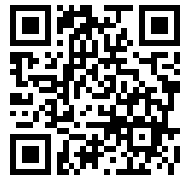

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JOURNAL
of the
Straits Branch
of the
Royal Asiatic Society

JANUARY 1902

Agencies of the Societies.

London and America	...	..	...	TRUBNER & Co.
Paris	...	...	...	ERNEST LEROUX & Co.
Germany	OTTO HARRASSOWITZ, Leipzig.

SINGAPORE :
PRINTED AT THE AMERICAN MISSION PRESS
1902.

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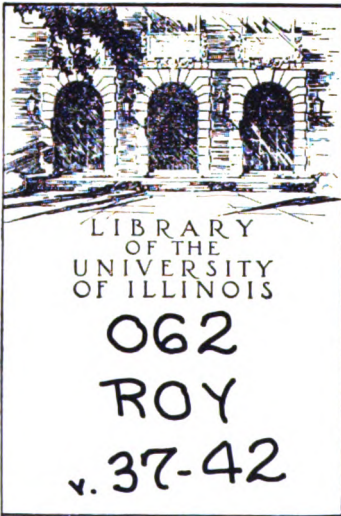
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THE
STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

COUNCIL FOR 1902.

The Right Rev. BISHOP HOSE, *President.*

Hon. W. R. COLLYER, *Vice-President for Singapore.*

DR. BROWN, *Vice-President for Penang.*

H. N. RIDLEY, ESQ., *Honorary Secretary.*

DR. HANITSCH, *Honorary Treasurer.*

II. ESCHKE, ESQ.,

A. W. O'SULLIVAN, ESQ.,

A. KNIGHT, ESQ.,

LIM BOON KENG, ESQ.,

P. J. BURGESS, ESQ.,

} *Councillors.*

List of Members for 1902.

ANTHONISZ, J. O.	Singapore.
BAMPFYLDE, Hon'ble C. A.	Kuching, Sarawak.
BANKS, J. E.	U. S. A. Life Member.
BARKER, Dr. A. J. G.	Sarawak.
BARNARD, B. H. F.	Selangor.
BARNES, W. D.	Penang.
BICKNELL, W. A.	Penang.
BIDWELL, R. A. J.	Singapore.
BINTARA LUAR, Hon. Dato. S.P.M.J.	Batu Pahat.
BIRCH, Hon. J. K.	Penang.
BISHOP, J. E.	Pekan, Pahang.
BLAGDEN, C. O. M.A.,	London, England. Life M'ber.
BLAND, Hon. R. N.	Malacca.
BOURKE, H. WALTER.	Puket, Siam. Life Member.
BRANDT, D. VON	Singapore.
BROCKMAN, E. L.	Singapore.
BROWN, Hon. Dr. W. C.	Penang.
BRYANT, A. T.	Penang.
BUCKLEY, C. B.	Singapore.
BURGESS, P. J.	Singapore.
BUTLER, A. L.	Kartoum, Egypt.
CAMUS, M. de	Singapore.
CERRUTI, G. B.	Tapah, Perak.
CLIFFORD, H. C., C.M.G.	Pahang.
COLLYER, Hon. W. R.	Singapore.
CONLAY, W.	Kuantan, Pahang.
COOK, Rev. J. A. B.	Singapore.

MEMBERS FOR 1902.

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DANE, Dr. R.	Singapore.
DENT, Sir ALFRED, K.C.M.G.	London.
DEW, A. T.	Krian, Perak.
DICKSON, E. A.	Kwala Langat, Selangor.
DRIVER, JAMES	Kwala Lumpor, Selangor.
DUNKERLEY, Rev. W. H. C., M.A.	Singapore.
EDGAR, Dr. P. G.	Ipoh, Perak.
EDMONDS, R. C.	Jugra, Selangor.
EGERTON, WALTER, C.M.G.	Penang.
ELCUM, J. B.	Singapore.
ESCHKE, H. H.	Singapore.
EVEBETT, H. H.	Santubong, Sarawak.
FLEMING, T. C.	Pekan, Pahang.
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FORT, HUGH	Singapore.
FREER, Dr. G. D.	Penang.
GERINI, Lt. Col. G. E.	Siam. Life Member.
GOMES, Rev. EDWIN	Sarawak.
GRAHAM, JAMES	Scotland.
HAFFENDEN, JOHN	Singapore.
HAINES, Rev. F. W.	Penang.
HALE, A.	Kent, England.
HANITSCH, Dr. R.	Singapore.
HELLIER, MAURICE	Singapore.
HERVEY, D. F. A., C.M.G.	Aldeburgh. Life Member.
HILL, Hon. E. C.	Singapore.
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HOSE, Dr. CHARLES	Baram, Sarawak.
HOSE, E. S.	Taiping, Perak.
HOYNCK van PAPENDRECHT, P. C.	Rotterdam, Holland.
HULLETT, R. W., M.A., F.L.S.	Singapore.
JOAQUIM, J. P., F.R.G.S.	Singapore.
JOHNSTON, L. A. M.	Butterworth, P. W.

MEMBERS FOR 1902.

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KEHDING, Dr.	Germany.
KER, J. CAMPBELL	Johore Bahru.
KLOSS, C. BODEN	Singapore.
KNIGHT, ARTHUR	Singapore.
KNOCKER, FRED. W.	Ulu Beranang, Negri Sembilan.
KYNNERSLEY, Hon. C. W. S., C.M.G.	Penang.
LADLAW, G. M.	Taiping, Perak.
LAWES, Rev. W. G.	Port Moresby, N. Guinea. Hon. M'ber.
LEASK, Dr. J. T.	Singapore.
LEMON, A. H.	Penang.
LERMIT, A. W.	Singapore.
LEWIS, J. E. A., B.A.	Sarawak.
LIM BOON KENG, Hon. Dr.	Singapore.
LUERING, Rev. Dr. H. L. E.	Ipoh, Perak.
LYONS, Rev. ERNEST	Singapore.
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MACLAREN, J. W. B.	Singapore.
MARRIOTT, H.	Singapore.
MASON, J. S.	Raub, Pahang.
MCCAUSLAND, C. F.	Kwala Lumpor, Selangor.
MELDRUM, Dato JAMES.	Johore.
MEREWETHER, E. M.	Malta.
NANSON, W., B.A., F.S.A.	Singapore.
NAPIER, Hon. W. J., D.C.L.	Singapore.
NORMAN, HENRY	Kwala Lipis, Pahang.
O'SULLIVAN, A. W. S.	Singapore.
PEARS, FRANCIS	Muar.
PERAK Government Museum	Taiping, Perak.
PERHAM, The Ven'ble Archdeacon	England. Hon. Member.
PUSTAU, R. von	Singapore.
RANKIN, H. F.	Amoy.
RIDLEY, H. N., M.A., F.L.S.	Singapore.
ROBERTS, J. A., M.A.	Singapore.

MEMBERS FOR 1902.

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ROBERTS, B. G.	North Raub, Pahang.
RODGER, J. P., C.M.G.	Taiping, Perak.
ROSTADOS, E.	Bundi, Trengganu.
ROWLAND, W. R.	Nagri Sembilan.
SARAWAK, H. H. The Rajah of,	G.C.M.G. Sarawak. Hon. M'ber.
SARAWAK, H. H. The Ranee of	Sarawak.
SATOW, Sir E. M., K.C.M.G.	Peking, China. Hon. Member.
SAUNDERS, C. J.	Singapore.
SEAH LIANG SEAH	Singapore.
SEAH SONG SEAH	Singapore.
SHELFORD, R.	Sarawak.
SHELFORD, W. H.	Singapore.
SHELLABEAR, Rev. W. G.	Singapore.
SKEAT, W. W.	London.
SMITH, Sir CECIL C., G.C.M.G.	London. Hon. Member.
SOHST, THEO.	Singapore.
ST. CLAIR, W. G.	Singapore.
STRINGER, Hon. CHARLES	Singapore.
SUGARS, J. C.	Telok Anson, Perak.
TATLOCK, J. H.	Ipoh, Perak.
VAN BEUNINGEN VON HELSDINGER, Dr. R.	Tandjong Pandan, Billiton.
VERMONT, Hon. J. M., C.M.G.	Province Wellesley.
WALKER, Lt. Col. R. S. F., C.M.G.	Kwala Lumpor, Selangor.
WALTER, W. G. C.	Klang, Selangor.
WATERSTRADT, J.	Ternate, Dutch East Indies.
WATKINS, A. J. W.	Kwala Lumpor, Selangor.
WEST, Rev. BENJ. FRANKLIN	Singapore.
WICKETT, FRED., M.I.C.E.	Lahat, Perak.
WISE, D. H.	Pekan, Pahang.
WOOD, C. G.	Batu Gajah, Perak.

PROCEEDINGS

of the

Annual General Meeting

The Annual General Meeting of the Royal Asiatic Society was held on the 12th of February, 1902.

There were present:—Right Reverend BISHOP HOSE, Hon'ble C. W. S. KYNNEERSLEY, Rev. W. H. C. DUNKERLEY, Rev. W. G. SHELLABEAR, Rev. Dr. B. F. WEST, Messrs. A. W. O'SULLIVAN, H. H. ESCHKE, LIM BOON KENG, C. J. SAUNDERS, A. KNIGHT, M. HELLIER, P. J. BURGESS.

The minutes of the last meeting were read and confirmed.

The Right Reverend BISHOP HOSE proposed that His Excellency SIR FRANK SWETTENHAM should be elected Patron of the Society. This was seconded by the Hon. C. W. S. KYNNEERSLEY and carried unanimously.

The elections of members who had joined the Society during the previous year were confirmed.

The Annual Report of the Council was read and its adoption carried, on the proposition of Mr. H. Eschke seconded by Mr. Saunders.

The Treasurer's Report audited by Mr. Knight was read, and the Rev. W. H. C. Dunkerley proposed its adoption, which was seconded by Mr. A. W. O'Sullivan and carried.

Mr. Shellabear proposed that the Council be requested to take steps during the year for the promotion of the study of Malay literature and to expend a portion of the funds in hand for that purpose. This was seconded by Mr. A. W. O'Sullivan.

Mr. Eschke proposed to add as an amendment by collecting and publishing manuscripts of value. The amendment was seconded by Dr. Lim Boon Keng and carried.

The Council and Officers for the following year were then elected, viz:—

President: The Right Rev. BISHOP HOSE.

Vice President for Singapore: Hon. W. R. COLLYER.

Vice President for Penang: DR. BROWN.

Hon. Secretary: H. N. RIDLEY, ESQ.

Hon. Treasurer: DR. HANITSCH.

Councillors elected by ballot were:—H. Eschke, Esq.,
A. W. O'Sullivan, Esq., A. Knight, Esq., Lim Boon Keng, Esq.,
P. J. Burgess, Esq.

Notes of thanks were then proposed to the President, Secretary, Treasurer, and Auditor.

Annual Report for 1901.

The Council are gratified to be able to state that the financial condition of the Society continues to be very favourable.

The following new members have been elected since the last general annual meeting :—

MR. R. A. J. BIDWELL	MR. A. W. LERMIT
DR. P. GALISTAN EDGAR	REV. E. S. LYONS
MR. J. B. ELCUM	MR. J. A. ROBERTS, M. A.
MR. M. HELLIER	MR. J. H. TATLOCK
MR. F. W. KNOCKER	MR. WATERSTRADT
MR. G. M. LAIDLAW	MR. F. WICKETT

One journal (No. 36) has been published during the year, and material for No. 37 is in the printer's hands.

A number of journals and pamphlets from various other societies have been received during the year and added to the library of the society.

It is to be greatly regretted that more material for publication is not available in spite of the large number of members of the society. This deficiency is particularly noticeable in the absence of contributions of short notes of features and occurrences of interest which must be frequent in and around the Malay Peninsula.

A statement of accounts of the Treasurer is appended.

Honorary Treasurer's Cash Account for the year ending 31st Dec., 1901.

Cr.

Dr.

1901		1901		1901	
	\$	c.		\$	c.
To Balance Current Account Chartered Bank	59	01	By American Mission Press printing Journal No. 35.	187	61
Do. Do. Mercantile Bank	895	09	do. do. No. 36.	217	85
Fixed Deposit Mercantile Bank	1035	30	Mounting Maps...	46	...
Subscriptions for 1897	5	...	Clerk's Salary ...	60	...
do. " 1898	5	...	Collector's Fee ...	10	...
do. " 1899	10	...	Printing, Postage, Bank		
do. " 1900	75	...	Discount on Foreign Notes, &c.	80	31
do. " 1901	440	...	Fixed Deposit, Mercantile Bank	1053	41
do. " 1902	15	...	Fixed Deposit, Mercantile Bank	500	...
Sale of Journals &c.	187	57	Balance in Chartered Bank	58	95
Sale of Maps	453	18	Balance Mercantile Bank	1000	77
Sundry Recoveries	4	82	Cash in hand	6	...
Interest on Bank Balance	35	93			
	3220	90		3220	90

M. HELLEK,

Honorary Treasurer, Straits Branch, Royal Asiatic Society.

Kelantan and my trip to Gunong Tahan.

BY MR. JOHN WATERSTRADT.

Gunong Tahan, the supposed highest mountain in the Malay Peninsula had always a great attraction for me, ever since I had ascended the Kina Balu mountain in Borneo, situated in about the same latitude, as I wanted to compare the fauna of the former with that of the latter. However it was not until ten years after my first ascent of Kina Balu, that I found an opportunity of undertaking the journey to Gunong Tahan. My plans for the trip had been laid long beforehand, and I had decided to take the Kelantan route in preference to that of Pahang, as several expeditions which had tried to reach the mountain by the latter route had failed, mostly I believe owing to the difficulty of obtaining food supplies. I decided to abandon everything in the shape of comforts for this trip, taking with me only things that were absolutely necessary, and utilising all the coolies I could get for carrying provisions. Leaving Singapore towards the end of April in a small coasting steamer, I arrived in Kelantan four days later, the steamer calling at most of the ports along the coast, on the way up. The mouth of the Kelantan river is on the map given as farther south than it really is, but that entrance has long ago sanded up, and ships have now to enter by the northern entrance. Lately a fairly good light house has been erected by the Siamese, and a Siamese gunboat is always stationed there. Owing to the shallowness of the river all steamers are obliged to anchor just inside the bar, behind a sand spit that affords good shelter: and passengers and cargo are taken up to Kota Bahru in small native boats.

Kota Bahru, the capital of Kelantan, is situated about eight miles from the mouth of the river, on the right bank of the same, and contains according to the Rajah's account, about 20,000 inhabitants. The town consists really of two villages:

one of them called Taratchin, is divided from the other by a branch of the river, and is chiefly inhabited by Chinese. Formerly nearly all the business was done in this place, but the ever changing river silted up just there, and now nearly all business is transacted in the native town, a little farther up river, where there is deep water close in to the bank. The Rajah at the instigation of the Siamese is now making fairly good roads in every direction through the town. Just before I arrived, there had been a tremendous fire in the Chinese village, half of which was burned down one night, when most of the inhabitants were attending a fête given by the Rajah on account of his marriage with the Rajah of Singora's daughter: and a number of young children who were left alone in the houses were burnt to death. The Rajah used this opportunity to make a broad street right through the whole village, where there formerly had been only narrow crooked paths. During my stay in Kota Bahru, before going up stream, I was the guest of the Siamese Commissioner and was introduced by him to the Rajah, who immediately offered to provide me with boats and men for the trip up the river. The present Rajah is a young man of about thirty-five years, and owes his position to the Siamese, who on the death of the old Rajah installed him as such, in preference to the rightful heir, on the supposition that he would conform to their wishes. So far the Siamese have interfered very little in the internal affairs of Kelantan, keeping only a Commissioner there, who acts as a sort of adviser to the Rajah, and a small garrison; but signs are not wanting that they want to get a more direct control of affairs, and probably before very long Kelantan will be to all purposes, except in name, a Siamese province. The Rajah's palace is just in the middle of the town, and every forenoon from about 10 to 1 o'clock he holds his court there, afterwards going for a drive out to his villa, that he has built in a garden outside the town. I visited him there one afternoon, and found workmen everywhere building cages for wild animals, and the Rajah told me he intended to start a small Zoological Garden there.

It was the dry season when I arrived in Kota Bahru and the heat was very intense, the thermometer seldom going below 100° in the daytime and 90° at night. The Kelantan river,

which in the rainy season often overflows its banks, was now nearly dried up, so we had great difficulty in getting up stream with the three large house boats that the Rajah supplied for me and my men. The river is about 250 yards wide at Kota Bahru, and continues to be about the same width up to Sungie Lebeh, which river falls into the Kelantan river from the right, thirty to forty miles up stream. The banks of the river up to Quala Lebeh are pretty thickly populated, and are lined with coconut groves most of the way. It took us four days to reach Quala Lebeh, as we had only one gang of men to pole the boats, and consequently had to stop at night. I decided to try first to get to Gunang Tahan by the Lebeh river, as that, according to my idea, was the nearest way, and we therefore proceeded up that river for another day, when the rapids were reached, and we had to stop, as it was impossible to get our heavy boats over them.

On the way up the river we had passed a number of bamboo rafts, with small huts built on them, either moored along the banks, or drifting slowly down stream. They were inhabited by Malays from Kota Bahru, who go up stream to trade or to plant paddy, and prefer living on the river rather than ashore. When therefore a suitable place is found, these people make a raft and build a hut thereon, wherein they live until they have traded away or exchanged all their goods for jungle produce, whereon they drift down stream with their barter or their paddy.

Just below the rapids a number of these rafts were moored, forming a floating village on the river; and as I had to wait there some days before I could get smaller boats to take me up river one of these huts was given up to me, and I discharged the three large boats and sent them back to Kota Bahru, as they were of no further use to me. I had to wait a week at this place before I got smaller boats and other men, to take me further up river, and in the meantime, I and my collectors that I had brought with me from Borneo, did a little collecting; but the species found there were of little interest being the same as are found everywhere in the low land of the Peninsula. At last we got away again in three smaller boats, all heavily loaded: and for the next few days we had a very rough

job pulling the boats over the rapids, of which the river was full. We had to stop at each village we passed on the way, to get fresh boatmen, as none of these would go any farther with me than to the next village, and this continual stopping and changing men delayed us a good deal. On the third day Quala Aring was reached; and as it was my intention to go up that river, we had again to wait to procure still smaller boats, but we soon managed to get six of these and plenty of men, so were able to proceed the next day. It was at Quala Aring that the Skeat expedition stopped, while Mr. Skeat went across to Pahang and tried to get up the Tahan from that side, but failed, I believe owing to want of provisions, the same as Messrs. Ridley and Davidson before him. The river Aring is of course much smaller than the Lebeh, and is full of rapids, but it was not very difficult to get the boats over them. I counted them several times, and found that on an average we passed over about ten of them an hour the whole way up. There are very few people living on this river, there being only one village of any size, about three days up stream, so I had not to stop on the way to change men, as those from the Quala took me right up to that village. The village is called Buntie, and is the last inhabited place in Kelantan, so I had to halt there to get together coolies and to find out the best way of ascending the mountain, of which I got a good view away to the southward on clear days. The natives there called it Gunong Siam. There is plenty of game to be had round the village, as there are lots of old clearings, where deer and pigs are plentiful, and tigers are also found in numbers. On the very first day I stayed there, while out collecting butterflies close to the house, I heard a noise in the thick low jungle close by, resembling the purring of a cat, only louder, but took no notice of this until a couple of Malays came running after me telling me to come back at once, as there was a tiger quite close by. As I had then about forty Malays with me I wanted them to go into the jungle and drive the tiger out into the open, a distance of not more than twenty or thirty yards, where I could get a shot at him; but though they were all armed with spears and I offered them some of my guns also, they were afraid of doing so, and I did not get a sight of the brute though he stayed in that

thicket not 150 yards from the house the whole day. On my return from the mountain however I got him, as he had just then killed a buffalo, and came back in the afternoon to have another meal.

About a day's journey to the westward of the village at another tributary to the Lebeh river, called Sungei Aring, was situated a small encampment of Sakais and as I wanted these men to show me the way to the mountain, I got the headman of the village to send word to them to join me at once. The whole tribe of Sakais living there are considered to be the property of a Malay living half way up the Aring; and this man brought all the full grown men to me a couple of days later. There is only this one settlement of Sakais in this part of the country, whereas there are said to be thousands of them living up the Ulu Kelantan river. Those that I had with me (ten or eleven men), were all remarkably strong and healthy looking, and were not so much troubled by skin diseases as is usually the case with the Sakais. After getting all the information I could about the Gunong Tahan or Gunong Siam, I decided to follow the Aring as far as it was possible to go with the native boats, and then strike across country straight for it. We therefore loaded the provisions in eight or nine small dug-outs, and went up stream with these, most of the coolies following us along the bank. After going on in this way for a couple of days I found it impossible to get any farther with the boats, as the river was getting too small, and the boats had continually to be hauled over trees that had fallen across the river and barred the passage. We therefore stopped at a small tributary called Sungei Tamu, and while my Malays made everything ready for the march inland, I sent the Sakais in the jungle to cut a path for us along the bank of the Tamu, which I had decided to follow seeing that it seemed to come from the direction that I wanted to take. The Sakais came back in the evening of the same day and reported having found an elephant track, which they had followed up a high ridge, and they were of the opinion that by following this track we should reach the foot of the mountain. They had come up with the elephants about half way up the mountain, there being seven of them, but as there were no tuskers amongst them, they had not fired on them, and the elephants continued

their journey to the top of the ridge and then disappeared down the other side. We halted two days while the different packages were divided amongst the coolies. The rest of the provisions which we could not take with us were hoisted up in a high tree, for fear of the elephants getting at them, and well covered with mats to protect them against rain, and then we started. In the beginning we got on very well, the ground rising gently the whole time, but as we got higher up on the spur, walking became more difficult, and we had to catch hold of roots and branches to help us in getting up, and had it not been for the deep footprints made in the soil by the elephants it would have been nearly impossible for the coolies to get up with their heavy burdens. I reached the top of the ridge, which proved to be about 3500' high, about noon, together with a few of my Borneo men and a couple of Sakais, and wanted to proceed along the comb of the ridge, which was running in the direction I wanted to take, but the Sakais insisted on our going down the slope on the other side, as they said we should find no water near the top; so I had to give in, and we went down about 1000' till we came to a tiny stream, where I decided to camp for the night. I had not taken any tent with me, but my men soon made a shelter with some large palm leaves, some three feet broad and seven feet long, which we found growing in abundance in altitudes from 500' up to 4500'. None of the other coolies reached our camp that night, and next morning we went farther down the slope till we reached a stream, which the Sakais declared to be the Sungei Tahan, and waited there until all the coolies had arrived. From the river bed we got a fine view of a mountain, that I judged to be about 5000' high, standing straight up and looking very formidable and inaccessible with a magnificent waterfall near the top. The natives declared that this mountain, which was not more than 2 miles distant, was part of Gunong Tahan, the higher part of which was shut out from sight by the high ridges running parallel with the river. We followed up the river for some time, but it was very difficult climbing and when we had reached an altitude of 2500' the coolies declared that they would not go any farther, so I had to make my camp there. Most of the coolies then returned to their villages; but I kept the Sakais and my collectors with

me, and with these I ascended to the top of the mountain that we had seen from the river. The ascent was however so difficult, that it was impossible to carry anything with us, and we had therefore to return to our old camp every night. Especially the last 500' proved to be very difficult to negotiate, as there was a sheer wall of rock about 300' in height, down which the Tahan river came thundering, forming the splendid waterfall that we had seen from the bottom, and which I christened the Lama Falls. After several failures we at last found a way to the top of the falls and were then confronted by two peaks, nearly inaccessible, and the river seemed to wind its way in between them. We tried to follow up the river, but soon had to stop, on account of huge boulders and deep pools, with sheer walls on each side, making it impossible for us to get through; so we had to give it up, and attempted instead to scale the least forbidding looking of the two peaks.

In this we succeeded at last, only to find however the top involved in thick mist, so that it was impossible to see anything and to ascertain whether we were really on a spur of the Tahan range or not. As it was impossible to stay up there for the night without any food or shelter, we had to return to our camp, my intention being to get up there again early the next day and have a good look at the surrounding country before the clouds commenced to gather round the mountain tops, as they always do in the afternoon. In the night however I got an attack of fever and was unable to walk for some days, so I sent my men up to try and find out the whereabouts of Gunong Tahan, and they returned with the information that the mountain that we were on was in no way connected with the Tahan, which they said they had seen a long way to the westward, but according to them it would be impossible to get up that mountain from that side, as we were separated from it by a deep chasm, which ran along for many miles, with sheer walls of rock on the other side, up which they declared it impossible for anybody to get. The Sakais stated that they had seen another river coming nearly from the top of the mountain, and this they took to be a branch of the Galas river, another tributary of the Kelantan river; and they strongly advised me to go back, and try to get up the mountain by that route. As they absolutely refused to

follow me when I wanted to try and get up from where we were, I had to give it up, though I myself believed it to be possible; and, as after events showed me, it proved to have been the easiest and nearest route to the top. However I made up my mind to return to Kota Bahru and get up another expedition up the Galas river; so I returned to the village Buntie with a few of the Sakais, leaving the rest of them together with my Malays and all our provisions on the mountain: as we had found a number of rare birds there, and I was desirous of getting some more of them. I told my men that they must try and find an easier way to Tahan, and if they succeeded in this they were to wait for me near the top of the mountain. I may as well mention here that some time after I left, my men did find a way up Gunong Tahan, and stayed there for some time waiting for me; but I never met them, as it took me a much longer time to get up the mountain by the Galas route than I expected, and so at last they returned down towards the coast by the same way as they got there. The trip back to Kota Bahru occupied ten days, and I had to wait there another month before I got new provisions and material up from Singapore for my next expedition. When these at last arrived a new start was made but this time I got rather a poor lot of boatmen, the Rajah having lent most of his best men to Messrs. Duff and Lathyen who went up stream just before me to prospect for gold. It therefore took me six days to get up to Quala Lebeh, and there I found the above gentlemen busy prospecting the river bed, having with them a great number of coolies. This time I went past Quala Lebeh, following the true Kelantan river, and in four days reached Quala Galas, where we were detained a short time, owing to the river being in flood. We passed several small tributaries on the way, most of them being uninhabited, being the Rajah's rattan preserves. Once in five to six years he farms each of these rivers out to some of the Chinese traders in Kota Bahru, who then collect all the rattans and other jungle produce, and after that nobody is allowed to touch anything for the next five to six years, thus giving the rattans a chance of growing to a fair size before they are again cut down. We then proceeded up the Galas, which a short distance from its Quala is only about 50 yards wide, and gets narrower farther up, and full of rapids. There

are a number of small villages on its banks, from which I obtained relays of boatmen, those I had with me from Kota Bahru having by this time all got fever, or were at least pretending to have. As we got farther up, the river got very shallow, and I had to leave the big boats behind, and go on in small dug-outs. We passed a few Chinamen on the way, washing gold, and they told me they could make about 75 cents a day, when working hard. At other places where the Chinamen were working farther inland, they had dammed up the river to obtain sufficient water, causing us a lot of trouble, as we had to unload the boats before we could haul them over these obstacles.

At last the village of Pulai was reached, and there I had to stop, as it was impossible to proceed any farther by boat. The village contains a couple of hundred inhabitants, nearly all Chinese, there being only a few Malay traders there, who occasionally come up from Kota Bahru and stay there a month or two, until they have bartered all their goods away for gold. Formerly all the Chinese living there were gold miners, but now that all the gold-bearing sand in the river bed has been washed over and over again and the returns are getting less, many of them have settled down as agriculturists and have large paddy fields all round the village. Formerly there must have been a much larger Chinese population in these parts, as traces of very large alluvial workings are found up nearly all the small creeks, being now overgrown and covered with dense jungle. At present there are only a couple of Chinese Kongsis working on anything like a large scale, and I believe they are doing fairly well. Lode working has also been tried by the Malays, but though the ore obtained was of very good quality they soon gave it up, the work proving too hard for them. The formation of the country about there is mostly hard blue limestone which crops through everywhere, the hills in some places rising to a considerable height, mostly impossible to ascend owing to their steep or overhanging walls. All these limestone hills are full of caves and passages made by the water in bygone days, and in places some very curious dripstones* are formed, the best specimen of which is found in a cave close to the village, about

*Stalagmites ?

100' up in a hill, and the Chinese, on account of this bearing some resemblance to one of their deities, formerly used it as a temple, and there is still an old rotten table up there with some candlesticks full of burned joss sticks, and remains of half-burned paper. It has however not been used for a long time, and the ladders that led up to it have long since rotted away, so I had to climb the face of the rock to get up; but I should not recommend anybody to try that experiment, unless he is a good climber. My men that were with me looked at it, and decided that it was safer to stop at the bottom; so I let them remain there, while I went up with a young Malay who had been up there once before. The Chinese are rather afraid to go near these limestone hills as they say that the tigers use the caves as sleeping apartments, and this is very likely, though I never found traces of them in any of the many caves that I visited, whereas I found plenty of traces of elephants in the larger caves that were level with the ground, and the Malays told me that these animals often made them their homes for months at a time. The floors of the caves were often strewn with the remains of dead and broken snail-shells, which had fallen down from the roof in the dry season, when most of the snails die. However I also found a number of live shells hidden away in the dark and moist crevices of the rock, among them several new and rare species. Most of the snails have a great liking for limestone rocks, and the collector will find more specimens in one hour on these rocks than in the jungle for one month.

From the top of some of these cliffs I got a good view of the surrounding country, but I looked in vain for a mountain that looked anything like 10,000' high. Towards the East were two mountain ranges which I supposed to be about 6,000' high, the natives calling the most northern Gunong Siam, and the other Tulang Rabong. Gunong Siam appeared to be slightly higher than the other, and the Malays stated that this was the same mountain that the Malays of Pahang called Gunong Tahan. I did not believe this possible, but seeing that the people on the Aring river also called Tahan the Gunong Siam, I decided to ascend the mountain to make sure of it. I had great difficulty in obtaining any coolies to go with me owing to the rivalry

between two of the native chiefs, and had at last to be contented with eight Pahang Malays; so we were only able to carry provisions with us for ten days. The first part of the road lay through fairly flat country and we had no difficulty in cutting a path through,—going northeast by the compass, for none of the Malays had been in that part of the country before. At night we camped on the banks of a fairly large river, which proved to be the Kateh, a tributary of the Galas; and next day we followed this up till we got into the hills, passing an old deserted mining camp on the way. We only had one glimpse of the mountain on our journey, though we climbed several hills to obtain a good view, but always found other hills in front of us obstructing the view towards the mountain. That night we also camped on the banks of the river, which here reaches an altitude of 800' above sea level, the men making a rude shelter of palm leaves, under which we slept undisturbed, though we that day had come across several tracks of tigers. Next day we started up a ridge which we thought sprung from the mountain, but when we at last reached the top of it 2500' up, it proved to be separated from the mountain by another branch of the Kateh river, and so we had to climb down again on the other side. The descent proved to be very difficult, especially the last 300' to 400', and I have no idea how the coolies came down, as each man chose his own way over the face of the cliffs, where overhanging boughs and roots afforded the only support for lowering oneself. All got down without any mishap, and we all collected together in the river bed, which was only about 20' wide, and commenced to look for a way out of the cañon or gully that we had got into, and this we found to be no easy task. It was impossible to get up on the other side of the stream, the walls of rock there being even more forbidding looking than those we had descended; and to get up by following the stream was equally impossible as there was a waterfall about 100' in height in front of us, from which the water came rushing down with a deafening noise. There was therefore no alternative left us but to go down stream; and this we did for a short distance, scrambling over huge boulders, wading through deep pools of water, and clinging to narrow ledges of rock where the pools were too deep to wade through; but at last we

got to a place where it was impossible to pass through, the bed of the stream being only about four feet wide, and through this narrow passage the water came rushing down over boulders and falls, making it impossible for any living thing to get through. Luckily we found a place where the rocks were less precipitous and we managed to get up these, following the direction of the river till we at last got on more even ground; and as we were by this time all thoroughly done up, we decided to camp on a small level piece of ground, that was situated just where another small mountain stream joined the one we had been following. There was no doubt that this stream came right up from the mountain; so next day we followed it until we reached a ridge. This we commenced to ascend, finding it rather difficult at first to cut a path through the jungle, but when we got farther up we found a fairly good track, evidently made by wild beasts, and the ascent was rather easy after that for the next 2000 feet. We passed a number of the argus pheasants' sporting places, on the way up, and heard their shrill cries all round, but never saw any, though I often tried to get near them and have a shot; but they were very shy and cleared away before I could see them. As we got higher and higher up, the path was evidently less used by animals, and got overgrown, until it was completely lost; and we then had to cut our way through low but very dense and thorny jungle, full of a kind of thin rattans, the leaves of which with their hundreds of bent thorns proved a great hindrance to our progress, as they caught hold of our clothes everywhere, and as soon as we had got loose from one of the leaves, we were hooked on to by half a dozen others. About two o'clock in the afternoon we came out on a small plateau at a height of about 4000', and from there we had a good look at the top of the mountain which was not very far off; but as at the rate that we were travelling, it would not be possible to reach it that day, we left the plateau, and followed the slope of the ridge until we reached a dried-up water course; and finding a little water in a hollow, we decided to camp there. There were no large palm leaves to be found thereabout, and so darkness and rain came upon us before we had finished our shelter, and we passed a miserable night, wet and shivering with cold, as the rain had put our fires out. Next morning we had

a hurried breakfast, being anxious to reach the top as early as possible before the clouds commenced to gather round it. The rain had made everything nasty and slippery, and as we had to get up the steep slope, it took us some considerable time before we again got out on the ridge, and both I and the coolies had some bad falls and got a good deal bruised. After getting out on the ridge the ascent was again easier, going up very gradually, but the rattan jungle still gave us lots of trouble, and as I had to go ahead myself and clear the way I got the skin of my face and hands torn a good deal, and smeared all over with blood. At last we reached the top of the mountain, which proved to be only 5500' high, so I was quite certain that it could not be Gunong Tahan.

We had a splendid view from there toward the north across immense stretches of low and flat land,—Gunong Siam being evidently the last peak to the northward of that range of mountains in the middle of the Peninsula, whereof Gunong Tahan forms a part. The mountains to the south and south-east were hidden from view, being enveloped in the clouds. The top of Gunong Siam is only a long and very narrow ridge, being in some places only four feet wide, and covered with thick brushwood. After the coolies had rested for an hour I sent them down another side of the mountain, which I thought would take us down to the Katche river sooner, with orders to stop as soon as they found water and suitable camping ground. I remained on the top of the mountain together with one of the Malays, in the hope that the clouds would clear away and enable me to get a view of the other mountains. In this I was not disappointed, as the mist cleared during the afternoon, and I got a good view of the Tulang Rabong range to the south and south-east, from which we seemed to be separated by the river Katche. This range is about the same height as Gunong Siam, and behind it, far away to the southeast, I now and then got a glimpse of a higher mountain the top of which was continually hidden by the clouds: and I felt certain that this must be Gunong Tahan, there being no other mountain in sight approaching the same height as that. I saw at once that it would be impossible to reach it by going straight from where we were, as we should have to cross ridge after ridge of Pulang Rabong to get there, and

after the experience that we had had of the Katch ridges I thought it most probable that we should never get there that way. We could either go round to the north of Gunong Siam, and then due south till we reached the foot of the mountain (and this would certainly save us a lot of trouble as the country round that way seemed to be fairly flat), or else we could go to the southward of Tulang Rabong and then straight to Gunong Tahan. This route appeared to be the shortest from Pulai, and I selected it though I knew the country to the southwards to be very mountainous, and difficult to get through; but as I wanted to do a little collecting on the Tulang Rabang, this suited me the best. After being fully satisfied that it was really Gunong Tahan that we were looking at, we commenced our descent, a shower of rain hurrying us on, and we soon overtook the coolies, who had not yet found any suitable place for camping. It was already commencing to get dark, and we were threatened with heavy rain so we hurried on as fast as the ground would allow us to travel, and just before it got dark we found a place beside a small stream, with plenty of large palm leaves close by, so all hands were soon busy making a shelter; and just as the rain came pouring down we had got it ready, and could cook our dinner. The camp was at 4000' so it was rather cold up there, and we had to keep a large fire burning the whole night; but still the Malays complained about the cold, and were glad when we started next morning for the valley. We expected to strike our old track from Pulai during that day, but somehow we missed it, and got into country unknown to us; so I decided to follow the Katch down stream, until we reached the village which I knew existed close to its junction with the Galas. We reached the place late the next afternoon, and slept that night in a small Malay hut. Next day I got a couple of Malay guides, who took us back to Pulai where I arrived shortly after noon; but some of the poor coolies did not arrive till shortly before dark, being thoroughly done up, with their feet full of thorns and bleeding from innumerable leech bites.

We now remained some days in Pulai to recoup ourselves, during which time I tried hard to get some more coolies; but only succeeded in getting two more from a village down river

as none of the Chinese from Pulau would go with me into the jungle. It was now the beginning of September, and the rainy season was commencing, so we were likely to have a rather bad time of it during our journey. The night before we started on our second trip it rained very heavily, and in the morning all the jungle paths in the low land were transformed into small streams, and the rivers were all in flood. For half a day we followed a track which ran due south into Pahang, the borders of which are only one day's journey from Pulau; but coming across an old Chinese gold mine, all overgrown with jungle, we completely lost sight of the path, and after wasting some time trying to find it again I decided to cut a path myself, going in a more easterly direction as I was afraid we were getting too far south. After doing this for some time we came across another old disused path evidently leading to some other old workings, and this we followed till evening, when we camped at a small stream. Next day we reached a large limestone cliff, at least 500' high, very long but narrow, being in one place where a narrow passage ran right through it, not more than 20' wide, whereas it must have been several miles long, for I started to go round it, but after marching for one hour and seeing no sign of the end of it, I gave it up and returned. We found a small cave (Goa the Malays call them), and we camped in it for the night, the Malays however preferring to sleep outside, as a cold wind seemed to be coming down through some opening in the roof. I sent a couple of my best men out to try and scale the cliff and obtain a view of Tahan, which we had not yet seen on this journey; but they found it impossible to get up, the sides being everywhere perpendicular or overhanging, and there were no bushes or roots growing on the sides, to hold on by. The following day we struck a branch of the Kateh river, which ran in a southerly direction, and following it up we came to a deep pool full of fish; so I discharged a dynamite cartridge in the midst of them, and that night my Malays had a real feast, fresh fish being very scarce at Pulau, for there are none to be found in the Ulu Galas, where all the deep pools in the river have long since been filled up by the washings from the gold mines, leaving the fishes no place to breed or hide from their enemies. We then ascended a ridge running parallel with the

Tulang Rabong range, and reached a height of 2500', but had to descend again on the other side, as a river had to be crossed which proved to be a branch of the Tenom, which again is a tributary of the large Pahang river. The descent was very steep and very slippery from the rain and just as we reached the river bed I slipped on a large boulder, and fell with great force against a large root, hurting my right side very much, and was unable to move for some time. I was afraid I should be unable to continue the journey, and we had to camp there that night, but next morning I felt much better and so we pushed on for another two days, when we struck another of the Pahang rivers, but whether this was another branch of the Tenom or whether it was the Kechau I was unable to determine. It rose near the top of Tulang Rabong, as I found out later by following it up very nearly to its source, about 5000' up. We camped at the only level place that we could find, about 1500' above sea level, but at night after a heavy rain we were nearly routed out of our camp by the river, which rose with startling suddenness and nearly flooded us out. The roar of the water rushing past us at a tremendous speed dashing against boulders and over falls was something not to be easily forgotten, and made sleep impossible that night. I decided to let most of my men remain at this place, while I went back to Pulai to obtain a fresh supply of provisions, but before doing so I ascended another range of hills that ran parallel with the river on the opposite side, and reached a height of 4500' from where I had a fine view of Gunong Tahan. I thought it would take us 4 to 5 days to reach the foot of it, and told my men to commence cutting a path up to it while I was away, at Pulai. I then went back, taking with me only two coolies, and walking hard for 2½ days we reached Pulai. It proved very difficult to obtain sufficient coolies at once, so I had to send 10 men off first, with provisions for my men, while the headman of Pulai sent for the Malays living farther down stream to come up and go with me. Twelve days were lost in waiting for them, and when they at last arrived there were only 15 of them instead of 25 that I wanted, but finding it useless to wait any longer I started off with these men, taking as much provisions with us as they could carry. These men came from the low land down river and

were not used to work in the mountains, so they very soon got tired, and I had continually to sit down and wait for them. We reached the camp of my Malays in four days, and it was my intention to push on the next day for the foot of Tahan; but my Pahang Malays, who had been out cutting part of the path while I had been away, had found this such hard work and such difficult climbing that they refused to go on. I argued with them a long time but it was no use, and promises or threats of punishment had equally little effect on them, and next morning they had disappeared, leaving behind them their parangs and spare clothing, which I had taken from them the previous evening, thinking thereby to prevent them from running away. When the Kelantan Malays saw this they also refused to go any farther, and the whole lot of them went back to Pulai leaving me only six men that I had with me from Kota Bahru, and a couple of Pahang men that joined me a few days later. Including myself and my Chinese boy we were nine in all, and to push on for Gunong Tahan with so few men would have been useless, as we should only have been able to carry enough provisions to take us to the foot of the mountain and back; whereas I wanted to stay some time near the top of the mountain to collect specimens. Therefore I decided to remain where we were, in the hope that the headman at Pulai would send the Kelantan Malays back to me, when he heard how I was situated; and this proved to be correct, the men returning to me at the end of twelve days. In the meantime we had done some collecting, and got a few rare birds and some orchids. My boy who had seen the Chinese at Pulai working gold amused himself by prospecting in the river bed; and one day he brought back to the camp a large piece of quartz which proved to be very rich, the gold being visible running right through it. The lode that it came from could not have been far off, as the mountain which the river sprang from was quite close, but we had no time to look for it.

It was my intention to take that piece of quartz back with me to Pulai on the return journey; but, as luck would have it, I never came back that way; and so it is still lying there waiting for somebody to come and pick it up. Having got the men back we then made another start, having first to climb the ridge

4500' high in front of us, and this proved such hard work that the men could not walk any farther when we reached the top, and so we camped there, going down the other side next morning. There we again got into Kelantan territory, crossing a branch of the Galas river, and went up a long and high ridge forming the boundary between Pahang and Kelantan. It was right from the foot of Tulong Rabong to Gunong Tahan, and as it did not appear to be known to the Malays, we christened it Bukit Gajah on account of the number of elephants that were to be found there, the top of the ridge seeming to be their regular highway. We saw only female elephants, the males being very scarce in Kelantan, where everybody is allowed to shoot them, and before long these will be quite extinct. We kept along this ridge for four days, reaching a height of 4500' and then commenced to descend, being then opposite to Gunong Tahan, and only separated from it by a river, which proved to be the Relai, a tributary of the Lebeh. None of the branches of the Galas come from the mountain, and it was evidently a great mistake my trying to get up from there, as the way up from the Relai or Aring rivers is much nearer and easier. The descent was difficult and would have been well nigh impossible if the elephants had not been there before us; but by following their tracks, and using the deep indents made by their huge feet, we managed to scramble down and reach the river, which is here 1200' above sea level. Arriving there the Kelantan Malays left me and returned to their homes, and I was not sorry to lose them this time, as these men had enormous appetites and were eating up nearly all my provisions. The rest of us stayed a couple of days at the river, and then, having found a spur that seemed to go in the right direction, we commenced the ascent.

The first 1000' were very difficult, and took us a long time to negotiate, but after that we got out on another spur and the ascent got much easier, there being a fairly good track made by wild beasts. Reaching a height of 4000' we got into rattan jungle, which seems to grow on all the Kelantan mountains of any height; so we left the comb of the spur and went down the side until we found water, where we then camped; but could not find any level place for our shelter, and had to build it on the side of the hill, and as it came on to rain

heavily towards evening we had a rather bad time of it that night, as the water came pouring down the hillside on the ground that we slept upon I, myself, was lying on a few raised sticks and was fairly well off; but the Malays had been too lazy to cut enough of these for themselves, and so had to sleep on the ground on a few leaves, with the water running in streams under them. Next morning on starting we soon got into rattan jungle again, and owing to the difficulty of getting through this, we only got up another 1000' that day, camping at night by the side of a small stream. As this seemed to be a likely place for collecting purposes, I decided to make it my headquarters for the time that we stayed on the mountains. It took us two more days to cut a path to the top of the mountain, the jungle being very dense and difficult to cut through. Every afternoon it rained heavily, so that we always got drenched before we could get back to camp; and as the path we had cut was only a very poor affair, we had to go bent double half of the way on account of overhanging branches, and it was very annoying to feel the water running from my cap down my neck, finding its way down my back, and finally coming out of my shoes. In the camp it was very cheerless too, in the evening, there being only very few leaves suitable for making a roof in the neighbourhood and consequently our shelter was very small and badly made. From the top of the mountain, we saw the village on the Aring river where I had stayed on my first trip, and as that appeared to be the only place within measurable distance from which we could obtain any food, I decided to send some of my men there to get a fresh supply of provisions, as we were running short of these. I told the men to follow the Relai river, when they reached the foot of the mountain, until they were clear of the hills, and then strike across country till they reached the Aring, when they were to follow that stream till the village was reached. There they were to buy provisions and get some coolies to carry them back to us. I sent three men, and when they left we had only provisions left us for another ten days; but by giving out short rations I hoped to get them to last until the men could come back from the village. The rest of us stayed up there collecting, and I found the best collecting ground to be between 5000' to 7000', but we also went several times right up

to the top when the weather was fine, in the hope of finding traces of the men that I left on my first trip; but could find none where we were, which, considering the immense size of the mountain, was not at all strange, as half a dozen different parties might have been on the mountain, without seeing each other. Far away we could see a large black patch that looked as if the low jungle had been burned away; but it was too far for us to attempt to reach it, as we should not have been able to do much collecting on the way, and I wanted to get together as large a collection as possible before our provisions gave out. Later on, I found out that it really was a piece of jungle that my men had burned down to attract our attention, but they had already left the mountain two months before we reached it. The mountain seemed really to consist of three separate ranges running parallel from about east to west, connected with each other at their highest points by a number of peaks, the one in the middle being the highest. In the ravines between the different ranges the following rivers had their sources, as far as I was able to judge with the help of my Pahang Malays:—towards the Kelantan side the river Relai and two branches of the Aring: towards the Pahang side the rivers Kechau, Tahan, and perhaps also another branch of the Tembeling,—as I am not sure that the river which we struck on my first trip was not a branch of that river, and not the Tahan as the Sakais stated. I found that all the branches of these rivers which sprung from anywhere near the top of the mountain, had very discoloured water, something like the water found in stagnant swamps; whereas the streams that came from an altitude of less than 4000' had beautifully clear water; but what might be the reason of this I did not find out. Nearly the whole of the mountain consists of white quartz. From my own experience on the Tahan or Tembeling river, and from what I saw when on the top, I should say that it will be very difficult to get up from the Pahang side, as the mountain on that side is very precipitous (probably deriving its name of Tahan on that account) and provisions have to be carried a much greater distance than from the Kelantan side. I only saw one village on the Pahang side, lying beside a huge limestone cliff that somewhat resembled the shape of an elephant; but none of my men could give me any

information as to the name of the river by which it was situated. If anybody wants to try and get up from the Pahang side I would recommend him to start from that village. There was a very grand view from the top, especially very early in the morning, when the mist covered all the low-lying land, making it resemble a lake of snow; and so low did the mist keep to the ground that the top of some of the tall jungle trees could be seen, looking like masts of sunken ships, and the smaller mountains stood out dark and sombre like islands in this beautiful lake. Later on in the day the mist would gradually rise and come rolling up the mountain side, with the dark clouds gathering fast near the top, and in the afternoon and evening the rain would come down in torrents. The trees and rocks were all covered with masses of long moss in which the rain kept hanging, so that it was impossible to move about without getting wet; and we had to go about day after day in wet clothes, with wind and rain blowing in on us at night. Besides which my Malays suffered much from the cold at night, when the temperature often went down to 50°.

Altogether I stayed eighteen days near the top of the mountain, and I got a very good collection of birds and some orchids; but I was only able to take a small quantity of the latter, as transporting a large number of them to the coast would have been impossible with the few men that I had. Of mammals we only got very few, and the same was the case with insects, of which I had hoped to get a lot; but with the wet and miserable weather that we had, all the insects that we saw flew very high, and even if they had come down, it would have been nearly impossible to chase and catch them in the thick low brushwood that covered the whole of the upper part of the mountain.

For the last few days that we stayed up there we only got half rations, as I was very loath to go down, hoping that the three men would return from the village in time with the provisions; when it was my intention to remain up there for another fourteen days. But when the last grain of rice and all the tinned provisions were finished, we had to start on the way down, taking with us all my collections except the orchids, which I was forced to leave behind as we could not carry them with us. I expected to find the men with the provisions at the foot of the mountain,

but on arriving there we found no sign of them. However I had left there four tins of salmon and two pounds of biscuits when we went up the mountain, and we now made a scanty meal of half of these, reserving the other half for next day. At night we discussed what was to be done, and as all the Malays wanted to make for the nearest village to obtain food there, I gave in; though I would rather have remained at the foot of the mountain and waited for the return of the three men, living on the mountain on such game as we could shoot and snare. Early next morning we started, leaving most of my things behind in the camp, taking with us only a blanket each, and my collection of birds. My Malays wanted me to leave the latter behind to enable us to travel quicker, but I was afraid the skins would be spoiled before we could return for them, and so I made the men carry them along. Following the Relai river we soon came past the mountain, and as the three men who had gone before us had made a track for us we got on rather quickly. A couple of hours walking brought us to a shelter where these men had camped, and beyond this were two tracks, so it was evident the men had gone wrong first, and finding this out, had returned to this place and struck out in another direction. We kept on following the river, but soon got into difficult country, with spurs from the mountains running right down to the river, so that we often had to cross the same, to escape having to climb over these hills, some of which were rather high and steep. Having to cross the river so often delayed us a good deal, as the river was in flood, the water coming tearing down with great force; and great care had to be taken in crossing over. The course of the river was very crooked indeed; but we had to keep to the banks and follow all its bends and windings, as we got into the hills as soon as we attempted to cut off some of the corners; and the Malays declared they were unable to do any climbing, as they had had so little food for the last few days. So on the whole I do not think we got very far that day. After rigging up a shelter for the night we fired a couple of dynamite cartridges in some pools in the rivers, but only got a few small fishes, that would scarcely have satisfied the hunger of one man, so I got the Malays to collect some young palm shoots, and we made a meal of them; but the Malays declared that they were

no good, saying there was absolutely no strength in them, and on the following days I could not get them to collect any. The next day we kept on following the river, hoping to find some bamboos, of which we then intended to make a raft and drift down stream until we reached the Sakai settlement which I knew existed there; but to our great disappointment there were none to be found in that part of the country, so we kept trudging along, now on this, and now on that side of the river, the Malays complaining very much, and getting more disheartened the farther we went. I tried my best to cheer them up and get them to hurry on, but finding this useless, I left them and went on by myself till some time in the afternoon; when having found a suitable place for camping I sat down and waited for them. When they at last arrived I had great difficulty in getting them to collect leaves for a shelter, as none of the large kind of palm leaves were to be found in the vicinity, and the men preferred to sleep in the open, rather than to take the trouble of making a shelter of the smaller leaves found there. However I insisted on having one built, and lucky it was that I did so, as the rain came pouring down as soon as it was finished, and this lasted half the night, so we should have been in a sorry plight had we had no roof over us. While the men made the shelter I fired another charge of dynamite in a pool, and this time I was more successful, getting a number of good-sized fishes. So we had enough for a fairly good meal that night and for another the next morning before we started, that being the last food we tasted before we reached the village four days later. The river was now in flood to such an extent that it was dangerous to cross over, and as we could not keep continually on one side of it owing to the many hills, we decided to leave it altogether and strike across country until we reached the Aring, where we could make a raft and drift down to the village. Soon after we had left the river bank, we got to some hills, and seeing no chance of getting round by the foot of them, I started climbing up, the Malays of course protesting; but as I did not take any notice of that, they had to follow me, grumbling very much as they went, and sitting down very often to rest. My Chinese boy proved to be the best man of the lot and kept fairly close behind me, whereas the Malays were soon left far behind,

The hill proved to be very much higher and steeper than I expected, being in fact a mountain range 3,000' high, dividing the Relai and Aring rivers, and the Malays were terribly done up when they at last reached the top. While I waited for them up there, I found a spur sloping gently down on the other side towards the north-east, and this we now followed right to the foot of the range, where we came across a small stream and camped close by it. We had no dinner that night, but there being still some tea left, we each had a cup of this before going to sleep. Following the stream next day we at last reached the Aring river, of which this was a tributary called Patei. It was about noon when we struck the Aring, and great was our joy on finding an old disused bamboo raft lying half way up on the banks. It had evidently been left there by some gutta hunters, and we soon had it in the water; luckily it was just big enough to hold us and our things, and after having cut some long poles to steer with, we started on our way down river.

Owing to the late heavy rains the river was in flood, and this was rather in our favour, as there would be no shallow places over which we otherwise would have had to haul the raft. We were travelling at a great rate of speed, it being impossible to stop the raft, but we did not anticipate any danger, as the Malays seemed well able to steer us clear of all rocks and snags. The men were all in high glee, now, at the prospect of soon reaching the village, shouting, singing and chaffing each other, and in their own estimation they were evidently great heroes. So we went dashing down one rapid after the other, the men yelling derision at them all, when just as we came round a bend in the river we dashed into the stem of a huge tree that had fallen across the stream and effectually blocked the whole river. The thing happened so suddenly that it was impossible to do anything to prevent it; there was a great cracking of the bamboos and down went the raft, throwing us all out in the river. We all managed to scramble up on the tree, and as all our things were light we fished them up again, with the exception of my only pair of shoes, which I had taken off as a precaution when we started, in case we should have to swim for it. We also managed to haul the raft up over the tree, and

as the Malays thought that it would still hold together, we decided to go on with it. A great many of the bamboos had been split open by the collision, so the raft was not nearly as buoyant as it had been before, and could scarcely carry us all. Going down over the rapids now became very dangerous, as the water would come rolling in over the raft, pressing now this now that side under water, so that we had difficulty in balancing ourselves on it, and I was afraid the raft would go to pieces at any minute. So after we had had about one hour of this dangerous sport, I thought it better to stop and keep to the jungle. So we landed and made a shelter, but it was a very poor one, the Malays being now again very disheartened, did not work very willingly, and the rain coming on again we passed a really miserable night in our wet clothes, with wet blankets, and the rain dripping on us from above, and running in streams under the few leaves on which we had made our bed, and without a morsel of food. Next day we looked for bamboos with which to repair our raft, but not finding any, we had to abandon it and start on our weary tramp again. I went ahead myself cutting a path for the others, as they all had something to carry, and a pretty bad time I had of it with my bare feet; for as I had to keep looking ahead, I could not always see where I put my feet, and as a consequence I often trod on thorns and sharp sticks; besides which there were thousands of leeches about, which took a great fancy to my bare legs, where they stuck till they had had their fill, as I often felt too weary to stoop down and pick them off. We knew that there was a native path on one side of the river, running from the village into Pahang; and so we went inland away from the river, trying to find it, but coming to a range of hills the Malays declared themselves unable to get over them; so we had to go back to the river and follow its many bends and curves. Often we had to make great detours inland when we came to tributaries of the Aring, which were deep and swollen, so that we had to find fords before we could cross over them. We walked the whole day, camping just before it got dark, and started off again early next morning, having then good hopes of reaching the village that day, as I had found some landmarks that I knew. The Malays were however very slow, so I got

far ahead of them all, by myself, thinking they would hurry on when they found that they were being left so far behind. Towards three o'clock in the afternoon, just when I had decided to stop and await my men, I heard a shout down river, and on my answering, a boat appeared, that had been sent up from the village to meet us. Two of the Malays whom I thought were far behind me had lost my track altogether, and in looking for it they had come across the real path to the village, and this cheering them up, they had hurried on to the village, and hearing there that we had not yet arrived, they sent a boat up stream to meet us. I waited till my other men came up, and then we all went down the river to the village, arriving there just as a heavy thunderstorm came on, and very thankful were we to be under a good roof again. The day after, the three men that I had sent for provisions came back to the village with a long tale of woe. They had arrived there four or five days before us, having taken fourteen days to reach it, whereas it took us only seven days. They had then bought some provisions and started on their return journey to the mountain. When two days out, their Sakai coolies ran away and left them; and instead of pushing on by themselves as they ought to have done, they returned to the village to obtain other coolies. So it was well for us that we did not stop at the foot of the mountain and wait for them to come back.

After the men had rested for four or five days, I sent them back to the mountain, together with a number of Malays from the village, to fetch the orchids and my other things that we had left behind. The coolies were to bring these back to Buntie, whereas my own men would go from the mountain back to Pulai, where they would fetch those of my things that I had left there; and then going down by the Galas river, join me at Kota Bahru. It was impossible for me to return to the mountain myself, having no shoes, with my feet in a terrible state, swollen and torn, so that I was scarcely able to walk for days after. Had it been otherwise I should certainly have gone back and stayed up on the mountain for another month. Shortly after the men had left I got a bad attack of fever, which luckily did not last very long but left me very weak. I got a tiger while waiting for the return of the men, there seeming to be

plenty of them in that part of the country, as a report came to hand that two men had been eaten by them at Quala Aring just before. Going down stream we passed eight of them,—two old and a young one,—that were disporting themselves in the jungle close to the bank: but we were then just passing over a rapid, and travelling at a great speed, so that it was impossible to get a shot at them. After waiting ten days the coolies returned, and I started on the return journey to Kota Bahru, the trip down stream taking only eight days, as all the rivers were in flood. The men that I had left on my first trip upon the mountain I picked up on the way down, and they stated that they had succeeded in scaling one of the peaks of the Tahan, to the south of where I got up, and they brought a fairly good collection of skins back with them.

I had to wait about a week in Kota Bahru for my men from the Galas river, and then went back to Singapore, the whole trip taking seven months instead of three as I had reckoned on.

On the Hymenoptera collected by Mr. Robert Shelford at Sarawak, and on the Hymenoptera of the Sarawak Museum.

BY P. CAMERON, OF NEW MILLS, DERBYSHIRE.

This paper is based on material collected at Sarawak, by Mr. Robert Shelford of Cambridge University and on the species in the Sarawak Museum brought home by Mr. Shelford for the purpose of being named. In addition to many known species the two collections contain many noteworthy undescribed genera and species. Since the publication of the paper by the late Mr. F. Smith (*Jour. Linn. Soc.* 1857) on the Hymenoptera collected by A. R. Wallace, very little has been written on the Bornean species, of which an immense number must still remain to be discovered in all the families, but more particularly among the smaller parasitic tribes—Ichneumonidæ, Braconidæ, Oxyura and Chalcididæ.

TENTHREDINIDÆ.

Hylotoma pruinosa, sp. nov.

Coerulea, dense albo pruinosa; alis hyalinis, macula sub-stigmatali fusca, ♀.

Long: 10 mm.

Hab. Sarawak, Borneo (Shelford).

Bright metallic blue densely covered with a white pile. The flagellum of the antennæ is black, the hinder tibiæ are broadly fuscous in the middle. The frontal fovea is deep, its sides oblique, it extends from the ocelli to shortly below the antennæ and is open above and below; the lateral furrows of the face are wide and deep; the labrum has a slight violet tinge. The vertex and the mesonotum have a slight purple tinge. The cloud on the fore wing occupies all the radial cellule; the upper half

of the first cubital and the greater part of the second, the third cellule being also slightly clouded; the second cubital cellule is distinctly longer at the top and bottom than the third: both the recurrent nervures are received shortly behind the middle of the cellules; the third transverse cubital nervure is angled outwardly above the middle and from the angle a short nervure issues: the upper and lower parts are straight and have an oblique slope. Abdomen coloured like the body; the apex of the first and the base laterally of the second segment are fuscous.

Allied to *H. janthina* Kl. and *H. maculipennis* Cam. Characteristic is the third transverse cubital nervure with its distinct nervure issuing from the angle above the middle.

EVANIIDÆ.

Evania borneana, sp. nov.

Nigra, capite thoraceque albopilosis; mesonoto sparse punctato; alis hyalinis, nervis nigris. ♂.

Long: 8 mm.

Hab. Sarawak (Shelford).

Antennæ longer than the body: the scape not dilated, narrow covered with a pale pile and as long as the following two joints united: the third and fourth joints are about equal in length. Head shining, smooth, almost impunctate, and covered with short white pubescence. Clypeus on the lower side bounded by a distinct curved furrow. On the front, outside the antennæ, is a narrow covered keel. The ocelli are in a curve; the hinder are separated from each other by a distinctly greater distance than they are from the eyes. There is a narrow, but distinct, keel between the antennæ. The mesonotum bears some large scattered punctures; the lateral furrows are distinct, deep and curved; there is a distinct, longitudinal furrow opposite the tegule. The scutellum has scattered punctures in four irregular rows. The median segment is regularly reticulated, except in the middle above, where it bears large, deep scattered punctures. The apex of the propleurae is irregularly furrowed above. The upper part of the mesopleurae is smooth: the lower regularly punctured. The breast is sparsely, and not very strongly, punctured. Wings clear hyaline: the

stigma and nervures black; the second transverse cubital nervure is obsolete; as is also the cubitus from the first transverse cubital nervure, which is interstitial with the recurrent.

The radial cellule is wide at the apex, through the radius having an oblique downward slope at the base; the apical abscissa is straight and oblique; the transverse basal nervure is almost interstitial. Legs black; the calcaria fuscous; the tibiæ without spines.

The metastemal forks are roundly curved. In Schletterer's Monograph (Ann. K. K. H. of Mus. Wien. 1889) this species would come near *E. appendigaster* Linn.

Megiseleus longicollis, sp. nov.

Black, the head yellowish-red; the four front legs tinged with rufous; the wings clear hyaline, the cubital and the transverse cubital nervures obliterated; the radius incomplete, ♀.

Long: 18; terebra 17-18 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ black; the basal three joints rufous. Head pale rufous, the orbits with a yellowish tinge; the anterior three tubercles are longer and sharper than the posterior; the front is coarsely, closely striated, obliquely above, transversely below; the vertex, behind the ocelli, is indistinctly furrowed in the middle, and closely obliquely striated on either side of it; the outer orbits are smooth. The prothorax has a brownish tinge; it is distinctly longer than the mesothorax, is deeply and widely incised at the base, the apex of the incision being rounded; the basal half is closely transversely striated, the apex is indistinctly striated; the dilated apex is smooth. Mesonotum coarsely, irregularly reticulated at the base; the apex is widely depressed in the middle, the raised sides are irregularly punctured. Scutellum smooth, its sides punctured. Mesopleuræ smooth; the base pilose. Median segment closely and regularly reticulated. The propleuræ in front of the tegulæ are strongly striated. The hinder coxæ are closely, but not strongly, striated; the coxal teeth are irregular and not very prominent. Wings clear hyaline; the nervures and stigma black; the basal abscissa of the radius is straight and oblique and forms an angle with the apical branch which is about equal in length to it; only the basal two

cellules are enclosed or complete, and the only apical nervure is the abbreviated radius.

A species easily known by the abbreviated and obsolete ulur nervures. The pronotum, too, is longer and narrower than it is with the other Oriental species.

Meqiseleus maculifrons, sp. nov.

Black, the head red; the vertex and the upper part of the front black; the outer orbits dull red, narrowly yellowish on the inner side close to the eyes; there is a broad red mark immediately behind the ocelli; legs black, the four front tarsi dull testaceous, the basal joint of the hinder tarsi white; the wings hyaline with a slight fuscous tinge; the stigma and nervures black, ♂.

Long: 12 mm.

Hab. Baram District. Low country (Hose).

Antennæ black; the scape and pedicle rufous. Head rufous, the outer orbits and the face duller, more yellowish in tint; the vertex and the upper part of the front and the upper part of the outer orbits, black; behind the ocelli is a red mark, which is broader than long. The front tubercle is longer, more sharply pointed than the others and is directed backwards; the hinder pair are shorter and broader than the middle. The vertex is narrowly rugose in the middle, the sides are striated transversely. Mandibles rufous, black at the apex, the palpi black, paler towards the apex. Prothorax short; the pleuræ depressed in the middle.

BRACONIDÆ.

Iphiaular, Foer.

The following three species of *Iphiaular* are similarly coloured—luteous with the wings fuscous, yellow at the base. They may be separated as follows:

- (a) The keel on the centre of second segment not reaching to the middle of the segment, not much longer than broad; *avayag*.
- (b) The keel on the centre of the second segment reaching beyond the middle.

The keel reaching to the apex, of equal width throughout; the segment at its sides not depressed, nor strongly transversely striated; *astrochus*.

- (c) The keel not reaching to the apex; the segment at its sides depressed and strongly transversely striated; *ceressus*.

Iphiaulax acragas, sp. nov.

Long: 11 mm; terebra 6 mm.

Hab. Borneo (Shelford).

Antennæ black, the scape luteous beneath. Head smooth and shining; the face sharpened, sparsely covered with long fuscous hair; the clypeus is bordered by oblique furrows laterally; apex of mandibles black; the palpi luteous. Thorax smooth and shining sparsely covered with pale pubescence. Legs coloured like the body; the apical joint of the four hinder tarsi fuscous. Wings fuscous, with a slight violaceous tint; the base behind the transverse basal nervure yellowish-hyaline; the first cubital and the discoidal cellule are lighter coloured in the middle; the stigma is black, with a luteous spot on its base. The central part of the petiole is rugose and is stoutly longitudinally striated in the middle; the second is closely rugously punctured; the lateral depressions are wide, deep and closely longitudinally striated; the oblique apical depressions are narrower, are deep and closely striated; the suturiform articulation is deep and rather strongly and regularly striated; the third segment is closely punctured; the basal furrow is wide, deep and closely striated in the centre; it becomes narrowed and curved at the sides; its apical furrow is narrow. The apical segments are smooth; the furrows on the fifth segment are narrow and striated.

Iphiaulax ceressus, sp. nov.

Long: 12 mm.

Hab. Matang, 3000 feet (Shelford).

Antennæ entirely black. The face is more yellowish in tint than the vertex; its centre is irregularly striated; the sides punctured; the clypeus is distinctly raised and clearly separated from the face. Mandibular teeth black. Thorax smooth and

shining, sparsely pilose. Wings smoothy-fuscous from the transverse basal nervure; behind it yellowish-hyaline; the lower part of the stigma to the transverse cubital nervure luteous. The central part of the petiole is rugose and longitudinally keeled down the centre; the four following segments are closely rugosely punctured; the basal keel extends to near the apex; it is of nearly equal width to near the apex; its sides are keeled and it is distinctly raised; the segment on either side of it is depressed and bears three stout, irregularly curved keels, the lateral depression is shallow; the sides of the segment outside it forms three ridges. The furrows on the other segments are longitudinally striated; the basal branch of the suturiform articulation is larger, broader, and more oblique and more distinctly striated than the apical.

Iphiaular astiochus, sp. nov.

Long: ♀; terebra 1-2 mm.

Hab. Sarawak, Borneo (R. Shelford).

Antennæ entirely black. Front and vertex smooth, shining and bare; the face irregularly rugose; the mandibular teeth are black. Thorax smooth and shining; the median segment is thickly covered with long pale hair. Wings dark fuscous; yellowish-hyaline behind the transverse basal nervure. The central area of the petiole is rugosely punctured; it is slightly narrowed towards the apex. The middle segments are closely rugosely punctured; the central keel extends to the suturiform articulation; it is of equal width throughout; is longitudinally striated, with the sides raised and irregular; the basal lateral depression is narrow at the base, much wider at the apex and is stoutly striated at the base of the dilated part, which turns inwardly at the apex; the suturiform articulation is wide and deep; its basal lateral fork is more oblique and narrower than the apical; the other furrows are closely striated; the basal more strongly than the apical; the apical segments are smooth and are more yellowish in tint than the others.

Spinaria curvispina, sp. nov.

Rufa, thorace spina collaris curvata, abdominis dorso strigoso; capite, thorace pedibusque anterioribus rufis; abdominis

dorso pedibusque posticis nigris; abdominis apice pallide flava; alis fuscis, ♀.

Long 12-13 mm.

Hab. Borneo (Shelford).

Antennæ longer than the body, black, tapering towards the apex. Head and antennæ rufous, smooth and shining; the median segment irregularly reticulated; more strongly and regularly at the middle than at the base. On the back of the pronotum, at the apex, is a long curved spine, which tapers towards the apex and is directed towards the head; between this and the middle is a large leaf-like plate, hollowed above, its sides curved and expanded outwardly; the lateral wings are narrowed towards the apex; at the base, running up the spine, is a stout keel. At the apex of the middle lobe of the mesonotum is a stout keel; the part on either side of it is striated. On the depression behind the scutellum are six stout longitudinal keels; from the middle of the sixth runs a stout, transverse keel; behind this are three short keels. The sides of the median segment at the apex project into stout teeth. The four front legs are paler in tint than the thorax; the apical joint of the tarsi is black; the hind legs are entirely black. Wings uniformly dark fuscous; the stigma and nervures are deep black; abdomen deep black; the sides of the first and second segments and the base of the first and the apical segment are pale yellow; the dorsum is closely and strongly longitudinally striated; the first two transverse furrows are strongly striated; the sides of the third and fourth segments project into sharp, stout spines; the spine on the fourth is the larger; on the centre of the third at the apex, is a stout triangular tooth, on the middle of the fourth is a larger, sharper one; the apical segment ends in a longish, sharp tooth.

Comes nearest apparently to *S. spinator*, Guer, from Bengal, but differs in the colouration of the wings and legs.

Shelfordia, gen. nov.

Median segment with a narrow area in the centre, extending from the base to the apex; second, third and fourth segments of the abdomen closely longitudinally striated; the second with four converging keels; there is a transverse crenulated furrow

on the base of the third segments only, and no oblique ones. Malar space large; the oral region widely open. Front depressed in the middle; the centre with a stout keel; the sides of the depression keeled. The third and fourth joints of the antennæ are equal in length and somewhat longer than the fifth. Legs of moderate length; the fore tarsi twice the length of the tibiæ. Sheaths of the ovipositor densely pilose.

The middle lobe of the mesonotum is distinctly separated; the scutellar depression is shallow and longitudinally striated; the furrow on the metapleuræ is long, wide and deep; above its apex is a longitudinal keel. The occiput is not margined; the temples are moderately large and are rounded behind. The legs are pilose, but not so thickly as in *Mysoma*. The clypeus is bordered by a wide oblique depression. The second and third segments are distinctly longer than their width at the apex; the abdomen is fully twice the length of the thorax. The inner orbits above are distinctly keeled.

A distinct genus easily known by the area on the median segment, by the longitudinally striated abdominal segments, by the margined upper inner orbits and by the keeled front.

Shelfordia ruficeps, sp. nov.

Nigra, capite, pedibus anticis, prothorace mesothoraceque rufis; alis fumatis, ♀.

Long: 11; terebra 22 mm.

Hab. Sarawak (Shelford).

Antennæ black; the scape rufous in the middle beneath. Head rufous; the face and clypeus closely punctured and sparsely covered with long black hair; the centre of the face slightly raised and smooth. The clypeus is clearly separated, especially at the sides; the top, in the middle, is transverse, its sides rounded; at the sides is a smooth depression. Mandibles rufous, their teeth black. The vertex is sparsely punctured, especially at the sides; the depressed front is more shining and smooth. Pro- and mesothorax with the scutellum smooth and impunctate; the scutellar depression is narrow and is stoutly longitudinally crenulated. The median segment is smooth and is sparsely covered with longish black hair. The anterior wings are uniformly smoky-fuscous; the hinder have the basal half milk-

white; the nervures and stigma are black; in the anterior is an oblique white cloud on the base of the first cubital cellule and extending obliquely into the discoidal. The front legs are rufous like the thorax; the base of the middle coxæ rufous; the rest of them and femora piceous; the hinder legs are entirely black; the coxæ impunctate. The petiole is raised in the centre; the raised part is bordered by an irregular stout keel; the centre towards the apex is irregularly transversely striated. The centre of the second segment is raised, the raised part is bordered by a keel and becomes gradually narrowed towards the apex which is sharply pointed; it is irregularly striated; bordering this is an area of equal width extending from the base to the apex of the segment; it is stoutly transversely striated, with some irregular longitudinal striæ in the middle; outside this is an area which becomes gradually wider towards the apex and bears some stout, irregular stria. The third segment and the basal two-thirds of the fourth are stoutly longitudinally striated; the transverse furrow on the base of the third segment is stoutly striated; the apical segments are smooth; the basal four ventral segments are milk-white.

Myosoma, Brulé

The species of this genus here described are black; with the head, thorax and the two or four anterior legs rufous, and the wings dark fuscous. The species may be divided into two sections:—

- (a) Head, thorax and the four anterior legs rufous. The third segment with a deep wide transverse striated furrow near the centre, the base stoutly, longitudinally striated; *forticarinata*.
The third segment without a transverse furrow; the base not stoutly striated; *brevicarinata*.
- (b) Head, pro- and mesothorax rufous, the two anterior legs rufous. The ovipositor not much longer than the body.
- (c) The keel on the second segment narrow extending to the apex of the segment; its base and apex dilated smooth and shining; *longicarinata*.

(b) The keel on the second segment broad, not extending to the apex of the segment, its base not smooth.

The second segment at the base on either side of the keel deep black, striated, the middle segment deep black;
fuscipennis.

The second segment at the base on either side of the kee brownish, not striated; the middle segments brownish;
trichiura.

Myosoma forticarinata, sp. nov.

Long : 13; terebra 19 mm. ♀.

Hab. Sarawak, Borneo (Shelford).

Antennæ black, the scape rufous. Head and thorax rufous, smooth and shining; the face rugosely punctured, the punctures running into reticulations and sparsely covered with longish black hair; there is a narrow furrow on the front. Mandibles and palpi rufous; the mandibular teeth black. The four front legs are rufous; the middle pair darker in tint, especially on the tibiæ and tarsi; the tibiæ and tarsi are thickly covered with longish dark hair. Wings dark fuscous; the nervures and stigma black. Petiole broadly depressed, on the sides the central part is bordered by stout keels and there is a stout keel down the centre; the basal part bears some stout irregularly curved keels. The second segment bears a complete central and a shorter lateral keel, which converge slightly towards the apex; the basal area is triangular, smooth and shining; the base in the centre is depressed, the centre bears some stout irregular keels; the outer parts bear stout, oblique keels; the inner parts at the apex being smooth and more deeply depressed than the outer. The two transverse depressions are wide, deep and stoutly longitudinally striated; the part between the two is stoutly longitudinally striated. The apical segments are thickly covered with long black hair. The sheaths of the ovipositor are stout and are thickly covered with black hair. The tarsal spines are rufous.

Myosoma brevicarinata, sp. nov.

Long : 12; terebra 21 mm. ♀

Hab. Borneo (Shelford).

Scape of antennæ rufous; the flagellum is brownish beneath, especially towards the apex. Head rufous; the face slightly

paler, more yellowish in tint, rugosely punctured and covered with pale hair; the front and vertex are more sparsely covered with longer darker hair. Mandibles black, broadly rufous at the base. Thorax smooth and shining; the middle of the mesonotum behind is broadly expressed; the central lobe is clearly defined; the median segment is thickly covered with longish fuscous hair. Wings dark fuscous, with a violaceous tinge at the base; the nervures and stigma are black. Metapleuræ widely and deeply furrowed down the middle. The front legs are rufous with a yellowish tinge; the middle pair are brownish; the femora paler; the tarsal spines are black. The petiole is broadly keeled down the centre; the sides on the apical half are stoutly irregularly striated; the keel on the second segment extends to the transverse furrow; its dilated base is finely striated; the sides and centre are irregularly, longitudinally striated to near the apex which is smooth and laterally expressed; the third segment at the base is longitudinally striated; the striæ in the middle reaches to the apex; the apical segments are brownish.

Myosoma trichiura, sp. nov.

Long: 14; terebra 14-15 mm.

Hab. Sarawak (Shelford).

Antennæ black, the base and apex of the scape rufous. The sides of the head are punctured; in the centre of the face are three stout, transverse keels. Mandibles rufous, their apex broadly black. The face is rather thickly covered with long black hair; the frons and vertex sparsely so. Pro- and mesothorax rufous, smooth and shining; the median segment black. Legs black: the anterior pair rufous; the apex of the median segment is sparsely, longitudinally striated. The apex of the petiole is coarsely irregularly reticulated the lateral furrows are depressed and transversely striated. The second segment is irregularly longitudinally striated; its basal area is broad at the base, becomes gradually and sharply narrowed towards the apex, is longitudinally striated and extends beyond the middle; on either side is an oblique, closely striated furrow. The third and fourth segments are closely striated; the basal furrow on the third extends to the sides; from it issues a curved furrow; the furrow on the fourth does not extend to the

sides in a straight line but curves broadly backwards to it; there is a transverse, striated furrow on the apex of the third and fourth segments. The sheaths of the ovipositor are broad and thickly covered with stiff black hairs.

This species is an *Iphiaular* with the hairy ovipositor and legs of a *Myosoma*.

Myosoma longicarinata, sp. nov.

Long: 11-12 mm ♀.

Hab. Sarawak. (Shelford).

Antennæ entirely black, head rufous; the face more yellowish in colour; it is smooth, sparsely punctured on the sides and bearing some longish black hair; the clypeus is irregularly rugose. Mandibles black, the base broadly rufous. Pro- and mesothorax rufous; the median segment, the base of the pleuræ and the lower part of the furrow black. The two front legs are coloured like the thorax; the middle have a piceous tinge; the tarsal spines are for the most part black. Wings dark fuscous, with a violaceous hue; the stigma and nervures are black. There is a stout longitudinal keel on the basal half of the petiole; the apical part is irregularly longitudinally, stoutly striated; the lateral depression bears stout, transverse keels. The central part of the second segment is obliquely narrowed towards the apex; the central keel reaches to the apex; there is a smooth triangular area at its base and a semicircular one at its apex; the central part is reticulated somewhat strongly; the lateral is closely longitudinally striated. The two transverse furrows are longitudinally striated; the second more finely and closely than the first. The third segment is closely longitudinally striated and is broadly depressed in the centre; the fourth is more closely and finely striated, the third and fourth segments are brownish.

Myosoma fuscipennis, sp. nov.

Long: 16 mm. terebra 16 mm.

Hab. Borneo (Shelford).

Antennæ black; the scape piceous in the middle below. Head mahogany coloured, smooth and shining; the centre of the face marked with some irregular transverse keels; the sides are

sparsely punctured. Mandibles black, broadly rufous at the base; the palpi rufo-testaceous. Thorax smooth and shining rufous; the median segment black. The anterior legs rufous; the posterior four black; the middle trochanters rufous. Wings brownish-smoky, with a slight violaceous tinge at the base; the stigma and basal nervures black; the apical nervures fuscous. The sides and ventral surface of the petiole are pale testaceous; its base is smooth; the rest of it coarsely reticulated. The second and third segments are closely, irregularly longitudinally punctured, at the apex almost reticulated; the fourth is closely reticulated, the centre more strongly than the sides; the other segments are smooth. The keel on the base of the second segment is not very distinctly defined: it is broad at the base, becomes gradually obliquely narrowed towards the apex, is more strongly striated than the rest of the segments and reaches to shortly beyond its middle; the lateral furrows are wide, oblique and stoutly striated; the lateral furrows on the third and fourth segments are narrower and more roundly curved: the transverse furrows on the base and apex of the third and fourth segments are closely longitudinally striated.

Holcotroticus, gen. nov.

Claws of all the legs bifid; the inner claw smaller than the other. Median segment completely areolated. Apex of the scutellum bifurcate, bordered by stout keels; the apex of the median segment obliquely depressed. Malar space moderately large, the oral region not greatly lengthened. Wings longer than the body; the areolet narrowed at the top; the nervures without a stump of a nervure. The oblique mesopleuræ furrow is wide and deep; a narrow oblique one runs from its middle. Pro- and mesopleuræ above with an oblique keel; between the tops of the middle and hinder coxæ is a stout keel. The fore tarsi are longer than the tibiæ; all the joints are longer than broad; the middle three are much shorter than the others. The hinder legs are much longer than the others; their coxæ are large, more than twice longer than wide. The joints of the maxillary palpi are elongated, the three penultimate joints are not short, compressed or lenticular. The occiput is margined, the sides more distinctly than the upper part; the two hinder ocelli are flat, not convex; there is a

small single keel between the antennæ; the scape of the antennæ is stout, about twice longer than broad; the front is keeled in the centre; the keel is stout with oblique sides; it is not hollowed, and there is no keel on each side. The first cubital cellule is clearly separated from the first discoidal; all the apical nervures in the hind wings are obliterated; there is only the brachial cellule defined and there are no transverse nervures; the radial cellule in the fore wing is elongate, narrow.

The affinities of this genus are with *Agathis* and *Troticus*. From the former it may be separated by the cleft claws; in the latter peculiarity it agrees with *Troticus*; but it wants the abnormal palpi of that genus. The hinder legs are longer than they are with *Agathis*, and this is also the case with the wings. The middle lobe of the mesonotum is distinctly raised; the scutellar depression is wide and narrow; the scutellum is keeled at the base.

Holcotroticus ruficollis, sp. nov.

Niger, capite, prothorace, mesothorace, pedibusque anticis rufis; alis fumatis, nervis stigmatæque nigris ♂.

Long: 8-9 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ black; the scape rufous. Face and clypeus shining, sparsely and slightly punctured and thickly covered with short, blackish hair. Thorax rufous; the median segment, except the pleuræ at the base which are rufous, black. Mesonotum sparsely and indistinctly, the scutellum more distinctly, punctured; its apex stoutly keeled and depressed laterally above. Mesopleuræ, below the oblique furrow, closely and distinctly punctured; at the base above are two stout oblique keels; the furrow is wide and bears some stout oblique keels; below the middle behind is an oblique furrow; the apical bordering furrow bears some stout keels. The basal furrow on the metapleuræ is wide and deep; on it is an upper and three lower stout, widely separated, keels. On the base of the median segment are three, on the apex five areæ; the central basal area is smaller than the lateral and is stoutly transversely striated; the central apical one is hollowed and is gradually narrowed towards the apex; there is also an outer

large spiracular area. The two front legs are of a paler rufous colour than the thorax; the middle pair have a piceous hue. The wings are of a uniform dark fuscous-violaceous colour, with black nervures and stigma. Abdomen deep black, smooth and shining; the petiole is furrowed along the sides.

The malar space is not quite so long as in typical *Agathidini*, the head not being so rostriform as usual. It differs also from *Agathis* in the hinder claws having a tooth near the base.

ICHNEUMONIDÆ.

Siphimedia, gen. nov.

Wings without an areolet; the recurrent nervure interstitial, or almost touching the transverse cubital; the transverse basal nervure interstitial; the transverse median nervure in hind wings broken shortly above the middle. Mesonotum trilobate; the middle lobe transverse at the base, sharply pointed at the apex; the parapsidal furrows deep. Post-scutellum deeply bifoveate at the base. Median segment areolated more or less with three or four basal areæ; the areola distinct; the spiracles are linear, longish and are placed in the middle. Legs, and especially the posterior, stout; the hinder femora thickened, shorter than the tibiæ; the four front claws are cleft, the hinder simple; the hind coxæ are twice as long as thick, the basal joint only as long as the following three united and not much longer than the apical. The antennæ stout, shorter than the body. The petiole is twice longer than the width at the apex; it is broad at the base and becomes gradually wider towards the apex; the spiracles are placed shortly behind the middle; the abdominal segments are smooth, without furrows or depressions; the second and following segments are wider than long; the hypopygium is very large, plough-share-shaped and projects beyond the dorsal segment; the ovipositor is stout and is about as long as the body. The front legs have one, the four hinder two, spurs. There is a curved furrow on the sides of the mesosternum.

The antennæ are placed well up on the face, above the middle of the eyes, which are parallel; the apex of the clypeus is rounded; the mandibles have two subequal teeth; the clypeus

is not distinctly separated from the face. The head is wider than long, is not much developed behind the eyes, and is obliquely narrowed there; the labrum does not project. The transverse cubital nervure has the stump of a nervure in the middle. This genus is founded on the species which I doubtfully referred to *Macrogaster* (*Manchester Memoirs*, XLIII, 193). Its real position is with the *Acrenitini*, and comes, in Ashmead's arrangement, nearest to *Arotas*, which may be known from it by the long and slender hinder tibiæ and tarsi, the tibiæ being almost twice the length of the femora. From *Acrenites* it may be separated by the deep parapsidal furrows, and by the areolated median segment. To this genus may be referred the following species.

Siphimedia bifasciata, sp. nov.

Nigra, facie clypeoque flavis; alis hyalinis, fusco-bifasciatis.
Long: 10 mm.

Hab. Sarawak (R. Shelford).

Head black, the face, except for a triangular black mark in the middle above, and the greater part of the clypeus, pale yellow. The face is strongly, transversely punctured; the apex smooth and depressed; the upper part of the head smooth and shining, and has a distinct plumbeous hue, as have also the pro- and meso-thorax which are smooth and shining; the apex of the middle lobe is stoutly transversely striated. There are three stout longitudinal keels on the scutellar depression. The areola is longer than wide, becomes slightly narrowed towards the apex, which is rounded; the apical central area is long and extends to the apex, its apical half is widely dilated and has the sides stoutly striated; on the top is a stout, curved transverse keel; the outer central area has two stout longitudinal keels in the middle. The median segment is irregularly punctured and coarsely irregularly longitudinally striated in the middle, especially at the base. The mesosternal furrow is wide and is coarsely transversely striated, and is thickly covered with white pubescence. Wings hyaline; there is a fuscous cloud, extending from the stigma to the cubitals and there is a similar cloud at the apex. Legs black; the anterior tibiæ and femora testaceous in front, and fuscous behind. The apical dorsal segments of the abdomen are lined with white.

This species is nearly allied to *S. nigricans*, it is smaller, has the mesonotum impunctate, not strongly punctured; there are only two central areas on the median segment, and the basal area is longer than wide, not wider than long.

Rhyssa nigritarsis, sp. nov.

Nigra, late flavo-maculata; abdominis apice late brunnea; pedibus flavis, tibiis femoribusque nigro lineatis; tarsis posterioribus nigris; alis hyalinis, stigmatate testaceo ♂.

Long: 17 mm.

Hab. Borneo (Shelford).

Antennæ black, the scape yellow beneath. Head black, the face entirely; the inner upper orbits to the ocelli, and the outer entirely, yellow. Face almost smooth, sparsely pilose, shining. Clypeus brownish; in the centre, at the apex, is a short, broad tooth with an indistinct tubercle on either side of it; above, on either side, is a fovea. On the thorax the following parts are lemon-yellow; the sides and base of the pronotum; the basal two thirds of the scutellum, the post-scutellum, the median segment, except at the base and sides; the tubercles and a large oblique line below them. The transverse striation, on the mesonotum does not extend to the apex; the scutellum is closely rugose; the median segment is smooth and shining, its base is depressed and black. The fore legs are yellow; the femora are brownish behind; the fore tibiæ are as long as the basal joint of the tarsi; the middle coxæ, femora and base of tibiæ are lined behind with black; the four hinder tarsi are black; the hinder coxæ are broadly black below and laterally; the femora are broadly black above; the tibiæ black, with a narrow yellow band near the base and a broader one at the apex. The basal two dorsal segments of the abdomen are black, lined with yellow down the centre; the third is brownish-black, banded with black near the middle; the others are brownish; on the fourth segment is a broad yellow band near the middle; the fifth is indistinctly yellow near the apex. The basal half of the ventral surface is pale yellow, marked with black; the apical brownish. The pedicel of the areolet is nearly as long as the basal abscissa.

Xanthopimpla labiata, sp. nov.

Lutea, basi late apiceque mesonoti nigris; thorace laevo; abdomine late nigro-maculato; alis hyalinis, apice fusco-violaceo ♀.

Long: 13; terebra 2 mm.

Hab. Sarawak.

Antennæ black; the scape yellow below. Head pallid yellow; above smooth, the face and clypeus closely but not strongly, punctured; the vertex in the centre is black from shortly behind the ocelli and this black mark is continued half way down the front, it becoming gradually narrower as it does so; there is an irregular black transverse mark on the centre of the occiput. The thorax is deeper in tint than the head; and is quite smooth, without any punctures; near the base of the mesonotum is a large irregular mark which extends to the sides; it is broadly rounded at the base; with short blunt projections in the middle; the sides at apex project, the projections becoming gradually narrower towards the apex; the apex of the mesonotum is broadly black; the black mark behind being continued into the scutellar depression. Scutellum smooth, broadly rounded, smooth; the sides and apex keeled. On the basal half of the median segment are four lateral and one large central area; the central area does not project beyond the lateral at the apex, which is transverse; its basal third is obliquely narrowed; the apical two thirds are also obliquely narrowed; the apical lateral areae are quadrangular and of equal width throughout; the apical half is keeled on the outside. Wings clear hyaline, except at the apex which is narrowly fusco-violaceous: the areolet is small and is distinctly appendiculated; the upper half of the recurrent nervure is sharply angled. The abdomen has the four middle segments closely punctured; the basal segment has a broad irregular black mark in the centre; the second and fifth segments have two large marks, those on the third and fourth being larger than the others; there are two minute marks on the sixth, and two broad, transverse ones on the seventh; the last segment is immaculate.

The labrum is longer than usual, being longer than the clypeus, it becomes gradually narrowed from the base to the

apex; the eyes are large, parallel; the malar space is small; the spiracular area is obsolete; below the spiracles, in the middle of the metapleuræ, is a curved longitudinal keel, which originates shortly behind the middle, but not extending to the base; there are two transverse lines on the base of the median segment; the bases of the tibiæ are black. The basal segment is longer than the width of its apex; the other segments are all wider than long; the transverse and oblique furrows are distinct; the head is only very slightly developed behind the eyes.

Comes nearest perhaps to *X. punctata*. Fah. The edge of the pronotum is more sharply raised than usual; the base of the middle lobe of the mesonotum more distinctly separated, and the labium more projecting and sharper pointed.

Xanthopimpla nigrobalteata, sp. nov.

Lutea, nigro-balteata; mesonoto lævo, nigro, flavo-bilineato; pedibus flavis, late nigro-lineatis; alis hyalinis, stigmatibus fusco ♀.

Long: 12 mm.

Hab. Borneo (Shelford).

This species forms a section with three large areæ on the median segment and only one apical.

Antennæ brownish on the under side; the scape yellow beneath; head luteous; the ocellar region and the greater part of the occiput black. Face sparsely punctured, slightly keeled down the middle. Clypeus smooth and shining, its apex broadly rounded. Mandibles black at the apex. Mesonotum smooth and shining, base covered with a short pile, black; the sides and two lines in the middle, extending from the base to near the apex, bright yellow. Scutellum thickly covered with long black hair; its apex, from shortly behind the middle, black. The base of the median segment between the stigmas and to near the apex of the areæ is black; the central area is nearly square; the lateral are longer and narrowed towards the apex and are longer on the outer than on the inner side, the apex being oblique. The apex of the propleuræ, the base of the meso-, the top below the tubercles and the apex except a large spot above, and the basal half of the metapleuræ, are black. Legs coloured like

the body; the top of the four front femora, the extreme base of the hinder, an oblique mark near the apex of the hinder and their extreme apex; the basal two thirds of the four anterior tibiae, the base of the hinder pair and a broad band on their middle and the four hinder tarsi, black. The middle of the petiole broadly, the sides at the base and the base of the other segments broadly, black; the bands on the apical segments occupy more of the segments than on the basal; the segments and the transverse furrows are smooth, impunctate; there is an oblique furrow on the sides of the second and third segments and a narrower one on the fourth. The abdominal segments are all distinctly broader than long; the middle of the mesonotum is distinctly raised at the base; the scutellum is roundly convex and is not raised above the level of the mesonotum; its sides are keeled.

A species not difficult to separate from any of the described species by the smooth thorax and abdomen, by the black abdomen, banded with yellow, by the black mesonotum with two yellow lines, and by the three large areas on the base of the median segment. It has a very similar appearance to *Chrysopimpla ornaticipes* Cam.

Charitopimpla, gen. nov.

Apex of the clypeus obliquely depressed and with semicircular emargination; its top separated from the face by a straight furrow. Areolet small, triangular; the recurrent nervure is received at the apex. Abdominal segments closely punctured; segments 2-4 with transverse depressions, which are prolonged obliquely backwards; there is also a shallow transverse furrow at the apex. Median segment smooth without keels. Tarsi spinose; the claws simple. The transverse median nervure in hind wings is broken far below the middle.

The areolet is straight, not oblique; the transverse basal nervure is interstitial; the eyes are large, parallel and reach quite close to the base of the mandibles. The second to fourth abdominal segments are, if anything, wider than long, almost square; the metathoracic spiracles are small, oval. The last joint of the antennae is not longer than the preceding two united. The legs are short; the hinder tarsi are shorter than

the tibiæ; the anterior are longer. The antennæ are stout and taper towards the apex.

Characteristic of this genus is the obliquely depressed semi-circularly emarginate apex of clypeus. It comes near to *Erythropimpla*, Ashmead.

Charitopimpla flavo-balteata, sp. nov.

Nigra, abdomine flavo-balteato; pedibus flavis; posticis nigro alboque maculatis; alis hyalinis, stigmate testaceo, nervis nigris ♀.

Long: 13; terebra 7 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ about two thirds of the length of the body; black, distinctly tapering towards the apex; the scape yellow beneath. The face and clypeus are shining, have a plumbeous hue and are uniformly but not strongly punctured; the face is covered sparsely with white, the clypeus with dark hair; the front and vertex are bare, smooth and shining. Mandibles black; the palpi lemon-yellow. Pro- and mesothorax smooth and shining, covered closely with short fuscous hair; the scutellum bears longer and paler hair; the median segment is, especially towards the apex, thickly covered with long white hair. The lower part of the metapleuræ is smooth and bare. The four front legs are yellow, with the femora suffused with fulvous; the hinder legs white; black are the coxæ, except above the base and apex of the femora, a ring near the base of the tibiæ, a broader band on their apex and the apical joints of the tarsi; the femora have the sides and lower surface rufous; the coxæ are bright yellow above. Wings hyaline, with a slight fulvous tinge. Abdomen black; the apices of the basal five segments bright lemon-yellow; the sixth is yellow on the sides; the seventh broadly in the middle above; the segments are closely punctured; the petiole has the middle smooth and slightly depressed; the apical two segments are impunctate, the transverse depressions are shallow except on the fifth where they are wider and deeper and the basal one is striated.

OPHIONIDES.

Anomalon perornatum, sp. nov.

Nigrum, abdomine late ferrugineo; pedibus anterioribus, basi tibiæ posticarum late tarsisque posticis flavis; alis fulvo-hyalinis, stigmatè testaceo ♀.

Long: 22 mm.

Hab. Borneo (Shelford).

Antennæ black; the scape yellow beneath. Head black; the face clypeus, labrum, the inner orbits, the malar space and the mandibles, except at the apex, bright lemon-yellow. The face broadly projects in the centre; the sides and upper part are irregularly wrinkled; the clypeus is smooth; the front, especially above, is coarsely, irregularly striated; above, the striæ are oblique; below, they almost form reticulations. Thorax entirely black; the median segment is coarsely, irregularly reticulated; the scutellum is coarsely reticulated and striated; above, it is flat in the centre and has an oblique slope; the mesonotum is rugosely punctured and irregularly reticulated; the apex is somewhat strongly transversely striated. The upper half of the propleuræ is closely rugose; the lower in the middle stoutly, longitudinally striated; the mesopleuræ above the middle coarsely striated, at the base reticulated. The four front legs are bright yellow; the apical three joints of the tarsi black; the hinder legs black; the basal two thirds of the tibiæ and the tarsi yellow; the trochanters beneath and the base of the femora fuscous. Abdomen ferruginous; the petiole and the second segment above black.

Anomalon fuscicornæ, sp. nov.

Long: 15 mm. ♀.

Hab. Borneo (Shelford).

This species resembles closely the preceding species. The differences between the two may be expressed thus:

Face not raised in the middle; the front with oblique striæ; the upper part of the mesopleuræ coarsely longitudinally striated, the lower smooth.

Face not raised in the middle; the front not striated; the upper part of the mesopleuræ closely reticulated.

Antennæ brownish beneath; the scape yellow below. The face, clypeus, the inner orbits to near the ocelli, an oblique mark on the top of the eyes, the malar space, the lower orbits and the mandibles except at the apex, lemon-yellow. The front and lower part of the vertex are stoutly longitudinally striated; the striæ are curved and form almost reticulations; the face in the middle is irregularly longitudinally striated. The middle lobe of the mesonotum is coarsely longitudinally reticulated; the lateral are closely rugose. Scutellum coarsely rugose. Median segment coarsely reticulated, the top more distinctly than the sides, which have the reticulations less distinct on the lower part. The upper part of the propleuræ is coarsely reticulated, as is also the upper part of the meso-pleuræ, but less closely and not so distinctly. The four front legs are yellow; the femora are more fulvous in tint; the hinder legs are black; the apex of the coxæ, the basal joint of the trochanters and the basal third of the tibiæ, dark rufous; the hinder tarsi yellow. Abdomen ferruginous; the petiole, the second segment above and the apical segment black.

Anisobas cincticornis, sp. nov.

Rufo flagello antennarum nigro, medio albo annulato; alis hyalinis, nervis stigmatæque nigris, ♀.

Long: 10 mm.

Hab. Sarawak, Borneo (R. Shelford).

Antennæ black; the base rufous; the seventh to the fourteenth joints for the greater part white; the basal joints of the flagellum are rufous below. The front is obscurely punctured; the face is distinctly but not very closely punctured; the clypeus is obscurely punctured above, below smooth and shining; the labrum is fringed with long hair. The mesonotum is darker coloured than the rest of the thorax and is shagreened; the scutellum is thickly covered with longish black pubescence. The basal three areæ of the median segment, are smooth and shining; the others are closely, rugosely punctured; the posterior median is smooth, with the sides slightly striated; the lateral teeth are large, and narrowed gradually towards the apex. Propleuræ punctured above; the apex irregularly striated in the middle;

the base and the lower half of the mesopleuræ closely, but not strongly punctured; the middle longitudinally striated; the metapleuræ punctured at the base, the rest closely longitudinally striated. Legs coloured like the body, the hinder tarsi black. The base of the wings have a fulvous tinge. Abdomen shining, the middle segments aciculated; the gastrocœli are smooth, shallow.

It is doubtful if this is a true *Anisobas*. The antennæ are stout and are slightly thickened towards the apex; the basal joints of the flagellum are all much longer than broad; the face is obliquely narrowed from the top to the bottom; the labrum projects and is narrowed towards the apex; the keel on the propleuræ (characteristic of typical *Anisobas*) is stout; the scutellum is obliquely raised, the sides stoutly keeled and the apex at the top depressed; the median segment is completely areolated; the areola is longer than wide, is not much narrowed towards the apex and rounded backwards at the base and apex; the sides are stoutly spined. The wings are as in *Ichneumon*. The abdomen is not much longer than the head and thorax united; there are seven segments; the last is large, above nearly as long as the sixth; the ovipositor largely projects.

Bodargus, gen. nov.

Eyes placed high up, separated by their own length from the base of the mandibles. Face and clypeus forming almost one piece; the suture separating them being almost obsolete; the foveæ are shallow; apex of clypeus transverse, its sides broadly rounded. Occiput deeply emarginate. Antennæ shorter than the body, serrate. Scutellum roundly convex; the sides stoutly keeled. Median segment depressed at the base; the areola is faintly indicated, is twice longer than broad, is open at the base and is gradually narrowed towards the apex; the other areæ are obsolete, except on the apical slope where there are three. Areolet much angled, narrowed at the top. The transverse basal nervure is interstitial; there is a short nervure on the cubital-disco nervure and a longer more distinct one on the recurrent; the transverse median nervure in the hind wings is broken far below the middle. Legs short; the hinder femora do not reach much beyond the apex of the second segment. The

middle segments of the abdomen slightly project at the apex; they are closely punctured; the last segment is as long as the penultimate. The main characteristics of this genus are the flat face, continuous with the clypeus, the indistinctness of the keels on the median segment; the short legs and the large, roundly convex, sharply keeled scutellum.

Boatargus rufus, sp. nov.

Ferruginea, apice femorum posticorum, basi tibiaram, apice late apiceque tarsorum posticorum nigris ♂.

Long: 15 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ dark rufous, darker towards the apex; the scape is yellow. Head uniformly coloured; the face and base of clypeus closely punctured; the vertex is more closely and strongly punctured; the ocellar region black. Mesonotum closely and distinctly punctured; the scutellum is more strongly and not quite so closely punctured, except on the basal slope. The median segment is rugosely punctured, except on the basal slope; on the apex it is transversely striated. Legs coloured like the body; the apical fourth of the hinder femora, the base of the tibiæ narrowly and their apex broadly, the apex of the metatarsus, the apical half of the second joint and the whole of the others, black. Wings hyaline, the stigma and nervures fuscous-black. Abdomen coloured like the thorax; the fifth, sixth and base of seventh blue-black; the apical half of seventh white.

Diapetus, gen. nov.

Median segment smooth and shining; its base broadly depressed in the middle; there are two stout, transverse keels. Prothorax with a stout, oblique keel above the middle; its base sharply keeled. Areolet minute, not clearly defined through the cubital and radial nervures uniting; the apical abscissæ of the radius and the cubitus spread out obliquely from it. Parapsidal furrows deep, uniting at the apex into one short, wide furrow. Metathoracic spiracles large, linear. Petiole curved, not much narrowed at the base; the spiracles are placed close to the middle, nearer the apex than to the base.

The antennæ are longer than the body, are filiform, and have the third joint distinctly longer than the fourth; the clypeus is roundly convex and is separated by a deep furrow from the face; the mandibles have two unequal teeth; the meso-pleural furrow is wide and deep and is interrupted in the centre. The transverse median nervure is received behind the transverse basal; the stigma is narrow, lanceolate in the hind wings; the cubital nervure is broken above the middle. The legs are long and slender; the claws moderate in size, the hinder tarsi are longer than the others. The abdomen is bluntly pointed and the last segment is larger than the penultima.

This genus may be referred to the *Cryptinus*, but it does not quite agree with that group, as the spiracles on the petiole are placed near the middle. The small, or more correctly, obsolete areolet might place it in the *Mesostenini*; but there is no known genus in that group in which it could be placed.

Diapetus nigroplagiatus, sp. nov.

Rufo-fulvo, vertice, mesonoto, metanoto, pleuris abdomineque late nigro-maculatis; alis flavo-hyalinis, nervis stigmatique testaceis ♀.

Long: 12; terebra 2 mm.

Hab. Borneo (Shelford).

Antennæ longer than the body, darker towards the apex. Head smooth and shining; the vertex and upper part of the occiput largely black; the front is broadly dark rufous in the middle. Face and clypeus yellowish, smooth and shining, sparsely covered with long black hair. Mandibles broadly black at the apex, yellow at the base, rufous in the middle. Thorax smooth and shining except the apex of the middle lobe and the furrows. Scutellum and post-scutellum yellow. The base of the median segment is black except in the middle depression; between the two keels are two large black marks, rounded and narrowed at the apex; the basal two-thirds of the mesopleuræ black; the middle of the metapleuræ broadly, and the greater part of the mesosternum black. Legs coloured like the body; the hinder femora are darker coloured at the base; the tarsi are minutely spinose. Wings yellowish-hyaline; the stigma testaceous; the nervures are of a darker testaceous colour. The petiole i

lighter in colour than the other segments; its central region is broadly black except narrowly down the middle; the second segment is black at the base to near the middle; the third has the basal third black; the fourth and fifth are more narrowly black at the base. On the metapleuræ are, in the middle, four short stout keels; the middle two are longer than the others.

Acleasa, gen. nov.

Median segment reticulated all over, without transverse keels; the apex with two large conical teeth. Thorax about three times longer than broad; the mesonotum with indistinct parapsidal furrows, and coarsely reticulated. Metapleural keels absent. Areolet large, wider than long, of equal width throughout; the transverse cubital nervures slightly oblique; the apical one distinct; the transverse median nervure is received behind the transverse basal; the transverse median nervure in hind wing broken shortly below the middle. Legs of moderate length; the basal joint of the hinder tarsi is thickened; the claws are small. The petiole becomes gradually wider towards the apex; its sides near the middle on the lower side project into a stout triangular tooth, the part behind this being keeled; in front of it is a rounded tubercle. The head is rather narrow; the eyes are large and projecting; the front is stoutly striated in the middle; the front and vertex are depressed; the eyes project above the vertex; the sides of the pronotum are indistinctly toothed at the base; they project at the tegulæ; the scutellar depression is larger and deeper than usual and bears four longitudinal keels.

A distinct genus of *Mesostenini* easily known by the completely reticulated median segment without transverse keels, by the stoutly spined petiole, by the raised scutellum, by the coarsely reticulated thorax, and by the thickened base of the hinder tarsi.

Acleasa albispina, sp. nov.

Nigra, scutello spinisque albis; abdomine rufo-balteata; pedibus flavis, coxis, trochanteribus posticis apice femorum posticorum apiceque tibiæ posticarum nigris; alis hyalinis, nervis stigmatique nigro-fuscis ♀.

Long: 12; terebra 2 mm.

Hab. Borneo (Shelford).

Antennæ stout, longer than the body: the ten middle joints white. Head black; the face and clypeus thickly covered with long white hair; the middle is irregularly striated. Clypeus roundly convex, shining; its upper part closely and finely punctured. The middle of the front is stoutly irregularly striated, more closely below than above. Mandibles rufous, their teeth black. Thorax black; the scutellum and teeth yellow. The middle lobe of the mesonotum is closely transversely striated, the lateral are coarsely irregularly reticulated and hollowed down the centre. Scutellum yellow, black at the base; smooth and shining; the basal depression is large; it has two stout complete keels in the centre, and an indistinct one on either side. Post-scutellum smooth and shining; its apex is dilated. Median segment coarsely, closely reticulated; the spines are large, conical and lemon yellow. Pro- and upper half of the mesopleuræ coarsely, irregularly striated; the lower part of the meso- smooth and shining; the furrow is crenulated. Metapleuræ closely reticulated. Legs yellow; the hinder coxæ, except the basal two-thirds above, the trochanters, apical third of femora, the extreme base of the femora and their apex more broadly, black. Abdomen black, the base of the petiole, its apex somewhat more narrowly and the apex of the other segments, yellow; the post-petiole is punctured and striated down the middle; the second, third, and fourth segments are closely punctured.

Fislistina, gen. nov.

Post-petiole much widened and clearly separated: its spiracles wider from each other than from the apex. Median segment rugose and reticulated; its sides bearing short thick spines; the spiracles large, oblong. Areolet small, square, open at the apex; the transverse basal nervure is interstitial; the transverse median nervure in hind wings broken below the middle; the stigma narrow, linear; below it, is a wide cloud. Antennæ stout, longish, annulated with white; the third and fourth joints subequal in length. Head as wide as the thorax; almost transverse and not much developed behind the eyes, which are large and parallel; the malar space is small. Clypeus clearly

separated from the face, roundly convex; its apex depressed. Mandibles large, wide; their apex with two equal triangular teeth. Parapsidal furrows extending beyond the middle. Scutellum roundly convex; the basal depression wide and deep. The metapleural furrow is wide, deep and reaches to the apex; there is only a basal keel on the median segment; the legs are stout and of moderate length; the fore tarsi are longer, the four hinder shorter, than the tibiæ; the fore tibiæ are distinctly narrowed at the base; the claws longish, curved. There are distinct gastrocelli on the second abdominal segment; the apical segment is transverse, bluntly pointed and bears distinct cerci.

Belongs to the *Mesostenini* and is most nearly related to the American genera *Mesostenoidens* and *Christolia*.

Fislistina maculipennis, sp. nov.

Nigra, abdomine late flavo-balteata; pedibus rufi; tibiis late apiceque femorum posticorum nigris; alis hyalinis, fascia substigmalis fusca ♀.

Long: 10; terebra 2 mm.

Hab. Borneo (Shelford).

Antennæ stout, longer than the body, black with two white bands, one on joints 6-10 and another on joints 13 to 16. Head entirely black; the face rugose, roundly projecting in the middle; the front smooth; the lower part of the vertex stoutly, longitudinally striated. Mesonotum smooth and shining, the furrows appear to bear a silvery pubescence. Scutellum smooth, yellow; the basal depression has four keels. Median segment coarsely reticulated; the basal region in the middle smooth; the teeth are yellow, short and broad. The upper part of the propleuræ closely obliquely striated; the middle less closely and more strongly longitudinally striated; the basal half of the mesopleuræ is closely longitudinally striated; the apical smooth and shining; the metapleuræ coarsely rugose. Wings hyaline, a broad fuscous cloud extends from the stigma to the opposite side. Legs rufous; the tibiæ and tarsi paler, the hinder white; the greater part of the four front tarsi, the four front tibiæ in front, the apex of the hinder femora, the tibiæ, except at the base, and the apical joint of the hinder tarsi,

black. On the abdomen, the post petiole, the apex of the second segments, the band roundly widened backwards in the middle, a broad band on the third segment, widest in the middle, and the greater part of the penultimate segment, yellow. The gastro-cœli are rufous.

Chrysocryptus, gen. nov.

Head and thorax densely covered with longish hairs, the abdomen sparsely haired. Median segment areolated; the transverse and longitudinal keels distinct; the areola large, twice longer than wide. Stigma conspicuous, wide, obliquely narrowed towards the base and apex. Areolet large, wide, not much narrowed above, five-angled. Radial cellule wide; the basal abscissa of the radius shorter than the apical and more curved than it; there are no nervelets on the disco-cubital and the recurrent nervures; the transverse basal nervure is interstitial. In the hind wings the cubitus is broken shortly below the middle. Head, if anything, wider than the thorax; the occiput rounded; eyes large, distinctly projecting; the malar space small. The middle lobe of the mesonotum is distinctly separated; the parapsidal furrows are deep and reach near to the scutellum. The furrow at the bottom of the mesopleuræ is distinct. The spiracles are linear; the spiracular area is well defined, as is also the area at its apex. The base of the metanotum is obliquely depressed. Ovipositor projecting; the sheaths are covered with longish white hair. Legs slender; the hinder coxæ and trochanters longish; the fore tarsi are longer than the tibiæ.

The first three joints of the antennæ are much lengthened, being fully four times as long as wide at apex, or longer; the abdomen is twice the length of the head and thorax united; the disco-cubital nervure is roundly curved, not angularly broken; the clypeus is roundly convex; its apex broadly rounded. The face is densely covered with golden hair. The median segment is completely areolated; the areæ are all large and have stout keels; the areola is rounded at the base, transverse at the apex; the lower part of the metapleuræ is stoutly keeled; the radius is thickly pilose at the base; the apical nervures in the hind

wings are faint and incomplete; the second transverse cubital nervure is bullated largely above.

This genus does not fit well into any of the known tribes of the *Cryptina*. The areolated median segment would place it near the *Hemiteli* and the *Phygadenonini*. Characteristic is the densely haired head and thorax.

Chrysocryptus aureopilosa, sp. nov.

Niger, capite thoraceque dense aureopilosis; abdomine pedibusque posticis rufo-testaceis; pedibus pallide testaceis; alis hyalinis, apice fumatis; stigmatibus nervisque testaceis ♀.

Long: 12; terebra 4-5 mm.

Hab. Borneo (Shelford).

Antennæ rufo-testaceous; the scape paler, and thickly covered with pale testaceous hair. Head black, smooth and shining densely covered with longish bright fulvous hair. Mandibles rufo-testaceous; the teeth black. Legs rufo-testaceous, the anterior paler; the hinder tarsi infuscated; they have the coxæ, trochanters and femora covered with long pale hair; the tibiæ and tarsi are closely covered with short pubescence. Wings hyaline; the apex infuscated; the basal nervures are dark; the apical, pale testaceous. The apex of the abdomen is pale testaceous, the basal three segments are sparsely covered with long pale hair.

Lattera, gen. nov.

Median segment not areolated; the base smooth; the rest striolated; the sides spined. First joint of the flagellum, if anything, shorter than the second. Antennæ over twenty-jointed. Eyes large, parallel, reaching close to the eyes; the hinder ocelli are separated from each other by about the same distance they are from the eyes. Pterostigma elongated, narrow; areolet small, square, open at the apex; the transverse median nervure is received behind the transverse basal. Radial cellule elongate, narrow, sharply pointed at the apex, the apical abscissa of the radius is not twice the length of the first; the nervures in the hind wing are complete; the transverse median nervure in the hind wings is sharply angled below the middle where the cubital nervure issues from it. Metathoracic spiracles small, twice longer than wide. Belongs to the *Hemiteli*. The non-

areolated strongly striolated median segment affords a good mark of recognition. The head is distinctly wider than the thorax; the clypeus is clearly separated from the face: the mandibles are large, broad and bi-dentate at the apex; the parapsidal furrows only extend to shortly beyond the middle of the mesonotum; the scutellar depression is deep, wide and keeled; the base of the mesopleuræ is keeled; the petiole is longer than the second segment; the post-petiole is distinctly separated.

Latteva albobulcata, sp. nov.

Nigra, abdomine albo balteato; pedibus testaceis; tibiis, tarsis trochanteribusque posticis nigris; tibiis posticis albo annulata; alis hyalinis, fusco-bifasciatis ♀.

Long: 8 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ black, the eighth to sixteenth joints white beneath; the scape is brownish on the under side. Head entirely black; the front is keeled down the centre; the keel on either side is oblique. Face opaque, alutaceous; the clypeus bare, smooth and shining. Mandibles black, rufous in the middle. Maxillary palpi white. Thorax black, except the scutellum which is broadly yellow in the middle; the apex of the middle lobe of the mesonotum is rugose. The median segment behind the keel is smooth; the middle is obliquely-longitudinally striated; the apical slope is transversely striated, the striæ running into reticulations; the spines are black, longer than broad. The propleuræ obliquely striated in the middle; the middle have a plumbeous hue; they are finely striated below the tubercles, stoutly behind the keel, and closely on the upper part of the depression behind the middle; the lower curved keel has some stout keels on the basal half as has also the apical bordering one. Metapleuræ striated indistinctly at the base and much more strongly towards the apex; the oblique furrow behind the middle is broad and deep. The anterior four legs are testaceous, paler, more yellowish at the base; their tarsi fuscous; the hinder pair are black; the femora rufous, black at the apex; the coxæ are pale rufous; there is a narrow white band near the base of the tibiæ: the apical joints

of the tarsi are testaceous at the base. Wings hyaline; there is a fuscous cloud at the stigma extending from the base of the cubitus to the apex of the areolet; there is another fuscous cloud at the apex. Abdomen black; the petiole is rufous, with a broad fuscous band near the base of the post-petiole; the apical third of the second segment and the apical two segments are white.

Friona, gen. nov.

Radial cellule elongate. Areolet moderately large (larger than in *Mesostenus*) wider than long; the cubital nervures parallel, straight, not oblique; the second faint; the transverse basal nervure interstitial or nearly so. The transverse median nervure in the hind wings is broken far below the middle. Head wider than the thorax; the front is stoutly striated and is depressed in the middle. Eyes large, parallel; the malar space is moderate. Face short, not extending below the level of the eyes. Clypeus roundly convex, clearly separated behind; its apex broadly rounded; labrum projecting. Mandibles with two large triangular teeth. Thorax more than three times longer than broad; pronotum dilated in front; the parapsidal furrows deep, extending beyond the middle. Median segment elongate, its base smooth; there is a transverse keel near the base, the part beyond it is closely transversely striated; the apex of the segment has a straight, steep slope and projects bluntly at the edges above; the spiracles are small, about three times longer than broad. Legs longish, slender; the fore tarsi are twice the length of the tibiæ. Antennæ longish, slightly, but distinctly, dilated at the middle; the third joint is longer than the fourth.

Has the usual form and colouration of the *Mesosteni*. The generic distinctions lie in the strongly striated depressed front and the transversely striated median segment, with its steeply sloped, clearly separated apex.

Friona striolata, sp. nov.

Nigra, late flavo maculata; mesopleuris fere immaculatis; pedibus fulvis, posticis nigro-maculatis; alis hyalinis nervis stigmatique nigris ♀.

Long : 13-14 ; terebra 4 mm.

Hab. Sarawak, Borneo (Shelford).

The sixth to seventeenth joints of the antennæ are white. Head black ; the face, clypeus, labrum, inner orbits to the end of the eyes, the outer from shortly above their middle, almost the basal two-thirds of the mandibles and the palpi, yellow ; the front in the centre is strongly obliquely striolated ; the face is rugosely punctured. Thorax black ; the projecting middle of the pronotum, the tubercles, tegulae, the scutellums, a large raised mark, narrowed on the inner side behind the hind wings, and a small curved mark behind the mesopleural suture, pale yellow. Pro- and mesonotum smooth and shining ; the pro- and mesopleurae closely longitudinally striated, the striae becoming weaker somewhat towards the apex. The part of the median segment immediately behind the transverse keel is coarsely aciculated ; the rest is closely and distinctly transversely striated ; shortly behind the transverse keel a broad yellow band originates, which becomes broadly dilated on the apical slope, where it extends to the middle, its sides being dilated, and the centre rounded. Legs fulvous ; the four front coxæ and trochanters are pale yellow ; the fore femora are lined with black above ; the hinder coxæ are black, yellow above and at the apex below ; the trochanters, apex of femora and of tibiae black ; the tarsi white. Abdomen black above ; all the segments with their apices yellow, the apical one very narrowly.

Lactolus, gen. nov.

Median segment elongate, with one transverse keel ; its base smooth, the rest closely transversely striated ; its apex has a gradually rounded slope ; the keel on the lower part of the metapleurae is complete and is roundly and broadly dilated at the base. Front and vertex depressed, stoutly striated. Areolet of moderate size, longer than broad ; the transverse cubital nervures have an oblique slope from the top to the bottom ; the apical one is faint ; the transverse basal nervure is almost interstitial.

There is only one transverse keel on the median segment ; its spiracles are of an elongate oval slope ; the clypeus is not separated from the face ; the thorax is more than three times longer than

broad; the legs are long; the claws longish; the hinder coxæ are long and reach near to the apex of the petiole; the spiracles on the petiole are separated from each other by about half the distance they are from the apex: the scutellum is stoutly keeled laterally to near the middle, the parapsidal furrows extend to shortly beyond the middle. The ♂ is similar to the ♀; the antennæ are longer and more slender, they are broadly ringed with white in both sexes; the apical abdominal segments in both sexes are marked with white.

The species of the genus are very similarly coloured to *Buodius* with which genus it agrees in some other respects; the difference in the form of the median segment enables them to be separated; in *Buodius* it is shorter, is stoutly spined, and the apex has a straight oblique, not a gradually rounded slope; in *Buodius*, too, the recurrent nervure is received at the apex of the areolet, almost united to the second transverse cubital nervure. Also the median segment is not transversely striated.

Lactolus albomaculatus, sp. nov.

Niger, annulo flagello antennarum tarsisque posticis albis; coxis posticis rufis alis fumato-hyalinis, nervis stigmatique nigris ♀.

Long. 13; terebra 3 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ longer than the body; the sixth to twelfth joints, for the greater part, white. Face rugosely striated in the middle; at the sides the striæ are oblique and more distinctly separated. Clypeus stoutly keeled in the middle; the rest aciculated and irregularly and not very strongly striated. The base of the mandibles closely striated; the teeth are for the greater part rufous. The front and the vertex from the hinder ocelli stoutly striated. Thorax shining; the pro-mesonotum and the base of the median segment smooth, striated. The mesopleural furrow is wide and deep; its lower part is stoutly striated. Legs black; the apical half of the metatarsus, the second and the fourth joints except at the apex, white; all the coxæ and the four front trochanters bright red; the anterior tibiæ and, to a less extent, the femora are brownish. Wings hyaline, with a slight, but distinct, smoky tinge; the stigma and nervures are black; the second transverse cubital nervure

is largely bullated; as is also the cubital-disco, and the recurrent nervures. Abdomen black; the top of the sixth, seventh, and the eighth segment more narrowly above, white; the apex of the second segment is obscure testaceous.

Lactolus ruficornis, sp. nov.

Niger, apice metanoti apiceque abdominis albis; pedibus fulvis, trochanteribus tibiisque posticis nigris; tarsis posticis albis; alis hyalinis, nervis stigmatique nigris ♀.

Long: 9-10; terebra 4 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ as long as the body; the middle of the flagellum is broadly white. The face is rugosely punctured, almost reticulated; the clypeus is smooth and shining, roundly convex; the curved keels on the lower part of the vertex are few in number and stout. Mandibles black; the palpi white. Mesonotum smooth and shining, except on the apex of the middle lobe, which is transversely striated. The scutellar depression is large and is stoutly keeled in the middle; the top of the scutellum is obscure brownish; the post-scutellum is white. The median segment at the base is smooth and shining; the rest of it, from the keel, is closely transversely striated; its apical slope is white; this white band is directed broadly backwards in the middle. The upper half of the propleuræ is closely, longitudinally reticulated, the lower strongly longitudinally striated. Mesopleuræ, except in the middle behind, strongly longitudinally striated; the base is smooth below; the striæ in the middle are smaller and closer; the metapleuræ, from the oblique keel, longitudinally striated; the striæ are waved. Legs fulvous, the anterior paler in tint; the hinder trochanters, the apex of the femora, the tibiæ and the base of the tarsi are black; the rest of the tarsi white. Abdomen black; the apical three segments white; the basal three segments are aciculated.

Lactolus flavipes, sp. nov.

Niger, annulo flagello antennarum late, abdominis apice tarsisque posticis albis; pedibus anterioribus flavis; alis hyalinis, nervis stigmatique nigris ♀.

Long: 10 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ black; the apex of the fifth, the sixth to eleventh entirely, and the twelfth and thirteenth partly, white. Head black, the inner orbits in the middle narrowly white; the face rugosely punctured, the punctures running into reticulation above. Clypeus roundly convex, smooth and shining and sparsely covered with longish hair. Mandibles rufous before the middle, smooth; the base coarsely aciculated. Front irregularly striolated, coarsely in the centre, more finely in the middle. Pro- and mesonotum with the scutellum smooth and shining; the apex of the middle lobe irregularly longitudinally striated. Median segment behind the keel smooth and shining; the rest of it strongly, transversely, closely striated; on the apex is a curved white band, which is dilated backwards in the middle. Pleuræ closely longitudinally striated; the striæ on the mesopleuræ are more irregular and more or less curved. The four front legs are pale yellow; their coxæ black, rufous towards the apex; their tarsi infuscated; the hinder tarsi are white, except narrowly at the base. The basal two segments of the abdomen are aciculated; the others smooth and shining; the second and third segments are narrowly pale at the apex; the apical three are for the greater part white.

Buodias, gen. nov.

Thorax three times longer than wide; the median segment behind the keel obliquely rugosely striated; its sides with a broad spine; the apical keel is wanting. Front stoutly striated. Petiole not much longer than the second segment, stout, becoming gradually wider towards the apex from the base. Areolet of moderate size, wider than long, wider at the apex than at the base; the recurrent nervure is received close to the apex; the transverse basal nervure is received behind the transverse basal. The petiolar spiracles are nearer each other than they are to the apex. Scutellum flat, keeled on the basal half. Ptero-stigma elongate, narrow. The median segment is about one half the length of the meso-thorax; its apex has an oblique, straight slope; its spiracles are small, about three times longer than broad. The abdomen is stout, not longer than the

head and thorax united, its apex is blunt and marked with white. The legs are long and stout; the tarsal claws of moderate length; the tibiae are slightly bent at the base. The clypeus is roundly convex, not very clearly separated behind; its apex is transverse and has a distinct margin. The mandibles are broad, curved, bidentate at the apex; lower tooth, small; the base is broadly raised on the upper side, the raised part forming a tubercle-like mass. The head is much wider than the thorax; the metapleural keel is complete and is dilated at the base. On the median segment in the middle behind the keel is an incomplete area, open behind.

In Ashmead's arrangement this genus should come near *Mesostenoidens* and *Christolia*.

Buolius ruficornis, sp. nov.

Niger; annulo flagello antennarum abdominisque apice albis; coxis trochanteribusque anterioribus rufis; alis fusco-hyalinis, nervis stigmatique nigris ♀.

Long: 21 mm. terebra 4-5 mm.

Hab. Sarawak (Shelford).

Antennæ not quite so long as the body, if anything, thickened towards the apex; the sixth to thirteenth joints white beneath; the scape bare smooth and shining. Head entirely black; smooth and shining; the front obliquely stoutly striated below the ocelli; the face coarsely irregularly reticulated. Mandibles black, rufous at the base above. Palpi testaceous. Thorax black; the sides of the scutellum to near the apex white; the spines on the median segment dull white. Pro- and mesonotum shining, bare; the middle lobe aciculated. The scutellum is, if anything, more shining than the mesonotum; post-scutellum is dull white. The base of the median segment in the middle is stoutly keeled; the part behind the keel is aciculated; there is one curved keel on the outer side of the stigma and several on the inner side; the teeth are broad and bluntly rounded at the apex. The middle of the propleuræ obliquely, and the upper two-thirds of the apex stoutly, striated. The base and the part in the middle is irregularly reticulated, this part being bounded by a keel in front and by an irregular furrow behind; the lower apical part is irregularly crenulated.

Metapleuræ coarsely obliquely striated; the striæ are irregular and more or less wrinkled; the base is aciculated behind the furrow, which is wide and deep; the upper part is irregularly, the median segment from the keel finely and closely transversely striated; the apical slope is rufous. The middle of the propleuræ, the greater part of the meso- and the meta- below the keel are closely and finely longitudinally striated. Legs black; the hinder coxæ rufous; the fore femora and tibiæ more or less testaceous, especially in front, the apical two-thirds of the basal joint of the hinder tarsi, the second, third, fourth and base of the fifth joints, white. Wings fuscous-hyaline; the nervures and stigma black; the second transverse cubital nervure is almost obliterated. Abdomen black; the sixth and seventh segments broadly above and the eighth narrowly white.

Mesostenus Shelfordi, sp. nov.

Niger; labro abdominisque apice albis; coxis posterioribus rufis; alis hyalinis, stigmatè nervisque fuscis ♂.

Long: 9 mm.

Hab. Sarawak, Borneo (Shelford).

Head black; the labrum and palpi white. Mandibles black, whitish-testaceous near the middle. Face opaque, closely but not very distinctly, punctured; the clypeus smooth and shining. front and vertex alutaceous, shagreened; the upper part of the front is furrowed in the centre. Pro- and meso-thorax smooth and shining and with a plumbeous hue. Median segment opaque; above closely, but not very strongly, transversely punctured. Wings clear hyaline; the stigma and nervures fuscous. Legs black; the four posterior coxæ orange red; the front coxæ black, pale at the apex; the four front legs are fuscous; the hinder tarsi are white, except narrowly at the base. The abdominal segments are narrowly lined with dull white at the apex; the apex of the fifth and the sixth and the seventh entirely, are clear white.

This is a *Mesostenus* as defined by Ashmead in his generic revision of the *Ichneumonidae* (Bull. U. S. Nat. Mus. XXIII. 44)—The keel on the mesopleuræ curves broadly and roundly upwards on the apical half; the basal keel on the median segment is complete; the apical one does not reach to the sides; the

keel on the lower edge of the metapleuræ is broad and plate-like; the transverse median nervure is received shortly behind the transverse basal; the areolet is moderately large, about one half longer than broad; the recurrent nervure is received shortly behind the middle.

LISTRODROMINI.

Maraces, gen. nov.

Claws pectinated, scutellum flat throughout, its sides and apex keeled. Areola obliquely narrowed behind, open in front, not separated from the posterior median area; it is separated at the base from the lateral area. Antennæ dilated beyond the middle. Labrum hidden. Areolet narrowed at the top, nervure uniting there; the transverse median nervure is widely distant from the basal. The apex of the hind femora reaches to the middle of the fourth segment; the abdominal segments are aciculated.

The pronotum projects above, broadly at the base, more narrowly at the apex; the apex of the scutellum has a perpendicular slope and is clearly raised above the post-scutellum; the abdominal segments do not project much at their apices. The stump of a nervure on the disco-cubital nervure is almost obsolete. Clypeus separated from the face, foveate at the base. Mandibles large; the teeth large, widely separated. Metathoracic spiracles linear, much longer than wide.

The eyes are large and parallel; the malar space is large. There are seven abdominal segments; the ventral keel is on the third and fourth segments. The occiput is roundly incised and is keeled above. Median segment, short, rounded gradually behind.

The pectinated claws refer this genus to the *Listrodromini*. The claws have long teeth and are toothed uniformly to near the apex. There are no spines on the median segment; the spiracles on the first abdominal segment are elongated; the segments are banded with yellow; the ovipositor projects largely.

Of the known genera of *Listrodromini*, *Maraces* comes nearest to *Neotypus* which, among other differences, is readily separated from it by the very small, rounded spiracles of the petiole. If it were not for the pectinated claws the genus might be placed with the *Joppini*.

Muraces flavo-haltea, sp. nov.

Niger, late flavo-maculato; pedibus flavis, coxis trochanteribus femoribusque posticis nigris; apice tibiæ posticarum late nigro; alis hyalinis, nervis stigmatique nigris ♀.

Long: 14 mm. ♀

Hab. Sarawak, Borneo (Shelford).

Antennæ black, the middle of the flagellum broadly banded with white. Head black; the face, except for a broad black line in the middle, the clypeus, the inner orbits narrowly to the top of the eyes on the inner side, and the outer, entirely below and broadly above, pale yellow. The face closely, the clypeus sparsely, punctured. Mandibles black. Front and vertex impunctate, bare, shining. Thorax black; the edge of the pronotum, two marks on the mesonotum, obliquely and sharply narrowed at the base, the apex of the scutellum broadly, the mark narrowed behind the apical part of the scutellar keels, the post-scutellum, two marks on the apex of the median segment, narrowed below as they follow the outline of the lateral area, the lower part of the propleuræ, of the mesopleuræ more broadly, the tubercles, the hinder edge of the mesopleuræ, and the apical half of the metapleuræ, yellow. Mesonotum closely rugosely punctured, reticulated in the middle behind; the scutellum is similarly punctured. The base of the median segment is smooth; the areola is coarsely sharpened; the posterior area coarsely irregularly reticulated; the lateral area smooth at the base, the rest coarsely punctured; the spiracular area rugose, the apex transversely, coarsely striated. The upper part of the propleuræ is closely punctured, the apex stoutly striated, the striæ in the centre extending to the centre. Meso- and metapleuræ distinctly and closely punctured; the middle, of the former finely and closely longitudinally striated. Wings hyaline, the nervures and stigma black. The four front legs yellow; the femora, tibiæ and tarsi black behind; the hinder coxæ, except at the apex on the inner side, the basal joint of the trochanters, the femora and the apical third of the tibiæ, black; the rest yellow. Abdomen black; the base of the petiole broadly, its apex and the apex of all the other segments, yellow; the middle segments of the abdomen are closely punctured; the gastrocoeli are

yellow, the steep apex of a more rufous hue; the base of the segment between them is striated; the sides of the apical three segments are yellow, the yellow becoming gradually broader towards the apex.

Maruces pectinata, sp. nov.

(Niger, late flavo ornato; pedibus fulvis, coxis trochanteribusque anterioribus flavis, posticis nigris; alis fulvo-hyalinis, nervis, stigmatique nigris ♀.

Long: 17 mm.

Hab. Khasia Hills (Coll Rothney).

Antennæ black, the eighth to sixteenth joints white; the scape covered with white hair. Head black; the face, clypeus, the inner orbits,—narrowly below, more broadly above, the yellow not extending beyond the inner top of the eyes,—and the outer orbits entirely, from above the middle of the eyes to the base of the mandibles, pale yellow. The face and clypeus obscurely punctured and thickly covered with white hair; there is a black line down the face and an elongate mark on the apex of the clypeus. Front and vertex smooth, shining, and bare. Mandibles yellow, the teeth black. Thorax black; the edge of the pronotum, two lines on the mesonotum, obliquely narrowed on the inner side at the base, the apical half of the scutellum, the mark roundly narrowed at the base, the base of the pronotum, the lower side of the propleuræ from behind the middle to the apex, the tubercles, a small mark on the middle of the mesopleuræ, a smaller one behind it lower down, the lower third of the mesopleuræ, the apex of the mesopleuræ broadly below the keel, yellow. Legs fulvous; the four front coxæ, trochanters pale yellow; the hinder coxæ black on the outer side and on the outer half of the top; the basal joint of the trochanters black, wings hyaline, the base with a slight fulvous tinge; the stigma and nervures black; the areolet oblique; the second transverse cubital nervure longer and with a more oblique slope than the first; they almost touch above; the recurrent nervure is received shortly behind the middle. Abdomen black, the apices of all the segments yellow; the band on the third is interrupted in the middle; the petiole shining, the base of the post-petiole strongly punctured; the second, third, fourth segments closely

punctured; the gastrocoeli narrow, deep, smooth, and shining. Mesonotum rather strongly and closely punctured; the scutellum is as strongly, and more widely punctured; its sides, under the keels, strongly but not closely, punctured. The base of the median segment is smooth; the rest coarsely punctured, the apex especially in the middle, closely reticulated; the suprmedian area large, about as wide as long; the sides at the base obliquely narrowed, the middle straight, the apex is not clearly separated from the posterior median by a keel. Pro- and mesopleuræ smooth; the depression on the former stoutly striated; the lower half of the meso- is depressed and separated from the raised upper half; the meta- closely and strongly punctured. The median segment is thickly covered with white hair.)

Joppini Zonojoppa, gen. nov.

Antennæ short, distinctly dilated and compressed between the middle and the apex; the dilated joints hollowed laterally. Wings violaceous throughout; the areolet is narrowed at the top, the transverse cubital nervures almost uniting there; the transverse basal nervure interstitial. Scutellum roundly convex; not raised above the level of the mesonotum, its sides stoutly keeled. Areola widely separated from the base of the segment, rounded and narrowed behind, the basal half deeply hollowed, the lateral basal areæ clearly separated. Clypeus broadly rounded at the apex, the labrum hidden. Legs short; the apex of the hinder femora not extending beyond the apex of the third segment. The abdominal segments do not project much laterally at the apex; the second and third segments are longitudinally striated at the base, the last (seventh) segment is well developed; its cerci are much longer than usual.

The thorax is shorter than the basal three segments of the abdomen; the middle of the mesonotum is raised and separated in front; the post-scutellum is shortly striated and depressed laterally; the apical three areæ on the median segment are closely defined, as is also the spiracular area; the sides of the mesonotum are bordered by a wide deep furrow; there is a short stump of a nervure on the disco-cubital nervure.

The characteristic features of this genus are the violaceous wings, the stoutly keeled scutellum, and the excavated areola.

Zonajoppa violaceipennis, sp. nov.

Nigra, capite thoraceque flavo maculatis; abdominis basi late rufo; pedibus nigris; coxis trochanteribusque anterioribus flavis, alis violaciis, nervis stigmatique nigris ♀.

Long. 15 mm.

Hab. Sarawak (Shelford).

Antennæ black, the scape yellow beneath. Head black; the face, clypeus, base of mandibles, the inner orbits to shortly beyond the ocelli, the outer more broadly from near the top, the line becoming gradually wider from top to bottom, pale yellow. Front and vertex smooth, bare and shining; the black on them has a plumbeous hue, and they are sparsely covered with pale hair. Thorax black; the upper edge of the pronotum from near the base (the yellow with a black band in the middle), the keels of the scutellum from near the base, the apex of the post-scutellum; the base of the prothorax from the keel on the pleuræ, the tubercles and a large mark on the lower part of the mesopleuræ at the base, yellow. Mesonotum in the middle stoutly punctured; the punctured space prolonged laterally at the base; the sides near the tegulæ are deeply furrowed. The scutellum, except at the base, is irregularly and rather strongly punctured; the sides are stoutly keeled; in the centre of the post scutellum are four stout keels. The central basal depression of the median segment is smooth; the sides are strongly punctured; the areola has a large, round depression at the base, which extends to shortly beyond the middle; the apical central area is smooth and depressed at the base; the rest of it stoutly transversely striated; the lateral stoutly, irregularly striated, almost reticulated; the spiracular, beyond the spiracles, irregularly obliquely striated. The lower part of the propleuræ is aciculated and irregularly striated; the meso-, except behind, finely and closely punctured; the meta- closely and coarsely striated; the meso- and metapleuræ are thickly covered with white hair. The four anterior coxæ entirely, the trochanters, the femora, except at the base, and the tibiæ and tarsi in front, pale yellow, black behind; the legs black; the coxæ above, except at the base, the apical half of the trochanters, a line on the femora above and on the base of the femora, pale yellow; all the legs are thickly covered with pale

pubescence; all the calcaria are pale yellow. Wings uniformly violaceous; the transverse cubital and the recurrent nervures are largely bullated. The basal three abdominal segments and the base of the fourth broadly, ferruginous; the basal three segments are narrowly lined with yellow at the apex. The post-petiole is finely longitudinally striated, the sides punctured; the second and third segments have a narrow keel in the centre, bordered by some longitudinal striations; the gastraceli are large, smooth, and have two oblique stout keels on the outer side.

MUTILLIDÆ.

Mutilla herpa, sp. nov.

Nigra, pro-mesothorace scutelloque ferrugineis; abdomine nitido, dense nigro piloso; segment secundo dense albo piloso; alis violaceis; tegulis rufis ♂.

Long: 12 mm.

Hab. Sarawak, Borneo (Shelford).

Head as wide as the base of the mesonotum; coarsely rugosely punctured, running into reticulations on the front, which, at the apex, broadly projects; its apex and side are sharply keeled; the middle is obliquely incised; the sides are broadly rounded; the face is rugose and bears, on the middle at the apex, three irregular punctures. Antennæ black, the scape shining, pilose; the flagellum opaque, bare. Pro- and mesonotum, with the scutellum, closely rugosely punctured. The scutellum, is broad; its sides are smooth and project; its apex has a rounded slope. Wings violaceous, lighter in tint at the base; the third transverse cubital nervure is only indicated by a stump on the top; there being thus only two complete cubital cellules; the second transverse cubital nervure is broadly rounded. The median segment is coarsely reticulated; the basal three are of equal length, but the central is much narrower and is acutely pointed at the apex. The pro- and the upper two-thirds of the mesopleuræ are ferruginous; the propleuræ and the base and apex of the mesopleuræ are smooth. Abdomen deep black, shining; the petiole is broad and becomes gradually

wider towards the apex; the apex is smooth; at the base of this smooth part is a row of large punctures; from this the petiole slopes obliquely to the base; the ventral keel is straight, rounded at the base and apex; the second segment is covered with short depressed clear white pubescence; and is smooth and shining in the middle at the apex; the pygidium bears large round punctures all over. Legs black, thickly covered with long white hair; the spurs white.

Mutilla ira, sp. nov.

Nigra, dense albo piloso; alis fusco-violaceis, basi fere hyalinis ♂.

Long: 17 mm.

Hab. Sarawak, Borneo (Shelford).

Head distinctly narrower than the thorax; closely rugosely punctured and thickly covered with long white pubescence; the vertex and front with the hair sparser and shorter. The clypeus is smooth and shining and is keeled in the middle; the mandibles, at the base, are thickly covered with long white hair. Thorax densely covered with longish grey pubescence; the mesonotum is strongly, distinctly and uniformly punctured; the furrows are distinct on the apical half. Scutellum strongly, deeply and uniformly punctured and roundly convex; the post-scutellum opaque, coarsely aciculated. Median segment coarsely reticulated; the basal median reticulation is twice longer than broad and has the apical half abruptly narrowed. Mesopleuræ coarsely punctured in the middle and thickly covered with grey hair; the lower part of the metapleuræ is alutaceous, the upper punctured. Legs thickly covered with long white hair; the calcaria pale. Wings dark violaceous, paler at the base; the cubital cellules complete; the middle one, is, above and below, longer than the following. Abdomen black, the basal two segments, the basal half of the third rufous; the base of the petiole is broad, more than half the width of the apex; the ventral keel is broadly rounded; the hair is white on the basal segments, shorter and black on the apical two; the hypopygium is punctured, smooth and shining in the middle; there are no keels or furrows on the epipygium.

Mutilla olbia, sp. nov.

Black, densely covered with longish pale hair; the first, second and the base of the third abdominal segment red; wings fuscous-hyaline with a violaceous tinge; the stigma and nervures testaceous, ♂.

Long: 15 mm.

Hab. Penrissen, 4500 feet, Sarawak.

Antennæ densely covered with a pale pile; the second and third joints together are equal in length to the fourth. Head distinctly narrower than the thorax; roundly, obliquely narrowed behind the eyes; the vertex strongly but not very closely punctured; the front more closely rugosely punctured; the vertex sparsely, the front more thickly covered with long fulvous hair. Clypeus depressed in the middle; the edges rounded and forming a semicircle; the apical tooth of the mandibles is long, rounded at the apex; the subapical one is short and blunt. Thorax thickly covered with long fulvous hair; the pro- and mesonotum closely rugosely punctured; the scutellum is more closely punctured. Median segment closely reticulated; the basal three central aræ larger than the others; the central is longer than the others. Propleuræ at the base rugosely punctured; the lower part of the apex with five stout keels; the central, raised part of the mesopleuræ is punctured but not deeply or strongly; the base of the metapleuræ smooth; the apex reticulated. The third transverse cubital nervure and the second recurrent are faint; the first transverse cubital nervure is oblique and rounded; the second is roundly curved and not obliquely sloped; the second cubital cellule at the top is shorter, at the bottom longer than the third: the recurrent nervures are received near the base of the apical third of the cellules. Legs thickly covered with white hair; the spines and calcaria white. On the abdomen the first, second, and the base of the third segments are rufous; the basal five segments are covered with long pale, the apical with black, hair; the ventral keel is slightly dilated at the base, roundly narrowed at the apex; the last segment above has the apical two-thirds broadly smooth in the middle; below it is strongly punctured, except at the apex, which is smooth and rufous.

Mutilla bagrada, sp. nov.

Long: 16-17 mm. ♂.

Hab. Kuching, Sarawak.

This species comes very near to *M. casiphia*; the differences between the two may be expressed thus:—

Scutellum not furrowed down the middle; the keel on the petiole straight; the face not tuberculate; the propleuræ smooth except above. *bagrada*.

Scutellum furrowed down the middle; the keel on the petiole curved; the face tuberculate below; the propleuræ rugose. *casiphia*.

Flagellum of antennæ brownish beneath, the third and fourth joints equal in length. Front and vertex coarsely rugosely punctured; the punctures running into reticulations on the front; the apex of the tubercles rufous. Clypeus slightly depressed in the middle; smooth, shining; the apex transverse. The face thickly covered with long grey hair. Mandibles at the base thickly covered with grey hair; the subapical tooth is indistinct; the apex of the projection behind the middle is oblique, rounded on the lower part. Pro- and mesonotum closely and rugosely punctured; there is a smooth keel in the middle; there is a furrow on either side of it on the apical half. Scutellum roundly convex, coarsely rugosely punctured. Median segment reticulated; the basal area short, not reaching beyond the middle; its basal third widened. Propleuræ smooth; the upper part at the base bordered by an oblique keel. Mesopleuræ thickly covered with silvery pubescence, the base smooth; there is a wide oblique depression. Legs thickly covered with white hair; the calcaria pale. Wings fuscous-violaceous, paler at the base; the third cubital cellule at the top and bottom distinctly shorter than the second; the first transverse cubital nervure is almost straight, and oblique; the second is roundly bent outwardly in the middle; both the recurrent nervures are received shortly beyond the middle. Abdomen thickly covered with white hair; the hair on the apical two segments is black; the basal two segments and the base of the third are rufous; the ventral keel is roundly curved and narrowed at the base; the last dorsal segment has no area; its lower surface is flat.

Mutilla agapeta, sp. nov.

Black; the abdomen red, with the apical two segments black; the clypeus broadly convex in the middle; the centre of the scutellum smooth and shining, its base depressed; wings fusco-violaceous, hyaline at the base. ♂.

Long: 15 mm.

Hab. Kuching, Sarawak.

The third joint of the antennæ is shortly, but distinctly, longer than the fourth. Front and vertex closely punctured; the vertex sparsely covered with longish pale hair; the front, especially in the centre, thickly covered with silvery pubescence. Face roundly convex, smooth and shining; the clypeus short, depressed, clearly separated, slightly and broadly waved; the edges depressed. Mandibles densely pilose at the base; the lower basal tooth stout, obliquely directed downwards; there is no distinct subapical tooth; the palpi are black. Pro- and mesonotum closely punctured; the pronotum above thickly covered with griseous pubescence; the lower and hinder part of the propleuræ bear stout, clearly separated keels. The raised central part of the mesopleuræ is thickly covered with silvery pubescence and punctured but not very deeply or closely. Metapleuræ smooth, irregularly reticulated at the base above. Mesonotum closely punctured. Scutellum strongly convex; the basal and apical slopes oblique; the base in the centre is flat, smooth and shining. Median segment reticulated, thickly covered with silvery pubescence. Legs thickly covered with white pubescence; the calcaria and spines pale. Wings fuscous-violaceous, hyaline behind the transverse basal nervure; the third cubital cellule at the top and bottom distinctly shorter than the second; the recurrent nervures are received beyond the middle of the cellules; the second transverse cubital nervure is roundly curved outwardly. Abdomen ferruginous; the basal half of the petiole below and the apical two segments black. The ventral keel is almost straight; the last segment is broadly smooth and bare in the centre; below it has the sides broadly, obliquely depressed and clearly separated from the centre which is depressed, especially at the apex, where it is bounded by keels.

Mutilla ilorda, sp. nov.

Black; the prothorax, mesonotum, scutellum and base of median segment rufous; abdomen black, with violet and purple tints; the apex of the second and of the third segments banded with clear white pubescence; wings fuscous-violaceous, lighter in tint at the base. ♂.

Long: 12 mm.

Hab. Kuching, Sarawak.

Antennæ stout, covered with a microscopic pale pile; the third joint is about twice the length of the pedicle and not quite one-half the length of the fourth. Head distinctly narrower than the thorax, thickly covered with long white hair, except on the front and vertex where the hair is sparser, shorter and black. The ocellar region is bounded laterally and below by two stout keels; the space between is depressed; a keel runs into the front ocellus. The clypeus is broadly keeled above; its apex is transverse, with the sides oblique. Mandibles irregularly bidentate at the apex; their base sparsely covered with longish golden hair. The pro- and mesonotum are closely and strongly punctured and covered with golden pubescence. Median segment closely reticulated; the central basal area is twice longer than broad and has the apical half narrowed. Propleuræ closely and strongly punctured except behind; the lower part is bounded by a stout keel; above this, on the apex, are four short keels, which become gradually shorter from the bottom to the top. Mesopleuræ closely and strongly punctured. Metapleuræ reticulated, except behind; on the upper part, at the base, is a narrow keel and above the middle a wide longitudinal furrow. Wings fuscous-violaceous, paler at the base; the third transverse cubital nervure is faint, as is also the cubitus from the second transverse cubital and the second recurrent nervures; the first transverse cubital nervure is oblique, and roundly curved on the lower part; the second is roundly curved outwardly in the middle; the second cubital nervure above is slightly more than one half of the length of the first. Abdomen shining, black; the third and following segments with blue and violet tints; the basal segments sparsely covered with white, the apical more thickly with black, hair; the apex of the second

and of the third with a broad band of depressed clear white pubescence; the basal ventral segment has a straight, rounded keel in the centre; its sides are stoutly punctured; its apex has an oblique slope; the pygidium is closely punctured and covered with black hair; its apex is depressed; there is no defined area on it; the epipygium is flat, closely and strongly punctured and has its sides margined.

Comes close to *M. gravillima*, Sm.

Mutilla mumblii, sp. nov.

Black, the scape of the antennæ, the thorax and the femora rufous, two oval spots of silvery pubescence on the base of the second abdominal segment; the whole of the third segment covered with depressed silvery pubescence; the sides of the pygidium fringed with silvery hair. ♀.

Long: 11 mm.

Hab. Kuching, Sarawak.

This species comes near to *M. prosperpina* Sm. which differs from it in having the legs ferruginous except that the knees and tarsi are slightly fuscous; the pubescence on the thorax is reddish-brown. The present species comes close to *M. gispa* Cam. but, apart from the difference in colouration, it may be known from it by the perfectly smooth pygidium.

Scape of antennæ rufous, covered with pale fulvous hair; the flagellum black, stout; the third joint twice the length of the fourth which is shorter than the fifth. Head nearly as wide as the thorax; closely rugosely punctured; the punctures longer than broad; the antennal tubercles black. Face and clypeus smooth and shining, sparsely covered with long pale fulvous hair. Mandibles rufous, black at the apex; the palpi blackish fuscous, darkest at the base; the subapical tooth straight and oblique at the apex. Thorax twice longer than broad, slightly narrowed in the middle; the base rounded with the edge irregular; the apex transverse, the sides above rounded; the sides of the median segment sharply denticulate; the outer edge of the pronotum is stoutly keeled above; the pleurae smooth, impunctate; the upper part of the thorax is covered with longish black hairs. Legs black; all the coxæ, trochan-

ters and femora, except at the apex, rufous; they are covered with longish white hair; the spines on the four front tibiæ are rufous, on the posterior black; on the tarsi they are rufous, and their basal joints are thickly covered with rufous, stiff pubescence. The basal segment of the abdomen is short and is much narrower than the second; underneath it is rufous, smooth below; the base of the keel obtusely dentate. On the base of the second segment are two irregular, broader than long, marks of silvery pubescence; the third segment is almost entirely covered with silvery pubescence; the pygidium is smooth and is fringed laterally with long silvery pubescence; the ventral segments are thickly covered with silvery hair.

Mutilla palaca, sp. nov.

Antennæ and head black; the thorax red; the abdomen blue, thickly covered with long white hair, without any bands of depressed pubescence; wings uniformly fuscous, with a slight violaceous tinge; the third transverse cubital completely, and the second recurrent nervure almost completely obliterated ♂.

Long: 9 mm.

Hab. Kuching, Sarawak.

Antennæ stout, black, covered with a pale pile; the third joint is slightly, but distinctly, shorter in length than the fourth. Head black, nearly as wide as the thorax; behind transverse, the edge of the occiput sharp and slightly raised above. Front and vertex shining closely punctured all over and covered with longish white hair. Clypeus largely depressed in the centre; the depression largest below, narrowed above; the apex raised and closely punctured. Mandibles bidentate; the apical tooth long and curved at the apex. Thorax entirely rufous, thickly pilose; the hair on the mesonotum fulvous, on the median segment longer and white. Pro- and mesonotum, with the scutellum closely rugosely punctured; the post-scutellum is bordered laterally by a keel and there is a short, less distinct, keel in the centre. Median segment reticulated; the central basal one is very broad at the base, the apex much narrowed; the areæ surrounding it are large. The upper part of the propleuræ is irregularly, indistinctly, punctured; at the apex is an elongated area, rounded below, which reaches to shortly below the middle.

Mesopleuræ closely punctured; the metapleuræ reticulated, smooth at the base. Legs black; the calcaria and spines pale; the hair dense, long and white. The second recurrent nervure is narrowed at the top, being there as wide as the space bounded by the first recurrent and the second transverse cubital nervures; the first transverse cubital nervure is straight and oblique; the second is curved and only slightly oblique. The first abdominal segment is broad at the base; below it is flat; its central keel does not project much and the part bordering it is irregularly punctured on either side of it. The last segment above is closely punctured, except for a smooth space in the middle at the apex; below, the apical half is stoutly keeled along the sides.

Agrees closely in colouration with *M. ilderda*, which may easily be separated from it by the keels on the front and vertex.

SCOLIIDÆ.

Scolia (Triscolia) aglana, sp. nov.

Long: 12 mm. ♂

Hab. Sarawak (Shelford).

This species is not unlike what I take to be *S. opalina* Sm., which has also been taken in Borneo by Mr. Shelford. The difference between the two may be expressed thus:—

The frontal area clearly defined bounded by a ridge behind, the hair on the head and thorax black; the median segment punctured throughout. *opalina*, Sm.

The frontal area not clearly defined, not bounded by a ridge behind; the hair on the head and thorax white; the median segment not punctured throughout, there being a wide smooth space on the inner side of the lateral lobe.

aglana, sp. nov.

Antennæ opaque, bare. Head strongly and closely punctured and thickly covered with long white hair; the middle of the clypeus smooth impunctate; there is no defined frontal area. Mesonotum closely and rather strongly punctured, less closely in the middle. The scutellum and post-scutellum are similarly punctured. The central region of the median segment is bounded by a distinct deep furrow and is punctured, if anything, more strongly than the mesonotum; the inner half of the outer lobe

is smooth and impunctate, the outer punctured. The pro- and basal part of the mesopleuræ, are closely punctured; the apical part is smooth in the middle; with a punctured band above and a wider one below. The metapleuræ smooth, with a punctured band round the top; the punctures are smaller than on the mesopleuræ. Wings fuscous, with a distinct, violaceous tinge and highly iridescent. Abdomen black, with a distinct violet iridescence; the hair is black above, white below; the punctuation is distinct. Legs black; the hair is long and white; the fore calcaria are pale; the spines on the fore tarsi rufous.

Scolia (Discolia) ergenna, sp. nov.

Black; the greater part of the clypeus, the pronotum broadly, the scutellum, except at the apex, the post-scutellum, the sides of the metanotum and the apex of the metapleuræ broadly, lemon-yellow, as is also the upper part of the mesopleuræ at the base; abdomen broadly banded with yellow; legs black; the four anterior tibiæ lined with yellow; wings hyaline; the radial cellules infuscated, the stigma and nervures dark rufous ♂.

Long: 13 mm.

Hab. Pankalan Ampat, Sarawak.

Antennæ black; the scape covered with white hair. Head thickly covered with long soft white hair. Except immediately below the ocelli, the vertex is closely punctured; the front ocellus is larger than the hinder pair and is placed in a deep pit; except above, the front is closely and strongly punctured, and has an oblique slope. The face has a smooth, flat keel in the middle and is sparsely punctured; the clypeus is roundly convex, sparsely, and distinctly, punctured; it is yellow, except at the apex, where there is a black line, which is roundly dilated above. The yellow bands on the thorax are broad and of equal breadth throughout; they are united above by a narrow yellow line on the hinder edge of the pronotum. Mesonotum thickly covered with short fuscous hair; the scutellum with longer paler hair. The median segment is thickly covered with long soft white hair; the black central part is depressed; the sides are broadly rounded and project slightly. Mesopleuræ thickly covered with long pale hair; the pro- and metapleuræ shortly pilose. Legs thickly covered with white soft hair; the calcaria black. Wings

hyaline; the radial cellules infuscated; the nervures dark rufous; the second transverse cubital nervure is broadly rounded above. Abdomen thickly covered with white hair; the apices of the basal three segments are broadly yellow; the black on the basal segment is triangularly produced in the middle; on the second it is squarely produced, the dilated part being more broadly and more distinctly separated; on the third the black band becomes gradually narrowed towards the apex; on the fourth and fifth the black bands are not dilated and extend to the middle; the apical three segments are entirely black.

Scolia (Discolia) patara, sp. nov.

Long: 17-19 mm.

Hab. Santubong, Sarawak.

This species comes very near to *D. thyatira* Cam. but the two are, I consider, distinct. *D. patara* is smaller, it wants the curved yellow marks on the top of the clypeus, there is no yellow mark below the antennæ, and the lower part of the radius is broadly rounded outwardly and does not form an angle with the upper abscissa.

Head black, the front, vertex and the upper half of the outer orbits narrowly orange-yellow; the front and vertex thickly covered with long pale fulvous hair; the face more sparsely with long black hair. The front and vertex strongly, the face, if anything, more strongly punctured, but not quite so closely; the clypeus is almost impunctate; the occiput is thickly covered with black hair. The orange band on the pronotum is narrowed behind, is broad, and covered with fulvous hair; the mesonotum is sparsely punctured and is thickly covered with short black hair; the scutellum is covered with long black hair except at the apex; the post scutellum is much more sparsely haired. The median segment is thickly covered with long black hair; as are also the pleuræ; the metapleuræ have also a pale pubescence. Wings uniformly fuscous-violet and moderately iridescent. Abdomen, except in the middle, thickly covered with black hair, smooth, shining, and, especially on the middle segments, bearing brilliant blue and violet tints, this being also the case with the ventral surface.

Scolia (Discolia) acutinerva, sp. nov.

Black; the apices of the basal four abdominal segments lined with yellow; the wings yellowish-hyaline, the cubital cellules with a more decided yellow tinge than the rest; the head and thorax covered with a pale golden pile and thickly with pale fulvous hair; the basal three segments of the abdomen have blue and violet tints and are fringed with pale fulvous hair; the hair on the apical segment is long, dense and black ♀.

Long: 23 mm.

Hab. Borneo.

Antennæ black, the scape shining and sparsely covered with long pale fulvous hair. The head, except on the ocellar region, is thickly covered with long pale fulvous hair; the vertex is more sparsely covered than the front; the vertex is shining and is strongly, but not closely, punctured; the front is impunctate and is furrowed down the middle. The clypeus is fringed above with long fulvous hair, is smooth above, the apex is irregularly, stoutly, longitudinally, striated; the extreme apex is depressed, smooth, and more or less piceous. The apices of the mandibles are piceous. The mesonotum is strongly punctured, except in the middle behind; the scutellum is, if anything, more strongly and closely punctured, except at the apex, which is smooth; the post-scutellum is more closely punctured. The golden pile on the median segment is dense, except laterally at the base, it is closely punctured. The golden pile on the pleuræ is very dense. Legs black, covered with fulvous hair. The long spines on the front tarsi are bright rufous; on the four hinder they are of a paler rufous colour; the tibial spines are pale yellowish; the calcaria are of a still paler yellow colour. The malar nervures are rufous; the transverse cubital nervure is sharply bent outwardly in the middle and projects there in a short branch. The abdominal segments are smooth, impunctate and are sparsely covered with long pale fulvous hair; the micaceous tints on the basal three segments are very distinct in certain lights; the hairs on the hypopygium are stout, stiff and black.

The clypeus is subtriangular and is broadly, roundly convex; its apex in the middle is transverse, its sides broadly rounded.

Comes near to *S. indica* Sauss. *sec.* Bingham. Characteristic is the peculiar form of the transverse cubital nervure.

Dielis borneana, sp. nov.

Black; the second and third segments broadly, and the others narrowly on the sides, red; the wings fuscous-violaceous, the apex without a violaceous tinge; the pile on the pygidium golden or rufous; the middle and apical segments of the abdomen fringed with rufous hair.

Long: 45 mm.

Hab. Bajong and Santubong, Sarawak.

Head; the vertex sparsely punctured; the ocellar region more sparsely punctured than the rest; the front is much more closely and strongly punctured and there is a smooth line down the middle. The face and clypeus closely punctured, except for a somewhat triangular large smooth space on the centre of the latter. The occiput is thickly covered with long black stiff hair; the vertex is almost bare; the front is covered with black hair, which has a rufous tinge; the face and clypeus are covered with shorter hair of a darker colour; the sides of the face are thickly covered above with silvery pubescence; the hinder orbits are covered with black hair and with silvery pubescence. Mesonotum strongly and closely punctured except for a smooth impunctate space behind the middle. The scutellum has a punctured, irregular band on the base and an irregular row of punctures before the apex. The post-scutellum is punctured at the base and there is an irregular row of punctures at the apex. The basal region of the median segment is closely and distinctly punctured, except broadly laterally at the base, and more narrowly down the centre; the apical slope is smooth, closely, minutely punctured above and at the sides. Propleuræ closely and rather strongly punctured, except behind; the meso-smooth; the middle thickly covered with black hair; the metapleuræ smooth and almost bare. Legs thickly covered with black hair; the hair on the hinder tarsi bright rufous. Wings fuscous-violaceous; the violaceous tinge absent from the apical portions, which are also lighter in tint; the stigma and nervures black, abdomen black; there are two large rufous marks on the second segment which are narrowed and rounded on the inner side;

the third segment is almost entirely rufous; the fourth and fifth segments are more or less rufous laterally; the apical fringe on the second and following segments is bright rufous; the pygidium is thickly covered with pale golden pubescence, which probably varies in tint.

Comes near to *E. luctuosa* Sm. and *E. 4 guttulata* Burm., but has the abdominal markings red, not yellow. *E. luctuosa* differs from it further in having the wings darker, more uniformly blue-violaceous in colour, in the scutellum and post-scutellum being much more strongly and broadly punctured, the punctuation on the former extending to near the apex, while the latter is strongly punctured at the base and apex.

POMPIDIDÆ.

Salius sostratus, sp. nov.

Black; the antennæ, head, pro- and mesonotum, with the scutellum ferruginous, and except the antennæ, thickly covered with golden pubescence; the legs entirely ferruginous; wings entirely flavo-hyaline, the stigma and nervures fulvous ♀. Long: 22 mm.

Hab. Sarawak, Borneo (Shelford).

Antennæ bare, uniformly ferruginous. Head ferruginous, densely covered with golden pubescence, the lower outer orbits black. The apex of the clypeus is depressed, clearly separated, smooth, bare and broadly rounded; the sides straight and oblique. The apex of the mandibles black, the rest ferruginous; the palpi ferruginous. The eyes distinctly converge above where they are separated by not much more than the length of the fourth antennal joint; the hinder ocelli are separate from the eyes by a slightly greater distance than they are from each other. Thorax black, the hinder half of the pronotum, the mesonotum and the scutellum ferruginous; and the whole is covered with a golden pile. The pronotum is furrowed in the middle: the mesonotum is broadly rounded at the base; it is alutaceous. The scutellum is flat, smooth and is not much raised above the top of the post-scutellum; the latter is broadly rounded from the top to the bottom; the sides of both have a distinct oblique slope (and more particularly the post-scutellum) so that both are narrowed on the top. The part at the sides of

the post-scutellum is strongly, but not closely, transversely striated. The median segment has a gradually rounded slope to the apex; the base and apex are smooth; the rest coarsely, irregularly transversely striated. Wings uniformly yellowish-hyaline, the apex not infuscated; if anything paler than the rest of the wing; the stigma and nervures yellowish; the first transverse cubital nervure is obliquely curved; the upper (longer) part has a more sharply oblique slope than the lower; the second is straight and oblique; the third is broadly rounded; the first recurrent nervure is received near the base of the apical third of the cellule, not close to the second transverse cubital nervure as in *Megnumia*; the first transverse cubital cellule is distinctly longer than the second above, but slightly shorter below; the second recurrent nervure is received at the apex of the apical fourth of the cellule. Legs uniformly ferruginous. Abdomen black; the last segment rufous all round and thickly covered with long rufous hair; the penultimate segment is covered with a golden pile.

This is a much more slenderly built species than *S. flavus*; and may be readily separated from it by the cubital cellules being more equal in length, by the pronotum not bulging broadly outwardly in the middle, not narrowed at the apex, by the median segment having a more gradually rounded slope and the head is shorter and more obliquely narrowed behind the eyes. Characteristic, as compared with most of the species of the *flavus* group, is the fact that the coxæ and trochanters are not black.

Salius iobates, sp. nov.

Claws with one tooth. Black, the abdomen with a bluish tinge; the antennæ rufous yellow, the scape and the apical four joints black; the basal half of the wings fuscous-violaceous; the apical yellowish-hyaline; the hinder wings entirely smoky violaceous. ♀.

Long: 24 mm.

Hab. Kuching, Sarawak.

Head black; the part between and below the antennæ testaceous; the clypeus with a brownish tinge; its apex rufotestaceous. Front and vertex alutaceous; the front distinctly

furrowed down the centre. Eyes distinctly converging above; at the top separated from each other by the length of the fourth antennal joint; the hinder ocelli are separated from each other by a less distance than they are from the eyes. Thorax velvety black, sparsely covered with long black hair; the scutellum not projecting much over the mesonotum; the post-scutellum has a lower elevation than it; its apical two-thirds have an oblique, straight slope; its centre is keeled. Median segment obscurely transversely striated. The dark part of the wings extends close to the first transverse cubital nervure and on the lower edge near to the apex; the base of the cubital cellule is blackish also; the second cubital cellule is distinctly shorter than the third above and below; the third transverse cubital nervure is obliquely narrowed towards the second on the upper half; the accessory nervure in the hind wings is interstitial. Legs black; the calcaria and spines black; the tooth on the base of the claws short and bluntly pointed. Abdomen black, with a distinct plumbeous-sericeous tinge; the anal segment thickly covered with long black hairs.

Macromeris aureopilosa, sp. nov.

Nigra, antennis subtus brunneis; capite thoraceque dense aureopilosis; alis flavo-hyalinis, apice fusco-violaceo, ♀.

Long: 13 mm.

Hab. Borneo.

Antennae slender, black above, brown below. Head densely covered with depressed golden pubescence and more sparsely with long silvery hair. Apex of clypeus broadly rounded. Mandibles black, broadly rufous near the middle; the base covered with silvery pubescence. Palpi testaceous. Thorax densely covered with depressed golden pubescence; the apex of the median segment transversely striated; the pleural tubercle nipple-like. Wings yellowish-hyaline; the apex from the second transverse cubital to the middle of the second recurrent nervure bright fuscous-violaceous. Legs long; the fore knees and tibiae testaceous; the tarsi are minutely spined; the hind spurs are not much more than one fourth of the length of the metatarsus.

Allied to *M. castanea* (Bingh.)

Pompilus citherus, sp. nov.

Black, marked with yellow; a mark on the apex of the mesonotum, two spots on the scutellum and the tegulae, yellow; wings yellowish-hyaline, the apices of both smoky; the second and third cubital cellules equal in length; legs black, marked with red and yellow; the four front tarsi annulated with yellow. ♂

Long: 11-12 mm.

Hab. Kuching, Sarawak.

Antennae reddish-brown, black above; the fifth and following joints dilated on the underside. Head, if anything, wider than the thorax, black; the face, the inner orbits broadly to near the ocelli, the clypeus, except for a broad black line in the centre above, the base of the mandibles broadly, and the outer orbits to the outer edge, yellow; the hinder part of the vertex and the occiput and cheeks thickly covered with long soft pale hair. The apex of the clypeus is broadly rounded; the labrum is two-thirds of its length and is black; the eyes are parallel; the ocelli are in a curve, the hinder are separated from each other by a slightly greater distance than they are from the eyes. The temples are narrow; the occiput transverse. Thorax thickly covered with silvery pubescence, black; a broad line on the hinder edge of the pronotum, a mark, broader than long, on the apex of the mesonotum, two oval marks behind the middle of the scutellum, tegulae and a small oblique mark over the middle coxae, yellow. The apex of the pronotum is broadly rounded; the scutellum is roundly convex, but not much raised above the level of the mesonotum. Median segment alutaceous, and thickly covered with longish pubescence. Legs black; the coxae and trochanters black, except at the apex of the anterior; the fore femora, except at the base, the middle and four posterior to near the middle, and the anterior tibiae entirely, red; the four anterior tibiae are yellow behind; the anterior tarsi yellow, black towards the apex; the middle black, with the four basal joints annulated with yellow; the hinder black; the spurs yellow. Wings yellowish-hyaline, the apices of both fuscous; the third cubital cellule is slightly shorter than the second; the first recurrent nervure is received near the base of the apical

fourth; the second shortly beyond the middle; the transverse basal nervure is interstitial; the accessory nervure in the hind wing is received shortly beyond the cubital. Abdomen densely pruinose; there are two large marks, wider than long on the base of the second segment, two marks on the base of the fourth, two larger marks on the base of the sixth and the whole of the seventh, yellow. The tibial and tarsal spines are yellow.

Allied to *P. vagabundus* Sm., which, *inter alia*, may be known from it by the second cubital cellule being twice the width of the third.

Pompilus iliacus, sp. nov.

Black, pruinose; the wings fuscous-violaceous; the first recurrent nervure is almost interstitial; the third cubital cellule at the top shorter than, at the bottom longer than, the second. ♀

Long: 13-14 mm.

Head wider than the thorax, the temples very narrow, the occiput transverse. Eyes large, distinctly converging above; the ocelli in a triangle; the hinder separated from each other by about the same distance they are from the eyes. Clypeus transverse at the apex in the middle; the sides broadly rounded. Prothorax large; the basal part distinctly separated all round; at the sides it projects broadly. Median segment broadly rounded from the base to the apex. Wings fuscous-violaceous, the posterior lighter in tint; the second cubital cellule at the top is distinctly longer, at the top distinctly shorter, than the third; the transverse basal nervure is almost interstitial, as is also the first recurrent (as in the *Salix-Mygminia* section); the second is received almost in the middle of the cellule; the accessory nervure in the hind wings is interstitial. Legs black; the tibial and tarsal spines black; the long spur of the hinder tibiæ does not reach to the middle of the metatarsus. Abdomen smooth; the last segment thickly covered with long black hair.

There is no transverse furrow on the second ventral segment; the meta-thoracic spiracles are large, raised and bordered behind by a furrow; the tibial and tarsal spines are long; the underside of the tarsi are thickly spined; the tarsal claws have a stout, sharp subapical tooth.

Comes near to *P. perpleurus* Sm.

Pompilus cariniscutis sp. nov.

Niger, facie, clypeo, orbitis oculorum, linea pronoti, scutello post-scutelloque flavis; pedibus rufo-fulvis; coxis, trochanteribus, femoribus apiceque tibiaram late nigris; alis flavo-hyalinis, apice violaceis. ♂

Long: 13-14 mm.

Hab. Borneo (Shelford).

Antennæ black; the scape yellowish beneath. Head black, sharpened, sparsely pilose; the face, clypeus, the inner orbits broad below, narrowed above and the outer more narrowly and uniformly, bright orange-yellow. The hinder ocelli are separated from each other by a slightly less distance than they are from the eyes, which converge slightly below. Mandibles orange-yellow, black at the apex. On the thorax there is a broad, interrupted line on the pronotum not extending to the tegulæ; a mark, wider than long, and with the sides at the base slightly projecting, on the hinder part of the mesonotum, a large mark on the scutellum roundly narrowed towards the base, where there is in the middle, a rounded point; at its apex and touching it, is a transverse line, which does not extend to its outer edge; and the top of the scutellum, all orange-yellow. The scutellum is broadly rounded above; the post-scutellum is slightly higher than it; it is more distinctly raised and separated; its top is keeled; the sides have an oblique slope. The median segment is opaque, and thickly covered with pale pubescence; it is, except in the middle at the apex, closely irregularly reticulated. Legs rufo-fulvous, the coxæ, trochanters, the femora to near the apex and the apical third of the hinder tibiæ, black. Wings, yellowish-hyaline; the apex of both wings violaceous, the first cubital cellule at the top is fully one-fourth longer than the second; the third transverse cubital nervure in the hind wings is interstitial.

The median segment has a gradually rounded slope; the inner spur on the hinder tibiæ is not half the length of the metatarsus; the basal segment of the abdomen is narrow at the base, becoming gradually wider towards the apex; the pronotum is rather short. The transverse median nervure is received in front of the transverse basal.

Belongs to the group of *P. multipictus* Sm., and the European *P. 4 punctatus*, Fab. Characteristic is the prominent, raised, keeled post-scutellum.

P. 4 punctatus, I may add, is found in Japan also.

Pompilus parmentis, sp. nov.

Niger, vertice, fronte, linea pronoti, scutello, post-scutello, macula mesonoto, linea abdominis segmento 2', maculaque segmento 7', flavis; alis flavo-hyalinis, apice fusco-fumato. ♂

Long: 12 mm.

Hab. Borneo (Shelford).

Antennae black, the scape for the greater part yellow. Head black, the face, front and the vertex, except behind, lemon-yellow; the ocellar region black; smooth, shining, almost bare. The eyes distinctly converge above, where they are separated by slightly less than the length of the third antennal joint. The apex of the clypeus is broadly rounded. Thorax black; a broad band on the centre of the pronotum behind, a large mark on the apical half of the mesonotum, its sides straight, its base irregular; and it is broader than long; the greater part of the scutellum (the mark obliquely narrowed laterally at the base), the post-scutellum and a line on the base of the second abdominal segment, lemon-yellow. The median segment is thickly covered with greyish hair; wings yellowish-hyaline; the apex is smoky, broader at the top, where the cloud extends to the second transverse cubital nervure; the second cubital cellule at the top is distinctly shorter than the first; the two transverse cubital nervures converging there; the transverse basal nervure is interstitial. Legs black; the tibiae and tarsi rufo-fulvous. The base of the second abdominal segment is lined with orange-yellow; the last segment above is broadly pale yellow.

Has the general colouration of *P. cariniscutis* here described; but is readily known from it by the flat post-scutellum and by the interstitial transverse basal nervure.

Pseudajenia reticulata, sp. nov.

Nigra, abdominis basi late femoribusque posticis rufis: alis fusco-violaceis, basi hyalinis ♀.

Long: 11-12 mm.

Front, face and clypeus covered with a silvery pile. Eyes distinctly converging above; at the top they are separated by twice the length of the second joint of the antennæ; the hinder ocelli are separated from the eyes by the same distance they are from each other. Clypeus rather short, broader than long. Palpi black. Thorax thickly covered with silvery pubescence; the central part of the mesonotum punctured and clearly separated from the lateral by a narrow furrow; the lateral parts are smooth, and the central part is more strongly punctured on the sides. Scutellum sparsely punctured; the post-scutellum shagreened. Median segment thickly covered with white pubescence; irregularly, closely reticulated. Meso- and metapleuræ closely, irregularly reticulated. Legs black; the hinder femora clear red; the tibiæ obscurely rufo-testaceous, the calcaria black. Wings fusco-violaceous, narrowly hyaline at the base; the third cubital cellule at the top shorter than the second, below about equal in length to it; the first recurrent nervure is received shortly behind the middle; the second at the apex of the basal third. Abdomen smooth and shining; the basal three segments ferruginous, the apical black and thickly pruinose.

Pseudagenia borneana, sp. nov.

Nigra, dense argenteo-pilosa; femoribus posticis rufis; alis fere hyalinis, nervis stigmatique nigris; flagello antennarum late rufo ♀.

Long: fere 12 mm.

Hab. Sarawak, Borneo (R. Shelford).

Antennæ black, the fourth and following joints rufous beneath. Head alutaceous; the lower part of the front, the face, clypeus and base of mandibles densely covered with silvery pubescence. The hinder ocelli are separated from the eyes by a slightly greater distance than they are from each other. The apex of the clypeus in the middle is smooth and shining; mandibles piceous near the middle; the apical joints of the palpi pale testaceous. Thorax densely pruinose; the pile has a fulvous tinge; the pronotum is broadly rounded; the propleuræ behind have two rounded, clearly separated, tubercles, the basal being

the larger. The median segment has a short, rounded slope; it is irregularly transversely wrinkled. The wings are hyaline, with a slight, but distinct, fulvous tinge; the first and second cubital cellules are equal in length above; the first recurrent nervure is received in the middle; the second at the apex of the basal third of the cellule; the accessory nervure in the hind wings is interstitial. Legs black; the hinder femora entirely and the four anterior tibiæ and base of tarsi rufous in front. Abdomen pruinose; the basal segment is triangular, and becomes gradually wider from the base to the apex, and without a neck at the base.

This species comes near to *P. tincta*. Sm., *sec.* Cam., Manch. Mem. 1891, p. 441. That species may be known from it by its head and thorax being densely pilose, by the first cubital cellule being distinctly shorter than the second above; by the apex of the propleuræ not being so distinctly bituberculate, and by the first transverse cubital nervure being roundly curved, not straight, as in the present species.

Agenia balteata, sp. nov.

Nigra, scapo antennarum, clypeo, mandibulis, pedibusque pallide testaceis; femoribus, tibiis tarsisque posterioribus nigromaculatis; alis hyalinis; stigmatibus nigro, nervis fuscis ♀.

Long: 11 mm.

Hab. Kuching, Sarawak, and Singapore.

The basal two joints of the antennæ rufo-testaceous; the third joint dark testaceous; the fourth, fifth and sixth joints dark testaceous beneath. Head black; the clypeus, mandibles, and lower inner orbits yellowish testaceous; the palpi at the base testaceous, the apical joints pale yellow; the hair bundle long and dark testaceous. The front is thickly covered with a golden pile and has a narrow furrow down the middle. The eyes distinctly converge above and are separated there by the length of the third antennal joint. Thorax thickly covered with golden pubescence; the prothorax yellowish-testaceous. Legs yellowish-testaceous; the four hinder trochanters, the middle femora with an irregular line above, the apex of the hinder femora, the apex of the middle tibiæ, the apical two-thirds of the hinder tibiæ, the apex of the fore tarsi and four posterior, except at the

base, black. Wings clear hyaline; the stigma black, the nervures paler. Abdomen black; the apices of all the segments testaceous; the last segment almost entirely testaceous.

This is an *Agenia* as now limited. The species recorded by Smith from the Malay and Indian regions are probably mostly referable to *Pseudagenia*, Kohl. The distinction between the two consists in *Agenia* having a bundle of stiff bristles at the base of the maxilla in the ♀.

SPHEGIDÆ.

Ampulex striatifrons, sp. nov.

Dark green, largely tinged with blue; the flagellum of the antennæ black; the wings hyaline; the radial cellule and the space bounded by the first and third transverse cubital nervures and the discoidal cellule smoky; the front with three stout, longitudinal keels; the space bounded by them is transversely striated ♂.

Long: 12 mm.

Hab. Kuching, Sarawak.

Antennæ black, covered with a pale pile; the scape with hardly any metallic tint. Head blue, the ocellar region largely tinged with purple; the three keels in the front are stout and all reach to the base of the mandibles; the part between them, from near their top, bears stout, oblique striæ; the part on their outer side at the top bears some large punctures; the vertex is sparsely and strongly punctured. The front ocellus is separated from the hinder by a greater distance than these are from each other, and the latter are separated from the eyes by a distinctly greater distance than they are from each other. Clypeus distinctly keeled in the middle, green, smooth and thickly covered with white pubescence. Mandibles brownish-black; their middle, on the lower side, with a row of large punctures. Prothorax elongate, the base distinctly narrowed; it is sparsely punctured and the middle of the pleuræ bears a longitudinal furrow. The central part of the mesonotum is strongly and deeply punctured; the sides are more sparsely punctured, are coppery in colour and are depressed behind. Scutellum and post-scutellum sparsely punctured. Median segment irregularly transversely striated;

the striæ are more widely separated in the centre; the second keel does not reach to the apex. The apical slope is thickly covered with white hair; the striation is close and obliquely transverse; the upper lateral teeth are small. The mesopleuræ are distinctly, but not closely, punctured; the upper part of the metapleuræ is stoutly striated. Legs for the greater part blue; the femora more greenish in tint than the tibiæ; the inner tooth of the claw is shorter and stouter than the outer. Wings hyaline, the radial cellule, the space bounded by the first and third transverse cubital nervures and the upper part of the discoidal are smoky; the three transverse cubital nervures are distinct. Abdomen largely marked with blue and purple tints; the third segment is largely marked with rosy and brassy tints; it is strongly punctured; its apical half is distinctly depressed, is more fiery in tint than the base and is more closely and not so strongly, punctured.

Comes near to *A. sodalicia*, Kohl. from Malacca.

Tachytes borneana, sp. nov.

Black; the head and thorax densely covered with pale silvery pubescence; the abdominal segments banded with silvery pile; the pygidium covered with golden pubescence; wings hyaline, with a faint yellowish tinge; the nervures pale testaceous; the second and third cubital cellules at the top equal in length ♀.

Long: 13 mm.

Hab. Kuching, Sarawak.

Antennæ black, covered with a pale microscopic pile. Front, face and clypeus densely covered with silvery pubescence and more sparsely with long pale hair; the vertex sparsely with long pale hair; alutaceous; the lower part of the vertex has a narrow furrow in the middle, which ends, above the ocelli, in a smooth depression. Mandibles black; the palpi testaceous. The basal portion of the median segment has a thin furrow down the middle, which becomes conically dilated at the apex; the furrow on the apical slope is wide and deep. The second and third cubital cellules are equal in length above; they are as wide there as the space bounded by the two recurrent nervures. Legs black; the front tarsi testaceous at the apex; the calcaria

testaceous; the tibial and tarsal spines white. The abdominal segments are banded with depressed silvery pubescence; the pygidium is covered with bright golden pubescence.

The radial cellule has the apex rounded, not acute; the eyes above are separated by not quite the length of the second and third antennal joints united; and there is no appendicular cellule in the fore wings. Comes near to *T. nitidula* F. and *T. rothneyi* Cam., from both of which it may be known by the golden pile on the pygidium.

Notogonia umbripennis, sp. nov.

Black, covered with silvery pubescence; the pygidium with a stiff golden pile; the wings fuscous-violaceous ♀.

Length 14-15 mm.

Hab. Kuching, Sarawak.

The lower part of the front and the clypeus thickly covered with silvery pubescence; the front and vertex closely and minutely punctured; the centre of the face has an impressed line; the clypeus is smooth, shining and bare. Eyes large, distinctly converging above, where they are separated by about the length of the fourth antennal joint. The base of the mandibles is thickly covered with silvery pubescence; the palpi are black and covered with a grey pile. The mesonotum is depressed in the middle at the base; and there is a short longitudinal furrow opposite the tegulae. Median segment alutaceous; there is a narrow keel down the centre of the basal two-thirds; above the middle of the mesopleuræ is a distinct striated longitudinal furrow, which does not reach to the apex. Wings fuscous-violaceous; the second and third cubital cellules above are equal in length; the recurrent nervures are received close to each other near the apex of the basal third of the cellule. Legs stout; the apex of the hinder tibiæ and the metatarsus covered with a golden pile; the spines on the tibiæ and tarsi are black, as are also the calcaria. Abdomen pruinose; the segments banded with silvery pile; the pygidium densely covered with bright golden pile and thickly with long stiff fulvous hair. The sides of the median segment are obscurely obliquely striated.

Comes nearest perhaps to *N. jaculatrix* Sm. from which it may be known by the dark violaceous wings.

Notogonia tegularis, sp. nov.

Black, densely covered with silvery pubescence; the wings hyaline, highly iridescent; the apex slightly smoky; the mesonotum and scutellum closely minutely punctured; the median segment obscurely transversely striated; the base with a longitudinal keel ♂.

Long: 9 mm.

Hab. Kuching, Sarawak.

Front, face and clypeus densely covered with silvery pubescence, this being also the case with the outer orbits and the base of the mandibles; the eyes distinctly converge above, where they are separated by almost the length of the second and third joints united. Thorax covered with a silvery pile; the mesonotum and scutellum are closely, minutely punctured, the latter more strongly than the former. The post-scutellum is depressed in the middle. Median segment alutaceous; the basal half transversely striated, but not strongly or closely and keeled down the middle. The mesopleuræ closely and distinctly punctured; on the basal half, in the centre, is a distinct longitudinal furrow; the basal half of the mesopleuræ longitudinally striated in the middle, the striae longest in the middle. Legs black, pruinose; the spines on the tibiæ are pale, on the tarsi rufous. Wings hyaline, highly iridescent, somewhat infuscated at the apex; the second and third cubital cellules at the top are about equal in length and are of the length of the space rounded by the two recurrent nervures, the outer of which is received in the middle of the cellule; the appendicular is longer than usual. Abdomen shining; the segments banded with silvery pubescence; the last segment entirely covered with silvery pubescence. The first transverse cubital nervure is broadly and roundly curved and is not angled. The tegulæ are black at the base, pale testaceous in front.

Cerceris crassilens, sp. nov.

Black, the basal four or five abdominal segments rufous; the antennal keel, a mark on the apex of the clypeus and the base of the mandibles, pale yellow; the wings smoky violaceous, paler at the base; the lower part of the mesopleuræ projecting into a stout tooth ♀.

Long : 18-19 mm.

Hab. Pankalan Ampat, Sarawak.

Antennæ stout, black, the apex rufous. Head black; the outer part of the antennal keel pale yellow; it is longish, stout and has a narrower keel on its apex; the face, cheeks and clypeus are thickly covered with silvery pubescence; except behind the ocelli it is closely and somewhat strongly punctured. Mandibles black; the basal half broadly yellow; behind the middle above they project upwards into a large, smooth shining, bluntly pointed tooth. Thorax densely covered with silvery pubescence; above closely and distinctly punctured, the punctures in the middle of the mesonotum running into longitudinal striations. The scutellum is slightly depressed in the middle; the area on the median segment is longitudinally striated. Legs black, covered with a silvery pile; the four hinder tibiæ are broadly lined with pale yellow behind. The wings are dark smoky, the base and the discoidal cellule paler; the hinder wings are almost hyaline except at the apex. Abdomen red, the apical two segments for the greater part black above; it is smooth, with the petiole and the penultimate segment sparsely punctured. The pygidium is closely punctured, reticulated; the sides of it are fringed with stout stiff hairs; the oblique sides of the segment are sparsely punctured; the apical half of the epipygium is incised in the middle; the incision is distinctly bordered, is rounded and obliquely narrowed behind; the segment at the base is depressed on either side.

In colouration this species is not unlike *C. viligans* Sm. and *C. sepulcralis* Sm., but may be easily separated from them by the stout projecting tooth on the mesopleuræ. The head is large and is well developed behind the eyes; the apex of the clypeus is depressed and is bluntly and shortly tuberculated in the middle and at the sides, the basal half of the petiole is keeled in the middle; the second cubital cellule on the lower side is distinctly shorter than the third.

Cerceris latidens, sp. nov.

Black; the inner lower orbits, the base of the mandibles, the sides of the scutellum, the post-scutellum, the apex of the petiole and an interrupted line on the apex of the third segment,

yellow; the apex of the clypeus bidentate; the area on the median segment obliquely striated; the wings hyaline, with a smoky fascia on the apex ♀.

Long: 7 mm.

Hab. Kuching, Borneo.

Antennæ black, the scape yellow, the flagellum brownish beneath. Front and vertex closely punctured, except over each antennæ; the antennal keel is stout, yellow, black above; the face is sparsely punctured, as is also the clypeus, except at the apex, which is bidentate; the teeth are broad and slightly oblique at the apex. Mandibles broadly yellow at the base. Mesonotum punctured, but not closely or deeply, as is also the median segment; the scutellum is more closely punctured. The area on the median segment is obliquely striated, except in the centre. Mesopleuræ reticulated, more strongly and distinctly below than above; the centre is deeply furrowed. Legs black; the anterior and middle tibiæ in front, the anterior tarsi, and the base of the middle tarsi, pale yellow. Wings clear hyaline, the radial cellule at the apex and the upper part of cubital below it dark smoky; the petiolated cellule is distinctly shorter than the following and receives the recurrent nervure at the apex of the basal third. The apex of the petiole, the base of the second segment and an interrupted line on the third segment are yellow; the pygidium is brownish, smooth at the base, punctured at the apex; the sides are strongly punctured; the epipygium is broadly depressed.

There is a stout, curved keel on the lower part of the metapleuræ in the middle; the lower part of the clypeus, under the projecting toothed part, is bluntly bidentate; the apex of the mandibles is bluntly rounded.

VEPIDÆ.

Icaria latebaltcata, sp. nov.

Dark ferruginous, variegated with black and yellow; the petiole short, wide, narrowed distinctly at the base; rufous, its apex broadly yellow; the apex of the second segment broadly yellow, much broader in the middle than at the sides; wings hyaline, the radial cellule dark smoky, except along the lower

edge; the stigma dark, the nervures of a lighter fuscous colour (worker).

Long: 9-10 mm.

Hab. Kuching, Sarawak.

Scape of antennæ yellow, dark testaceous above, the flagellum blackish, brownish at the base and apex beneath. Head dark ferruginous, thickly covered with silvery pubescence, the vertex sparsely with fuscous hair; the lower inner orbits to near the inner part of the incision; the sides of the clypeus broadly, its apex more narrowly, a line on the outer orbits near the top, another one below and the base of the mandibles broadly above, pale yellow. The front and the vertex to the end of the ocelli are distinctly, regularly, but not very closely, punctured; the clypeus is sparsely punctured, more especially noticeable on the dark central part. The meso- and metapleuræ are black, the metanotum dark rufous; the rest of the thorax rufous, with the following parts yellow: the base of the prothorax all round and broadest on the top of the pleuræ, a large mark on either side of the base of the scutellum, a broad band, incised in the middle, on the base of the post-scutellum, two large marks on the apical slope of the median segment, and a longish mark on the mesopleuræ below the tegulæ. The pro- and mesothorax with the scutellum are closely and distinctly punctured; the median segment is almost impunctate; its central furrow is wide, with oblique sides; its upper two-thirds irregularly transversely striated. Legs dark rufous; the anterior coxæ broadly, the apex of the femora (the anterior broadly) and the base of the tibiæ broadly, yellow. Wings clear hyaline, the apex of the costal and the radial cellules, except on its lower edge, smoky; the costa and stigma blackish; the nervures pale. The petiole is not quite so long as the second segment; its basal third is narrowed; the second segment is not narrowed at the base, is bell-shaped, its length greater than its width at the apex and it is closely and distinctly punctured, more closely and rugosely at the base than at the apex; the following segments are lined with yellow at the apex.

Comes near to *I. ferruginea*, but is smaller, and darker coloured; the clypeus is broadly black in the middle, the radial cellule entirely black above, not broadly hyaline at the base; the

stigma black, not clear testaceous, and the band on the second segment is broadly dilated backwards in the middle.

Icaria flavo-bilineata, sp. nov.

Black, the post-scutellum and the apex of the petiole yellow; the apex of the clypeus broadly pale yellow; wings hyaline, a fuscous spot in the radial and apical cellules; the stigma yellowish. Long: 13 mm. (worker).

Hab. Kuching, Sarawak.

This species comes near to *I. lugubris* Sm. *Sec.* Saussure, S. E. Z. XXIII, p. 134, which is also from Borneo. The two may be separated as follows:

The cloud occupying all the radial cellule, the second transverse cubital nervure almost interstitial, the post-scutellum and apex of petiole not yellow, the stigma black. *lugubris* Sm.

The cloud in the radial cellule commencing at the end of the stigma, the stigma yellow; the second recurrent nervure not interstitial; the post-scutellum and apex of petiole lined with yellow. *flavobilineata*.

Flagellum of antennæ brownish beneath. Front and vertex alutaceous, sparsely punctured, there is a narrow keel between the antennæ; clypeus covered with a sparse pale down, sparsely haired, and roundly convex; its middle at the apex not distinctly toothed; it has the narrowed apical part pale yellow. Mandibles black, the teeth dark piceous. Thorax opaque; the mesopleuræ and scutellum closely and distinctly, but not strongly, punctured; the mesonotum is thickly covered with a fuscous down; the base of the prothorax is sharply keeled. The scutellum has a shallow furrow down the middle. The striation on the median segment is obscure. Legs black, pruinose; the calcaria and claws white. Wings hyaline; the costal cellule is slightly smoky; the cloud in the radial cellule is at the end of the stigma and at the second transverse cubital nervure and extends to the apex; in the cubital cellule it does not extend beyond the end of the radius; the recurrent nervures are received shortly behind and beyond the middle of the cellule. Abdomen black, densely pruinose, more thickly towards the apex; the apex of the petiole is yellow.

The middle of the median segment has only a shallow indistinct furrow, not a deep one, with oblique sides as in *lugubris*; the apex of the median segment is yellow, the yellow band extending sideways over the coxæ; the petiole is short, becomes gradually wider from the base to the apex; the second segment is not much, nor abruptly narrowed at the base; in length it is, if anything, shorter than its greatest width; the clypeus at the end of the eyes is as broad as its length.

Icaria xanthopoda, sp. nov.

Black, largely marked with yellow; two small marks on the apex of the petiole and two large ones, extending on to the ventral surface, on the base of the second segment; the legs yellow, the posterior trochanters and the base of the femora, black; wings hyaline, the stigma and nervures brownish (worker).

Long 11 mm.

Hab. Borneo (Shelford).

Antennæ brownish, marked above with black. Head black, the clypeus, the mandibles, except their teeth, the eye incisious entirely (the yellow mark is straight and oblique on the outer-side), a large mark, narrowed below, and ending in a sharp narrowed point above, and the outer orbits, bright sulphur-yellow; behind the ocelli are two small yellow marks. The clypeus is wider than long; its sides above are roundly curved; its apex does not end in a sharp tooth. Thorax black; the edge of the prothorax all round and broadest on the pronotum, two lines on the centre of the mesonotum, two large squarish marks on the base of the scutellum, two broad ones, narrowed and rounded on the inner side, on the post scutellum, the sides of the median segment largely, and a large mark, obliquely narrowed below on the mesopleura, orange-yellow. Abdomen black; a mark on the sides of the post-petiole, two large marks on the base of the second segment, continued on to the ventral surface, which has the basal half yellow; a narrow line on the apex on the second segment all round and the apical segment, orange yellow.

The petiole is not quite so long as the second segment; its basal fourth is greatly and distinctly narrowed compared to the enlarged apical part; the second segment is bell-shaped; its apex about two-thirds of the total length; the base of the pro-

thorax is sharply keeled; the third cubital cellule is of the same width above as below; the third transverse cubital nervure is parallel with the second, and both are roundly curved inwardly.

Ischnogaster flaviplagiatus, sp. nov.

Ferruginous brown, the clypeus, eye orbits, two marks, obliquely narrowed, on the base of the scutellum, the pleuræ and the apical half of the median segment, pallid yellow; the wings clear hyaline, the stigma testaceous, the third cubital cellule not half the length of the second, the fourth at the top as long as the third. ♀

Long: 13-14 mm.

Hab. Kuching, Sarawak.

Antennæ ferruginous, the flagellum darker in the middle above. Head smooth; the front and vertex covered with silvery pubescence; the clypeus with longer fuscous hair. The lower part of the clypeus is ferruginous, the upper yellow. Mandibles yellow, their apex black. The inner orbits and the eye incisions yellow. Thorax smooth and shining, thickly covered with glistening white hair. The base of the median segment is darker coloured than the mesonotum; it is smooth and is distinctly keeled down the centre. Wings clear hyaline, highly iridescent; the stigma clear testaceous; the nervures darker; the second cubital cellule is more than twice the length of the third, which, at the top, is as long as the fourth; the second and third transverse cubital nervures are straight and converge above; the first recurrent nervure is received quite close to the first transverse cubital; the second at fully twice the distance from the second; the second recurrent nervure is slightly and roundly bent outwardly in the middle. Legs paler in tint than the body, and thickly covered with pale hair. Abdomen coloured like the thorax, the segments mottled with pallid yellow; there is a distinct pale yellow mark on the base of the second segment at the sides and a large one on the side of its ventral surface; the extreme base of the narrowed neck is also yellow. On the mesopleuræ under the tegule is a mark which reaches to the middle; below the middle is a large curved yellow mark.

Comes near to *I. nitidipennis* Sauss. *Sec.* Bingham.

Ischnogaster nigricans, sp. nov.

Black; a line on the pronotum, a broad one on the post-scutellum, one below the tegulæ and two small ones on the apex of the median segment, yellow; the four front tibiæ yellow behind; the wings clear hyaline, iridescent, the stigma and nervures black. ♀.

Long. 12 mm.

Hab. Kuching, Sarawak.

Head entirely black; the face and clypeus thickly covered with silvery pubescence; opaque, closely, but not very strongly, punctured, the clypeus less strongly punctured; the apical tooth bluntly pointed. Thorax black, covered with silvery pubescence; the scutellum with long pale hair. Mesonotum, scutellum and median segment closely and distinctly punctured; the median segment with a distinct, narrow, deep furrow down the centre, which is widened and smooth at the apex. A line on the pronotum, a mark under the tegulæ, the post-scutellum broadly and two marks on the apex of the median segment, yellow. The second and third transverse cubital nervures are straight, slightly oblique and converge slightly above; the fourth cellule at the top is two-thirds of the length of the third. All the knees are yellow, the four front ones broadly; there is a black line on the yellow, near the base of the middle tibiæ. Abdomen entirely black; the petiole twice the length of the thorax; the base of the second segment is widely narrowed.

Ischnogaster ornatifrons, sp. nov.

Black, largely marked with yellow, the antennæ brownish, black above, except at the sides of the median segment with a large yellow mark dilated at the apex; the wings hyaline, the radial and two apical cubital cellules infuscated. ♀.

Long: 22 mm.

Hab. Santubong, Kuching, Sarawak.

Head black, the front, except for a small black mark in the middle above, the clypeus, the mandibles, a small oblique mark on the outer side of the antennæ, one in the eye incisions and a small one on the hinder edge of the vertex, yellow. The front is distinctly, but not closely, punctured and is furrowed in the

middle, deeply and distinctly above. Thorax shining and smooth; the mesonotum more opaque and closely punctured; the scutellum is more sparsely punctured, and has a narrow keel on the basal half. The following are yellow:— a broad line on the pronotum, two large marks, rounded behind, on the base of the scutellum, a broad band, almost interrupted in the middle, on the post-scutellum, a large broad band, widened below, on the sides of the median segment, half on the metanotum, half on the pleuræ, a large oval mark below the tegulæ and a large curved mark on the lower side of the mesopleuræ. Wings hyaline, the radial and the apical two cubital cellules smoky; the second transverse cubital nervure is slightly, roundly bent outwardly, the fourth cubital cullule is half the length of the third. The front legs are yellow, lined with black in front; the apical joints of the tarsi are brownish; the middle legs are brownish-black; the base of the tibiae, their apex more broadly and the base of the tarsi more narrowly, yellow; the four hinder coxæ are broadly yellow behind. Abdomen black; a large oval mark near the middle of the second segment below; a short line on the sides of the ventral surface, a band near the base of the third segment broadest on the sides, a mark on its ventral surface, rounded on the outer side, a smaller one on the fourth and a narrow line on the fifth dorsal segment, yellow.

Ischnogaster fulvipennis, sp. nov.

Black, with small yellow marks: the clypeus with two marks above and one in the centre below and two small marks on the apex of the median segment; the legs and petiole dark rufous; wings fulvous: the stigma testaceous; the second transverse cubital nervure is roundly curved; the fourth cubital cellule is fully half the length of the third. ♀

Long: 23 mm.

Hab. Mt. Penrissen, Sarawak.

Antennæ black, the scape and apical joints brownish beneath, the apical joints entirely so. Head black; an irregular mark roundly narrowed below and ending in a joint, on either side of the front, a longish mark on the upper half of the face, narrowed and curved above, and there is a longish broad mark on the centre near the apex, extending to the base of the tooth and

yellow. The lower part of the vertex is sparsely and distinctly punctured; the front is more closely and not so strongly punctured, except in the middle where it is smooth; almost bare and impunctate. Mandibles black, sparsely punctured and shining. Thorax smooth and shining, except on the mesonotum which is closely and distinctly punctured; the scutellum is less strongly punctured and has a narrow keel in the middle; both are thickly covered with fulvous hair. Median segment and pleuræ smooth and shining; the pleuræ have a plumbeous hue. On the thorax the following are yellow: a line on either side of the base of the pronotum, an irregular spot on either side of the base of the scutellum, two smaller spots on the base of the post-scutellum in the centre, two small marks on the apex of the median segment, a spot about three times longer than broad on the mesopleuræ in the middle below the tegulæ, and a curved mark below the furrow, this spot having the apex narrower and more oblique than the base. Legs dark rufous, probably varying in tint; the coxæ, tibiæ and tarsi are darker coloured than the femora; the hair is long and fuscous. Wings fulvous-hyaline, darker at the apex; the stigma is testaceous, the nervures fuscous; the second transverse cubital nervure is roundly curved outwardly; the fourth cellule is fully half the length of the third. The petiole is brownish, the node black above except at the base; there is an oval, small yellow mark on either side of the second segment below, and two elongate marks on the base of the third, with a small spot on either side. There are two obscure yellow marks on the base of the median segment.

The ♂ is more richly coloured than the ♀ the yellow markings being larger and the rufous colour of the legs and petiole much brighter in tint. The front is yellow, except for a black line in the centre, the clypeus entirely yellow; the mandibles are dark testaceous; the marks on the thorax are larger, especially the upper mark on the mesopleuræ and on the base and apex of the median segment. The petiole is almost twice the length of the rest of the abdomen; the rufous colour extends to the narrowed part of the second segment, the lower half of the clypeus is keeled in the middle, the tubercle on the propleuræ is large; there is a narrow striated band on its apex, and a broader, oblique one below its middle.

One of the largest of the Oriental species.

Ischnogaster flavolineata, sp. nov.

Black, largely marked with yellow; two small marks on the lower part of the front, one on either side of the ocelli behind, two lines on the mesonotum, the basal half of the scutellum, the post-scutellum and the median segment, except a squarish black mark on the base, yellow; legs pale yellow, the apical half of the tibiae and of the tarsi black; wings clear hyaline; the fourth cubital cellule not much more than half the length of the third. ♀.

Long: 17 mm.

Hab. Lingga, Sarawak.

Antennae black, the apical joints of the flagellum brownish beneath. Head black; a curved mark on the vertex behind the ocelli and touching the eyes and obliquely narrowed towards the apex, the eye incisions, an ovate transverse mark over each antennae, the lower orbits broadly, the sides and apex of the clypeus, the outer orbits and the mandibles, pallid yellow. The vertex is obscurely, the face somewhat more strongly, punctured. Clypeus is smooth; its sides are covered with long silvery pubescence; the apical tooth is clearly separated, twice longer than broad, and its apex is slightly incised; the black mark has its sides at the apex prolonged, the part between them at the base being also separated. The upper edge of the pronotum is yellow, as is also the lower half of the propleurae. Mesonotum black, except for two lines on the basal half, these being dilated on the outer side at the base. The yellow mark on the scutellum is dilated laterally. Post-scutellum yellow, its apex black. Pleurae yellow, slightly streaked with fuscous; the median segment yellow, except for an irregularly squarish black mark at the base. Legs yellow; the hinder trochanters, the under side and base of the hinder femora, the basal two-thirds of the hinder tibiae and the four apical joints of the hinder tarsi, black. Wings clear hyaline, the stigma testaceous, the nervures fuscous; the fourth cubital cellule is half the length of the third; the third transverse cubital nervure is straight and slightly oblique; the second is slightly, but distinctly, roundly curved on the lower half. Abdomen black, thickly covered with longish pale

hair; there is a clear yellow band at the base of the dilated part of the petiole, a narrower one at the base of the second segment, a large oblique mark on either side of its middle, a narrow longitudinal line in its centre, and the apices of the other segments narrowly, yellow. The black on the abdomen has a brownish tinge.

EUMENIDÆ.

Montezumia? forticeps, sp. nov.

Black; the clypeus, the underside of the scape, two oblique lines on vertex, a large mark, narrowed below on the outer orbits; the pronotum broadly, two lines on the mesonotum, two marks on the scutellum, two lines on the post-scutellum, the sides of the median segment broadly, a line on the side and apex of petiole, two lateral marks on the second abdominal segment and the apices of the second, third and fourth segments, yellow; the wings fuscous-hyaline, with a fulvous tinge. ♀.

Long: 21 mm.

Hab. Mt. Matang, Sarawak.

Antennæ black; the scape largely yellow below. Head largely developed behind the eyes; closely punctured, the front more closely and strongly than the vertex; the eye incision less closely punctured than the vertex; above the antennæ is a small, somewhat conical mark, which is smooth and furrowed in the middle, except above. Clypeus distinctly broader than long; sparsely but distinctly, punctured; its apex is narrowly black; the sides of the incision are oblique and project at the apex. The marks on the pronotum become roundly dilated on the outer side and do not quite reach to the middle; the two lines on the mesonotum are in the middle following the parapsidal furrows and are about equal distance from the base and apex. The two marks on the scutellum do not quite reach to the middle and are broader than long. The two marks on the median segment extend on the inner side to the edge of the furrow and are roundly narrowed on the inner side above. There is a yellow mark on the mesopleuræ, longer than broad, below the base of the front wings. Pro- mesonotum and scutellum closely punctured; the mesonotum less closely and strongly at the sides. The parapsidal furrows commence shortly beyond the middle. The

median segment is closely and strongly punctured at the base; the apical furrow is wide, becomes gradually wider towards the apex and is keeled down the middle; its apical slope is oblique. The second cubital cellule is narrowed at the top, the nervures almost touching there; both are straight and oblique; the first recurrent nervure is received distinctly behind the middle; the second close to the second transverse cubital, almost interstitial. Legs black; the fore femora are yellow at the apex; the four hinder are rufous below and probably in some examples above. Abdomen black; the apices of the basal four segments yellow; there is an oval oblique mark on either side of the second segment at the base. The petiole is nearly as long as the second segment; it is stout, with the basal third distinctly narrowed; it is distinctly, but not very closely, punctured; the second segment is alutaceous.

The generic location of this species is doubtful. It has 3- and 6-jointed palpi as in *Zethus*, and it has further the head largely developed behind the eyes as in that genus and thereby differs from *Eumenes*. The petiole is shorter and stouter than it is in the typical *Zethus* and also the second segment is not contracted at the base into a neck. The form of the cubital cellules is different from what they are in *Eumenes* and more like what they are in *Zethus*. It is not a typical *Montezumia* either, although it has certainly some affinity to that genus, which has five jointed maxillary palpi. I leave it, in the meantime, in *Montezumia*, which is, strictly speaking, an American genus.

Zethus varipunctatus, sp. nov.

Black; the upper side of the mandibles and a large mark on the apex of the clypeus, yellow; the scape of the antennae, the tegulae and the legs rufous; the hinder tibiae and tarsi blackish; wings fuscous-violaceous towards the apex; the apex of the clypeus broadly rounded, not dentate ♀.

Long: 17 mm.

Hab. Kuching, Sarawak.

Head thickly covered with short pale pubescence, rugosely punctured, the punctures running into reticulations on the front. Clypeus roundly convex; its greatest width greater than its greatest length; closely and distinctly punctured, but not so

coarsely as the front; its apex broadly rounded. The scape of the antennæ is broadly rufous below; the apical joints are brownish beneath. Thorax entirely black covered with a pale pile; the mesonotum and scutellum more thickly with longer pale pubescence. Mesonotum closely rugosely punctured; the punctuation sparser towards the apex; the two furrows are indistinct at the base, being confounded with the punctuation. Scutellum strongly punctured and with a narrow furrow in the middle; the post-scutellum is, if anything, more rugosely punctured; its apex is opaque, alutaceous. The median segment is opaque, alutaceous, keeled down the centre and at the sides; above it is obscurely striated. Propleuræ smooth, the upper part at the base striated. Mesopleuræ closely, rugosely punctured; the basal and apical slopes smooth. Metapleuræ strongly punctured, except for a large oblique space on the base and apex. Petiole closely and uniformly punctured; the base rufous, smooth. Legs bright rufous; the hinder tibiæ and tarsi infuscated.

This does not appear to me to be the ♂ of *A.-dentatus*, as apart from the difference in colouration, there are structural differences between them not of a sexual nature. The two may be separated thus:—

The furrow at the base of the scutellum with five stout keels; the metapleuræ coarsely punctured and striated throughout. *A.-dentatus*.

The furrow at the base of the scutellum with eight short keels; the metapleuræ sparsely punctured above, smooth below. *varipunctatus*.

Odynerus cilicius, sp. nov.

Black, largely marked with yellow; the median segment yellow, except in the middle, a dagger-shaped line on the front, a mark on either side of the ocellar region and two oblique large marks on the mesopleuræ, yellow; wings hyaline; the radial cellule and the cubital nervures in front dark smoky ♀.

Long: 12-13 mm.

Hab. Kuching, Sarawak.

Front distinctly, but not very closely, punctured, the vertex almost impunctate. The mark on the front is narrowed in the

middle and obliquely narrowed above; the eye incision, the inner orbits narrowly, and the outer orbits more broadly, yellow. Clypeus yellow, smooth, obscurely punctured at the apex: its greatest length is slightly greater than its greatest breadth: the apical incision is wide and shallow. The scape is yellow, the flagellum brownish beneath. The basal two-thirds of the pronotum broadly yellow; there are two short, narrow lines in the centre of the mesonotum; almost the basal half of the scutellum is yellow; the apex is more strongly punctured than the base, and on the sides at the apex are three oblique keels. Post-scutellum strongly and closely punctured; it has a rounded slope from the base to the apex, and is on a level with the top of the median segment, which has a rather steep straight slope, with rounded sides and a deep furrow in the middle. Pleuræ punctured, but not strongly or closely; the mesopleuræ yellow, except at the apex and extreme base; the yellow is divided in two by an oblique furrow. Wings almost hyaline, the costal cellule infuscated; the stigma yellowish, the nervures black. Legs clear yellow, the hinder femora slightly lined with black above. Abdomen yellow; a large black mark, narrowed and rounded laterally, on the apical half of the first segment; the base of the second narrowly, a large mark, narrowed laterally, and extending from near the base to near the apex, the greater part of the third, fourth and the whole of the sixth, black. The ventral surface, except the last segment, is black.

Comes close to *O. maculipennis* Smith.

Odynerus hyades, sp. nov.

Black, largely marked with yellow; two short lines on the mesonotum, the sides of the scutellum, the mesopleuræ largely, the sides of the petiole and two large irregularly oval marks on the second abdominal segment, yellow; legs yellow, the femora slightly lined with black; the wings hyaline, with a slight fulvous tinge; the apex smoky; the stigma and nervures black ♀.

Long: 15 mm.

Hab. Sarawak (Shelford).

Antennæ black, the scape yellowish, the flagellum brownish beneath. Head black; the clypeus, the eye incision, a large mark, narrowed in the centre above, and the outer orbits to near the top, yellow. Front and vertex rugosely punctured, the punctures running into reticulations on the sides; the space between the antennæ is yellow and smooth. Clypeus long, pyriform, its width at the base half the length; the basal part roundly convex and irregularly marked with elongate punctures; the apex transverse. Thorax black, a large mark, obliquely narrowed on the hinder part, two short narrow lines on the mesonotum, two irregular marks on the base of the scutellum on the sides, the post-scutellum broadly in the middle and the sides of the median segment, broadly, yellow. Mesonotum strongly and closely punctured; the punctures large, deeper and closer on the base than on the apex. Scutellum flat, on the same level as the mesonotum; its apex rounded; it is not quite so strongly punctured as the mesonotum, especially at the base; the post-scutellum is more coarsely punctured. The median segment is keeled down the middle; above in the middle it is stoutly irregularly transversely striated; the sides, broadly above, narrowly below, are stoutly punctured; below the middle the sides distinctly project into stout blunt teeth. The upper part of the propleuræ is irregularly, stoutly, obliquely striated; the lower part bears stout, longitudinal keels. Mesopleuræ coarsely reticulated. Metapleuræ on the upper half irregularly, closely striated. Legs clear yellow, the tarsi darker; the femora irregularly lined with black. The second cubital cellule at the top is not quite half the length of the third; the first recurrent nervure is received shortly behind the middle; the second is interstitial. All the abdominal segments have a narrow yellow line before the apex; that on the second is broader than on the others and is largely dilated backwards at the sides; on the petiole there is a large semicircular mark behind and united to it; on the base of the second laterally is a large irregularly oval mark which is incised at the base on the lower side; the petiole is coarsely, the second and third segments are finely and closely punctured; the last segment is smooth; its apex is narrowly yellow. On the second ventral segment, on the sides, is a large yellow mark, which is rounded on the inner side.

Odynerus lybas, sp. nov.

Black; a band, greatly widened laterally, on the pronotum, the basal two-thirds of the scutellum, a large mark on the mesopleuræ under the tegulæ, two oval marks on the base of the second abdominal segment, the apex of the first and second segments and a transverse line on the middle of the fourth, pale yellow; the legs for the greater part black; wings hyaline, the radial cellule, except along the cubitus at the base, and the apex of the apical cubital cellule dark smoky; the costa and nervures black. ♀.

Long: 10 mm.

Hab. Sarawak (Shelford).

Antennæ black; the scape yellow, the apical joints brownish beneath. Head black; the lower part of the eye incision, the basal half of the clypeus, two oblique marks near its apex, a mark immediately over the antennæ and a band, narrowed below, on the upper half of the outer orbits, yellow. Front and vertex closely and strongly punctured; the front thickly covered with pale pubescence. Clypeus punctured, but not closely; the top almost smooth; its apex is depressed slightly in the middle; the teeth are short, broad and short. Mandibles black; the lower half yellow, tinged with rufous towards the apex. Prothorax and mesonotum closely, rugosely and distinctly punctured; the mesopleuræ obscurely punctured; the upper half of the metapleuræ is punctured, but not strongly; both are thickly covered with pale pubescence. Legs black; the apical half of the four front femora in front, the four anterior tibiae except behind, and a broad band on the outer side of the hinder tibiae, yellow. Abdomen pruinose; the petiole on the dilated apical part punctured, distinctly, but not strongly, or closely; the other segments smooth; the basal spots on the second segment are large, oval and oblique.

Comes near to *O. 2-pustulatus* Sauss. There is no suture on the base of the petiole; the basal slope of the petiole is long, straight and oblique and is distinctly longer than the apical.

ANTHOPHILA.

Nomia robusta, sp. nov.

Nigra, fulvo-pilosa; alis hyalinis, apice fusco-violaceo. ♀.

Long : 14 mm.

Hab. Borneo (Shelford).

One of the larger species. Head covered with deep fulvous pubescence, the vertex distinctly punctured, less closely and more deeply at the sides than in the middle; the front is rugose in the middle, with the sides punctured as in the vertex. Face roundly projecting in the middle and strongly, but not closely, punctured above. Clypeus clearly separated from the face; its middle depressed; it is strongly, but not very closely, punctured; its apex is transverse, with the sides rounded. The pubescence on the thorax is deep fulvous and dense, especially on the pleuræ; the mesonotum and scutellum are closely and somewhat strongly punctured, the base of the scutellum less strongly than the rest. The basal area on the median segment is smooth and shining, punctured round the edges; the furrow at its base is irregularly striated, especially laterally. Legs densely covered with long bright fulvous pubescence; the apices of the tarsi rufous. Wings hyaline, with a slight fulvous tinge; the apex is smoky, with a distinct violaceous tinge, the nervures, except at the apex, are dark testaceous. Abdomen shining; the apices of the segments fringed, but not very thickly, with fulvous pubescence; the ventral segments are more thickly fringed with similarly coloured hair. The tegulæ are for the greater part rufo-testaceous, the second transverse cubital nervure has a more oblique slope than the first; the recurrent nervure is received very close to it.

Nomia borneana, sp. nov.

Black; the basal four segments of the abdomen with smooth, shining blue bands; the legs fulvous and covered with fulvous hair; the clypeus smooth, not keeled, the face distinctly tuberculated in the middle; wings hyaline, the stigma fuscous—black; the nervures paler. ♀.

Long : 11 mm.

Hab. Borneo (Shelford).

Head black; the front, the face and sides of the clypeus thickly covered with fulvous pubescence, smooth, shining and impunctate; the tubercle on the face is more prominent than usual; the labrum is fringed with long golden hair. Mandibles

ferruginous, black at the apex. Thorax closely covered with fulvous hair; the post-scutellum region densely covered with fulvous hair; the mesonotum and scutellum are smooth and shining. The area on the median segment is shining, distinctly bordered behind and irregularly striated, the striæ more widely separated in the middle than laterally; the rest of the segment is opaque and densely covered with fulvous pubescence. The transverse cubital nervures are paler than usual, this being especially the case with the second. Legs uniformly yellowish-fulvous and thickly haired; the hair is paler in colour; the calcaria pallid yellow. Abdomen black; the basal four segments with smooth, shining, bare, bluish bands; the back is smooth and shining; the basal segment at the base is thickly covered with fulvous hair; the others are sparsely haired; the ventral segments are closely punctured; their apices thickly fringed with fulvous hair. The blue belts on the abdomen are slightly tinged with yellow; the furrow on the median segment is indistinct; the scape is testaceous at the base; the second cubital cellule is about one-third of the length of the top of the third; the third transverse cubital nervure is roundly curved; the first recurrent nervure is interstitial.

Comes close to *N. elegans* Sm. which may be known from it by the clypeus being coarsely punctured, subtuberculate on each side, and with a "central longitudinal depression."

Nomia leucozonata, sp. nov.

Black, the basal half of the abdomen above and the ventral surface rufous, the second, third, and fourth segments banded with white on the apex; the apex of the clypeus rufous; the legs black, densely covered with long white hair; the wings hyaline, the costa and stigma rufo-testaceous, the nervures paler. ♀.

Long: 8 mm.

Hab. Bidi, Sarawak.

Head thickly covered with pale fulvous pubescence, black, the apex of the clypeus broadly rufous; the clypeus and face strongly, but not very closely, punctured; the front is more sparsely punctured and has a narrow longitudinal keel in the middle. Mandibles rufous, black at the apex. Mesonotum and scutellum minutely and closely punctured; the post-scutellar

region is thickly covered with pale fulvous pubescence. Median segment smooth, shining and bare; its sides thickly covered with long pale fulvous hair; the basal depression is not clearly bordered behind and bears narrow longitudinal keels. Legs black, thickly covered with long pale fulvous hair; the hinder tibiae become gradually thickened towards the apex; the metatarsus is thickened. Wings hyaline; the costa and stigma testaceous, the nervures paler; the second cubital cellule is narrow; the second transverse cubital nervure is faint; the first transverse cubital nervure is interstitial. Abdomen rufous; the apical three segments (the basal two broadly) marked with black in the centre; the apices of the second, third and fourth are banded with cream-white.

Coelioxys eriocephala, sp. nov.

Black, the head and thorax rugosely punctured; the scutellum coarsely reticulated, its sides at the apex projecting into sharp spines; the basal area of the median segment aciculated, the rest of the segment closely punctured, the upper half deeply furrowed in the middle; wings hyaline, the apex from the base of the radial cellule fuscous-violaceous. ♀.

Long: 11 mm.

Hab. Kuching, Sarawak.

Head rugosely punctured, the clypeus more closely and less strongly than the rest; the cheeks, the face and apex of the clypeus covered with pale pubescence; the outer orbits and occiput are thickly covered with white pubescence; the vertex and front are sparsely haired. Mesonotum closely rugosely punctured; the scutellum is coarsely reticulated-punctured; the apex is rounded, with the sides projecting into teeth, which are twice longer than broad; its apex projects over the post-scutellum. The basal area of the median segment is coarsely aciculated; the rest is closely punctured and thickly covered with white pubescence. Mesopleuræ closely rugosely punctured and covered with white pubescence; the sides and apex are aciculated. The second transverse cubital nervure has the lower half oblique; the upper distinctly oblique and straight. Legs thickly covered with woolly hair; the basal joint of the hinder tarsi is thickly covered with fulvous pubescence. The five

basal segments of the abdomen are shining, closely, distinctly, but not strongly, punctured; their basal furrows are covered with white pubescence; the basal part of the last segment is minutely, but not very closely, punctured; the narrowed apical part is closely rugosely punctured; in its centre is a smooth narrow keel. The last ventral segment is long, narrow, acutely pointed and projects over the dorsal.

There is a distinct furrow on the front; the lateral teeth on the scutellum distinctly project beyond the middle of the apex; the ventral surface of the abdomen is more strongly and closely punctured than the dorsal; the transverse median nervure is received shortly, but distinctly, behind the transverse basal. The last dorsal segment is distinctly depressed laterally at the base of the narrowed part. The second transverse cubital nervure is received shortly behind the middle of the radius; the nervures and stigma deep black.

Megachile alticola, sp. nov.

Nigra, albo-pilosa; scopa abdominisque apice supra dense albo pilosis; alis hyalinis; nervis stigmatique nigris. ♀ et ♂.
Long: 9 mm.

Hab. Matang, Sarawak, 3,000 feet.

♀ Head black; the face and clypeus covered closely with dark fulvous pubescence; the front and vertex less closely with longer black, intermixed, on the vertex, with shorter fulvous pubescence. The front is closely rugosely punctured; the vertex is more distinctly, more strongly and less closely, punctured. The apex of the clypeus is almost transverse, with its sides rounded; its sides above bear a belt of dense white pubescence. Mandibles strongly punctured; their apex broad, slightly oblique; the lower tooth is smooth, shining and sharply pointed; the subapical is shorter and blunter. Thorax closely and distinctly punctured; the mesonotum is densely covered with short black pubescence; the pronotum behind is covered densely with white pubescence; the scutellum has posteriorly long black hair. The basal area of the median segment is smooth, bare, aciculated and almost shining; and it bears a shallow furrow in the centre; the sides of the segment are thickly covered with white hair. There is a curved band of

white pubescence round the tubercles; the sternum is covered with white pubescence. The hair on the legs is thick, stiff and black. Wings hyaline, their apex slightly infuscated. Abdomen black; the segments are probably edged with white pubescence; the apical two above are thickly covered with grey depressed pubescence; the scape is white.

The ♂ is similarly coloured; the hair on the face is longer and denser, and has a slight fulvous tinge; the hair on the median segment is longer and denser; the basal four abdominal segments have, on the sides at the apex, broad bands of white pubescence; the apical segment is round and has a broad projecting border on the lower side; the ventral segments are fringed with soft white pubescence and there is also a band of similar pubescence on their middle; the pubescence on the four hinder tarsi is fulvous.

Comes into Bingham's Section *F*, but cannot well be confounded with anything there described.

Megachile viripluca, sp. nov.

Black; the head and thorax covered with fuscous-black pubescence; a tuft of long white hair below the antennæ; and the labrum is fringed with long white hair; the wings yellowish-hyaline, the nervures and stigma yellowish-fulvous. ♀.

Long: 18 mm.

Hab. Kuching, Sarawak.

Antennæ black, bare, longer than the thorax. Front and vertex rugosely, closely punctured. The hinder ocelli are separated from each other by a slightly greater distance than they are from the eyes. Between the antennæ and the top of the clypeus is a dense tuft of longish white hair; and the labrum is fringed with longer white hair. The apical tooth of the mandibles is long, curved and sharply pointed; the subapical is bluntly rounded. Mesonotum and scutellum closely punctured and covered thickly with short black hair; the median segment is thickly covered with longish sooty-black hair, as are also the pleuræ and breast. Wings yellowish-hyaline; the stigma and nervures are yellowish; the two recurrent nervures are almost interstitial; the second cubital cellule at the top is about half the length of the bottom; the second transverse cubital nervure is broadly

rounded in the lower half and middle; the first is roundly curved. The hair on the legs is short and black; the base of the fore tarsi is rounded and deeply incised; the fore coxæ are stoutly toothed. Abdomen black and covered with short black hair; the middle segments are depressed at the base; the apical segment is, at the apex, roundly incised; its middle on the apical half is depressed, below the base it is roundly raised.

Megachile moera, sp. nov.

Black; the four posterior femora red; the head and thorax covered with long white hair; the abdominal segments narrowly edged with pale fulvous pubescence; the ventral scope white; the base of the hinder tarsi densely covered with long fulvous hair; the wings hyaline, the stigma and nervures black.

Long: 8-9 mm.

Hab. Kuching, Sarawak.

Head closely punctured; the face and clypeus more coarsely than the vertex; the apex of the clypeus in the middle projecting, smooth and shining; the sides of the face and clypeus thickly covered with white pubescence; the front less thickly covered with long white hair, the vertex more sparsely with shorter back hair. Mandibles closely, rugosely punctured and covered with white pubescence; towards the apex they are coarsely irregularly striated; the apical two teeth are of about the same size, are opaque and moderately acutely pointed; the rest of the outer edge is smooth and shining. Pro- and mesothorax, with the scutellum, closely and uniformly punctured; the pronotum and base of the mesopleuræ above thickly covered with woolly hair; the mesonotum has a short pubescence; the median segment is covered with long, soft hair; its basal area is closely aciculated, the rest punctured, but not strongly or closely; its middle is deeply furrowed. Wings hyaline; the first recurrent nervure is received nearer the transverse cubital than is the second. The four hinder femora and the hinder trochanters and coxæ are bright rufous; the hair on the basal four joints of the hinder tarsi is larger than usual; and it becomes gradually shorter towards the fourth joint; it is bright fulvous; the hair on the middle tarsi is shorter and paler. Abdomen closely punctured; the transverse furrows on the basal three

segments are distinct; the segments are banded with pale fulvous bands of pubescence; the ventral scopa is white; the basal ventral segments are more or less rufous; the apical dorsal segment is closely rugose and sparsely haired.

The scutellum is broadly rounded behind and has a rounded slope on the apex; the depression at its base is covered with white pubescence.

Comes near to *femorata* Sm.

Megachile wola, sp. nov.

Black; the head and thorax covered with pale fulvous hair; the face and clypeus more densely with long pale hair; the abdomen densely with ferruginous pubescence, except on the base of the basal three segments; the wings almost hyaline, the stigma and nervures black; the apical abdominal segment entire. ♂.

Long: 12 mm.

Hab. Matang, 3600 feet. Sarawak.

Antennæ black, base shining. Head black, closely and strongly punctured; the lower part of the front, the face and clypeus are densely covered with long pale fulvous hair; the apex of the clypeus is transverse. Mandibles closely, irregularly longitudinally striated to near the apex; the lower part at the apex smooth and shining; the apical tooth is long and sharply pointed at the apex. Pro- and mesothorax closely and distinctly punctured and covered with long pale fulvous hair; the median segment is more thickly haired and the hair is longer; the basal area is closely punctured and has a wide and distinct furrow down the centre. Pleuræ thickly covered with long pale fulvous hair. Legs black; the four anterior tarsi are fringed with very long fulvous hair; the hair on the hinder tarsi is short and fulvous; on the rest of the legs it is short and paler. The second recurrent nervure is almost interstitial; the first is received close to the transverse cubital. The basal three segments of the abdomen are black, with their apices covered with bright ferruginous pubescence, the other segments are entirely covered with similar pubescence; the apical segment is entire and broadly rounded; the apical ventral segments are covered with fulvous pubescence.

Megachile osca, sp. nov.

Black; the face and apex of the clypeus fringed with long pale hair; the pleuræ and median segment covered densely with pale fulvous hair; the abdomen, except at its basal slope, with ferruginous pubescence; wings hyaline with a slight fuscous tinge, the stigma and nervures black; the apical abdominal segment roundly incised in the middle. ♂.

Long: 14 mm.

Hab. Matang, 3600 feet. Sarawak.

Head closely punctured; the front thickly covered with long black hair, the vertex more sparsely with shorter black hair; between the antennæ is a clump of long white hair and the apex and the clypeus is fringed with similar hair. The clypeus is shining and covered with short black hair; it is irregularly, somewhat strongly, but not very closely, punctured, and is clearly separated from the face, which is closely rugosely punctured—there is a smooth narrow shining line down the middle. The basal half of the mandibles is opaque and irregularly punctured; the apex is smooth and shining and with an acutely pointed apical tooth. Mesonotum and scutellum closely rugosely punctured and thickly covered with short black hair; the pleuræ and median segments are thickly covered with long pale fulvous hair. The apex of the scutellum is broadly rounded. The area on the median segment is opaque and shagreened; the rest of the segment is shining and closely punctured. Wings hyaline, with fuscous-fulvous tinge, and slightly clouded at the apex; the stigma and nervures black; both the recurrent nervures are received close to the transverse cubitals. Legs black; the anterior tarsi testaceous at the base; the femora and tibiæ are sparsely covered with short pale hair; the tarsi thickly with short fulvous pubescence on the under side; the anterior coxæ are toothed at the apex. Abdomen, except on the basal slope, and on the basal two ventral segments, thickly covered with bright ferruginous pubescence; the apical segment is widely but not very deeply, incised in the middle; it is broadly rounded and is not keeled down the middle.

Megachile amstela, sp. nov.

Long: 12 mm.

Hab. Borneo.

This species may be separated from *tarea*, with which it agrees closely in colouration, as follows:—

The clypeus distinctly narrowed, smooth and rounded above; the base of the mandibles broadly rounded, without a projection in the middle, the outer side not strongly, uniformly punctured. *tarea* Cam.

The clypeus not distinctly narrowed above, where it is strongly punctured, and where there is a smooth, transverse keel; the outer side strongly punctured; the inner side on the basal part projecting in the middle. *amstela* Cam.

Head strongly, closely, rugosely punctured; the top and apex of the clypeus with a smooth, impunctate band; its hair black; long and dense on the front and vertex, shorter on the clypeus. The clypeus is distinctly separated from the face by a smooth, shining band, the sides being also bounded by similar bands: its apex projects slightly and roundly at the sides. Mandibles rugosely punctured, irregularly, strongly, longitudinally striated towards the apex; the apical edge and the lower on the apical half, smooth and shining: the apical tooth is large; the subapical is shorter and broader. Thorax closely punctured; the hair on the pleuræ, mesonotum and scutellum is black; on the median segment it is long and soot-coloured; on the sternum pale fulvous. Wings hyaline, with a slight, but distinct fulvous tinge; the nervures are blackish, the stigma dark rufous. Legs black; the hair pale, mixed with black; on the base of the tarsi it has a slightly more rufous tint. The abdomen is black; its basal three segments are banded with bright ferruginous pile; the other segments are thickly covered with bright ferruginous hair, mixed with black in the middle; the scopa is ferruginous.

On the outer side of the apex of the tibiæ, in the middle, is a longish, sharp-pointed spine.

Megachile tarea, sp. nov.

Black; the head covered with black, the pleuræ and metanotum with pale, pubescence; the abdominal segments banded with ferruginous pubescence; the scopa fulvous, rufous towards the apex; the legs covered with fulvous, the metatarsus on the inner side with rufous, pubescence; wings hyaline, the apex slightly infuscated, the costa and nervures dark fuscous. ♀.

Long: 12 mm.

Hab. Borneo.

The hair on the upper part of the head is deep black; below long and white; on the front and cheeks it is longer and denser than on the face and vertex. The clypeus is narrowed and rounded above, where it is smooth and impunctate, or only sparsely, and indistinctly punctured; the lower two-thirds punctured, but not closely or strongly; there is a narrow, impunctate band in the centre; the centre, in the apex, is not quite transverse. The mandibles are broadly, roundly dilated in the middle; there are two apical teeth; the apical is the longer; the subapical is broader and more rounded; their upper side is irregularly punctured; on the inner side is a row of punctures, on the outer, on the apical half, a curved deep furrow; the basal half on the outer side is strongly punctured, the punctures becoming larger and more elongated towards the middle. Thorax closely and distinctly punctured, the pleuræ somewhat more strongly than the mesonotum. Legs black; the hair on the femora and tibiæ is long and pale; on the tarsi it is dense and rufous; the anterior calcaria rufous; the outer joint is straight, transverse, and not dilated at the apex; the subapical is curved and surrounded by a hyaline horny process; the claws are rufous at the base.

On the apex of the fore tibiæ in the middle is a large, platelike projection, which becomes gradually narrowed towards the apex, is rufous in colour and has the sides raised; on the outer side of it is a stout tubercle.

Megachile Shelfordi, sp. nov.

Nigra, opaca, nigro pilosa; alis flavo-hyalinis, apice fumato; nervis stigmatæque fulvis. ♀.

Long : 17 mm.

Hab. Borneo (Shelford).

Front and vertex closely and uniformly punctured, thickly covered with black hair, which is much longer on the front. The clypeus is rather strongly, closely and uniformly punctured, except above in the middle, where it is smooth and shining. Mandibles below smooth and shining, above closely punctured; there are four teeth, all bluntly rounded; the inner two project more than the apical. The upper part of the thorax is thickly covered with short, stiff hair; the hair on the pleuræ is longer, is thick and sooty-black in colour. The hair on the legs is long and black; on the under side of the middle tarsi it is bright rufous. The hair on the abdomen, above and below, is deep black; the second segment at the base is deeply depressed, at the apex obliquely raised; the last segment has the apex depressed and broadly rounded. Wings yellowish-hyaline, the stigma and nervures rufo-fulvous; the apex, outside the radius, the second transverse cubital, the second recurrent and the discoidal nervures, smoky; the apex of the hind wings is likewise smoky.

Comes near apparently to *M. tuberculata* Sm.

Protomthidium rufobalteatum, sp. nov.

Black; the head and thorax densely covered with stiff, moderately long black hair; the apical two segments of the abdomen entirely, the middle segments banded with rufous-yellow; the ventral fringe bright ferruginous.

Long : 12 mm. ♀.

Hab. Matang, 3600 feet. Sarawak.

Antennæ black, short, smooth and shining. Head closely rugosely punctured, the clypeus more finely than the vertex; in front and above closely covered with short, black hair; below with longer, soft, pale hair. The clypeus is distinctly, narrowly keeled in the middle; the apex of the clypeus is transverse, its sides are rounded. Mandibles opaque, closely rugose above, below covered with a pale fulvous pile and below also with some long pale hair; the apical tooth is bluntly rounded and projects; behind it are three short, bluntly rounded teeth. Thorax closely and somewhat strongly and uniformly punctured;

above the hair is black; on the sides it is longer and whitish; the scutellum distinctly projects over the median segment; its apical incision is rounded and not very deep. Legs black; the hair on the tibiæ and tarsi is thick and stiff; on the inner side it is rufous, the apical three joints of the tarsi are rufous. Wings hyaline with a faint, fulvous tinge; the stigma and nervures are black. Abdomen black; there is a narrow rufous line on the sides of the second segment; an almost entire one on the apex of the third, a broader one, narrowed at the sides, on the fourth and the whole of the apical two segments are rufous. The ventral scopa is bright ferruginous.

The ♂ has the antennæ much longer; there is a dense mass of white pubescence over them; the clypeus, the cheeks, on either side of it, and the mandibles, except at the apex, are rufous-yellow; the apical abdominal segment is roundly, but not deeply, incised. The mandibles are bidentate at the apex; the apical is more narrowed at the apex than the subapical, which is shorter, broader and more broadly rounded; the clypeus is slightly depressed in the middle at the apex.

Protoanthidium ovatum, sp. nov.

Black; the hair on the thorax and abdomen black; there is a tuft of fulvous hair on the front; the face and clypeus are covered with short rufous pubescence; the scopa rufous; the wings to the stigma smoky, the apex milk-white, the stigma and nervures black. ♀.

Long: 14 mm.

Hab. Matang, 3600 feet. Sarawak.

Antennæ black, the under side of the scape rufous. Front and vertex closely, uniformly and strongly punctured; the face is less closely and less strongly punctured; its apex and a line in the centre, smooth. Clypeus closely and uniformly punctured; its middle keeled, but not very strongly; its apex slightly bent inwardly. The lower part and the apex of the mandibles are smooth and shining; the rest punctured and pilose; besides the apical tooth, there are three short, round ones. Mesonotum and scutellum closely and uniformly punctured; the mesonotum thickly covered with fuscous-black pubescence; the apex of the clypeus is roundly incised and projects over the median segment

which is closely, but not strongly, punctured, and is shining in the middle. Legs black, and thickly covered with black hair; the calcaria black. The wings, to the stigma, smoky-fuscous; the rest milky-hyaline; the stigma and nervures black; the first transverse cubital nervure is straight and has an abrupt oblique slope; the second is two-angled, the upper is the longer and is more oblique; both the recurrent nervures are received distinctly beyond the transverse cubitals. Abdomen black; closely but not strongly, punctured above and covered, but not densely, with short black hair; the apical segment is roundly incised; the ventral scopa is fulvous.

Protoanthidium rufomaculatum, sp. nov.

Black; the clypeus and the antennæ rufo-testaceous; the top of the head and the mesonotum with the scutellum thickly covered with rufo-fulvous pubescence; the scopa rufo-fulvous; the apical-dorsal segment covered with whitish pubescence; the wings dark smoky-fuscous to the base of the stigma, lacteous beyond it. ♀.

Long: 8 mm.

Hab. Kuching, Sarawak.

Antennæ shining, base rufous, the second joint black. Head closely, rugosely punctured; above thickly covered with short rufous pubescence; the face and clypeus with soft, paler hair. The apex of the clypeus on the lower side is flat, smooth and shining. Mandibles rufo-testaceous, the lower edge of the apex black; it is sparsely punctured; its apical tooth is large, is sharply pointed and clearly separated from the subapical, which is short, does not project and is not defined behind. Mesonotum closely, uniformly and somewhat strongly punctured; there is an impressed line down its centre. The scutellum is flat, is not raised above the level of the mesonotum, and its apex projects largely over the median segment; it is more closely punctured than the mesonotum; its sides and apex are broadly rufous and the apex has a shallow, rounded incision in the middle. The median segment has a vertical slope, is closely punctured and covered with a short pubescence. Mesopleuræ closely punctured like the mesonotum; the base of which is smooth, projecting. Legs black; the hair black; the greater part

of the front femora, the apex of the front tibiæ and the base of the tarsi, rufous, as are also the apical joints of the hinder tarsi; the hair on the hinder tibiæ and metatarsus long, black and thick; the fore tibia at the apex on the outer side is armed with a short narrow tooth. The radial, cubital and recurrent nervures are pale; the first transverse cubital nervure is straight and oblique; the second is roundly curved; both the recurrent nervures are received shortly, but distinctly, beyond the transverse cubitals; the second recurrent nervure has the upper part roundly bent outwardly. The basal five dorsal segments of the abdomen are smooth, shining; the basal ones minutely and closed punctured and almost bare; the large apical segment is thickly covered with glistening grey hair and is rounded at the apex; the scopa is rufous.

Xylocopa Shelfordi, sp. nov.

♀ Black, the thorax above, the upper parts of the pleuræ and the basal two segments of the abdomen clothed with bright yellow pubescence; the wings hyaline, iridescent, the apex infuscated. The ♂ with the sides of the thorax and a broad band on the basal three segments of the abdomen clothed with bright yellow pubescence, otherwise coloured as in the ♀.

Long: 16 mm.

Hab. Matang, 3,600 feet. Sarawak (Shelford).

♀ Head densely covered with black hair; the black hair on the face mixed with white. Front and vertex closely and distinctly punctured; the furrow on the front is distinct; its lower half is bordered by distinct, flat, smooth keels; the clypeus is more strongly punctured than the face and has a smooth flat furrow in the centre. Mandibles smooth and shining; the basal half in the centre punctured; the apical teeth bluntly pointed and of almost equal length. Thorax above smooth and shining; the centre of the mesonotum and metanotum bare and impunctate; the apex of the latter sharply margined. The pubescence on the upper part of the mesopleuræ is yellow; on the hinder edge it is paler; on the rest and on the sternum, black; legs black and covered with black hair; abdomen black; the upper surface of the basal two segments covered with yellowish hair; the other segments clothed more sparsely with shorter black

hair. Wings hyaline, with a slightly fuscous-coppery iridescence; the apex much darker coloured.

The ♂ has the upper part of the thorax covered with yellowish pubescence except in the centre, where there is a broad band of black pubescence of the same width as the lateral bands; and on the apex, where there is a thin band of pale yellow pubescence; the upper part of the pleuræ is covered with pale yellow pubescence; the tarsi are thickly covered with long black hair; the black hair on the tarsi is mixed with rufous beneath, on the tibiæ with pale, hair. The hair on the sides of the inner and outer orbits is pale.

I believe I have correctly united the sexes of this species. Both are in the Sarawak collection from Matang, where the ♀ has also been taken by Mr. Shelford at an elevation of 3000 feet. The ♂ agrees, in the arrangement of the hair bands, with that of *A. perversa* Weid. from Java, but the females are different.

Trigona erythrogastra, sp. nov.

Black; the basal three segments of the abdomen rufo-testaceous, the others black, suffused with rufo-testaceous, especially at the sides; the wings yellowish-hyaline to the stigma, the rest hyaline; the stigma and nervures rufo-testaceous. ♀.

Long: 7 mm.

Hab. Sarawak (R. Shelford).

Antennæ black, the flagellum brownish beneath, more broadly and distinctly on the apical than on the basal half. The occiput and the hinder part of the vertex are thickly covered with long black, stiff hair; the front is covered with a dark fuscous, thick pubescence and above sparsely with black hair. Clypeus thickly covered with fuscous down and smooth and shining. Mandibles black, smooth and shining. Thorax black, smooth and shining; the base of the mesonotum and the hinder part of the scutellum covered with long stiff black hair; the propleuræ covered sparsely with long black hair; the metapleuræ thickly with a fulvous down. The first transverse cubital nervure is faint above and almost obliterated in the middle; the second is very faint. Legs black; their hair is also black. The ventral surface is rufous.

Comes near to *T. lactifasciata* Cam. but that has the second cubital cellule narrower at the top; the thorax rufous and the femora rufous.

Trigona flavistigma, sp. nov.

Rufo-testaceous, the hinder tibiæ and the basal joints of the four hinder tarsi black; wings hyaline, the basal half with a distinct yellowish tint; the stigma fulvous yellow, the nervures slightly darker in tint; antennæ rufo-testaceous, the apical four joints black. ♂.

Long: 8 mm.

Hab. Kuching, Sarawak.

Head smooth and shining; the front and vertex sparsely covered with long black hair; the hairs on the vertex longer than those on the front. Cheeks and clypeus covered with golden pubescence; the clypeus also sparsely with black hair. Mandibles rufous, blackish at the apex. The thorax is narrower than the head and is similarly coloured; the mesonotum and scutellum are sparsely covered with blackish hair; the sides and apex of the former have a yellowish down; the pronotum is glabrous in front, sparsely haired behind; in the centre, at the base, is a wide depression. The apical slope of the scutellum is thickly covered with long pale fulvous hair. The centre of the metanotum is very smooth, shining and glabrous; the mesopleuræ thickly covered with long, pale fulvous hair. The wings have a distinct yellowish tinge to the base of the stigma; the stigma and nervures are bright rufo-fulvous. Legs coloured like the body; the hinder tibiæ and the basal joints of the four hinder tarsi black; the hair on the black part of the legs is black. Abdomen coloured like the thorax; its base lighter in tint; the ventral surface is darker and is thickly covered with long blackish hair.

Trigona latebaltata, sp. nov.

Black; the base of the scape, the basal and the apical two segments of the abdomen rufo-testaceous; the anterior legs, the middle coxæ, trochanters, femora and the tibiæ in front; the hinder coxæ and trochanters beneath, rufous, the wings clear hyaline, the stigma and nervures testaceous. Worker.

Long: 5 mm.

Hab. Kuching. Sarawak.

Head black, the apex of the clypeus pale testaceous; the front, face and clypeus covered thickly with pale pubescence; the front has a narrow furrow down the centre; the labrum is testaceous; mandibles pale rufous, blackish towards the apex; the occiput is fringed with long fusco-rufous hair. The mesonotum is bordered all round by a distinct belt of fulvous pubescence; there is a broader belt on the sides and apex of the scutellum; the post-scutellum is covered with short fulvous pubescence. Median segment closely, uniformly and distinctly punctured. Pleuræ covered with fulvous pile. Wings clear hyaline; the stigma pale, the nervures of a deeper testaceous colour; the two transverse cubital nervures are faintly indicated, the first more distinctly than the second. Antennæ black, the base of the scape broadly testaceous. Abdomen smooth and shining; rufo-testaceous; the second, third and fourth segments deep black.

Trigona lactrifasciata, sp. nov.

Dark luteous, the head, except the centre of the clypeus, the flagellum of the antennæ and the tibiæ and tarsi, black; wings hyaline, a milky cloud at the end of the stigma; the stigma and nervures luteous; there are two transverse cubital nervures, which are straight, oblique and approach close to each other near the top. ♀.

Long: 8-9 mm.

Hab. Borneo.

Antennæ black; the basal two-thirds of the scape rufous. Head black, the clypeus broadly, in the centre rufous; the front, face and clypeus thickly covered with a pale down; the hinder part of the occiput thickly covered with stiff blackish hair. Mandibles black. Thorax dark rufous, thickly covered on the mesonotum and scutellum with short, stiff, dark fulvous hair, which is thickest and longest on the base of the mesonotum. Median segment smooth and shining and is bare in the middle. The coxæ, trochanters and femora are coloured like the thorax; the tibiæ and tarsi black, except the apical joint of the tarsi; and they are covered with black hair. The basal two joints of the tarsi are mahogany coloured; the others are darker in tint; the ventral segments are similarly coloured and are sparsely covered with longish fuscous hair.

Description of New Species of Aculeate Hymenoptera from Borneo.

BY P. CAMERON.

ANTHOPHILA.

Nomia varibalteata, sp. nov.

Black; the head and thorax densely covered with fulvous pubescence; the abdomen with five blue, mixed with red, bands: legs black, the wings hyaline, with black stigma and nervures ζ .

Long: 11 mm.

Hab. Borneo.

Antennæ black, the scape sparsely covered with fulvous hair, the flagellum with a pale down. The front to the ocelli is closely, distinctly and uniformly punctured; the vertex smooth; both are thickly covered with long fulvous hair. The face is smooth: its sides are broadly and thickly covered with fulvous hair; the clypeus is stoutly keeled in the middle, is obscurely punctured and thickly covered with fulvous hair. Thorax thickly covered with fulvous pubescence. Mesonotum and scutellum opaque, closely and minutely punctured; the scutellar depression is covered with depressed pale fulvous pubescence; the scutellum sparsely with long blackish hair; the post-scutellar region thickly with fulvous pubescence. Median segment closely, irregularly punctured and thickly haired; the basal depression is clearly defined behind and is irregularly closely longitudinally striated. Legs black; the femora and tibiæ covered with pale hair; the tarsi on the under side thickly covered with fulvous pubescence; the hinder tibiæ are narrowed at the base and become gradually, but not greatly, thicker towards the apex. The abdomen is smooth, shining and sparsely haired above; the basal five segments are banded with blue belts, which are largely tinged in the middle with red. The ventral segments are covered with fulvous pubescence; the last segment is distinctly keeled in the centre.

The transverse median nervure is not interstitial, being received shortly behind the transverse basal; the first recurrent nervure is received shortly beyond the middle: the tegulae are pale testaceous: the third transverse cubital nervure is roundly curved on the lower side; the punctuation on the apical half of the clypeus is coarser than on the basal and runs into striations or obscure reticulations: the sides of the last ventral segment are keeled and project obliquely at the apex; the last dorsal segment is punctured and thickly covered with black hair; its apex is smooth.

A species closely related to *N. iridescens* Sm.

Megachile zygia, sp. nov.

Black; the hair on the front, face, pleurae and median segment, ferruginous; the abdominal segments banded with ferruginous pubescence, the ventral scopa pale fulvous: wings hyaline; the stigma and nervures rufous. ♀.

Long: 12 mm.

Hab. Borneo.

Head closely rugosely punctured; the face and upper part of the clypeus with a smooth, irregular longitudinal keel in the centre. The apex of the clypeus is transverse, finely rugose; its sides are straight and oblique. The base of the mandibles is closely rugosely punctured, the upper apical half has, at the base, some distinct punctures: the apical and the lower half smooth: the apical tooth is large, projecting, and becomes gradually narrowed towards the apex; the subapical is blunt and indistinct; on the base are two shallow curves, the inner being the larger. The mesonotum is closely alutaceous, opaque, without distinct punctures; the mesopleurae are coarsely rugosely punctured; the metapleurae coarsely alutaceous. The hair on the mesonotum and scutellum is short and dark, on the upper part of the pleurae and the median segment it is rufous; on the lower parts and on the sternum, pale fulvous. Wings hyaline, with a slight fulvous tinge; the costa, stigma and nervures are bright rufous. Abdomen black; the dorsal segments banded with a bright ferruginous pile; the scopa pale fulvous; the last dorsal segment is covered with short black hair. Legs black, covered with pale fulvous pubescence: that on the tarsi is

rufous in tint: on the apex of the front tibiae in the middle is a stout, slightly curved spine, which becomes narrowed towards the apex; on the apex, at the base, in front of this, is a shorter tooth; the apical claws are larger and stouter than usual and rufous in colour: the calcaria are obliquely narrowed at the apex.

SPHEGIDÆ.

Sphex malayanus, sp. nov.

Black: the second abdominal segment rufous at the base: the head and thorax densely covered with golden pile and thickly with long pale pubescence: wings clearly hyaline, the stigma and nervures deep black: the apex with a deep black cloud between the end of the radial nervure and the lower end of the third transverse cubital. ♂.

Long: 14 mm.

Hab. Borneo.

The eyes distinctly converge below; the inner orbits from near the ocelli and the face and clypeus are densely covered with a golden pile and the entire head is thickly covered with long pale hair: it is impunctate: the ocelli are in a curve, are large and prominent: below them is a short, distinct keel which becomes sharply pointed at the apex: the apex of the clypeus is broadly rounded: in its centre it is distinctly depressed or furrowed; the middle is keeled. The labrum is slightly keeled in the middle. Mandibles black, rufous towards the apex: they are bidentate: the upper tooth is long, is clearly separated from the lower, which does not project, and is straight or slightly oblique at the apex; the apical tooth projects on the upper side, slightly, but distinctly; this projecting part is about three times longer than broad. The golden pile on the thorax is dense: the long pale hair is dense, long and pale: on the median segment it is not quite so thick, but is, if anything, longer. The mesonotum is alutaceous: the mesopleurae closely and distinctly punctured: the scutellum is sparsely punctured in the middle, more closely and distinctly on the sides. Neither it, nor the post-scutellum, is furrowed in the centre: the latter is thickly covered with golden pubescence. The median segment is closely, finely, distinctly and irregularly reticulated: the apical slope is largely hollowed. Legs black, pruinose:

the femora and coxæ covered with long, soft white hair; as with many species the apex of the hinder tibiæ has a rufous pile; the tarsi are spinose. Wings clear hyaline; the nervures and stigma deep black; the cloud commences at the end of the radial cellule and extends behind to the cubitus; the angle formed by the bending back of the third transverse cubital nervure is hyaline. Abdomen black; the second segment more or less rufous; the petiole is long and curved; it is, if anything, longer than the hinder tibiæ and is covered with long white hair. The apices of the segments are testaceous all round and more broadly below than above.

There are two teeth on the tarsal claws. The third cubital cellule at the top is not much shorter than the second; at the bottom it is longer than it; the second recurrent nervure is received close to the second transverse cubital; the first at three times greater the distance from it. The species comes near to *S. maria* Bing. and *S. nigellus* Sm.

Cerceris excavata, sp. nov.

Black; the lower inner orbits, the apex of the third and of the sixth abdominal segments, pale yellow; the four anterior tibiæ and tarsi and the base of the hinder tibiæ, yellow; wings hyaline; the radial cellule and the apical cubital cellule above, smoky; the area on the median segment not clearly defined, rugosely longitudinally striated. ♂.

Long: 7 mm.

Hab. Borneo.

Antennæ black; the scape pale yellow beneath; the eight basal joints and the apical joint of the flagellum reddish-brown. Front and vertex rugosely punctured as is also the clypeus and, to a less extent, the face; there is a broad yellow line, roundly narrowed at the top and bottom, on the lower inner orbits; the apex of the clypeus is slightly waved in the centre, the sides are thickly fringed with stiff longish pale golden hair. Antennal keel acute, and black and yellow. Thorax coarsely rugosely punctured, black; a spot on either side of the pronotum behind; the scutellum is smooth behind: the median segment is coarsely rugosely punctured; the punctures are round and deep; the apex is hollowed in the middle; the basal area is not clearly

defined: there is a stout longitudinal keel and two less distinct oblique ones on either side of it. Wings hyaline, the radial cellule and the greater part of the apical cubital cellule, smoky: the petiolated cellule is about one half the length of the following; it receives the recurrent nervure distinctly behind the middle. The four anterior tibiae and tarsi are yellow; the mid tibiae are marked behind with black; the hinder are black, except for a yellow band near their base and the metatarsus. Abdomen closely and coarsely punctured; black, the apex of the third and of the sixth segment banded with yellow: the pygidium is broad, coarsely punctured; its apex transverse, depressed, membranous, except at the sides: the epipygium is depressed. The third ventral segment is banded broadly with yellow in the middle.

A distinct species, not very nearly related to any of the described Indian species. Characteristic is the "enclosed space" at the base of the median segment which is less clearly bounded than usual and is longitudinally and obliquely coarsely striated and the excavated middle of the median segment.

SCOLIIDE.

Scolia pulchricostata, sp. nov.

Black; the head and thorax densely covered with fulvous hair and with a dense golden pile; the basal segments of the abdomen with blue and purple tints; the segments edged with pale fulvous hair; the wings fulvous-hyaline; the fulvous tint deeper along the apex; the stigma and nervures deep fulvous. ♀.

Long: 27 mm.

Hab. Borneo.

Antennae black, the scape covered with pale fulvous hair. The vertex behind and in the centre is strongly and closely punctured, and there are a few punctures on the outside of the ocelli; the upper part of the vertex is smooth, bare and furrowed in the middle; the lower part is punctured and thickly covered with fulvous hair. The clypeus is smooth, base, subtriangular and flat; its apex is flat, broadly rounded and piceous; the apex of the mandibles broadly rufous. Thorax densely covered, except on the apical slope of the median segment, with pale

golden pile and with longish fulvous hair. Mesonotum, except in the middle behind, strongly punctured; the scutellum is more closely punctured, except on the apex and in the middle at the base; the post-scutellum is closely and strongly punctured, except in the middle. The basal part of the median segment is closely, but not strongly, punctured. The second transverse cubital nervure is broadly and roundly curved outwardly below the middle. Legs black, thickly covered with fulvous hair; the tibial and tarsal spines are rufous; the calcaria pale; abdomen black; the basal three segments with violet and blue micaceous tints; the basal segments thickly covered with long pale hair; smooth; the apical fringes are pale; the hair on the apical three segments is long and black; the pile on the pygidium is black.

Comes near to *S. acutinerva*; it is a stouter built insect; its clypeus is flat, not roundly convex; its second transverse cubital nervure is broadly rounded and the abdomen wants the yellow bands.

Scolia apherema, sp. nov.

Black; the front and vertex, the eye incision and the outer orbits, orange-red; wings fuscous-violaceous. ♀.

Long: 17 mm.

Hab. Borneo.

Antennae black; the scape and second joint smooth and shining, the flagellum opaque. Head; the front, vertex, eye incisions and the outer orbits—wide above, narrowing below—to near the bottom, orange-red. Front and vertex shining, distinctly, but not very closely, punctured, except on the hinder edge of the vertex; and somewhat thickly covered with shining fulvous pubescence. The antennal tubercles and the parts below the antennae deep black; the clypeus smooth and shining, the rest closely and rather strongly punctured. Mandibles black, smooth. Thorax above thickly covered with stiff black hair; the apical slope of the median segment is covered with white hair and densely with silvery pubescence; the propleurae covered with long dark, the meso- with long pale, pubescence; the metapleurae thickly covered with silvery pile. Mesonotum strongly and closely punctured; the middle behind smooth; the

scutellum is strongly, but not very closely, punctured: the post-scutellum is more closely and regularly punctured. The basal region of the median segment is closely punctured except the basal lobes at the base. Legs black; the femora and tibiæ thickly covered with long pale, mixed sparsely with black, hair; the spines on the four front tibiæ are bright rufous, on the hinder black. Abdomen black; the second and third segments have distinct violaceous tints; the pubescence on the dorsal segments are black, mixed with pale hair; on the ventral segments the hair is longer and paler; the apex of the petiole is strongly punctured; the rest of the abdomen smooth; the segments are not distinctly fringed with hair on their apices; the stiff pile on the pygidium is black mixed with white.

Comes nearest perhaps to *S. humeralis* Sauss. which differs from it in having the wings of a deep blue-violet tint; in its pronotum being broadly rufous; in the mesonotum and scutellum not being so strongly and closely punctured, the apical halves of these being impunctate; the abdominal segments want the blue-violet tints and the abdomen is longer compared to the length of the head and thorax.

Scolia (Discolia) thuytira, sp. nov.

Black; largely tinted with violet and purple tints; the front, vertex, upper part of the occiput, a small spot below the antennæ in the middle, an oblique broad mark on either side of the top of the clypeus, the pronotum broadly above and a large broad mark narrowed and rounded behind, on either side of the base of the third segment, bright orange, the wings uniformly fuscous-violaceous ♂.

Long: 22 mm.

Hab. Borneo.

Antennæ black, the scape, shining and covered with black hair, the flagellum opaque. The entire vertex, front, and the upper part of the outer orbits, orange yellow; strongly, but not very closely, punctured, and covered rather thickly with long fulvous hair. The clypeus is more sparsely punctured and its apex is impunctate; the two orange marks are large, covered, and almost unite above; the hair on the face is black, on the clypeus pale. The hair on the thorax is dense, stiff and black; the punctuation

on the mesonotum is close, almost uniform and distinct: this is also the case with the scutellum, except on its apex, which is smooth. The post scutellum is less strongly punctured. The median segment is more violaceous in tint than the mesonotum; it is smooth and is covered rather thickly with black hair except laterally at the base. Mesopleurae thickly covered with black hair. The wings are uniformly dark fuscous-violaceous and are without a very brilliant lustre. Legs thickly covered with black hair. Abdomen covered like the thorax and with violet, green and blue tints and lightly iridescent; it is thickly covered with black hair except on the second and third segments where the hair is much sparser and shorter; on the base of the third segment are two broad orange marks, which are obliquely narrowed laterally. The frontal furrow is smooth and is deeper and more distinct above and below than in the middle; the orange on the front extends into the eye incisions; the two yellow marks on the clypeus vary in extent; the lateral furrows on the apex are distinct; the two orange marks on the third abdominal segment vary in size and form.

Comes near to *S. bioculata* Sauss. and *S. fulvifrons* Sauss.

MUTILLIDÆ.

Mutilla gispa, sp. nov.

Black; the thorax and the base of the mandibles red; the third abdominal segment covered with silvery pubescence, two irregularly oval marks of silvery pubescence on the base of the second segment; the pygidium laterally covered with long silvery hair ♀.

Long: 11 mm.

Hab. Borneo.

Scape of antennæ shining, sparsely punctured and covered with white hair; the flagellum opaque, covered with a microscopic down; the terminal joint is brownish; the third joint is nearly twice the length of the fourth; the antennal tubercles rufous. Front and vertex coarsely rugosely punctured; the punctures on the front running into reticulations. Face and clypeus smooth and shining; the apex of the clypeus with a broad shallow incision. Mandibles black, rufous at the base; the apical

tooth is long and does not taper much towards the apex, which is rounded; the subapical tooth is rounded at the apex, does not project much and is not defined behind. Palpi long, dark testaceous and thickly covered with pale yellowish hair. Thorax slightly, but distinctly, narrower than the head; rounded at the base, almost transverse at the apex; it is fully twice longer than wide; its sides above irregular, not contracted; above it is coarsely rugosely punctured and sparsely covered with longish black hair; the pleurae are smooth and shining; there is a stout curved keel in the centre of the propleurae. Above the base of the middle coxae is a stout keel, which extends upwards to the middle; the lower edge is less distinctly keeled. Legs black, covered sparsely with long white hair; the tibial spines are black and stout; the tarsal bright rufous; the calcaria pale. Abdomen black; the basal segment short, becoming gradually wider towards the apex, above covered with long pale hair; the basal segment is thickly covered with shorter black hair; there are two irregular oval marks of silvery pubescence on the base of the second segment, which is thickly covered with black hair, long at the base, shorter on the remainder; the third segment is covered with silvery pubescence; the basal two-thirds of the pygidium is irregularly longitudinally striated; the apical third smooth; the sides are thickly covered with long pale hair. The keel on the basal ventral segment does not reach to the middle of the segment, is stout, is rounded at the base, its apex with a vertical slope; near it the sides bear some large round punctures; above the middle is a complete curved keel with a shorter one below on the apical half. The second and following segments are thickly fringed with silvery pubescence, the epipygium is punctured; the apex is smooth and is roundly incised in the middle.

Occasional Notes.

DIALECTS OF THE MALAY PENINSULA.

I have been engaged for some time past in an attempt to collect and compare the various dialects of the Wild Tribes of the Peninsula and shall be much indebted to anyone who will furnish me with fresh material on the subject, with a view to its being embodied in a forthcoming publication. Any vocabularies, grammatical notes, specimens of sentences with literal (verbatim) translations, and even lists of personal names, would be welcome, if accompanied by a clear statement of (1) the name of the tribe to which they refer; (2) its location (district and state, and approximate position on the map) and, if possible, (3) a short description of its physical characteristics.

I venture to appeal to members of the Society, or their friends, who may have collected such information, but have not the leisure or the inclination to work it up themselves, to assist me in this way in the work of collating these dialects. Much valuable material remains unpublished and is ultimately lost because men, who have been at some trouble to collect it, keep it back with a view to completing it with additional matter which they eventually have not time to collect.

I am particularly in want of specimens of the aboriginal dialects of the Negri Sembilan and Pahang, but any information relating to the aborigines of the Peninsula will be most welcome.

While on the subject of dialects, may I venture to draw the attention of the members of the Society to the importance of accurately recording the various dialects of Malay which are spoken in the Peninsula. Apart from a few scrappy notes about the pronunciation of certain letters, practically nothing has been done in this department. There are now, however, in most districts of the Peninsula, Europeans well qualified by a more than adequate knowledge of standard Malay, and if each of them were to compile a record of the local peculiarities of

the dialect spoken in the particular district where he was stationed, the result would be an invaluable contribution to the scientific study of the Malayan languages. Local dialects, which were formerly neglected under the mistaken idea that they were mere corruptions of the standard or written language, are now recognized to be of great importance from the philological point of view, and in many countries they are being accurately recorded and studied. It is regrettable that in this respect we should lag so far behind the Dutch, who have by this time compiled more or less adequate records (some of them in every way admirable) of almost every language and dialect spoken in their vast section of the Archipelago. To take one instance, of which I have some slight personal knowledge: we possess an excellent Dutch dictionary of Menangkabau Malay and a goodly number of specimens in prose and verse, of that curious and interesting dialect, yet, though this same dialect, with slight variations, is spoken in Nangri (Malacca) and the Negri Sembilan, where scores of Englishmen have heard it spoken, we have no adequate English record of it.

What is wanted, among other things, is an accurate account of

- (1) peculiarities of intonation and accent;
- (2) peculiarities of pronunciation of particular syllables, especially finals;
- (3) grammatical and syntactical peculiarities, if any. *e. g.* the use of prefixes or suffixes different from those of ordinary Malay: and differences in the construction of sentences;
- (4) preference for one of two synonyms where the standard Malay prefers the other;
- (5) the use of words with a meaning differing from that which they have in the standard language;
- (6) local words, simple and derivative, not found in the standard language;
- (7) local phrases, turns of speech and idioms.

Another subject which needs working up is that of place-names, both those that appear to be Malay and such as have no meaning in Malay and are probably in some cases Aboriginal.

These latter may eventually throw considerable light on that dark subject, the condition of the Peninsula prior to the Malay immigration.

I need hardly add that though I have specially dwelt on the Malay Peninsula, as the immediate domain of the Society's scientific interests, yet I do not mean to underrate the importance of contributions relating to other Malayan countries.

C. O. Blagden.



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Mura

A Malayan Element in some of the Languages of Southern Indo-China.

BY C. O. BLAGDEN.

In a former paper I endeavoured to point out that the aboriginal dialects of the Malay Peninsula show distinct traces of an Indo-Chinese element, impressed upon them, probably at a fairly early date, by the intrusion from Southern Indo-China of a race of Mon-Annam stock speaking a language which was closely allied to that of the Peguans and Cambojans.* The object of the present paper is to introduce the readers of this Journal to what may perhaps be appropriately described as the converse phenomenon, namely, the persistence (from a still remoter era) in some parts of Southern Indo-China, of distinct relics of an independent group of Malayan dialects, underlying the now dominant Indo-Chinese languages of that region.

As might be expected, the modern representatives of this group are far from being pure Malayan tongues: they exhibit obvious traces of the Mon-Annam and other influences to which they have for many centuries been subjected, and it is by no means certain that, in their present mixed condition, they can all claim to be classified in the Malayo-Polynesian family of languages. But whether that claim, which is sometimes made for them by French scholars more familiar with the Indo-Chinese than the Malayan languages, could be substantiated or not; whether, that is to say, these mixed dialects are to be regarded

* This subject has been learnedly and (so far as the materials at his disposal permitted) exhaustively handled by the Rev. Father W. Schmidt in a recent paper "Die Sprachen der Sakei und Semang auf Malacca und ihr Verhältnis zu den Mon-Khmet-Sprachen", which appeared in *Bijdragen tot de Taal-hand-en Volken-Kunde van Nederlandsch-Indië* Vol. LII (Series 6, part 8) Fasc. 3-4 (The Hague, 1901).

It remains to be seen whether the author's conclusions will stand the test of the further evidence that can be adduced; but at any rate he has marshalled the evidence that was before him with admirable skill and scientific acumen.

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2 LANGUAGES OF SOUTHERN INDO-CHINA.

as genuine Malayan languages overlaid with foreign accretions, or, on the other hand, as alien tongues containing a large number of old Malayan loan words, is not for the present purpose very material. In order to decide this point and to determine whether these mixed languages partake more of the Malayan or of the Mon-Annam type, a careful study of their structure and grammar would be required, but the materials for such a study are at present very deficient, and in either case these dialects even in their present state presuppose, as I intend to show, the existence of a distinct Malayan continental group established at a very remote period in the south of Indo-China.

The chief of these languages is Cham, the language of the ancient Hindu kingdom of Champa, which in medieval times occupied the country now called Annam, and in the period just preceding its fall (which occurred in A. D. 1471) had its centre on the East coast of Indo-China about lat. 14° N., though one of its earlier capitals was as far north as lat. $17^{\circ} 37'$ N. This language is still spoken in a few inland villages of the Annamese province of Binh Thuan, near lat. 12° N., and by the emigrant Cham community in Camboja; the latter is now Muhammadan in its entirety, but the Chams that remain in Annam are mostly pagans. Each group has its own dialect, but apart from slight variations the language of both is the same. It is written in a complex alphabet of Indian origin: inscriptions, both in Sanskrit and in Cham, abound in Annam, and the former go back to about the 3rd century after our era.* According

* The Sanskrit inscriptions were dealt with in a paper "L'Ancien Royaume de Campa d'après les inscriptions" by M. Abel Bergaigne in the *Journal Asiatique* (Paris) Jan. Feb. 1888.

The inscriptions in Cham, which have more interest for us, from the Malayan point of view, than the Sanskrit ones, have been dealt with by M. Etienne Aymonier in a paper "Première Étude sur les Inscriptions Tchames," in the same journal, Jan. Feb. 1891. The earliest known of these Cham inscriptions dates from about the beginning of the 9th century A. D.

In an inscription dated a little later, recording the dedication of two fields to pious uses, the expression used is *huma dua nan*, lit. "fields two those"; the word for God is *Yang*, the old word which survives in Malay *kajangan* and *sembahyang*. Most of the rest of the inscription is full of Sanskrit words, as indeed the whole series

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to Ptolemy the metropolis of this region was Balonga. This place can be clearly identified,* on other grounds besides mere similarity of name, with Bal-Angoué, of which the ruins situated near the coast about lat. 14° N are still in existence, and which was therefore apparently the first, or at least the earliest known, as it ultimately became the last, of the Cham capitals. Its fall is narrated, curiously enough, in the *Séjarah Malayu*, where it is called Bal, the generic Cham word for "metropolis" or "capital."

The Chams, in fact, are the remnants of what was once a highly civilized nation: they were the furthest outpost of Indian civilization on the Asiatic continent, and their country was a borderland where for over a thousand years Indian culture struggled with and was eventually vanquished by Chinese, the latter being represented by the Annamese, who though non-Chinese in origin had become civilized under Chinese tutelage.

Such is the history of the Chams in outline: but legends carry it back even further, for the Cambojan traditions, for what they are worth, represent the Chams as having been in occupation of Camboja when the Cambojans first arrived there, some centuries before the Christian era: the immigrant Cambojans are said to have intermingled at first with the Chams but eventually to have got the upper hand and driven out their king.

Physically the Chams appear to resemble the Malay and Indo-Chinese types, being described as somewhat fairer than the former. Some of them appear to show traces of Indian and Arab blood. Their language, of which a good grammar has been published, is in its present condition a mixed language containing a relatively large number of Mon-Annam elements. Some have regarded it as a Mon-Annam language saturated with Malayan loan words, others maintain that it is a Malayan language modified by Mon-Annam influences. As will appear in the sequel, I am not sure that this may not be something

of Cham inscriptions appear to be, the language in which they were written bearing much the same relation to the spoken Cham, as Kawi probably did to the contemporary spoken Javanese.

The series extends into the 15th century, to a few years before the fall of the kingdom.

* See J. R. A. S. (1899) 665.

like a distinction without a difference : but certain it is, at any rate, that Cham contains a very large percentage (perhaps nearly 50 per cent.) of pure Malayan words ; and in this respect it seems to exceed its neighbours, the dialects to be next mentioned.

It is in the hilly country bounding Annam on the west and separating it from the valley of the Mekong River, about lat. 13° and 14° N., that these three dialects are found : they are spoken by three savage tribes called respectively Cancho, Rodé and Chréai. These tribes appear to be on much the same plane of civilization as the Orang Hutan of the South of the Malay Peninsula ; their dialects are unwritten, and we owe such slight knowledge of them as we possess to the investigations of the three or four French explorers and administrators who have interested themselves in them. Practically that merely amounts to vocabularies of about 120 or 150 words of each of these dialects.* Besides these, there are other dialects in this region which are apparently more or less related to the above, and of some of which even less is known : † most of them however show decidedly more relationship with the Mon-Annam than with the Malayan family, the elements which they have in common with the latter decreasing in relative importance as one proceeds north and west from the old Cham region.

The only other dialect I propose to deal with here belongs to a different quarter altogether : it is spoken by the Selung (or Silung or Salone, as they are variously called) a sea-faring race who inhabit the numerous islands that fringe the Western Shore of Tenasserim (Lower Burma) from about lat. 13° N. to about lat. 10° N., and are marked on maps with the rather high-sounding title of the Mergui Archipelago.

These people may fairly enough be styled a distant branch of the Orang Laut. Their physical type, to judge from photographs, is more or less that of a rude Malayan race, with (possibly) some admixture of other elements, (of which the Indonesian may be one, as the Selungs, or at least some of them, are

* These are given in Moura, "Le Royaume du Cambodge."

† Of the Bahmar, however, a good dictionary by Douris-boure has been published (Hong Kong, 1889). It is a Mon-Annam dialect, but contains a certain number of Malayan words.

mesocephalic, while the true Malays tend to the *brachycephalic* type). The three wild tribes previously mentioned, I should have said, appear from descriptions and such illustrations as I have seen, to be at least in part of non-Malayan stock: some authorities have insisted much upon their Caucasian type, by which I suppose is meant that they differ considerably from the Mongoloid type of features common to both Indo-Chines and Malays.

The Selungs, whatever their race may be, are pagans in a low state of civilization, and their language is an unwritten tongue. It comprises several dialects differing considerably from one another, so that people from two islands barely eighty miles apart have some difficulty in carrying on an intelligible conversation together. Several short vocabularies* of this language have been collected at various times by different persons, and they serve to illustrate these dialectic variations: but as it is not quite clear to which dialects they respectively refer, the Selung must for our purposes be dealt with as one language. It would appear to be really a Malayan language, less mixed with other elements than are the tongues already mentioned, and its claim to be mentioned here at all rests merely on its present geographical position: but being the speech of a sea-roving race of islanders it is obvious that its position does not furnish such cogent evidence for the antiquity of Malayan elements in Indo-China as do the inland dialects previously enumerated; nor is it as closely connected with any of them as they evidently are with one another.

It may however be said to form a link in the chain between these mainland dialects and languages of the Eastern Archipelago; and that is the reason why mention is made of it here, although its existence does not really affect the main argument of this paper.

It would be merely wearisome to present a whole series of vocabularies of the five languages I have enumerated: a few words will serve to convey some idea of the nature of the Malayan elements which they contain and will exhibit the

* They are given in Anderson, "The Selungs of the Mergui Archipelago."

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peculiar character of their relation to the Malayo-Polynesian family of languages quite sufficiently for the present purpose.

The numerals, which are very characteristic, are as follows:—

	<i>Cham.</i>	<i>Caucho.</i>	<i>Rodé.</i>	<i>Chréai.</i>	<i>Selung.</i>
One	thaa, sa	sa	sa	sa	chā, chet
Two	dvaa, dva	doa	doa	toa	twa
Three	klāu	clou	to	clou	tahlow
Four	pak	pac	pac	pac	pāt
Five	limœu	lema	ema	léma	lemah
Six	nəm	nam	nam	nam	nam
Seven	tijuh	tuchu	cachu	tuchu	loojoo
Eight	dalapan	salapan	sapan	repan	wahlow
Nine	{thalapan, salapan, samilan }	doalapan	doapan	toapan	chowai
Ten	{tha pluh, sa pluh }	saplu	plu	plu	taplaw
Eleven	saplul sa	saplu sa	plu sa	plu sa	{taplaw-chā taplaw-chet
Twelve	saplu dva	saplu doa	plu doa	plu toa	ta plaw-twa
Twenty	dva pluh	doa plu	doa plu	toa plu	twa plaw
Hundred	ratuh	[Not given]	[Not given]	retus	allataw
Thousand	ribāu	[Not given]	[Not given]	ha repou	[appān]

The *th*-* forms in Cham belong to the Binh Thuan, the *s*-forms to the Camboja, dialect. Presumably the double forms in Selung are also dialectic variants. The spelling of Selung is the old fashioned English, that of Cham the modern scientific system †; as to the rest, they are collected by French authorities but I am not quite clear on what system they are spelt.

These words are interesting as exhibiting a numeral system which, though unquestionably and obviously Malayan, is in some

* This *th* is the English sound in *thing*. Some dialects of Achinese also turn *s* into *th* in this way.

† Slightly modified by the French tendencies of the transliterator. His *e* = *v* his *a* = *a* a sound varying between the vowels of Fr. *œur* and *œu*, or the two *œu* in Fr. *leureur*. But *u* is the real *u* (Fr. *ou*); *œu* is a lengthening of *a*.

respects clearly more archaic than that of Malay and could not, therefore, have been derived from it. In fact, even if these words were all that we knew of the dialects in question, we should be justified in saying that they constituted a distinct subgroup of languages, not directly derived from any existing Malayan group. The forms for *one*, *two*, *four*, *five* and *six* run practically through the whole Malayo-Polynesian family almost unchanged. In *four* the mainland dialects approximate most closely, perhaps, to the Bugis *ṣpak* and Madurese *ṣmpak*, unless indeed the *-k*, which appears to be unpronounced in these two languages, is to be regarded merely as a device of writing, not as the remnant of a real *-k*; Selung agrees with the Javanese and Dayak *pat*. In *six* they all agree with the Javanese *nēm* in the absence of the first syllable of the word (Malay *anam*) but retain the *a* of the second syllable like the Malay (also the Madurese *ṣnam*); the Achinese and Kayan Dayak form *nam* is identical.

The forms for *three* agree substantially amongst themselves and (except that some have a guttural for the initial *t*-) with the great majority of the Malayo-Polynesian family which retains the old form *tolu* or *tēlu*; but differ from Malay, which has another word, *tiga*. The nearest approximation to the Cham Cancho and Chréai forms appears to be the Bisaya (Philippines), *tló*: compare also the Sulu * *Kātluán* (= *Ka-tlu-an*), "thirty." For the guttural, compare Sulu *iklog*, Selung *k'loen*, with Tagalog *itlóg*, Malay *tēlor*, "egg." The Rodé contraction *to* recurs in Sulu.

The forms for *seven*, on the other hand, differ from the typical Malayo-Polynesian *pitu* and agree substantially with the Malay *tujoh*, save only that Selung puts *l*- for *t*-.

In both these cases, it is very noticeable that the dialects now under consideration agree substantially with Achinese (*tēlu* or *lu* pronounced *tēlhé* and *thée*, "three;" and *tujoh*, "seven") and with some of the Dayak dialects of Borneo, for which the reader may refer to No. 5 of this Journal, where out of a list of eleven dialects, ten have forms of *tolu* for *three*, and eight of those ten agree with some others not included in the ten in having forms of *tujoh* for *seven*.

* Between Borneo and the Philippines.

In *eight* and *nine* there is some confusion, which may be due either to the collector or to the wild tribes themselves; possibly the latter get a little mixed when they come to the higher numbers. Anyhow, they are said to use for *eight* a form *sulapan* which occurs again in Sundanese (Java) and also in Mangkasar (Macassar, of Celebes), in the latter under the form *sakupang*, and there means, as it ought to mean, *nine*. Oddly enough, the Minangkabau Malays use it, interchangeably with *dulapan* (*dələpan*), and also make it mean *eight*. Vice versa, these wild tribes use variants of the Malay and Achinese form of *eight* for *nine*. Cham, it is to be observed, uses both forms correctly, but has also another form for *nine*, viz., *Samilan*, the Malay *Sambilan* (*Səmbilon*), which may perhaps be merely a loan word from Malay itself.

There has been, in historical times, a Malay immigration from Sumatra (and particularly, it seems, from Minangkabau) into Camboja (where this form *Samilan* is used) and the Cham and Malay communities in that country, though distinct, are in close contact with each other, and being of one religion sometimes intermarry.

It is noticeable that Selung differs from the other dialects in having preserved, though in rather uncouth shape, the original Malayo-Polynesian forms for *eight* (*walu*) and *nine* (*siwa*).

In the forms for *ten* these dialects agree substantially with the Achinese *pələh*, in shortening the first syllable; this does not, apparently, occur in the Bornean dialects, which in other respects show a fairly close resemblance in their numeral systems.

For *eleven* and upwards the dialects agree amongst themselves and with some of the Bornean dialects, but differ from Malay, Achinese, Javanese, etc., in not using forms compounded with *-ləlas* (originally *-wulas*, the Malay *balas*, "to repay," with the meaning "to return," i.e. to the hand on which the counting was first began).

The Selung for "hundred" apparently has the prefix *sa-* "one" reduced to *a*, which occurs also in a Cham subdialect as *la-*. For the *-l-* of Selung *yahloam*, Malay *jarum*, "needle."

Thus while there are here particular words agreeing, each with some different Malayan language or group of languages,

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the sum total of the numeral system of these dialects is quite characteristic in its individuality.

A similar state of things prevails in regard to many other common words, as the following specimens will suffice to show:—

	Cham.	Cancho.	Rodè.	Chréai.	Selung.
Dog:	<i>athäu.</i>	<i>ason.</i>	<i>so.</i>	<i>so.</i>	<i>oiee, aai.</i>

Melano-Dayak *asau* comes nearest but the word, though not found in Malay (except in the expression *gigi asu*, "canine teeth") is very wide spread, e.g. Javanese *asu*.

Fowl:	<i>menuk.</i>	<i>menuc.</i>	<i>menuc.</i>	[<i>tus</i>].	{ <i>manok.</i> <i>maynauk.</i> }
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Compare the Javanese (and almost universal Malayo-Polynesian) *manuk*.

Tiger:	<i>rimong.</i>	<i>remong.</i>	<i>imong.</i>	<i>lemong.</i>	_____
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(The Selung word is different, viz: *pamoo, puuk*, which finds its analogues in aboriginal dialects of the Malay Peninsula, e.g., Tëmbe' *m'nu* (for which see No. 24 of this Journal, p. 17). The Achinese form is *rimong* like the Cham. I think there is no reason to doubt the identity of the word with the Malay *riman*. Possibly the form *hariman* is a sort of Hobson-Jobson word, that is to say, really the old native Malayan word for "tiger" but twisted into its present form by a fanciful notion that it ought to mean "the beast of Hari" (*harimriya*, see Maxwell, Manual of Malay, p. 21). I confess that even Sir William's brilliant scholarship cannot convince me that his Tamil "male lion" derivation is the right one.

Elephant:	<i>liman.</i>	<i>eman.</i>	<i>romon.</i>	<i>lonon.</i>	_____
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(Selung has *gazah*, the Malay *gajah*, a word of Sanskrit origin). Compare the Bulud Opie (Borneo), Javanese and Lampong (Sumatra) *liman*: this word, which is not found in Malay or Achinese, is probably derived from *lima*, the old word for "hand," the application being to the end of the animal's trunk. One of the Sanskrit names for the elephant (*hastin*) has a similar derivation; and compare also his Latin epithet *angnimantus*, "having a serpent for a hand."

	Cham.	Cancho.	Rodé.	Chérai.	Selung.
Plantain:	<i>patei.</i>	<i>potej.</i>	<i>untoi.</i>	<i>phumpetey.</i>	<hr/>
Rice:	<i>brah.</i>	<i>bréa.</i>	<i>brai.</i>	<i>pras.</i>	{ <i>palluh.</i> } <i>pla.</i>

(Selung has *pechang*, the Malay *pisang*.) With these forms compare the Dusun *pintie*, Tagbenua *punti*, Bulud Opie *pitch*, Kian (? Kayan) Dayak *pitch* (all of Borneo), Sumbawa *punti*, Mangkasar *unti*, Malagasy *untsi*, Fijian *vuli*: not found in Malay, Javanese or (I believe) Achinese; but it is the old original Malayo-Polynesian word. *Phum* is the Malay *pohon*, "tree," Cham *phun*.

Malay *béras*; I find in a Bugis vocabulary printed in the Arabic character at Singapore, *bārā'*; Achinese *bērēs* (apparently pronounced *bröch*, final -s in Achinese being as a rule pronounced -h as in Minangkabau Malay, where the word is *barèh*; in the Naning (Malacca) pronunciation, *borèh*). This word is a good instance of the rule (first formulated by the late Dr. H. N. Van der Tuuk in his "Outlines of a Grammar of the Malagasy Language," 1865) that "when the Malay and Batak equivalent word has *r* and the Tagal or Bisaya has *g*, both the Kawi and Javanese have no consonant." * The Batak form here is *boras* Tagalog *bigás*, Bisaya *bogas*, Kawi *wiwas*, which last contracts to Javanese *wos*, while Balinese has *baas*. It will be noticed that Cham and its neighbours here agree most closely with the Sumatran and South Celebes type and differ entirely from the Javan and Philippine. Selung rather stands alone, as in many other words. But Selung -l- corresponds in some other cases to Malay -r- e.g. *mata-aloi* (= *matahari*), "sun;" *yahloam* (= *jarum*) "needle."

Rice (in husk) is in Cham *palai*: Malay *padi*, Achinese *padé*, Javanese *pari*, Batak *pagé*, Bisaya *palai*. Here again, Cham agrees, as regards consonants, with Malay and Achinese, but it differs here from Batak as well as from the others. †

* This is often called "Van der Tuuk's first rule."

† These consonantal changes are regular and exemplify Van der Tuuk's second rule; see below, *s. c.* "nose."

Ox, cow: *tamor. lemo. imo. romo. l'mu*: Malay *lẽmbu*, in Achinese the same, and also *lẽmo*.

Rain: *hujan. ujan. hajan. yan. (kujan. kujan.)*

Malay *hujan*: but Batak and Javanese *ũlan**, Tagalog and Bisaya *olan*. Selung *k-* represents Malay *h-* in *ketam* (= *hitam*), "black" and a few other words.

Root: in Cham *ngha, agha* (in accordance with the peculiarity referred to below): this is not, apparently the Malay *akar* but *urat*, "Sinew." In form it is nearer to the Formosan *ugat*; Tagalog and Bisaya *ogát* than to any other forms. Batak in this word agrees with Malay.

In a sub-dialect of Cham of which specimens are given by Morice in an article entitled "Les Tiams et les Stiengs" in the "Revue de Linguistique" Vol. VII, vii, pp. 359-370, *r-* is often re-placed by *g-* e.g. *agopao* (= *saribu*) a "thousand"; *hagaton* (= *saratus*), "a hundred." In Tagalog these words appear as *libo* and *gatós* respectively.

Tongue: in Cham *dilah, dulah* (both being used); approaching nearer to the Tagalog *dita*, Bisaya *dila*, than to the Malay and Achinese *lidah*. Batak also has *dila*: here, therefore, Cham agrees closely with Batak and the Philippine languages but differs from Malay and Achinese.

Belly: *(tėan. tėan. tėan. kajėan. k'lan. tyan.)*

Bisaya, Iranun and Dusun *tian*, Sulu *tián*. *Tian* is given in some Malay dictionaries as a Javanese loan word meaning "belly (of a pregnant woman)." In Achinese *tiyěn* means "foetus," *mětiyěn* "to be pregnant"; in Cham *mětėan* means "pregnancy," *boh tėan* (literally "fruit of the belly," Malay *buah*, Javanese *wah*, "fruit") means "family."

Hand: *tangin. tengam. cangan. tangin. lėngan.* Malay *tangan*, Dusun *lėngan*, Dusun of Kimanis *longon*. For the Selung *l-* = Malay *t-*, compare *loojoo* (= *tujoh*), "seven."

* Van der Tuuk's third rule: "when a *j* of Balinese and Malay is *d* in Batak, the Javanese and Kawi both also have *d*."

	Cham.	Cancho.	Rodê.	Chérai.	Selung.
Nose :	<i>adung.</i>	[<i>chnu</i>].	<i>dung.</i>	<i>dung.</i>	{ <i>yoong.</i> <i>gyong.</i>

Malay and Achinese have *hidung*. Cham uses both *adung* and *idung*. Compare the Tidung (Borneo) *adung*, Dusun of Kimanis *adung*. Javanese and most of the Bornean dialects replace this *d* by *r*; the Philippine languages (and in this word Madurese also) have *-l* here; Batak has *-g*. The importance of this particular set of consonantal correspondences was also first pointed out by the late Dr. H. N. van der Tuuk. They constitute his second rule:—"When the Malay and Balinese *d* of equivalent words is represented by *l* in Bisaya or Tagal, both the Javanese and Kawi have *r*." *Chnu* is probably Cambojan.

Fire :	{ <i>apvêi.</i> <i>apvêi.</i> <i>apui.</i>	}	<i>apui.</i>	<i>pui.</i>	<i>pui.</i>	}	{ <i>appoi.</i> <i>apoi.</i> <i>apoe.</i>
							Malay <i>api</i> , but Achinese and several Dayak dialects, etc., have <i>apui</i> .

Water :	{ <i>iâ.</i> <i>ev.</i>	}	<i>ea.</i>	<i>eu.</i>	<i>ju.</i>	}	{ <i>sawên.</i> <i>larwaen.</i>
							Malay <i>ayêr</i> , Achinese <i>iyêr</i> , Madurese <i>aeng</i> , etc.

Stone :	<i>batâu.</i>	<i>pétou.</i>	<i>bato.</i>	<i>potou.</i>	<i>batoe.</i>
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Malay *batu*, the Achinese equivalent is written in the same way but pronounced *baté*.

The few words here given suffice to show that these dialects have peculiar points of relationship with several widely separated Malayan groups of languages and could not have been derived from any one of them. Their affinities appear to be most marked with Achinese, as is shown especially by the fact that in common with that language (and quite the opposite to Malay), they tend to throw the accent on the last syllable, which is consequently often strengthened to a diphthong, at the expense of the first, which is weakened and sometimes entirely suppressed: Compare *plâh*, "ten" with the Achinese *pêlah* and contrast the Malay *puloh*: similarly compare the forms, in

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Cham, Achinese and Malay respectively, **thun*, *t̄hun*, *tahun*, "year"; **dhan*, *d̄h̄n*, *dahan*, "bough"; *ngan*, *ngon*, *d̄ngan*, "with"; *dot*, *duk*, *du-lok*, "remain, dwell, sit"; and *mat̄ai*, *maté*, *mati*, "dead." Selung has *mat̄ai*, which form also occurs in Bornean dialects as *mat̄ai*.

It is probably owing to the same tendency to weaken the first syllable, that Cham has *hajan* for *hujan*, "rain," *akan* for *ikan*, "fish," *adung* for *hidung*, "nose," *balau* for *bulu*, "hair," and the like: and here it goes further in this direction than Achinese or any other Malayan language that I am aware of, although this vowel change appears also (but more rarely in some Bornean dialects, e.g. Tidung *adung*, "nose," Biadju Dayak *balau*, Lawangan *balu*, Siang *warlo* † [sic], "hair.")

It will of course be understood that the words here given have been expressly chosen with a view to exhibiting the Malayan element in these dialects, and that alien, especially Mon-Annam forms have been deliberately avoided. The Malayan element is strongest in the substantives, but is also represented in some of the verbs and adjectives, e.g.

	Cham.	Cancho.	Rodé.	Chréai.
Buy :	<i>bl̄i</i> .	<i>bloi</i> .	<i>blai</i> .	<i>blai</i> .
	Malay <i>b̄li</i> , Achinese, <i>blai</i> .			
Sell :	<i>pabl̄i</i> (in Cham: the rest are different): Achinese <i>publoi</i> .			
Give :	<i>br̄i</i> .	<i>brey</i> .	<i>broi</i> .	<i>proi</i> .
	Malay <i>b̄ri</i> , Achinese <i>bri</i> .			
Descend :	<i>trun</i> .	<i>trunh</i> .	<i>trun</i> .	[<i>tumau</i> .]
	Malay <i>turun</i> , Achinese <i>trun</i> .			
White :	<i>patih</i> (Cham); <i>potajak</i> , <i>patuk</i> (Seiung): Malay <i>putch</i> .			
Drunk :	<i>m̄buk</i> (Cham): Malay <i>mabok</i> .			
New :	<i>bar̄u</i> (Cham): Malay <i>baharu</i> .			
Unripe :	<i>mat̄ah</i> (Cham): Malay <i>m̄ntah</i> .‡			

* This is a different *th-* from the other: this *th-* and *dh-* are true aspirates.

† I take these examples from C. den Hamer's *Proeve van eener Verglikende Woordenlijst van zes in de Z. O. Afd. v. Borneo voorkomende Taaltakken*.

‡ For the present purpose it is not necessary to pursue this comparison further. Suffice it to say that the Malayan element can be traced (at least in Cham and to some extent in Selung, there being no

The main object of this paper being merely to point out the existence of Malayo-Polynesian words in these languages and not to determine the difficult question of their right to be classified as genuine members of that family, I shall pass somewhat lightly over their grammatical characteristics of which indeed, except as regards Cham, little is as yet known. Cham forms its derivative words, like the Malayan, but unfortunately also like the Southern Mon-Annam languages, with prefixes and infixes: The common ones in Cham are the prefixes: *pa*, *mæ-*, *ta-* or *da-* and infixes: *-an-*, *-næ-* and *-am-* or *-mæ-*. Most of these reappear, in more or less similar forms, with much the same force, in Achinese; but also in Cambodian, where they are very freely used, and to some extent in Peguan.* Suffixes, corresponding to the Malay *-kan* and *-an*

	<i>Prefixed.</i>	<i>Achinese.</i>	<i>Cham.</i>	<i>Khmer.</i>	<i>Mon.</i>
Verbs of action: causal or					
merely transitive ... ..	...	pě-, pu-	pa-	p-, ph-	p-, ph-, b-
Verbs, generally intransitive ...	...	mě-, mu-	mæ-	?	mā-
	<i>Infixes.</i>				
Verbs of state, intransitive ...	...	-əm-	-mæ-	?	-m-
Substantives ... ..	...	?	-mæ-	-m-, -am-	-m-
Substantives ... ..	...	-ən-	-an-	-n-, -an-	[-an-?]

In some other cases, where the forms agree, the meanings appear to differ somewhat. do not appear to be in use at the present time either in Cham, Achinese, Cambodian or Peguan; but if the derivation given above for *liman* (*liman*) from *lima* is right, they must have existed formerly to some extent in Cham.

The Selung dialect forms verbs by prefixing *me-* as in *metoqam*, "to smell" (Malay *cium*), *na-* as in *na-baut*, "to make" (Malay *buat*), *naleat*, "to look" (Malay *lihat*), *nadök*, "to sit" (Malay *duduk*, Achinese *duk*, Cham *dok*): also, apparently, by nasalizing the initial consonant, as in *nadone*, "to sleep" (Malay *tidur*) and *nakout* "to fear" (Malay *takut*). But

data for the other dialects) through most of the parts of speech, but the non-Malayan element is also, apparently, present in them.

* A few instances of this general correspondence must suffice: there are of course many differences in detail.

this last may possibly be due to the phonetic decay of a prefix of the form *man-* or *mən-* (the Malay *mě-*, *məng-*, etc.): for a word like *mangai*, "to cry" seems to presuppose an earlier *manangai* (Malay *tangis*, *məngangis*) and *mawah*, "to laugh" an earlier *manawah* (Malay *těr-tawa*). The loss of a medial *-n-* seems more probable than that of a *-t-*: it may be, however, that the Selung in these words as in "seven" had replaced the *t* by *l*. In that case these forms probably exemplify the prefix *me-* above.

Selung has the suffix *-kan* e.g. in the word *makkān* (for *mabakkan*, *am-bakkan* or *məmbakkan*, from *bah*, to "bring," Malay *bawa*).

The ideological order of these languages is unknown to me, except that in Cham (as in the Mon-Annam languages again) it appears to agree substantially with the Malay order: the attributive adjective and the genitive follow the principal noun, the object follows and the subject precedes the verb; but in Selung the object precedes the verb, which is very strange, unless it is due to the sentences having been collected through the medium of a Burmese interpreter, in speaking to whom the Selungs may have cast their words into the Burmese order. It is curious that Andamanese exhibits the same phenomenon: but there is no evidence that the Selungs are in any way connected with the Andaman islanders: both in physique and in language the two races are quite distinct from one another.

I have already indicated the conclusion to which a necessarily rather superficial comparison of these dialects seems to me to point; I regard them, or at least all of them except Selung, as proof positive of the establishment on the mainland of Southern Indo-China of a Malayan sub-family which must date its separate existence from a period so remote as to be coeval with the differentiation and dispersal of the existing insular language groups of at least the Western part of the Malayan Archipelago, and which formed something like a link between the Sumatra, Bornean and Philippine groups.

I think it is worth adding that the southern Mon-Annam languages, which so closely resemble the Malayan in certain of their structural forms, though by far the greater part of their vocabulary is radically different and non-Malayan, owe this

resemblance, in my opinion, to the fact of their having developed on what I believe was originally a Malayan soil. The true explanation of the peculiarities which they share in common with the Malayo-Polynesian family is, I believe, that they have been formed by the synthesis of a language introduced by alien immigrants from the north with the Malayan speech of a people who then already occupied Southern Indo-China. The northern invaders must have absorbed and assimilated these primitive Malayo-Polynesians and imposed upon them their alien language, which in its turn has been twisted, in the mouths of their mixed descendants, into something of a Malayo-Polynesian form, by a process that has been aptly called "inverse attraction."

The result of such an introduction of a strange tongue is, as a rule, that it becomes modified or recast into some form that comes natural to the people upon whom it is imposed: this may be illustrated by such well known cases as the Pidgin English, of the China ports, Negro English, or the Malay of many Chinese, Tamils and Europeans.

In such cases the mere vocabulary, though foreign to the speaker, is learnt readily enough; but he cannot help speaking his new tongue in the manner of his old one. He pronounces the new words in the way that comes easiest to him and utters them in what is to him the natural order, though that may not be the order proper to the language as spoken by those whose original speech it was. If it was natural to him to use prefixes and infixes in his old language, I imagine he would be apt to apply them to his acquired tongue in the same way and for the same purposes. This, to my mind, is the explanation of the curious fact that in Cambodian and Peguan we find these modes of formation, which are so characteristic of the Malayo-Polynesian family, while the difference of the material elements of language, i.e. the words themselves, prevents us from admitting an original kinship between the Mon-Annam and the Malayan families of speech.

I am afraid that this idea of the formal elements of language surviving, while the native vocabulary is gradually being superseded by foreign words, may remind some people of the persistence of the grin after the disappearance of the *Cheshire*

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cat. But the real analogy is to be found in those petrifications where every cell and fibre of the original wood or other substance are in course of time accurately reproduced by the stony deposit that replaces them. To drop figures of speech, which, however apt, can never be conclusive, when one considers that the Malayan languages readily adopt foreign words and instinctively fit them up with Malayan prefixes and suffixes, one can almost see the beginnings of such a process as I have indicated: words like *ka-raja-an*, *bēr-akal* or even *di-rēport-kun* (which last can be heard any day when a Malay police officer reads from his Station report book in a Police Court) are instances taken at random, where a Sanskrit, Arabic or English loan word has been subjected to this treatment.

One has only to carry the idea out to its logical conclusion and imagine a Malayan language gradually allowing its native vocabulary to be superseded, more or less completely, by foreign loan words, and the result would be much the same as what we now find in southern Indo-China. If the process were arrested half-way, a fairly evenly mixed vocabulary would be formed, like that of Cham; a more advanced stage of change would result in something like Cambodian; while a thorough application of the same principle might end in producing a language like Peguan, where only a very small percentage of words is to be found which show any signs of kinship with the Malayan family. Nevertheless the ideological order of these languages, that is to say the order of words in a sentence, is substantially the same as in the Malayan languages* and the same system of prefixes and infixes (though not, apparently, of suffixes) still survives.

On the other hand a strong tendency is noticeable, of which it has been shown that even Achinese (Malayan language) exhibited the beginnings, to contract disyllabic words into monosyllables or at least into quasi-monosyllables, in which one of the two syllables is almost suppressed. There are also other

* There is reason to believe that in this respect the Mon-Annam languages did not differ originally from the Malayan.

peculiarities which distinguish the Mon-Annam from the Malayan group, e.g., a preference for *harā* sounds* (surds) and the occurrence of true aspirated consonants: these latter characteristics may be due to the non-Malayan element in these languages.

The hypothesis here put forward would account for the remarkable resemblance in structure and formal elements between the Malayan and the Mon-Annam languages, a resemblance which, so far as I know, no one has yet satisfactorily explained. † But of course it must remain a mere hypothesis until these languages have been thoroughly studied and compared with one another.

This much, however, is certain: one Mon-Annam language which cannot be accused of having been developed on Malayan soil, namely the Annamese, which grew up on the borders of Kwang Si, within the Chinese sphere of influence, does not exhibit these phenomena, but follows the Chinese system of tones, though it has not adopted the Chinese ideological order. I take it that the differences between Peguan and Cambojan on the one side and Annamese on the other are the measure of the difference between a Chinese and a Malayan environment.

Whether, however, this suggested explanation be the true one or not, there remains the fact that in Peguan, and still more in Cambojan, there are a fair number of words (too many to be due to accidental coincidence) which correspond in form with Malayan words of similar meanings. As already stated, they are generally more or less contracted or mutilated, by the weakening or entire loss of one syllable, while the Malayan languages retain them in their fuller disyllabic forms. That being the case, the presumption is that they are genuine Malayan words: and this presumption is strengthened when any of

* Clearly, however, it is at a relatively modern date that the Mon-Annam languages have changed some of their sonants into surds: for in many cases (especially in many of the Indian and some of the Malayan loan-words) they still appear as sonants in the written language. Conversely Cambojan pronounces some surds as sonants.

† Mr. Himly in his paper referred to below, throws out a hint that some such explanation is possible, but does not enlarge upon it.

them are found to occur again in some distant island dialect of the Malayan family.

I propose to give a few instances to show the forms which such words assume in Cambojan and Peguan, but before doing so, I may as well point out that Indian loan-words, as to the origin and derivation of which there can be no doubt, undergo a similar mutilation in the Southern Indo-Chinese languages so that an analysis of the changes exhibited by these Indian words will serve as a guide in identifying the Malayan words to be found in those languages, which are often hardly recognizable without some such help.

The following are examples of words of Indian origin common to Malay and these two languages: I give the Malay, rather than the Sanskrit form, because the former is more familiar to those who know Malay.

<i>Malay.</i>	<i>Cambojan.</i>	<i>Peguan.</i>
Kala	... kāl .. ...	... kāla.
Kéçhapi	... chāpey [chapëy]	... ———
Guru	... grūw [Krū] ———
Chandra	... chand [chän] ———
Jambu	... jāmbūw [chömpū	... ———
Dewata	{ dew-ta [tévoda] deb-ta [tépoda]	{ dewatan [tewātau].
Dosa	... dōs [tōus] ...	... duh [tuh].
Nagara	... nagar [nokor]	... ———
Naga	... nāg [néak] ...	... nāk [naik].
Puasa	... puos [buos] ———
Bangsa	{ wangs [vong] pangs [pong] ...	{ wang [weang] wongsa.
Muka	... mukkh [mūkh]	... muk.
Raja	... rāj [réach] ...	... rājū [reachea].
Satwa	... satw [sāt] ...	... sat [sāt].
Sutra	... sūt [saut] ...	... sut.

The following list shews some of the similar changes which Malayan words suffer, viz.

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I. Suppression or weakening of the first syllable :—

<i>Malay.</i>	<i>Cambojan.</i>	<i>Peguan.</i>
Kayu 	jhéc [chœu]	... chhu [tsu]
Kijang 	k-tân [kôdan]	... ———
Katup 	k tûp [kédap]	... ———
Garam 	krâm [kram]	... ———
Jawa 	iwâ [chvéa]	... ———
Tarum 	trâm [trôm]	... ———
Pusat 	phehèt	... ———
Perak* 	prâk [prâk]	... ———
Bési* 	_____	Pâsoa.
Sarong 	srôm	... ———

II. Loss of initial consonant :—

Chin chin 	ânchién	... kâchin.
Têbu 	ainbau [âmpou]	... bau.
Tabong 	ainbang [ampong]	... ———
Daching 	anjing [ânching]	... ———

III. Loss of first syllable :—

Tumbok 	pok [bok]	... ———
Abang 	pông [bông]	.. ———
Létak 	tâk [dâk]	... ———
Kéring 	ring ———
Esok 	sâek ———

*[Note] Achinese bésôi, "iron." It is perhaps worth noticing that the Cambojan word for *silver*, like the Peguan for *iron*, is Malayan, while the Cambojan for *iron*, viz., *ték* [dék] is common to it and Chinese. The Cambojan word for *gold* is *mas* [méas]; the same as the Malay *mas*, *āmas*; but this is believed to be of Indian origin. For *tin* the Peguans use the expression *pâsoa dâk* [*pâsoa daik*], literally "water iron," alluding presumably to the alluvial formations where tin ore is got by washing river sand, while the Cambojans call it *Samma pâhâng* [*Sâmmâ pâhâng*], from which, as *samma* appears properly to mean "lead," I conjecture that the Cambojans first got their tin from Pahang, for the word *pâhâng* does not seem to have any meaning in their language, so far as can be ascertained from the Dictionary. Similarly in some of the Western languages (e.g. Arabic and also Hindustani, I believe) tin is called by a name *al-kalî'i* derived from Kalah, a place on the Western shore of the Peninsula probably identical with Kelah.

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IV. Loss of second syllable :—

Pěchah	...	pek [bək]	..	řakaw [přako].
Patah	...	Přk [bak]	...	puıt [pat].
Buka	...	pěčk [bők]	...	přk.
Mata	...	—		mat [măt, mot].
Tanda	...	tăn [dan]	...	—
Tolak	...	tol [dol]	...	—
Pakai	...	břk [peak]	...	buık [puk].

The Cambojan and Peguan words have been transliterated, to the best of my ability, from the written languages: where the pronunciation is different, this is indicated by a second form in square brackets, following in the case of Cambojan, M. Aymonier's spelling and in the case of Peguan the indications given by Haswell, adapted to the ordinary modern system of romanization.

This list could be considerably lengthened, specially as regards Cambojan, if space permitted: but I think it is enough * to show that there is a field of research waiting for any Malay scholar who has a fancy for hunting up Malayan words in these languages. It would however be a great mistake to suppose that the bulk of the vocabulary of Peguan or Cambojan can be accounted for in this way: the contrary is the fact, and at first sight any Malay student looking through a dictionary of either of these tongues would be struck with their non-Malayan aspect. It is by neglecting the essential relationship which exists between Peguan and Cambojan † and ignoring the

* In presenting a list which merely compares a few words in Peguan and Cambojan with what I believe to be the corresponding words in Malay, without taking into account the other Mon-Annam dialects and the other languages of the Malayan family, I am aware that I am offending against one of the primary canons of comparative philology. But my present object being to make out merely such a *prima facie* case as will justify further investigation in this direction, I have thought it superfluous to bring in the corroborative evidence that can be supplied from the other languages. I hope some day to deal with this matter more fully and systematically.

† It will interest Straits readers to know that this was first noticed by our Straits authority, J. R. Logan. It has since been conclusively proved by Forbes in his "Languages of Further India."

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wide differences in lexicographical material between the latter and the Malayan languages, that some authorities have been misled into denying the existence of a Mon-Annam family and asserting that Cambodian should be classified as a member of the Malayan group.

So far as it goes, this list of words serves to illustrate the subject of this paper by giving another instance of the traces of a Malayan influence in Iudo-China, which must be of very ancient date, and which is obviously an important element to be considered in relation to the unsolved problem of the origin of the Malayan races.

Many considerations point to the conclusion that at least some part of the ancestry of those races* is of continental Asiatic origin: there are anthropological reasons, which I am unable to deal with, but which have been summed up roughly (and not very accurately) in the phrase "Mongoloid type;" ethnographical considerations, such as were dwelt upon by the late Sir Henry Yule † and others, specially a curious agreement between the races of the Archipelago and those of Indo-China in a considerable number of points of detail regarding customs and usages (a kind of evidence, which though very weak if depending merely on one or two points of agreement, is in its nature cumulative and gains strength in an increased ratio as additional points are discovered); and, finally, there is the linguistic evidence, the investigation of which is, however, involved in many preliminary difficulties. It is to be feared, for instance, that the late Mr. J. R. Logan's achievements in this direction are not a safe basis for further enquiries to start from. On the other hand Professor Kern, ‡ by a comparison of

* I refer here more particularly to the true Malayan races inhabiting the western half of the Indian Archipelago, to whom alone the anthropological argument applies. How it is that the totally distinct stocks known as Papuan, Polynesian, Micronesian, etc., come to speak languages that cannot be severed from the Malayan family, is another problem, also at present awaiting solution. There seems, however, no doubt that it is the case, in spite of the difficulty of finding an explanation for it.

† *Journal of the Anthropological Institute*, 1880.

‡ In the paper to which a reference will be found below, the most conclusive, perhaps, of these words are the names for sugar-cane.

a considerable number of names of plants, animals and the like, which run (more or less) through the whole range of Malayo-Polynesian languages from Madagascar to Hawaii and from Formosa to New Zealand, has shown that the speakers (whoever they were) of the mother tongue from which these innumerable languages were evolved, were a seafaring people, of some moderate degree of civilization, (they were acquainted with the use of iron), who at the stage preceding the differentiation of these languages (but not necessarily originally) inhabited a long coastline of some good-sized country situated within the tropics, somewhere in the western half of the vast region over which these languages now extend. He points to the South-Eastern coast of Indo-China as the country that fits in best with this conclusion; and without going into details, lays some stress on the considerable Malayan element that is to be found in the existing languages of that region, which fact, as he observes, in view of the relative unimportance of the small Malayan communities to be found there in modern times, can only be explained by the hypothesis that they formerly constituted a much more numerous and powerful factor there than they do in our own day.

This last point it has been my endeavour to illustrate in the present paper.

It may be convenient if I summarize the conclusions to which the considerations here brought together appear to me to lead:—

(1) The Malayan element in Cham and its cognate dialects was not borrowed from any other Malayan language or group of languages. It has been separated from the western insular groups for as many centuries, as they have been from one another, and has become differentiated from them as they have amongst themselves.

(2) The Southern Mon-Annam languages and Cham are at once Malayan and non-Malayan: largely Malayan in structural formation, mixed but predominantly non-Malayan in vocabulary, they are probably the result of an intimate mixture between

banana, rice (in husk and husked), shark, prawn, sea-turtle, buffalo and crocodile: but there are a good many more besides.

Malayan and alien tongues. The Malayan element is strongest in the southeast, weakening progressively towards the north and west.

(3) At a remote age, before the introduction of the alien element just referred to, probably the whole coast of southern Indo-China from the Irrawady to the borders of Tongking, and certainly the eastern part of it from Cape St. James to the neighbourhood of Hué, was more or less occupied by communities speaking a pure Malayan language, possibly already slightly differentiated into dialects.

(4) It was probably from this region at a time when it was still purely Malayan, that the various emigrations took place, which ultimately carried dialects of that language to the distant islands in which they are now spoken.

I am content to rest this last proposition on the grounds put forward by Professor Kern in the essay already referred to; the other three appear to me to follow, though not all with the same degree of certainty, from the linguistic evidence of which some specimens have here been brought together.

Since writing the above, I have seen in the *T'oung Pao* for March, 1901 (Series II, Vol. 2, No. 1, p. 86) a review by M. Gustave Schlegel of a recent Siamese grammar. In noticing this work (which appears to be the best Siamese grammar hitherto published) after pointing out, what has been pointed out before, notably by the late M. Terrien de la Couperie, that Siamese contains a very large percentage* of words common to it and Chinese (especially, the numerals† which are, up to a certain point, pure Chinese loan words) and also a considerable number of Sanskrit and other Indian words, the eminent Chinese Professor of Leyden hazards the view that the residuum of Siamese will be found to be a Malayan language, and supports this thesis by a few words which no doubt are Malayan but may very well be loan words like the Indian ones; everything that the venerable professor writes is worthy of consideration, but

* De la Couperie puts it as high as 33½ per cent: "Languages of China before the Chinese" pp. 59-60.

† Not however, "one" and "two."

with all deference, I venture to say that this is indeed a bold theory. His chief argument, apparently, apart from the aforesaid Malay loan words, is that Fu-nan (or Pu-nam), the old name for the country now called Siam, is capable of being explained by a Siamese derivation which M. Schlegel invents for it: unfortunately all monosyllabic languages lend themselves only too easily to hypothetical derivations of that kind; and that its people, in the early centuries of the Christian era, are described by Chinese chroniclers as being "ugly and black" with "curled hair," resembling, the Professor himself says, the Semangs. On the strength of this he assumes the Siamese to be Malayan. Everyone who has been to the Far East should know, and M. Schlegel can hardly have forgotten, that the Siamese are several shades fairer and the Semangs several shades darker than the average Malay complexion: and that neither Siamese nor Malays have curled or curly hair. His argument compels M. Schlegel to deny the historically certain fact that the Thai, that is the present Siamese, are comparatively recent arrivals from the interior of Northern Indo-China; and he entirely overlooks the essential unity of their language with that of the Laos, Shans, etc., right away to the Khamti on the eastern border of Assam and a string of tribes in southwestern China. If the Siamese spoken to-day at Bangkok is at bottom a Malayan language, so must be the languages of all these northern tribes, for they are substantially the same and cannot be severed from one another. That appears to me to be an exceedingly large conclusion to draw from a few Malay loan words to be found in modern Siamese, and I am convinced that it will be repudiated both by Siamese and Malay Scholars with tolerable unanimity.

Of course the possibility that there is a Malayan element in the blood of the modern Siamese of the South is not thereby excluded: that there should be such an element is an almost necessary consequence if the main argument of the foregoing paper has anything in it. But apart from modern intermixture which the difference of religions keeps at a minimum, it can only have come in at second hand through the Peguan or Cambodian inhabitants who occupied Siam before the Thai conquered it. That, however, is a very different matter from the

hazardous assertion that Siamese is a Malayan language, an assertion which requires far more cogent evidence to justify it than M. Schlegel has supplied in the article to which I refer.

It is hardly necessary for me to add that this paper is merely intended to draw the attention of the readers of this Journal to the subject: so far as the greater part of it is concerned, no claim is made for originality, and it is in the main merely a restatement of what has been set forth elsewhere in fuller form by others. My excuse for offering it to the Society is that some of the readers of this Journal may not have had access to the existing literature on the subject. At the risk of appearing egotistical, I desire to put on record that at the time my former paper was published, I had not heard of Professor Kuhn's admirable essay entitled "Beiträge Zur Sprachen Kunde Hinterindiens." In it most of my conclusions were anticipated, and, if I had known of its existence, my paper would not have appeared, without at least some reference to it. The occasion for this personal explanation, which ought perhaps to have been made sooner, is a remark by Dr. Luering in No. 35 of this Journal.

I append a list of the principal authorities consulted:—

AYMONIER, Grammaire de la langue Chame: Les Tchames et leurs Religions (Revue de l'Histoire des Religions, 1891); The History of Tchampa (Imperial and Asiatic Quarterly Review, July 1893, and Transactions of the Ninth Congress of Orientalists, London, 1893); Vocabulaire Cambodgien-Français; Dictionnaire Khmèr-Français:

VAN LANGEN, Atjehsche Taal (Handleiding; Woordenboek);

HASWELL, Grammatical Notes and Vocabulary of the Peguan Language;

STEVENS, Vocabulary of English and Peguan;

KERN, De Fidjitaal: Taalkundige gegevens ter bepaling van het Stamland der Maleisch-Polynesische Volken (Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, Afd. Letterkunde, Amsterdam, 1889).

MOURA, Le Royaume du Cambodge:

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- ANDERSON, The Selungs of the Mergui Archipelago;
- KUHN, Beiträge zur Sprachenkunde Hinterindiens (Sitzungsberichte der Philosophisch-, Philologisch- und Historischen classe der Königlichen Akademie der Wissenschaften; Munich, 1883);
- HIMBY, Bemerkungen über die Wortbildung des Mou (*ibid.*); Ueber den Wörterschatz der Tscham-Sprache (*ibid.*), 1890.
- NIEMANN, Bijdrage tot de Kennis van der Verhouding van het Tjam tot de Talen van Indonesie (Bijdragen tot de Taal-, Landen Volkenkunde van Nederlandsch Indie, Leyden, 1891.)
- BRANDES, Bijdrage tot de Vergelijkende Klankleer der Westersche Afdeeling van de Maleisch-Polynesische Taalfamilie.
- VAN DER TUUK, Outlines of a Grammar of the Malagasy Language (Reprinted, from the Journal of the Royal Asiatic Society, in Vol. I of the Second Series of Essays Relating to Indo-China, for the Straits Branch).

A Vocabulary of the Jakuns of Batu Pahat, Johore, together with some remarks on their customs and peculiarities.

BY A. D. MACHADO.

At the headwaters of the Sembrong, the Bekok and the Simpang Kiri in the interior of Johore, three large streams which, draining one into the other, form lower down the Batu Pahat River, are to be found scattered families of Jakuns. These people live by agriculture, are employed by the Chinese pepper and gambier cultivators in clearing jungle for them, and furnish the Malays through barter, their stock of jungle produce. Years of contact with the Chinaman have robbed them of much of their primitiveness. So great is their assimilation to the Chinaman, that when cadging a bowlful of rice from him, they have been often seen manipulating a pair of chopsticks with a dexterity unequalled by the Chinaman himself. They now profess an abhorrence for monkeys, snakes, lizards and similar delicacies, and it is sometimes amusing to behold their studied look of consternation at any one suggesting the possibility of anything so loathsome forming part of their daily menu. Yet the Malays declare that in the privacy of their own homes, they will devour anything, from a snail to an elephant. They do not regard with disfavour the giving of their daughters in marriage to Chinese planters, such unions usually assuring to them and their relations some measure of certainty of a regular supply of food. They are thus a somewhat mixed people to-day. In general appearance they are not unlike up-country Malays. There is still however that peculiar lustre in their eyes, an appearance of independence and yet of timidity, an indefinable something in fact, which to a practiced observer, at once proclaims them their primitive origin and their probable connexion with the other wild tribes further north in the peninsula. They

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do not call themselves Jakuns, that word being a term of opprobrium if applied to them within their hearing. Curiously enough, the Sakais also resent the application of the word Sakai to them, and like the Sakais again, they call themselves *Orang Ulu*, up-country people. The Malays in their dealings with the Jakuns, call them *Pa angkat* (adopted father) *Ma angkat* (adopted mother) *adik angkat* (adopted younger brother) and so on as the case may be. This pleases them hugely, though not to the extent of inducing them to part with their stock any cheaper or in greater quantity. For all that, they are very much harrassed and robbed by the Malays, in particular by those who have some authority over them. In my journeys into the interior of Batu Pahat, I have often had patiently to listen to the complaints of these men against their Malay oppressors, many of undoubted genuineness, without however having the power to render any relief.

It may not perhaps be generally known that the Jakuns practice the rite of circumcision, but in a way peculiar to themselves. They do not, like the Mohammedans, remove the whole skin, but merely part the upper folds of the prepuce by a longitudinal cut or incision, causing the rest to drop into a bunch below. Asked as to the reason for this peculiar rite, the oldest man present related to me the following legend. Very many years ago, when the whole country belonged to them and they were under the rule of a great Batin (King of their own, as great as the Sultan of Johore,) this great Batin had a wife who for a long time remained childless. At length, a male child was born to them, who after thriving for some time sickened and was on the point of death. On consulting a *Pawang* (Diviner or Sorcerer) who happened in this case to have been a Mohammedan Malay, he declared that the only means of saving the youth's life was by circumcision. To this the great Batin demurred but vowed that if his child recovered, he would be circumscised. He got well and the operation was in due time performed but in order that he might not thereby be held to have embraced the Mohammedan faith, this peculiar style was adopted, the fiat having in the meantime gone forth that all male Jakun children were in future to undergo this operation in the manner indicated above, which explains the existence of this peculiar

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custom to-day. This custom is utterly unknown to the northern Sakais who appear to dread the operation, so much so that many Pahang Sakais have told me that but for this one operation, they would have embraced the Mohammedan faith. Another reason why a Sakai will not become a Mohammedan is that he will be obliged to eschew such delicacies as he from time to time picks up in the jungle, in particular the bamboo rat (*Rhizomys*) which is to him the most toothsome and delicate of foods!

These Batu Pahat Jakuns told me that in days of old, they possessed a very extensive vocabulary of their own. All that now remains of this once extensive vocabulary are a few words, which they still use interspersed with Malay and which are transcribed below. Even these few remaining words, the rising generation of Jakuns do not appear inclined to use, so that in a short time, their once extensive language will be a thing of the past. I should add that a great number of these words have appeared in one of the earlier issues of the Journal collected by Lieut. Kelsall, R. E., from the Endau Jakuns, while a few seem peculiar to the Batu Pahat people.

**List of Jakun Words at present in use among the
Jakuns of Batu Pahat.**

Now, klak.

Day after to-morrow, duak'.

Morning, lom. ("Lom" in Siamese means air.)

Thunder, pātēh. ("Pātēh" is "Slave" in Malay.)

Lightning, gintal.

Tiger, jerokee.

You, atok, hee. (Heh is Sakai for you.)

Boy, kōlōp. (In Perak "kulup" also means boy among Malays, while in Pahang, the same word means, among Pahang Malays, male organ of generation.)

Girl, dai-ying (Siamese for woman is Pu ying)

Father, bai.

Aunt, amai.

Uncle, wāh.

Unmarried man, penganting.

„ girl, dai-ang.

- Cheek, pipi.
 Chin, dago.
 Forehead, kening.
 Eyebrow, bulu halis.
 Widower, balu.
 Widow, indong balu.
 Divorced man, silai.
 Divorced woman, indong silai.
 Cold, sidék.
 Father of first born child, p'miot.
 Mother „ „ „ „ indong miot.
 Porcupine, sebuntu.
 Gibbon, tawók.
 Dog, koyok.
 Durian fruit (*Durio Zibechinus* L.), tuang
 Tampui (*Baccaurea Malajana*), berket.
 Papaya (*Carica Papaya*), kuntaia.
 Sweet potato, tilak.
 Don't know, bê-ná-hük.
 Finished, bek.
 Man, b'orang.
 Woman, oyang.
 Father of dead child, mantai.
 Mother „ „ „ indong mantai.
 Want, endák.
 Don't want, n'guin.
 To procreate, m'nuju.
 Female organ, kache.
 Drink, jo'ho.
 Thirst, chekat.
 Tired, kabo.
 Head of father or mother-in-law, hambubu.
 Forehead, k'ning.
 Heel, tumbit.
 Mouth, bibir.
 Jungle, debri.
 Ant, m'ret.
 Elephant, pechem
 Mosquito, rengit.

- Pig, jokot.
 Rhinoceros, s'ukrat.
 Come, kiah.
 Friend, teman.
 Knee, to-ut.
 Frog, bihong, or chikong or B'bap.
 To kill, kleng.
 Weak, beh rot or beh alah.
 Firestick, larak.
 Firewood, Ungun api or chel-hér.
 Not got, póhós
 Rainbow, bohuta or kawat.
 Blow pipe, temiang. (Temiang is Malay for that particular
 species of bamboo from which Blow Pipes are
 made, the *Bamboosa Wrayi*.)
 River bank, t'rbis.
 Angry, t'keng.
 No, beh.
 Go, jök.
 Spider, t'wowoh.
 Woodpecker, t'rlom.
 Leprosy, p'ngundim or barak.
 Korap. (a kind of ringworm common among all jungle
 men, likewise among Malays and Siamese who
 dwell in the interior) Losonq.

On the Parthenogenetic Breeding of EURYCHEMA HERCULANEA, Charpentier.

BY R. HANITSCH, PH. D.,

CURATOR OF THE RAFFLES MUSEUM, SINGAPORE.

Although I have already given some account of the breeding of the huge Phasmid insect, since identified as *Eurycnema herculanea*, Charpentier, in the Annual Reports of the Raffles Library and Museum for 1897 and 1898, it seems desirable to put it on record in a more connected form.

About January 1897 Mr. L. A. Fernandis, Taxidermist in the Raffles Museum, received a living female of this species, but as it had passed through several hands, its place of origin could not be traced. Possibly it may have come from Java. He kept it alive, feeding it on guava leaves (*Pisidium gujava*, L.), and in February it began to lay eggs. He kindly presented me with a number of those eggs, most of which hatched during April and May of that year, but one not till August, and the last one in the middle of September. As soon as the young ones were hatched, they applied themselves very vigorously to the consumption of guava leaves, and grew so quickly that the first one out was fully developed on August 11th, casting its last skin on that date, i. e., more than a month before its last sister egg was hatched. During growth they cast off their skin several times without any great effort, only rarely losing a leg in the process, until the last cast, when many of them lost several legs, one even as many as five. Naturally these were then helpless in feeding themselves, not being able to cling on to the guava leaves, and they soon died. But the individuals which were successful afforded an interesting sight when the last skin was cast. Up to this they had been stick-like in appearance (Malay name "Bilalang Ranting," Stick Insect), without wings, of dark brown colour in the earlier stages

and turning into grey in the later stages. Now they suddenly appeared in a glistening new green skin, with long wings, and the body seemingly almost double its former diameter. All specimens were female, and a few weeks after they had reached the adult stage, they began to swell up and lay eggs, the first of them being laid on September 16th. None of the females had ever come into contact with a male insect, having been carefully kept in a large airy case consisting of glass and perforated zinc, exhibited in the entrance hall of the Raffles Museum. Eggs were continually being laid by the sister insects up to February 1898, the insects dying about two or three weeks after they had deposited the eggs. Of the eggs laid during the last four months of 1897 and the first two months of 1898, a careful account was kept. Every morning I inspected the case, removed the eggs which had been laid during the past twenty-four hours, and placed the eggs laid on different days in separate boxes, duly dated. The first young ones of this generation appeared in March and the last in August, requiring for their development from 165 to more than 240 days of which great divergence in time I cannot give any explanation. Most of them, however, were hatched between the 195th and 212th days, the maximum number being hatched on the 205th day. The accompanying table shows the proportions of eggs hatched on different days. This generation was rather weakly, only a few reached maturity, most of them dying off when shedding their skin two or three stages before maturity. The first of them reached the adult stage on August 10th, 1898, and never having come into contact with any male, began to lay eggs on September 15th. These eggs did not develop, and none of the other individuals of this generation laid any eggs.

The reason why the eggs of the last generation did not develop was very probably in consequence of their artificial surroundings. If I had been able to keep the insects in more natural conditions and to devote more care to their feeding, I feel sure I would have been able to rear a few more parthenogenetic generations.


This appears to be the first instance of Parthenogenesis observed amongst Orthoptera, and there are now only three

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orders of insects left in which this mode of propagation has not yet been described, viz., Coleoptera, Strepsiptera, and Aptera. In Hymenoptera Parthenogenesis occurs amongst the Tenthredinidæ or Saw Flies, Cynipidæ or Gall Flies, Chalcididæ, and certain Bees and Wasps. Amongst Lepidoptera there is perhaps only the one well-established case of *Solenobia*, and amongst Diptera that of *Chironomus*, amongst Thysanoptera the case of *Thrips*, and amongst Neuroptera a doubtful case of one of the Caddis Flies, *Apatania*. More common again are well-established cases of Parthenogenesis amongst Hemiptera, viz., in the Aphidæ or Plant-Lice, and Coccidæ or Scale Insects.

Description of the adult female: The total length of the largest specimen, preserved dry, is 230 mm. (about 9 inches), but all the measurements given below are taken from a very perfect specimen preserved in spirit, measuring 204 mm. (about 8 inches), the total length in both cases being exclusive of the antennæ, but inclusive of the ovipositor.

The head is oval and smooth, 13 mm. long, with three very distinct ocelli, the antennæ being 27 mm. in length and consisting of 26 joints. The prothorax is corrugated, without spines, and only 11 mm. in length. The mesothorax is 39 mm. long and spined. On its dorsal surface there are about sixteen spines arranged in two irregular rows of eight each, laterally about eight spines on either side, and ventrally two irregular rows of about six spines each. The metathorax, 16 mm. long, is smooth dorsally, but provided with a few blunt spines laterally and ventrally.

All the abdominal segments are smooth. The first segment measures 12 mm., the second, third, fourth and fifth 14 mm. each, the sixth 15 mm., the seventh 13 mm., the eighth 10 mm., the ninth and tenth 7 mm. each. The ovipositor is large and boat shaped, measuring 39 mm. and projecting beyond the last segment by 19 mm. The styles are 12 mm. long: they are narrow flat plates with a dorsal vertical ridge, appearing therefore  shaped in transverse section.

The first pair of legs measures 112 mm., the second 90 mm., the third 122 mm. The femora of all legs bear spines arranged in three rows, but the tibiæ of the first pair of legs are almost smooth, whilst those of the second pair are more

spiny and those of the last pair still more so. The animal has the power of reproducing legs lost during the process of casting of the skin, especially in the earlier stages, but in my specimens the new legs never grew up to the size of the normal legs of the opposite side.

The wing covers measure 39 mm., the wings themselves 77 mm., reaching down to the end of the fifth segment.

The eggs are oval and smooth, of dark brown colour, measuring 5 by 4 mm., surmounted by an almost spherical capitulum, 1.5 mm. in diameter. These eggs were figured by Dr. D. Sharp, F. R. S., of Cambridge, in his "Account of the Phasmidæ, with Notes on the Eggs," in Willey's "Zoological Results," part IX, fig. 39, under the name of *Cyphocrania hamitschi*, n.n., and the author says that they are remarkable for the large size of the capitulum. Later on, however, he identified the species as *Eurynema herculanæ*, Charpentier.

Malay Plant Names.

BY H. N. RIDLEY AND C. CURTIS.

In Journal No. 30 a list was published of Malay names of plants with their equivalents in Latin and English. It has been considered by various persons that it would be useful to have the names in Latin-Malay, and Mr. Curtis has compiled this from the original work. This also gives an opportunity of adding names since obtained, and of making various corrections in identification and spelling. Dr. Clercq, who is much interested in this study of native plant names, has criticised the original list, and added a number of names and suggestions, which are incorporated herewith. One or two words have been added from Clifford and Swettenham's Dictionary, but many of the plant names therein are unidentified with the plants, and so useless for this purpose, and some are not Malay Peninsula words, to which this list has been confined.

Scientific Names.

Malay Names.

Abrus precatorius, L. ...	...	Akar belimbing. Akar saga betina.
(<i>Leguminosæ</i>).		
Abutilon indicum, L. ...	...	Kambong lobo. Bunga kis-ar. Malbar.
(<i>Malvaceæ</i>).		
Acacia pseudo intsia, Willd. ...	...	Akar kapok. Kayap.
(<i>Leguminosæ</i>).		
„ pennata, Willd. ...	...	Akar kayu manis.
(Var pluricapitata).		
„ Farnesiana, Willd. ..	..	Lasana.
Acalypha indica. ...	...	Rumpit lis-lis.
(<i>Urticaceæ</i>).		
Acanthus ebracteatus, Wall. ...	...	Jeruju. Jerujah. Gurujah laut.
(<i>Acanthaceæ</i>).		
Acorus calamus, L. ...	...	Jeringu. Deringu.
(<i>Aroideæ</i>).		

<i>Acriopsis javanica</i> , Reinw. ...	Sakat bawang. Sakat batu kapiam.
(<i>Orchideæ</i>).	
<i>Achras Sapota</i> , L. ...	Chiku.
(<i>Sapotaceæ</i>).	
<i>Acrostichum aureum</i> , L. ...	Larat.
(<i>Filices</i>).	
<i>Acronychia Porteri</i> , Wall. ...	Katiak. Bimau hutan. Melaman.
(<i>Rutaceæ</i>).	
<i>A. laurifolia</i> , Bl. ...	Gambadak. Rejang.
<i>Actinodaphne</i> sp. ...	Medang kuning. M. kunyit.
(<i>Laurineæ</i>).	
<i>Actinorrhytis Calapparia</i>	Pinang Sendawa. P. hantu. P. Penawar.
(<i>Palmeæ</i>).	
<i>Adenosma coeruleum</i> , Br. ...	Magun jantan. Bapulut. Gumbok.
(<i>Scrophularineæ</i>).	
„ <i>capitatum</i> , Benth. ...	Timbah tasek. Tasek-tasek. Tasek-tasek. Ruku hitam. Talan.
	Kuching-kuching.
<i>Adenostemma viscosa</i> , Forst. ...	Rumput pasir. Sumbong gajah.
(<i>Compositæ</i>).	
<i>Adenantha pavonina</i> , L. ...	Saga. Kanduri batang.
(<i>Leguminosæ</i>).	
<i>Adenosacme longifolia</i> , Wall. ...	Nasi-nasi bukit.
(<i>Rubiaceæ</i>).	
<i>Adina rubescens</i> , Hemsl. ...	Murombong. Peropong. Berubong.
(<i>Rubiaceæ</i>).	
<i>Adinandra dumosa</i> , Jack. ...	Poko gula. Tiup-tiup. Medang petutu. Medang api-api.
(<i>Temstramiaceæ</i>).	
„ sp. ...	„
„ sp. ...	„
<i>Aegiceras majus</i> , Gaertn. ...	Teruntum. Kukulang Laut.
(<i>Myrsinæ</i>).	
<i>Aeschynanthus radicans</i> , Jack. ...	Akar Rambéh daun. Akar berunus.
(<i>Gesneriaceæ</i>).	
<i>Aegle Marmelos</i>	Bila.
(<i>Rutaceæ</i>).	

Aganosma marginata, Don. ...	Sakat limah. (Pahang).
(<i>Apocynaceæ</i>).	
Ageratum conyzoides, L. ...	Tahi ayam. Tombok-tombok jantan. Sianggit.
(<i>Compositæ</i>).	
Aglaonema angustifolium, N. E. Br. (<i>Aroidæ</i>)	Sumpuh bulan. Sumpuh kring. Penggehé sagut.
„ marantifolium, Schott....	Birah ayer.
„ minus, Hk. f. ...	Mata hudang. Salimpat Ayer. Senjuang hutan. Mata Bisol.
„ oblongifolium, Schott. ...	Lidah gajah.
Aglaia argentea, King. ...	Modu.
(<i>Meliaceæ</i>).	
„ Griffithii, Kurz. ...	Balun hijau.
„ odorata, Lour. ...	Belangkas. Chulan.
„ odoratissima, Bl. ...	Sulubat jantan. Tumilang. Belangkas hutan. Rambutan Pachat Jantan.
„ glabriflora, Hiern. ...	Pasak bras-bras. Mulupas. Pasak Linga, Pasak Merah.
„ Tenuicaulis, Hiern. ...	Kasip bukit.
„ Diepenhorstii. ...	Tada Ikan.
Ageloea vestita, Wall.	Kaching-kaching. Kang-kuchang. Akar rusarusa. Telor bujak.
Agrostistachys longifolia, Benth. (<i>Euphorbiaceæ</i>)	Julong-julong.
Agrostophyllum glumaceum, Hk. f. (<i>Orchiidæ</i>).	Bunga sakat.
Alchornea villosa, Muell. ...	Rambahan bukit. Rami hutan. Rami bukit.
(<i>Euphorbiaceæ</i>).	
Aleurites moluccana, L. ...	Kamiri. Buah keras.
(<i>Euphorbiaceæ</i>).	
Alocasia longiloba, Miq. ...	Keladi rimau. Keladi ular.
(<i>Aroidæ</i>).	
„ macrorhiza, Schott. ...	Keladi sebarang. Keladi. Birah negri.

<i>Allomorpha exigua</i> , Bl. ...	(<i>Melastomaceæ</i>).	...	Pakan rimbau. Senduduk gajah. Senduduk hutan. Panghong. Kerakup rimau. Kaduduk gajah. Endebi.
„ <i>Griffithii</i> , Hk. f. ...		...	Kapo-kapo. Kurukap rimau. Tutup bumi rimbah.
<i>Allophyllus cobbe</i> , L. ...	(<i>Sapindaceæ</i>).	...	Terentang bukit. Tumbit kayu.
<i>Aloe ferox</i> , Haw. ...	(<i>Liliaceæ</i>).	...	Lidah buaya.
<i>Alpinia conchigera</i> , Griff. ...	(<i>Scitamineæ</i>)	...	Lengkuas ranting. Kela- moyiang. Jurunang.
„ <i>involutrata</i> , Griff. ...		...	Kantan hutan. Puah putih. Gingin.
„ <i>galanga</i> , L. ...		...	Lengkwias. Murawang.
„ <i>Rafflesiana</i> , Wall. ...		...	Pua mengkuang. Tepus ki- joi.
<i>Alstonia scholaris</i> , Br. ...	(<i>Apocynaceæ</i>).	...	Getah pulai. Pulai. Rejang.
„ <i>macrophylla</i> , Wall. ...		...	Medang tai kerbau. Buta- buta darat. Tembusu paya. Chendai petri. Buburas.
„ <i>spathulata</i> , Bl. ...		...	Rajana.
<i>Allium cepa</i> , L. ...	(<i>Liliaceæ</i>).	...	Bramban.
<i>Alsodeia echinocarpa</i> , Korth. ...	(<i>Violaceæ</i>).	...	Aho-lumut. Juta-juta. La- lada. Lelada. Sibilek. Se- gumpa betina. Medang terutau.
„ <i>Kunstleriana</i> , King. ...		...	Sigoh. Marajan minko. Sigoniah.
„ <i>membranacea</i> , King. ...		...	Melor angin.
„ <i>lanceolata</i> , Wall. ...		...	Ina kechil.
<i>Alternanthera sessilis</i> , Br. ...	(<i>Amaranthaceæ</i>).	...	Akar rumput. Kelama hijau. Bayam pasir. Bayam tana. Kerak-kerak paya. Keru- mak bukit paya.
<i>Alseodaphne semicarpifolia</i> , Hk. ...	f. (<i>Laurineæ</i>).	...	Medang lebar daun.

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<i>Alseodaphne umbelliflora</i> , Hk. f.	Medang ketanahan. M. loso Belangkas hutan.
<i>Alyxia stellata</i> , Roem. ...	Ampalas hari. Milor.
(<i>Apocynaceæ</i>).	
„ <i>lucida</i> , Wall. ...	Ampalas hari. Mempelas Hari. Pulasari.
„ <i>pilosa</i> . Hook. fil. ..	Ampalas wangi.
<i>Amaranthus caudatus</i> , L. ...	Bayam selaseh.
(<i>Amaranthaceæ</i>).	
„ <i>gangeticus</i> , L. ...	Bayam merah.
„ <i>retroflexus</i> , L. ...	Bayam duri.
„ <i>viridis</i> , L. ..	Bayam monyet. Bayam pu- tih.
„ <i>spinosus</i> , L. ...	Bayam duri.
„ <i>spp.</i> ...	Bayam.
<i>Ampelocissus</i> sp. ...	Akar chabang tujuh.
(<i>Ampelidææ</i>).	
„ <i>cinnamomea</i>	Akar puding rimbah.
<i>Amorphophallus variabilis</i> Bl....	Kumbang brankie.
(<i>Aroideæ</i>).	
„ <i>prainiana</i> , Hook. f. ...	Likir Likir ular.
<i>Amygdalus persicus</i> ...	Kenari wolanda.
(<i>Rosaceæ</i>).	
<i>Anadendron montanum</i> , Schott.	Akar asam tebing darat. Akar tebing agu. Akar Murian sumbong. Sugunja. A. chabai hutan.
(<i>Aroideæ</i>).	
<i>A. latifolium</i> , Hook. fil. ...	Akar surundang.
<i>Anacardium occidentale</i> , L. ...	Gajus. Jambu monyet. Kaju.
(<i>Anacardiaceæ</i>).	
<i>Anaxagorea Scortechinii</i> , King.	Pali monyet.
(<i>Anonaceæ</i>).	
<i>Ananasa sativa</i> , L. ...	Nanas.
(<i>Bromeliaceæ</i>).	
<i>Ancistrocladus penangianus</i> , Wall. (<i>Dipterocarpeæ</i>).	Akar Julong hitam.
<i>Aneilema nudiflora</i> , Br ...	Rumput Tapak burong. R. Lidah lumbu. R. Kurunit. R. Sarang tupai.
(<i>Commelinaceæ</i>).	

<i>Anaectochilus Reinwardtii</i> , Bl...	Bunga tulis.
(<i>Orchideæ</i>).	
<i>Anisoptera Curtisii</i> , King. ...	Rengkong
(<i>Dipterocarpeæ</i>).	
„ <i>glabra</i> , King. ...	Mersawah merah.
„ <i>costata</i> , Korth. ...	Mersawah ular.
<i>Anona muricata</i> , L. ...	Srikaya blanda. Nona blanda
(<i>Anonaceæ</i>).	(Sour sop).
„ <i>reticulata</i> , L. ...	Nona kapri. (Bullock-heart)
„ <i>squamosa</i> , L. ...	Nona. Sri kayu. (Custard-apple).
<i>Anplectrum glaucum</i> , Triana ...	Akar dumah bukit. Akar
(<i>Melastomaceæ</i>).	seduduk. Senduduk Rim-
„ <i>divaricatum</i> , Triana ...	bah.
„ <i>polyanthum</i> , Clarke ...	Akar kamunting. Kamunting
<i>Anisophylleia disticha</i> , Hk. f. ...	bukit. (Chambai hantu
(<i>Rhizophoreæ</i>).	(Malacca).
„ <i>apetala</i> , Scort. ...	Akar jambah surai.
„ <i>Griffithii</i> , Oliv. ...	Kanchil.
<i>Andropogon intermedius</i> , Bl. ...	Dalik limau manis. Medang
(<i>Gramineæ</i>).	burunit.
„ <i>muricatus</i> , L. ...	Kumpas dadeli.
„ <i>schoenanthus</i> , L. ...	Rnmput pijit.
<i>Antrophyum reticulatum</i> ...	Akar wangi. Kus-kus.
(<i>Filiceæ</i>).	Serey.
<i>Anthistiria arguens</i> , Willd. ...	Salimpar.
(<i>Gramineæ</i>).	
„ <i>gigantea</i> , Cav. ...	Rumput sarang pipit.
<i>Anisogonium esculentum</i> , Presl. ...	Rumput riang-riang.
(<i>Filices</i>).	Paku benar. Paku tanjong.
<i>Antidesma alatum</i> , Hk. f. ...	Peruan hitam. Berunai Ba-
(<i>Euphorbiaceæ</i>).	rek.
„ <i>bumias</i> , Muell. ...	Bras-bras hitam. Lundo.
	Mata punai. Buni. Bunch.

<i>Antidesma cuspidatum</i> , Muell ...	Gami. Gamo. Kenidei punai. Nah sepat. Pataling pagu. P. tugo. Mugagon.
„ <i>fallax</i> , Muell. ..	... Gunchian gajah.
„ <i>Ghaeseumbilla</i> , Gaert. ...	... Gunchak. Kasumba, Balong ayam.
„ <i>microcalyx</i> , Hk. f. ...	... Bras-bras merah.
„ <i>leucocladon</i> , Hk. f. ...	... Berek. Sakellet.
„ <i>Moritzii</i> , Muell. ...	... Geruseh putih.
„ <i>salicifolius</i>. ...	... Wampanu (Johor).
„ <i>velutinum</i> , Bl. ...	... Berubah rimba. Lupong jantan. Guhe gajah. Mempunai bukit.
„ sp. ...	... Jantan tloh. Sutapoh Bukit.
<i>Aporosa aurea</i> , Hk. f. ...	... Gading betina. Mubagon. Mumbong. Sebasah hitam. Rambai chuchut. Tambon chuchut. Sebasah minyak. Sebasah nipis kulit. Gading Betina.
„ <i>Benthamiana</i> , Hk. f. ...	... Kasai. Marabuloh. Kelempeti.
„ <i>Maingayi</i> , Hk. f. ...	... Tampoi pachat. Agas-agas. Sulumsui. Lampai.
„ <i>ficifolia</i> Baill. ...	... Pulin Bukit. Sebasah jantan. Putangga Paya. Nipis kulit betina. Bras-bras.
„ <i>microcalyx</i> , Hk. ...	... Buburas padi. Jujamo. Pelangi. Bras-bras merah.
„ <i>microsphaera</i> , Hk. f. ...	... Sukam merah.
„ <i>nervosa</i> , Hk. f. ...	... Jinjenta.
„ <i>nigricans</i> , Hk. f. ...	... Banuan.
„ <i>Praiiiana</i> , Hk. f. ...	... Bras-bras hutan. Petaling tandok. Chamantong gajah. Sutapoh. Masekam Putih.
„ <i>stellifera</i> , Hk. f. ...	... Damak-damak paya. Nipis kulit putih.

<i>Aporosa ficifolia</i> , Hk. f. ...	Pulangga paya. Sebasah jantan.
<i>Apostasia nuda</i> , Wall. .. (<i>Orchideae</i>).	Kenching pelandok. Pulumpas budak.
<i>Aphania paucijuga</i> , King. ... (<i>Sapindaceae</i>).	Kelat julong putih. Kelat tulong. Mumjilai.
<i>Aquilaria hirta</i> , Ridl. ...	Chandan.
<i>Aquilaria malaccense</i> (<i>Thymeleaceae</i>).	Gaharu. Karas. Karas gaharu. Tui karas. Kalambak.
<i>Aralia Thomsonii</i> , Seern. ... (<i>Araliaceae</i>).	Dulang-dulang.
<i>Arachis hypogæa</i> , L. ... (<i>Leguminosae</i>).	Kachang China. K. Goreng. K. Tanah.
<i>Aralidium pinnatifidum</i> , Miq. ... (<i>Araliaceae</i>).	Selubat. Tampong tulong. Balai. Tingal balai. Sabalal. Lempeda buaya.
<i>Archytea VahlII</i> , Choisy. ... (<i>Ternstroemiaceae</i>).	Riang-riang.
<i>Ardisia colorata</i> , Roxb. ... (<i>Myrsinaceae</i>)	Mantua pelandok. Naulinauli. Munsial. Marabuloh. Mumboloh. Jerok putih. Mantulong. Maranting.
„	
„ <i>crenata</i> , Roxb. ...	Mata pelandok. Lingguni.
„ <i>humilis</i> , Vahl. ...	Lutus.
„ <i>lanceolata</i> , Roxb. ...	Sembaring. Murambong.
„ <i>odontophylla</i> , Wall. ...	Sumpuh lumpo. Pasal.
„ <i>oxyphylla</i> , Clarke. ...	Bujong samalam bukit. Tumuras. Chato.
„ <i>villosa</i> , Roxb. ...	Mata pelandok gajah. Salunta orang tinggi. Se-goreh.
„ sp.	Munijau.
<i>Areca catechu</i> , L. ... (<i>Palmeae</i>)	Pinang, Kachu.
<i>Arenga Westerhoutii</i> , Griff. ... (<i>Palmeae</i>).	Langkup.
„ <i>saccharifera</i> , L. ...	Kabung. Enau.
<i>Aristolochia Roxburghiana</i> , Bl. (<i>Aristolochiaceae</i>).	Akar ara. Ketola hutan.

<i>Artocarpus incisa</i> , L.	...	Sukun. Kulur. Kelur.
(<i>Urticaceæ</i>).		
„ <i>integrifolia</i> , L.	...	Nangka.
„ <i>Gomeziana</i> , Wall.	...	Tampang. Tampang tulong Tampang nasi. Tampang burong. Tampan-bulat.
„ <i>Lakoocha</i> , Roxb.	...	Tampang manis. Tampang ambon.
„ <i>laucifolius</i> , Rox.	...	Nangka pipit. Keledang
„ <i>Kunstleri</i> , King.	...	Getah terap.
„ <i>Lowii</i> , King.	..	Miku.
„ <i>rigidus</i> , Bl.	...	Tampuneh. Monkey jack.
„ <i>Maingayi</i> , King.	...	Champedak ayer.
„ <i>polyphema</i> , Persoon.	...	Champedak. Bongkong (Perak).
„ n. sp.		Tukul.
<i>Artemisia vulgaris</i> , L.	...	Baru china.
(<i>Compositæ</i>).		
<i>Artanema sesamoides</i> , Wall.	...	Kelulut gajah. Seluang mu- dik. Sesawi pasir.
<i>Argostemma elatostemma</i> , Hk. f.	...	Sumpuh kring.
(<i>Rubiaceæ</i>).		
<i>Arthrophyllum diversifolium</i> , Bl.	...	Mempunai bukit. Jolok hantu. Segan bedahan. Apuil. Bedabau jantan.
(<i>Araliaceæ</i>).		
„ <i>pinnatum</i> , Clarke.		Minta anak.
<i>Arytera littoralis</i> , Miq.	...	Kalintek Jamuk. Kulalayo hitam.
(<i>Sapinduceæ</i>).		
<i>Asparagus officinalis</i> , B.	...	Separu kras.
(<i>Liliaceæ</i>).		
<i>Aspidium lenzianum</i> , Hk. f.	...	Paku gading.
(<i>Filices</i>).		
„ <i>polymorphum</i> , Wall.	...	P. kikir.
„ <i>cicutarium</i> , Sw.	...	P. tembaga.
„ <i>Singaporianum</i>	...	P. murak. Biawak. Mero- yan papan.
<i>Asclepias curassavica</i> , L.	...	Bunga mas. Malukut paya.
(<i>Asclepiadeæ</i>).		

<i>Asystasia intrusa</i> , Bl. ...	Pengurak.
(<i>Acanthaceae</i>).	
<i>Aspidopterys concava</i> , Juss. ...	Sedapat. Sampo paya.
(<i>Malpighiaceae</i>)	
<i>Atalantia monophylla</i> , De C. ...	Empenai (Pahang).
(<i>Rutaceae</i>).	
• „ <i>Roxburghiana</i> , Hk. f. ...	Limau pagar.
<i>Averrhoa bilimbi</i> , L. ...	Belimbing.
(<i>Geraniaceae</i>).	
„ <i>carambola</i> , L. ...	Belimbing caramboia, manis. B. batu.
<i>Avicennia officinalis</i> , L. ...	Api-api.
(<i>Verbenaceae</i>).	
<i>Baccaurea brevipes</i> , Hk. f. ...	Karaes (Selangor) Poko ma- was. Mata Ayam. Rambai Bukit. R. Ayam Rantau. R. Hutan. Tajam Moleh. Setambun Lilin.
(<i>Euphorbiaceae</i>).	
<i>B.</i> <i>bracteata</i> , Muell. ...	Tampoi K'ra.
<i>B.</i> <i>Kunstleri</i> , Hook. f. ...	Rambai hutan.
<i>B.</i> <i>macrophylla</i> , Hk. f. ...	Tampoi Tunga. T. Tunngau.
<i>B.</i> <i>malayana</i> , Hk. f. ...	Tampoi.
<i>B.</i> <i>Motleyana</i> , Hk. f. ...	Rambai. Rambeh.
<i>polyneura</i> , Hook. f. ...	Ginteh merah.
<i>B.</i> <i>parviflora</i> , Muell. ...	Rambai Hutan. Setambun.
<i>B.</i> <i>symplocoides</i> , Hk. f. ...	Kumpa Manang.
<i>B.</i> <i>Wallichii</i> , Hk. f. ...	Rambai Hutan. Setambun Betina. Ginteh Merah. Lolai paya.
<i>Baekea frutescens</i> , L. ...	Daun Chuchor Atap.
(<i>Myrtaceae</i>).	
<i>Bambusa Blumeana</i> , Sch. ...	Buluh Duri. The spiny bam- boo.
(<i>Gramineae</i>).	
<i>B.</i> <i>nana</i> , Roxb. ...	Buluh China. B. Periudi. (Wray).
<i>B.</i> <i>Ridleyi</i> , Gamble ...	Akar Buluh.
<i>B.</i> <i>Tuldoides</i> , Munro ...	Buluh Balai
<i>B.</i> <i>vulgaris</i> , var. ...	Aur Gading. Buluh Pan (Wray).

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B. Wrayii, Stapf.	...	Buluh Bersumpitan. B. Temiang.
Balanocarpus anomala, King	...	Malaut
(<i>Dipterocarpeæ</i>).		
B. penangianus, King.	...	Damar Hitam.
B. maximus, King.	..	Chengai. Chengal. Penak.
Balanostreblus ilicifolius, Kurz.		Limau Lelang Antan.
(<i>Urticaceæ</i>).		
Barclaya (Motleyana, Hk. f.	...	Daun Kalapa.
(<i>Nympheaceæ</i>).		
Barleria prionitis, L.	...	Bunga Landak.
(<i>Acanthaceæ</i>).		
Barringtonia macrostachya,		Putat hutan. Putat Bukit
Wall.	... ..	putih.
(<i>Myrtaceæ</i>).		
B. Scortechinii, King	...	Putat Gajah.
B. sumatrana, Miq.	...	Putat Darat. Putat Gajah.
B. fusiformis, King	..	Putat Padi.
B. spicata, Bl.	...	Juri-Juri.
Bassia Motleyana, Clarke	...	Maiang.
(<i>Sapotaceæ</i>).		
B. sp.	... ..	Gugating.
Bauhinia bidentata, Jack.	...	Katup-Katup.
(<i>Leguminosæ</i>).		
B. integrifolia, Rox.	...	Kang Katok (Selangor). Dau.
		Akar Dadaup (Pahang).
B. Kingii, Prain.	...	Akar suloh.
B. Hullettii, Prain.	...	Akar tapa kudah antan.
Benincasa cerifera, Sav.	...	(Wax Gourd), Kundor. K.
(<i>Cucurbitaceæ</i>).		China. K Jawa, varieties.
Bidens pilosa, B.	...	Rumput Juara.
(<i>Compositæ</i>).		
Biophytum adiantoides, Wt.	...	Payong Ali.
(<i>Geraniaceæ</i>).		
Bixa orellana, L.	... ..	Kusumba. Kunyit Jawa
(<i>Bixineæ</i>).		
Blainvillea latifolia, Ad. C.	..	Rumput Babi. Katumbit
(<i>Compositæ</i>).		Padang. Tutop Bumi
		Paya. Salamani.

Blechnum orientale, L. (<i>Filices</i>).	.	Paku Ikan. P. Ubil. P. Ular.
Blumea balsamifera, De. C. (<i>Compositæ</i>).	...	Chapa. Chapu. Sembong Sumbong.
B. lacera, De. C.	..	Lumai Hitam.
Boehmeria nivea, Hk. f. (<i>Urticaceæ</i>).	...	Rami-Hami. Ramin.
Bonnaya veronicæfolia, Spr. (<i>Scrophularineæ</i>).	...	Kerak-Kerak. Jantan Merah. Sampu Chachang.
Borassus flabellifer, L. (<i>Palmeæ</i>).	...	Lontar. Tah (Telubang).
Boschia (Griffithii), Nees. (<i>Malvaceæ</i>).	...	Durian-Durian. Dendurian. Durian Haji. Dada Ruan. (Johor).
Bouea macrophylla, Griff. (<i>Anacardiaceæ</i>).	...	Kundangan.
B. microphylla, Griff.	...	Ruminiya. Rumia.
Bragantia corymbosa, Griff. (<i>Aristolochiaceæ</i>).	...	Akar Surai. A. Julong Bukit. Changi Ular. Chumbai Ular.
Brassia oleracea, L. (<i>Cruciferae</i>).	... ..	Kobis. (The cabbage).
B. nigra, L.	... ..	Sawi. Sesawi. Sayur. (Mustard).
Breynia coronata, Hk. f. (<i>Euphorbiaceæ</i>).	...	Hujan Panas. Rumang Panas. Chuma Padang. (Kedah).
B. reclinata, Hk. f.	...	Hujan Panas. Peringit. Sum- bor.
B. rhamnoides, Muell.	...	Suruyian.
Bridelia pustulata, Hk. f. (<i>Euphorbiaceæ</i>).	...	Kenidei Hutan. K. Gajah. Bubongkal.
B. stipularis, Hk. f.	...	Kenidei Babi.
B. tomentosa, Bl.	...	Kenidei. K. Jantan. Nidei.
B. sps.	...	Nidei. Kenidei.
Brownlowia lanceolata, Benth.	...	Durian Laut.
Brucea sumatrana, Wall. (<i>Simarubææ</i>).	...	Cherek Jantan. Embalau. E. Padang. E. Betina. Ham- pedu Bruang. Lada Pahit (Pahang).

<i>Brugueria carophylloides</i> , Bl.	Bakau Putih.
(<i>Rhizophoræ</i>).	
<i>B. gymnorhiza</i> , Lam. ...	Tumu.
<i>B. parviflora</i> , W. & A. ...	Lenggadi.
<i>B. sp.</i>	Bungkup. (Johor).
<i>Bryophyllum calycinum</i> , Salisb.	Tumbu Daun. Sadingin.
(<i>Crassulacæ</i>).	(Malacca) Karanchong
	(Pahang).
<i>Buchanania acuminata</i> , Turcz.	Otak Tudang. Kutak Hu-
(<i>Anacardiaceæ</i>).	dang. (Johor). Katawa
	Hudang. Temohong. Gu-
	lawai.
<i>B. lucida</i> , Turcz.	Kelompang Kras. (Kedah).
<i>Burmannia coelestis</i> , Don. ...	Rumpot Sisik Naga.
(<i>Burmanniaceæ</i>).	
<i>Byttneria Maingayi</i> , Hk. f. ...	Akar Batu. A. Kachubong.
(<i>Tiliacæ</i>).	
<i>B. uncinata</i> , Mast.	Sugi Jantan.
<i>Cesalpinia pulcherrima</i> , Rox. ...	Chana (Favre).
(<i>Leguminosæ</i>).	
<i>C. sappan</i> , L.	Sepang.
<i>Cæsulia axillaris</i> , L.	Chinkro, Kangkong kerbau.
(<i>Compositæ</i>).	
<i>Cajanus indicus</i> , L.	Kachang kayu.
(<i>Leguminosæ</i>).	
<i>Calamus castaneus</i> , Griff. ...	Atap Chuchur. Rotan Chu-
(<i>Palmæ</i>).	chur.
<i>C. aquatilis</i> , Ridl.	Rotan ayer.
<i>C. Lobbianus</i> , Becc.	Rotan Manana.
<i>C. didymophyllus</i> , Becc. ...	Rotan Getah. R. Hudang.
<i>C. Diepenhorstii</i> , Muell. ...	Rotan sago. R. chichi.
<i>C. insignis</i> , Griff.	Rotan Batu.
<i>C. Javensis</i> , Bl.	Rotan Lilin. R. Sundek
	(Perak).
<i>C. ornatus</i> , Griff.	Rotan kumbang. R. Segu
<i>C. oxleyanus</i> , Griff.	Badak. Rotan Pujare.
	(Griffith).
<i>C. scipionum</i> , Lour.	Rotan Semambu (Malacca
	Cane). Rotan Rajah.

<i>Calanthe rubens</i> , Ridl. ...	Haliya Enggang (Lankawi). (<i>Orchideæ</i>).
<i>C. veratrifolia</i> , Lindl. and other species. ...	Lumbah.
<i>Callicarpa arborea</i> , Rox. ...	Ambong-ambong Putih. (<i>Verbenaceæ</i>). Kata kran.
<i>C. cana</i> , L. ...	Tampang Besih Putih.
<i>C. lanata</i> , Griff.	Balik Angin Laut. Chulak. Tuloh Putih.
<i>C. longifolia</i> , Lam. ...	Tampang Besih. Tampoi. Besih. Tampo Besih.
<i>Calophyllum inophyllum</i> , L. ...	Bintangor Bukit, B. Bunga. (<i>Guttifereæ</i>). Penaga. Pudih (Malacca).
<i>C. macrocarpum</i> , Hk. f. ...	Bintangor Rimbah.
<i>C. pulcherrimum</i> , Wall. ...	Bintangor Batu. B. Besar. B. Bukit.
<i>C. Wallichiana</i> , Pl. ...	Bintangor Merah.
<i>C. spectabile</i> , Willd. ...	Bintangor Bunut.
<i>Calotropis gigantea</i> , Br. ...	Beduri. Kemengu. (<i>Asclepiadeæ</i>).
<i>C. procera</i> , Br. ...	Lambega.
<i>Camnospermum auriculata</i> , Hk. f. ...	Terentang. (<i>Anacardiaceæ</i>).
<i>C. oxyrrhachis</i> , Engl. ...	Mulumut.
<i>Canarium commune</i> , L. ...	Kenari. (<i>Burseraceæ</i>).
<i>C. Kadondon</i> , Benn. ...	Kadongdong Krut. K. Mata Hari. Gigit Buntai.
<i>C. laxum</i> , Benn. ...	Rau.
<i>C. nitidum</i> , Benn. ...	Dongdong. Kadongdong. K. Hutan.
<i>C. pilosum</i> , Benn. ...	Kadongdong Hutan.
<i>C. rufum</i> , Benn. ...	Kadongdong Bulan. Kerat Telampok. K. Tulonjok. Sungol Hutan. Sangol Hutan.
<i>C. secundum</i> , Benn. ...	Damar Kijai. Kasumba. Ka- sumbi.

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<i>C. sps.</i>	Blau (Johor) Rota (Johor).
<i>Cananga odorata</i> , L. (<i>Anonaceæ</i>).	Kananga. Kenanga.
<i>Canangium Scortechinii</i> , King. (<i>Anonaceæ</i>).	Kasidang (Malacca).
<i>Canavalia ensiformis</i> var <i>gladiata</i> (<i>Leguminosæ</i>).	Kachang Parang.
<i>C. obtusifolia</i> , De C.	Kachang Rang-rang. Kachang hantu.
<i>Canna edulis</i> , L. (<i>Scitamineæ</i>).	Pisang Sebiak.
<i>C. indica</i> , L.	Sebeh. (Favre).
<i>Cannabis sativa</i> , L. (<i>Urticaceæ</i>).	Ganja. Gunja.
<i>Cansjera Rheedii</i> , W. and A. ... (<i>Olcaceæ</i>).	Bittot. Chemperai. Chimperai.
<i>Canthium confertum</i> , Korth. ... (<i>Rubiaceæ</i>).	Kamuning Jantan Hutan. Mata Keli Jantan.
<i>C. didymum</i> , Rox.	Butulang.
<i>C. glabrum</i> , Bl.	Mungkoi. Sabusuh Betina.
<i>C. horridum</i> , Bl.	Bulang Gajah. B. Kechil. B. Hitam. Bulang Tikus.
<i>C. oliganthum</i> , Miq.	Akar Pelandok.
<i>C. sp.</i>	Akar Kuku Baning.
<i>C. sp.</i>	Akar Lempedu Borong. Kukurai. Surumat.
<i>C. sp.</i>	Gading. Surumat.
<i>Capsicum annuum</i> , L. (<i>Solanaceæ</i>).	Chabai. Lada Merah.
<i>C. bicolor</i> , Jacq.	Chabai selasah (Clifford).
<i>C. frutescens</i> , L.	Chabai Achong. C. Sebrang.
<i>C. fastigiatum</i> , Bl.	C. Rawit.
<i>Carapa moluccana</i> , Lam. (<i>Meliaceæ</i>).	Nireh.
<i>Carallia integerrima</i> , Dec. ... (<i>Rhizophoræ</i>).	Bong-bong. Merpoin. Janggut Keli. Kusinga.

<i>Cardiopteris lobata</i> , Br. ...	Gambah Putih. (Pahang).
(<i>Olacineæ</i>).	
<i>Cardiospermum Halicacabum</i> , L. ...	Peria Bulan. Akar Uban Kayu.
(<i>Sapindaceæ</i>).	
<i>Carex cryptostachys</i> , Hance. ...	Rumput Ringgin.
(<i>Cyperaceæ</i>).	
<i>Carica papaya</i> , L. ...	Betik. B. Belulang. B. Bubor.
(<i>Papayaceæ</i>).	
<i>Carissa Karandas</i> , L. ...	Kerandang.
(<i>Apocynaceæ</i>).	
<i>Carum Carui</i> , L. ...	Jintan. (Carraway seed. Imported).
(<i>Umbellifereæ</i>).	
<i>Caryota mitis</i> , Lour. ...	Bredin (Province Wellesley) Tukus.
(<i>Palmecæ</i>).	
<i>Casearia Lobbiana</i> , Turcz. ...	Medang Kirisa.
(<i>Samydaceæ</i>).	
<i>Cassia alata</i> , L. ...	Daun Kurap. Glenggang.
(<i>Leguminosæ</i>).	
<i>C. angustifolia</i> , Vahl. ...	Sena. S. Maki.
<i>C. fistula</i> , L. ...	Biraksa. Bereksa.
<i>C. javanica</i> , L. ...	Dulang.
<i>C. nodosa</i> , Ham. ...	Busok-Busok. Sibusuk. Turukop Bumi.
<i>C. occidentalis</i> , L. ...	Kachang Kota.
<i>C. Siamea</i> , Lam. ...	Jua. Jual. Guah. Hitam (Johor).
<i>C. tomentosa</i> , L. ...	Sinteng.
<i>C. obtusifolia</i> , L. ...	Glenggang Kechil. G. Padang.
<i>Castanopsis Hulletti</i> , King. ...	Berangan Papan.
(<i>Cupulifereæ</i>).	
<i>C. hystrix</i> , De C. ...	Kata Bileh. Sebilek.
<i>C. javanica</i> , Dcn. ...	Berangan Duri. B. Gajah.
<i>C. nephelioides</i>	Resak
<i>Casuarina equisetifolia</i> , Forst. ...	Ru. Kayu Ru. RuLaut. Aru.
(<i>Casuarinacæ</i>).	
<i>Cedrela febrifuga</i> , Bl. ...	Suntang Putih.
(<i>Meliaceæ</i>).	

Celastrus monospermus, Roxb.	Gurugun. Akar Serapoh.
(<i>Crabtreeae</i>).	
Celosia cristata, L.	Bayam Ekor Kuching.
(<i>Amarantaceae</i>).	
Centotheca lappacea, Beau. ...	Rumput Silat Kain.
(<i>Gramineae</i>).	
Ceratolobus Kingiana, Becc. ...	Rotan Kipas.
(<i>Palmeae</i>).	
Cerbera lactaria, Ham.	Babuta. Buta-Buta. Pong- Pong (Selangor).
(<i>Apocynaceae</i>).	
C. odollam, L.	Babuta. Buta-Buta. Pom- pong (Pinang) Bintan. Bin- taro.
Cephaelis Griffithii, Hk. f. ...	Chempaka Bukit Pupulut Hutan. Sabiak Gajah.
(<i>Rubiaceae</i>).	
Cerriops Candolleana, Arn. ...	Tengah. (Bark used for tan- ning).
(<i>Rhizophoraceae</i>).	
Chaetocarpus castanocarpus ...	Bedi (Pinang).
(<i>Euphorbiaceae</i>).	
Chailletia deflexifolia, Turcz. ...	Akar Pah Kuda. A. Sarang Punai. A. Tugor Pontianak.
(<i>Chailletiaceae</i>).	
C. Griffithii, Hk. f.	Kurupoh Bukit. Kurutot. Akar Puleh Kambing. A. Puleh Angin.
C. sp.	Angos (Kedah).
Chamocladon angustifolium, Schott.	Bakung Ayer Kaati (Johor).
(<i>Aroideae</i>).	
C. Griffithii, Hk. f.	Asam Tikus. Kumayang. Kelamoyiang Padi.
Champereia Griffithii, Hk. f. ...	Chemperai. Chimperai.
Chasalia curviflora, Miq. ...	Buah Bras. Gading Galok. Jarum Hitam. Gandarusa Jantan. Pecha Piring Hitam Kamiri. Piu-Piu. Pecha Priok Putih.
(<i>Rubiaceae</i>).	
C. c. var. angustifolia. ...	Sun-poh Sumut. Tubang.
Cheilanthes tenuifolia, Sw. ...	Paku Resam. Padi. Paku Resam Lumut.
(<i>Filices</i>).	

<i>Chilocarpus Maingayii</i> , Ilk. f....	Gunum.
(<i>Apocynaceae</i>).	
<i>Chonemorpha macrophylla</i> , Bl. ...	Gegrip Merah.
(<i>Apocynaceae</i>).	
<i>Chisocheton divergens</i> , Bl. ...	Garontong Tengah.
(<i>Meliaceae</i>).	
<i>C. penduliflorus</i> , Bl. ...	Medang Kasungko. Sanggol Lutong Hitam.
<i>C. sp.</i> ...	Sadapu.
<i>Chloranthus officinalis</i> , Bl. ...	Sambon Paya, Sumban Paya.
(<i>Chloranthaceae</i>).	
<i>Chrysophyllum Roxburghii</i> , Don.	Kayu Malukut. Poko Pulut-Pulut.
(<i>Sapotaceae</i>).	
<i>Cibotium Barometz.</i> ...	Penawar Jambi.
(<i>Filices</i>).	
<i>Cicca acidissima</i> , ...	Chamin-Chamin.
(<i>Euphorbiaceae</i>).	
<i>Cinnamomum camphora</i> , L. ...	Kapur Tohori (Japan camphor).
(<i>Laurineae</i>).	
<i>C. culit lawan</i> , Nees. ...	Lawang. Kulit Lawang.
<i>C. iners</i> , Bl. ...	Singga Betina. Kayu Manis.
<i>C. mollissima</i> , Bl. ...	Pialu. (Johor). Tegah. Tegoh. (Favre).
<i>C. nitidum</i> , Bl. ...	Lelang.
<i>C. parthenoxylum</i> , Miess. ...	Chinta. Medang Kemana. Kayu Gadis. Kulit Lawa. Mula Hitam.
<i>C. Zeylanicum</i> , L. ...	Kayu Manis. (Cinnamon).
<i>C. sp.</i> (Pahang). ...	Tejã.
<i>Cissampelos Pareira</i> , L. ...	Mumpanang. Lumkang. Gasing-Gasing. Gegasing.
(<i>Menispermaceae</i>).	
<i>Citrus acida</i> , Rox. ...	(Common Lime). Limau Kedangsa. L. Kapas. L. Kasturi. L. Kerbau. L. Nipis. L. Perut. L. Susu.
(<i>Rutaceae</i>).	
<i>C. aurantium</i> , L. ...	(Orange) Limau manis. Wangkang (Chinese us).
<i>C. a. var. Bigardia</i> (Favre). ...	(Bitter Orange) Limau Gede.

<i>C. decumana</i> , L.	(Pomelo) Limau Kedangsa. (Favre) L. Abong, L. Batawi: L. Besar (Favre).
<i>C. d.</i> var.	(Wild Pomelo) Limau Hantu. (Pahang, Malacca).
<i>C. medica</i>	(Citron) Limau Bali (Favre).
<i>Clausena excavata</i> , Burm.	Chenama (Pinaug). Cherek Hitam. (<i>Rutacee</i>).
<i>Clavaria</i> sps. (Fungis).	Chendawan Samangkok.
<i>Cœtanthus hirsutulus</i> , Hk. f.	Kurudas Bukit. Simpoh Ayer. (<i>Euphorbiacee</i>).
<i>C. lævis</i> , Hk. f.	Jarak Pipit, Kurumak Hutan.
<i>C. nitidus</i> , Hk. f.	Sabasah Batu.
<i>C. sp.</i>	Surangkiang.
<i>Clerodendron deflexum</i> , Wall....	Cherit Hutan. Lidah Kerbau. (<i>Verbenacee</i>). L. Kerbau Betina. Sumpu Kuhao. Sembong Hutan Jantan. Picha Priok Hitam. Sakacha Lima.
<i>C. disparifolium</i> , Bl.	Guriam (S. Ujong). Lampang Badak. Lelampang Badak. Tudong Ruman. Sempian Petri. Sembang. Lulang- gring Budan. Seliguri. S. Betina.
<i>C. fallax</i> , L.	Orawari Rungkup.
<i>C. fragrans</i> , Vent.	Rabu Kumbang.
<i>C. inerme</i> , Gaertn.	Pawan.
<i>C. nutans</i> , L.	Mali-mali Bukit. Piango. Unting-unting. Meroyan Kabut.
<i>C. paniculatum</i> , L.	Penkilai.
<i>C. siphonanthus</i> , Br.	Gunja-ganja. Penatoh.
<i>Cl. serratum</i> , Spreng.	Lampin Budak.
<i>C. villosum</i> , Bl.	Chapah. Champening. Ka- sap. Tapak Kerbau. Picha Priok Babi.
<i>Clinogyne dichotoma</i> , Salisb.	Bemban Ayer. (<i>Scitaminee</i>).

<i>C. grandis</i> , Benth.	Bemban Gajah. Tongkat Setau.
<i>Clitoria cajanifolia</i> , Benth. (<i>Leguminosæ</i>).	Beluntas Padi (Malacca). Rumput Sabusuk. R. Turi.
<i>C. ternatea</i> , L.	Bunga Biru. Kachang Telang.
<i>Cleome viscosa</i> , L. (<i>Crucifera</i>).	Kuteping. (Malacca).
<i>Cnestis ramiflora</i> , Griff. (<i>Connaraceæ</i>).	Akar Gasing-Gasing. A. Padang. Semilat Merah. S. Papan. S. Padang. Akar Perjep.
<i>Cnesmone Javanica</i> , Bl. (<i>Euphorbiaceæ</i>).	Jelatang Badak.
<i>Cocos nucifera</i> (<i>Palmeæ</i>).	Kalapa. Niyur.
<i>Codiaeum variegatum</i> , Bl. (<i>Euphorbiaceæ</i>).	Puding. Adal-adal (Javanese)
<i>Crocodiscus montanum</i> , Muell... .. (<i>Euphorbiaceæ</i>).	Gelam Bukit.
<i>Cyclogyne Rochussenii</i> , DeVr... .. (<i>Orchideæ</i>).	Sakat Tulong Ular.
<i>Colostegia Griffithii</i> , Most. (<i>Malvaceæ</i>).	Pungai. Pungai. Ha-Ha.
<i>Coffea arabica</i> (<i>Rubiaceæ</i>).	Kopie.
<i>C. liliifera</i> , Hiern.	Kopie. Kahwa.
<i>Coix lachryma</i> , L. (<i>Gramineæ</i>).	Jilei Batu. J. Pulut (the dark colored variety)
<i>Coleus Blumii</i> , Benth. (<i>Labiataæ</i>).	Ati-Ati.
<i>Colocasia antiquorum</i> , Schott... .. (<i>Aroideæ</i>).	Birah Keladi. Keladi Telor. K. China. K. Hudang.
<i>Combretum extensum</i> , Rox. (<i>Combretaceæ</i>).	Sarudang Betina.
<i>C. sundaicum</i> , Miq.	Akar Gegambar.
<i>C. trifoliatum</i> , Vent.	Akar Sunggung. Harus.
<i>Commersonia echinata</i> , Forst. (<i>Tiliaceæ</i>).	Durian Tupai. Chenara.

<i>Commelyna benghalensis</i> , L. ...	Mayiam.
(<i>Commelynaceae</i>).	
<i>C. nudiflora</i> , L. ...	Rumput aur. Kukupo.
<i>Connaropsis monophylla</i> , Pl. ...	Belimbing Besi. B. Bulat.
(<i>Geraniaceae</i>).	B. Hutan. B. Keris. B.
	Kra. B. Penjuru. B Pipit.
<i>C. sp.</i>	Kupoi. Pupoi.
<i>Connarus ferrugineus</i> , Jack. ...	Bunga Burutta. Akar Pulau.
(<i>Connaraceae</i>).	Hantu. A. Sakelet. A.
	Merah. A. Sanderap.
<i>C. gibbosus</i> , Wall. ...	Akar Tulang Padang. Namo.
<i>C. grandis</i> , Jack. ...	Akar Tulang Padang.
<i>C. semidecandrus</i> , Jack. ...	Akar Tukor.
<i>Conocephalus amœnus</i> , King. ...	Ara Jankang.
(<i>Urticaceae</i>).	
<i>C. Scortechinii</i> , Hk. f. ...	Akar Umu (Johor).
<i>C. suaveolens</i> , Bl. ...	Akar Tentawan.
<i>C. subtrinervis</i> , Miq. ...	Landong Padi. Akar Sandang Padi. A. Sasaram.
<i>Coptosepalta flavescens</i> , Korth.	Akar Sabusuh.
(<i>Rubiaceae</i>).	
<i>C. griffithii</i> , Hk. f. ...	Akar Bunga Milor Hutan.
	Situlang (Pahang) Sumpu
	Puchut.
<i>Corchorus acutangulus</i> , Lam. ...	Rumput Baya Roasa
(<i>Tiliaceae</i>).	
<i>C. capsularis</i> , L. ...	Sunarong Betina.
<i>Cordyline terminalis</i> , Kunth. ...	Andong. A. Hijau. A.
(<i>Liliaceae</i>).	Merah. Jejuang (Singapore) Lenjuang Merah.
<i>Coriandrum sativum</i> ...	Katambar. (Coriander seed).
(<i>Umbelliferae</i>).	
<i>Corymborchis veratrifolia</i> , Thouars. ...	Lulumbah Paya.
(<i>Orchideae</i>).	
<i>Cosciniun Blumeianum</i> , Miers. ...	Akar Mengkunyit.
(<i>Menispermaceae</i>).	
<i>C. fenestratum</i> , Coleb. ...	Kugit-Kugit Babi Tol.
	(Vaughan Stephens).

<i>Cosmos caudatus</i> , H. B. K. ...	Ulan Rajah.
(<i>Compositae</i>).	
<i>Costus speciosus</i> , L. ...	Sitawa. Satawa. Tawa-Tawa
(<i>Scitamineae</i>).	Antar.
<i>Cratoxylon polyanthum</i> ,	
Korth. ...	Drum (Penang) Mempat-
(<i>Hypericineae</i>).	Mempat Hutan. Lunchui.
<i>C. arborescens</i> , Bl. ...	Geronggang. Geronggong.
	Penaga Hitam (Johor).
<i>C. formosum</i> , Benth. ...	Mempapit. Mempas Hutan.
	Mempetis. Sepadas Bunga
	(Jack).
<i>Crinum asiaticum</i> , L. ..	Bakung. Bawang H u t a n.
(<i>Amarylidadee</i>).	Bunga Tembaga Suasa.
	Landap. Silandap. Selan-
	dap (Favre).
<i>Crocus sativus</i> , L. ...	Kumkumah (Pollen of <i>C.</i>
(<i>Irideae</i>).	<i>sativus</i> imported). Saffron.
<i>Crotolaria alata</i> , Hamilt. ...	Kachang Hantu Darat.
(<i>Leguminosae</i>).	
<i>C. retusa</i> , L. ...	Giring Landak.
<i>C. striata</i> , De C. ...	Giring-Giring. Guring-Gu-
	ring. Rang-Rang.
<i>C. verrucosa</i> , L. ...	Gigeling. G. Jantan.
<i>Croton argyratus</i> , Bl. ...	Chendrai Gajah. Cherit.
(<i>Euphorbiaceae</i>).	Budak Mungke Senan-
	chong. Summungke.
	Sumangso. Hamba Rajah
	(Penang).
<i>C. caudatus</i> , Geisl. ...	Ara Lumut. Akar Tuko
	Takal. Pauh-Pauh. Perin-
	gat Kating.
<i>C. Griffithii</i> , Hk. f. ...	Gulumbong Hantu. Lidai
	Api. Marai. Tumpang.
	Tumpang Bliong. Siangus.
	Kayu Meruan.
<i>C. oblongifolius</i> , Rox. ...	Chalang Paya.
<i>C. sublyratus</i> , Kurz. ...	Balik Angin Bukit.
<i>C. Tiglium</i> , L. ...	Bua Chengkian.

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<i>Crataerea macrocarpa</i> , King. ...	Kadat. Kelambai (Malacca).
(<i>Capparidæ</i>).	Kulumbai.
<i>C. religiosa</i> var <i>Narvala</i>	Bulan Ayer.
<i>C. sp.</i>	Bulan Betul.
<i>Crypteronia Griffithii</i> , Hk. f. ...	Sumpu Telinga Badak.
(<i>Lythraceæ</i>).	
<i>C. pubescens</i> , Bl.	Bekwoi. Babi Buah.
<i>C. paniculata</i>	Rupal.
<i>Cryptocarya coesia</i> , Bl.	Kayu Grisik. Medang Lasa.
(<i>Laurineæ</i>).	Rangan.
<i>C. ferrea</i> , Bl.	Langirtan Kwas. Mumpat Jantan.
<i>C. Griffithiana</i> , Wight. ...	Medang Buaya. M. Mantu. Rambahan Bukit. Sigun. Simpoh Bukit. Tubo Buah.
<i>C. impressa</i> , Miq.	Kayu Kunyit. Kichie. Medang Nau. Menjuat.
<i>C. sp.</i>	Manamak.
<i>Cryptocarpus Griffithianum</i> , Wight.	Dring (Johor) Laiang
(<i>Laurineæ</i>).	
<i>Cryptocoryne cordata</i> , Griff. ...	Ati-Ati Paya.
(<i>Aroideæ</i>).	
<i>Otenolophon parvifolius</i> , Oliv. ...	Kelat Hitam. Kunus. K. Bruang. Mata Kelat Bangkok. B. Paya.
(<i>Olacineæ</i>).	
<i>Cucumis sativus</i> , L.	Timun China (Cucumber) ...
(<i>Cucurbitaceæ</i>).	
<i>Cucurbita pepo</i> , L.	(Pumpkin) Labu Ayer. L. Manis. L. Pringgi, varieties.
(<i>Cucurbitaceæ</i>).	
<i>C. maxima</i> , Duchesne. ...	(Gourd) Labu.
<i>Cumpassia Malaccensis</i> , Main-gay.	Kempas.
(<i>Leguminosæ</i>).	
<i>C. parvifolia</i> , Prain.	Sialang, Tualang.
<i>Cuminum Cuminum</i> , L.	Jintan Putih. (Cumin seed).
(<i>Umbelliferæ</i>)	

<i>Cupania Lessertiana</i> , Camb. ...	Ludai Bulan. Medang Serai.
(<i>Sapiulaceae</i>).	Perepat Bukit. Tasai (Malacca).
<i>C. pallidula</i> , Hiern. ...	Kelilayan Putih. Nilau.
<i>C. pleuropteris</i> , Hiern. ...	Sempayan Ulur (Malacca).
<i>C. pubescens</i> , Radlk. ...	Sugi (Maingay).
<i>Curculigo recurvatu</i> , Dry. ...	Lumbah Merah.
(<i>Hyporidaceae</i>)	
<i>C. sumatrana</i> , Rox. ...	Lumbah. L. Rimbah. Kalapa Puyuh. Linsubah (Pahang)
<i>Curanga amara</i> , Juss. ...	Labang. Gelumah Susu.
(<i>Scrophulariaceae</i>).	
<i>Curcuma longa</i> , L. ...	(Turmeric) Kunyit-Kunyit. Temu Kunyit.
(<i>Scitamineae</i>).	
<i>C. Zedoaria</i> , Roscoe. ...	Temu Lawas. (White Turmeric).
<i>Cyathea Brunonis</i> , Wall. ...	Paku Gajah Paya. P. Hitam. Paya. P. Pahat. P. Selama.
(<i>Filiceae</i>).	
<i>Cyathula prostrata</i> , Bl. ...	Angkop Merah. Bayam Rusa. Rumput Jarang-Jarang. Kelulut Merah. Senjarang.
(<i>Amaranthaceae</i>).	
<i>Cycas Rumphii</i> , Miq. ...	Bogah (P. W.) Paku Aji. P. Laut. Saba and Tiyung (Favre).
(<i>Cycadeae</i>).	
<i>Cyclea Arnotti</i> , Miers. ...	Akar Rempenang (Selangor) Trongkuman (Lankawi).
(<i>Menispermaceae</i>).	
<i>Cyathostema Scortechinii</i> , King. ...	Akar Mupisang.
(<i>Anonaceae</i>).	
<i>Cyclostemon longifolius</i> , Bl. ...	Gelugur Salah.
(<i>Euphorbiaceae</i>).	
<i>Cynanchium</i> sp. ...	Akar Rambut Chambe.
(<i>Asclepiadaceae</i>).	
<i>Cynometra cauliflora</i> , L. ...	Nam-Nam. Puki Anjing.
(<i>Leguminosae</i>).	
<i>C. polyandra</i> , Rox. ...	Malangkan. Bulangkan. Kotong.
<i>Cyperus compressus</i> , L. ...	Rumput Tiga Sari.
(<i>Cyperaceae</i>).	
<i>C. distans</i> , Br. ...	Rumput Wangi.

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<i>C. haspan</i> , L.	Rumput Biblis Jantan. R. Sumbo.
<i>C. iria</i> , L.	Rumput Suloh Belalang.
<i>C. pilosus</i> , Rottb.	Rumput Para-Para (Malacca)
<i>C. procerus</i> , Rottb.	Rumput Munsiang. R. Manseyang.
<i>C. pumila</i> , Vahl.	Rumput Saman.
<i>C. rigidulus</i>	Rumput Chukor Kerbau.
<i>C. venustus</i> , Br.	Peparu.
<i>Cypripedium barbatum</i> , Lindl....	Bunga Kasut.
(<i>Orchideæ</i>).	
<i>Cyrtandromea megaphylla</i> , Hems.	Sumpu Munahan. Supujit Bukit.
(<i>Gesneriaceæ</i>).	
<i>Cyrtosperma lasioides</i> , Griff. ...	Birah Hutan. Keladi Pari. Gli-Gli.
(<i>Aroidæ</i>).	
<i>Cyrtostachys lacca</i> , Scheff. ...	Pinang Rajah.
(<i>Palmeæ</i>).	
<i>Dacrydium elatum</i> , Wall. ...	Ru Bukit.
(<i>Conifereæ</i>).	
<i>Daemonorops calicarpus</i> , Griff.	Rotan Chuchur minyak.
(<i>Palmeæ</i>).	
<i>D. crinitus</i> , Bl.	R. Chin-Chin. ...
<i>D. Draco</i> , L.	Jerenang. Rotan Jerenang.
<i>D. geniculatus</i> , Mart.	Rotan Kerai. R. Kamunting. R. Chin-Chin. R. Gulang. R. Tunggal.
<i>D. grandis</i> , Mart.	R. Semambu. R. Sunang. R. Chrysa (Griffith).
<i>D. hystrix</i> , Mart.	Rotan Buah. R. Sabut.
<i>D. leptopus</i> , Mart.	R. Bakau, R. Muruseh.
<i>D. longipes</i> , Mart.	Rotan Machap. R. Sepah. R. Chuchor.
<i>D. micracanthus</i> , Griff.	Rotan Tahi Ayam.
<i>D. propinquus</i> , Becc.	Rotan Bakau. R. Jerenang. (Malacca).
<i>D. verticillaris</i> , Mart.	R. Chin-Chin, R. Gulang.
<i>Dalbergia Junghuhnii</i> , Benth.	Saga Paya.
(<i>Leguminosæ</i>).	

Daldinia vernicosa, Cesati. ...	Jumput-Jumput.
(<i>Fungi</i>).	
Dammara orientalis, Lam. ...	Damar Minyak.
(<i>Coniferae</i>).	
Daphniphyllum laurinum, Bl... ..	Chicha. Jinjarong Jantan.
(<i>Laurineae</i>).	Mempit Padang. Serapoh.
	Rupah. Ruas-Ruas Jantan.
Datura metel, L. and D. fas- tuosa, L.	Kachabong. Kachubong.
Decaspermum paniculatum, Kurz.	Kelintat Kring. K. Nyamok.
(<i>Myrtaceae</i>).	Kelapit Nyamok. (Singa- pore) Empoyan Padang.
	Kelentat Padang. Kamuning Batu. Kelat Paya.
	Salah Nama.
Dehaasia sp.	Pekan.
(<i>Laurineae</i>).	
D. sp.	Bulonggo.
D. sp.	Gajah. Gajus Hutan.
Delima sarmentosa, L.	Ampalas Tikus.
(<i>Dilleniaceae</i>).	
Dendrocalamus flagelifer, Munro	Buluh Betong Perih.
(<i>Palmeae</i>).	
D. strictus, Nees.	Buluh Brang.
D. strictus, Ham.	Buluh Batu. B. Tapat.
Dendrobium conostalix, Reich. f.	Rumput Rajah Sari.
(<i>Orchideae</i>).	
D. crumenatum Sw.	Anggrek Merpati.
D. pumilum, Rox.	Sakat Kulumbai.
Dentella repens, Forst.	Bunga Karang.
(<i>Rubiaceae</i>).	
Derris elliptica, Benth.	Tubah.
(<i>Leguminosae</i>).	
D. Maingayana, Hk. f.	Akar Tubah-Tubah. A. Pah Kedah.
D. thyrsiflora, Benth.	Akar Tulang Bukit: A Ber- umbat.
D. uliginosa, Benth.	Akar Ketuil.

Desmodium heterophyllum, De C.	Omba-Omba (Singapore). Akar Sisik Niga. A. Telin- ga Tikus.
(<i>Leguminosæ</i>).	
D. latifolium, Wall.	Kamani Babi. Katah. Se- rengam.
D. parvifolium, Bak.	Akar Seliguri.
D. polycarpum, De C.	Kachang Kayu Betina. Ka- lunbar. (Pahang). Rum- put Kerbau Drapah. Ka- tunbar.
D. umbellatum, De C.	Petai Belalang.
Dialum laurinum, Baker	Kranji Papan.
(<i>Leguminosæ</i>).	
D. Maingayii, Baker	Keranji Burong. Mumpanjor.
D. platysepalum, Baker	Keranji Tembaga. K. Papan.
D. patens, Baker	Keranji Umbut. Sepan. (Malacca).
Dianella ensifolia, Red.	Meroyan Bungke. Satigit. Siak-Siak Jantan.
(<i>Liliaceæ</i>).	
Dichopsis gutta, Benth.	Taban. Teban. Getah Taban Merah. Getah Percha. Percha.
(<i>Sapotaceæ</i>).	
D. pustulata, Clarke	Getah Taban Chaia.
D. sp.	Simpur (Perak).
D. obovata, Clarke	Getah Taban Putih. Belian Wangie.
Dictyophora campanulata, Nees.	Chendawan Telakong.
(<i>Fungi</i>).	
Didymocarpus atrosanguinea,	Meroyan Nibut.
Ridl.	
(<i>Gesneriaceæ</i>).	
D. crinita, Jack.	Sumbong Merah. Tummu.
D. reptans, Jack.	Tummu Kechil. (Jack is the authority for these two last names which are doubtful).
Dillenia indica, L.	Simpoh. Simpoh. Chimpoh.
(<i>Dilleniaceæ</i>).	

<i>Dioeclea reflexa</i> , Hk. f. ...	...	Kachang Laut (Pahang).
(<i>Leguminosae</i>).		
<i>Dioscorea alata</i> , Rox. ...	...	Ubi Nasi.
(<i>Dioscoreaceae</i>).		
<i>D. daemonum</i> , Rox. ...	...	Gadong. Gadung.
<i>D. glabra</i> , Rox. ...	...	Janggut Kulonak. Akar Kakop. A. Mawas. A. Munuhan.
<i>D. laurifolia</i> , Wall. ...	...	Akar Kamahang. A. Surun- ting.
<i>D. oppositifolia</i> , Bl. ...	...	Akar Keminiyan Hantu. Akar Klana.
<i>D. pentaphylla</i> , L. ...	...	Ubi Pasir, U. Jabbet. (Vau- ghan Stevens. (?Chiabet).
<i>D. pyrifolia</i> , Korth. ...	...	Akar Gulongo. A. Kemini- yan Paya.
<i>D. sp.</i> ... ..	...	Akar Nana.
<i>Diospyros discolor</i> , Willd. ...	...	Buah Manteiga. Pisang kaki (Penang).
(<i>Ebenaceae</i>).		
<i>D. argentea</i> , Griff. ...	...	Bedil Lalat. Buluh-Buluh.
<i>D. hirsuta</i> , var. <i>lucida</i> , Wall...	...	Taring Pelandok. Seng- kawas Hitam Mati.
<i>D. lucida</i> , Hiern. ...	...	Koguel. Kayu Arang. Lang- Kgadi.
<i>D. oblonga</i> , Wall. ...	...	Sumoi. (Pinang.)
<i>D. sp.</i> ... ..	...	Siangan Jantan.
<i>D. sp. near embryopteris</i>.	...	Mentubo. (Malacca.)
<i>Dipterocarpus crinitus</i> , Dyer ...	...	Minyak Keruing. M. Keru- ing Buluh. Gombang.
(<i>Dipterocarpaceae</i>).		
<i>D. Hasseltii</i> , Bl. ...	...	Minyak Keruing.
<i>D. Kerrii</i> , King ...	...	Keruing Chaia.
<i>D. oblongifolius</i> , Bl. ...	...	Nerrum. (Pahang.) Meran.
<i>D. pterygocalyx</i> , Scheff. ...	...	Keruing Dadak. K. Buku.
<i>Diplanthera bancana</i> , Scheff. ...	...	Chenderu.
(<i>Bignoniaceae</i>).		
<i>Diplazium sorzogonense</i> ,	Paku Kijang. P. Rusa.	
Presl.		
(<i>Filices</i>).		
<i>D. tomentosa</i> , Hk. ...	...	Paku Biuit.

Dipodium pictum, Rchb. fil. ...	Wa-Wa. (V. Stephens.)
(<i>Orchideæ</i>).	
Diplospora sp.	Uloh-Uloh.
(<i>Rubiaceæ</i>).	
D. sp.	Chinduru. Sugai Petaling.
Dischidia albida, Griff. ...	Akar Sabernas.
(<i>Asclepiadeæ</i>).	
D. collyris, Wall.	Petis (Johore).
D. Rafflesiana, Wall. ...	Akar Kul. A. Bano.
Dissochaeta bracteata, Bl. ...	Akar Meroyan Sejuk.
(<i>Melastomaceæ</i>).	
D. celebica, Bl.	Meroyan Jantan. M. Paya. Mumpoyan Paya.
D. punctulata, Hk. f. ...	Meroyan Busuk. Akar Senu- dudok.
Dolichandrone Rheedii, Seem.	Kulo.
(<i>Bignoniaceæ</i>).	
Dolichos lab-lab, L.	Kachang Jariji. K. Karkaras. K. Kunyit. Karkaras.
(<i>Leguminosæ</i>).	
Dracaena breviflora, Ridl. ...	Pumaton. (Selangore).
(<i>Liliaceæ</i>).	
D. congesta, Ridl.	Juang-juang Bukit.
D. ternifolia, Rox.	Sanjuan Bukit.
D. angustifolia, Wall. ...	Chamau. Chemau.
D. Maingayii, Baker. ...	Chamau. Chemau.
Dracontomelum mangiferum, Bl.	Sakai. Sangkuang. Changku- ang.
(<i>Anacardiaceæ</i>).	
Drepananthus cauliflorus, Hk. f.	Antoi Putih.
(<i>Anonaceæ</i>).	
D. pruniferus, Hk. f. ...	Antoi itam.
Dryobalanops camphora, Gaertn	Kapur Barus.
(<i>Dipterocarpeæ</i>).	
Drymoglossum piloselloides. ...	Sakat Ribu-ribu.
(<i>Filices</i>).	
Duabanga sonneratioides, Ham.	Kudada. Berumbong Bukit.
(<i>Lythraceæ</i>).	
Durio oxleyanus, Mast. ...	Durian Daun. Kuripal. (Johor).
(<i>Malvaceæ</i>).	
D. testudinarium, Becc. ...	Durian Tanah. D. Burong.

<i>D. zibethinus</i> , L.	... ..	Durian.
<i>Dyera costulata</i> , Hk. f.	... ..	Jelutong. J. Pipit. Getah Jelutong.
	(<i>Apocynaceae</i>).	
<i>D. Maingayii</i> , Hk. f.	... ..	Same names as <i>D. costulata</i> .
<i>Dysoxylon acutangulum</i> , King.	... ..	Pasak Lingga.
	(<i>Meliaceae</i>).	
<i>D. angustifolium</i> , King.	... ..	Kamanjong. (Pahang). Doso. (Pahang).
<i>D. cauliflorum</i> , Hiern.	... ..	Balun Hijau. Guatak. Kuleun. Jarong.
<i>D. macrothyrsum</i> , Miq.	... ..	Kasip Hutan. Kombel. (Malacca).
<i>D. sp.</i>	... ..	Rongga.
<i>Dysophylla auricularia</i> , Bl.	... ..	Ekor Kuching.
	(<i>Labiatae</i>).	
<i>Ebermaiera angustifolia</i> , Anders.	... ..	Kerak Rimbah. Kumoja Batu.
	(<i>Acanthaceae</i>).	
<i>E. Griffithiana</i> , Anders.	... ..	Ambong Bukit.
<i>E. setigera</i> , Nees.	... ..	Serawan Kubang.
<i>Eclipta alba</i> , L.	... ..	Rumput Beu. Kurumak Jantan.
	(<i>Compositae</i>).	
<i>Elaterospermum Tapos</i> , Miq.	... ..	P'rah.
<i>Eleocarpus Hullettii</i> , King.	... ..	Darumun Pipit.
	(<i>Tiliaceae</i>).	
<i>E. integra</i> , Wall.	... ..	Medang or Mendong Pepilakan. M. Tandjong.
<i>E. Jackianus</i> , Wall.	... ..	Jatek-Jatek. Jentek-Jentek.
<i>E. Mastersii</i> , Hk. f.	... ..	Chemanton Merah. Lempedu Burong. Medang Asam. M. Lansor. M. Suggueh. Perah Paya.
<i>E. obtusus</i> , Bl.	... ..	Medang Kawan. M. Paya. M. Tanah.
<i>E. paniculatus</i> , Wall.	... ..	Darumun Hitam. Mendong Musang. Tingar Belukar.
<i>E. parvifolius</i> , Wall.	... ..	Jambu Kelawar. J. Kelat Lawar Putih. Medang Api. M. Pipit. Mendong Kelawar. Munsaga. Paroh.

<i>E. pedunculatus</i> , Wall.	...	Darumun Padi.
<i>E. polystachyus</i> , Wall.	...	Darumun (Malacca). Darumun Babi.
<i>E. robustus</i> , Rox.	... ..	Barong. Kunkunan Jantan. Obah. Sito. Sopi.
<i>E. salicifolius</i> , King.	... ..	Darumun Padi.
<i>E. spp.</i>	... ..	Darumun Juromong. Mendong-mendong.
<i>E. stipularis</i> , Bl.	... ..	Darumun Pelandok. Medang Tijo. Paroh. Ungank. Pulau Pipit.
<i>Ellipeia nervosa</i> , Hk. f. (<i>Anonaceæ</i>).	...	Kenchong.
<i>Elephantopus scaber</i> , L. (<i>Compositæ</i>).	...	Tutop Bumi.
<i>Eleusine coracana</i> , L. ... (<i>Gramineæ</i>).	... ..	Sambau.
<i>Embelia amentacea</i> , C. B. C. (<i>Myrsinæ</i>).	... ..	Akar Malukut.
<i>E. coriacea</i> var.	... ..	Akar Sakarito (Pahang).
<i>E. Limpanii</i> , Scheff.	...	Akar Dulang-Dulang. Akar Dudulang.
<i>E. ribes</i> , Burm.	... ..	Akar Sulu Karang.
<i>Emilia sonchifolia</i> , De C. (<i>Compositæ</i>).	...	Katumbit Jantan. Setumbuh Merah.
<i>Endospermum Malaccense</i> , Arg. ... (<i>Euphorbiaceæ</i>).	M.	Medang Klabu. Sendok-Sendok.
<i>Enhalus acoroides</i> , Zoll. (<i>Hydrocharideæ</i>).	...	Deringu. Jeringu Laut.
<i>Entada scandens</i> , L. ... (<i>Leguminosæ</i>).	... ..	Akar Beluru.
<i>Epipremnum giganteum</i> , Schott. ... (<i>Aroideæ</i>).	... ..	Ringut.
<i>Epiprinus malaccensis</i> . (<i>Euphorbiaceæ</i>).	...	Bantun Hitam.
<i>E. Malayanus</i> , Griff. ...	... ..	Balong Hijau. Kasumba. Chendra. Chendui. Munot.

<i>Eria pellipes</i> , Lindl.	Angrek Gading Gajah. (Malacca).
(<i>Orchideæ</i>).	
<i>Erianthemum album</i> , Nees.	Kumoja Hutan.
(<i>Acanthaceæ</i>).	
<i>E. malaccense</i> . C. B. C.	Gurah Bukit. Kamoyan. Melor Hutan. Pecha Priok Biru. Suluang Mudah. Tampam Putri.
<i>Erigeron linifolius</i> , Willd.	Sari Bulan (S. Ujong).
(<i>Compositæ</i>).	
<i>Eriocaulon sexangulare</i> , L.	Kumpai Bunang. Rumput Butang. R. Suasa.
(<i>Eriocaulæ</i>).	
<i>E. truncatum</i> , Ham.	Rumput Duria.
<i>Eriodendron anfractuosum</i>	Kabok. Kapok. Kaboh.
(<i>Malvaceæ</i>).	
<i>Erioglossum edule</i> , Bl.	Kelat Jantan. K. Layu Hu- tan. Kulit Layu. Mertajam. Rambutan Hutan.
(<i>Supindaceæ</i>).	
<i>Erismanthès obliqua</i> , Wall.	Kusep Kuludu. Murai Batu.
(<i>Euphorbiaceæ</i>).	
<i>Erycibe angulata</i> , King.	Akar Tampang Ari. Rumput Ular Ari.
(<i>Convolvulaceæ</i>).	
<i>E. malaccense</i> , Wall.	Akar Sakijang.
<i>E. Princei</i> , Wall.	Akar Jambol Siol. A. Ulan Jantan. Perut Kerbau. P. Kijang. Akar Sakijang.
<i>E. sp.</i>	Serawan.
<i>Eryngium fetidum</i> , L.	Kulubar.
(<i>Umbellifereæ</i>).	
<i>Erythrina spp.</i>	Dadap. Dadap.
(<i>Leguminosæ</i>).	
<i>E. stricta</i> , Rox.	Chengkring.
<i>Erythroxylon burmanicum</i> , Griff.	Beluntas Bukit. Chinta Mula. Medang Wangi. M. Lagundi.
(<i>Linacæ</i>).	
<i>Eugenia acuminatissima</i> , Kurz.	Kelat Api. K. Asam. K. Be- lian. K. Lapis.
(<i>Myrtaceæ</i>).	
<i>E. anisosepala</i> . Duthie	Kelat Putih Bukit.

E. <i>aquea</i> , Burm.	..	...	Jambu Ayer. Jambu Ayer Mawar.
E. <i>brachiata</i> , Rox.	...	...	Krean Lada
E. <i>caryophylla</i> , Wight.	...	...	Chinkeh. Chinkah. Chingke.
E. <i>chloroleuca</i> , Duthie	...	...	Kelat Putih. K. jantan.
E. <i>conglomerata</i> , Duthie.	...	...	Salembat. Sulimbat.
E. <i>cymosa</i> , Lam.	...	...	Kelat Jantan. K. Penaga.
E. <i>densiflora</i> , De C.	...	...	Kelat Putih Bukit. Jambu Ayer Mawar Autan or Hutan.
E. <i>filiformis</i> , Wall.	...	...	Kelat Api. K. Belian. K. Lapis. Gising. Kelat Jambu Ayer.
E. <i>Goodenovii</i> , King	...	...	Kelat Putih
E. <i>grandis</i> , Wight	...	...	Jambu Ayer Laut. Krean Batu (Penang).
E. <i>grata</i> , Wall.	...	...	Gelam Tikus, (Penang).
E. <i>Griffithii</i> , Duthie	...	...	Kelat Bising. Medang Telor.
E. <i>inophylla</i> , Rox.	...	...	Samak Paya. Glam Tikus.
E. <i>jambolana</i> , L.	...	...	Jambelan. Jiwat. Salam.
E. <i>jambos</i> , L.	...	...	Jambu Mawar.
E. <i>lepidocarpa</i> , Wall.	...	...	Samak Tebrau. S. Ular.
E. <i>lineata</i> , Bl....	...	...	Katcham (Johor) Kelat Lapis. K. Merah. K. Putih. Kelapit Nyamok. Tupo Lalat.
E. <i>macrocarpa</i> , Rox.	...	...	Jambu Ayer Hutan. J. Bukit. Kelat Jambu. K. Bruang.
E. <i>claviflora</i> , Roxb.	...	...	Bangko. Sedong.
E. <i>malaccensis</i> , L.	...	...	Jambu Bol. J. Susu.
E. <i>nitida</i> , Duthie.	...	...	Palung.
E. <i>papillosa</i> ...	...	...	Samak Bukit.
E. <i>pendens</i> , Duthie	...	...	Kelat Besar. Jelongong.
E. <i>pseudosubtilis</i> , King	...	...	Krian.
E. <i>punctulata</i> , King.	...	...	Kelat Penaga, Kelat Kobo. Jambu chili. Jiwat padi.
E. <i>pustulata</i> , Duthie....	...	...	Gelam Tikus. (Singapore).
E. <i>pyrifolia</i> , Wall.	...	...	Kelat Lapis. K. Putih. Samak Darat.

<i>E. polyantha</i>, ... ..	...	Kelat Merah.
<i>E. spp.</i> ... ..	...	Beti Paya. Biawak Rimbah Brac. (Johor).
<i>E. subdecussata</i> , Wall.	...	Kelat Belian. K. Kobu. Sa- mak Pulut. Kelat Asam.
<i>E. valdevenosa</i> , Duthie	...	Kelat Bunga.
<i>E. venulosa</i> , Wall. ...	...	Kelat Jambu Ayer. K. Putra.
<i>E. zeylanica</i> , L. ...	...	Beti. Merkasib. Nasi-Nasi. Kelat Nasi-Nasi.
<i>Eugeissona triste</i> , Griff. (<i>Palmeæ</i>).	...	Bertam.
<i>Eulophia graminea</i> , Lindl. (<i>Orchideæ</i>).	...	Kaling Lilin (Johor).
<i>Euphorbia atoto</i> , Forst. (<i>Euphorbiaceæ</i>).	...	Jelutong Laut (Singapore).
<i>E. pilulifera</i> , L. ...	...	Ambin Jantan. Ara Tanah. Kulusom. Kurumak Susu. Gelang Susu.
<i>E. neriifolia</i> , L. ..	...	Sudu-Sudu, Sesudu.
<i>E. thymifolia</i> , L. ...	..	Segan Padang.
<i>Eurya acuminata</i> , L. ... (<i>Ternstroemaceæ</i>).	...	Betutu. Jirak. Bunga Kelan- tang. Maluku Jantan. Medang Maluku Jantan. Ranek Daun. Jirak. Ma- ribut. Pagar Anak (Pe- nang).
<i>Eurycles amboinensis</i> . .. (<i>Amaryllideæ</i>)	...	Daun Sapenoh.
<i>Eurycoma latifolia</i> , Jack. (<i>Simarubææ</i>).	...	Bedaru Pahit. B. Putih. B. Merah. Penawar Pa- hit. Sempedu Pahit.
<i>E. longifolia</i> , Jack. ...	...	Duak. Juak. Tongkat Ba- ginda (Penang) Lempedu Pahit. Bidara Pahit.
<i>Eusideroxylon Schwagerii</i> , Tey- sin. ... ..	...	Belian.
(<i>Laurineæ</i>).		
<i>Euthemis leucocarpa</i> , Jack. ...	...	Pelawan Beruk. Tambo.
(<i>Ochnaceæ</i>).		

<i>Evodia latifolia</i> , De C. ...	...	Leban Pelandok. L. Nasi. L. Jantan. Pauh-Pauh Be- tina. Serapoh Jantan.
(<i>Rutaceæ</i>).		
<i>E. Roxburghiana</i> , Bth. ...	...	Kiandang. Meserah Jantan. Pauh-Pauh. Pauh-Pauh Paya. Rudomo. Kayu Asam. Stengah Burong. Tengah Burong.
<i>E. spp.</i> ...	...	Sinintot (Johor).
<i>Fagrea auriculata</i>. ...	...	Peler Musang.
(<i>Loyaniaceæ</i>).		
<i>F. fastigiata</i> , Bl. ...	...	Malibera (Selangore) Mali- beiro. (Malacca).
<i>F. fragrans</i> , Rox. ...	...	Tembusu. Tamusu.
<i>F. Maingayii</i> , Clarke ...	...	Lambusu.
<i>F. morindæfolia</i> , Bl. ...	...	Dada Kura (Selangore). Lam- busu Paya. Mengkudu Badak.
<i>F. racemosa</i> , Jack. ...	...	Lidah Rusa. Pakan Paya. Rumpo-Rumpo. Sapuli (Pahang) Serawas. S. Pa- ya. Suruas. Setebal. Tengok Biawak.
<i>Ferula Narthex</i>. ...	...	(Asafœtida) Anggu. Inngu.
(<i>Umbelliferae</i>).		
<i>Fibraea chloroleuca</i> , Miers. ...	...	Akar Kuning. A. Kinching Kerbau.
(<i>Menispermaceæ</i>).		
<i>Ficus acamptophylla</i> , Miq. ...	...	Ara Buruteh.
(<i>Urticaceæ</i>).		
<i>F. alba</i> , Reinw. ...	...	Ara Perak. Chumantong. (S. Ujong). Kelumpung Burong. K. Ayer. K. Jan- tan. Supudih Jantan.
<i>F. altissima</i> , Bl. ...	...	Ara Juluteh.
<i>F. annulata</i> , Bl. ...	...	Ara Kumbangan. A. Kubang. Kubangan.
<i>F. aurantiaca</i> , Griff. ...	...	Akar Pala-Pala. A. Tengok Biawak Hitam.
<i>F. apiocarpa</i> , Miq. ...	...	Akar Halua.

F. <i>Benjamina</i> , L.	Beringin. Warengin. Waringen.
F. <i>Binnendykii</i> , King.	Ara Akar.
F. <i>chartacea</i> , Wall.	Buah Sungei (Selangor). Kelumpang Mata Punai. Rami Hutan.
F. <i>consociata</i> , Bl.	Akar Piango Hutan. (Pahang). Getah Tahan Remba, (Malacca).
F. <i>diversifolia</i> , Bl.	Api Telinga Gajah.
F. <i>dubia</i> , Wall.	Ara Gajah. Ara Kuap.
F. <i>glabella</i> , Bl.	Ara Nasi.
F. <i>globosa</i> , Bl.	Ara Kelawak. A. Paya. Pulo Bijoh. Tuloh Bijoh.
F. <i>indica</i> , L.	Ara Tampo Pinang. A. Tandok.
F. <i>microstoma</i> , Wall.	Ara Kechil.
F. <i>Miquelii</i> , King.	Ara Batu. Kelumpang. K. Gajah. K. Bukit. Akar Beringen.
F. <i>pisifera</i> , Wall.	Ara Lidah Rimau. A. Suburuteh. A. Supude. A. Supude Paya.
F. <i>retusa</i> , L.	Ara Jejawi.
F. <i>ribes</i> , Reinw.	Alumut.
F. <i>religiosa</i> , L.	Bodi. Budi.
F. <i>rhododendrifolia</i>	Dodol. Ara Jejawi. Jawi-Jawi. Jejawi. Membatu Laiang.
F. <i>Roxburghii</i> , Wall.	Kelebok (Selangore).
<i>Ficus</i> , sp.	Akar Susu Putri.
F. <i>subulata</i> , Bl.	Kelumpang Agas. Lupong Merah.
F. <i>urophylla</i> , Wall.	Akar Buntat Ular. Supudeh. Supideh.
F. <i>vasculosa</i> , Wall.	Tampang Burong.
F. <i>villosa</i> , Bl.	Ara Akar Buloh. A. Sepadi.
F. <i>xylophylla</i> , Wall.	Ara Daun Lebar.

<i>Fimbristylis asperima</i> , Vahl. ...	Rumput Bawang	R. Pulut.
(<i>Cyperaceæ</i>).		R. Siamet.
<i>F. diphylla</i> , Rottb. ...	Rumput Peroh.	R. Purun Batu.
<i>F. globulosa</i> , Benth. ...	Rumput Sandong.	
<i>F. miliacea</i> , Benth. ...	Rumput Tahi Kerbau.	
<i>F. pauciflora</i> , Benth. ...	Rumput Girah.	
<i>Flagellaria indica</i> , L. ...	Rotan Ayer.	R. binui.
(<i>Flagellariæ</i>).		
<i>Flemingia congesta</i> , Rox. ...	Seringan Jantan.	
(<i>Leguminosæ</i>).		
<i>Flacourtea cataphracta</i> , Rox. ...	Rukam.	
(<i>Bixineæ</i>).		
<i>Fleurya interrupta</i> , Gaud. ...	Jelatang Ayam.	
(<i>Urticaceæ</i>).		
<i>Floscopa scandens</i> , Lour, ...	Kangkong Ayer.	
(<i>Commelinaceæ</i>).		
<i>Forrestia Griffithii</i> , Clarke. ...	Setawa Jantan.	S. Hutan.
(<i>Commelinaceæ</i>).	Sumpoh Landak.	
<i>F. mollis</i> , Hassk. ...	Tawaga, (Penang).	
<i>F. spp.</i> ...	Setawa. Satawa.	
<i>Freycinetia angustifolia</i> , Bl. ...	Nanchong Besih (Penang).	
(<i>Pandaneæ</i>).	Rotan Musang. Akar Ular.	
<i>Fuirena glomerata</i> , L. ...	Rumput Buku Buloh.	R. Kelulut. R. Lidah Menkerang.
(<i>Cyperaceæ</i>).		
<i>Gahnia javanica</i> ...	Serei bukit.	
(<i>Cyperaceæ</i>).		
<i>Galearia affinis</i> , Bl. ...	Rambai Pontianak.	
(<i>Euphorbiaceæ</i>).		
<i>G. phlebocarpa</i> , Br. ...	Rambai Daun. Ubak.	
<i>G. subulata</i> , Muell. ...	Penurun Lutong. (Johore).	
<i>Garcinia Andersonii</i> , Hk. f. ...	Kandis Gajah.	
(<i>Guttiferæ</i>).		
<i>G. atroviridis</i> , Griff. ...	Asam Gelugur.	
<i>G. dulcis</i> , Kurz. ...	Mundu.	
<i>G. eugeniaefolia</i> , Wall. ...	Tentulang Merah.	
<i>G. Hombroniana</i> , Prain. ...	Manggis Hutan.	
<i>G. Mangostana</i> , L. ...	Manggis. Mustah (Legeh).	

<i>G. nigro-lineata</i> , Bl. ...	...	Kandis Tulang-Tulang.
<i>G. Praineana</i> , King. ...	...	Chekow. Chupu. Cherapu.
<i>G. Spp.</i> ...	...	Geteh Hudang (Johore) Sirit Budak (Johore) Barus. Binkiring.
<i>Gardenia carinata</i> , Thw. (<i>Rubiaceæ</i>).	...	Randa.
<i>G. Griffithii</i> , Hk. f. ...	...	Champaka Hutan.
<i>G. florida</i> L. ...	...	Bunga Susu. Bunga China.
<i>G. tentaculata</i> , Hk. f. ...	...	Kachubong Paya. Kapa- yung Ayer.
<i>G. tubifera</i> , Wall. ...	...	Delima Hutan Jambu Batu Hutan. Koping Ayer (Selangor) K a p a y a n g Ipas.
<i>Gelonium bifarium</i> , Rox. (<i>Euphorbiaceæ</i>).	...	Lampon Hitam. Limau- Limau. Ruas-Ruas.
<i>G. multiflorum</i> , A. Juss. ...	...	Punai Mengantok (Penang).
<i>Geophila reniformis</i> , Don. (<i>Rubiaceæ</i>).	...	Akar Pantat Beruk. Pegaga Ular. Pegaga Tikus.
<i>Gigantochloa heterostachya</i> , Munro. ...	...	Buluh Tilan.
<i>G. Kurzii</i> , Gamble. ...	...	Buluh Plang.
<i>G. latispiculata</i> , Munro. ...	...	Buluh Tilan Minyak.
<i>G. Scortechinii</i> , Gamble. ...	...	Buluh Raya.
<i>G. Wrayii</i> , Gamble. ...	...	Buluh Plang.
<i>Gironniera nervosa</i> , Bl. (<i>Urticaceæ</i>).	...	Ampas Tebu. Medang Am- pas Tebu. M. Hitam. M. Kasap.
<i>G. parvifolia</i> , Pl. ...	...	Ampas Tebu. Medang Ampas Tebu. M. Kasap. Saga- ding.
<i>G. subaequalis</i> , Pl. ...	...	Medang Bulanak. M. Bulapo.
<i>Gleichenia linearis</i> ... (<i>Filices</i>).	...	Bengkawang, Resam. Paku Resam.
<i>Globba</i> spp. ... (<i>Scitamineæ</i>).	...	Haliya Hutan. Meroyan Tingal.
<i>Glochidion brunneum</i> , Hk. f. ... (<i>Euphorbiaceæ</i>).	...	Kenidei Paya. Ranang. Ubah Merah. U. Paya.

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<i>G. desmocarpum</i> , Ilk. f. ...	U'bah Hitam.
<i>G. hirsutum</i> , Muell.	Kornum.
<i>G. insulare</i> , Muell.	Terasai Manis.
<i>G. leiostylum</i> , Kurz.	Lunuranop. U'bah Kechil.
<i>G. microbotrys</i> , Ilk. f.	U'bah Paya.
<i>G. nanogynum</i> , Ilk. f.	Semak Suai.
<i>G. obscurum</i> , Bl.	Chermei Antan.
<i>G. sericeum</i> , Ilk. f.	Hujan Panas puteh. Kenedei Bukit. Sindarong.
<i>G. superbum</i> , Baill.	Gurumong Jantan. G. Betina. Rosok Temagnu (Singa- pore) Timah Bangan.
<i>Gluta elegans</i> , Hook. f.	Kerbau Jalang (Selangor).
<i>(Anacardiaceae).</i>	
<i>Glycosmis sapindoides</i> , Lindl.	Buluntoh Burong. Cherit Morai Pulong. Simambu Hutan (Lankawi).
<i>(Rutaceae).</i>	
<i>Gnetum Brunonianum</i> , Griff.	Akar Dagun Putih. Ekor Balangkas. Pantat Ulat. Sugi-Sugi.
<i>(Gnetaceae).</i>	
<i>G. edule</i> , Bl.	Blay Kechil. B. Merah.
<i>G. funiculare</i> , Bl.	A. Dagun. A. Mantadu. A. Putat. A. Sebuseh Paya. A. Saburus. A. Tutubo.
<i>G. gnemon</i> , L.	Buah Manino. (Pinang) Mango.
<i>G. neglectum</i> Bl.	Akar Jullah. A. Perut Tem- bu. A. Sacherit Hitam. A. Seraput Jantan. Selampah (Selangor).
<i>Gomphandra lanceolata</i> , King.	Chemperai Batu. Lambas Gurang Jantan. Kasturi Jantan. Mungilang Api. Meruseh Hitam.
<i>G. pinangiana</i> , Wall.	Lempedu Jawa. Lilan Hitam.
<i>Gomphostemma crinitum</i> , Wall.	Munjulong Bukit.
<i>(Labiatae)</i>	
<i>Gomphia Hookeri</i> , Pl.	Kasi (Johor) Taupoi Paya.
<i>(Ochnaceae)</i>	

<i>G. sumatrana</i> , Pl.	Liba. Luis. Mata Ketam Batu. Murmagong. Siburu. Janggot Keli. Kelat Ampedu Jawa.
<i>Goniothalamus giganteus</i> , Hk. f. (<i>Anonaceae</i>)	Galang Hutan.
<i>G. macrophyllus</i> , Hk. f.	Bongsoi. Sajur Wah.
<i>G. malayanus</i> , Hk. f.	Mupisang.
<i>G. Prainanus</i> , King.	Banitan.
<i>G. sp.</i>	Kobak Bassu.
<i>G. Tapis</i> , Miq.	Galai.
<i>Goniocaryum longerracemosum</i> , King.	Ruai Gajah. Sigam. Toioh (Singapore).
(<i>Olinaceae</i>)	
<i>Gordonia excelsa</i> , Bl.	Pagar Anak Jantan. Kelat Assam.
(<i>Ternstroemiaceae</i>)	
<i>Gossypium herbaceum</i> , L.	Kapas. K. Taun. K. Huuna. K. Muri. K. Benggala. (Favre's names for varieties).
(<i>Malvaceae</i>)	
<i>Gouania macrocarpa</i>	Sibueh.
(<i>Rhamnaceae</i>)	
<i>Gracilaria lichenoides</i> , J. Ag.	Agar-Agar.
(<i>Algae</i>).	
<i>Grammatophyllum speciosum</i> ,	Bunga Bidadari. B. Putri.
(<i>Orchideae</i>)	
<i>Greenia Jackii</i> , W. & A.	Lada Burong Besar. Landas Paya. Lundas Paya. Sikam Bulan.
(<i>Rubiaceae</i>)	
<i>Grewia fibrocarpa</i> , Mast.	Chendrai. C. Hutan. C. Rim- bah Damak. C. Asam.
(<i>Tiliaceae</i>)	
<i>G. globulifera</i> , Mast.	Damak-Damak Buluh. Da- mak Merah. Sabut-Sabut.
<i>G. laevigata</i> , Vahl.	Sempelas Lidah Kuching.
<i>G. Miqueliana</i> , Kurtz.	Chenderai Paya. Malabu (Johore).
<i>G. paniculata</i> , Rox.	Chenderai. C. Hutan.
<i>G. umbellata</i> , L.	Chenderai. Akar Sekapu. A. Kपालु. Sempelas Lidah Kuching. (S. Ujong)

				Tongkat Ali.
<i>Guilandina bonduc</i> , L.	...		Bondok.	Akar Kilichi
				(<i>Leguminosae</i>)
<i>Gynnema acuminatum</i> , Wall.	...			Akar Sibueh Api.
				(<i>Asclepiadeae</i>)
<i>Gymnopetalum cochinchinense</i> ,				Sipam (Lankawi).
				(<i>Cucurbitaceae</i>)
<i>Gynochthodes coriacea</i> , Miq.	...		Akar Lempedu Tanah.	Akar
				Mali.
<i>G. sublanceolata</i> , Miq.	...		Akar Lampai Hitam	(Ma-
				lacca).
<i>Gynotroches axillaris</i> , Miq.	...		Janggut Keli.	Mata Keli
				Membuluh. M. Kechil.
<i>Gynura sarmentosa</i> , Dec.	...			Akar Sabiak.
				(<i>Compositae</i>)
<i>Haemaria discolor</i> , Lindl.	...		Baldu Merah.	Daun Lau.
				(<i>Orchideae</i>)
<i>Haeteria obliqua</i> , Bl.	...	...		Tumbuh Hutan.
				(<i>Orchideae</i>)
<i>Harmandia Kunstleri</i> , King.	...			Mempudu Tanah.
				(<i>Olacineae</i>)
<i>Hedychium longicornutum</i> , Hk.f.				Ubat Chaching.
				(<i>Scitamineae</i>)
<i>Hedyotis auricularia</i> , L.	...		Kenikah Batu.	Kerukoh
				Batu.
<i>H. capitellata</i> , Wall.	...	...	Anga Besi.	Keminyan Hantu.
				Akar Lidah Jin. Sampu
				Keladi. Sutnibut. Kereseq
				Pisang (Selangor).
<i>H. congesta</i> , Br.	...	...	Lidah Jin, Sampu	Puchut
				(Malacca).
<i>H. glabra</i> , Br.	...	...	Rumput Chenkring.	R. Chin-
				kering. R. Sebueh Jantan.
				R. Sipitum (Pahang). R.
				Srigala.
<i>H. pinifolia</i> , Wall.	...	...		Rumput Biring.
<i>H. vestita</i> , Br.	...	...		Lingugat. Tokong Balu.
<i>Helicia attenuata</i> , Bl.	...	...		Golang Paya. Gurang Bukit.
				(<i>Proteaceae</i>).

<i>H. excelsa</i> , Bl.	...	...	Mata Kaok. Medang Obu.
<i>H. petiolaris</i> , Benth.	...	...	Gong (Johore).
<i>H. robusta</i> , Wall.	...	...	Medang Keladi. M. Laiang. Putat Paya. P. Tepi.
<i>Helicteres isora</i> , L.	..	...	Chabei Pintal. C. Tali (Singapore). Kayu Ulas.
(<i>Sterculiaceae</i>).			Rumput Olek. Seri Bumi.
<i>Heliotropium indicum</i> , L.	...	...
(<i>Boraginaceae</i>).			
<i>Hemigraphis affinis</i> , Nees.	...	...	Langundi Pasir.
(<i>Acanthaceae</i>).			
<i>H. confinis</i> , Ander.			Dilam. Nilam Jantan. Ruku Jantan.
<i>Hemigyrosa longifolia</i> , Heirn.			Penupoh.
(<i>Sapindaceae</i>).			
<i>Henslowia Lobbiana</i> , A. D. C.			Api-API. Benalu. Bendalu- Bendalu. Benelu. Akar Sa- tubal. A Sumpah-Ulat. Telingan Kra.
(<i>Santalaceae</i>).			
<i>Heptapleurum heterophyllum</i> ,			
Seem.	...	...	Akar Chabang Lima.
(<i>Araliaceae</i>).			
<i>H. subulatum</i> , Seem.	...	...	Kayu Mentas. Kukau. Akar Pusat Budak.
<i>H. venulosa</i> , Seem.	...	...	Sepuku. Teluta Jantan.
<i>Hernandia sonora</i> , L.	...	...	Buah Keras Laut.
(<i>Laurineae</i>).			
<i>Herpestes monniera</i> , L.	...	...	Bremi.
(<i>Scropularineae</i>).			
<i>Heriteria littoralis</i> , L.	...	...	Atun Laut. Bayur Laut. Dungun. Peler Kambing.
(<i>Sterculiaceae</i>).			
<i>Heynea trijuga</i> , Rox.	...	...	Duak. Juak.
(<i>Meliaceae</i>).			
<i>Hibiscus abelmoschus</i> , L.	...	...	Kapas Hantu. K. Hutan.
(<i>Malvaceae</i>).			
<i>H. esculentus</i> , L.	...	...	Kachang Bendi. K. Lindir.
<i>H. floccosus</i> , Mast.	Kapas Kapas (Malacca). Petutu. Unchang (P. W.)
<i>H. macrophyllus</i> , Rox.	Tutok.
<i>H. mutabilis</i> , L.	Baru Landak.

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<i>H. rosa-sinensis</i> , L.	Bunga Raya.
<i>H. surattensis</i> , L.	Asam Susor.
<i>H. tiliaceus</i> , L.	Baru. Ambaru. Waru. Baru Laut. Dedap Laut.
<i>Hippocratea Cumingi</i> , Laws. ...	Gambir Ayer.
(<i>Malpighiaceae</i>).	Akar Dedalu Bukit (Malacca).
<i>Hiptage sericea</i> , Hk. f. ...	A. Kirai. A. Kulupus. A. Papina. Sarunchi (Johore).
<i>Hodgsonia heteroclita</i> , Hk. f.	Akar Papayong.
(<i>Cucurbitaceae</i>).	
<i>Homalium propinquum</i> , Clarke.	Pantat Ulat Putih.
<i>Homalium foetidum</i> , Benth. ...	Ayer Anjing. Mensara Puteh (Johore).
<i>H. frutescens</i> , King	Anjing Ayer.
<i>H. grandiflorum</i> , Benth. ...	Kayu Batu.
<i>H. longifolium</i> , Benth.	Panasan. Pauh Kijang Jantan.
<i>H. Griffithianum</i> , Kurz. ...	Lagundi Laut (Kedah).
<i>Homalomena coerulea</i> , Jungh.	Keladi Moyiang. Kemoyang.
(<i>Aroideae</i>).	Kelamoyiang.
<i>Homalomena rostrata</i> , Griff. ...	Keladi Moyang. Kemoyang.
(<i>Aroideae</i>).	Kelamoyiang. Lumbah Paya.
<i>H. velutina</i> , Hk. f.	Puah Bukit.
<i>Homalanthus populifolius</i> , Gray	Ludai Padi. Moya (S. Ujong). Mahang Makan Pelandok.
(<i>Euphorbiaceae</i>).	
<i>Hopsea globosa</i> , Brandis. ...	Damar Mata Kuching (Perak).
(<i>Dipterocarpeae</i>).	
<i>H. Griffithiana</i> , Dyer ...	Meranti Puteh.
<i>H. intermedia</i> , King	Jangkang (Penang). Meranti (Johore). Merawan. M. Kunyit. Mengarawan.
<i>H. Mengarawan</i> , Bl.	Merawan. M. Kunyit. Jangel.
<i>Hoya caudata</i> , Hk. f.	Akar Sujah.
(<i>Asclepiadeae</i>).	

<i>H. coronaria</i> , Bl.	Akar Setebal.
<i>H. diversifolia</i> , Bl.	Akar Sarapat. Susudu Bukit.
<i>Hullettia dumosa</i> , King	Sunto Bukit.
(<i>Urticaceæ</i>).	
<i>Hunteria corymbosa</i> , Rox.	Gading (Penang).
(<i>Apocynaceæ</i>).	
<i>Hydnocarpus castaneus</i> , Ilk. f.	Alai Batu.
(<i>Birineæ</i>).	
<i>H.</i> sp.	Akar Keranji.
<i>Hydnophytum formicarium</i> ,	Kepala Berok. Padal Itak.
Jack.	Senala Api Laut.
(<i>Rubiaceæ</i>).	
<i>Hydrocera triflora</i> , W. & A.	Inai Paya. Tampinah.
(<i>Geraniaceæ</i>).	
<i>Hydrocotyle asiatica</i> , L.	Pegaga.
(<i>Umbellifereæ</i>).	
<i>Hygrophila salicifolia</i> , Nees.	Chukal (Malacca). Kurumak
(<i>Acanthaceæ</i>).	Rusa. Maman Babi.
<i>Hygrophora punicea</i> , Fr.	Chendawan Telinga Tiang.
(<i>Fungi</i>).	
<i>Hyptis brevipes</i> , Poir.	Sari Ingank. S. Hutan. S.
(<i>Labiataæ</i>).	Enggang.
<i>H.</i> suaveolens, Poir.	Malbar Hutau. Sapulut
	(Singapore). Selasih
	Hutan.
<i>Iguanaur polymorpha</i> , Becc.	Kelasak. Sapidan.
(<i>Palmeæ</i>).	
<i>I.</i> sp.	Teruno.
<i>Ilex cymosa</i> , Bl.	Musirah Bukit M. Putih.
(<i>Illicineæ</i>).	Timah-Timah. Titimah.
<i>I. macrophylla</i> , Wall.	Medang Tulok (Pinang).
	Timah-Timah Bulan. T.
	Gading.
<i>Illicium anisatum</i> , L.	(Aniseed). Adas Manis.
(<i>Magnoliaceæ</i>).	
<i>Illigera appendiculata</i> , Bl.	Maralapit.
(<i>Combretaceæ</i>).	
<i>Impatiens Griffithii</i> , Ilk. f.	Inai Bukit.
(<i>Geraniaceæ</i>).	

<i>Imperata cylindrica</i> , Beauv. ...	Lalang.
(<i>Gramineæ</i>).	
<i>I. exaltata</i> , Brngn. ...	Lalang Jawa.
<i>Indigofera tinctoria</i> , L. ...	Nila. Tarum.
(<i>Leguminosæ</i>).	
<i>Inocarpus edule</i> , Forst. ...	Gayam.
(<i>Leguminosæ</i>).	
<i>Iodes velutina</i> , King ...	Akar China Bukit. A Sulu-pit.
(<i>Olacineæ</i>).	
<i>Ipomœa angustifolia</i> , Jacq. ..	Kangkong Pasir. A k a r Kurumak.
(<i>Convolvulacæ</i>).	
<i>I. aquatica</i> , Forst. ...	Kangkong.
<i>I. cymosa</i> , Roem. ...	Akar Ulan.
<i>I. digitata</i> , L. ...	Kangkong Laut. A k a r Lana (Penang).
<i>I. peltata</i> , Miq. ...	Kangkong Bukit. Ulam Gajah.
<i>I. pes-capræ</i> , Roth. ...	Tapak Kuda.
<i>I. uniflora</i> , R. & S. ...	Lidah Patong. Ulam Putih.
<i>I. quamoclit</i> , L. ...	Bunga Jawa.
<i>Irvingia malayana</i> , Hk. f. ...	Pauh Kijang. Merlang.
(<i>Simarubæ</i>).	
<i>Ischaemum muticum</i> , L. ...	Rumput Ekor Chari. R. Tembaga.
(<i>Gramineæ</i>).	
<i>Ixonanthes icosandra</i> , Jack. ...	Langgundi Bunga. Buah Tui.
(<i>Lineæ</i>).	
<i>I. obovata</i> , Hk. f. ...	Pagar Anak. P. A. Merah. P. A. Hitam. P. A. Betina. Sankau Merah.
<i>I. reticulata</i> , Jack. ...	Jinjagong. Sakit Hudang (Malacca). Pagar Anak.
<i>Ixora amœna</i> , Wall. ...	Siantan Jantan. S. Hutan.
(<i>Rubiaceæ</i>).	
<i>Ixora coccinea</i> , Br. ...	Jarum-Jarum Merah.
<i>I. fulgens</i> , Roxb. ...	Kramat Hujan. Pechah Priok.
<i>I. grandiflora</i> , Zoll. ...	Sampu Tikus, Segading Jantan, Trubol.
<i>I. nigricans</i> , Br. ...	Supati

I. <i>opaca</i> , Br.	Jambol Siol. Mumjilai Hutan.
I. <i>parviflora</i> , Vahl.	Kelat Tandok. Kupayiang Ayer. Padijang.
I. <i>pendula</i> , Jack.	Saratong Padi (Johore). Tabong Bunga.
I. spp. cultivated forms	Bunga China.
<i>Jackia ornata</i> , Wall.	Sintulang.
(<i>Rubiaceae</i>).	
Jasminum <i>bifarium</i> , Wall.	Kukulang Paya. Pakan. Hutan. P. Jantan. P. Betina. Sumpoh. Pukan.
(<i>Oleaceae</i>).	
J. <i>Griffithii</i> , Clarke	Kumkumah Hutan. Akar Melor Hutan.
J. <i>Sambac</i> , Ait.	Melati. Malati. Malor. Melor.
J. <i>smilacifolium</i> , Griff.	Kenching Kambing. Akar Lumut Sial Munahon.
<i>Jatropha curcas</i> , L.	Jarak Blanda.
(<i>Euphorbiaceae</i>).	
<i>Jussiaea suffruticosa</i> , L.	Bujang Semalam. Lakom Ayer. Pujong Malam.
(<i>Onagraceae</i>).	
<i>Justicia gandarusa</i> , L.	Gandarusa. Gendarusa. Kisi-Kisi (Selangore).
(<i>Acanthaceae</i>).	
J. sp.	Sibiak (Malacca).
<i>Koempferia Galanga</i> , L.	Chekur. Kenchur.
(<i>Scitamineae</i>).	
<i>Kayea ferruginea</i> , Pierre	Sumbawang.
(<i>Guttiferae</i>).	
K. <i>grandis</i> , King	Bunuai. Penaga Paya.
<i>Kibara coriacea</i> , Endl.	Kutang tandok. Pakan Jantan. Setubah Paya.
(<i>Monimiaceae</i>).	
<i>Kibessa galeata</i> , Cogn.	Lagis Hutan Pukua.
(<i>Melastomaceae</i>).	
K. <i>simplex</i> , Korth.	Kelat Menaun. Mahubi. Munahon. Menaun. Sial Menaun. Sangkap Jantan. Sigumbong Paya. Srian-Putih. Naun.
<i>Kopsia</i> sp.	Bangku.
(<i>Apocynaceae</i>).	

Kurrimia paniculata, Wall. ...	Benak. Biko-Biko. Bunak.
(<i>Celastrinæ</i>).	
K. pulcherrima ...	Boko-Boko. Medang Gidap.
Kyllingia brevifolia, Rottb. ...	Rumput Kanching Baju Hutan.
(<i>Cyperaceæ</i>).	
K. monocephala, Vahl. ...	Rumput Tuki.
Labisia pothoina, Lind. ...	Berangkas Hutan. Mata Plandok Rimbah.
(<i>Myrsinæ</i>).	
Lagenaria vulgaris, Ser. ...	Labu Jantong. L. Ayer Putih. L. Kendi.
(<i>Cucurbitaceæ</i>).	
Lagerstroemia floribunda, Jack. ...	Bongok. Bongor. Bongoh.
(<i>Lythraceæ</i>).	
L. Flos-Regina, Retz. ...	Bongok Raya. Sebugo.
L. hexaptera, Miq. ...	Bongok Balong. Mapot (Malacca).
L. sp. ...	Bongkok Malukut.
L. sp. ...	Bongkok Susor.
Lasia spinosa, Thw. ...	Gli-Gli. Bekil.
(<i>Aroideæ</i>).	
Lansium domesticum, Jack. ...	Langsat. Langsad. Lansat.
var. Duku. ...	Lansah. Duku.
(<i>Meliaceæ</i>).	
Lantana Camara, L. ...	Bunga Pagar. Tahi Ayam.
(<i>Verbenaceæ</i>).	
Laportea crenulata, Forst. ...	Jelatang. Daun Gatal. Rumpai.
(<i>Urticaceæ</i>).	
Lasianthus adpressus, Hk. f. ...	Sebong Hutan.
(<i>Rubiaceæ</i>).	
L. Jackianus, Hk. f. ...	Ayam-Ayam.
L. sp. ...	Binchi.
L. sp. ...	Meroyan Batu.
L. sps. ...	Jarka. Lankam.
L. Wallichii, Wight. ...	Buah Chabang Baju.
L. Wightianus, Hk. f. ..	Buntat Bahong. Daun Sekuntot.
Lawsonia alba, Lam. ...	Hina. Hinai. Inai.
(<i>Lythraceæ</i>).	

<i>Lecananthus erubescens</i> , Jack. (<i>Rubiaceæ</i>).	Ambun Akar. Akar Dato Rajah (Johore). Akar Susor Paya (Malacca).
<i>Leea æquatica</i> , L. ... (<i>Ampelideæ</i>).	Jolok-Jolok.
<i>L. gigantea</i> , Griff. ...	Gireng.
<i>Leea sambucina</i> , Willd. (<i>Ampelideæ</i>).	Jarak Laut. Jolok-Jolok. Tumbo Daun Bukit.
<i>L. sp.</i> ...	Toi.
<i>Lentinus exilis</i> ... (<i>Fungi</i>).	Chendawang Batang.
<i>Leonurus sibiricus</i> , L. ... (<i>Labiataæ</i>).	Tebing Aga, Seranting.
<i>Lepidagathis hyalina</i> , Nees. (<i>Acanthaceæ</i>).	Kuntul Rimbah.
<i>L. longifolia</i> , Wight.	Peluroh. Serga. Seruntu.
<i>Leptaspis urceolata</i> , Br. (<i>Gramineæ</i>).	Tampo Kulang. Getah Pu- yuh. T. Gulang. Glang.
<i>Leptonychia glabra</i> , Willd. (<i>Sterculiaceæ</i>).	Tingao.
<i>Leptospermum amboinense</i> , Bl. (<i>Myrtaceæ</i>).	Gelam Bukit.
<i>Lettsomia Maingayi</i> , Clarke ... (<i>Convolvulaceæ</i>).	Akar Butang Bunga. A. Kelupos. A. Sumulut. A. Sumuntat. Tentarong Terong-Terong.
<i>L. peguense</i> , Clarke ...	Akar Tapak Rusa. A. Tumi- ang. A. Ulan Bukit.
<i>L. rubicunda</i> , Clarke ...	Akar Saga Moleh.
<i>Leucas zeylanica</i> , Br. ... (<i>Labiataæ</i>).	Katumbit.
<i>Leuconotis eugeniaefolia</i> , De C. (<i>Apocynaceæ</i>).	Akar Garah. A. Gegrip Sun- dek.
<i>Leucopogon Malayanus</i> , Jack. (<i>Apocynaceæ</i>).	Mentada.
<i>Leucostegia parvula</i> , Wall. ... (<i>Filices</i>).	Paku Lumut Batu
<i>Licuala acutifida</i> , Mart. (<i>Palmeæ</i>).	Palas Tikus.

<i>L. glabra</i> , Griff.	Palas Padi. P. Gunong.
<i>L. longipes</i> , Griff.	Palas Batu.
<i>L. paludosa</i> , Griff.	Palas.
<i>L. pusilla</i> , Becc.	Gurcheng. Palas Rewang.
<i>Limacia cuspidata</i> , Hk. f.	Akar Minyak.
(<i>Menispermaceæ</i>).	
<i>L. oblonga</i> , Miers.	Akar China.
<i>L. triandra</i> , Miers.	Akar Kunyit-Kunyit. A. Kusin.
<i>Limnophila conferta</i> , Benth.	Bremi Hutan.
(<i>Scrophularineæ</i>).	
<i>Limnophila villosa</i> , Benth.	Kerak Nasi Putih. Sabueh Batu. Sibueh Batu.
(<i>Scrophularineæ</i>).	
<i>Lindera malaccensis</i> , Hk. f.	Medang Paya. Serapu Putih.
(<i>Laurineæ</i>).	
<i>L. sp.</i>	Medang Perauas.
<i>Lindsaya scandens</i> , Hk. f.	Paku Dudok Bukit
(<i>Filices</i>).	
<i>Linostoma pauciflora</i> , Griff.	Babora.
(<i>Thymeleaceæ</i>).	
<i>L. scandens</i> , Griff.	Akar Kapang.
<i>Litsea amara</i> , Bl.	Medang Buluko. M. Mo- yang.
(<i>Laurineæ</i>).	
<i>L. lancifolia</i> , Rox.	Medang Kechawi. M. Tam- po.
<i>L. myristicæfolia</i> , Wall.	Medang Bunga. M. Kela- yer. M. Tai Ayam.
<i>L. nitida</i> , Rox.	Medang Kelor.
<i>L. polyantha</i> , Juss.	Bangang. Medang Busuk.
<i>L. sp. near panamonja</i> , Hamm.	Medang Katuko.
<i>L. sp.</i>	Bobokor (Selangor).
<i>L. zeylanica</i> , Nees.	Medang Saluang.
<i>Livistona cochinchinensis</i> , Mart.	Serdang.
(<i>Palmeæ</i>).	
<i>L. Kingii</i> , Hk. f.	Kepau (Selangor).
<i>Luvunga scandens</i> , Ham.	Akar Keping (Johore).
(<i>Rutaceæ</i>).	
<i>Lophatherum gracile</i> , Beauv.	Rumput Jarang. R. Keru- but. R. Kelurat.
(<i>Gramineæ</i>).	

Lophiocarpus guyanensis, Rich.		Kelipoh Padang.
(<i>Alismaceæ</i>).		
Lophopetalum fimbriatum, Wight.	Krabu. Medang Asam.	
(<i>Celastrineæ</i>).		
L. pallidum, Laws.	Kroi.	
Loranthus ampullaceus, Rox. ...	Dudalu. Menalu. Sanalu	
(<i>Loranthaceæ</i>).	Api-Api Jantan.	
L. crassus, Hk. f.	Benalu Api.	
L. ferrugineus, Miq.	Benalu Api.	
L. formosus, Bl.	Gilan (Johore).	
L. grandifrons, King... ..	Mendalu Besar.	
L. pentandrus, L.	Lulor Api-Api. Sanalu Api.	
	Sulor Api Jantan.	
Loranthus pentapetalus, Rox....	Mendalu Api.	
(<i>Loranthaceæ</i>).		
L. sps.	Api-Api.	
Lowia longiflora, Scort. ...	Lobak Hutan.	
(<i>Scitamineæ</i>).		
Luffa aegyptica, L.	Petola Manis.	
(<i>Cucurbitaceæ</i>).		
L. cylindrica, Roem.	Ketola Manis.	
Lumnitzera coccinea, Wight. ...	Api-Api.	
Lycopodium cernuum	Rumput Sarani.	
(<i>Lycopodiaceæ</i>).		
Lygodium dichotomum, ...	Akar Sidin.	
(<i>Filices</i>).		
L. pinnatifidum	Akar Darai Paya. Ribu-Ribu	
	Gajah.	
L. scandens	Ribu-Ribu.	
Maba buxifolia, Pers.	Kayu Arang.	
(<i>Ebenaceæ</i>).		
Macaranga Hullettii, King ...	Mahang Bulan. M. Serendit.	
(<i>Euphorbiaceæ</i>).		
M. hypoleuca, Muell.	Mahang Putih.	
M. Javanica, Muell.	Mahang Bayan. M. Api. M.	
	Lok. Selaru. Sugu-Sugu.	
M. Lowii, King	Gireseh Padi. Rami Betina.	

<i>M. megalophylla</i> , Muell.	..	Chia Kubit. Kubin. Kuban. Sapedas. Bank.
<i>M. populifolia</i> , Muell.	...	Balik Angin Putih. Pulau. Pipi.
<i>M. tanarius</i> , Muell.	... ..	Inchong (Pinang). Kundo.
<i>M. spp.</i>	... ..	Mahang.
(<i>Myrsinæ</i>).		
<i>Mallotus, Caput-Medusæ</i> , Hk. f.		Medang Jurnus.
(<i>Euphorbiacæ</i>).		
<i>M. cochinchinensis</i> , Muell.	...	Balik Angin.
<i>M. floribundus</i> , Muell.	...	Sekubing Ayer.
<i>M. Griffithianus</i> , Hk. f.	...	Marpoh. Murpoh. Pulut- Pulut Bukit. Setampin (Selangore).
<i>M. lancifolius</i> , Hk. f.	...	Ludai Jantan. Medang Jarak.
<i>M. macrostachys</i> , Muell.	...	Balik Kuning. Duleh Merah. Berumbong.
<i>M. penangensis</i> , Muell.	...	Pulut-Pulut Poko.
<i>M. Porterianus</i> , Muell.	...	Pulut-Pulut Hutan.
<i>M. repandus</i> , Muell.	...	Akar Chiarek Putih.
<i>M. subpeltatus</i> , Muell.	...	Jarak Gajah. J. Hutan.
<i>Mapania bancana</i> , Miq.	...	Rumput Giring-Giring. R. Supidang. R. Surat Bel- lugar.
(<i>Cyperacæ</i>).		
<i>M. humilis</i> , Naves	... ..	Siak-Siak Rimbah.
<i>M. hypolytroides</i> , Clarke	... ..	Pandan Biru.
<i>M. palustris</i> , Benth.	... ..	Mengkuang. M. tudong. Lobo.
<i>Mangifera coesia</i> , Jack.	...	Binjai.
(<i>Anacardiaceæ</i>).		
<i>M. foetida</i> , L.	... ..	Bachang. Machang. Amba- chang. Kambachang. Ma- chang Batu.
<i>M. indica</i> , L.	... ..	Mampelam. A m p e l a m . Hampelam.
<i>M. kemanga</i> , Bl.	... ..	Kemanga.
<i>M. Maingayii</i> , Hk. f.	... ..	Sepum.

<i>M. oblongifolium</i> , Hk. f.	..	Kuwini (Maingay).
<i>M. odorata</i> , Griff.	... ..	Kuwini.
<i>M. sp.</i> ... ..	... ..	Para (Johore).
<i>M. sp.</i> ... ..	... ..	Bachang Hutan.
<i>M. sp.</i> ... ..	... ..	Kijai.
<i>Marasmius gordipes</i> ..	... ..	Chindawan Rombut Ali.
(<i>Fungi</i>).		
<i>Mariscus albescens</i> , Gaud.	... ..	Rumput Bumbut.
(<i>Cyperaceæ</i>).		
<i>M. pennatus</i> , Clarke ...	... ..	Rumput Sulengsin. R. Surai.
<i>M. umbellatus</i> , Clarke	... ..	Janggut Baong. Rumput
		Pinang.
<i>Marlea ebenacea</i> , Clarke	... ..	Lidah Kerbau Putih. Lidah-
(<i>Cornaceæ</i>).		Lidah Kayu. Puchut Ku-
		ning.
<i>M. nobilis</i> , Clarke ...	... ..	Sutubal.
<i>Marumia verrucosa</i> , Miq.	... ..	Akar Kamunting (Johore).
(<i>Melastomaceæ</i>).		A. Salan Hutan. A. Sen-
		dudok.
<i>Marsdenia tinctoria</i> , Br.	... ..	Akar Tarum.
(<i>Asclepiadaceæ</i>).		
<i>M. sp.</i> ... ..	..	Tarumbo (Pahang).
<i>Matthæa latifolia</i> , Perk.	... ..	Lumso.
<i>Medinilla Hasseltii</i> , Bl.	... ..	Asam Lokan Putih. Lokan
(<i>Melastomaceæ</i>).		Putih. L. Jantan. Akar
		Nubal (S. Ujong).
<i>Melanochyla auriculata</i> , Hk. f.	... ..	Mumpian.
(<i>Anacardiaceæ</i>).		
<i>M. angustifolia</i> , Hk. f.	... ..	Rapat Bukit.
<i>M. Maingayi</i> , Hk. f.	... ..	Chengal Batu Bukit.
<i>Mezzettia Herveyana</i> , Oliv.	... ..	Mengkudang.
(<i>Anouaceæ</i>).		
<i>Melaleuca leucadendron</i> , L.	... ..	Gelam. Kayu Putih.
(<i>Myrtaceæ</i>).		
<i>Melastoma malabathricum</i> , L.	... ..	Sendudok. Sendudu. Kedu-
(<i>Melastomaceæ</i>).		dok. Birurong Hitam (Clif-
		ford). Probably not Ma-
		lay.
<i>M. decemfida</i> , Wall. ...	... ..	Sendudok Putih.

<i>Melochia corchorifolia</i> , L. ...	...	Lumah Ketam.
(<i>Sterculiaceæ</i>).		
<i>Melodinus orientalis</i> , Bl. ...	...	Getah Ujol.
(<i>Apocynaceæ</i>).		
<i>Melodorum fulgens</i> , Hk. f. ...	...	Akar Larat. A. Lerek. A. Lerit. A. Kep.
(<i>Anonaceæ</i>).		
<i>M. hypoglaucum</i> , Hk. f. ...	...	Akar Larak Merah.
<i>M. latifolium</i> , Hk. f. ...	...	Akar Pisang-Pisang Buldo.
<i>M. manubriatum</i> , Hk. f. ...	...	Akar Jankang. A. Kenching.
<i>M. pisocarpum</i> , Hk. f. ...	...	Akar Jinteh.
<i>M. prismaticum</i> , Hk. f. ...	...	Akar Pisang-Pisang Bukit.
<i>Meliosma nitida</i> , Bl. ...	...	Medang Siri.
(<i>Sabiaceæ</i>).		
<i>Meliosma</i> , sp. ...	...	Medang Berhulu.
<i>M.</i> sp. ...	...	Mengading.
<i>Melothria affinis</i> , King. ...	...	Akar Kundor Tikus.
(<i>Cucurbitaceæ</i>).		
<i>M. marginata</i> ...	...	Timun Tikus.
<i>M.</i> sp. ...	...	Akar Muntinum Pipit.
<i>Memecylon acuminatum</i> , Sm. ...	...	Magas.
(<i>Melastomaceæ</i>).		
<i>M. caloneuron</i> , Miq. ...	...	Kayu kapas. Api-Api Bukit.
<i>M. coeruleum</i> , Jack. ...	...	Api-Api Hutan. Dalek Jambu. Pantat Ulat. (Malacca). Sinonia.
<i>M. edule</i> , Rox. ...	...	Dalek Ayer. Dulek Putih.
<i>M. garcinioides</i> , Bl. ...	...	Bangas. Jenitan. Liis. Bangas Merah.
<i>M. heteropleurum</i> , Bl. ...	...	Jambu Baning. Kuku Baning.
<i>M. Hulletti</i> , King ...	...	Jambu Kalada.
<i>M. lævigatum</i> , Bl. ...	...	Dalek Tembaga.
<i>M. multiflorum</i> King. ...	...	Kuku Baning.
<i>M. myrsinoides</i> , Bl. ...	...	Bala. Dalek Putih. Kuku Baning. Kayu Nipis Kulit.
<i>M. oleæfolium</i> , Bl. ...	...	Dulek Putih.
<i>M. oligoneuron</i> , Miq. ...	...	Sial Munahon.
<i>M. dichotomum</i> , Clarke ...	...	Dalek Ayer. Delima Burong. Bagas Putih.

M. spp.	Dalek. Delek. Delak.
Mezoneuron sumatranum, Wall. (<i>Leguminosæ</i>).	Akar Darah Blut. A. Kelechi Remba.
M. leptopoda, Oliv.	Perah.
Melanorrhea Curtisii, Oliv. (<i>Anacardiaceæ</i>).	Rengas. Merah, Kluang.
M. Wallichii, Hk. f.	Rengas. R. Manau.
Mesua ferrea, L. (<i>Guttiferæ</i>).	Matopus (Penang) Penaga Kunyit. P. Lilin. P. Putih. P. Saga. Tapis.
M. lepidota	Jambu Dulek.
Michelia champaca, L. (<i>Magnoliaceæ</i>).	Champaka. Chempaka.
Microdesmis casearifolia, Pl. (<i>Euphorbiaceæ</i>).	Buah Chatang. Kenidei Badak.
Micromelum hirsutum, Oliv. (<i>Rutaceæ</i>).	Chenana (Pahang).
Micromelum pubescens, Bl.	Cherek Putih. Kurnan. Saga Kayu. Titimah Betina (Malacca).
Micropora Curtisii, Hk. f. (<i>Laurineæ</i>).	Medang Kaki Liong. M. Salayun. M. Tuloh. M. Tandok (Pahang).
Microstemon velutinum, Engl. (<i>Anacardiaceæ</i>).	Shinghe.
Microstylis congesta, Lindl. (<i>Orchideæ</i>).	Sigundo Hutan.
Mikania scandens, Vahl. (<i>Compositæ</i>).	Akar Ulam Tikus. A. Churroma. A. Lupang.
Millettia atropurpurea, Benth. (<i>Leguminosæ</i>).	Tulang Dang. Chicha. Girah Paya.
M. eriantha, Benth.	Akar Koyah. A. Kuaya. A. Kuayah. A. Pera.
M. sericea, W. & A.	Akar Nambu Jantan. A. Mumbol (Malacca).
Miquelia caudata, King. (<i>Olacineæ</i>).	Selowung.
Mimosa pudica, L. (<i>Leguminosæ</i>).	Samalu (Singapore).

Mimusops elengi, L.	Bunga Tanjung.
(<i>Sapotaceæ</i>).	
Mitragyne speciosa, Korth. ...	Biak.
(<i>Rubiaceæ</i>).	
Mitrephora macrophylla, Oliv.	Prusat.
(<i>Anonaceæ</i>).	
M. Maingayii, Hk. f. ...	Maribut Daun Besar (Penang).
M. reticulata, Hk. f. ...	Ringei-jerenang.
Metroxylon Rumphii, Mart. and	
M. Sagus.	Sagu. Rembia. Gumbia.
(<i>Palmææ</i>).	Gombir
Modecca singaporiana, Mast.	Akar Gelumpang. A. Lu-
(<i>Passiflorææ</i>).	pok. A. Lempedu Gajah.
	A. Laut. A. Merapoh.
	Kulipunang (S. Ujong).
Moesa ramentacea, ADC. ...	Akar Mumbolah. Bakaras.
(<i>Myrsinææ</i>).	Gegambir Jantan. Kam-
	por. Selutang (Johore).
	Tulang Hutan. Belangkas
	Hutan.
M. Indica, L.	Kasih Hutan.
Mollugo stricta, L.	Rumput Belangkas.
(<i>Ficoideæ</i>).	
Monochoria hastaeifolia, L.	Chachang Layer.
(<i>Pontederiaceæ</i>).	
Morinda citrifolia, L.	Mengkudu Jantan.
(<i>Rubiaceæ</i>).	
M. rigida, Miq.	Lumbu Jawa.
M. sarmentosa, Bl.	Buku Bemban.
M. tinctoria, Rox.	Mengkudu. Mangkudu.
	Bangkudu. Changkudu.
M. umbellata, L.	Mengkudu Kechil. Buah Bu-
	tang.
Mormodica charantia, L. ...	Peria Laut.
(<i>Cucurbitaceæ</i>).	
Moringa pterygosperma, L. ...	Ramunggai. Kelor. Ka-
(<i>Moringææ</i>).	chang Kelor. Kelu.
Mucuna pruriens, De C. ...	Kachang Karkaras Gatal
(<i>Leguminosææ</i>).	Kachang Babi.

<i>Murraya exotica</i> , L. ...	...	Kamuning.
(<i>Rutaceae</i>).		
<i>Musa malaccensis</i> , Ridl. ...	...	Pisang Karok.
(<i>Scitamineae</i>).		
<i>Musa sapientum</i> , L. ...	...	Pisang.
<i>Mussaenda glabra</i> , Vahl. ...	...	Daun Petri (Favre). Balik Adap.
(<i>Rubiaceae</i>).		
<i>M. variabilis</i> , Hems. ...	...	Balik Adap Bukit. Akar Bintang Merah. A. Bunga Bintang Kuning.
<i>M. villosa</i> , Wall. ...	...	Adap-Adap. Balik Adap.
<i>Mussaendopsis Beccariana</i> , Baill.		Selumar.
<i>Myrialepis Scortechinii</i> , Hk. f. ...	...	Rotan Gajah. R. Kirtong.
(<i>Palmeae</i>).		
<i>Myrica naga</i> , L. ...	...	Gelenchak. Kayteng. Kusami.
(<i>Myricaceae</i>).		
<i>Myrsine capitellata</i> , Wall. ...	...	Kicher-Kicher.
(<i>Myrsineae</i>).		
<i>Myristica Colletiana</i> , King ...	...	Kayu Jermal. Pendaraya.
(<i>Myristicaceae</i>).		
<i>M. crassa</i> , King. ...	...	Pala Bukit.
<i>M. crassifolia</i> , Hk. f. ...	...	Pala Jantan Paya.
<i>M. Curtisii</i> , King ...	...	Pandarahan Bukit.
<i>M. conferta</i> , Bl. ...	...	Penara Bukit.
<i>M. elliptica</i> , Wall. ...	...	Pala Hutan. Sunkit.
<i>M. Farquhariana</i> , Wall. ...	...	Leleong Merah. Maralak. Masalak.
<i>M. fragrans</i> , L. ...	...	Pala.
<i>M. geminata</i> , King ..	...	Enggank. Ingank.
<i>M. glaucescens</i> , Hk. f. ...	...	Chindarah Laut. Pendarah Laut. Singga Putih.
<i>M. globularia</i> , King ...	...	Kadanga Hutan Hitam.
<i>M. Griffithii</i> , Hook. f. ...	...	Ampas Tebu.
<i>M. Hookeriana</i> , Wall. ...	...	Rengas Daun Besar. Ahtcho.
<i>M. intermedia</i> , Bl. ...	...	Medang Paya. Pendaraya Kikeh.
<i>Myristica Irya</i> , Gaertn. ...	...	Lempoyan Paya. Lumpoyan Paya.
<i>M. Kunstleri</i> , King ...	...	Pala Bukit.

M. Lowiana, King	...	...	Pala Hutan Bulu.
M. laurinum, Bl.	...	...	Kamarahan. Kerantu. Tenol. Mumpisang Bulu.
M. Maingayi, Hk. f.	...	...	Chenderahan. Penarahan.
M. missionis, Will.	...	...	Chendarah Padi. Merbulu Kechil. Pendarah Padi.
M. oblongifolia, King	...	...	Pendara Hitam.
M. paludicola, King	...	...	Jankang Jaya.
M. polyspherula, Hk. f.	...	...	Jankang Bukit. Pandara. Hijau.
M. Ridleyana, King	...	...	Piango Jantan.
M. Scortechinii, King	...	...	Penara Batu.
M. superba, Hk. f.	...	...	Pendarah. Penarah. Menarah.
M. sp. ...	...	...	Chindarah.
M. sp. ...	...	...	Penaga Lilin. (Malacca).
M. sp. Nr. polyspherula	...	...	Tebuang Blang.
Myrmecodia echinata, Gaud.	...	...	Perutak. Priok Hant u. Samboko.
(<i>Rubiaceae</i>).			
Myxopyrum nervosum, Bl.	...	...	Akar Dudaro. A. Kulawi.
(<i>Oleaceae</i>).			
Nauclea, sp.	...	...	Pulasan Hutan. Timbang Dayong. Mumpoyan. Mupayian Kelimpayan.
(<i>Rubiaceae</i>).			
Nelumbium speciosum, Willd.	...	...	Saroja. Seroja. Seratei.
(<i>Nymphaeaceae</i>).			
Nenga Wendlandiana, Scheff.	...	...	Piung Umu.
(<i>Palmeae</i>).			
Nepenthes gracilis, Korth.	...	...	Kanchong Kerah. Priok Kerah.
(<i>Nepenthaceae</i>).			
N. sps.	...	...	Priok Kerah.
Nephelium costatum, Hiern.	...	...	Rambutan Passeh.
(<i>Sapindaceae</i>).			
N. eriopetala, Miq.	...	...	Gumpo. Sanggol Lubong.
N. Litchii, Camb.	...	...	Lichi. Kelingking (Favre).
N. lappaceum, L.	...	...	Rambutan.
N. Maingayi, Hiern.	...	...	Ridau.
N. malaiense, Griff.	...	...	Mata Kuching.
N. mutabile, Bl.	...	...	Pulasau.

Neprodium dissectum, Forst.		Paku Kilat.
(<i>Filices</i>).		
Neprolepis exaltata, L.	...	Paku Uban.
(<i>Filices</i>).		
Nerium oleander, L.	...	Bunga Anis. B. Japun.
(<i>Apocynaceae</i>).		
Neuropeltis racemosa, Wall.	..	Akar China Putih. Bunga Junkal. Akar Oran Merah (Malacca).
(<i>Convolvulaceae</i>).		
Nigella sativa, L.	... ..	Jintan Hitam (imported).
(<i>Ranunculaceae</i>).		
Nipa fruticans, L.	... ..	Nipah.
(<i>Palmee</i>).		
Nicolaia imperialis, Horan.	...	Kantan.
(<i>Scitamineae</i>).		
Norrisia malaccensis, Hk. f.	...	Jangkot. Kakaras. Saropok. Serupah Bukit.
(<i>Loganiaceae</i>).		
Nymphaea stellata, L.	... ..	Ati-Ati Paya. Kelipoh. Teratei Kechil.
(<i>Nymphaeaceae</i>).		
Oberonia anceps, Lindl.	...	Sakat Lidah Buaya (Malacca).
(<i>Orchideae</i>).		
O. stenophylla, Ridl.	...	Nibong Palir (Johore).
Ochlandra Ridleyi, Gamble	...	Buluh Kasap.
(<i>Gramineae</i>).		
Ochanostachys amentacea, Mast.		Petaling.
(<i>Olacineae</i>).		
Ochthocharis borneensis, Miq.		Sakalan (Johore).
(<i>Melastomaceae</i>).		
O. javanica, Bl.	... ..	Silokan (Singapore).
Ocimum basilicum, L.	... ..	Selasih Antan.
(<i>Labiatae</i>).		
Olax imbricata, Rox.	..	Maribut (Kedah).
(<i>Olacineae</i>).		
Oldenlandia diffusa	... ..	Rumput Jingah.
(<i>Rubiaceae</i>).		
O. corymbosa, Heyne	...	Tulo Belankas.
Oncosperma horrida	... ..	Bayas.
(<i>Palmee</i>).		
O. sp.	... ..	Nibong Padi. N. Li nau

<i>O. tigillaria</i> , Jack.	Nibong. Anibong.
<i>Ophiorrhiza</i> , sps. (<i>Rubiaceæ</i>).	Changkoi Bahang. Kudu- mak. Sambu Badak. Sum- puh Badak.
<i>Orania macrocladus</i> , Mart.	Ibul.
(<i>Palmeæ</i>).	
<i>Oroxylon indicum</i> , Vent.	Bulai.
(<i>Bignoniaceæ</i>).	
<i>Orthosiphon stamineus</i> , Benth.	Kumis Kuching.
(<i>Labiataæ</i>).	
<i>Ormosia venosa</i> , Baker	Suga.
(<i>Leguminosæ</i>).	
<i>Osmelia Maingayi</i> , King	Chindarong Bukit. Bangas Merah. Medang Keman- tow.
(<i>Samydaceæ</i>).	
<i>Ostodes macrophylla</i> , Benth.	Chendarah Hantu. Chungah Putih. Dada Ruan. Ju- long Jantan. J. Putih. Kasumbo Jantan. Kayn Katu. Kasumbo Jantan Lalantar (Malacca). Lang- kuang. Sumpuyan Ular.
(<i>Euphorbiaceæ</i>).	
<i>Oxymitra biglandulosa</i> , Scheff.	Akar Mupisang Hitam.
(<i>Anonaceæ</i>).	
<i>O. sp.</i>	Lingkean.
<i>Oxytenanthera sinuata</i> , Gamble	Buluh Minyak.
(<i>Gramineæ</i>).	
<i>Pachynocarpus Wallichii</i> , King	Damar Mata Kuching. Mer- batu Pasir. Petaling Ayer.
(<i>Dipterocarpeæ</i>).	
<i>Pachyrrhizus angulatus</i> , Rich.	Kachang Bengkuang. K. Sengkuang.
(<i>Leguminosæ</i>).	
<i>Pæderia foetida</i> , L.	Akar Sekuntut. Dandang- king (Johore).
(<i>Rubiaceæ</i>).	
<i>Pancratium Zeylanicum</i> , L.	Bramban Hutan.
(<i>Amaryllideæ</i>).	
<i>Pandanus atrocarpus</i> , Griff.	Mengkuang.
(<i>Pandanaceæ</i>).	
<i>P. fascicularis</i> Lam.	Mengkuang Laut. Pandan duri. P. laut. P. Darat

<i>P. Houlletiana</i> , Carr	...	Mengkuang Hutan.
<i>P. inermis</i> ...	...	Pudak (Favre).
<i>P. ovatus</i> , Kurz.	...	Pandan Tikus. P. Beduri.
<i>P. lævis</i> , Rumph.	...	Pandan Jelinkeh.
<i>P. helicopus</i> , Kurz.	...	Pandan Resau. P. Rasow.
<i>P. sp. near helicopus</i>	...	Pandan Telongkat (Selangor).
<i>P. parvus</i> , Ridl.	...	Pandan Kura.
<i>P. sp. n. aff. ovatus</i>	...	Silangsang. Sendayan Masing.
<i>Pangium edule</i> , Reinwdt. (<i>Bixineæ</i>).	...	Payung. Kapayung.
<i>Panicum auritum</i> , Prest. (<i>Gramineæ</i>).	...	Rumput Kumpai. Gumpai (Johore).
<i>P. colonum</i> , L.	...	Rumput Kusa-Kusa. R. Padi Burong.
<i>P. indicum</i> , L.	...	Rumput Bidis. R. Bonto Darat.
<i>P. italicum</i> , L.	...	Rumput Sekoyi.
<i>P. myosuroides</i> , Br.	...	R. Kumani.
<i>P. myurus</i> , H. B. K.	...	R. Kumpai.
<i>P. nodosum</i> , L.	...	R. Sarang Buaya.
<i>P. radicans</i> , L.	...	R. Telor Ikan. R. Upat.
<i>Panicum sarmentosum</i> , Rox.	...	Rumput Janggut Ali. R. Tongkat Ali. R. Kulu-bong.
<i>P. trigonum</i> , Retz.	...	R. Kurubong Padi. R. Mutubong.
<i>Paramignya longispina</i> , Hk. f. (<i>Rutaceæ</i>).	...	Limau Lelang.
<i>P. monophylla</i> , Wight.	...	Akar Merlimau.
<i>Parameria glandulifera</i> , Hk. f. (<i>Apocynaceæ</i>).	...	Akar Serau.
<i>P. polyneura</i> , Hk. f.	...	Akar Sedang. A. Serapat.
<i>Parastemon urophyllum</i> , De C. (<i>Rosaceæ</i>).	...	Siagnos Betina. Malas. Ke-lat Pasir.
<i>Parinarium Griffithianum</i> , Hk. f. (<i>Rosaceæ</i>).	...	Merbatu Loyang. Chana. Mujagon. Sauh Hutan. Sunko Rimau.

<i>P. costatum</i> , Hk. f.	Poko Obi. Sukupa.
<i>P. nitidum</i> , Hk. f.	Bangas Putih. Kelat-Layu Hutan. Medang Kawan. Merbatu Kechil. M. Me- rah. M. Putih. Mumbatu. Marabatu. T u m b a t u . Mumpadang.
<i>Parkia biglandulosa</i> , W. & A. ... (<i>Leguminosæ</i>).	Petai.
<i>P. Roxburghii</i> , Don.	Petai. Beka. Bôli. Gudaya.ng Kedawang. Kerayang. Gudawang. Kerayong (Selangor). Kurayong.
<i>Passiflora foetida</i> , L.	Letop-Letop (Malacca). Ti. mun Dindang. T. Padang.
<i>Paspalum scrobiculatum</i> , L. ... (<i>Gramineæ</i>).	Rumput Hijau. R. Julong- R. Liku. R. Tulo Sintadok.
<i>Pavetta humilis</i> , Hk. f. (<i>Rubiaceæ</i>).	Jarum-Jarum Batu.
<i>Pavetta indica</i> , L.	Gading Hutan. Jarum. Jarum-Jarum. J. Paya. Jejarum. Menjarum. Pecha. Priok Putih. Serau Lipis. Surungko.
<i>Payena costata</i> , King (<i>Sapotaceæ</i>).	Niato. N. Tembaga. N. Balau. N. Putih. N. Hi- tam. Munglut. Perut Pelandok. Samaram.
<i>P. Leerii</i> , Oliv.	Getah Sundik. Sundek.
<i>P. Maingayi</i> , C. B. C.	Getah Percha Burong.
<i>P. quadrangularis</i> , L.	Timun Hutan.
<i>Peliosanthes albida</i> , Hk. f.	Pinang Lumbah. Suludang Pinang, Tukus Tikus.
<i>P. spp.</i>	Lumbah Bukit.
<i>Pellionia Duvauana</i> N. E. Br. ... (<i>Urticaceæ</i>).	Akar Siak Naga.
<i>P. javanica</i> , Wedd.	Chambai Batu.
<i>Peltophorum dasyrrachis</i> , Kz. (<i>Leguminosæ</i>).	Alai. Batai.

Pellacalyx saccardianus, Scort. (<i>Rhizophorææ</i>).	Kayu Johore. Mumbuloh Rimbah. Piango Jantan
Pentace eximia, King ... (<i>Tiliaceæ</i>).	Medang Lusa.
P. triptera, Mast.	Medang Serai Johore. Ka- bal Ayam. Sepa Putri S. Petri.
Pentacme malayana, King ... (<i>Dipterocarpeæ</i>).	Timah Batu.
Pentaphragma begoniæfolia, Wall.	Balong Ayam Batu.
(<i>Campanulaceæ</i>).	
Pentasacme caudata, Wall. ... (<i>Asclepiadeæ</i>).	Chermin Batu (Pahang).
Pergularia minor, Andr. ... (<i>Asclepiadeæ</i>).	Bunga Tongkin.
P. odoratissima, L.	Malati Tongking.
Peristrophe acuminata, Nees. ... (<i>Acanthaceæ</i>).	Rumput Lidah Jin.
P. montana, Nees.	Noja.
Pericampylus incana, Miers. ... (<i>Menispermaceæ</i>).	Gasing-Gasing. Gegasing. Jerkasing. Kelesu (Pe- nang).
Perotis latifolia (<i>Gramineæ</i>).	Rumput Ekor Kuching.
Petunga sp.	Tulang Betina.
(<i>Rubiaceæ</i>).	
P. venulosa, Hk. f.	Mempas Jantan. Peluk Han- tu. Pulas Hantu. Umpa- ong Hantu. Gading Lambai.
Phaseolus lunatus, L. (<i>Leguminosæ</i>).	Kachang China (Favre). K. Serinding.
P. mungo, L.	Kachang Chindai. K. Hijau. K. Kechil. Keddi. Ke- deli.
P. vulgaris, L.	Kachang Bunche. K. Pen- dek.
Phaeanthus nutans, Hk. f. ... (<i>Anonaceæ</i>).	Pisang-Pisang Bukit. P. P. Kechil. P. P. Paya.

<i>Phoebe multiflora</i> , Bl. ...	Medang Ketanah. M. Merah (Malacca). M. Pasir.
(<i>Laurineæ</i>).	
<i>P. sp.</i>	Medang Burong (Johore).
<i>P. sp.</i>	Medang Kasiri. Kusirai.
<i>P. sp.</i>	Silincha (Johore).
<i>Phyllanthus distichus</i> , Muell. ...	Chermei. Chermela. Cham-in.
(<i>Euphorbiaceæ</i>).	
<i>P. frondosus</i> , Wall.	Cherek Hantu.
<i>P. pectinatus</i> , Hk. f.	Laka-Laka. Malaka.
<i>P. pulcher</i> , L.	Kanka Bona.
<i>P. urinarius</i> , L.	Ambelan Buah. Ambin Buah
<i>Phyllagathis rotundifolia</i> , Bl. ...	Banau Hutan. Bawal Hutan.
(<i>Melastomaceæ</i>).	
<i>Philydrum lanuginosum</i> , Br. ...	Kepas. Kipas.
(<i>Philydraceæ</i>).	
<i>Phyllochlamys spinosa</i> , Bureau. ...	Supucha.
(<i>Urticaceæ</i>).	
<i>P. Wallichii</i> , King	Gambadak (Kedah).
<i>Physalis minima</i> , L.	Chipluan.
(<i>Solanaceæ</i>).	
<i>Phragmites Roxburghii</i> , Steud. ...	Gudabong
(<i>Gramineæ</i>).	
<i>Phrynium hirtum</i> , Ridl.	Lerak Betina.
(<i>Scitamineæ</i>).	
<i>Ph. Griffithii</i> , Baker, and	
<i>Ph. Malaccense</i> , Ridl.	Lerek. Lerit.
<i>P. Jagoranum</i> , Koch.	Lerit Padi (Selangor).
<i>Physostelma Wallichii</i> , Wight. ...	Akar Siak.
(<i>Asclepiadeæ</i>).	
<i>Phytocrene palmata</i> , Wall.	Akar Pisang-Pisang Buloh.
(<i>Olacineæ</i>).	
<i>Pimelandra Wallichii</i> , A. De.	Layan. Medang Katanah.
(<i>Myrsineæ</i>).	M. Merah (Malacca). M. Pasir. Tambang Sisir.
<i>Pimpinella anisum</i> , L.	Jintan Manis.
(<i>Umbellifereæ</i>).	(Imported).
<i>Pinanga disticha</i> , Bl.	Pinang Boring Padi. P. Legong (Pahang).
(<i>Palmeæ</i>).	

P. malayana, Scheff. ...	...	Pinang Boring. P. Dampong.
P. polymorpha, Becc. ...	...	Pinang Kaki Pelandok.
P. Scortechinii, Becc. ...	...	Bayas Betina.
Piper caninum, L. ...	...	Chabai Hutan. Akar Kalong.
(<i>Piperaceæ</i>).		Lada Hantu. L. Anjing.
P. chaba, Hunter ...	...	Bakek. Lada China.
P. cubeba, L. ...	...	Kumukus (Singapore). Lada Ekor. L. Berekor.
P. Betel, L. ...	...	Sirih. S. Malayu. S. Chiua.
P. lonchitis, R. & Sch. ...	...	Lada Antan.
P. longum, L. ...	..	Chabei. Kadok.
		Kadok. Kadanok. Kudak (Pinang). Keduk (Favre).
P. muricatum, Miq. ...	...	Kerubut Paya.
P. nigrum, L. ...	...	Lada Hitam.
P. ribesioides, Miq. ...	...	Kalong Ular. K. Gajah.
		Lada Rimba.
P. stylosum, Miq. ...	...	Kadok Hutan.
P. sp. ...	..	Akar Sangkap.
Piptospatha Ridleyi, Hk. f. ...	...	Salimpat.
(<i>Aroideæ</i>)		
Pistia stratooides, L. ...	...	Kambiang. Kiamban. Kiyambang (Favre).
(<i>Aroideæ</i>).		
Pisum sativum, L. ...	...	Kachang Putih.
Pithecolobium bubalinum, Benth.		Giring Antan.
(<i>Leguminosæ</i>).		
P. clypearia, Jack. ...	...	Jering Munyet.
P. contortum, Mast. ...	...	Asam Jawa Antan.
P. fasciculatum, Benth. ...	...	Jering Bali. Kachang Tupai, Saga Gajah.
P. lobatum, Benth. ...	...	Jering.
P. microcarpum, Bth. ...	...	Jering Tupai. Petai Belalang. Kurudus. Kerudas. K. Ayam. K. Api.
Pittosporum ferrugineum, Dryand. ...	...	Chabe Hantu (Penang). Bunga Sapong. Giramong (Jo-
(<i>Pittosporæ</i>).		

				hore). Kapiala Pajan (Malacca). Lusai. Medang Kelawak (Malacca). Suro-ras. Sereras (Malacca). Medang Pasir. Trangnok.
Plantago asiatica, L.	...	...	...	Ekor Angin.
(Plantagineæ).				
Plectocomia Griffithii, Hk. f.	...	...	...	Rotan Dahan. R. Tukus. Unak. Onak. Unar.
(Palmeæ).				
Pleopeltis angustata	...	...	...	Hilan.
(Filices).				
P. phymatodes, L.	...	...	...	Paku Wangi.
Pluchea indica, L.	...	...	...	Beluntas.
(Compositæ).				
Plumeria acutifolia, L.	...	...	...	Chempaka Biru, Kembaja (Favre).
(Apocynaceæ).				
Plukenetia corniculata, Sm.	...	...	...	Pina-Pina.
(Euphorbiaceæ).				
Plumbago rosea, L.	...	...	...	Cheraka (Singapore). Sitaka (Favre). Binasa (Favre).
(Plumbagineæ).				
Podocarpus neglectus, Bl.	...	...	...	Sentada. Setada.
(Conifereæ).				
Pogostemon Heyneanum, Hk.				
f. & T.	...	...	...	Nilam Bukit.
(Labiata).				
P. Patchouli, Pell.	...	...	...	Nilam.
Pollia sorzogonensis, Endl.	...	...	...	Tampo Kalin. Tubo Keloi.
(Commelinaceæ).				
Polianthes tuberosa, L.	...	...	...	Sundal Malam.
(Amaryllidaceæ).				
Polyalthia Beccarii, King	...	...	...	Ruseh.
(Anonaceæ).				
P. Jenkinsii, Bth.	...	...	...	Mumpisang.
P. Scortechinii, King	...	...	...	Jankang Hutan. Kenanga Hutan.
P. spp.	...	...	...	Pepisang.
P. Teysmanii, King	...	...	...	Larak Merah.
Polygonum flaccidum, Meissn.	...	...	...	Kalina Paya. Kasum.
(Polygonaceæ).				

<i>P. peduncularis</i> , Wall.	...	Rumput Janggut Rimau. Rumput Kowah.
<i>Polyosma mutabile</i> , Bl. (<i>Sarifraguceæ</i>).	...	Tembosa Jantan. Poko Tupai.
<i>P. sp.</i> ... ..	...	Lara Batang (Pahang).
<i>Polyporus sacer</i> , L. ... (<i>Fungi</i>).	...	Susu Rimau.
<i>Polystictus sanguineus</i> (<i>Fungi</i>).	...	Chendawan Boreng. C. Merah.
<i>P. xerampelinus</i> ...	...	Chendawan Telinga Kra.
<i>Pometia pinnata</i> , Forst. (<i>Sapindaceæ</i>).	...	Kasai.
<i>Pongamia glabra</i> , Vent. (<i>Leguminosæ</i>).	...	Kachang Kayu Laut.
<i>Popowia fetida</i> , Maing. (<i>Anonaceæ</i>).	...	Pisang-Pisang Besar.
<i>P. nervifolia</i> , Maing.	...	Mumpisang Batu. Pasak Achong.
<i>Portulaca oleracea</i> , L. (<i>Portulacaceæ</i>).	...	Gelang Pasir. Segan Jantan (Penang).
<i>P. quadrifida</i> , L. ...	...	Memahiran Putih (Favre).
<i>Pothos Curtisii</i> , Hk. f. (<i>Aroideæ</i>).	...	Dendendong.
<i>P. latifolia</i> , Hk. f. ...	...	Lidah Buaya.
<i>Pothomorphe subpeltata</i> , Miq. (<i>Piperaceæ</i>).	...	Sigambar Urat.
<i>Pouzolzia pentandra</i> , Benn. (<i>Urticaceæ</i>).	...	Balam.
<i>Pouzolzia indica</i> , Gaud.	...	Aring-Aring; Urang Urang.
<i>Premna cordifolia</i> , Rox. (<i>Verbenaceæ</i>).	...	Ambong-Ambong Laut. Buas-Buas. Babuas. Bruas.
<i>P. coriacea</i> , C. B. C.	...	Akar Mulor Padang.
<i>P. corymbosa</i> , Roth.	...	Kanrian.
<i>P. parasitica</i> , Bl. ...	...	Akar Buas.
<i>Prismatomeris albidiflora</i> , Wight. (<i>Rubiaceæ</i>).	...	Langsit. (Penang).
<i>Psidium guava</i> , L. ... (<i>Myrtaceæ</i>).	...	Jambu Biji. J. Belawas. Melukat (Johore).

<i>Psophocarpus tetragonolobus</i> , (<i>Leguminosæ</i>).	Kachang Botol. K. Botor. Botor.
<i>Psychotria angulata</i> , Korth. ...	Jarum-Jarum Betina. Penawar Billah.
(<i>Rubiaceæ</i>).	
<i>P. Jackii</i> , Hook.	Ubat Halan.
<i>P. Malayana</i> , Jack.	Bayam Badak. Tulang-Tulang.
<i>P. ovoidea</i> , Wall.	Akar Ambelu.
<i>P. polycarpa</i> , Miq.	Bertis. Akar Chinta Mula. A. Nasi-Nasi. A. Sulong. Silam Kulu.
<i>P. sarmentosa</i> , Bl.	A. Daldaru. A. Rambek Padang.
<i>P. stipulacea</i> , Wall.	Julong-Julong Bukit.
<i>P. sp.</i>	Akar Gandarusa.
<i>P. sp.</i>	Penoh-Penoh Hutan. Akar Gandarusa.
<i>P. sp.</i>	Akar Sabuseh Putih (Malacca). Sambaran Angin.
<i>Pternandra capitellata</i> , Jack. ..	Kuliŕ Nipis (Penang).
(<i>Melastomaceæ</i>).	
<i>P. coerulescens</i> , Jack.	Benut Paya. Bunyut Paya. Kelat Biru. Manaon. Sial Munahon.
<i>P. spp.</i>	Dalek. Delek. Delak.
<i>Pterisanthes caudigera</i> , Miq. ...	Akar Gamat.
(<i>Ampelideæ</i>).	
<i>P. heterantha</i> , Miq.	Akar Sebunkak.
<i>Pterocarpus indica</i> , Willd.	Sena. Angsená.
(<i>Leguminosæ</i>).	
<i>Pterospermum diversifolium</i> , Bl. ...	Bayur Jantan.
(<i>Sterculiaceæ</i>).	
<i>P. Jackianum</i> , Wall.	Bayur.
<i>Ptychopyxis costata</i> , Miq.	Kaliah Toah. Mendarah.
(<i>Euphorbiaceæ</i>).	
<i>Punica granatum</i> , L.	Buah Delima.
(<i>Lythraceæ</i>).	
<i>Pygeum acuminatum</i> , Bl.	Tampoi Dadah.
(<i>Rosaceæ</i>).	

<i>P. lanceolatum</i> , Hk. f.	...	Merapit (Malacca).
<i>P. sp.</i>	... ..	Medang Chang Kauno. M. Chupona. M. Kelawar.
<i>Pyrenaria acuminata</i> , Bl.	...	Chumpahong. Gelugur Gajah. Medang Gelugur. Samak Jantan.
(<i>Ternstroemiaceae</i>).		
<i>Quercus enclisocarpa</i> , Korth.	...	Berangan Babi Hutan.
(<i>Cupuliferae</i>).		
<i>Q. hystrix</i> , Korth.	... ..	Gugiring. Kampuning.
<i>Q. oidocarpa</i> , Korth.	... ..	Berangan Antan.
<i>Q. spicata</i> , L.	... ..	Berangan Padi. Empeuing. Pening.
<i>Q. sps.</i>	... ..	Berangan Babi.
<i>Q. Kunstlerii</i> , King	... ..	Kelempening. (Lankawi).
<i>Quisqualis densiflora</i> , Wall.	...	Selimpas. Sumang.
(<i>Combretaceae</i>).		
<i>Q. indica</i> , L.	... ..	Akar Pontianak. A. Suloh
<i>Rafflesia Arnoldii</i> , Bl.	... ..	Kerubut.
(<i>Rafflesiaceae</i>).		
<i>Randia anisophylla</i> , Jack.	...	Bungkal. Chempakah Putih Hutan. Jarum-Jarum Jantan. Medang Gajah. Mumpulu Rimbah.
(<i>Rubiaceae</i>).		
<i>R. densiflora</i> , Benth.	... ..	Burumbong Jantan. Gading Tulang. Geruseh. Gere-seh. G. Puteh. G. Jantan. Mata Ular. Merumbong Jantan. Musirah Mata Kerbau. Perawas.
<i>R. fasciculata</i> , De C.	... ..	Akar Bedarah Laut. A. Duri. A. Kukulang.
<i>R. longiflora</i> , Lam.	... ..	Siantan Hutan.
<i>R. macrophylla</i> , Bl.	... ..	Kachubong Rimbah. Kumantan. Pecha Pingan.
<i>R. rugulosa</i> , Thw.	... ..	Akar Suburus.
<i>Raphidophora Lobbii</i> , Hk. f.	... ..	Akar Asam Tebing Paya.
(<i>Aroidae</i>).		
<i>R. minor</i> , Hk. f.	... ..	Akar Kalamoyiang.
<i>Ratonia sp.</i>	... ..	Pantat Ulat Putih.

<i>Renanthera moschifera</i> , Linal.	Bunga Kasturi.
(<i>Orchideæ</i>).	
<i>Rhizophora conjugata</i> , L. ...	Akit.
(<i>Rhizophoræ</i>).	
<i>R. mucronata</i> , Lam. ...	Belukap.
<i>Rhodamnia trinervia</i> , Bl. ...	Empoyan. E. Batu. Mung- koyan Pinang. Rusa-Babi (Johore). Sedomang (Ma- lacca).
(<i>Myrtaceæ</i>).	
<i>R. trinervia</i> , var. <i>montana</i> ...	Empoyan Bukit.
<i>Rhodomyrtus tomentosa</i> , Bl. ...	Kamunting. Kemunting.
(<i>Myrtaceæ</i>).	
<i>Rhynchosperma Wallichiana</i> ,	
Kunth.	Bulang Rumput.
<i>Ricinus communis</i> , L. ...	Jarak.
(<i>Euphorbiaceæ</i>).	
<i>Rosa centifolia</i> , L. ...	Bunga Mawar (The Rose).
(<i>Rosaceæ</i>).	
<i>Roucheria Griffithiana</i> , Bl. ...	Bhoi. Ipoh Akar Putih. Ipoh Putih. Akar Biji. Garam-Garam. Kait-kait. Akar Kait Putih. Akar Musiang.
(<i>Lineæ</i>).	
<i>Roureopsis pubinervis</i> ...	Akar Kachang Betina. Akar Kaldee. A. Tukekel.
(<i>Connaraceæ</i>).	
<i>Rourea fulgens</i> , Wall. ...	Akar Asam. Asam Akar. Semilat. Sembilat. Semi- lat Darah. S. Putih.
(<i>Connaraceæ</i>).	
<i>R. rugosa</i> , Bl. ...	Akar Kelintat Kra. Semilat- Semilat. Sembilat.
<i>Rubus glomeratus</i> , Bl. ...	Akar Balik Adap. A. Bulan Mudu. Akar Kupor.
(<i>Rosaceæ</i>).	
<i>R. moluccanus</i> , L. ...	Tempoh Ragat. (Pahang). Tempu Ranak (Malacca).
<i>Ruellia repens</i> , L. ...	Dras Malam. Akar Kuru- mak.
(<i>Acanthaceæ</i>).	
<i>Ruta graveolens</i> , L. ...	Aruda (Rue).
<i>Ryparia fasciculata</i> , King ...	Lumòs. Musukang Putih. Surumkop. Tajam Bulat.
(<i>Birvineæ</i>).	

R. sp. ... ..	...	Yu.
Saccharum arundinaceum, L. ...	...	Tebrau.
(Gramineæ).		
S. officinarum, L. ... ..	...	Tebu.
S. Ridleyi, Hk. f. ... ..	...	Tebrau (Pahang).
Salacia flavescens, Kz. ...	...	Katimbang (Kedah). Sedang.
(Celastrineæ).		
S. grandiflora, Kz. ... ..	...	Anpadal Ayam. Empedal Ayam.
S. sp. ... ..	...	Nasi Sejuk (Kedah).
Salix tetrasperma, Rox. ...	...	Dalu-Dalu. Jendalu. Dahu.
(Salicineæ).		
Sauropus albicans ... ..	...	Chekop Manis. Chermela Hut-
(Euphorbiaceæ).		tan. Tarok Manis.
Samadera indica, Gaertn. ...	...	Eph. (Johore).
(Simarubeæ).		
Sandoricum dasyneurum, Baill.		Kechapi Hutau.
(Meliaceæ).		
S. indicum. ... ..	...	Sentol. Setui. (Lankawi).
S. radiatum, King ... ..	...	Kechapi. Kulapi.
Salomonina cantoniensis, L. ...	...	Rumput Bua.
(Polygaleæ).		
Santalum album, L. ..	...	Chendana.
(Santalaceæ).		
Santiria apiculata, Benn. ...	...	Keranti Batu.
(Burseraceæ).		
S. fasciculata, Benn. ... ..	...	Kadongdong Bulan Putih.
S. Griffithii, Engl. ... ..	...	Kempas Romau.
S. levigata, Bl. ... ..	...	Kerantei. Keratei. K. Me-
		rah.
S. multiflora, Benn. ... ..	...	do. do.
Sapium baccatum, Rox. ...	...	Ludai. L. Pelandok. Rulus.
(Euphorbiaceæ)		
S. indicum, L. ... ..	...	Gurah. Guring.
Saprosma arboreum, Retz. ...	...	Chumpong. Kusimbo. Ma-
(Rubiaceæ).		rabuloh Paya.
S. sp. .. ... ..	...	Daun Sekuntut.
Saraca cauliflora Bak. ... ..	...	Gapis Kunyit. Talan Kunyit.
(Leguminosæ).		

<i>S. triandra</i> , Bak.	Gapis. Talan.
<i>Sarcanthus secundus</i> , Griff.	Sakat Ular.
(<i>Orchideæ</i>).	
<i>Sarcocephalus Junghuhnii</i> , Miq.	Bongkah Ayer. Chermin
(<i>Rubiaceæ</i>).	Ayer. Lempedu Jawa.
	Melada (Pinang). Mem-
	pelu Tanah. Mungkal.
	Sebutah. Sebongkok Bu-
	kit.
<i>S. subditus</i> , Miq.	Magal. Markel. Sakir Da-
	mak (Johore). Subutu.
<i>Sargassum</i> sp.	Dandigum.
(<i>Algæ</i>).	
<i>Scævola Koenigii</i> , Vahl.	Ambong-Ambong. Ambun-
	Ambun. Buas-Buas Laut.
<i>Schizæa dichotoma</i>	Paju Jarum.
(<i>Filices</i>).	
<i>Schoutenia Mastersi</i> , King	Banitan Merah.
(<i>Tiliaceæ</i>).	
<i>Schizostachyum aciculare</i> ,	Buluh Padi.
Gamble.	
(<i>Grammineæ</i>).	
<i>S. Blumii</i> , Nees.	Buluh Juron.
<i>S. chilianthum</i> , Gamble	Akar Buluh.
<i>S. Zollingerii</i> , King	Buluh Tuloh.
<i>Schima Noronhæ</i> , Reinw.	Medang Bekawi (Pinang).
(<i>Ternstroemiaceæ</i>).	
<i>Schizophyllum commune</i>	Chendawan Sesak.
(<i>Fungi</i>)	
<i>Scirpus grossus</i> , Vahl.	Mendarong. Menerong. Rum-
(<i>Cyperaceæ</i>).	put Murong. R. Musing.
<i>S. mucronatus</i> , L.	Rumput Kerchut. Kumbah.
<i>S. supinus</i> , L.	Rumput Perut Tikus.
<i>Scirpodendron costatum</i> , Thw.	Selensing.
(<i>Cyperaceæ</i>).	
<i>Scindapsus hederaceæ</i> , Schott.	Akar Lubang Alah.
(<i>Aroideæ</i>).	
<i>S. pictus</i> , Hassk.	Siri Chichewi. (P. Wellesley).
<i>S. sp.</i>	Akar Kelumpangang.

<i>Scleroderma flavo-crocatum</i> ...	Chendawan Tumbong Klapa.
(<i>Fungus</i>).	
<i>Scleria oryzoides</i> , Presl. ...	Rumput Liku Daun.
(<i>Cyperaceæ</i>).	
<i>S.</i> sps.	Rumput Sendarian.
<i>S. sumatrensis</i> , Retz. ...	Rumput Kubar.
<i>Scolopia rhinantha</i> , Clos. ...	Rukam Hutan.
(<i>Bixineæ</i>).	
<i>Scoparia dulcis</i> , L.	Bunga Baik Salam. Cha Pa-
(<i>Scrophularineæ</i>).	dang. Te Macao Dulis.
<i>Scorodocarpus borneensis</i> , Becc.	Kulim.
(<i>Olacineæ</i>).	
<i>Scyphiphora hydrophyllacea</i> ,	Chingum (Johore). Satasoh.
Gaertn.	Sebasah.
(<i>Rubiaceæ</i>).	
<i>Sebastiania chamoelea</i> , Muell. ...	Ainin-Amin.
(<i>Euphorbiaceæ</i>).	
<i>Selaginella atroviridis</i> ...	Jambol Merak.
(<i>Lycopodiaceæ</i>).	
<i>Selliguea Feei</i> , Hk.	Paku Gala Hantu Laut.
(<i>Filices</i>).	
<i>Sesamum indicum</i> , D. C. ...	Bijan. Lenga.
(<i>Scrophularineæ</i>).	
<i>Sesbania grandiflora</i> , Pers. ...	Turi.
(<i>Leguminosæ</i>).	
<i>Sesuvium portulacastrum</i> , L. ...	Gelang Laut. Seseplit (Sing-
(<i>Ficoideæ</i>).	apore).
<i>Setaria glauca</i> , Beauv. ...	Rumput Julong-Julong.
(<i>Gramineæ</i>).	
<i>Shorea acuminata</i> , Dyer ...	Meranti Paya. Rambeh Daun.
(<i>Dipterocarpeæ</i>).	Seraya Batu. (Maingay).
<i>S.</i> bracteolata, Dyer ...	Chingal.
<i>S.</i> barbata, Brandis	Resak.
<i>S.</i> Curtisii, Dyer ..	Meranti Tai.
<i>S.</i> glauca, King	Damar Laut Daun Besar.
<i>S.</i> macroptera, Dyer ...	Kepong. K. Hutan. K.
	Hantu.
<i>S.</i> parviflora, Dyer ...	Meranti Daun Kechil. Mer-
	anti Kerap. Seraya Samak.

<i>S. utilis</i> , King	... ..	Damar Laut No. Satu.
<i>S. sp.</i> ... ..	... ..	Temah (Lankawi).
<i>Sida carpinifolia</i> , L.	... ..	Katumbur Hutan (Malacca). Kelulut Putih. Sada Turi. Telor Belangkas.
<i>S. rhombifolia</i> , L.	... ..	Bunga Padang. Seliguri Pa- dang. Sendaguri.
<i>Sideroxylon ferrugineum</i> , Hk.	... ..	Tawak. Tuak-Tuak. (<i>Sapotaceæ</i>).
<i>S. sp.</i> ... ..	... ..	Chinta Mula Putih.
<i>Sindora siamensis</i> , Teys.	... ..	Saputi. (<i>Leguminosæ</i>).
<i>S. sp.</i> ... ..	... ..	Saputi Minyak.
<i>S. Wallichii</i> , Benth.	... ..	Saputi Sindo.
<i>Sloetia sideroxylon</i> , Teys.	... ..	Tampuis. T. Merah T. Ke- rong. T. Putih T. Hi- tam are said to be slight varieties?
<i>Smilax calophylla</i> , Wall.	... ..	Itah Tembaga (Perak) Sada- wi. (<i>Liliaceæ</i>).
<i>S. China</i> , L. ... ..	... ..	Gadung China. Ubat Rajah. Ubi Rajah (Java).
<i>S. Helferii</i> , A. de C.	... ..	Akar Bana. Gadong Tikus. Kijil. (Selangor). Kutona Betina. Akar Seminjo (Pahang).
<i>S. leucophylla</i> , Bl. ... ..	... ..	Kuranting Jantan.
<i>S. megacarpa</i> , D. C.	... ..	Kluna. Akar Lampan Bu- kit. Rabano.
<i>S. myosotiflora</i> , D. C.	... ..	Akar Ali. Itah Visi.
<i>Solanum aculeatissimum</i> , Jacq.	... ..	Terong Asam Hutan. T. Blanda. T. Purat. (<i>Solanaceæ</i>).
<i>S. nigrum</i> , L. ... ..	... ..	Terong Meranti (Kedah). T. Parachichit.
<i>S. sarmentosum</i> , Nees.	... ..	Terong Tikus.
<i>S. torvum</i> , Swartz. ... ..	... ..	Terong Pipit.
<i>S. tuberosum</i> , L. ... ..	... ..	Ubi Benggala. Kentang.
<i>S. verbascifolium</i> , L.	... ..	Terong Raya. T. Bulah. T. Pipit. T. Rimban. Sukasap.

<i>Sonerila heterostemon</i> , Naud. ...	Ati-Ati Gajah. Ati-Ati. Hutan. Kerakap Ayer.
(<i>Melastomaceæ</i>).	
<i>S. moluccana</i> , Jack. ...	Pouh (Jack).
<i>S. sp.</i>	Bubulus (Malacca). Bulu Ulat.
<i>Sonneratia acida</i> , L.	Bedat. Bedata. Perupat.
(<i>Lythraceæ</i>).	
<i>S. Griffithii</i> , Kz.	Gadabu.
<i>Sorghum sacchariferum</i> , L. ...	Betari. Batari.
(<i>Gramineæ</i>).	
<i>Soya hispida</i> , Benth	Kachang Japun.
(<i>Leguminosæ</i>).	
<i>Sphenodesma barbata</i> , Schawr.	Agalumut. Akor Chabang Lima. Lilimbo.
(<i>Verbenaceæ</i>).	
<i>S. pentandra</i> , Jack.	Akar Lintong Rusa. A. Sulang. A. Tanak Rimau.
<i>S. triflora</i> , Wight.	Akar Risa. A. Meruan. A. Memali.
<i>Spathoglottis plicata</i>	Lumbah.
(<i>Orchideæ</i>).	
<i>Spatholobus ferrugineus</i> , Benth.	Akar Jangat. A. Sejangat. A. Sekoet.
(<i>Leguminosæ</i>).	
<i>Spermacece hispida</i> , L.	Rumput Setarro. R. Standang. R. Susor.
(<i>Rubiaceæ</i>).	
<i>Sphæranthus microcephalus</i> , D.C.	Gelumak Susu.
<i>Spilanthes acmella</i> , L.	Gutang.
(<i>Compositæ</i>).	
<i>Spinifex squarrosa</i> , Lab.	Rumput Lari-Lari.
(<i>Gramineæ</i>).	
<i>Spondias mangifera</i> , Willd. . .	Kadongdong. Kandongdong. Dongdong.
(<i>Anacardiaceæ</i>).	
<i>Sporobolus diander</i> , L.	Rumput Tule Belalang.
(<i>Gramineæ</i>).	
<i>Stachytarpheta indica</i> , L. ...	Selasih Dende. S. Hutan.
(<i>Verbenaceæ</i>).	
<i>Stemona tuberosa</i>	U'bi Kumili Hutan.
(<i>Rorburghiaceæ</i>).	
<i>Stenochasma convolutum</i> , Griff.	Pua Hitam.
(<i>Scitamineæ</i>).	

S. sps. ... ..	...	Tepus.
<i>Stenochlæna palustris</i> ... ..	...	Laminging. Miding. M. Betina. Paku Mesin. P. Mesah. P. Ramu. Sayur Paku.
(<i>Filices</i>).		
<i>Sterculia campanulata</i> , Wall. ... ..	...	Kluet. Kulunot.
(<i>Sterculiaceæ</i>).		
S. <i>Jackiana</i> , Wall. ... ..	...	Bayur Betina.
S. <i>levis</i> , Jack. ... ..	...	Chempaka Janggi.
S. <i>macrophylla</i> , Vent. ... ..	...	Milian.
S. <i>parviflora</i> , Rox. ... ..	...	Kadampang, Rongga Jantan.
S. <i>rubiginosa</i> , Jack. ..	...	Dudanak Hitam. Kelunting, Saburu. Sakelat. Unting-Unting Besar.
S. <i>scaphigera</i> , Wall. ... ..	...	Kembang Samangko. Silayer (Selangor).
<i>Stereum nitidulum</i> ... ..	...	Chendawan Karang.
(<i>Fungi</i>).		
<i>Stereospermum frimbiatum</i> , D.C. ... ..	...	Cha-Cha. Lumpoyan.
(<i>Bignoniaceæ</i>).		
S. <i>glandulosum</i> , Miq. ... ..	...	Lempayan.
S. <i>hypostictum</i> , Miq. ... ..	...	Bunga Pawang.
<i>Stephegyne speciosa</i> , Miq. ... ..	...	Kutum (Pahang).
<i>Streptocaulon Wallichii</i> , W. & A. ... ..	...	Sarapat. Akar Timah Ketam.
(<i>Asclepiadeæ</i>).		
<i>Striga lutea</i> , Lour. ... ..	...	Siku-Siku.
(<i>Scrophularineæ</i>).		
<i>Strophanthus dichotomus</i> , De. C. ... ..	...	Akar Dudok Kijang. A. Tandok-Tandok.
(<i>Apocynaceæ</i>).		
S. <i>jackianus</i> , Wall. ... ..	...	Bunga Hantu.
<i>Strychnos laurina</i> , Wall. ... ..	...	Akar Semijo.
(<i>Loganiaceæ</i>).		
S. <i>pubescens</i> , Clarke ... ..	...	Blay Besar.
S. <i>Tieute</i> , Bl. ... ..	...	Blay Hitam. Ipoh Akar.
S. sp. ... ..	...	Bedara Hutan. Akar Lada-Lada.
<i>Styrax benzoin</i> , L. ... ..	...	Keminiyan. Kumian. Kaminan. Kumeyan.
(<i>Styraceæ</i>).		
<i>Susum anthelminticum</i> , Bl. ..	...	Bakung Ayer. B. Pantal. B. Suasa. Bangkong. Lo-
(<i>Flagellariæ</i>).		

Swintonia Schwenkii, Teys. ...	...	...	bak-Lobak. Lobak Jantan. Balau Betina.
(<i>Anacardiaceæ</i>).			
S. spicifera, Teys. ...	...	...	Mupus (Pinang).
Symplocos adenophylla, Wall.	...	...	Semugum.
(<i>Styraceæ</i>).			
S. fasciculatus, Zoll. ...	...	...	Jejuh. Lukot. Merpadi Paya.
S. ferrugineus, Rox. ...	...	...	Ganchil Kechil.
S. racemosa, Rox. ...	...	...	Marililin. Empat.
S. rigida, Clarke ...	...	...	Laga Egan (Johor).
S. rubiginosa, Wall. ...	...	...	Bantun.
S. sp. ...	...	...	Domun (Singapore).
Synadenium sp. ...	...	...	Sesudu Hutan (Pinang).
(<i>Euphorbiaceæ</i>).			
Syngramme alismæfolia, Hk. ...	...	...	Paku Tunjok Sanget.
(<i>Filices</i>).			
Tacca cristata, Jack. ...	...	...	Kelemoyiang Ayer (Selan- gor). Sabiak. Sebiak.
(<i>Taccaceæ</i>).			
T. pinnatifida, L. ...	...	...	Lukeh.
Tabernæmontana coronaria, Bl.	...	...	Bunga Susu. Manda Kaki (Malacca). Susun Kelapa.
(<i>Apocynaceæ</i>).			
T. corymbosa ...	...	...	Istong Parah. Restong. Jan- tang Badak. Jelutong Ba- dak. Saratong (Johore).
T. malaccensis ...	...	...	Gurang. Laggundi Bulan. Lada-Lada Jantan. Lala- da. Lelada Padi. L. Hutan. Perachet. Puding Hutan. Penyoi (S. Ujong) Poko Restong.
T. pedunculare, Wall. ...	...	...	Sejarang. Sujarong.
Tæniochloa Griffithii, Hk f.	...	...	Borombong (Akar). Akar China. Kachang Purai.
(<i>Connaraceæ</i>).			
Tænites blechnoides, Swartz ...	...	...	Paku Balu. B. Pijai.
(<i>Filices</i>).			
Tamarindus indicus, L. ...	...	...	Asam Jawa.
(<i>Leguminosæ</i>).			
Tarrietia simplicifolia, Mast. ...	...	...	Merbayu. Mumbaju Siku Keluang. Traling.
(<i>Sterculiaceæ</i>).			

Tectona grandis, L.	Jati.
(<i>Verbenaceæ</i>).	
Terminalia catappa, L.	Ketapang.
(<i>Combretaceæ</i>).	
T. phellocarpa, King	Pelawei (Selangor). Mampalam Babi.
T. subspathulata, King	Jilawei.
Tephrosia Hookeriana, W & A.	Kachang Buloh.
(<i>Leguminosæ</i>).	
Ternstroemia pinangiana, Chois.	Tengah Hutan.
(<i>Ternstroemiaceæ</i>).	
T. coriacea	Buguas.
Tetracera assa, L.	Mempelas. Ampelas. Ampelas.
(<i>Dilleniaceæ</i>).	
T. macrophylla, Hk. f.	Ampelas Gajah. A. Rimau.
Tetractomia laurifolia, Bl. ...	Kertak Hudang. Medang Hudang.
(<i>Rutaceæ</i>).	
Teysmannia altifrons, Miq. ...	Daun Payong. (Pahang) Daun Segalar (Selangor). D. Selebar. Daun Sang (Kinta) C. C.
Thamnopteris nidus-avis, L. ...	Paku Langsuir (Selangor). Rumah Langsuir. Paku Pandan.
(<i>Filices</i>).	
Theallchinensis, L.	Te. Poko Cha (Pinang).
Thecostele maculosa, Ridl. ...	Sakat Bilimbi.
(<i>Orchideæ</i>).	
Thespesia populnea, L.	Baru.
(<i>Malvaceæ</i>).	
Thottea grandiflora, Rox.	Grobo (Malacca). Kurubut. Kerubut. Sambut. Seburat. Saburut. Suprut.
(<i>Aristolochiaceæ</i>).	
Thrixspermum lilacinum, Rchb-fil.	Akar Sesudu Paya.
(<i>Orchideæ</i>).	
Thunbergia alata, Rox.	Akar Ulan.
(<i>Acanthaceæ</i>).	
Thysanolena acarifera, Nees. ...	Buluh Tebrau.
(<i>Gramineæ</i>).	

Tinomiscium petiolare, Miers. ... (<i>Menispermaceæ</i>).	...	Akar Langkap. A. Lempoyang (S. Ujong). A. Mumbulu.
Timonius jambosella, Thw. ... (<i>Rubiaceæ</i>).	...	Merombong (Malacca). Rio (Johore). Tabah (S. Ujong) Kurau (Penang).
Torenia asiatica, L. ... (<i>Scrophularineæ</i>).	...	Kulalawat.
T. pedunculata, Benth. ...	...	Kelawat. Rulang Hutan.
T. polygonoides, Benth. ...	...	Kerak Merah. Terutop Batu.
Trema amboinensis, Bl. ... (<i>Urticaceæ</i>).	...	Mundarong. Narong Jantan. Narong Paya.
Trevesia sundaica, Miq. ... (<i>Araliaceæ</i>).	...	Kabu-Kabu. Kakabu. Tapak Rusa.
Trichoranthos anguina, L. ... (<i>Cucurbitaceæ</i>).	...	Ketola Ular.
T. celebica, Miq. ...	...	Akar Tiga Chabang (Selangor). Timun Dendang Lunjung.
T. cordata, Rox. ...	...	Akar Labu Ayer Hutan. Akar Sunto. A. Lokar.
T. tricuspida ...	...	Akar Katominan (Penang).
T. Wallichianum, Cogn. ...	...	Timun Gajak. Akar Balistur.
T. Wawraii, Cogn. ...	...	Akar Tiga Chabang.
Tridax procumbens, L. ... (<i>Compositæ</i>).	...	Rumput Kanching Baju.
Trichospermum Kurzii, King ... (<i>Tiliaceæ</i>).	...	Kasumba Bukit.
Trigonella Fenugrecum ...	...	Alba.
Trigonochlamys Griffithii, Hk. f. ... (<i>Burseraceæ</i>).	...	Babi Kurus. Damar Kijai. Kijai. Kasir. Kadongdong Mata Hari.
T. sps. ...	...	Kadengdong. Kadongdong.
Trigonostemon indicus ... (<i>Euphorbiaceæ</i>).	...	Gadu Gajah. Pelandok Besar. Selendap Bukit.
T. sp. ...	...	Mantua Pelandok Jantan.
Trigoniastrum hypoleucum, Miq. ... (<i>Polygalæ</i>).	...	Maharajili (Johore). Mata Passeh (Maingay).

Jour. Straits Branch,

<i>Triumfetta rhomboidea</i> Jacq. ...	Champadang.
(<i>Tiliaceæ</i>).	
<i>Tristania Maingayii</i> , Duthie. ...	Pasir Lingga.
(<i>Myrtaceæ</i>).	
<i>T. Wightiana</i> , Griff. ...	... Pelawan. Changal.
<i>Triphasia trifoliata</i> , De C. ...	... Limau Keah. L. Kikit. L.
(<i>Rutaceæ</i>).	... Kaya.
<i>Turpinia pomifera</i> , De C. ...	... Merbong Jantan.
(<i>Sapindaceæ</i>).	
<i>Turnera ulmifolia</i> ...	... Lidah Kuching.
(<i>Turneraceæ</i>).	
<i>Typhonium divaricatum</i> , Decne.	Birah Kechil.
(<i>Aroideæ</i>).	
<i>Tylophora asthmatica</i> . Wight.	Sambukan.
(<i>Asclepiadeæ</i>).	
<i>T. tenuis</i> , Wall. ...	... Akar Saput Tungal.
<i>T. Wallichii</i> , Hk. f. ...	... Akar Subidai.
<i>Uncaria ferrea</i> , De C. ...	... Kait-Kait Bukit. Kait-Kait
(<i>Rubiaceæ</i>).	... Merah.
<i>U. gambir</i> , Hunter ...	... Gambir. Gatta Gambir.
<i>U. lanosa</i> , Wall. ...	... Gegambir Paya. G. Hutan.
<i>U. pteropoda</i> , Miq. ...	... Kait-Kait Darat (Malacca).
<i>U. sclerophylla</i> , Rox. ...	... Belalai Gajah. Akar Selimbar (Favre).
<i>U. spp.</i> ...	... Kait-Kait.
<i>Unona dasmychala</i> , Bl. ...	... Chenang Hutan (Malacca).
(<i>Anonaceæ</i>).	
<i>U. discolor</i> , Vahl. ...	... Akar Darah. A. Kenanga
	... Hutan.
<i>U. dumosa</i> , Rox. ...	... Akar Kenchong Johu.
<i>U. longiflora</i> , Rox. ...	... Jari Ayam.
<i>Uraria crinita</i> , Desv. ...	... Ekor Kuching. Seringan.
(<i>Leguminosæ</i>).	... Pua Acoraging (Johor).
<i>Urceola brachysepala</i> , Hk. f. ...	... Gegrip Putih.
(<i>Apocynaceæ</i>).	
<i>U. elastica</i> , Rox. ...	... Gegrip Tembaga.
<i>U. lucida</i> , Benth. ...	... Gegrip Merah. G. Nasi.
<i>U. malaccensis</i> , Hk. f. ...	... Akar Sangkang Buaya. A.
	... Serapat Jantan.

<i>U. torulosa</i> , Hk. f.	Akar Montek. A. Suapah.
<i>Urena lobata</i> , L. (<i>Malvaceæ</i>).	Poko Kelulut. Perpulut. Pepulut. Pulut-Pulut.
<i>Urophyllum Blumeanum</i> , Wight. (<i>Rubiaceæ</i>).	Chemperai Dadis.
<i>U. Griffithianum</i> , Wight. : ...	Limputih Paya.
<i>U. hirsutum</i> , Wight.	Panchan (Malacca).
<i>U. sps.</i>	Jinteh Putih. Mata Keli Para.
<i>Utricularia flexuosa</i> , Vahl. (<i>Lentibulariaceæ</i>).	Lumut Ekor Kuning.
<i>Uvaria dulcis</i> , Dunal. (<i>Anonaceæ</i>).	Pisang-Pisang Hitam.
<i>U. dumosa</i> , Rox.	Pisang-Pisang Padi. P. P. Pipit.
<i>U. purpurea</i> , Bl.	Pisang-Pisang Jantan. P.-P. Kuning. P.-P. Tandok.
<i>Vaccinium malaccense</i> , Wight. (<i>Vacciniæ</i>).	Kelempadang.
<i>Vandellia crustacea</i> , Benth. (<i>Scrophulariaceæ</i>).	Kerak Nasi.
<i>Vanda gigantea</i> , Lindl. (<i>Orchideæ</i>).	Kayu Low (Lankawi) Pisang Kling (Lankawi) Low Kayu.
<i>Vanilla Griffithii</i> , Reich. (<i>Orchideæ</i>).	Akar Penubal. Telinah Ker- bau Bukit.
<i>Vatica Curtissii</i> , King. (<i>Dipterocarpaceæ</i>).	Pinang Baik (Penang).
<i>V. pallida</i> , Dyer.	Merambong Bukit Besar.
<i>Vernonia arborea</i> , L. (<i>Compositæ</i>).	Jankang Paya. Mengabong. Medang Gambong. Me- rombong Bukit.
<i>V. Chinensis</i> , Less.	Rukum Gajah.
<i>V. Cinerea</i> , Less.	Bujong Samalam. Ekor Ku- da. Rumput Sapagi. Sembong Hutan. Rum- put Susor Daun. Tahi Babi. Tambak Bukit. Tam- bak-Taubak.
<i>V. scandens</i> , De C.	Akar Lumbuh (Malacca).

V. sp.	...	...	...	Ragin.
Vitis adnata, Wall.	...	...	...	Chawat Udi. Akar Pakan Paya.
(<i>Ampelideae</i>).				
V. cinnamomea, Wall.	...	...	...	Akar Jari Biawak. Keladek Ingan. Susuwat.
V. diffusa, Miq.	...	...	...	Chiarek Merah. Lakom Laut. L. Jang-Jang. L. Umbon. Akar Mumpayang.
V. elegans, Kurz.	...	...	...	Akar Plas (Johore).
V. gracilis, Wall.	...	...	...	Keladek Tana.
V. glaberrima Wall.	...	...	...	Akar Asam Riang. A. Riang-Riang.
V. lanceolaria, Rox.	...	...	...	Akar Kangkong Gajah.
V. macrostachys, Miq.	...	...	...	Akar Charek-Charek. A. Sakariah.
V. mollissima, Wall.	...	...	...	Lakom Gajah. Akar Sebungkah. Peria Hutan.
V. novemfolia, Wall.	...	...	...	Lakom Terbau.
V. quadrangularis, Wall.	...	...	...	Salah Laku.
V. sps.	...	...	...	Lakom. Ati-Ati.
V. sp.	...	...	...	Akar Koyah Asam.
Vitex coriacea, Clarke	...	...	...	Jali Batu. Medang Pupoi
(<i>Verbenaceae</i>).				(Malacca).
V. pubescens, Vahl.	...	...	...	Leban. L. Hitam. L. Tandok.
V. sp.	...	...	...	Leban Kunyit.
V. trifolia, L.	...	...	...	Lagundi. Legundi. Lenggundi. Langgundi. Langgudi.
V. vestita, Wall.	...	...	...	Alban. Halban. Bangus Jantan. Leban Bunga. L. Nasi-Nasi. Nasi Remba. Sepit. Sipet.
Viscum spp.	...	...	...	Api-Api.
(<i>Loranthaceae</i>).				
Viburnum sambucinum, Rein.	...	...	...	Buas-Buas Bukit. Buas-Buas Paya.
(<i>Caprifoliaceae</i>).				
Vigna catieng, Endl.	...	...	...	Kacang Merah. K. Perut Ayam. K. Puru Ayam. K. Towchew. K. Panjang.
(<i>Leguminosae</i>).				

Ventilago leiocarpa, Benth. ..	(<i>Rhamnace</i>).	Akar Hitam. A. Tukul.
V. Maingayii, Laws. ...		Kamayan Antan (Pahang). Kutapek.
Voandzeia subterranea, Thouars.	(<i>Leguminosae</i>).	Kachang Manilla.
Walsura multijuga, King ...	(<i>Meliaceae</i>).	Laka-Laka Jantan.
Webera grandiflora, Hk. f. ...	(<i>Rubiaceae</i>).	Julong-Julong Jantan.
W. longifolia, Hk. f. ...		Kulu Babi. Sigauri.
W. mollis		Injau Belukar. Kelabu.
W. stellata, Hk. f.		Kuruseh Putih. Suluro.
Wedelia biflora, De C. ...	(<i>Compositae</i>).	Sarune. Saruney (Favre). Serenah Laut. Sunai Laut.
Wikstroemia Candolleana, Meisn.	(<i>Thymeleaceae</i>).	Chandan (Pahang).
Willughbeia coriacea, Wall. ...	(<i>Apocynaceae</i>).	Getah Gaharu. G. Ujol. G. Menjawa (Malacca). Ujol. Puchong Kapor.
W. firma, Bl.		Gegrip Hitam. G. Besi. Akar Sampat.
Wornica meliosmœefolia, King...	(<i>Dilleniaceae</i>).	Simpoh Jantan. S. Bukit. S. Hutan.
W. oblonga, Wall.		Kambai Hutan.
W. pulchella, Jack.		Simpoh Paya.
Xanthium strumarium, L. ...	(<i>Compositae</i>).	Buah Anjang.
Xanthophyllum affine, Korth. ..	(<i>Polygalae</i>).	Chubon. Gading Jantan. Li mah Beruk Jantan.
X. Griffithii		Dudoli Paya.
X. Kunstleri, King		Boborek. Limah Beruk Pu- tih. Minyak Beruk.
X. Maingayii, Hk. f.		Limah Beruk Betina.
X. obscurum, Benn.		Buah Kapas.
X. palembanicum, Miq.		Minyak Beruk.
X. rufum, Benn.		Kapas Bulan. Krabu. Med- ang Katanahan. Minyak Beruk Jantan.

X. Wrayii, King	...	...	Medang Surupo.
X. sps.	...	...	Limah Beruk. Lamah. Lu- mah. Minyak Beruk.
Xerospermum Norohnianum, Bl. (<i>Sapindaceæ</i>).			Rambutan Pachat.
X. Wallichianum, King	...	...	Balong Ayam.
Ximenia americana, L. (<i>Olucineæ</i>).	...	...	Bidara Laut.
Xylopa elliptica, Maingay (<i>Anonaceæ</i>).	...	...	Lilan.
X. ferruginea, Hk. f.	...	...	Jankang. J. Paya. J. Beti- na. J. Merah.
X. magna, Maingay	...	...	Kudago Hutan.
X. malayana, Maingay	...	...	Banit Kijang.
Xyris indica, L. (<i>Xyridaceæ</i>).	..	...	Baghao. Jeringu Padang.
Zalacca affinis, Griff.	...	...	Salak Betul.
(<i>Palmeæ</i>).			
Z. conferta, Bl.	...	...	Asam Kelubi. A. Paya. Kelubi.
Z. edulis, B.	...	...	Salak.
Z. macrostachya, Griff.	...	...	Salak Rungum.
Z. Wallichianum, Mart.	...	...	Kumbak.
Zanthoxylum myriacanthum, Wall.	...	...	Kabu-Kabu Hutan. Mambu- loh.
(<i>Rutaceæ</i>).			
Zea mays, L.	...	...	Jagon.
(<i>Gramineæ</i>).			
Zingiber cassumunar	...	...	Bunglei, Lampayang. Lem- poyang.
(<i>Scitamineæ</i>).			
Z. Griffithii, Baker	...	...	Boila Hitam.
Z. officinalis, L.	...	...	Aliya. Haliya.
Z. spectabilis, Griff.	...	...	Chadak (Selangor). Tupoi (Pinang).
Zizyphus calophylla, Wall.	...	...	Dawai-Dawai. Deda wi. Akar Jambu Kelawar. Unak (Malacca). A. Pialu. A. Unak.
(<i>Rhamnaceæ</i>).			
Z. jujuba, Lam.	...	...	Bedara China.

Z. oenoplia, Mills. Kuku Balam. K. Tupai. Kukulang.

Silk and Cotton Dyeing by Malays.

BY W. W. SKEAT.

In Kelantan and Patani the material of which *sarongs*, *kain lepas*, etc., are made is now almost invariably silk or cotton thread imported from Singapore, but in out-of-the-way inland districts a few Malays of the older generation still manufacture a coarse but durable thread of native vegetable fibre (home-spun). In the latter case the dyes most commonly used were blue (*biru*) and purple (*umu*) with occasionally some green (*ijau* or *émpo*) and a little yellow (*kuning* or *tūla*). Red, though much admired, was not commonly used owing to the difficulty of making it fast. When silk is to be dyed, from four or ten *kati*'s weight is now usually bought from peddlers or in the bazaar at from \$4 to \$4.50 per *kati* ($1\frac{1}{3}$ lbs). The following are the processes by which the required colours are obtained, both silk and cotton thread being similarly treated. I may add that the numbers correspond to a series of standard colours which were shown to my informants when the information was obtained, but which it is unfortunately impossible to reproduce here.

Red:—(1) To dye a *kati* of silk red from ten to fifteen fruits of the *asam gelugor*,* with two or three common tamarinds, and as much alum as will cover the nail of the fourth finger, are together put into a *pan* (*blanga*), and heated up to boiling-point (*sāpā bērgölēgāk*).† The silk is plunged into the liquid, which is kept on the fire till the whole has been well boiled, when the *pan* is taken off and allowed to stand all night. Next morning the silk is kneaded to clean it (*di-kichāh*, Selangor *kinchah*) taken out, and dried in the sun, and put out in the dew

* *Garcinia atroviridis*.—H. N. R.

† I have given exact Kelantan and Patani pronunciations in this article as likely to be of most interest to the reader.—H. N. R.

for the night. This method of dyeing silk red is called by Patani and Kelantan Malays "chëlu mala" (or, in standard Malay, "chë lup malau.")

Orange:—(2) To dye silk orange [which is called kuning pinä masâk, or "ripe betel-nut yellow"], the silk may be dipped into the already used red dye. Only a weak solution is required, so that if the strength of the dye (*pati*) has been absorbed by the first instalment of silk it does not really matter. Of course if a new solution is brewed, care must be taken to see that it is not too strong, but the former method is generally favoured. The silk is dipped into the liquid and stirred about, and then boiled a little, till it is as red as the *pulut-pulut* flower,* my informant declared. On being taken out again, the dye is wrung out of it, when it is laid aside for the time being. About a "chupâk" of the fruits of the *kasömâ klin* (*kasumba kling*) are then squeezed (*ramah*) into a dish (*pasu*), the husks being thrown away. To these are added about ten of the fruits of *belimbing masan*, which is also called "Buâh k'rih" in Kelantan and Patani from its being used for the express purpose of cleaning K'ris blades (*di-bachâë k'rih*). These being squeezed into the *pasu*, a pinch or two of alum is added, (as a mordant), and the mixture is ready. The silk is dipped into this liquid and kneaded in it for a few moments (*sa-jënih*), after which it is boiled for a short while on the fire. When taken out, it is hung up upon a line in a shady place to dry (*di-sidâ di-tëdob*).† Shade is of importance, as if it is exposed to the sun the colour will fade. It is however exposed to the dew (*di-përempong*) every night for three nights consecutively.

Dark orange is obtained from chips of the heart of the jackfruit (*nangka*) tree, with the usual mordant (alum and *asam gelugor*).

Yellow:—(3) and all the colours now to be mentioned are now usually obtained from aniline dye-stuffs imported from Singapore. In the absence of such dyes however they are still obtained as follows.

* *Urena lobata* whose flower is pink.—H. N. R.

† In Selangor Malay = Sindal.

To dye silk *yellow*, turmeric or curcuma is pounded in a small specially-made mortar and wrung or squeezed by hand (di-p'rah) to get the juice out of it. Tamarinds, asam gëlugor, and alum are added in the same proportion as before, and the silk boiled in the mixture and hung up to dry, as in the "malau" process. This dye however like all other shades of yellow must be exposed to the action of the sun, as without this the required tint cannot be obtained.

For *yellow green* (4) the treatment commences with the same process as for yellow, but a mixture is added which is made from the root and heart of the "poko' këdræ." About a kati (1½ lbs) of this wood is taken, chopped up small (di-chichê) and heated to boiling point. It is then allowed to stand and cool a little, when the clearer liquor at the top (*siring*) is spooned off (leaving the thicker stuff, called *dodo'* at the bottom), and added to the decoction of turmeric before referred to. The rest of the process is the same as before. The same colour is also given by young shoots of the Rambutan (*Nephelium lappaceum*) tree, alum and asam gëlugor being added.

For *Green* (5) a larger proportion of the "kedrang" mixture is applied. For *Blue Green* (6) the process is twice repeated. For *Blue* (7) a decoction of indigo leaves takes the place of the turmeric. The process is otherwise the same but repeated two or three times till the right tint is obtained.

The following are the more important kinds of indigo known in Kelantan and Patani.

1. tarung këchi' (= tarum kechil)
2. tarung gëlængæ (= t. gelanggang)
3. tarung Siæ (= t. Siam)
4. tarung akā or tarung utæ.* (= t. akar or t. eitan).

For *Indigo* (8) the leaves are gathered and thrown into a big earthenware jar called "tëpayæ" (St. Mal. tëmpayan) together with the bark of the young shoots or young fruit-spikes of the coconut-palm (kuli'püti'nyâ), one fruit-spike on an average going to each tepayæ. A lump of lime "as thick as a man's arm" (bësä lengæ) is added, and the silk steeped in the decoction till it becomes of the requisite tint.

* *Marsdenia tinctoria* (?)—H. N. R.

For *Violet* (9) commence with the light red dye (mālā), as before, but then steep the silk in fermented cocoanut milk (ayi nyā 'dāh jadi ragi) keeping the silk in it only just long enough to turn it of the requisite tinge, as if not watched, and allowed to remain too long, it will turn a rusty black.

Purple (10) may be obtained either from an infusion of tengar bark or by combination of the "mala" (light red) dyeing process with indigo; *Dark purple* from the sērā kayu (Sel. *kenundang*), a tree with small red edible fruits, with alum and asam gēlugor as usual. *White* (11) is obtained by steeping the silk in a decoction of (burnt) durian skin. *Light black* or *Black* (12) is obtained from an infusion of tengar bark or by repeated steepings in indigo; or by burying in the soil of the *gurah* tree,* yarn already dyed yellow-green (4) or dark purple (10). *Dark black* (13) by still further repeated dyeing with indigo or fermented coconut milk; *Grey* (14, 15) by dipping in indigo; *Brown* (16, 17) by dyeing with "mundu" † bark, alum and tamarinds being added as required; *Brown* (18) by dyeing with "mundu" bark *only*; and *Brown* (19) by adding indigo to the above.

I may add that the most generally favourite colour is red after which come yellow and a kind of delicate rose-colour (or madder), which is called kēmbang pētang in Selangor (kēmāē pētāē in Kelantan and Patani). Darker and soberer tints are in vogue for the older folks, and the sarong-patterns worn by the women have smaller checks and are more tasteful than those worn by the men.

In Raman (an inland province of Patani), both Blue and Black dyes are obtained from either the wild or cultivated variety of indigo (tarung utāē or tarung kāpon) the yarn being steeped in an infusion coloured by the young shoots until the requisite tint is obtained. The black is therefore merely the deepest shade of blue obtainable. Red is obtained from Brazil-wood or *sepany* mixed with an equal proportion of chips of the

* The yarn after dyeing is buried in soil taken from underneath the *gurah* tree, whose leaves are said to turn the soil underneath it black. The "gurah" tree is probably "Excoecaria agallocha," (H. N. R.) in which case it is the same as the *guring* (?).

† *Garcinia dulcis*.—H. N. R.

“*kědrèng*” tree. The heart of the tree (*těrah*) is taken and steeped in water until the infusion becomes of a sufficiently deep red colour. Green is obtained by taking the old leaves of the Indigo and mixing them with the juice of young cocoanut-fruit pounded small (*ayer mumbang* di-tumboh*).

Yellow† is obtained from equal proportions of turmeric (*kunyit*) and lime (*kapor*) which are mixed and allowed to ferment (*di-rapai jadi ragi*).

Purple is made by dipping red-dyed yarn in indigo.

Before concluding I may perhaps here add for the sake of comparison a few general notes on typical dyeing processes on the west coast (Selangor).

In Selangor mangrove bark (*kulit bakau*) is used as a black dye, whilst from *isi těmu kunyit* or *těmu kunchi* and *těmu pauh* (especially from the first of these three) yellow dye is obtained. The yellow dye obtained from these latter preparations is darkened by the addition of lime (*kapor*) and asam gělugor.

Red dye is obtained from Sepang and *kěsumba k'ling*: green from *bunga tělang* (the creeper, not the bamboo); black from the fruit of the *kědudok* (*Melastoma*) and from the fruit of the *tumu*, the latter giving the best results.

* In Raman called *gāmā* (= *gumbang*).

† Probably the exact colour obtained would depend upon the length of the immersion. It might be expected that such a mixture as described would produce, when its full strength was brought out, a sort of burnt ochre.

Malay Tiger-beetles.

BY H. N. RIDLEY.

The tiger beetles (Cicindelidæ) are among the most attractive and conspicuous of our smaller beetles on account both of their bright colours, and their rapid movements in the full sun, in the hottest time of the day. They are exclusively carnivorous, chasing their prey consisting of smaller insects and usually flying very briskly, and usually require the use of the net to capture them. The Malay species may be divided into two groups, the jungle-tiger beetles and the road-tiger beetles. The former include species of the genera *Tricondyla* and *Collyris*.

Tricondyla aptera, Oliv., is the only species of this genus I have seen in the peninsula, and it is by no means common. I obtained a single specimen in the Botanic Gardens in Singapore, and there is also a specimen from Penang in the British Museum. It seems to be abundant in New Guinea and occurs also in Amboina, Aru Islands and Solomon Islands. It is our largest species, about $\frac{3}{4}$ inch long, and is also remarkable for being quite wingless, a narrow, elongate, deep blue beetle with slender antennæ, prominent eyes, and long red legs. I found it running about on the ground with the workers of the common large ant known as Semut Rajah, (*Camponotus gigas*). This ant makes nests in the bases of hollow trees, and the workers are commonly to be seen scampering about on paths, especially in the early morning and late evening, in search of food. The *Tricondyla* appears to mimic the ant, for though when the two insects are compared the resemblance is less striking, the general form, long legs, and method of running about cause the beetle to so much resemble the ant that I very nearly let it escape mistaking it for the ant.

Of the genus *Collyris* we have three species here and probably more will be found, as the species very closely resemble one another. They are much smaller than the *Tricondyla* but of very much the same shape, though they have

wings, slender long-legged beetles, blue or violet, which are often to be seen flying and scampering over leaves on bushes in the bright sunny spots of the jungle. The commonest species is *C. dolens*, Chand., which I have collected in Singapore, Selangor, Penang and elsewhere. *C. filiformis*, Chand., is a more slender species, bright violet blue with red legs. *C. apicalis*, Chand., is rather larger, very dark in colour, almost black, with red legs and a reddish patch at the apex of the elytra. It is common in the Botanic Gardens.

Therates humeralis has broader elytra and more resembles a road tiger-beetle. It is blue with tawny shoulders and red legs. I have collected it in Singapore.

Of the road tiger-beetles with broad elytra, which dart about on sandy roads, taking short flights, then running a little on their long legs and off again, we have two genera, *Cicindela* and *Heptalonta*. The first genus seems to be very widely distributed, abundant in Europe and North America as well as in the tropics. The larvæ of the temperate climate species are soft bodied with large heads and powerful jaws. They live in holes in the ground from the entrance of which they look out for passing insects on which to prey. The larvæ of our species doubtless resemble those of colder climates, but they have not yet been investigated.

The commonest species is *Cicindela aurulenta*, Fabr., which is very abundant on sandy roads in Singapore, Perak, Penang, Province Wellesley and elsewhere. It is abundant on the west Hill in Penang at an altitude of 3000 feet. The upper surface is of a dark blue green with six golden spots on the elytra. The abdomen beneath is coppery red. It has very powerful black curved jaws, but cannot bite through the skin. Altogether it is a very beautiful beetle.

C. fuliginosa, Dej., is smaller and rather less common, though by no means rare. The elytra have a dark brown key pattern on a cream ground. I have met with it in Singapore, Penang, Province Wellesley and Perak, and it will probably be found all over the peninsula as well.

Heptalonta aialis, Fabr., has the same form and habits as the two *Cicindelas*, but is a plain dark blue-green beetle without any spots. It is widely distributed, occurring in Penang,

Jour. Straits Branch.

Selangor and Perak and is also found in Bombay, Java and Sumatra.

I identified these beetles by the collections in the Natural History Museum. There are probably other species to be found in the peninsula, especially in our hill regions, and as they are conspicuous and easy to catch there ought to be no difficulty in getting a complete set of the species of the peninsula.

A List of the Reptiles of Borneo—Addenda et Corrigenda.*

P. 47.—*Brookeia baileyi*, Bartlett.

This species must now be known as *Orlitia borneensis*, Gray. *O. borneensis* was most incompletely described in 1873, from a very young mounted specimen, collected by Bleeker at Sintang, Dutch Borneo. Boulenger subsequently relegated the species to the genus *Bellia*, since the very immature specimens showed no characters on which to base a sound generic diagnosis. Adult specimens of this same species were later (1895 and 1897) described by Bartlett and Boulenger as *Brookeia baileyi* and *Liemys inornata* respectively. A skull of this tortoise in the Zoological Institute, Munich, was described by Baur in 1895 as *Adelochelys crassa* and referred to the super-family *Chelydroidea*, chiefly characteristic of the New World, and its habitat guessed at as Costa Rica! Finally Schenkel in 1901 suggested that *Brookeia baileyi* and *Bellia borneensis* were conspecific, and pointing out the differences between this species and a typical *Bellia*, revived Gray's Genus *Orlitia*. I had already pointed out to Mr. Boulenger the identity of his *Liemys inornata* with *Brookeia baileyi*, and recently was able to obtain, through the kindness of Mr. Bailey, of the Sarawak service, a young specimen of this oft-described tortoise; Mr. Boulenger has compared this with the type of *Orlitia borneensis*, itself a young specimen, and in a letter he informs me that the two are identical. The head and entoplastron alone shew that the species is not a *Bellia*, but must occupy a genus by itself, for which the name *Orlitia* has already been provided.

* See this Journal No. 35, pp. 43-68, 1901.

The species also occurs in Sumatra.

The following is a list of the literature relating to the species :—

- Orlitia borneensis*, Gray, A. M. N. H. (4) xi, p. 157, 1873.
Bellia borneensis, Boulenger, Cat. Chelonians, Brit. Mus., p. 100, (1889).
Hardella baileyi, Bartlett, Sarawak Gazette, Vol. xxv, p. 83, 1895, and Zoolog. Note Book of Sarawak, No. 1, p. 60, 1895.
Brookeia baileyi, Bartlett, Sarawak Gazette, Vol. xxvii, p. 113, 1896, and Zool. N. B. of Sarawak, No. 2, p. 81, 1896.
Adelochelys crassa, Baur, Anat. Anz., xii, 1896, p. 314.
Liemys inornata, Boulenger, A. M. N. H. (5), Vol. 19, p. 868-469, 1897.
Liemys inenata, Siebenrock, Sitzb. Ak. Wien., cvi, 1, 1897, p. 248.
Orlitia (Bellia) borneensis, Shenckel, Verh. Nat. Ges. Basel, xiii, 1901, p. 196.
- P. 47.—*Bellia borneensis*, Gray. Omit (see above).
P. 50.—*Tarentola delalandii*, D. & B.
This species should not be included in the Bornean fauna. Its habitat is West Africa and Madeira.
P. 54.—*Lygosoma whiteheadi*, Mocq.
This is conspecific with *L. bowringii*, Günth.
P. 58.—Add Mt. Saribau, Samarahan R. as another locality for *Opisthotropis typica*, Mocq., and *Hydrablates periops*, Günth.
P. 58.—*Xylophis albonuchalis*, Günth.
This species, which was included by Günther in the genus *Geophis*, has been referred by Boulenger (Zool. Record, 1898) to *Agrophis*, next to *Idiopholis* (see p. 61).
P. 61—After *Agrophis albonuchalis*, Günth, add :—
Agrophis sarawacensis, Shelford. Shelford A. M. N. H. (7), Vol. viii, p. 516, 1901. S. M. Kuching. (Shelford).
Type and only known specimen in the Sarawak Museum.

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After *Idiopholis collaris*, Mocq. add :—

Idiopholis everetti, Shelford, l. c. p. 517, 1901.

Sawa, N. Borneo (A. Everett) cf. The unique specimen is preserved in the British Museum.

P. 62.—For *Calamaria prakii* read *Calamaria prakii*.

P. 63.—For *Perraea* read *Perruca*.

R. Shelford.

RULES
OF THE
STRAITS ASIATIC SOCIETY.

I.—Name and Objects.

1.—The name of the Society shall be “THE STRAITS ASIATIC SOCIETY.”

2.—The objects of the Society shall be—

- a.* The investigation of subjects connected with the Straits of Malacca and the neighbouring Countries.
- b.* The publication of papers in a Journal.
- c.* The formation of a Library of books bearing on the objects of the Society.

II.—Membership.

3.—Members shall be classed as Ordinary and Honorary.

4.—Ordinary Members shall pay an annual subscription of \$5, payable in advance on the 1st January of each year. Members shall be allowed to compound for life membership of the Society on payment of \$50.

5.—Honorary Members shall pay no subscription.

6.—On or about the 30th June of every year, the Honorary Treasurer shall prepare a list of those Members whose subscriptions for the current year remain unpaid, and such persons shall be deemed to have resigned their Membership. But the operation of this rule, in any particular case, may be suspended by a vote of the Council of the Society. No member shall receive a copy of the Journal or other publications of the Society until his subscription for the current year has been paid.

7.—Candidates for admission as Members shall be proposed by one and seconded by another member of the Society, and if agreed to by a majority of the Council shall be deemed to be duly elected.

8.—Honorary Members must be proposed for election by the Council at a general meeting of the Society.

III.—Officers.

9.—The Officers of the Society shall be:—

A President;

Two Vice-Presidents, one of whom shall be selected from amongst the members resident in Penang;

An Honorary Secretary and Librarian;

An Honorary Treasurer; and

Five Councillors.

These Officers shall hold office until their successors are chosen.

10.—Vacancies in the above offices shall be filled for the current year by a vote of the remaining Officers.

IV.—Council.

11.—The Council of the Society shall be composed of the Officers for the current year, and its duties shall be:—

- a.* To administer the affairs, property and trusts of the Society.
- b.* To elect ordinary members and recommend Honorary members for election by the Society.
- c.* To decide on the eligibility of papers to be read before general meetings.
- d.* To select papers for publication in the Journal, and to supervise the printing and distribution of the said Journal.
- e.* To select and purchase books for the Library.
- f.* To accept or decline donations on behalf of the Society.
- g.* To present to the Annual Meeting at the expiration of their term of office a Report of the proceedings and condition of the Society.

12.—The Council shall meet for the transaction of business once a month, or oftener if necessary. At Council meetings three Officers shall constitute a quorum.

13.—The Council shall have authority, subject to confirmation by a general meeting, to make and enforce such by-laws and regulations for the proper conduct of the Society's affairs as may, from time to time, be expedient.

V.—Meetings.

14.—The Annual General Meeting shall be held in January of each year.

15.—General Meetings shall be held, when practicable, once in every month, and oftener if expedient, at such hour as the Council may appoint.

16.—At Ordinary General Meetings of the Society seven and at the Annual General Meeting eleven members shall form a quorum for the transaction of business.

17.—At all Meetings, the Chairman shall, in case of an equality of votes, be entitled to a casting vote in addition to his own.

18.—At the Annual General Meeting, the Council shall present a Report for the preceding year, and the Treasurer shall render an account of the financial condition of the Society. Officers for the current year shall also be chosen.

19.—The work of Ordinary General Meetings shall be the transaction of routine business, the reading of papers approved by the Council, and the discussion of topics connected with the general objects of the Society.

20.—Notice of the subjects intended to be introduced for discussion by any member of the Society should be handed in to the Secretary before the Meeting.

Visitors may be admitted to the Meetings of the Society, but no one who is not a member shall be allowed to address the Meeting, except by invitation or permission of the Chairman.

VI.—Publications of the Society.

21.—A Journal shall be published, when practicable, every six months, under the supervision of the Council. It shall com-

prise a selection of the papers read before the Society, the Report of the Council and Treasurer, and such other matter as the Council may deem it expedient to publish.

22.—Every member of the Society shall be entitled to one copy of the Journal, deliverable at the place of publication. The Council shall have power to present copies to other Societies and to distinguished individuals, and the remaining copies shall be sold at such prices as the Council shall, from time to time, direct.

23.—Twenty-four copies of each paper published in the Journal shall be placed at the disposal of the Author.

24.—The Council shall have power to sanction the publication, in a separate form, of papers or documents laid before the Society, if in their opinion practicable and expedient.

VII.—Popular Lectures.

25.—Occasional Popular Lectures upon literary or scientific subjects may be delivered, under the sanction of the Council, on evenings other than those appointed for General Meetings of the Society.

VIII.—Amendments.

26.—Amendments to these Rules must be proposed in writing to the Council, who shall, after notice given, lay them before a General Meeting of the Society. A Committee of Resident Members shall thereupon be appointed, in conjunction with the Council, to report on the proposed Amendments to the General Meeting next ensuing, when a decision may be taken, provided that any amendment to the Rules which is to be proposed by such Committee to the General Meeting shall be stated in the notice summoning the meeting.

PUBLICATIONS OF THE SOCIETY.

JOURNAL No. 1 to No. 38, Price to members, \$1.00 each.

„ „ „ „ to non-members, \$1.50 each.

ESSAYS RELATING TO INDO-CHINA, 4 Vols., Price \$1.00 each.

THE HIKAYAT ABDULLAH.

THE WAI-SENG LOTTERY, by G. T. Hare, Esq.

RAJAH BUDIMAN. A Malay Folk Tale, by H. Clifford, Esq.

THE MAP OF THE MALAY PENINSULA,

To members	\$9.00 mounted.
„ non-members	13.00 „
„ members	7.00 unmounted.
„ non-members	11.00 „

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STRAITS BRANCH
ROYAL ASIATIC SOCIETY

[No. 39]

JOURNAL

June, 1903

Agents of the Society

London: KEGAN PAUL, TRENCH, TRÜBNER & CO.

[No. 39]

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of the
Royal Asiatic Society

JUNE 1903

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1903

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THE
STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

COUNCIL FOR 1903.

The Right Rev. BISHOP HOSE, *President.*

Hon. W. R. COLLYER, *Vice-President for Singapore.*

Hon. C. W. KYNNEERSLEY, *Vice-President for Penang*

H. N. RIDLEY, *Honorary Secretary.*

DR. HANITSCH, *Honorary Treasurer.*

H. ESCHKE, Esq.,

A. KNIGHT, Esq.,

W. G. ST. CLAIR, Esq.,

A. W. O'SULLIVAN, Esq.,

Ven. Archdeacon DUNKERLEY

} Councillors

PROCEEDINGS
of the
Annual General Meeting

The Annual General Meeting of the Society was held on January, 23rd 1903.

There were present:--Right Reverend BISHOP HOSE, Hon'ble W. R. COLLYER, Dr. HANITSCH, A. KNIGHT, H. ESCHKE, A. D. MACHADO, Ven. Archdeacon DUNKERLEY, W. G. ST. CLAIR, J. A. ROBERTS, Esq., Dr. GALLOWAY, H. NS RIDLEY.

The minutes of the last Annual General meeting were read and confirmed.

The Annual Report of the Council and the Treasurer's report were laid on the table and their adoption moved by W. G. St. CLAIR seconded by Dr. GALLOWAY, subject to the auditing of the Accounts which was undertaken by Mr. KNIGHT, as proposed by the Ven. Archdeacon DUNKERLEY and seconded by H. ESCHKE.

The Secretary read the draft of a letter of congratulation to the China Branch of the Royal Asiatic Society which was adopted unanimously by the meeting.

PROCEEDINGS

The Council for the ensuing year was then elected, viz.:

President: Right Reverend BISHOP HOSE.

Vice President for Singapore: Hon. W. R. COLLYER.

Vice President for Penang: Hon. C. W. KYNERSLEY.

Hon. Secretary: H. N. RIDLEY.

Hon. Treasurer: Dr. HANITSCH.

Councillors: W. G. St. CLAIR, Esq., A. W. O'SULLIVAN, Esq.
Ven. Archdeacon DANKERLEY.

The President then proposed a vote of thanks to the Secretary and Treasurer which was carried unanimously.

Annual Report for 1902.

The Council are gratified to report that the financial condition of the Society continues to be very satisfactory.

The following new members have been elected since the last Annual General Meeting:—

REV. E. GOMES.	MR. H. E. BYRNE.
MR. H. WALTER BOURKE.	MR. J. W. SIMMONS.
MR. H. MARRIOTT.	MR. G. LAWS.
DR. GIMLETTE.	MR. F. J. SKERTCHLEY.
MR. E. C. H. WOLFF.	MR. W. D. GRANDJEAN.
MR. C. CURTIS.	MR. D. BEATTIE.

DR. GALLOWAY.

Two numbers of the Journal, Nos. 37 and 38, were published during the year. The supply of material for publication, however, was as observed in the last Annual Report, still scanty, and it is hoped that members who have any opportunity of sending in notes or observations on the subjects in which the Society is interested will do so.

The Council regret to have to record the death of a member, Mr. J. P. Joaquim, F. R. G. S.

A number of books, papers and journals were added to the library. The Librarian is re-arranging the library and hopes to have a catalogue of it ready shortly.

The Treasurer's account is appended.

HONORARY TREASURER'S ACCOUNT FOR THE YEAR 1902

	\$	c.	\$	c.	\$	c.
Balances brought forward						
from 1901:—						
Mercantile Bank, Fixed Deposits	1553	41			238	25
Mercantile Bank, Current Account	1000	77			224	15
Chartered Bank, Current Account	58	95			73	93
Cash in Hand	6				10	...
			2619	13		
Receipts in 1902:—						
Subscriptions for 1900	5	...			62	...
do " 1901	45				56	05
do " 1902	470	...			60	...
do " 1903	10	...			10	...
do for Life Membership	50				64	03
Sale of Journals and Publications	214	95				
Sale of Maps	996	85			2595	54
Sundry Recoveries	9	04			700	81
Bank Interest	81	84	1882	68	348	10
					58	95
			4501	81	3703	40
					798	41
					4501	81

A. KNIGHT,
Hon. Auditor.

R. HANITSCH,
Honorary Treasurer, Straits Branch, Royal Asiatic Society.

Notes on a trip to Gunong Benom in Pahang.

BY W. D. BARNES.

Gunong Benom is the name usually given to the "massif" which lies in Ulu Pahang in the centre of the triangle the western side of which is formed by the Pahang Trunk Road running from Trantum through Tras and Raub to Kuala Lipis, the Eastern by the Jelai and Pahang rivers running from Kuala Lipis to Kwala Semantan, and the southern by the Trantum-Bentong road and the Bentong and Semantan rivers which latter river joins the Pahang at Kwala Semantan. The name Benom is used by the Malays on the Pahang river but seems unknown at Raub. The mountain is a very conspicuous object from the Raub Rest House. Its height has been fixed trigonometrically by observations from the Perak and Selangor borders at about 6800 feet.

In July 1900 an experienced mandore Che Musa was sent from Perak by Mr. Young, the present head of the F. M. S. Trigonometrical Survey to erect trigonometrical beacons at this and other points in Pahang. Difficulties having arisen I, in the middle of August undertook the work on Benom. Che Musa was then in Raub having reached what he took to be the top of the mountain and done some clearing there. He had returned for supplies but was unable to get any men to go back with him. With the assistance of Mr. Mason the Asst. District Officer at Raub I managed to collect 17 men on a promise of wages at 70 cents a day and food. The food I had the least hesitation in promising as I knew by experience that a Malay who goes into the jungle on board-wages invariably runs out of stores and has to return for more at the precise moment when work is most pressing and disagreeable. With these men Che Musa went back. On the 29th of August he met me again at Raub and reported that he had built a camp two days

march towards the Mountain and had carried to it half of the trigonometrical beacon and eight tins of rice. I had had all the rice soldered down in clean kerosine tins. The plan answered admirably. Each rice-coolie made a frame work like that of a knapsack on which to lash the tins and fitted it with straps of bark through which to pass his arms and carried in this way five and a half gantangs of rice (roughly the contents of a tin) rode comfortably, no time was wasted in packing and opening bundles, and most important of all—the rice kept perfectly without any of the usual trouble in preserving it from wet.

I was now ready to start and on arranging for my party found that the beacon (it was made of iron) needed a total of 22 men to carry it; more men were of course needed to carry rice for the beacon-carriers; I was very anxious to take sufficient food to last the whole party until the station had been cleared and the beacon fixed. I engaged therefore 32 coolies, all were Malays and but one or two were foreign Malays—Kelantan and Tringganu men. As they assured me that the mountain was infested with peculiarly vicious 'hantu' I engaged a 'pawang' one Wan Putih. He was recommended to me as a powerful exorcist who feared no 'hantu' whatever. In fact he was I was told perhaps a little too rough in the way he dealt with them. The 'pawang' whom Che Musa had taken with him had proved a hopeless failure. My five boatmen also went with me as well as a Malay boy and a Chinese cook. Che Musa completed a party of 42.

We left Raub on the 31st and stopped the night at Wan Putih's house in Ulu Gali. This though only two or three hours' walk from Raub was the last kampong on the way to the Gunong and to it the other half of the beacon had previously been brought. The afternoon was spent in getting packs, etc., all ready for an early start the next morning. I passed the night under a waterproof sheet; most of the men were accommodated by Wan Putih whose house was, if anything, even filthier than the usual Malay house.

Next morning one man was sick with fever and had to be left behind. Two others were engaged in his place and the whole party with half a trigonometrical beacon, a theodolite.

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a load of botanical drying paper, my kit and bedding, rice and salt fish for the men and flour and fowls for me started off in good time. The first half of the day's march was easy, the rest up Bukit Numbih and down the other side was hard work for men carrying very inconveniently shaped pieces of angle iron. We camped on a tributary of the Klui which is a tributary of the Dong. The camp was at an elevation of about 1800 feet. Next day Che Musa with one man went back to Raub for more rice and food stores with instructions to hire men to bring them to Wan Putih's. The rest of us went on to the camp which Che Musa had previously made. Here we found a good 'pondok' and the 8 tins of rice and half the beacon. This camp was on another tributary of the Klui and also about 1800 feet high. The march was a short one. The day after I sent back 19 men to Wan Putih's to bring on the additional stores for which Che Musa had gone together with the balance of the beacon tools and with the rest of the men I went on to the foot of the Gunong, crossing Bukit Palas on the way. We stopped for the night at a point a little over 3100 feet high and as this was (so Che Musa had told me) the last place on the way up where water could be got and as the weather was distinctly unsettled (it had rained every day since we started) I set the men to work to build a good shelter.

On the third day ten men went back to the previous camp to bring on rice, whilst I went to Che Musa's clearing at the presumed top of the Gunong. To my surprise I found it to be only about 5000 feet high instead of 6800 as it should have been. As however the clearing was small and faced Raub it was impossible to make out the exact position. Next day I went up again with all the coolies left and started clearing and building a camp, and on the 7th it became obvious that the hill which Che Musa had thought to be the Gunong itself was really a subordinate one three miles away and separated from it by at least five deep valleys. After some consideration I decided to fix the beacon where I was. Looking for the true Gunong with a party of 40 men to feed was obviously out of the question and as the hill on which I was commanded a view of a large number of the main range trigonometrical stations and also much of the Gali and Dong Valleys invisible from the

highest point I decided that a beacon on it would at all events give some return for the expense incurred.

On the 8th Che Musa reached the top and by the 11th nearly all the beacon had arrived enabling me to send ten of my party back to Raub there to be paid off. Nearly all of them were sick with fever or otherwise useless for clearing and filling and I was very glad to have fewer men to feed. On the 14th the beacon was erected and on the 15th finally placed in position. By this time food was running short for all hands, and the coolies had got very tired of their job. Three had left without permission thereby forfeiting the greater part of their pay and on the afternoon of the 16th all the rest struck work. The average foreign Malay who comes to Raub to look for work is not a pleasant person with whom to deal, and if he hail from Tringganu as did most of my men did, his respect for a contract is very precisely measured by the ability of the other party to improve it. Luckily I was a Government officer and although my powers were not perhaps quite so extensive as I represented them to be, I succeeded in sufficiently impressing the men to induce them to go to work again late the next morning. I must own that I to some extent sympathised with them. Their work was pretty hard and their food had come down to rice and salt only. Fish sufficient for twice their number they had finished entirely. (My sympathies were sharpened by the fact that my own diet had fallen to bread and condensed milk.) When on the 18th the salt also gave out I found that I ran a risk of being left alone with my boatmen and a good deal more kit than they could carry. On the 20th therefore I started down although two very large trees up which a ladder had been contrived still stood on the side towards the Gunong. These are only noticeable from the Raub Rest House, whither late on the afternoon of the 21st I arrived, the return journey being done in two days.

During the whole time between the 7th and the 20th the coolies were felling I was taking a round of theodolite angles and sketching the outlines of the hills in sight. The seeing was rarely good especially towards the north-west and south and trigonometrical stations more than 25 miles away could not have been pitched up without the aid of the powerful telescope which

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I had fortunately borrowed from the Selangor Survey Office. In clear weather the view was very fine. The hill sloped steeply on all sides except towards the Gunong and seemed to rise out of a level plain. On the north in the dim distance above the spurs of the 'massif' were Gunong Tahan and another noticeable peak since identified at Sinting. On the west the main range ran from Perak down to Jelebu with foot hills below it, and a narrow plain leading from Raub southward to the Bentong and Semantan cut up with long ridges of hills separating the various streams. At the foot of the Gunong were the white limestone cliffs of Gunong Serdam with the Gali plain beyond and Raub with the iron-roofed mine buildings sharply picked out and the cable-track showing like a long angled trench. I managed twice to get bearings of Tahan and to sketch the range of which it forms part. The beacon which I erected stands on the highest of these small peaks of about equal height and the clearing round it measures quite five acres.

The weather was fair only. There was a good deal of rain and on more than one day I never got a single sight. The sun when it shone was very hot and I found that working the theodolite under it meant considerable loss of cuticle from the nose and face. At 8 p.m. the temperature was about 69° and at 6 a.m. 62°. The Malays complained a good deal of the cold although I had provided every man with a blanket. Many of them suffered from chapped lips. My Chinese cook in a blue serge Norfolk suit worn over all his other clothes looked a quaint sight. He never complained however and baked most excellent bread in an empty kerosine tin. A great difficulty was water supply. Every day a water party of five men had to be sent to the last camp nearly 2000 feet down and as the climb was steep and the men out of sight that water party did very little or no other work. Bathing was of course out of the question and washing had frequently to be foregone.

The 'pawang' was a great nuisance. Naturally he did no work himself and I suppose equally naturally he was of no use at all when the men went on strike. He was one of the most self-righteous natives whom I ever met and though quite illiterate fully equalled many a Koran-quoting haji in conceit. As a 'pawang' he did little except to 'Jampi' a man who was bitten

on the foot by a snake on the hill-top. This poor fellow's leg swelled up badly and as he was an oldish man and got high fever I began to be nervous about him. However either the charms or my remedies brought him round and in a few days he could walk again. Occasionally the 'pawang' thought fit to give us a taste of his quality and usually at inconvenient times. At the camp at the foot of the Gunong we heard every night a continuous shrill yelping as of baskets of puppies deserted by their mothers. It was, I think, made by birds though the Malays could give me no name for them. When I asked the 'pawang' he looked mysterious and suggested that the subject should be changed. One night this yelping was very persistent several 'riang-riang' were screeching in the trees, a wind having sprung up the jungle seemed full of noises. I fell asleep but was awakened near midnight by a loud harangue from the 'pawang' to the "hantu" of the Gunong. He began mildly by asking why they made such a disturbance; had they forgotten the propitiatory service he had paid before the first tree was felled? Was it fair to go back on him like this? For a while the noise died down and I heard the men expressing their sense of the 'pawang's' power over the spirits. Soon after however it began again and the pawang after more unavailing discourse lost his temper and scolded the hantu in very unmeasured language indeed. This frightened the men and they kept up a chorus of "Biar-lah," "Jangan-lah," "Nanti dia marah" until finally the pawang was reluctantly pacified and left the hantu alone.

Then they all began to tell ghost stories. One I remember about Bukit Hitam which is full of getah-taban but on which no getah hantu dare collect owing to the tigers which guard the mountain. One man said that his uncle (a particularly brave man) started once with a large party and as a protection kept a ring of fire round the camp at night. Before morning however a tiger sprang through the flames and carried off the leader. This superstition about Bukit Hitam seems only general. I have heard it both sides of the main ridge. The commonest story about high mountains seems to be that they are inhabited by 'beroh' (*macacus nemestrinus*) who increase in size and ferocity the higher the adventurous traveller mounts until at last

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they become as lazy as buffaloes. At this point the traveller always returns believing that they would be as large as elephants further on. On Gunong Raja by-the-by there are chili plants sufficiently gigantic to allow these big 'brok' to perch on their branches.

The Malay belief in 'hantu' is of course universal but is noticeable that it is always possible to find some one whether a pawang or otherwise who will have them for a consideration. A charming old Chinese thauke at Belat in Kuantan tells a story of how he offered \$5 to some Malays to fell a large chingah tree which overhung his kongsi. They refused and said that it was a "datoh." Subsequently they offered to fell it for \$10. The thauke's indignant reply was that he would have nothing to do with men who would cut down their grandfather for ten dollars. Why for fifteen you would cut down your father and mother as well! He got over the difficulty by the aid of a large auger half a tin of kerosine and a lighted match. After describing how in a day or two the tree fell its heart completely burnt out, he always ends by saying very scornfully "Mana hantu?" As a rule however a Chinaman believes in propitiating the local unseen powers and even this sceptical thauke was seriously considering whether he could not change his luck by engaging a pawang to pay the belated sacrifice of a buffalo to the genius loci of his mine. A Chinaman is perhaps somewhat of a fatalist but he believes in insurance all the same.

Another superstition which I overheard concerned a cure for skin disease. The pawang was complaining that it was difficult to arrange the marriage of a girl who lived near his house as the poor thing was covered with "kurap." My headboatman who had noticed the girl, displayed great interest (he was I think contemplating matrimony à bonne marché) and stated that he knew an infallible cure for "kurap." It consisted in an ointment of sulphur and kerosine oil applied in some mysterious manner and it was an essential part of the cure that no living soul should see the patient for seven days after the unction.

As regards the fauna of the hill, over the very top of the ridge, i. e., 5000 feet high ran a beast-track and on almost the highest point was a quantity of rhinoceros' dung. One night whilst

we were on the top an elephant came along this track but was turned back by the fallen trees. It is easy to understand that aborigines walk for choice along the ridges and hills in order to avoid the dense undergrowth in the valleys but why beasts whose weight is calculated in tons should voluntarily carry that weight up hills of really considerable steepness is not so obvious. Do they go along the ridge in order to avoid the sidelong ground of the slopes much of which would give an insecure foot hold? In the present case the track seemed to run towards the Gunong itself nearly 2000 feet higher. On the lower ground we saw many tracks of sladang and elephant and heard elephants more than once. Animal life seemed scarce on the hill top. A snake—mutilated beyond recognition before I saw it—was found, also a wood louse and a scorpion. Small bees (lebah) however abounded as on all hill-clearings and crawled persistently over one's face and hands. Flies too appeared very quickly and in large numbers. They were in colour a dark metallic blue and in size between a housefly and a blue-bottle. They laid masses of longish white eggs on blankets not actually exposed to bright sunlight. There were also a few white woolly-looking flies of about the same size. None of these insects lived apparently on the spot. They all seemed to appear after the clearing was begun. Whence they came I cannot say. I also saw a few butterflies.

With the aid of a supply of botanical drying paper lent by Mr. Ridley, the Director of the Botanical Gardens, Singapore, I made a large and, I think, fairly complete collection of all trees, shrubs and plants which were at the time in fruit or flower. Mr. Ridley informs me that the collection reached him in good order and he has made out the appended catalogue raisonné of it. It is in fact as an introduction to this catalogue that these notes have been written. From the nature of the moss upon the hill I should imagine that Benom is much drier than the hill tops on the main range. The commonest trees were "pagar anak" bintangor, kelat, rengas manak, mempassi, membungit and palawan, at least those were the names of them given to me by the coolies. The "rengas manak" was not I was told poisonous. My Chinese cook however broke out with a bad eruption on his nose and face probably caused by "rengas" sap and on the night

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before we started down one of the coolies was very badly stung on the body—so badly indeed that he got high fever and could carry nothing and almost had to be carried himself. I saw him about a week later and the eruption was still visible on his chest. Either therefore rengas proper existed on the hill or else “rengas manak” is not harmless.

The palawan trees were a great nuisance. The wood was so hard that the bliong's in the hands of the less expert coolies were badly gapped and I was obliged to order that one exceptionally good man should tackle them all. The tree seemed to me exactly like the palawan so common on river banks.

On the very top of the hill there was a good deal of “chandan” which Mr. Ridley has identified in a paper recently published in the Journal.

Throughout the whole trip I saw no getah, taban, chinga, merbau, petaling, or other valuable timber. On the lowest slopes of the hill there were however many fine “seraia” trees. The whole of the specimens identified by Mr. Ridley were collected on the top of the hill at a height of almost exactly 5000 feet.

The Benom “massif” consists of granite and I noticed that the sedimentary rocks were left behind very soon after leaving the low ground along the foot of the main range; they are found much higher up and in some places places higher than 1000 feet above sea level. Benom is an isolated granite intrusion without visible igneous connection with the main-range. In the long plain running southward from Raub the ridges which divide the Klan Bilut and Bentong are from their appearance of sedimentary rock. One of them Gunong Raca which overlooks Bentong township is of course conglomerate. This conglomerate is seen also at Jeram Kapur below Bentong. The pebbles in it are as far as I could see, not of igneous rocks but of quartzite and silicified slate. Its strike is a few points West of North and East of South and its dip (apparently) very steep. Similar conglomerates occur in the Ulu Jelai. The metamorphic limestone cliffs off Serdam at the foot of Benom seem identical in composition with those at Bukit Chintamani on the Bentong river and indeed with all the other limestones scattered, mostly in isolated cliffs throughout the Peninsula. In the Jelai river

this limestone has recently been shown to reach to a depth of over 900 feet below the present surface. The height at which the old sedimentary rocks remain on the east side of the main range as compared with the west is very noticeable when crossing the range by the Pahang Trunk Road. Further I have walked along the foot of the range the whole way from Tramun southward to the Triang (a tributary of the Pahang which rises in Jelebu) and have not only seen no granite but have found the pebbles in the streams to be mostly of sedimentary rarely of igneous rocks. The rocks over which I passed were all sedimentaries. The bed rock of the Bentong alluvial flat where the mines are worked is uniformly not a bed of china clay as is usual on the western side of the Peninsula but a denuded surface of slates on edge.

I was unable to ascertain the name of the hill on which the beacon is placed. It is certainly not Bukit Palas as I passed over Bukit Palas on my way to it. It may possibly be Kluang Terbang. At places however like Raub where no native seems to go into the more inaccessible jungle, local names are very uncertain.

If another attempt is made to fix a station on Benom I would strongly advise that another route be chosen. At Raub labour is very expensive and natives with any idea of local topography are nonexistent. Sakais there are none. Personally if I were to try again I should begin by making enquiries as to routes up the Dong or by the Krau, a tributary of the Jelai on the other side of the 'massif.'

List of Plants Collected.

Illicium evenium, King. Also occurs in Malacca, Selangor and Perak.

Polypogon venenosus, Juss. var. This is the same plant as that collected by Wray on Gunong Bubu (No. 3813) and distributed under this name by King and is probably the var *gracilis* of Miquel. It is very unlike the ordinary form of the Penang and Perak hills, having a long terminal spike of flowers and not short axillary ones.

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Garcinia, sp. In young fruit, branches grey corky, leaves lanceolate acuminate coriaceous 2 inches long and one and a half broad, petiole half an inch long axillary or supra-axillary few-flowered petals small, stigma discoid grooved. I have never seen this plant from elsewhere.

Calophyllum sp. Of this genus there are two species represented; one is perhaps a form of *C. retusum* the other has oblong blunt leaves. None of the specimens have flowers or fruits, but all have the curious bud-galls common to other species of the genus.

Anneslea crassipes, Hook. A big tree; specimens with very large fruit; occurs on Mt. Ophir.

Adinandra maculosa, Anders. A variety with smaller leaves than usual and glabrous fruit quite ripe.

Ternstroemia Scortechinii, King. Also occurs in Perak.

Gordonia imbricata, King. A rare plant once collected by Scortechini, in Perak.

Ternstroemiaceae, a very striking plant apparently belonging to the same order but in fruit only was obtained by Mr. Barnes. It is a tree or shrub with dark colored branches, and coriaceous ovate lanceolate leaves with blunt points 1 inch to $1\frac{1}{2}$ long $2\frac{1}{4}$ to $\frac{3}{4}$ inch wide with numerous close nerves and reticulations on the under surface. The upper surface is smooth dark green the under surface yellow when dry and the young leaves are red. The racemes are axillary about one inch long with about ten flowers. The fruit is a capsule on a very short pedicel. With a small rounded bract. The sepals are orbicular imbricate 4 in number, coriaceous with a scarious margin fringed with white hairs, and with three elevated ribs in the centre about $\frac{1}{2}$ inch long. The capule $\frac{1}{4}$ inch long splitting into 4 acute lobes on one of which persists the fairly stout style with an obscurely lobed stigma. There is a persistent column in the centre. The seeds are linear curved not winged two in each cell.

The flowers have not been obtained, and consequently it is difficult to refer this with any certainty to

any genus. If as it appears it belongs to the order Ternstroemiaceæ, it seems most nearly allied to *Pentaphylax* of China.

Pachynocarpus Stappianus, King. Leaves elliptic shortly acuminate blunt base slightly acuminate 6 inches long 3 wide smooth with 6 pairs of nerves depressed above dark brown above, beneath grey with prominent nerves and reticulations, petiole stout $\frac{1}{2}$ inch long rugose. Panicles crowded compact short red scurfy. Bracts lanceolate scurfy $\frac{1}{2}$ inch long. Flowers crowded less than $\frac{1}{4}$ inch long red scurfy, calyx and lobes lanceolate obtuse. Petals linear oblong scurfy. Stamens short ovate apiculate. Fruit solitary globose on a stout thickened pedicel, a little over $\frac{1}{2}$ inch long, brown rugose, calyx lobes shorter than the whole fruit projecting as short triangular processes.

This tree was only known from a specimen collected by Scortechini, in fruit. It is very satisfactory to have also the flowers.

Elaeocarpus robustus, Roxb.

Bauhinia cornifolia, Bak. Flowers red.

Bucklandia populnea, R. Br. In flower. The leaves in the specimens are not tricuspid but ovate with three prominent nerves and coriaceous. The petioles and nerves on the back hairy or glabrescent, buds ferruginous hairy, the bracts are narrow as in Miquel's figure, in the Flora of Sumatra.

Weinmannia Blumei, Planch. In flower and fruit occurs on all the higher hills. Mt. Ophir, Perak.

Polyosma lacte-virens, Griff.

Carollia multiflora, Miq. From description I take this plant to be Miquel's species collected once in Java by Harfield, the exact locality unknown.

Rhodamnia trinervis Bl.

Tristania meruensis, Griff. Very characteristic of our higher

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hills. The wood according to Mr. Barnes is exceedingly hard and broke the edges of the axes in felling.

Eugenia sp. Leaves very narrow lanceolate with a very long narrow point blunt, coriaceous dotted above, pale beneath one inch long, $\frac{1}{4}$ inch wide fruit in short axillary and terminal racemes $\frac{1}{4}$ inch long, small tessellate $\frac{1}{8}$ inch long.

E. subdecussata, Wall.

Anerinoleistus macranthus, King.

Medinilla Clarkei, King.

Begonia Herveyana, King. Rhizome stout often rather long creeping. Leaves when young pink adult dark green, petiole over a foot long, blade ovate acute hardly in equilateral base rounded 6 inches long and 5 wide glabrous. Scape six inches long, lengthening in fruit, male flowers numerous about half an inch across, white outer sepals ovate rounded, inner ones narrower, stamens numerous anthers elliptic blunt not apiculate. Fruit fleshy 3-winged, one wing much larger than the other curved obtuse thick $\frac{3}{4}$ inch long, the others much shorter, deluscing along the base of the wing.

Besides this locality, it has been met with in Pulau Tinggi (Feilding) in Jeram Nyalas (Malacca) by Derry (No. 1130) and in Bukit Sulu (Negri Sembilan). It is called *assam susu* by the Malays.

Argostemma parvifolium, Bemi.

A. hirtum, Ridl. also occurs on Mt. Ophir.

Lucenæa sp. Evidently near *L. pentacme* of Stapf from Kinabalu, resembling it in the white bark of the stem and almost nerveless leaves but the peduncle of the head is longer and the bracts at the base are not connate in a cupule as in that species. The only species recorded from the peninsula is *L. Morinda*, Jack. which is common in Singapore. This species is evidently undes-

cribed but as Sir George King is at present at work on the *Rubiaceæ* and probably has already seen it, I do not give it a name.

Timonius Tambosella, Tha.

Cephaelis cuneata var. *debilis*. A more slender plant than the usual form with smaller narrow lanceolate acuminate leaves 3 to 4 inches long and one inch wide or less, petiole $\frac{1}{2}$ to 1 inch long. In fruit this seems to be a weak form of this species of which the common form often occurs high upon our hills.

Lasianthus sp. With lanceolate acuminate leaves strongly reticulate beneath nerves, petioles, and twigs hairy.

Ardisia villosa, Roxb.

A. oxyphylla, Wall. A variety with smaller oblong to oblanceolate leaves.

Linociera lancifolia, nsp. Branches pale, leaves opposite lanceolate acuminate, base cuneate 2 to 3 inches long $\frac{1}{2}$ to 1 in. wide smooth, thinly coriaceous nerves inconspicuous on the upper surface, midrib elevated beneath, nerves alternate ten on the lower surface. Panicles small an inch long with a pair of broad oblong bracts $\frac{1}{4}$ inch long at the base. Flowers $\frac{1}{8}$ inch long umbellate on the ends of the branches, pedicels $\frac{1}{8}$ inch long, calyx lobes short ovate puberulous, corolla tube very short lobes linear obtuse from a broad base keeled glabrous. Stamens 2 short broad. Style thick shorter than stamens. Drupe cylindrical acute.

Alycia pumila, Hook fil. A form with larger leaves and fruits than usual. Calyx lobes puberulous.

Dischidia coccinea, Griff.

Hoya sp. near *H. parasitica*, but with much smaller thinner flowers. I have it also from Gunong Hijau in Perak.

Vaccinium bancanum, Miq. A variety with small leaves and fruits.

V. Teysmanni, Miq. var. with branches and petioles and base in midrib beneath covered with black hairs. According to the description the typical form is glabrous. I have obtained it also on Maxwell's Hill, Perak, where it was epiphytic and had pink flowers.

Rhododendron Malayanum, Jack.

Diplycosia urceolata, Stapf, var. This differs only from the plant described from Kinabalu in the leaves being ovate lanceolate and rather larger as much as 4 inches long by two wide, instead of obovate. The form of the leaves however seems rather variable. I have also met with it on Bukit Kutu and Bukit Hitam in Selangor. *D. macrophylla* of Beccari a native of Borneo is as far as description goes similar except in the leaves which more resemble those of the Peninsula plant.

D. lancifolia, nsp. Shrub with rather slender branches with whitish bark upper part setulose, leaves coriaceous lanceolate to ovate lanceolate acuminate, base narrowed to the petiole shining green above. Midrib and two side nerves depressed visible, beneath paler dotted midrib only visible raised, $1\frac{1}{2}$ inch long $\frac{1}{4}$ to $\frac{1}{2}$ inch wide. Flowers solitary axillary on slender pedicels nearly half an inch long with red setulose bristles. Bracts 2 short ovate pubescent. Calyx campanulate narrowed at the base lobes ovate acute with red hairs, $\frac{1}{4}$ inch long. Corolla longer glabrous. Stamens with long points opening by two pores yellow. Style rather long slender.

D. consobrina, Becc. A specimen collected by Mr. Barnes resembles the description of this Bornean plant.

Gaertnera Koenigii, Wight.

Aeschynanthus Hildebrandtii, Hook fil. Also occurs in Perak.

Ae sp., possibly a variety of this but with ovate acute leaves, and a bigger plant than I have seen of the species. The specimen is in fruit.

Didymocarpus near *albomarginatus*, Hemsl., but with leaves narrower at the base, in very young bud only.

Clerodendron deflexum, Wall. It is not usual to get this common low country plant at such an elevation.

Nepenthes sanguinea, Lindl.

N. gracilis, Korth.

Litsea sp. A narrow leaved species near *lancifolia* but glabrous; in fruit.

Micropora Curtisii, Hook fil.

Wikstræmia candolleana, Meisn. The Chandan of Pahang. This species is not recorded for our flora in the Flora of British India, but occurs on Gunong Hijau, Kedah Peak, and also at Kamposa in Kelantan. It is a shrub or small tree about 6 to 10 feet tall with smaller flowers than those of *W. indica*.

Loranthus evenius, Bl. This beautiful red flowered mistletoe occurs also in Singapore and in Perak.

L. tetragonus, Bl. New to the Peninsula.

Henslowia buxifolia, Bl. Not rare on our hills.

H. sp., near *Lobbiana*. Leaves ovate orbicular 2 inches long by one wide tapering into the petiole which is $\frac{1}{4}$ inch long, nerves five faintly visible on the under surface. Fruits two or three together axillary on pedicels half an inch long, oblong light brown $\frac{1}{2}$ an inch long, crowned by five short connivent calyx teeth; obscurely five grooved. This is remarkable for the large size and shape of the fruit. I have not seen it elsewhere.

Balanophora multibrachiata, Jungh. Also occurs on Mount Ophir.

Ficus diversifolia, Bl. A form with elliptic oblong leaves and small pedicelled figs.

F. fulva, Reinwaldt.

Quercus Russa, Miq.

Podocarpus cupressinus, Bl.

- Burmanna longifolia*, Becc.
Dendrobium sinuatum, Lindl.
D. bifarium, Lindl.
D. Kelsalli, Ridl.
D. macropodum, Hook fil.
D. hymenopterum, Hook fil.
D. cornutum, Hook fil. A rare plant with good sized pink flowers originally collected by Wray in Perak.
Bulbophyllum capitatum, Lindl.
B. catenarium, Ridl.
B. montigenum, Ridl. Also on Kinabalu.
Eria vestita, Lindl.
E. æridostachya, Rchb. fil.
E. bidens, Ridl.
E. longifolia, Hook fil.
E. Scortechinii, Hook fil.
Ceratostylis clathrata, Hook fil.
Dendrochilum angustifolium, Ridl. nsp. Occurs also on Bukit Hitam, Selangor.
D. sp. in fruit only.
Coelogyne tomentosa, Lindl.
C. sulphurea, Rchbf.
C. carnea, Hook fil. This plant occurs in Perak also there is a figure of it in the *Icones Plantarum* which however represents the petals as fine as and very much broader than they actually are, so that the plant is nearly unrecognizable. I have however a specimen from Scortechini's collection distributed as typical *C. carnea* and a good pencil drawing by Scortechini showing the very narrow petals and labelled *C. carnea* by Hooker. The flowers are neither fleshy nor flesh-colored as the name would imply but rather thin textured even for a *coelogyne* and brown and yellow.

Pholidota gibbosa, De Vr. This Javanese plant has not previously been recorded for the peninsula. It seems to be very closely allied to *P. carnea*, chiefly differing in the broad three-nerved petals.

Calanthe augustifolia, Lindl. This pretty white *Calanthe* grows on all our high hills.

Saccolabium bigibbum, Hook fil.

Corysanthes picta, Bl.

Smilax calophylla, Wall.

FERNS.

Humata pedata, Sm.

Lindsaya scandens, Hook.

Hymenophyllum Neesii, Hook.

Hymenophyllum polyanthos, Sw.

Polypodium cucullatum, Nees.

Pleopeltis Wragi, Baker.

Elaphoglossum latifolium, Sw.

Vittaria falcata, Kze.

Also an *Alsophila* without fruit.

Selaginella chrysorhiza, Spring?

The two typical hill Mosses *Pogonatum macrophyllum* and *Hypnodendron arborescens* also occurred in the collection.

H. N. Ridley.

Notes on the Formation of Words in Malay and Cognate Languages.

H. L. E. LUERING, PH. D. (Strassburg).

Unlike the great majority of the better known Oriental languages the vernaculars of the Malayan family have not yet revealed the history of their growth and development. The Semitic, Persian, Indian and Chinese languages have not only preserved very early monuments of literature, which serve as infallible guides to the student, but we can follow their growth from step to step, from antiquity to the present day, without missing, as it were, a single foot-print in all the long journey. In this search for light on the origin and the roots of the language numerous sister-tongues have liberally added their testimony. Arabic literature and living speech step in where Hebrew tradition leaves a breach, and both supplement, and are supplemented by, each other and the Semitic varieties of cuneiform and other inscriptions. So it is also with Sanskrit, ancient Persian and the language of the Zendavesta. I remember very well the time, when owing to the lack of a Persian or Zend Dictionary I had to prepare my lessons in the Avesta and in the inscriptions of Bisûtûn with the help of a Sanskrit Dictionary. This will, at least, show the great benefit philologically derived from a comparison of cognate languages, even where the modes of writing and the alphabets are radically different.

In Chinese philology we have not only a literature going back—indirectly if not directly—to great antiquity, but we have also a record of the ancient sounds and signs used at an early date. These together with the comparison of numerous idioms and dialects, enable us to assign what at first appears as a motley of heterogeneous languages to their legitimate mother.

In the Malayan family of languages we have no ancient monuments of literature, but we have a large variety of tongues, which may all be pressed into service to shed their scant light upon the history of the language. I call their contribut-

ion scant because the historic element is almost entirely wanting. We have as yet no data as to the time of division of the various branches of this family, though some writers have settled this question to their satisfaction by intuition, without, however, convincing the careful enquirer. Nevertheless the comparison of Malayan languages will lead us a considerable distance towards the solution of the problem of the proto-malayan language. Nor will this task be a very difficult one after the necessary materials for such a work have once been collected.

In the present paper we will attempt to study, in some of its phases, a more difficult subject, not the original form of words but the formation of words (Wortbildung). We will find not a little agreement in the manner of these formations in widely differentiated languages of this family, and this agreement must necessarily point back to a common source. Such a study, to be on a strictly scientific basis, should start from one of the more unchanged and original languages of the branch, preferably from the Batak (Batta) or one or the other of the Filipino vernaculars, and not from the highly disintegrated and corrupted Malay of the present day.* I have, however, willingly incurred the difficulty and undergone the inconvenience of making Malay the foundation of my remarks, because Malay is a language better known to my readers and consequently of greater interest to them.

The simplest formation of words of a new meaning in Malay is by

I. REDUPLICATION.

Herein and in the use of "classifiers" or numeral co-efficients the Malay family of languages is related both to the Chinese (Mongolian) and the Papuan languages. Let us en-

* This must not be understood as in any sense disparaging to the usefulness and importance of the language. Malay has bought its popularity as a medium of speech over so vast a territory at the same price at which English has acquired its world-wide sway: Grammatical finesse and linguistically interesting forms have been lost in equal proportion as the language has affected larger circles of population.

deavour to classify the varieties of the meanings designated by simple reduplications.

1. *Specialization and differentiation.*

I believe that I place myself in opposition to every grammarian, who has written on Malay, by denying that reduplication is one of the modes of expressing the plural. I will not make any superfluous quotations, but in half a dozen grammars which lie before me, I find it stated that this is one of the plural formations, though in almost every case, the said grammarians find it impossible to state why the word should be reduplicated, as already the single word implies the plural, and why even the reduplication should be joined together with the adjective *سكل* *segala* which is universally accepted as indicating the plural. A few careful grammarians have noted the fact that only few words can form plurals by means of a reduplication. This observation should have led them to a correct understanding of the meaning of such alleged plurals. The universal paradigma of this "plural" in grammars is *راج* *raja-raja*. It is well known that *راج* *raja* alone can mean "kings;" now if *raja-raja* should be used to avoid ambiguity, or to distinguish it from a possible singular "king," why should in almost every case *سكل* *segala* be added: *راج سكل* *segala raja-raja*, where the translation "all the kings" or "all kings" is quite out of the question?

In accordance with other Malayan languages, including the Malagasy, I explain the reduplication as intended to specialize the sense of the word. A careful study of Malay literature, aside of any other language, might have led to a correct understanding of the expression. Take for example the ever-recurring phrase in Malay court novels:

دهادف اوله سكل راج دان منتري هلبالغ سره بدواند سكلين

di-hudap oleh segala raja-raja dan mentri, hulubalang serta biduanda sekalian (Isma Yatim, *passim*). Not once in this frequent phrase another of the nouns occurring in it, which are all plurals, is found in reduplication, such as *mentri-mentri, hulubalang-hulubalang, biduanda-biduanda*, while *raja* is always reduplicated. The heading of this paragraph will supply the explanation of the difference. While the other nouns denote certain offices or ranks, the members of which are equals among themselves, all being ministers or officers of the body-guard, or pages, the title "raja" includes all princes of royal blood (usually below the rank of *tengku* and *engku*), inclusive of that large class of attendants at court, who by some however distant blood relation with the ruling prince are thereby differentiated from outsiders. It cannot be denied that there is the greatest variation in rank included under this title, and this the Malay writer and speaker expresses by the reduplication. We may translate the phrase therefore: "(The prince) waited upon by the various classes of Rajas, and the ministers, officers of the body-guard and the pages together."

If there should be yet a reluctance in giving up the long accepted view of seeing in these reduplications proper plurals in our sense of the word, I would refer the reader to those of the Malay classics, which, like the Bustanu's *salatin**, the Taju's *salatin*, and of more modern works, the *Taman Permata*, are largely made up of Arabic quotations with their Malay translations. It is a very easy task to compare these translations with the Arabic originals, and it will be seen, that in every case where the Arabic plural is at all expressed in Malay, it is done by *ك* *segula*. Passages like these are of great interest to the student of the language, because they are the only

*The Bustanu's *salatin* is one of the most interesting of all Malay works, especially as it is dated. It was written in Aceh, Sumatra, in 1641 (1040 of the Muhammedan era) by Nuru'ddin ibn Ali ibn Hasanji ibn Muhammad al Hamidi (the author is very careful in giving so much of his pedigree) under the patronage of Sultan Iskandar II. Of the seven volumes the first two have been published by R. J. Wilkinson in 1899 and 1900. I possess a MS copy of the seventh volume. The work deserves the careful study of all somewhat advanced students of the language.

authentic commentaries, giving us the exact meaning of the idiom of the writer, supposing however that he fully understood the Arabic of his quotation, which is highly probable in the majority of cases.

The "specialization" expressed by reduplication leads us to another closely connected meaning, which I do not hesitate to place under the same heading. To start from the same expres-

sion راجج *raja-raja*, we have found that it cannot be translated "kings," but that the meaning of *raja* has been specialized as meaning something not exactly a king, but only similar to one. This is a kind of specialization very frequent in Malayan languages. Of the large number of examples I can only quote a small portion, which will, however, fully suffice to explain the rule.

لاغبة *langit-langit*, a sky yet not a sky : a baldachin ;

بواة *buat-buat*, to do, yet not to do : to pretend ;

اولر *ular-ular*, a snake, yet not a snake : a streamer, pennon ;

ام *ayam-ayam*, a hen, yet not hen : a waterfowl ;

جاروم *jarum-jarum*, a needle, yet not a needle, the needle of a balance.

In the same way فوته *putih-putih* means whitish, not white, بيرو *biru-biru* bluish, not blue, ماسق *masak-masak* to play at cooking, not to cook, انق *anak-anak* a doll, not a child. افي *api-api*, the mistletoe, which causes trees infested by it to have the appearance as if burnt by fire (*api*). Here it is also worthy of note that in order to express "flaming" anger or wrath the reduplication برافي *berapi-api* is used,

while the proper word when speaking of natural flames would be *برافي* *berapi*.

To this class belong expressions such as

فارغ *parang*, long knife, *فارغ* *parang-parang*, a fish resembling it. *فاري* *pari*, rayfish. *فاري* *pari-pari*, a ring of rotan resembling in shape that of the ray.

Many words are now found in reduplications only, which may possibly belong to the same class, though we have no means at hand to prove it. Such words are *كانق* *kanak-kanak*, *سيد* *sida-sida* and many others, while in many cases references to other languages help us to place the words under this group.

Such a word is *لاكي* *laki-laki*, manhood, courage, male, brave, which comes from *laki*, strong, great (so in Tagalog, in Malagasy: *lahy*). In Malay the single word signifies the "stronger," but not the "better" half, the husband.

I now append a short list of reduplications from cognate languages, which will show that in this respect the greatest similarity exists.

Reduplications expressing similarity not identity are in

Malagasy:

lahy, husband,
vahy, wife,
sala, wrong,
fotsy, white,

lehilahy, man, male ;
nehivahy, woman, female ;
salasala, doubtful ;
fotsyfotsy, whitish ;

Batak:

lahi, husband,
boru, daughter,

lahilahi, male, man ;
boruboru, female, woman ;

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*Tagalog :**puti*, white,*puti-puti*, semen, sperma ;

I refrain from further illustrating the use of these reduplications by examples, as this would encroach too much upon the space at my disposal.

2. *Emphasis and repetition.* The second meaning expressed by reduplication is emphasis and repetition. This is so common in almost all languages that it is not necessary to go into many details, especially as no radical change of meaning is effected by such reduplication. I select the following examples :

‏هايس‏ *habis-habis*, completely finished;

‏هارف‏ *harap-harap*, to hope fervently;

‏بولة‏ *bulat-bulat* (also in Tagalog) all, most sincere ;

‏لام‏ *lama-lama*, for ever so long ;

‏لاين‏ *lain-lain*, (also in Tagalog) altogether different;

‏انده‏ *endah-endah*, very beautiful;

‏تبه‏ *tambah-tambah*, to add repeatedly;

‏دوا‏ *dua-dua*, by two and twos, etc., etc.

It may suffice to say here that this sort of reduplication is found in Tagalog, Batak, Malagasy and every other Malayan language.

Reduplications, which are combined with secondary changes of form do not interest us here, where we are treating merely of the reduplication of primitive words.

With regard to partial reduplication, such as

‏للاكي‏ *lelaki* beside ‏لاكي‏ *laki-laki*,

‏ففارو‏ *peparu* beside ‏فارو‏ *paru-paru*,

تتتمفن ۲ <i>tetampan</i> beside	تفن ۲ <i>tampan-tampan</i> ,
جمبن <i>jejamban</i> beside	جمبن ۲ <i>jamban-jamban</i> .
ججئغ <i>jejenang</i> beside	جئغ ۲ <i>jenang-jenang</i>
ببرم <i>bebram</i> beside	برم ۲ <i>bram-bram</i> .

no special mention need be made, but that they are found in various Malay languages, (cf. Tagalog *lalaki*, male) and that they all belong to the first group of reduplications, those that express specialization and differentiation.

II. ANCIENT VOCATIVE FORMS.

It may sound very much out of place to speak, in a language like Malay, which has neither declension nor conjugation, of a vocative case. Nor do I wish to imply, by the use of the expression, that the language has ever had a declension. Such a supposition appears to me altogether at variance with the genius of the Malay language. But there is no doubt, that in several of the languages of this family we find a peculiar change of form in words used in the address of persons, which may well be designated as vocatives, and this has been repeatedly done by careful grammarians. It cannot be denied that a considerable number of these expressions, to be presently mentioned, have already lost their distinctly vocative character in Malay, while some forms are losing their character more and more. It may be said that, with one or two exceptions, the forms mentioned here, having yet a distinctive vocative meaning, belong to the language of the past and are preserved almost exclusively in court language or in the poetic style.

Here is a list of the commoner of these expressions :

أنغ <i>anung</i> , oh child! from <i>anak</i> ;	انغ
ادئغ <i>ading</i> , oh younger brother! from <i>adek</i> ;	ادئغ
باؤغ <i>bapang</i> , oh father! from <i>bapa</i> ;	باؤغ

أَمْبُوغ *embong*, eldest child! from *embok*;

أَنْدُوغ *indong*, mother! from *indok*;

أَچُوغ *achang*, boy! messenger!

I add to these vocative forms words like the following: أَبُوغ *abang*, elder brother; أَيْنُوغ *inang*, nurse (see examples from Batak below); دَايُوغ *dayang*, maid; أَيْغ *ang*, هَيْغ *hang*, as pronouns of the second person; سُولُوغ *sulong*, eldest son; and with some diffidence I add the ancient names of divinities: يَنْغ *yang* and سَنْغ *sang*. All these words have distinct vocative forms, though they may have lost the vocative meaning, for it is easily seen, how these words, constantly used in the vocative, finally had to do duty for other cases also.

We have forms corresponding exactly to these in Batak, and here in fullest every day use. I mention only the following:

amáng, from *ána*, father!

indang, from *ina*, mother! (see *inang* in Malay);

ompung, from *ómpu*, grandfather!

huháng, from *háha*, elder brother or sister! (see Malay

كَاكُو *kakak*):

itóng, from *ito*, elder brother! etc.

The only expression denoting close relationship in Batak, which has no vocative form in use is *anggi*, younger brother, though even this word becomes *angging*, when used in intercourse with younger friends, not brothers, just as *itóng* (from *ito*) and *ibotóng* is used as an address to elder friends.

In Malagasy all forms ending in *ng* have been changed, and this is the reason, I believe, why we have no formal vocatives. The case of address is expressed as in modern Malay, by particles of exclamation.

In Tagalog, and this opinion is strengthened by the same tendency mentioned above of Malay, the vocative has gradually gained ascendancy over the other cases, so that all nouns and adjectives and pronouns add to their vocalic ending (also to final *n*) the ending of the old vocative. So we have throughout the language.

inang, mother, from *ina* ;

amang, father, from *ama* ;

panginoong, master, lord, from *panginoon*. In order, therefore to distinguish the proper vocative it is necessary to add the particle of exclamation *oy* or *ay*, which corresponds to

the Malay *هي* *hei* or *hai*.

III. ANCIENT ADJECTIVE FORMS.

Lexicographers, rather than grammarians, have noted the existence in Malay of some hitherto unexplained parallel forms, such as :

مالغ *malang* beside الغ *alang* :

ماسيغ *masing* beside اسيغ *asing* :

ماسم *masam* beside اسم *asam* ;

ماسين *masin* beside اسين *asin* (cf. Tagalog *ma-asin*),

مالف *malap* beside الف *alap*

An opinion regarding these forms, that they may be introductions from the Javanese, is disproved on closer investigation.

By comparison with other Malayan languages, however, we learn beyond doubt, that we possess in these and a few other expressions highly interesting adjective forms. The need, in Malay, of a special form for adjectives must have certainly been felt, especially as the common forms used by us in that sense are indistinguishable from nouns. Though custom has given, to mention but one example, to *besar* the meaning of the adjective "great, large," it must not be forgotten that in very many uses of the word it is a distinct noun. Take the following sentences :

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hulubalang itu se-tengah tujuh kaki besar-nya.

Lembah itu dua batu lebar-nya.

Sungai itu dua puluh batu panjang-nya.

Bukit itu se-ribu kaki tinggi-nya.

Anak itu se-puluh tahun 'omor-nya.

In these sentences we have *besar* (size), *lebar* (breadth), *panjang* (length), and *tinggi* (height) absolutely parallel with the Arabic noun 'omor (age). The substantive use of these "adjectives" is certainly the more original, and even now the more idiomatic.

The ancient adjectives were formed from these "roots" by prefixing the syllable *ma-*. Such forms are in constant use in Tagalog, the languages of Borneo, Batak and Malagasy, as we will show by numerous examples, which might be increased almost *ad libitum*. They must have been used to a much larger extent even in historical Malay, and we should expect to find some remnants of this use in geographical names, where antiquities are much more likely to remain unchanged. It would be worth the labour of a student to make careful lists of Malay geographical names, laying stress upon peculiar expressions, and seeing that modern corruptions (in the mouth of Tamils, Chinese and foreign Malays) be eliminated. I will mention but one name belonging to this group. In the Province Wellesley we find the name of a hill and an adjacent town, usually spelled Bukit Mertajam. The latter word is a corruption of *matajam*, which means "sharp, pointed," Batak *ma-tajom*, and the name "pointed hill" is quite in accordance with the character of the elevation.*

In Batak a careful distinction is maintained in the use of the simple root and that of the adjectival form with the prefix.

The latter is only used as a predicate, never as a qualifying adjective. The sentence "*Ma-timbo hayu on*" means: this tree is high, while the expression "this high tree" is rendered by "*hayu na timbo on*," i. e. this tree which possesses height, which is high, this high tree. Other words belonging to this class are:

* It is possible that the very word Malayu comes under this rubric. No previous explanation of the term has found general acceptance. The Tagalog "malayo" means "far, distant, strange, stranger," certainly a very suitable appellation for the roving strangers that settled in the archipelago.

murara, from *rara*, red (Malay ميره *mērah*);

malembe, from *lemba*, faint, (Malay لهبه *lembēh*);

mamora, from *mora*, rich (Malay مورہ *murah*);

mapitung, from *pitung*, blind.

In Malagasy we have forms like :

malady, quick, *manitra*, fragrant, *malaza*, clever, renowned,

malama, slippery, smooth, *malemby*, soft, tender (Malay لهه *lemah*),

maloto, filthy, dirty, *marina*, just, righteous,

mahitsy, straight, *masina*, holy, *mainty*, black (Malay هيم *hitam*, Dusun *meitam*, Tag. *maitim*).

In Tagalog we find :

ma-itim, from *itim*, black, Malay هيم *hitam*;

ma-lalim, from *lalim*, deep, Malay دالم *dalam*;

ma-lambot, from *lambot*, soft, kind, Malay لمبوة *lembot*;

ma-lapar(d), from *lapar(d)*, hungry, Malay لافر *lapor*;

ma-laki, from *laki*, strong, great, Malay لاکي *laki*;

ma-hina, from *hina*, weak, mean, Malay هينا *hina*;

ma-lakas, from *lakas*, swift, strong, Malay لکس *lekus*;

ma-sakit, from *sakit*, sick, painful, Malay ساکيه *sakit*;

ma-puti, from *puti*, white, Malay فوته *putih*.

The Dusun language of Borneo presents among others these examples : See Journal R. A. S., Straits Branch, vol. 30, 1897, p. 1. sqq.

me-itum, black ;
me-suan, dark ;
m-ial, alike (from *ial*, form) ;
m-alus, soft, from *halus* ;
m-onsom, sour, from *onsom*, cf. Malay *masam*.

I think that these lists of words will leave the reader satisfied that we have here in Malay a few forms of great antiquity, which go back upon a time when the Malayan languages were not yet divided up into their present divisions, and it is only with the help of the cognate languages of the family that we can grammatically explain them.

IV. ANCIENT VERBAL FORMS.

In the formation of verbs, where the modern Malay has effected the greatest change and simplification, we find nevertheless numerous traces of antiquity, of which the Malay has almost or altogether forgotten the original connection.

1. Let me first refer the reader to pairs of words like the following.

كتر *getar*, to tremble. كتر *gemetar*, to tremble vehemently ;
 كرتق *gertak*, to spur on, كرتق *gemertak*, to frighten with weapons ;
 كولغ *gulong*, to roll up, كمولغ *gemuloug*, rolled up and twisted ;
 كيلغ *gilang*, to glisten, كميلغ *gemilang*, very glistening ;
 كيلف *gilap*, to glisten. كميلف *gemilap*, very glistening ;
 كلانق *gelatok*, to tremble, كملانق *gemelatok*, to tremble violently ;
 كلكوة *gelegut*, to tremble, كملكوة *gemelegut*, to tremble violently ;
 نورن *turun*, to descend, نورن *temurun*, farther descent ;
 تراغ *trang*, light, تمارغ *temarang*, half-light, glooming ;

نابر *tabor*, to scatter, تمابر *temabor*, to scatter everywhere ;

چورم *churam*, steep, چمورم *chemuram*, declivity ;

لوكه *lukut* and لوكه *lemukut*, to pound parched grain ;

چرلغ *cherlang* and چمرلغ *chemerlang*, to glitter, glisten ;

گوره *guroh* and گموره *gemuroh*, thunder, rolling noise ;

تندغ *tandang* and تمندغ *temandang*, outfit, get-up ;

تالي *tali* and تمالي *temali*, twisted cordage ;

and perhaps the following :

توبوق *tebok* and تمبوق *tembok*, perforated ;

تبه *tebat*, and تمبه *tambat*, tied up ;

تنگوڭ *tanggong*, to bear تنگوڭ *temenggong*, dignitary.
responsibility,

In many cases the similar sense of the two words will invite an association between them, but this does not provide us with a grammatical explanation of the second form.

We have here forms of a conjugation, which in Batak Grammar has been designated as the Fourth, in Tagalog as the First Conjugation. It is formed by infixing into the verbal stem, after the initial consonant the syllable -um- (or, which does not concern us here, if the root commences with a vowel or labial letter, by prefixing the syllable um-). In the first case, -um- is called an infix, in the latter a prefix. Here are a few of the many examples which might be adduced :

Malay :
سورة *surat*,

Batak :

Tagalog :
sulat, sumulat, to write

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سوروة *surut*, *surut*, *sumurut*, to with-
draw, to bend back.

اوبه *ubah*, *uba*, *umuba*, *ubo*, *umubo*, to change.

It will be seen that but for the fact that in Malay the vowel sign of the conjugation has weakened, being depressed from u to ũ or ě, the above mentioned Malay forms fully correspond to the Batak and Tagalog forms. Such a slight change is nothing improbable, yet we need not indulge in conjectures in the face of even so slight a change, for we find most of the original forms preserved in Malay dialects, e. g. *gilang-gumilang*, *gilap-gumilap*, *gelatok-gumelatok*, *turon-tumuron*, *churam-chumuram*, *lukut-lumukut*, *guroh-gumuroh*, etc.

Even in the classes of verbs, which are conjugated according to this paradigm, the closest agreement exists. They are mostly verbs denoting visible motion, trembling, (See Malay: *gemetar*, *gemelatok*, *gemelegut*, etc.), and verbs, to whom this conjugation gives the power of "intensiva" (compare Malay *gemetar*, *gemertak*, *gemilang*, *gemilap*, *gemelatok*, *gemelegut*, *temabor*, etc.)

2. We will now notice another class of verbal formations which also appear to be a remnant of a now obsolete conjugation. The examples given below do not exhaust the large stock preserved in the language, but are merely chosen to illustrate the existence of the conjugation, while many other words doubtlessly belong to this class, though their radicals have been lost to the Malay vocabulary.

نكن *tekan*, to press with the hand, تلكن *telekan*, to lean on the out-
stretched and stiffened
arm;

نكف *tekap*, to press softly with the hand, تلکف *telekap*, to brush away
with the hand;

تنگه *tingkah*, character, تلنگه *telingkah*, to be of differ-
ent character, to col-
lide;

تأفق <i>tapak</i> , and	تلاقق <i>telapak</i> , foot-print :
تتوق <i>tepok</i> , to pat,	تلتوق <i>telepok</i> , to tap softly, as in applying specks of gold and silver flocks upon paper or cloth ;
تتفف <i>tempap</i> , and	تلتفف <i>telempap</i> , to lay the hand flatly on, to measure by hand's breadths ;
چوفر <i>chupar</i> , and	چلوفر <i>chelupar</i> , to babble in- cessantly ;
سافوة <i>saput</i> , to cover with clouds, etc.,	سلافوة <i>selaput</i> , to cover densely or closely ;
سمتغ <i>sēmpang</i> , to go off side- wards,	سملتغ <i>selēmpang</i> , to jump side- ways ;
سمپی <i>sampai</i> , to hang clothes,	سلمپی <i>selampai</i> , to wear over both shoulders, like a shawl ;
سندغ <i>sandang</i> , to tie sideways,	سلندغ <i>selandang</i> , to wear side- ways over one shoulder ;
سودغ <i>sudang</i> , and	سلودغ <i>seludang</i> ; to decorate with flowers in a peculiar manner ;
سیدق <i>sidik</i> , and	سلیدق <i>selidik</i> to examine close- ly ;
سیسه <i>sisih</i> , and	سلیسه <i>selisih</i> , to quarrel, dispute :
گوسق <i>gosok</i> , and	گلوسق <i>gelosok</i> , to rub ;

كَبُوغ *gembong*, and كَلْبُوغ *gelebong*, to bubble up;

كَكْن *gegak*, to make an indis- كَلَكْن *gelegak*, a bubbling noise.
tinct noise,

كَكْر *gegar*, and كَلَكْر *gelegar*, to vibrate;

كَتْر *getar*, to tremble. كَلَتْر *getetar*, to tremble violently;

كَيْتَق *getek*, to be forward, as an كَلَيْتَق *getetek* to feel sensual
impudent woman, desire, to suffer of nym-
phomania,

كُوْكَر *qugor*, to drop, esp. when كَلُوْكَر *gelugor*, a wild mango,
unripe, which falls in large
numbers, when unripe;

كَبُوغ *kembong*, to be swollen, كَلْبُوغ *kelebong*, to be swollen,
blown up;

كَلْكَغ *kangkang*, to stand open, كَلْكَغ *kelangkang*, to stretch out
the legs, wide open in
indecent posture;

كُوْفَس *kupas*, and كَلُوْفَس *kelupas*, to peel off.

The enumeration of such examples might be continued much longer, but I will add but a few words, which appear to belong to this class, though the primitive forms are not now extant in Malay:

كَلِيْسَه *gelisah*, to be restless;

كَلِيْچَه *gelêcheh*, to slip, to glide;

كَلِيْجُوْر *gelunchor*, to slide down, to glide;

كَلِيْپَر *gelipar*, to glide out, as a knife;

كلوفق *kelupak*, to open up, as the developing banana bud
(cf. *kupak*);

سلوبغ *selubong*, to cover ;

سلشكر *selongkar*, to turn upside down ;

سلشكر *selengkar*, to be anxious ;

سلشكغ *selongkang*, to be counterfeit ;
etc., etc.,

All these forms indicate conjugational changes of the primitive words, with which most are coupled in the enumeration above. It is a conjugation which corresponds to the Tenth conjugation of Batak Grammar, and is formed by the infix *-al-* and another verbal infix or prefix. While there exist in Batak four different classes of these verbs, according to the difference of the infix or prefix combined with the characteristic of the conjugation *-al-*, the Malay seems to have preserved none but forms which combine the commonest of all verbal prefixes, *me-*, *men-*, *meng-* *mem-* or *meny-* with the infix *-al-*. I know of no similar formations in Malagasy and Tagalog, though they might possibly be found after a more careful search, perhaps in a slightly varied form, in one or the other of the Philippine languages. I will, however, for comparison, subjoin one or two examples from Batak :

mangh-al-aputi, to do hastily (from *haput*) ;

mand-al-etes, to be open (as country without jungle) ;

mand-al-utus, *man-al-utus*, to glide swiftly along (as a boat under sail).

3. Before closing my remarks on the ancient forms of conjugation in Malay, it is necessary at least to mention the most common of all verbal changes, the one which in Malay has superseded all the rest. I refer to the one marked by the prefix : *me-*, *men-*, *meng-*, *mem-* or *meny-*, all of which are really the same, modified slightly by combination with the initial consonants or vowels of the verbs. This conjugation is

found in all Malayan languages, as the following examples will show. By selecting Tagalog, Batak, and Malagasy verbs, which are also found in Malay, it becomes unnecessary to select a separate list of Malay examples.

Tagalog :

mang-aral (aral) to teach, Malay *mengajar*;
man-ubus (tubus) to redeem, Malay *menebus*;
mam-uti (puti) to whiten, Malay *memutih*;
man-ulat (sulat) to write, Malay *menyurat*.

Batak :

mang-handang (handang), to fence, Malay *mengandang (kandang)*;
mang-embung (hembang), to spread out, Malay *mengembang (kembang)*;
man-urat (surat), to write, Malay *menyurat (surat)*;
mam-unu (bunu), to kill, Malay *membunuh (bunuh)*;
man-obus (tobus), to redeem, Malay *menebus (tebus)*.

Malagasy :

man-enona (tenona), to weave, Malay *menenun (tenun)*;
man-ampana (sampang), to separate, Malay *menyempang (sampang)*;
man-dalo (lalo), to pass by, Malay *melalu (lalu)*;
man-doa (loa), to spit, Malay *meludah (ludah)*;
mam-eno (feno), to fill, Malay *memenuhi (penuhi)*;
mam-otsy (fotsy), to whiten, Malay *memutih (putih)*;
mam-ono (vono), to kill, Malay *membunuh (bunuh)*;
man-irakira (kirakira), to finger, to count, Malay *mengira-ira, (kira-kira)*.

The writer of these fragmentary notes on Malay Grammar trusts that his readers will excuse the many imperfections of this article. Though the subject treated in these pages has occupied the interest of the writer for a considerable time, the actual writing was done under great inconveniences, in the spare moments of a very busy period, and without the advantage of a large library close at hand. He should, however, feel well repaid for having undertaken the task, if by his attempt others would be encouraged in taking up this inviting subject.

The Sakai and Semang Languages in the Malay Peninsula and their rela- tion to the Mon-Khmer Languages.

BY P. W. SCHMIDT, S. V. D.

REVIEWED BY W. D. BARNES.

In the third and fourth numbers of the eighth part of the sixth series of the *Bijdragen tot Taal-Land-en Volkenkunde van Nederlandsche-Indië*, published in 1901, is a paper by P. W. Schmidt, S.V.D., written in German with the title "Dir Sprachen der Sakei und Semang auf Malacca und ihr Verhältniss zu den Mon-Khmer-Sprachen." The following abstract of it will I think, have great interest for readers of the Journal.

The author begins his introduction as follows:—

"More important than these connections with the An-
namite language are the undeniable relations of our mono-
syllabic Khasi-Mon-Khmer root-stock with the Kohl language
with that of Nancowry and with the dialects of the abori-
gines of the Malay Peninsula. We should not however be justi-
fied in deducing therefrom an ancestral connection with these
partly polysyllabic languages.' So wrote E. Kuhn towards the
end of his 'Articles on the languages of Further India' *Beit-
räge zur Sprachenkunde Hinterindiens. Sitzgsb : d. k. bayer. ac.
d. w. phil.-hist. LL 1899 I. p. 219 f.f.*) Thus he leaves open the
question whether there exists between the Khasi-Mon-Khmer
group and the Khol languages, that of Nancowry and the
dialects of the aborigines of the Malay Peninsula, an intimate
actual relationship, or whether the evident identities are due
merely to external influences.

"Some years later—1894—E. (sic.) Otto Blagden in the
Journal of the Straits Branch 27 pages 21-56, without appar-
ently knowing anything of Kuhn's work put forward a more

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“complete comparison of the Vocabulary of the dialects of the Peninsula aborigines with that of the Mon-Khmer (Anam) languages. But as his title “Early Indo-Chinese influences in the Malay Peninsula, as illustrated by some of the Dialects of the Aboriginal Tribes” shows, Blagden also did not go so far as to conclude that the identities to which he drew attention arose from any intimate connection between the two groups of languages. He says, ‘But even to assume that the aboriginal dialects are cognate languages which should be classified in the Mon-Annam family would be going further than our evidence justifies us in doing.’ Neither Blagden nor Kuhn had examined the whole material which is available on the subject of these aboriginal dialects. It is my purpose to collate this full material and to endeavour by its aid to remove the present uncertainty concerning these dialects and to settle their genealogical relation beyond doubt. For this purpose it is first necessary to settle the relationships of these dialects to one another, a task which in itself demands much labour since no comprehensive work has been done on the subject. The first half of my paper will comprise this comparison, and the comparison of the aboriginal dialects with the Mon-Khmer languages will occupy the second half.”

His first part the author begins with a list of publications in which words, vocabularies, etc. from the aboriginal dialects have been given. This list is I presume the completest yet published and I give a full abstract of it. *Journal of the S. B. R. A. S.* Vol. I, p. 38; V, p. 129; VII, p. 94; VIII, p. 9; XXIV, p. 13; XXVI, p. 41; XXVII, p. 27; XXX, p. 13.

(1). T. J. Newbold “Political and Statistical Account of the British Settlements in the Straits of Malacca.” London, 1839, Vol. II, pp: 369-434.

(2). The MSS of Hrolf Vaughan Stevens. Veröffentl: d. K. Museums f. Völkerk. zu Berlin; Bd 2 und 3.

(3). Marsden’s *Miscellaneous Essays*:—A Short List of ‘Jakoon’ words from Raffles of ‘Jooroo’ Semang (J. Anderson given as collector) and of ‘Quedah’ Semang.

(4). Roberts’ *Embassy to the Eastern Coasts of Cochin China, Siam, Muscat*:—‘Jooroo’ Semang—A list of words (Mr. Maingay given as collector) and ‘Quedah’ Semang (McLunes

given as collector):—apparently the same lists as those given by Marsden.

(5). Klaproth, Journ. Asiatique 12 pp. 241-243 (Semang.)

(6.) Mentera-Glossen (Mantra) by Borie, Tijdschrift voor Ind-Taal-Land-en Volkenkunde 10 pp: 439, &c.

(7). Crawford. History of Indian Archipelago, Edinburgh 1820. Nrs. 12: ('Quedah' Semang—apparently the same list as given by Marsden and Roberts).

(8). Sakaya S. Kerbou &c. by L. de Morgan "Bulletin de la Société Normande de Géographie, Rouen 7. 1885. p. 434 &c. also printed in L. de Morgan Exploration dans la presqu'île Malaise, Paris 1886.

(9). J. Low, Sakai in Perak. Journal of the Indian Archipelago. Old Series IV, p. 430.

(10). Tomlin. A list of Samang words, "Extract from the Malacca Observer from an article on Tomlin's Mission-Travels (Royal Library, Berlin).

(11). Mikloucho-Maclay, Tijdschrift voor Ind.-Taal-hand-en Volkenkunde 23 reprinted in Vol. I of J. S. B. R. A. S.*

The next ten papers contain a critical examination of this material. The author points out that several of the old lists are wholly or partly copies of one another and laments the infinite variety in the methods adopted by the different collectors in the spelling of words given. 'Clifford alone' he says (to some extent Blagden and Hewitt) makes a praiseworthy 'attempt to give a determinate value to the vowels used.'

The author himself employs throughout the system of Fr. Müller except that he uses *g* instead of *dz*.

The next 75 pages contain a vocabulary compiled from the various lists, etc., detailed above. This vocabulary contains

* Here and elsewhere the author also quotes the following books:—

Alb: Grünwedel. Veröffentlichungen aus d. k. Museum für Völkerkunde in Berlin (1894).

Bd: 3 Teil 2. p. 145. (Bibliography and Glossary.)

R. Martin. Die Ur einwohner der Malayischen Halbinsel. Sonder Abdr. aus. d. Corresp.—Blatt der deutsch Anthrop. Gesellschaft, 1899. Nrs. 10 p. 6.

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1249 roots arranged alphabetically. The author explains that it is possible that in some cases further enquiry or rather fuller material for enquiry may show that some of his roots may require correction, but contends that for his purpose the arrangement adopted is the most useful one. All hypothetical root-forms are enclosed in brackets. All Malay loan-words are omitted.

Next follow the only available 'texts' viz:— those given by Skeat in Berisi by Clifford in Sen-oi and by de Morgan in Sakai of S. Kerbou and S. Raya, and in 'Söman.' The translations are given in each case.

The next thirty pages contain a discussion of the 'Grammatik.'

The fourth subsection of the first part is headed "The relation of the dialects to one another." The author begins as follows:— "The questions as to the relation of these languages to one another and to their correct grouping are the more important since the races who speak them have no ethnological unity. The Sakai although sharply distinguished from Mongolian races have a more Mongoloid character than have the Semang. The Semang on the other hand belong as even B. H. Meyer's very critical examination shows, to the Negritoës. Our examination has therefore a further meaning in that it aids in answering the question whether these Semang-Negritoës have a language of their own." In the next nine pages the author examines in detail the similarities and differences in the vocabularies of the various dialects and concludes that, as far as the present state of our knowledge allows us to judge, the Sakai and Semang languages are one. He then points out the two marked groups into which this one language falls. In the one group come the words, etc., collected from 'Quedah-Semang' Semang of Tjoh. Steven's Semang, Semang of Ulu Selama, Miconho-Maclay's Ulu Kelantan and Ulu Petani, Tomlin's Semang 'Jooroo-Semang,' in the other words, etc., collected from Bersisi, Palou, Ulu Indau, Sakei of Sungei Raya, Clifford's Sen-oi, Sakai of J. Kerbon, Sömang of de Morgan, Clifford's Tembe. Perak Semang and Chanderiang Sakai.

The author now points out that it is not safe to believe that collectors of vocabularies who have called certain races

Sakais or Semangs have in all cases correctly described them. He therefore tests these statements by the locality, physical peculiarities, etc., of the tribes in question. He points out that Semangs do not exist in the southern part of the peninsula and quotes R. Martin who gives as their country northern Perak, Kedah, Rahman, Rangan, and Kelantan, a description with which Stevens agrees. He further notes that the Semang use or have used the bow, and that there is no record of the Sakais having done so. He concludes that the Semangs in his first group are correctly described but that de Morgan's 'Söman' and the 'Perak Semangs,' and 'Kenning Semangs' mentioned in fifth volume of the J. S. B. R. A. S. may very possibly have been Sakais or at all events mixed races. The Sakai who form his second group fall linguistically into two sub-classes the divisions between which seem to be confirmed geographically by Clifford's line from Blanja on the Perak River to the Bidor Mountains and thence to Kuala Angin in Kelantan to the north of which line Clifford found his Tem-be to the south his Sen-oi. He concludes therefore that the Semang and Sakai form two different branches of one language and that the Sakai branch shows two sub-branches.

The second part is headed 'comparison of the Sakai and Semang languages' and opens with a list of books consulted by the author in his study of the latter. Then follows a list of those Mon-Khmer words and roots which are found to be similar to words and roots in Sakai and Semang. The author's comments on this are as follows:—"The above agreements seems to me to be amply sufficient both in number and kind to negative the suggestion of 'A mere external borrowing.' As to the "their number out of the 1249 forms contained in the vocabulary "there are about 240 such agreements. That is in itself a notable "result but it gains in meaning when two things are borne in "mind:—First that most undoubtedly a part at least of the "materials for the Sakai and Semang languages are recorded "with a wrong or uncertain meaning thus rendering it difficult "or even impossible to find their correct equivalents in Mon-Khmer, and secondly that another part,—more specially that "collected by de Morgan and Stevens, is of such a nature "(names of implements and individual parts of them, of individ-

“ual plants, etc.,) that in any case corresponding expressions for them could hardly be expected. Finally it must be pointed out that in these prefix-languages it is most difficult to find corresponding words in dictionaries which are arranged alphabetically according to the initial letters of the words, and that our vocabularies of a part at least of the Mon-Khmer languages are by no means complete.”

The words showing similarity are next arranged in groups as follows:—Nouns: 18 such as God, Thunder, Night, Rain, Stone, Fire, etc.; 8 such as Tree, Flower, Rice; 21 such as Louse, Fly, Egg, Dog, Elephant, Rhinoceros, etc.; 18 such as Man, Stranger, Wife, Aunt, Nephew, etc.; 33 such as Blood, Hair, Mouth, Neck, Belly, Elbow, etc.; and 13 such as Clothing, Arrow, Knife, Stick, etc.; Verbs: 61 including to go, give, sleep, fasten, see, sit, turn back, cry, call, speak, drink, etc.; and 33 Adjectives and Adverbs: such as many, white, with, bad, sweet, cold, etc. The author continues:—“The comprehensive manner in which all kinds of correspondences are represented and more especially in which the names for almost all parts of the human body show agreement and finally the large number of indentities in verbs and adjectives leave, in so far as an examination of the grammatical relations of the two groups of languages offers no obstacle, one conclusion only, viz:—that there exists an inward and intimate condition between the Sakai and Semang languages and those of the Mon-Khmer.”

The author next points out that there is a small number of words occurring in many Sakai and Semang dialects for which no corresponding words can be found in Mon-Khmer, but he asserts that the existence of these can not disturb the conclusion drawn from the total result more especially as further search in the more out-of-the way dialects of Mon-Khmer may yet reveal them. He then continues:—“As against these however great stress must be laid on the part that for those particular words which constitute the difference between Semang and Sakai no parallels can be found. If therefore we can rely upon our knowledge of the Mon-Khmer vocabulary it is very remarkable that it is these words and these (so to speak) alone which fail us. When further we bear in mind that the words in question are such as are in constant use in every day life it seems most im-

“probable that their parallels will be found in these Mon-Khmer languages of which we have at present any knowledge and it may be regarded as very doubtful indeed if any entirely new branch of these languages will be discovered which will supply the deficiencies. It seems therefore very probable that we have in these words a remnant of the former Semang-Negrito-language. If that is really the case then further and more exhaustive research will certainly reveal still more material of the same kind. May this be a keen incentive to those who are in a position to make such researches to commence them without delay before the rapidly advancing disappearance of these races render further proof ever impossible! Perhaps we may be able to oppose some positive facts to that wave of theories which has burst over these poor Negrites!”

The next eighteen pages are occupied with a close comparison of the “Grammatik” of the two groups. The following conclusions are drawn:—

- (i) The sounds are in essentials the same.
- (ii) The word-formation follows the same laws.
- (iii) The personal pronoun shows as much identity as can be expected.
- (iv) Pronouns and adverbs are in essentials demonstratively the same.
- (v) The syntactical relations of nouns, adjectives and verbs are the same.
- (vi) The numeral is the same in form and construction.

The author continues:—“Against these resemblances and identities no important divergencies are as yet opposed. When we consider them in conjunction with the wide spread identities in the vocabulary we are justified in concluding that the Sakai and Semang languages are intimately related with the Mon-Khmer languages and must be regarded as a member of that family. In the case of the Sakai languages this conclusion can be pushed further. When we consider the physical resemblances between the Sakai and the Mon-Khmer peoples we are justified in saying that the language now spoken by the Sakai was the original Sakai language.”

The author then gives the following four physical characteristics of the Mon-Khmer people:—

- (i) Dolicho-cephalic skulls.
- (ii) Darkish skins.
- (iii) Eyes horizontal not oblique.

(iv) Hair wavy not straight and not woolly; and he quotes R. Martin and Logan as proving that the Sakai have the same peculiarities.

He continues:—"It is otherwise with the Semang. Their "darker colour, and woolly hair separate them anthropologically "both from the Sakai and from the Mon-Khmer people. The "fact that they speak what is essentially the same language can "only be explained on the assumption that they have abandoned "their own and adopted a foreign one. As is the case with the "Negritos of the Philippines the original Negriti language seems "to have been lost although indeed in the case of the Semang a "number of words appear to exist as a new want of it.

The paper here ends. It covers 180 octavo pages and is obviously the outcome of most careful and labourious work. It is much too important not to be noticed in the Society's Journal and in default of a review by a competent hand my abstract may, I trust, suffice to direct the attention of members to it.

The Comparative Philology of the Sakai and Semang Dialects of the Malay Peninsula—A Review.

BY C. O. BLAGDEN.

There has recently appeared in the *Bijdragen tot de Taal-Land-en Volkenkunde van Nederlandsch-Indie* a monograph * of some length on the Sakai and Sëmang dialects, which may fairly claim to be the most comprehensive piece of work yet done in this connection and is therefore deserving of the attention of the readers of this Journal. It is the more interesting as being the first occasion for many years that a scholar of some standing in Europe has been attracted to the study of these dialects, and it will serve as a landmark for future collection and research in relation to his rather neglected subject.

Never before have these dialects been submitted to the systematic comparison to which Professor Schmidt subjects them in his paper. It has been his purpose to collate all the existing published materials and to see whether any sound inferences could be drawn from such a comparison. He has actually omitted very little, and that little is not of the first importance. The sources from which he draws are carefully enumerated: they include, besides the previous numbers ^b of this Journal the works of Newbold ^c, Roberts, ^d De Morgan ^e and Vaughan Stevens ^f as well as the vocabularies published by Klaproth ^g Tomlin, ^h Low, ⁱ Borie ^j and Maclay, ^k so that they comprise practically everything of permanent value that had

a. Die Sprachen der Sakei und Semang auf Malacca und ihr Verhältnis zu den Mon-Khmér Sprachen, von P. W. Schmidt, S. V. D., *Bijdragen*, etc., ('S Gravenhage, 1901) No. 52, (6e Volgr., Deel 8) pp. 399-583.

b. Nos. 5, p. 129 *et seq*; 8, p. 112 *et seq*; 9, p. 167 *et seq*; 24, p. 13 *et seq*; 27, p. 22 *et seq*; 29, p. 13 *et seq*; See also Nos. 1 p. 41 *et seq*; 3, p. 113 *et seq*; 33, p. 247 *et seq*.

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appeared in print about these dialects when the author's paper was written¹. The addition of the relatively few words given by Lias^m and the vocabularies of Castelnauⁿ and Errington de la Croix^o, as well as those published in the Selangor Journal^p, would have made the collection as nearly complete as could have been wished.

c. T. J. Newbold, Political and Statistical Account of the British Settlements in the Straits of Malacca, (London, 1839) Vol. II, pp. 369-434.

d. Edm. Roberts, Embassy to the Eastern Courts of Cochinchina, Siam, etc. (New York, 1837) pp. 413-415.

e. L. De Morgan, in Bulletin de la Société Normande de Géographie, (Rouen, 1885), Vol. 7. p. 434 *et seq.*; reprinted as Exploration de la presqu'île malaise, (Paris, 1886), Linguistique.

f. H. V. Stevens, (ed. Grünwedel) Materialien zur Kenntniss der Wilden Stämme auf der Halbinsel Malaka, in Veröffentlichungen aus dem Königlichen Museum für Völkerkunde (Berlin, 1892, 1894) esp. Pt. II, p. 145 *et seq.*

g. Klaproth in Journal Asiatique No. 12, pp. 241-3 (Paris, 1883).

h. Tomlin, "A list of Samang Words" from the "Malacca Observer," no date given. This appears, however, to be a mere reprint of the list given by Begbie in The Malayan Peninsula, (Vepery Mission Press, 1834) pp. 14-18.

i. Low in Journal of the Indian Archipelago, Vol. IV, p. 431.

j. H. Borie, Notice sur les Mantras, in Tijdschrift voor Ind. Taal-Land-en Volkenkunde Vol. 10, p. 439 *et seq.* (Batavia, 1861) (translated in Indo-Chinese Essays, 2nd Series, Vol. I.)

k. Miklucho-Maclay in Tijdschrift voor Ind. Taal-Land-en Volkenkunde, Vol. 23 p. 303 *et seq.*, p. 309 *et seq.* (Batavia, 1876). A part of these last also appeared in this Journal (No. 1), but the lists there given are less complete and are disfigured by several misprints.

l. See also J. Crawford History of the Indian Archipelago Vol. II, p. 125 *et seq.*, (Edinburgh, 1820). Malay Grammar Vol. I. p. clxvi, clxxi-ii (London, 1852). W. Marsden, Miscellaneous Essays, (London, 1834), pp. 87, 113. J. Anderson, Political and Commercial Considerations relative to the Malayan Peninsula (Prince of Wales Island, 1824) p. xlv *et seq.*

m. Brau de St. Pol Lias, Pérak et les Orangs-Sakèys (Paris, 1883) pp. 270-273.

n. F. de Castelnau, Mémoire sur les Mantras, Revue de Philologie et d'Ethnographie (Paris, 1876), Vol. II, pp. 142-3.

o. Errington de la Croix, Les Sakaies de Pérak, Revue d'Ethnographie (Paris, 1882) Vol. I, pp. 317-341.

p. Selangor Journal (1895) Vol. III p. 223 *et seq.*; 240 *et seq.*; (1897) (Vol. V p. 325 *et seq.*; 361 *et seq.*; 378 *et seq.*; 393 *et seq.*

The author's merits, however, do not lie in the mere compilation of materials: he analyses his sources with the utmost ingenuity, showing how in some cases two authorities have borrowed from one source, which is sometimes a written, sometimes an unwritten one, and how the several vocabularies are related *inter se*^q. Here it might have been worth while to go even more deeply into the bibliography of the subject, and to show, for instance, that Klaproth's list is an unacknowledged copy from the one that appears in Crawford's History of the Indian Archipelago, eked out however with some additions from elsewhere, and to mention that Roberts merely copies, as he himself admits, from Anderson. In dealing with Newbold's somewhat irritating "Benua" list, the author rightly points out that it is a heterogeneous mixture of Bësi words from some Sëmang dialect cognate to the one given by Tomlin (and Begbie); but his want of first-hand acquaintance with the spoken dialects of Malacca has prevented him from recognizing in it a third element, viz: Jakun, which is represented by a good many words collected for Newbold by Munshi 'Abdullah, as related by the latter in his well-known Autobiography. It is worth noticing too, though the author does not mention it, that the older sources (i. e., prior to 1875) practically all deal either with the Sëmang dialects of the North of the Peninsula (collected from Penang) or the dialects of the south (collected from Malacca). The latter barely take in the Southern fringe of the Sakai group, the purer forms of which, situated as they are in the centre of the Peninsula, remained quite unknown (except for the short notice by Colonel Low) until the introduction of the Residential system opened the Native States to European enquirers.^r

q. I may, perhaps, be permitted, in this connection, to confirm the author's inference, drawn purely from internal evidence, that I did *not* copy the Bësi words I gave in a former paper from my friend Mr. W. W. Skeat, or *vice versa*. Mine were collected in Malacca, his in Selangor. I venture to think it is rather a tribute to our accuracy that they exhibit so few serious discrepancies.

r. Bearing these limitations in view and allowing for their occasional errors, the old lists are still very valuable and well worth studying, especially for the Sëmang dialects.

After discussing the sources, Professor Schmidt gives a comparative vocabulary of words of all the aboriginal dialects represented in them, reduced as far as possible to a uniform system of spelling and arranged according to the apparent relationships of the individual words. This has been very well done and must have been a difficult and troublesome task, but it is needless to say that such an arrangement (the only one possible for comparative study) is necessarily, in the present imperfect state of our knowledge of the subject, to some extent tentative and provisional. In many cases the author's assumption of an underlying affinity seems somewhat unconvincing. It is difficult, for instance, to believe that *log*ⁿ is the same word as *jěhu*: true they both mean "tree" or "wood" (though I believe *log*ⁿ = "tree," Mal. *pohon* and *jěhu* = "wood" Mal. *kayu*), and there are, it must be admitted, forms in existence which seem to be almost intermediate between them, e. g., *delok*ⁿ, *jelop*, *jěhup* and the like, but the evidence of identity does not seem to be quite conclusive, the more so as, apparently, the two variant forms appear on occasions together in one dialect.*

Sometimes, too, in his natural desire to arrive at identifications, the author is inclined to take liberties with his authorities: e. g., he will have it that *ge*, "to eat" (in Sēmang) is to be pronounced *je*, so as to bring it into line with the other and more common word for "to eat," viz: *cha* (Sakai), *chi* (Sēman). But the *g* in *ge* is hard, and the word appears to be quite distinct from *chu* and *chi*.

In compiling his comparative vocabulary, the author has designedly omitted words of Malayan origin.¹ This is somewhat regrettable as the forms assumed by these words in the aboriginal dialects throw an interesting light on their phonology. Moreover the omission seems to involve the assumption that all such words are of comparatively modern importation from Malay, whereas in fact there are in these dialects words of undoubted Malayan affinity which cannot possibly have come into them in that way. Certainly such words as *to'ot* "knee", *asu* "dog" are

s. See Dr. Luering's Ulu Kampar Sakai in No. 35 of this Journal.

t. The process has not been quite completely carried out, some 50 words being left in, besides those noticed by the author.

“rattan,” *siah* “salt,” *manuk* “fowl,” *kebus* “dead,” *hirum* “black,” point back to a Malayan dialect other than Malay, and the presence of such words, relatively few though they are, inevitably throws some doubt on the origin of others whose source, by reason of their being common to Malay and other Malayan languages, is necessarily a subject of uncertainty.

The omission of these words obscures one important element in the constitution of the aboriginal dialects which must not be left out of sight in any speculation as to their origin and affinities.

It is difficult to account for their presence in the aboriginal dialects of the Peninsula except on the assumption that they represent relics of Malayan dialects locally evolved there and distinct from Malay itself, which is a Sumatran language not originally native to the Peninsula; and in that case their introduction must, it would seem, be of very ancient date, going back to the days when Malay had not yet become the language of the Peninsula; or to put the same thing in another way, some of these aboriginal dialects are, at any rate in part, derived from an independent Malayan origin going back to a remote antiquity. While, therefore, there can be no doubt as to the importance of the well-known Mon-Annam element in the aboriginal dialects, this very archaic Malayan element is equally deserving of recognition.

These points are not without importance, for the author's argument for the Mon-Annam origin of these dialects depends to some extent upon the percentage of Mon-Annam words which can be discovered in them: if therefore the aggregate number of words examined is unduly reduced, either by arbitrary exclusion or by doubtful identifications, it is plain that this percentage will be overstated. As the figures stand, the author reduces his words to about 1250 and of these he professes to identify about 240, say 20 per cent, as Mon-Annam. The comparison is made at a later stage, and it is rather anticipating matters to mention it here, but it is the main thesis of the article.

Most of the identifications seem to be quite unassailable and even if they only account for something less than 20 per cent of the vocabulary, that is still a considerable achievement.

But a good many are at least doubtful, and one great element of uncertainty remains which it is at present impossible to eliminate, viz: the question whether the so-called Mon-Annam languages themselves constitute a true family or are not rather a very mixed formation, embodying various elements of unknown origin.

The point is shortly this: so long as one is dealing with Peguan or Cambojan, about which, as they are written languages, a considerable amount is known, one is on relatively safe ground and can fairly refer words, that are attested by their appearance in these two languages, to the Mon-Annam group. But when it comes to words that reappear only in such dialects as Lemet, Cat, Sedang and the like, of which merely a few short vocabularies exist, while little or nothing is known of their structure, the genuine Mon-Annam character of such words is at least doubtful. The frequent comparisons with Cham which the author makes also illustrate this point: for Cham is, in part at least, a Malayan language. Such a word as *cheong* "belly" in Sĕmang, if it be really identical with the Cham *tiam*, cannot be referred to a Mon-Annam origin, for *tiam* is unquestionably Malayan, occurring as it does in several island languages of the Archipelago.

The fact is that one is dealing here with very mixed materials, and even the greatest care will not prevent an occasional mistake.

After setting out the comparative vocabulary and the too few sentences which have been recorded, the author proceeds to give what is really the first attempt at a comparative grammar of these dialects. As a first attempt it can only be characterized as admirable.

He begins by discussing the sounds, both vowels and consonants; and here it is worth while laying stress upon his well-grounded complaint that collectors almost uniformly omit to give a key to their systems of orthography. If they would only be good enough to explain precisely how they intend words to be pronounced, the work of the comparative student would be much facilitated. The discussion of the phonology of these dialects brings out several interesting points. The nasal consonants are noticed; the nasal vowels, however, which are

equally well-marked, are not observed by the author, that is not his fault: it may be explained that they somewhat resemble the French *n* sounds, but are not unfrequently followed by an ordinary consonant. The pronunciation of the palatal letters (*ch, j, sh*) seems to require further elucidation, as it is not quite clear whether they are identical with the corresponding English sounds or somewhat softer. There is a question whether all the so-called diphthongs are really diphthongs or merely two vowels in juxtaposition, each retaining its separate force. A few letters seem to be doubtful: e. g., *z* and *j'* in Newbold's list, where the former represents a rough (probably palatal) *r* and the latter generally a *p*; but both *z* and *j'* appear, though rarely, in Sémang, and *z* in a few Sakai words. On these points perhaps future collectors may throw more light.

Reduplication and repetition as modes of word formation are next noticed, and then follows a most valuable section on prefixes and infixes. Their existence as formative elements in these dialects has been pointed out before,^a though never worked out as completely as is done here. There can be no two opinions as to its importance, especially in relation to the closely similar formation of the Mon-Annam and the Malayan families of speech. It may however be as well to express a doubt as to the soundness of the author's view that a prefix can be assumed whenever a word appears in two slightly varying forms differentiated by their initial syllables, or by the absence in one case of an initial syllable which appears in the other. In the first place, the mutability of sounds in these dialects is something quite remarkable, but this need not imply that the syllable which changes is a prefix, that is to say a merely formal accretion and no part of the essence of the word: for the same mutability shows itself in the final consonants,^c which must surely be part of the root. Secondly, where there are two forms, a longer and a shorter, it is by no means certain that the shorter is always the original one: it may be only an abbreviation, the result of rapid speech and phonetic decay. Some allowance, too, must be made for the defective observation and spelling of some collectors.

^a. e. g., by Mr. W. W. Skeat in *Selangor Journal*, Vol. V, p. 328.

^c. The author gives instances of the interchange of *k, t* and *-p*.

Still, after making a reasonable allowance for these sources of error, there remains a large number of words in which the existence of prefixes is quite certain. Their meaning is more difficult to arrive at, but some, e. g., *Ka-* in Bēsisi and *ma-* in Sēmang are undoubtedly verbal, and there are others which are apparently adjectival and pronominal or demonstrative. One very curious verbal prefix found in a dialect of the Northern Sakai group (but by the collector, De Morgan, called Sēmang) appears to vary its final consonant to suit the final consonant of the principal root: e. g. *nēpchip* "to go", *neblūp* "to enter," *nēkpok* "to open." This would seem to be in reality a combination of a prefix and a broken down repetition of the root word.

The author after comparing in succession the pronouns, personal, possessive, demonstrative and interrogative, proceeds to deal with the syntax of the substantive. It is worth noting that, so far as appears, the same system of syntax runs through all these dialects. The nominative (subject) precedes the predicate; the genitive, adjective and demonstrative pronoun follows the verb which governs it. Apparently there is no foundation, at any rate in the materials here analysed, for the theory that in Sēmang the ideology is different.

Next the numerals are compared: here there is a clear classification into groups, and as the numerals raise certain points of some difficulty and considerable interest it seems desirable to give specimens of the various types which occur. They are as follows:—

	I <i>Sēmang.</i>	II <i>Sakai.</i>	III <i>Sakai.</i>	IV <i>Bēsisi</i> (and other southern dialects)
		(<i>Tēmbe'</i>)	(<i>Sēnoi</i>)	
1.	nai	neh (nei)	nanu	mui
2.	bie	uar	narr	'mbar
3.	(various)	ne'	ni	'mpe'
4.	(various)	(none)	(none)	npun
5.	(none)	(none)	(none)	māsok"
6.	(none)	(none)	(none)	pēru
7.	(none)	(none)	(none)	tempo

For *three* in Sēmang the forms *pat*, *ne*, *diu* and for *four* *sa-beh* and *nos* are given. These seem doubtful: but all the forms

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given in the above table are well attested, and it is noticeable how little agreement there is between the Sakai on the one hand and the Sēmang and Bēsisi respectively on the other. It is true that *one* appears to be the same in groups I and II and possibly this is due to the fact that II is a mixed group of Sakai with a tinge of Sēmang in it, as is evidenced by other words common to these two groups. But the author's attempt to derive the forms of groups I, II and III from the purely Mon-Annam forms of group IV is more or less conjectural, and even if it is correct it leaves one with the curious result that the pure Sakai is (as regards the numerals) further removed from the regular Mon-Annam type than the mixed Bēsisi and its neighbours. This group IV consists of a string of outlying dialects scattered along the border line between the pure Sakai and the Jakun, in a tract of country which extends from Ulu Tēmbēling and Kuantan (Pahang) to the Jasin district of Malacca and from Kuala Langat (Sēlangor) to Ulu Indau (Johor). In this group *alone* do the numerals extend beyond *four*, and that fact as well as their singularly good state of preservation (in these very mixed dialects) seems to me to indicate that these Mon-Annam numerals were not native to the aboriginal dialects of the Peninsula but were imposed from without, and that they either have nothing whatever to do with the Sakai numerals (from which they certainly cannot be derived) or that they have filtered through into Sakai in degenerate forms. It seems very unlikely that the pure Sakai first imposed its numerals (in a primitive form) on the Jakuns who speak Bēsisi etc., and then proceeded to corrupt them while the Bēsisi preserved them unchanged.

So far as this evidence goes, it appears to me to tell against the conclusion which the author ultimately arrives at, viz: that all the aboriginal dialects of the Peninsula are branches of the Mon-Annam stock.

It will be seen, too, that it is a mistake to regard the various dialects as corruptions, in different degrees, of one single type

w. Some rather dubious lists of numerals beyond "four" are given by two or three authorities, but all differ *inter se* and are suspected on that ground.

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of Sakai, represented in its purest form by the Sēnoi dialect. This erroneous view has perhaps tended to discourage the collection of the other dialects, which has been stigmatized as useless except for the purpose of studying the progressive decay of the language. It is evident, however, that Sēnoi, though no doubt on the whole the purest type of its own class of Sakai, cannot be called upon to explain all the other dialects, some of which appear to be in some respects nearer to the ancient forms.

I need say nothing of the author's further comparison with the numerals of two Borneo dialects given in Mr. Ling Roth's work on Sarawak, as Mr. Ray (in "Man" 1902, No. 42) has shown that one of these so-called Borneo dialects is really a Sakai dialect of Perak collected by the late Mr. Brooke Low, while the resemblance of the other is very slight and clearly fortuitous.

After pointing out that a fair number of words (some 50 or so, and all or nearly all of them of Mon-Annam origin) run through almost all the dialects, the author next proceeds to analyse the lists where they differ, with a view to discovering the relationship of the various dialects *inter se* and establishing a classification of them into groups. Considering the paucity of the materials for many of the dialects, this is really a brilliant piece of work, to which justice could be done only by going into details for which there is no space in this notice. The upshot of it is that the dialects of the Peninsula, so far as they are here represented, fall into the following groups:—

I. Sēmang.

- (i) A relatively pure Sēmang (and Pangan) group, curiously homogeneous though covering a large tract of country and extending from Northern Kēdah to southern Kēlantān;
- (ii) Another Sēmang group, less pure than the preceding, represented by (a) the "Jooroo" (Juru) Sēmang of the authorities, (b) the dialect given by Begbie (and Toulin) and (c) certain words in Newbold's "Renua" list: apparently to be regarded as "low country" Sēmang as opposed to the purer dialects of the interior hills.

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II. Sakai.

- (iii) The T'ëmbe' (or northern) Sakai group:
- (iv) The Sënoi (or central) Sakai group and the southern dialects, such as Bësisì.

Substantially this classification, so far as it goes, would seem to be entirely justified by the existing materials. It will be observed that the main line of division (that between groups I and II) corresponds pretty closely with the difference in race between the Negritos (Sëmangs) and the Sakais, while the sub-division of group II into sub-groups iij and iv coincides with Mr. Clifford's distinction between T'ëmbe' and Sënoi and agrees with Dr. Luering's statement (which is borne out by a comparison of their vocabularies) that the Ulu Kampar Sakais, who belong to sub-group iv, cannot understand the dialect of the Kinta Sakais, who fall into sub-group iij. So far at least as the Western half of the Peninsula is concerned, this classification will probably stand the test of further enquiry: in Pahang there appear to be dialects of a mixed character which partake of some of the characteristics of several of these sub-groups and have peculiarities of their own as well. Of these the author had no knowledge, as they have not as yet appeared in print.

It is probable that sub-group iv should be further sub-divided into —

- (a) Central Sakai, including Sënoi, the Southern Perak dialects and some of the Sëlangor dialects, down to and including the dialect of the Orang Tanjong of Ulu Langat,² and
- (b) Bësisì and a straggling group of allied dialects in Southern Sëlangor, the Nègri Sëmbilan, Malacca, and part of Pahang.

This last sub-division runs along the borderland between Sakais and Jakuns: to the south and south-east of it come the more Malayan Jakun dialects of Johor and the neighbouring territories, and it is to be observed that the Bësisì group, itself, though remarkable for the purity with which it has preserved the Mon-Annam numerals, contains a considerable Malayan ele-

². Sëlangor Journal (1895) Vol III pp. 244, 245.

ment. Similarly one of the chief differences between the Sēnoi and the Tēmbé' groups is that the latter has more in common with Sēmang than the former. The purest Sēmang appears to be spoken in Central and Northern Kēdah and the adjoining States of Raman and Ligei, and the purest Sakai in South-eastern Perak, between Sungei Raya and Ulu Slim, and in the adjoining valleys of Ulu Pahang. Between these centres there is a debatable country in which are to be found more or less mixed tribes speaking mixed dialects partly Sēmang, partly Sakai.

The author's classification appears to be defective in one point, namely in ignoring the Jakun group of the South of the Peninsula: this group, whatever its origin, is now hopelessly broken down and almost swamped with Malay, but it is of some interest and apparently originally quite distinct from Sakai.

Here we have, however, the first attempt at a systematic grouping of these dialects, and for this the author deserves every credit. He also brings out a most important fact, viz: that, underlying the common Mon-Annam element which apparently runs through practically all these dialects, though in varying strength, and the comparative uniformity of which has led some former writers into the erroneous Pan-Negrito theory,² there is in the Sēmang dialects an alien element, neither Mon-Annam nor Malayan, which may reasonably be assumed to be the remnant of the original speech of the Negritos.

It is a mistake to assert that there are but few words common to Sakai and Sēmang: the contrary is the case, such words being fairly numerous. But, apart from these, there is a body of words apparently peculiar to Sēmang and not derived from Sakai or any other known language. It is in these words that the original affinities of the Sēmang dialects will have to be sought (if indeed it is any longer possible to detect them) and not in the words which Sēmang has in common with Sakai and

1. I mean pure with reference to Sēmang and Sakai intermixture only, leaving Malay influence out of the question.

2. By this I mean the notion (of Maclay and others) that the whole of the aborigines are of Negrito origin and that the differences amongst them depend merely, on the percentage of crossing with Malays.

the Mon-Annam languages of Indo-China. The author is fully justified in claiming to have established on purely linguistic grounds the existence of a distinct Semang group of dialects, spoken by and more or less co-extensive with the Negrito tribes of the North of the Peninsula.

It is true that the border lines of language and physique do not quite coincide: there are mixed Sakai-Semang tribes in Northern Perak who speak substantially Sakai dialects, while in Southern Kélanan and Tréngganu there are tribes, described as having the Sakai physical characteristics, whose dialects nevertheless must be classified as Semang. But the great point gained is that there is now proved to be a Semang group of dialects originally distinct from Sakai and retaining a considerable number of words for which no analogues have yet been found elsewhere. Instances of such words are (1) *k'ŕto'*, "day," (2) *Kawau*, "bird," (3) *mako*, "egg," (4) *ekob*, "snake," (5) *ek*, "dog," (6) *yus*, *nyus*, "tooth," (7) *chas*, "hand," which are in no way connected with the corresponding Sakai words (1) *jish*, (2) *chim* (or *chep*), (3) *tap*, (4) *taju*, (5) *cho*, (6) *t'ëmun*, (7) *t'ëk* (or *tih*). With the possible exception of No. 6, none of the above Semang words appear to be Mon-Annam; while, of the Sakai, Nos. 2, 3, 5, 6, and 7 certainly are.

The next section of the paper is occupied with a careful analysis of the mode of formation of the Mon-Annam languages. It is shown that the sounds correspond pretty closely with those of our aboriginal dialects; but the greatest stress is laid on the system of prefixes and infixes. In this place it is hardly practicable to do more than illustrate this point by an example or two, drawn from the author's specimens. Thus in Cambojan, from a word *p'ëk*, "to fall to pieces; to split up; division," are derived the following:—

<i>p'ëk</i>	"part"
<i>p'amp'ëk</i>	"to divide"
<i>p'amn'ëk</i>	"piece"
<i>p'ren'ëk</i>	"piece"
<i>p'rap'ëk</i>	"division"

where the persistence of the root (here shown in italics) is clearly seen in spite of the apparatus of prefixes or infixes added to it. Another similar case is:—

<i>kāt</i>	"to cut off"
<i>khnāt</i>	"measure"
<i>kūmnāt</i>	"piece"
<i>thkāt</i>	"pain"
<i>tānkāt</i>	"pain, suffering."

Analogous, though less elaborate, formations occur in several of the other Mon-Annam languages, and this system, it must be admitted bears a strong resemblance to the mode of formation of the aboriginal dialects of the Peninsula.

It must, however, be borne in mind that it also finds parallels in the Malayan family, some members of which (e. g. the Philippine languages) have carried it to an even higher stage of complicated development. In fact the relation between the Malayan and Mon-Annam families in this particular are very puzzling: there is so much similarity in their structure and so little, relatively speaking, in their material or lexicographical elements. I suppose it may be regarded as certain that these two families of speech formerly bordered on one another in Southern Indo-China (and possibly in the Peninsula too) and, it would seem that while they were in contact the one group in some way exercised a profound influence on the other, probably in the way, mainly, of the Mon-Annam group absorbing Malayan elements, both material and formal. This makes it doubly difficult, in the case of the aboriginal dialects of the Peninsula which must have been evolved somewhere near the border line of these two families, to decide to which, if either, of them they originally belonged, seeing that the mode of formation in both is so very similar. In the apparent absence of suffixes and in some other respects, however, it must be admitted that the aboriginal dialects offer more analogy to the Mon-Annam than to the Malayan family.

After analysing these formal elements, the author runs through the various parts of speech in the Mon-Annam languages

and compares them with the corresponding ones in the aboriginal dialects, so far as the materials admit of such comparison. The upshot of the matter is that, in his view, on grounds of phonology, structure, and similarity of pronouns, demonstrative adverbs and numerals, as well as the number of other words already alluded to, the Sakai and Sémang dialects are to be considered as essentially related to the Mon-Annam family. Further the author holds that, on anthropological grounds, the Sakais are to be considered as genuine members of the Mon-Annam group of races, and therefore that their dialects are not an acquired form of speech but represent their own original language.

This latter point is, unfortunately, very slightly handled. The author rests it upon (1) the dolichocephalic character (2) the dark complexion (3) the non-Mongoloid eyes and (4) the wavy hair of these tribes, characteristics which may be paralleled in certain of the Mon-Annam races.

This matter is, however, involved in great obscurity: for some of these characteristics appear to be absent in some of the Mon-Annam races. The Peguans and Cambojans appear to be decidedly Mongoloid in type, though with a difference: and the author's view requires us to believe that this is due to crossing with a Mongoloid strain which has obliterated their genuine original characteristics, while these have been retained in relative purity by some of the wilder tribes. The thing is possible. One knows that in Indo-China there has been an enormous amount of crossing of races, and it is conceivable that a slight strain of the strong Mongoloid type (which, as one sees in Straits Eurasians, is very persistent even when present in small percentages) might have modified the physical characteristics of the civilized members of the Mon-Annam stock (after the wild tribes had parted off from it) without seriously affecting their languages.

In the case of the Negritos the matter is not susceptible of the same explanation, and the author's view is that the Sē

a. I am assured by a Peguan that he can distinguish his own people from the Burmese by their more oval faces and more prominent (almost European) noses; and that wavy hair occurs, though rarely, amongst them.

mangs have substantially given up their own languages and now speak dialects imposed upon them by a Mon-Annam race, that is presumably by their neighbours the Sakais, although they have preserved a good many genuine old Sémang words.

The collection and analysis of new materials will show whether these conclusions are tenable. Personally I still incline rather to the view, suggested in a former number of this Journal, that most of the Mon-Annam words in these dialects have been imposed from without by the influence of a Mon-Annam race of higher civilization; and I think that the curiously pure form of the numerals in the otherwise mixed group of dialects to which Bësi belongs supports this view. It would not however be inconsistent with this idea to hold that the Sakai dialects are also of Mon-Annam origin, though much more distantly related to the parent stem: and that would perhaps account for the divergence of the Sakai numerals from the normal type. In that case we should have two waves of Mon-Annam influence in the Peninsula, as well as two of Malayan, and the analysis of the dialects would be somewhat as follows:—

I. Common elements running through practically all the dialects—

- (1) Malay;
- (2) Mon-Annam of the purer type;
- (3) Malayan, other than Malay.

II. Separate original elements.

- (4) In Sémang: the original language of the Negritos, whatever that may have been (possibly akin to Andamanese?)
- (5) in Sakai: a rude Mon-Annam form of speech (?)
- (6) in Jakun: Malayan (?) and if so, identical with (3) above (?).

It is evident from what has been said that though some progress has been made in the study of these dialects, much remains to be done; and as the author's main purpose, as stated by himself, is to encourage further research, it is to be hoped that collectors will be stimulated by his valuable paper, and will take the matter seriously in hand. Above all it is absolutely necessary to obtain a large number of genuine sentences, as

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actually spoken by the aborigines: mere lists of words have their value, but the only chance of getting an insight into the grammar of a language lies in the collection and analysis of sentences, and that is now the most urgent *desideratum* in connection with these dialects. Such work can only be done properly by men on the spot and thoroughly conversant with local circumstances, and the task should be undertaken at once, before the imminent extinction of these dialects makes it forever impossible. In view of the high value, from a scientific point of view, of such researches (which is attested by the interest taken in them by a scholar of European reputation like the author of the paper I have attempted to review) I venture to express the hope that the Governments of the Straits Settlements and the Native States will follow the good example, in these matters, of the Indian Government and will give some assistance, or at least encouragement, towards a systematic linguistic survey of the Peninsula on the lines of the Linguistic Survey of India.

The Contents of a Dyak Medicine Chest.

BY BISHOP HOSE.

A few days ago I was in the upper part of the Saribas river, the home of the race once celebrated throughout Malaya for daring deeds of piracy. My companion was the Rev. William Howell, the joint author with Mr. D. J. S. Bailey of 'A Dictionary of the Sea-Dyak Language,' and an authority on all subjects connected with the religious and other customs of that people. We had ascended the Padih, an affluent of the main river, to the village of Kundong, where we were going to spend the night in the Dyak house, of which Brok is the *tuai*, or head-man. The house is of moderate length, about twenty doors; and as usual the apartments of the *tuai* are near the middle of the building. There we were hospitably installed on the *ruai*, or undivided hall, (sometimes described as a verandah), which extends throughout the whole length of a Sea-Dyak house, and occupies about half of its area. The good mats were brought down from the *sadau*, or loft, and spread for us; the rare luxury of a chair was provided for me and there we talked, and taught, and answered questions, and dispensed medicines, while the inhabitants of the other rooms gathered round us, as well as the occupants of our host's private quarters. There also we ate, and there we slept when the kindly people would at last consent to our going to bed.

The majority of the 'rooms,' i. e. separate tenements, in this house are inhabited by Christians of long standing, but there are a few who have not yet come in. Amongst them is a *Manang*, or Doctor of Magic, named Dasu, who has a large practice in the neighbourhood. I was anxious to interview him in order to get some information that I wanted for the purpose of comparing the original spiritual beliefs of the Borneans with those that underlie the Mohammedanism of the Malays of the Peninsula. I was also desirous of ascertaining how far the methods of the

Dyak *Maung*, when undertaking to cure diseases, resembled those of the *Pawang* and *Bomor*, his Malay confrères.

At our invitation Dr. Dasu came out of his room readily enough, and sat down with us to chat and smoke a cigarette. He talked freely and intelligently about such matters of general interest as happened to be broached, especially the late expedition against the turbulent people of the Ulu Ai, and the terrible epidemic of cholera which was just passing away. But as soon as we began to give the conversation a professional turn, and speak of the practice of medicine by the native doctors of the Saribas, he put on a look of impenetrable reserve, and could hardly be persuaded to speak at all. There is reason to believe that this was chiefly owing to the presence of Howell. He has succeeded in winning the confidence and affectionate regard of Dyaks to an unusual degree, but he is unpopular among the *Maungs*. His teaching has led people to think for themselves, and wherever he goes the business and the gains of the village doctor shew a tendency to decrease. Moreover several of the fraternity have submitted to his influence, abandoned their tricks, and taken to honest farming. It is known too that some of these have surrendered their whole stock of charms to my friend, and have also made dangerous revelations, whereby the profession has been much discredited.

So Dr. Dasu was only with great difficulty induced to impart to us his knowledge. He told me after more confidential relations had grown up between us, that he suspected me of an intention, by some means or other, to get possession of his precious *materia medica*, and so deprive him of his means of living. However his fears were removed by repeated assurances that it was information only that I wanted, and that I was consulting him just because I preferred to get it direct from a professor of repute, rather than trust to reports received from white men. At length we persuaded him to be gently catechised. I got some precise answers to my questions respecting certain articles of Dyak belief which had been variously defined by different investigators, and about which my ideas had been a good deal confused. But those matters are not the subject of this note. It is the concluding incident of the rather prolonged interview that I propose to describe.

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We had talked to one another so pleasantly and frankly that I thought I might ask Dasu as a great favor to show me his *Lupong*, or Medicine Chest, and the charms of power which it contained. It was quite evident that this aroused his suspicions again, and he retired within himself as before. But the principal people of the house, who were sitting by us, urged him to consent, and, as old acquaintances of mine, assured him of my good faith. So he was at last persuaded, and went to his own room to fetch the treasure.

As I have said, the good mats of the household, as is usual when it is intended to show respect to a visitor, had been taken down for our accommodation from the place where they are stored. But we now saw that the most valued of them all had been held in reserve. This, which was made of fine and very flexible rotan, the latest triumph of the skill and industry of our courteous hostess Ipah, Brok's wife, was now handed down and spread in front of us for the reception of the great man and the mysterious implements of his profession. After some considerable delay, probably intended to excite our curiosity the more, he appeared and sat down on the mat prepared for him: a subdued murmur of applause and satisfaction greeting him as he took his seat.

A Manang's *Lupong*, or case for holding his charms, may be almost anything. Sometimes it is a box, sometimes a basket, sometimes a bag. In this instance it was an open-mouthed basket made of thin shavings of bamboo, hung round the neck of the owner by a strip of bark.

Before beginning the exhibition Dasu made a little formal speech, in which with much show of humility, he spoke in depreciation of his own powers and knowledge, and of his collection of remedial charms, as compared with those of other members of the profession elsewhere. These remarks were of course received with complimentary expressions of dissent from the audience: and then at last the contents of the basket were displayed before us. They were tied up together in a cloth bag, the most highly prized being further enclosed in special receptacles of their own, such as a second cloth covering, a little bamboo box with a lid, or a match-box. They were ceremoniously brought out and placed side by side on the mat

of honour. I was then invited to handle and examine them, and the name and use of each were told me without any fresh indication of unwillingness. This is a list of them.

i. *Batu bintang*, or Star-stone; a small transparent stone rounded by the action of water till it was almost spherical, with a rather rough surface. The *Manang* looked upon it as his badge of authority, and told the following story of the way he became possessed of it. Many years ago, in the interval between harvest and the next seed-time, he was working as a cooly in Upper Sarawak. There he had a dream in which he was visited by the being whom he looks upon as his guardian-spirit. As in all cases when this spirit has had any communication to make to him, it appeared in the form of a tortoise. It told him that he must forthwith put himself under instruction in order to be qualified for the office of a *Manang*: and that if he neglected this command all the spirits would be angry, and death or madness would be the penalty. When he awoke he found the *Batu bintang* by his side, and had no doubt it was the gift of the spirit. Accordingly he did as he was bidden without loss of time. He acquired the professional knowledge and the stock in trade which were necessary, and was at last duly initiated with all the proper rites and ceremonies.

ii. *Batu krat ikan sembilan*, or The petrified section of the Sembilan fish. This was a curious object which I could not quite make out. It was oblong in shape, about two inches long, one inch broad, and half an inch thick in the middle, but getting suddenly thinner towards the two edges till it became not more than $\frac{1}{8}$ of an inch. The thick part was hollow, having a large oval-shaped perforation going through it. It resembled a section from the middle of a large winged seed, but heavy for its size, and feeling like stone. I could not of course test this by cutting or scraping. When used it is soaked for a time in water; the water is then given to the sick man to drink, or is rubbed gently upon the part of his body which is affected.

iii. *Batu lintar*, or Thunder-bolt: a small dark-coloured stone, about an inch and a half long, and a quarter of an inch thick at the base, tapering to a sixteenth of an inch at the point; curved and rather like a very small rhinoceros horn, and highly polished. It was probably the same kind of stone as that of

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which the stone implements found in the Malay Peninsula are made, which are also called *Batu lintar*. It is pressed firmly against the body wherever pain is felt.

iv. *Batu nitar*, another name for Thunder-bolt: a minute four-side crystal, half an inch long and about two lines thick. A charm to be used only in extreme cases. It is dipped in water and then shaken over the patient. If he starts when the drops of water fall upon his body he will recover, otherwise he will die.

v. *Batu krang jiranau*, or Petrified root-stock of *jiranau* (a Zingiberad?). They told us this is the Dyak name of a kind of wild ginger. The word is curiously near to *Jerangau* or *Jeringu*, which Ridley says is *Acorus calamus*: "a plant much used by native medicine-men," (Wilkinson, Malay-English Dictionary.) The thing so called was possibly part of the back-bone of some animal, bent double and the two ends tied together, each vertebra brown and shining after long use. A charm for dysentery and indigestion, and also for consumption. It is dipped in oil, and rubbed on the patient's body in a downward direction.

vi. *Batu ilau*, or Sparkling stone, also called *Batu kras*, or the hard stone. A six-sided crystal, two inches long and three quarters of an inch thick. One end appeared to have been formerly stuck into some sort of handle, as it was covered with *malau*, or lac. This is the indispensable sight-stone to be looked into for a view of that which is future, or distant, or otherwise invisible to ordinary eyes. It is specially used by *Manangs*, for discovering where the soul of the sick man, wandering away from the body, is concealing itself; or for detecting the particular demon who is causing the illness.

There were also, jumbled up together at the bottom of the bag, a number of tusks of wild boar, pebbles, and other rubbish, but these were pronounced to be *utai ngapa*, things of no importance. One article that we hoped to find was absent. Dasu said he should be glad indeed to have it, but it had never come in his way. It is the *Batu burung endan*, or Pelican stone. He explained to us that this is a stone which has the magical power of securing the presence and cooperation of a spirit who dwells in the form of the *endan*, (*pelicanus malaccensis*). When the *Manang* is seeking to enter *Sebuyan*, the Spirit world, in search

of the errant soul of a sick man, this demon can ensure to him a swift and unimpeded passage thither and back again.

While Dasu was telling us the story of his vision of the Tortoise spirit who gave him the *Batu Bintang* I watched his face carefully for any sign that he believed, or did not believe his account. I could not be sure : but I am inclined to think he did not. He seemed relieved when we had finished our examination of his possessions, and he could pack them all up and carry them off to the security of his own dwelling.

Several similar collections of charms have at different times been given to me, obtained from Manangs who have become Christians but it was particularly interesting to me to have a set actually in use exhibited and explained by their owner, and I have thought that a description of them might possibly have some interest for other Members of the Society.

New Malay Orchids.

BY H. N. RIDLEY.

The following new orchids mostly from the peninsula have been obtained since the publication of the Orchids of the Malay Peninsula in the Journal of the Linnean Society Vol. XXXII, p. 213.

In working up the group for the Flora of the Malay Peninsula I find we have as at present known 530 species belonging to 87 genera, and doubtless there are many more to be discovered especially in the northern districts, and on the hills of the east of the Peninsula. I have added a few descriptions of new species also from Sumatra, the orchid flora of which is really very little known, though the more showy kinds have been exported thence for many years.

Liparis atrosanguinea, n. sp. Stem stout sheathed 4 inches long tall, leaves ovate lanceolate acute crisped 8 inches long by three inches wide or less, scape stout over a foot tall. Raceme lax many flowered. Bracts very small ovate lanceolate, ovary and pedicel 1 inch long twisted, and the ovary with sinuate ribs. Flowers as large as those of *L. venosa* entirely deep red purple. Sepals linear obtuse revolute. Petals much narrower. Lip orbicular oblong $\frac{1}{2}$ inch long subacute denticulate with two short semicircular lamellæ at the base. Column arched with narrow wings.

Perak on the Gap on the Thaiping hills at 4000 feet elevation, (Curtis and Derry.)

Allied to *L. venosa*, Ridl., but with a broader lip and deep purple flower. A really beautiful plant.

L. vittata, n. sp. Pseudobulbs conic crowded short 1 inch long. Leaf lanceolate acute 5 inches long $\frac{3}{4}$ inch wide. Scape 6 inches long. Flowers numerous $\frac{1}{4}$ inch across. Sepals lanceolate, petals linear all white. Lip entire,

oblong obtuse white with a central crimson bar. No calli. Ovary and pedicel $\frac{1}{4}$ inch long. Column straight, broadened at the base.

Sumatra, Indragiri (Curtis). Flowered in Penang Gardens.

A pretty little plant of the *Coriifoliae* section, somewhat resembling *L. lacerata* Ridl., inhabit, but the lip is quite entire, and very differently colored.

Platyclinis odorata, n. sp. Pseudobulbs cylindric tapering $2\frac{1}{2}$ to 3 inches long leaf lanceolate subacute petiolate blade 9 inches long $\frac{3}{4}$ inches wide, petiole 2 inches long slender. Raceme nodding graceful one foot long, lower half nude slender. Flowers greenish white sweet-scented $\frac{1}{4}$ inch long numerous bracts lanceolate, acuminate longer than the shorter ovary, Sepals and petals lanceolate acuminate acute. Lip entire tongue-shaped obtuse minutely pubescent keels 2 nearly the whole length of the lip. Column rather short with broad wings, arms free from a little below the stigma as long as the hood linear apex soothed, hood of columns large toothed anther with a short broad beak.

Perak (Curtis, No. 2854).

Dendrobium viridicatum, n. sp. Stem rather slender flexuous over a foot long. Leaves lanceolate acute $2\frac{1}{2}$ inches long, $\frac{1}{2}$ inch wide sheaths $\frac{1}{2}$ inch long. Flowers borne on leafless stems numerous in very short racemes of 2 or 3 flowers, peduncles $\frac{1}{2}$ inch long, bracts very small ovate sheathing, pedicels $\frac{3}{4}$ inch long. Flowers $\frac{1}{2}$ inch long light green. Sepals lanceolate acute, laterals broader, mentum very short blunt. Petals broader oblong lanceolate. Lip entire lanceolate acute column short with erect arms.

Perak, at Ipoh (C. Goldham.)

This seems as nearly allied to *D. macrostachyum*, Lindl., as to any other species.

D. Calicopsis, n. sp. Stems slender over a foot long internodes $\frac{1}{2}$ to 1 inch long. Leaves lanceolate acuminate acute,

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3 inches long $\frac{1}{2}$ inch wide. Flowers three or four on a short peduncle $\frac{1}{2}$ inch long, pedicels with ovary $\frac{1}{2}$ inch long, flowers an inch across, sepals ovate obtuse, laterals narrower subacute, mentum as long cylindric subacute. Petals broader elliptic obtuse, all white tinted with rose, lip entire broadly oblong truncate apex bilobed, lobes short rounded, with 4 raised veins in the centre two thick in the centre and two thinner outside all white with a rosy spot on the tip. Column short and thick enlarged at the stigma arms erect both like crimson. Anther ovate pink large.

Lankawi Islands, (Curtis).

This belongs to the *Pedilonum* section and is allied to *D. hymenopterum*, Hook. fil. which grows in Kedah. The flowers though few and rather fugacious, are very pretty the deep crimson of the tip of the column, contrasting well with the rosy white of the rest of the flower.

D. tenuicaule, n. sp. Stems very slender weak, a foot long. Leaves narrow linear lanceolate acuminate 3 inches long $\frac{1}{4}$ inch wide, sheaths one inch long. Flower solitary large, pedicel and ovary slender $\frac{1}{2}$ inch long. Upper sepal ovate acute, mentum very long cylindric apex decurved acute $\frac{3}{4}$ inch long. Petals broadly ovate all pink darkest at the tips. Whole flower $\frac{3}{4}$ inch across. Lip claw very long narrow lateral lobes broad up curved, mid lobe short ovate apex bifid, edge crisped, white with a central pink line. Column short with a very long foot, arms toothlike erect. Anther margin pubescent.

Lankawi, Ayer Hangat (Curtis).

D. bifidum, n. sp. Plant with the habit of *D. flabellum*, stems a foot or more long slender, pseudobulbs oblanceolate flattened $1\frac{1}{2}$ inch long, 2 inches apart. Leaf broadly lanceolate ovate obtuse 5 inches long 2 inches wide. Bracts lanceolate acute red. Flowers 1 or 2 open at a time, ovary and pedicel $\frac{1}{2}$ inch long. Sepals and petals linear oblong acute recurved yellow with red spots, petals a little smaller, mentum acute. Lip longer than

the sepals, claw narrow linear edges and ridges crenulate, apex with two narrow cuneate truncate labels half as long as the claw, white yellowish at the tip column stout conic, as long as the foot. Anther oblong-truncate in front.

Lankawi Islands (Curtis).

One of the *Desmotrichum* section resembling *D. flabellum* but remarkable for the terminal lobe of the lip formed of two narrow cuneate truncate lobes.

Bulbophyllum variabile, n. sp. Rhizome stout woody, pseudobulbs curved 3 inches long. Leaf elliptic ovate acute 6 inches long, 2 to 3 inches wide, thin by coriaceous, petiole an inch long. Scape from near the pseudobulb stout, red with several sheaths at the base and three or four lanceolate red spotted ones scattered on it. Bracts large lanceolate acute spotted red half as long as the ovary. Flowers 1 or 2 large show 3 inches across. Upper sepal lanceolate acute, laterals falcate. Petals lanceolate nearly as long all yellow with red dots. Lip tongue-shaped recurved with a broader base, short, apex blunt yellow with red spots. Column short, foot twice as long, apex free, arms short rounded.

B. Reinwardtii, Hook. fil. Fl. Brit. Ind. V. p. 754 (not *B. Reinwardtii*, Rehb. fil. *Sarcopodium Reinwardtii*, Lindl.)

Thaiping Hills on trees and rocks; collected by Mr. Curtis and myself; and at Gunong Batu Putih, by Wray, 1122.

There are two colour forms of this, one as described above, the other has the sepals and petals crimson, with red spots at the base; lip dark crimson, column yellow with crimson spots. Both forms are very beautiful and attractive plants, but like so many of these large *Bulbophylla* very troublesome to grow.

B. pustulatum, n. sp. Stem stout crinite, pseudobulbs crowded oblong conic half an inch long. Leaf elliptic lanceolate acute four inches long by one inch wide, petiole $\frac{1}{2}$ inch long. Flower solitary an inch across, pedicel slender $\frac{1}{4}$ an

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inch long. Upper sepal lanceolate acute, laterals much broader ovate obtuse. Petals lanceolate acute nearly as large as the upper sepal. All yellow with red stripes. Lip fleshy ovate cordate obtuse dark maroon colored $\frac{1}{4}$ inch long with 2 raised lobes at the base, and a mass of papillæ on the disc. Column short with a long foot, the apex free, arms triangular oblong obtuse. Climbing on trees on the lower slopes of the Mount Ophir range.

B. tenerum, n. sp. Rhizome slender filiform pseudobulbs ovoid $\frac{1}{4}$ inch long about $\frac{1}{4}$ inch apart. Leaf oval half an inch long not petiolate. Scape slender red 2 inches tall with a few bracts at the base. Flowers 3 at the top of the stem $\frac{1}{4}$ inch long, shortly pedicelled. Upper sepal lanceolate acuminate, laterals much longer slightly gibbous at base, purple bases green. Petals ovate elliptic much shorter green. Lip small recurved acute purple. Column thick curved green foot as long purple, arms long linear curved acute.

Lankawi Islands (Curtis).

Very small few-flowered species allied to *B. hirtulum*, Ridl.

B. cincinnatum, n. sp. Very small plant pseudobulb very small. Leaf elliptic obtuse closely nerved, 4 inches long 2 inches wide, scape very slender 2 inches long. Flowers $\frac{1}{6}$ inch long, 2 on the apex of the scape. Bracts ovate very short ovary and pedicel $\frac{1}{8}$ inch long. Sepals lanceolate subacute nearly equal brown, hairy. Petals brown linear oblong falcate hairy. Lip obtuse with long white hairs. Column short foot as long, arms short.

Perak, Batu Tujoh (Curtis).

This is another of the small species with a few small flowers on the end of a slender scape. The curious white curly hairs on the lip are perhaps its most striking characteristic.

B. brevipes, n. sp. Rhizome woody, pseudobulbs $\frac{1}{2}$ to $\frac{3}{4}$ an inch apart cylindrical conic curved. $\frac{1}{2}$ inch long. Leaf elliptic shortly petioled one inch long $\frac{1}{4}$ to $\frac{1}{3}$ inch wide,

apex subacute coriaceous; raceme very short about 6 flowered $\frac{1}{4}$ inch long. Flowers pale yellow. Bracts lanceolate much longer than the ovary. Sepals subequal lanceolate acuminate $\frac{3}{8}$ inch long. Petals about $\frac{1}{3}$ of the length elliptic blunt. Lip shorter curved thick fleshy deeply grooved base clawed, with two strongly raised ridges or wings from the base. Column short and thick with a short foot, arms erect narrow acuminate.

Perak, Bujong Malacca (Ridley), Scortechini drawing 176. Allied to *B. Gamblei*, Hook. fil., but with a much shorter peduncle.

B. ochranthum, n. sp. Pseudobulbs densely crowded oblong conic $\frac{1}{4}$ inch long. Leaf linear-lanceolate acute base narrowed $1\frac{1}{4}$ inch long, $\frac{1}{8}$ inch wide. Scape nearly as long flowers 5 or 6 crowded in a head about $\frac{1}{4}$ inch long. Bracts lanceolate shorter than the ovary; upper sepal narrow linear-lanceolate acuminate, laterals one quarter longer, all white with yellowish tips. Petals less than half as long as the upper sepal lanceolate obtuse white. Lip small tongue shaped acute recurved yellow. Column thick foot shorter, arms narrow linear acute curved.

Perak, Thaiping Hills, at 3000 to 4000 feet elevation (Curtis).

B. (Cirrhopetalum) Curtisi, n. sp. Rhizome slender creeping, with ovoid conic pseudobulbs $\frac{3}{8}$ inch long, $\frac{1}{2}$ an inch apart. Leaf elliptic oblong obtuse thick 1 to $1\frac{1}{2}$ inch long, half an inch wide, very shortly petioled. Scape slender 2 to 3 inches long with a lanceolate-pointed sheath in the middle. Flowers about 5 crowded at the top. Bracts lanceolate acuminate. Upper sepal triangular lanceolate laterals quite free, linear flat narrow $\frac{3}{8}$ inch long yellow. Petals falcate lanceolate glabrous, brown. Lip small tongue-shaped fleshy curved. Column broad arms triangular short.

Dindings. In Mangrove swamps (Curtis).

B. perakense, n. sp. Pseudobulb conic $\frac{1}{4}$ inch long. Leaf elliptic narrowed at the base 2 to 3 inches long, $\frac{1}{2}$ inch wide.

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coriaceous, scape 3 to 4 inches long fairly stout; flowers crowded numerous glabrous; bracts lanceolate acuminate. Upper sepal ovate acute, laterals $\frac{3}{8}$ inch long connate for half their length, tips acuminate. Petals nearly as large as the upper sepal, ovate lanceolate acute. Lip tongue-shaped channeled above, but little curved; column arms triangular obtuse erect broad.

Perak, on the Waterloo Estate near Kwala Kangsa. (Sir Graeme Elphinstone).

Dendrochilum angustifolium, n. sp. Rhizome long woody terete, pseudobulbs 1 to $1\frac{1}{2}$ inch apart or closer, subcylindric $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Leaf narrowly linear lanceolate 2 inches long, $\frac{1}{4}$ inch wide blunt; mucronulate, narrow at the base, scapes solitary or several together on a stout short peduncle from the base of the pseudobulbs with numerous basal sheaths 3 to 4 inches long. Flowers numerous greenish white $\frac{1}{2}$ inch long. Bracts ovate subacute half the length of the ovary, rachis scabrid. Sepals linear lanceolate. Petals narrower. Lip narrow lanceolate to obtuse with 2 thick ridges at the base and a lower one between them. Column short upper margin hooded minutely toothed, arms linear from near the base. Capsule half-an-inch long subglabose ovoid three-angled.

Selangor, Bukit Hitam, (Kelsall).

Pahang, K'luang Terbang, (Barnes).

D. ellipticum, n. sp. Rhizome long woody branched yellow, pseudobulbs conic-cylindric curved $\frac{3}{4}$ inch long. Leaf thinly coriaceous elliptic oblanceolate obtuse 3 inches long by one inch wide. Scapes 3 inches long with large sheaths at the base; bracts ovate acute nearly as long as the short ovary. Flowers $\frac{1}{2}$ inch long rather fleshy. Sepals lanceolate acute, apex thickened terete. Petals similar but narrower. Lip pandurate obtuse pustular, basal ridges obscure forming a pustular mass. Column rather long, hood with three teeth, arms from about half-way up the column, linear longer than broad.

Singapore, Sumbawang, (Ridley 6536).

A curious little species on account of its pustular lip.

It is interesting as being the only low country species, the rest being all mountain plants.

Eria pendula, n. sp. Stems terete 2 or 3 feet long $\frac{1}{4}$ inch through leafy. Leaves narrowly linear lanceolate acuminate 4 inches long $\frac{1}{4}$ inch wide sheaths dilate upwards $\frac{3}{4}$ to 1 inch long. Racemes lateral hardly $\frac{1}{2}$ inch long with several lanceolate acute red brown bracts half an inch long. Flower solitary nearly an inch across white. Pedicel and ovary $\frac{1}{2}$ inch long red. Upper sepal oblong obtuse laterals broadly ovate reflexed, mentum short very broad and blunt. Petals oblong rounded as broad or broader than the upper sepal. Lip shortly clawed broad obovate rounded, side lobes indistinct, midlobe longer broad keels 2 curved plates on the disc. Column stem foot long.

Selangor at the Kwala Lumpur Caves (Kelsall).

Perak (Scortechini, drawing).

Borneo Sarawak.

Eria (Trichotosia) cristata n. sp. Stem a foot tall, leaves lanceolate acuminate oblique 3 inches long $\frac{1}{2}$ inch wide, coriaceous almost glabrous above hairy beneath sheaths glabrescent when old, very hairy when young, half an inch long. Racemes short $\frac{1}{4}$ inch long very hairy, lowest bract cup-shaped; upper ones ovate lanceolate acute $\frac{1}{2}$ inch long much longer than the ovary; flowers 2 to 3 half an inch long. Sepals lanceolate acute covered with red hair, mentum as long blunt; petals linear obtuse much narrower, lip with a very long claw pubescent at the base spatulate tip rounded retuse, glabrous except for the ends of the three raised veins which are covered with short clubbed hairs; column base pubescent.

Penang, and Lankawi Island at Terutau, (Curtis 1696).

E. rotundifolia, n. sp. Stems slender forming a matted mass. Leaves in small tufts on short stems $\frac{1}{8}$ inch long, fleshy thick obovate blunt hairy $\frac{1}{4}$ inch long. Flowers $\frac{1}{4}$ inch long on a very short pedicel solitary with 2

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cupular bracts with a short point, upper one longer than the ovary; upper sepal oblong ovate, laterals much broader, mentum rather large rounded. Petals oblong obtuse; all greenish yellow, billows on the outer surface. Lip oblong obtuse, tip broader three-lobed; side lobes small, midlobe rounded, all denticulate greenish yellow with a central raised bar ocreous, and some purple spots on each side, column short foot long olive green; anther orange conic one-celled, apex with a short blunt point, front edge emarginate. Pollinia 8 subequal.

Penang, above the Waterfall (Curtis).

A very curious plant forming large masses of small tufted leaves something like those of *Dischidia mummularia*. It is allied to *E. dasyphylla*, Par., a native of India, and *E. microphylla*, Bl. of Java. From the former it differs in its shorter rounded leaves, much shorter peduncle and longer mentum. The lip is broader at the tip and 3-lobed, and is differently colored. The anther is also quite different in shape having a kind of blunt conic boss on the top.

Ceratostylis puncticulata, n. sp. Stems slender weak curved to 3 4 inches long but little branched, sheaths short ampliate, mucronulate, minutely punctate. Leaves narrowly elliptic lanceolate blunt, petiolate 2 inches long $\frac{1}{4}$ inch wide. Flowers in pairs on short slender pedicels with minute bracts. Sepals lanceolate acute. Lip spatulate with an acute thickened tip.

Perak, Taiping Hills at 5000 feet elevation.

Culanthe mutabilis, n. sp. Habit of *C. veratrifolia*. Leaves broad ovate lanceolate acuminate 12 inches long 4 inches wide. Scapes stout 20 inches tall sometimes branched, raceme about 6 inches long-many flowered. Bracts persistent oblong obtuse $\frac{1}{4}$ inch. Pedicels slender $\frac{3}{4}$ inch long. Upper sepal broadly lanceolate ovate laterals lanceolate acute $\frac{1}{4}$ inch long. Petals narrow linear. All white. Lip claw very short with 3 large lanceolate papillæ and a number of small ones, terminal lobe broad $\frac{1}{4}$ inch across reniform bilobed at the apex, white with claw and

base of midlobe yellow, at first, becoming ocreous orange after one or two days and fading red orange. Spur very slender an inch long obtuse decurved. Column thickened round the stigma, anther shortly bluntly beaked.

Sumatra, Deli, imported with *C. revatrifolia* and cultivated in the Botanic Gardens, Penang. Fl. September.

This plant Mr. Curtis says is indistinguishable from *C. revatrifolia* in leaves and habit. The flower is however quite different. The broad kidney-shaped bilobed lip, colour changing from white tinted with lemon yellow at the base to dull dark orange red is very striking. The branched scape a most unusual character in *Calanthe* is not apparently rare, as it has been produced in two out of three plants cultivated by him.

C. albo-lutea, n. sp. A large plant with broadly lanceolate acute leaves $2\frac{1}{2}$ feet tall, 4 inches wide with strong ribs petiole stout 8 inches tall, scape over $1\frac{1}{2}$ feet long, stout. Bracts caducous, flowers about half an inch across, pedicel and ovary $\frac{1}{4}$ inch long. Sepals and petals short broad ovate acute white. Lip 3 lobed white with yellow base, lobes very short falcate acute, midlobe obovate rounded reniform broad, bilobed, calli 2 short semiovate ridges at the base, spur shorter than the pedicel thick blunt clubbed curved.

Perak (Scortechini). Bujong Malacca (Ridley). Larut Hills (Derry).

C. aurantiaca, n. sp. Rhizome fairly stout, leaves narrow lanceolate acuminate 12 inches long $\frac{3}{4}$ inch wide, petiole 3 inches long. Scape slender a foot tall with a large lanceolate sheath towards the base. Bracts caducous. Flowers $\frac{1}{2}$ inch across orange. Pedicel and ovary slender $\frac{1}{2}$ inch long. Sepals ovate apiculate $\frac{1}{2}$ inch long. Petals much broader. Lip narrow, side lobes subtriangular ovate, midlobe narrow linear oblong obtuse red. Keels 2 short semiovate, spur slender sigmoid blunt. Rostellum long beaked.

Perak. Bujong Malacca (Ridley).

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C. microglossa, n. sp. Pseudobulb short; Leaves distichous lanceolate acuminate 6 inches long, 2 inches wide. Scape stout a foot tall, with a large swollen sheath. Bracts lanceolate acuminate pale caducous. Flowers small ovary and pedicel $\frac{1}{2}$ inch parts distinct. Sepals ovate acuminate $\frac{3}{4}$ inch long orange. Petals shorter orbicular ovate rounded. Lip shorter very small scarlet, oblong spatulate base broad narrowed in the middle; apex deflexed with two elevated ridges at base, spur as long as ovary thick scrotiform, rostellum and anther not beaked.

Sumatra, East Coast, (native collector) near *C. Scortechinii*, but with a differently formed and colored lip. It has quite the appearance of *C. curculigoides* at a little distance. It was sent with other orchids from the East Coast of Sumatra by a native and flowered in the Botanic Gardens, Singapore.

Coelogyne densiflora, n. sp. Pseudobulbs long cylindric-conic narrow 4 inches long. Leaves lanceolate acuminate 15 inches long $1\frac{3}{4}$ inch wide, petiole 2 inches long. Scape pendulous 8 inches long dense flowers numerous smaller than in *C. Dayana*, rachis and ovaries not nigrohirsute. Bracts red brown oblong truncate half an inch long and as wide; sepals lanceolate acute; petals narrower $\frac{1}{2}$ inch long brownish. Lip, side-lobes short acute, apices narrow, outside white, inside brown with white streaks; midlobe orbicular, shortly apiculate, edge white, centre red brown with a large yellow central papillose mass; keels on the disc between the lobes crested. Column hood retuse anther white.

Selangor, on Bukit Hitam, (Kelsall).

C. pallens, n. sp. Rhizome stout, pseudobulbs subcylindric 2 to 3 inches long wrinkled. Leaves 2 elliptic or oblanceolate 3 to 6 inches long 1 to $1\frac{1}{2}$ inch wide petiole 1 inch long. Scape from the top of the pseudobulb, base nude with 1 persistent bract. Raceme 6 inches long flexuous. Flowers 2 inches across. Sepals lanceolate acute pale green. Petals linear filiform. Lip white lateral lobes

long with subacute long pubescent tips, base saccate midlobe as long, with 2 long sinuous brown keels. Column hood three lobed central lobe long undulate. Anther conic not beaked.

Perak, Thaiping Hills (Curtis). Bujong Malacca (Ridley).

This is closely allied to *C. anceps*, Hook fil. Ic. Pl. 2109 but the scape is terete not compressed and the petals are much narrower.

Saccolabium Machadonis, n. sp. Stems curved slender 12 inches long. Leaves terete recurved 3 inches long $\frac{1}{8}$ inch thick apex pungent. Racemes 2 inches long. Flowers scattered $\frac{3}{8}$ inch long; sepals linear oblong obtuse. Petals narrower all recurved olive yellow. Lip pale violet, side lobes erect oblong truncate, midlobe much longer flat hastate triangular acuminate obtuse spur short curved blunt olive-yellow, upper callus in mouth rounded hemispheric with an anchor-shaped process on the top, lower edge of callus truncate pubescent, lower callus conic ending in a lamina running to the back of the spur. Column short stout sigmoid olive yellow. Anther flattened 1 celled hemispheric, pollinia subglobose on a broad elongate candicle tapering upwards to the point and fixed to the saddle-shaped disc. Rostellum lobes broad deflexed parallel oblong.

Johor. On Gunong Banang, Batu Pahat.

This species is allied to *S. halophilum*, Ridl., but differs in the violet hastate lip and the remarkable callus in the mouth of the spur. It is named after Mr. A. D. Machado with whom I collected the plant which flowered in the Botanic Gardens.

S. rugosulum, nsp. Stem stout 6 inches long. Leaves linear narrowed at the base, apex bilobed mucronate 5 inches long $\frac{1}{2}$ inch wide, sheaths $\frac{1}{2}$ inch long deeply transversely wrinkled. Racemes short $\frac{1}{2}$ inch long stout with a few cup-shaped sheaths at the base. Flowers $\frac{1}{4}$ inch across, on pedicels $\frac{1}{2}$ inch long yellow-spotted with red. Sepals ovate coriaceous. Petals thinner pallid. Lip boat-shaped, side lobes very short oblong, midlobe fleshy

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ovate grooved ending in a long slender horn bifid at the tip, spur very short conic blunt. Column large arms rounded.

Kedah, on Kedah Peak.

S. (Cleisostoma) hortense, n. sp. Stem stout 1 to 2 inches long or more. Leaves lorate, coriaceous blunt unequally bilobed 4 to 6 inches long $\frac{3}{4}$ inch wide. Scape erect taller than the leaves, base nude apex racemed or more usually with a few branches. Bracts small ovate. Flowers $\frac{1}{2}$ inch across. Sepals oblong obtuse, laterals broader. Petals narrower yellow with red edges Lip yellow, side lobes small erect with two subacute points, midlobe broader ovate acute, spur scrotiform very broad red, callus in the mouth of the tube a thin lamina bifid at the apex. Column short and broad. Anther broad abruptly truncate beaked; pollinia elliptic, caudicle linear very narrow disc ovoid, rostellum entire. Capsule elliptic oblong an inch long.

Singapore Jurong; Johor, Tana Runto, Malacca, Sungei Rambai (Derry) Perak (Scortechini's drawings No. 53); Penang, Tanjong Bunga (Curtis 1834). This little plant generally occurs in orchid trees, and I cannot think how it has escaped being described for so long. It grows also in Borneo. Its flowers resemble those of *S. latifolium*, Ridl. *Cleisostoma latifolium* and *C. fuscum*, Lindl., but it has a much smaller stem than that plant and the panicle is much smaller.

S. arachnanthe, n. sp. Stem tall climbing, leaves oblong obtuse 4 inches long $1\frac{1}{2}$ inch wide sheaths $\frac{1}{2}$ inch long. Panicle $2\frac{1}{2}$ feet long with a long nude peduncle purple, branches 3 or 4 inches long spreading. Flowers scattered $\frac{1}{2}$ inch across, pedicels longer slender. Bracts small ovate. Sepals and petals spreading spatulate obtuse, lateral sepals falcate white with purple spots at base. Lip fleshy side lobes indistinct forming a wall round the entrance of the spur, midlobe ovate broad short, spur broad saccate rounded large, all white, callus in the mouth oblong notched. Column short and broad, rostel-

lum short. Anther thin depressed hemispheric. Pollinia 2 globose, caudicle broadly linear, disc half as long oblong.

Perak and Kedah collected by Mr. Curtis from whom I have received specimens and a colored drawing. The habit of this plant is that of a *Renanthera* but the flowers rather are those of a *Saccolabium* of the section *cleisostoma*

S. patinatum, n. sp. Stem very short hardly an inch long. Leaves 2 to 3 very coriaceous oblong obtuse broadly bilobed 7 inches long by 2 inches wide. Raceme very short rachis stout, flowers about $6\frac{3}{4}$ inch across. Sepals obovate spatulate blunt. Petals narrower yellow with red spots. Lip saccate rounded, no distinct side lobes, terminal lobe ovate triangular entire glabrous blunt all white with violet spots. Column very short and broad at the base pink, no arms, anther obtuse conic in front triangular bifid. Pollinia oblong globose half split, caudicle linear, disc oblong hastate. Rostellum bifid. Capsule elliptic narrowed at base 2 inches long.

Pahang, Kota Glanggi (Ridley).

Distrib., Borneo.

This is probably the *S. Calceolare*, collected in Perak by Carter in Fl. Brit. Ind., as it much resembles that species when dry. It differs from *S. Calceolare* in the entire smooth lip.

S. Myosurus, n. sp. Stems short 1 to 2 inches long crowded together and forming a dense mat with copious roots. Leaves lanceolate falcate subacute 3 inches long $\frac{1}{4}$ inch wide, sheaths $\frac{1}{4}$ inch long. Scapes slender 3 inches long scabred at the base, racemes thickened 1 inch long, bracts ovate very numerous blunt. Flowers minute. Sepals lanceolate oblong falcate. Petals narrower, lip side lobes oblong erect, midlobe ovate lanceolate shorter, spur pendulous as long as the ovary. Column short and broad. Capsule cylindrical $\frac{1}{2}$ inch long, pedicel $\frac{1}{8}$ inch long.

Pahang at Kwala Tembling.

A very curious plant, with the habit, foliage and ra-

cemes of a *Dendrocolla*, but the very minute flowers have the structure of a *Saccolabium*.

Ascochilus teres, n. sp. Stem 6 inches or more tall slender. Leaves terete acute $4\frac{1}{2}$ inches long $\frac{1}{8}$ inch thick, sheaths $\frac{1}{2}$ inch long ribbed and transversely wrinkled. Raceme slender 4 inches long. Flowers few scattered $\frac{1}{4}$ inch across. Bracts very small ovate, ovary and pedicel $\frac{3}{8}$ inch long. Upper sepal oblanceolate hooded; laterals oblong ovate oblique much larger. Petals broadly spathulate oblique shorter. Lip side lobes erect lanceolate falcate, midlobe hastate, basal lobes rounded apex subacute spur half the length curved obtuse. Column as long as its foot nearly as long as the petals, arms short and broad.

Johor, Bukit Banang, Batu Pahat, (Ridley).

The habit of this is just that of a *Luisia* or one of the *Saccolabiums* and not at all like the rest of this genus.

A. minutiflora, n. sp. Stem very short, leaves linear lanceolate falcate acute, 3 inches long, $\frac{1}{2}$ inch wide or less, sheaths very short. Scape very slender an inch long pubescent; raceme very short. Bracts cucullate ovate. Flowers $\frac{1}{8}$ inch across. Upper sepal lorate oblong laterals lanceolate, all keeled, yellow with red spots. Petals obcuneate yellow with a red spot at the base. Lip side lobes large oblong truncate, midlobe very short truncate entire spur short blunt rather thick saccate scrotiform obtuse. Column tall curved slender foot hardly as long. Anther long beaked.

Pahang, Kwala Tembiling.

Sarcochilus virescens, n. sp. Stem very short; Leaves lanceolate subacute $1\frac{1}{2}$ inch long $\frac{1}{2}$ inch wide or less. Raceme an inch long. Bracts ovate, flowers an inch across. Sepals ovate acute. Petals narrower lanceolate. All light green. Lip very short white, side lobes short rounded, midlobe represented by an orange callus, spur short broad conic, column short and thick, foot as long curved. Anther orange beak triangular.

Perak at Tapah. Collected by Mr. Aeria, flowered in the Botanic Gardens in Penang.

Podochilus densifolia. Stems over a foot long covered with close-set distichous leaves oblong obtuse, bases broad, an inch long $\frac{1}{2}$ inch broad, sheaths $\frac{1}{4}$ inch long. Racemes 2 terminal an inch long densely flowered to the base, rachis stout, bracts ovate reflexed. Flowers $\frac{1}{8}$ inch long, white. Sepals ovate obtuse nentum rather long. Petals ovate but little smaller. Lip ovate acute fleshy, an irregular fleshy callus in the middle with a thickened ridge running to the tip. Column short. Rostellum long deeply bifid acuminate. Anther lanceolate subacute.

Pahang, Tahan River, (No. 2370).

This plant has the inflorescence of one of the *P. pendulus* section, and indeed has been referred to that species, but the flowers are quite different and the callus on the lip is rather that of *P. cornutus*.

Zexine rupestris, n. sp. Whole plant 6 to 8 inches tall slender, leaves few lanceolate narrow blunt $\frac{1}{2}$ to $\frac{3}{4}$ inch long $\frac{1}{2}$ inch wide, scape slender pubescent. Flowers 2 terminal $\frac{1}{4}$ inch long white. Sepals ovate hairy, petals adnate to the upper sepal. Lip base saccate with 2 linear subulate processes inside, limb clawed with a terete minutely toothed claw blade bifid lobes oblong, truncate. Column short rostellum lobes linear blunt incurved. Capsules erect $\frac{1}{4}$ inch long.

Penang on rocks at the top of Government Hill on the way to Richmond pool, (Curtis 2823). A very slender little white-flowered thing remarkable for the long narrow claw of the lip which thus more resembles that of an *Anoectochilus*.

Goodyera lanceolata, n. sp. Stem slender 9 inches tall. Leaves lanceolate acuminate $1\frac{1}{2}$ inch long nearly $\frac{1}{2}$ inch wide. Scape $3\frac{1}{2}$ inches long pubescent few flowered. Bracts lanceolate acuminate $\frac{3}{4}$ inch long woolly pubescent. Laterals oblique acuminate woolly pubescent reddish. Petals adnate to upper sepal thin glabrous reddish.

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Lip base saccate adnate to the column by the edges glabrous within with a raised central keel and a tuft of digitate processes on each side. Apex of lip acuminate subulate column short. Anther very long acuminate. Pollinia $\frac{1}{2}$ inch long clubbed with a pair of caudicles. Caudicles connate about half way down. Rostellum long shortly bilid, lobes acute, stigma large with thin walls.

Selangor at the Gap on the Pahang track, (Curtis). A single specimen only was found. The plant is allied to *G. rubens*, Bl., *G. cordata*, Hook. fil.

Heteria parvifolia, n. sp. A slender plant of exactly the habit of *Zeuxine clandestina* Bl. Stem 2 inches long, leaves small lanceolate acute nearly sessile 1 inch long $\frac{1}{4}$ inch wide, sheaths $\frac{1}{4}$ inch long amplate, scape slender pubescent 5 or 6 inches tall with several rather long distant acuminate sheaths. Raceme 2 inches long. Flowers very small $\frac{1}{2}$ inch long appressed to the stem. Bracts narrow lanceolate acuminate nearly as long as the ovary, upper sepal adnate to petals ovate acuminate pubescent, laterals lanceolate acute. Lip base saccate with minute cylindric processes inside; apex lanceolate acute, sides at tip involute forming a tube not longer than the sepals. Column short dilated above. Rostellum arms nearly as long linear truncate. Anther with a long narrow beak.

Penang, Government Hill. I collected this plant at the same time as Mr. Curtis and myself got *Zeuxine rupestris*.

Descriptions of New Genera and Species of Hymenoptera taken by Mr. Robert Shelford at Sarawak, Borneo.

BY P. CAMERON.

This paper is a continuation of one describing the new genera and species contained in the Sarawak Museum and those captured by Mr. Shelford at Sarawak, published in the Journal of this Society, No. 37, January 1902.

SIRICIDÆ.

Xiphydria erythropus, sp. nov.

Black, the scape of the antennæ and the legs dark red, the wings dark fuscous-violaceous, the nervures and stigma black, the head and thorax closely rugosely punctured, the greater part of the vertex and the upper half of the front broadly; in the middle smooth and shining, ♂.

Length 16 mm.

Hab. Matang, 3600 feet.

Front coarsely rugosely punctured, the punctures running into reticulations in parts; its centre is furrowed; the furrow is punctured on either side, the punctured band becoming wider towards the apex. On the smooth part of the vertex, at the apex, is a deep transverse furrow; behind, in the centre, is a narrower, shallower longitudinal furrow. Face irregularly longitudinally striated; the clypeus is piceous; its apex is broadly roundly incised. Mandibles opaque, sparsely punctured; their teeth are smooth and shining, large and broadly rounded. Thorax coarsely rugosely punctured: the pleuræ more coarsely than the mesonotum and more or less reticulated; the propleuræ smooths and with the central depression bearing some stout keels. The central lobe of the mesonotum has a deep furrow in the centre which is stoutly transversely striated; on the apex in the centre are 4 longitudinal keels. The fore tarsi and the

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apical joints of the posterior are black. Except on the inner sides and apices of the lobes the median segment is closely punctured; the basal 4 segments are broadly furrowed across the base: these furrows are closely longitudinally striated.

Xiphydria melanopus, sp. nov.

Black; the wings fuscous violaceous: the head rugose, the vertex smooth, the thorax coarsely rugosely punctured and reticulated throughout; the lateral and central furrows on the mesonotum wide, closely transversely striated, the lateral curved and becoming wider towards the apex, ♀.

Length 17 mm.

Hab. Matang.

Mandibles at the base closely punctured and thickly covered with white hair. Middle lobe of mesonotum coarsely irregularly reticulated; the lateral lobes on the inner side less strongly and more irregularly reticulated, on the outer almost smooth; the furrows become gradually wider towards the apex. Scutellum rugosely, coarsely punctured, except at the apex, which is smooth and shining; it is longitudinally furrowed down the centre. Abdomen as in *X. erythropus*.

Apart from the difference in colour this species may be known from *erythropus* by the much wider, broader at the apex, more rounded and closely striated middle lobe of the mesonotum, by the front having a large deep round depression and by the thorax being more strongly punctured.

TENTHREDINIDÆ.

Monophadnus trichiocerus, sp. nov.

Black, shining; the clypeus, labrum, the apex of the femora, and the tibiae, the upper edge of the pronotum and the tegulae whitish-yellow; abdomen testaceous, darker towards the apex; the wings from the transverse basal nervure fuscous-violaceous, the stigma and nervures black, ♀.

Length 9 mm.

Hab. Matang.

Antennæ short stout: the basal joint testaceous, the apical joint rufous beneath; they are thickly covered with

stiff black hair. Centre of vertex bordered by wide and deep furrows, in front by a narrow oblique one; the front is deeply depressed, narrowly above, widely below. Apex of clypeus transverse. Labrum large, rounded in front. Mandibles pale yellow, rufous at the apex. The apical segments of the abdomen are narrowly edged with black at the apex; they are darker coloured than the basal and have a faint but distinct, violaceous tint. Legs covered with white hair; the apex of the hinder tibiæ black.

Selandria iridipennis, sp. nov.

Dark blue, the labrum, the coxæ, trochanters and the base of the tibiæ broadly white; the front wings fuscous, with a violaceous tint and highly iridescent; the stigma and nervures black; the hinder wings clear hyaline, ♀ and ♂.

Length 9 mm.

Hab. Kuching.

Antennæ thickly covered with stiff black hair. Front and vertex closely and distinctly punctured, the vertex not raised; the lateral furrows shallow, indistinct; on the centre of the front is a large wide fovea almost transverse in front, rounded behind, and having a smaller round fovea on either side. Clypeus closely and distinctly punctured. Labrum smooth. Base of mandibles closely punctured. Legs thickly covered with white hair; the claws bifid. The 1st transverse cubital nervure is widely interrupted in the middle.

CYNIPIDÆ.

Mesocynips, gen. nov.

Abdomen sessile, large, ovate, its middle as wide as the thorax, its basal 4 segments of equal width, the apical 2 longer. Antennæ stout, 13-jointed; they are placed near the top of the head. Eyes ovate, widely separated from the base of the mandibles, the malar space being longer than their length. Clypeus depressed, separated from the face, obliquely narrowed towards the apex, which is transverse. Mandibles stout, broad, bidentate, the teeth broadly rounded. Vertex stoutly, longi-

tudinally keeled; the front being also bordered below by a stout keel. The apex of the pronotum is sharply keeled; this keel is continued down the middle of the propleuræ obliquely, their apex being also keeled. Mesonotum and scutellum stoutly transversely striated. Scutellar fovea large, deep and stoutly keeled in the middle. The metanotum is bordered laterally by a stout keel and outside this, on the pleura, is a stout curved, irregular keel. Radial cellule short, the radius curved not reaching half way to the apex; the areolet is small, elongate, narrow, closed below by a thick pseudo-nervure; the cubitus reaches to the apex of the wing, it really issues from the radius, for a transverse cubital nervure can hardly be said to exist. The costal, median and submedian cellules are all distinct; the externo-median nervure is distinct, the discoidal nervure is distinct and reaches close to the apex of the wing, it is interstitial with the externo-median nervure.

The ovipositor is long and issues from the base of the abdomen, is straight and its sheaths are curved and project; the hypopygium is short and does not reach to the apex of the abdomen. Legs stout, pilose; the front calcaria are curved, the basal joint of all the tarsi is much the longer; the middle 3 are small; the apical large, but not quite so long as the basal one; the claws are large, curved, simple.

This new genus will form a new subfamily of *Cynipidæ*. It has the form of *Cynips* but differs from that in the abdominal segments being of almost equal length, and in the straight, not curved, ovipositor. The subfamily *Ibaliinæ* may be known from it by the long, cultriform abdomen, which has, as in our subfamily, the segments about equal in length. It has the alar nervures better developed than in the other subfamilies and in that respect resembles *Mesocynips*, whose systematic position is probably between the *Ibaliinæ* and the *Cynipinæ*.

Mesocynips insignis, sp. nov.

Ferruginous-yellow, the yellow tint more noticeable on the sides; the flagellum of the antennæ infuscated, paler towards the apex; the mesonotum and the basal half of the scutellum

strongly, sharply transversely striated; the wings dark smoky-fuscous; the base to the transverse basal nervure and above to the base of the stigma bright yellow: the apical nervures fuscous-black; the basal bright yellow, ♀.

Length 10 mm.

Hab. Kuching.

Head shining, sparsely punctured; the middle of the face raised and more closely and distinctly punctured; the face, front, vertex and occiput covered, but not thickly, with longish pale fuscous and white hairs. Apex of the mandibles broadly, deep black. Thorax smooth and are shining; the pro- and meso-sparsely, the meta thorax thickly covered with long pale hair. Centre of metanotum smooth; the sides somewhat shagreened. Abdomen shining; the back and apical segments covered with long pale fuscous hairs; the penultimate segments punctured; the last much more strongly and deeply punctured. Femora sparsely, the tibiæ and tarsi thickly covered with pale hairs; the claws blackish.

This species is probably identical with "*Cynips*" *insignis*. Smith, described, Proc. Linn. Soc. 1857, p. 117, from Sarawak. It is in no sense a *Cynips* in the modern meaning, and belongs to the parasitic branch of the family. To prevent the making of a synonym I have used Smith's name in case an examination of Smith's type would prove it to be identical with the species I have described.

CHALCIDIDÆ.

Leucospis erythrogastra, sp. nov.

Black, the ventral surface and apex of abdomen rufous mixed with yellow; a large broad mark on the inner orbits, rounded at the top and bottom and roundly curved inwardly on the inner side, a large somewhat heartshaped mark—narrow above incised below—below the antennae, a smaller, somewhat similar mark below it, a line, dilated at the sides, on the base of the pronotum, a slightly broader one, not reaching to the edges, on its apex, 2 oblique irregularly oval marks on the centre of the mesonotum, a longish, broad line on its sides, slightly incised on the innerside, the sides of the scutellum from near the base and

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its apex more broadly, a large curved line on the post scutellum, a large mark on the mesopleuræ narrowed and rounded below, its top at the base and apex—the apex more widely—obliquely narrowed, the greater part of the base of the metapleuræ—the mark straight at the base, the apex rounded and its top part wider than the lower, a large curved—its top rounded—oblique mark on either side of the 1st abdominal segment, a broad transverse line on the 2nd, a large curved one on the 3rd, which is dilated roundly backwards at the side and is then continued along the lower edges to the base of the segment, 2 small oblique marks on the top of the 4th, yellow; the remaining segments and the ventral surface rufous, mixed slightly with yellow. Legs yellow, the fore-femora broadly above, the middle broadly, irregularly at the base, a large curved mark on the outside of the hinder-narrow at the top becoming gradually wider towards the bottom—the lower edge and the teeth, the hinder tibiæ broadly below on the inner and outer sides and their calcaria, deep black. Wings almost hyaline, the fore pair infuscated broadly in front, the nervures black.

Length 11 mm. ♀

Hab. Kuching.

Except the front, the entire head and body is strongly and closely punctured; the face and clypeus are more closely and finely punctured than the rest; the front above the antennæ is smooth and shining; the scutellar depressions are strongly, distinctly, but not very closely, striated; the lower part of the pro- and mesopleuræ depressed and smooth and shining, this part on the mesopleuræ being obscurely finely striated around the edges. There are 7 teeth on the hinder femora: the basal one is short, blunt and indistinct; the 2nd is not much longer, but more distinct and broader; the middle 3 are very much larger, longer and more widely separated; the 6th is distinctly shorter than the 5th; and the 7th is shorter and less distinct than the 6th. The hinder tarsi are rufous: the 4 anterior dark yellow; the hinder coxæ are rufous on the under side at the apex and have there a yellow mark. The ovipositor reaches to the apex of the scutellum.

Megacolus apicipennis, sp. nov.

Black, the tarsi dark rufo-testaceous; the basal half of the

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wings to the ulna smoky-fuscous, the ulna fuscous, the cubitus black, the apex of the wings milky-white; the hinder femora with 7 teeth; the ovipositor stout, two-thirds of the length of the body, ♀.

Length to the commencement of the ovipositor 10 mm.; the ovipositor nearly 4 mm.

Hab. Kuching.

Head and thorax coarsely, closely rugosely punctured; the front is stoutly keeled down the middle and is stoutly transversely striated on either side of the keel; the face is sparsely covered with glistening white hair. The upper part of the propleuræ is smooth and is depressed at the base, the lower is irregularly striated. The basal third of the mesopleuræ is depressed and is irregularly, widely striated. The base of the pronotum is obliquely depressed and is irregularly transversely striated. The apex of the scutellum broadly projects in the middle and is there roundly incised. Median segment coarsely reticulated; at the base on the sides is a large area roundly narrowed at the apex; between them are 3 areas of which the central is the larger, and it is widened at the apex; on the sides of the segment is a large projection, wide at the base, roundly narrowed towards the apex; the apex of the segment triangularly projects. The basal three teeth on the base of the femora are short, broad and bluntly rounded; the others are more distinct; the apical two are closer to each other than the pair in front of them and are less prominent.

Megacolus rufiventris, sp. nov.

Black; the abdomen bright rufous; the tarsi, four front knees and the apices of the 4 front tibiæ rufo-testaceous; the hinder femora with 6 irregularly separated not very prominent teeth; the wings hyaline, with a faint fulvous tinge; the nervures dark fuscous; the ovipositor black, very stout, as long as the abdomen, ♀.

Length 9; ovipositor 4 mm.

Hab. Kuching.

Head and thorax coarsely rugosely punctured; the pro- and mesopleuræ closely reticulated; there is a smooth band at

the base of the latter which has on the upper part, 7 keels (the lower 3 separated from the upper) and below are 3 more widely separated longitudinal keels. Front stoutly keeled down the centre and closely transversely striated. Pronotum transversely striated at the base; on its apex is a smooth narrow band. The projecting apex of the scutellum is prominent and ends in two rounded lobes. Metanotum coarsely irregularly reticulated; its sides near the base, project into a stout, sharply pointed tooth and there is a shorter one near the middle. On the apex of the basal third of the hinder femora is a short tooth somewhat triangular in shape, followed by an indistinct one at some distance; following this, and separated by a less distance, is a sharper, longer; more distinct one, at about the same distance from this is a stouter one, immediately behind this a short blunt indistinct tubercle-like one, followed on the apex by 2 stout keels of which the hinder is somewhat the larger. Tegulae rufous. The head, thorax and legs are covered with a silvery pile.

Closely allied to *Megacolus* is the following new Indian genus.

Megachalcis, gen. nov.

Antennae placed over the base of the clypeus, 11-jointed, the 2nd joint cup-shaped, the 3rd much longer and narrower than it. Scutellum large, roundly convex, its apex transverse. The sides of the metanotum project at the base above and have a stout tooth in the middle. The base of the mesosternum has a stout tooth in the centre; the fore coxae have a rounded leaf-like expansion on the apex above. Hind femora regularly toothed. Basal abdominal segment longer than all the others united; spiracles on the 3rd large; the last large, elongate and forming a sheath for the ovipositor, which is stout and twice the length of the abdomen.

The occiput is margined, more sharply above than on the sides. Base of metanotum areolated. Five segments are on the abdomen as seen from the side, but only four from above. Sheaths of ovipositor stout, broad, pubescent and round on the apex. Hinder coxae nearly as long as the femora. Pronotum large, roundly produced in the middle at the base.

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Comes nearest to *Megacolus*, Kirby, which differs from it in having the antennæ 12-jointed and in the scutellum ending in a raised, bilobate plate behind. The 1st abdominal segment is, in *Megacolus*, half the length of the remainder.

Megachalcis fumipennis, sp. nov.

Black; the 4 front tarsi and the hinder tibiæ piceous, the hinder tibiæ ferrugineous; the wings smoky, the nervures deep black; hinder femora with 10 teeth of nearly equal size, ♀.

Length 12; terebra 10 mm.

Hab. Khasia (coll. Rothney).

Scape of antennæ, head, median segment and sides of abdomen thickly covered with silvery pubescence; the tarsi on the underside are thickly covered with stiff pubescence and bear, on the apices of the joints, stiff spines. Sides of the head in front coarsely rugosely punctured, the punctures running into reticulations; the vertex closely punctured; the outer orbits bear shallow, scattered punctures. Apex of clypeus roundly, but not deeply, incised; the part between the antennæ raised, transverse below. Pro- and mesonotum rugosely punctured, the punctures running into reticulations. The scutellum is more widely reticulated; it is flat above; at its base, laterally, the mesonotum forms two large rounded masses, opposite the tegulæ. The base of the median segment is flat, smooth; on the middle are five stout, longitudinal keels; the outer side is deeply foveate. The apex of the segment has on the top a large, deep, fovea, rounded behind, transverse below; below this are 2 or 3 irregular reticulations; the sides project largely and have, shortly beyond the middle, a large, somewhat triangular tooth. Propleuræ irregularly reticulated behind; the apex below and the lower part depressed, the mesopleuræ deeply and widely depressed, smooth, obscurely and finely striated in the middle. Metapleuræ regularly reticulated. Abdomen smooth and shining at the base, the 2nd segment broadly in the middle and the others entirely and more strongly punctured.

Epistenia longicollis, sp. nov.

Purple mixed with green and blue; the flagellum of the

antennæ black, the 4 anterior trochanters, femora, tibiæ and tarsi, the hinder trochanters, base of femora, apex of tibiæ and base of tarsi narrowly, rufous; the flagellum of the antennæ black, the scape for the greater part green; the wings hyaline, the nervures and stigma dark fuscous. ♀.

Length 12 mm.; ovipositor 2 mm.

Hab. Kuching.

The clypeus and the basal half of the mandibles are dark rufous, the latter covered with longish hair. Face and front for the greater part golden; the face covered with curved striæ, which are finer and closer on the inner half of the malar space, the latter being clearly separated from the outer part, which is minutely and finely striated. The front is rugose between and above the antennæ; this central part is wedge-shaped and bounded by the wide antennal furrows; the part between this and the scape is blue and finely transversely striated. Pronotum broadly depressed in the centre; the sides broadly rounded and finely and closely transversely striated; the pleuræ are finely and closely covered with curved striæ. The middle lobe of the mesonotum irregularly transversely striated; its base is dark blue; behind this is a green band; the rest is dark purple, except for a green band at the tegulæ; the apex of the middle lobe is transversely striated, except round the edges; in the centre are two curved, deep furrows. Scutellum somewhat strongly and closely longitudinally striated; it is dark purple, with a blue band on the base. Median segment green; the centre purple; this purple part is narrow at the base and becomes gradually and roundly wider towards the apex; it bears 4 or 5 stout, irregularly curved keels; the parts bounding this are stoutly striated and are raised above the sides, which are finely and closely rugose. Mesopleuræ for the greater part green, finely, closely and irregularly striated; the lower part is clearly separated off and is closely irregularly reticulated, except at the base which is raised and finely and closely punctured. The base of the metapleuræ is almost smooth above; below covered with fine curved striæ; above is a deep, distinct curved crenulated furrow. Abdomen dark purple the basal five segments, above and below, with narrow, longish rounded green lines on the outer edges.

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The fore coxæ are for the greater part purple; the fore femora have a large green mark on the top; the apices of the 4 front femora are paler than the rest of them; the 4 hinder tarsi are dark testaceous.

E. imperialis, Sm., from Sarawak may be known from this by the ovipositor being two-thirds of the length of the abdomen and by the legs being black. In our species the anterior ocellus is larger than the two posterior and is placed in front of them about double the distance these are separated from each other; the ocellar region is an elongated oval and is clearly separated from the eyes; the vertex behind them is depressed. The prothorax is long, two-thirds of the length of the mesothorax; the head is almost double its width; the metathorax is fully half the length of the scutellum; the incision on the apex of the 3rd dorsal segment is better marked than it is on the basal two.

EVANIIDÆ.

Evania malayana, sp. nov.

Black; the palpi white; the wings hyaline iridescent, the nervures and stigma black; the mandibles with a testaceous band behind the teeth: the face with a small raised point in the centre, ♂.

Length 11 mm.

Hab. Kuching.

Face, clypeus and mandibles thickly covered with white pubescence, smooth and shining. Front irregularly striated; the striæ more or less intersecting and forming narrow elongated, irregular reticulations; in the centre is a moderately stout longitudinal keel. Hinder ocelli separated from each other by not quite half the distance they are from the eyes. Malar space closely and finely striated, the striæ obliquely curved. The central lobe of the mesonotum bears shallow, irregular punctures; the scutellum is less distinctly and more finely punctured; meta-notum closely reticulated; in the centre the reticulations are closer, longer and narrower; laterally larger and rounder. At the apex the propleuræ bear some shallow elongated foveæ; near the bottom the meso- bear a broad, somewhat oblique band of punctures; the meta- closely and almost uniformly reticulated.

The metasternal keel is sharply raised; the fork is stout, short and broad, the sides straight, the apex bluntly rounded. The 2nd transverse cubital nervure is obsolete; the cubitus distinct; the lower part of the apical abscissa is rounded: the upper straight and oblique. The petiole above between the middle and apex, is irregularly longitudinally striated; the sides more stoutly obliquely striated. Tibiæ and tarsi thickly covered with short stiff black pubescence and more sparsely with short black spines; the calcaria are black; the front tibiæ and base of tarsi are pale testaceous in front.

Evania violaceipennis, sp. nov.

Black; the scape and the basal joints of the flagellum beneath, the mandibles, except the teeth and the 4 anterior femora and tibiæ in front, pale testaceous; the posterior tarsi except the apical joint, white; the wings uniformly dark violaceous; the nervures and stigma black. ♀.

Length 11-12 mm.

Hab. Kuching.

Face and clypeus opaque, alutaceous: the apex of the clypeus rounded; the malar space alutaceous; they are all thickly covered with silvery pubescence. Front longitudinally striated throughout; the striae all distinctly separated; the central is the stouter. The hinder ocelli are separated from the eyes by almost double the distance they are from each other. The middle lobe of the mesonotum is indistinctly, irregularly reticulated. The part at the sides of the scutellum behind is stoutly, obliquely striated. The metanotum is closely, rather strongly, irregularly punctured, except at the apex which is smooth. Propleuræ almost entirely smooth; the meso- smooth, indistinctly punctured below, above with a raised, slightly oblique, band of stout striae; the meta- are stoutly, regularly reticulated. The tibiæ are thickly covered with stiff black hair and sparsely with black spines. The apical abscissa of the radius is roundly, broadly curved inwardly; the first recurrent nervure is received distinctly beyond the transverse cubital; the 2nd transverse cubital nervure is obsolete. The sternal keel is stout; the metasternal process is stout, the forks diverge outwardly,

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are stout, roundly curved and bluntly pointed at the apex. Petiole smooth above; its apical half laterally stoutly, obliquely striated.

STEPHANIDÆ.

Foenatopus fuscinervis, sp. nov.

Black; the head dark red; the vertex blackish; the basal joints of the antennæ pale rufous; the wings clear hyaline; the nervures and stigma pale fuscous; the abdominal petiole twice the length of the following joints united; the prothorax twice the length of the mesothorax, ♂.

Length 13 mm.

Hab. Kuching.

The scape of the antennæ is not much longer than the 2nd joint, which is slightly more than one half the length of the 3rd; the 4th is as long as the 2nd and 3rd united. The apical three frontal tubercles are stout, narrowed, but not sharply, above; the hinder pair are smaller and more rounded. Face closely rugosely punctured; its sides finely and closely transversely striated. Vertex closely, distinctly transversely striated and indistinctly furrowed down the middle, the furrow not breaking the striæ. The inner orbits are distinctly margined; the outer are pale yellowish. Prothorax closely and rather strongly aciculated, except at the apex which is testaceous in colour; there is a curved, not very stout keel on the apex; a stout keel runs between the tegulæ; the middle of the mesonotum is deeply depressed, the depression with some transverse striæ, and it is rounded at the base and apex. The base of the metanotum is widely depressed; in the centre are 2 stout straight keels; outside these is a thinner one; outside these a stouter oblique one and the edges are also keeled. The rest of the segment is stoutly reticulated, except the lower part of the metapleuræ, which is smooth, except for 4 stout, slightly oblique keels. Mesopleuræ sparsely punctured at the base and apex. Petiole very long and slender, closely striated; the sides, except on the apical fourth, furrowed; the sides of the 2nd and 3rd segments are testaceous. The alar stigma is long, nearly as long as the radial nervure; it is pale in the centre, pointed at the apex from

where the radius leaves it; the radius has the basal abscissa oblique and curved; the apical is straight and is about one fourth longer than it. The 4 anterior coxæ, trochanters, tibiæ and tarsi are testaceous; the basal half of the hinder femora is coarsely rugosely striated; there is a blunt, broad, not prominent, tooth behind the middle of the hinder femora; a stout one beyond the middle, a smaller one nearer the apex and 3 short teeth between these which are fuscous below.

Stephanus Ceylonicus, sp. nov.

[Black, a pale spot below the eyes; the 4 front legs piceous; the wings clear hyaline; the nervures and stigma black; the petiole as long as the rest of the abdomen united; the hinder femora with 2 teeth: the ovipositor broadly white at the apex. ♀.

Length 28 mm.

Hab. Trincomali, Ceylon. (Yerbury).

Antennæ black; the 2nd joint of the flagellum is distinctly shorter than the 3rd, which is slightly shorter than the 4th. Vertex closely covered with stout, curved striæ, which are stouter and more regularly curved before than behind; the 3 front teeth are stout and of nearly equal size, the hinder are almost obsolete. Face irregularly transversely rugose; above the punctures run into curved striæ. The narrowed basal part of the pronotum is closely, stoutly, transversely striated, but only sparsely at the extreme base; at the end of this is an impunctate space, the apex has a band of large deep punctures in the middle; the sides have some scattered, deep punctures. Scutellum impunctate. The depression at the base of the metanotum bears stout longitudinal keels; the part behind this is covered with round clearly separated punctures; the apex is irregularly, transversely reticulated. Propleuræ covered with stout, oblique striæ; the meso- almost impunctate; the meta-smooth, below with stout curved striæ, which form almost reticulations. Petiole closely striated. There are 2 large, widely separated teeth on the hinder femora, the hinder being slightly the larger; there is a short, broad, bluntly rounded tooth, immediately behind the posterior large one: and this is followed by a much smaller one.

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The wings have a steel-coloured iridescence; all the nervures are complete; the basal abscissa of the radius is distinctly shorter than the apical; it is straight, not curved, and is slightly angled near the base. The ovipositor and abdomen appear to be stouter than usual; the former is as long as the body.

In Schletterer's arrangement (Berl. Ent. Zeits. xxxiii. 117) this species would come near *S. hematipoda*, Mont.]

BRACONIDÆ.

BRACONINÆ.

Iphiaular, Foerster.

i.—*Wings fuscous, the head, more or less of the thorax, and the fore legs, red.*

Iphiaular Shelfordi, sp. nov.

Black, shining, the head, pro- and mesothorax, the front legs and the middle coxæ, trochanters and femora, red: the 1st, 2nd and basal half of the 3rd abdominal segments strongly longitudinally striated; the wings fuscous, the under side of the stigma, the upper half of the 1st cubital and the base of the radial cellule to the end of the stigma, orange-yellow. ♀.

Length 15 mm.; terebra 95 mm.

Hab. Kuching, February.

Antennæ black, shorter than the body; the scape 3 times longer than broad, of equal width throughout; the 3rd about one-third longer than the fourth. Front of vertex smooth and shining, their sides sparsely haired. Face strongly punctured, except in the centre above the clypeus, where it is depressed. Clypeus smooth, bare, except at the apex, twice broader than high, its sides above broadly rounded. Mandibles rufous, black at the apex, the middle closely and finely striated. Metanotum covered with black hair; its apical slope rather strongly longitudinally striated. The raised apical part of the petiole is depressed and smooth in the middle; the sides are stoutly, irregularly striated; the apical half of the lateral depression is stoutly transversely striated. The 2nd segment is closely, strongly longitudinally striated except on the

basal lateral depressions and in the centre at the apex; the basal area is finely and closely longitudinally striated; it is twice longer than its greatest width and becomes gradually narrowed towards the base and apex, the apical part being almost twice the length of the basal. Radial cellule long and narrow; the 2nd cubital is, on the lower side, nearly 3 times the length of the first and is distinctly longer than the 3rd. There is a small fulvous cloud on the base of the fore wing on the apical side. The ovipositor has the sheath thickly haired at the base and has a broad white band near the apex.

The legs are only shortly and sparsely haired; the parapsidal furrows are deep; the scutellar depression is shallow and irregularly striated; the hypopygium is large and projects beyond the cerci and is brownish in colour.

Comes near to *I. insignis*, Sm. sec. Szepligeti Termész. Füzetek, xxiv, 372, but that species is larger (20 mm.) and has the ovipositor shorter compared with the body; has the 3rd and 4th segments striated, the 3rd antennal joint hardly longer than the 4th, the scape only twice longer than broad, etc.

Iphiaular Kuchingensis, sp. nov.

Length 12 mm.; terebra 4.5 mm.

Hab. Kuching, February.

Agrees in colouration with *I. Shelfordi* but is smaller, more slenderly built and has the ovipositor shorter compared with the body, the radial cellule is not fulvous on the basal part, the apex of the petiole is not distinctly transversely striated; its central apical part is more strongly and distinctly longitudinally striated; the area on the base of the 2nd segment is not so distinctly defined and is continued as a keel to near the apex of the segment, there being no keel on *Shelfordi*; there are on it two lateral oblique keels bordering and limiting the basal half of the segment; and the apical two-thirds of the ovipositor are white.

Scape of antennæ cylindrical, not hollowed, becoming gradually wider towards the apex; its length about twice of the width at the apex. Face, except immediately over the centre of the clypeus, closely and coarsely punctured and covered with

stiff black hairs; the clypeus smooth, except on the apex, where there is band of black hair; above it is broadly rounded and has a distinct margin. Mandibles black at the apex; the base bare, the middle covered with long hair. Metanotum thickly covered with long black hair; on the apex in the middle are some irregular striæ. On the apex of the petiole are 3 irregular longitudinal keels, with one or two small ones; the 2nd segment is strongly striated; the striæ are mostly oblique and curved; the central keel is bordered by short round ones; the basal half of the 3rd segment is strongly, longitudinally striated; the remaining segments smooth. The fore legs are rufous-like the thorax; the middle femora and base of tibiæ of a darker rufous colour. The stigma is rufous below; there is an obscure fulvous cloud in the 1st cubital cellule; the 2nd cubital cellule is shortly, but distinctly longer than the 3rd.

Iphiaulax reticulatus, sp. nov.

Black, head, pro- and mesothorax and the anterior legs rufous; the scape below and a line on the middle femora dark rufous; the wings dark fuscous; the basal 4 abdominal segments closely longitudinally striated; the basal plate on the 2nd segment large, its length the width of the base, smooth; the apex obscurely finely striated; the keel extends to the apex; the raised part on either side of it is coarsely reticulated; the sides of the apex are more closely reticulated; at the base and middle coarsely obliquely striated. ♀.

Length 18; terebra 21 mm.

Hab. Kuching, February.

Scape of antennæ long, as long as the 4 following joints united; the 3rd joint is not much longer than the 4th. Head smooth and shining, the face covered with black hair; the clypeus shagreened, projecting, rounded behind. Front not depressed, a deep furrow with wide oblique sides above. Mandibles rufous, their teeth black. Middle lobe of mesonotum distinctly raised and separated from the lateral; its base bluntly rounded. There is an elongated fovea on the apex of the metanotum, bounded by a V-shaped keel below. Tibiæ and tarsi covered with moderately long hair. The raised part of the

petiole has a keel in the centre: it is raised and rounded at the base and does not extend to the apex; the apical half, on either side of it, is irregularly reticulated; second segment stoutly irregularly reticulated: the depression is stoutly, closely obliquely striated; the raised outer apical part is closely rugose and with some striae. The 3rd and 4th segments are close, uniformly longitudinally striated. Wings, except for a narrow oblique cloud at the base and one below the 1st cubital cellule, dark fuscous, with a slight violaceous tinge; the 2nd cubital cellule above is slightly longer, below a little shorter than the 3rd.

Iphiaulax patrous, sp. nov.

Black: the scape of antennae, head, thorax and forelegs ferruginous, the middle femora piceous; the wings fuscous; the 2nd 3rd and 4th abdominal segments closely longitudinally striated; the 2nd segment reticulated in the middle, the keel broad, extending to the apex: the dilated basal part broad at the base, becoming gradually narrowed to near the middle of the segment: its base smooth, the rest closely covered with twisted longitudinal striae. Sheath of ovipositor densely pilose, broad: the apical third white: it is twice the length of the body. ♀.

Length 13 mm.

Scape of antennae long, of equal width, longer than the 2nd and 3rd joints united; the 3rd joint shortly, but distinctly, longer than the 4th. Face closely and distinctly punctured, except in the middle, which is raised and smooth. Clypeus punctured below: it becomes obliquely narrowed towards the top which is transverse and is not dilated like the lower part. The ocellar region and the middle of the front depressed; the vertex sparsely covered with long hair. The raised part of the petiole is smooth and depressed at the base and has a shallow furrow in the middle; the apex has a keel down the middle and bears some stout, mostly transverse, keels. The lateral depression on the base of the 2nd segment is large, irregularly striated in the middle, narrowed at the base and with a large fovea at the base and on either side at the apex: the base of the 3rd segment is smooth laterally at the base and depressed there especially at

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the sides; the middle of the segment is depressed and striated. The 4th segment has a large, smooth depression on the base at the sides. The legs are covered with black hair, which is longest on the posterior pair. The 2nd cubital cellule is slightly shorter than the 3rd.

This species is closely related to the species I have, with some doubt identified as *B. foveatus*, Sm. This agrees with it in colouration, but is larger and more stoutly built (16 mm.): the 2nd cubital cellule on the top is equal in length to the 3rd; the apex of the petiole is not stoutly, irregularly transversely striated; the lateral depressions on the 2nd, 3rd and 4th segments are larger and deeper, the keel on the 2nd segment is more distinctly defined and the longitudinal striation on the abdomen is stronger.

Iphiaulax mareotis, sp. nov.

Black, the head, pro- and mesothorax and the lower half of the metapleuræ ferruginous; the anterior legs, the middle coxæ, trochanters and femora rufous, the middle tibiæ dark rufous; the wings dark fuscous, the stigma and nervures black; the 1st and 2nd abdominal segments, the greater part of the 3rd and the 4th and 5th broadly in the middle longitudinally rugose; the furrows on the 2nd, 3rd and 4th segments are crenulated; the keel on the 2nd segment extends to the apex; the plate is longish and is stoutly longitudinally striated. ♂.

Length 15 mm.

Hab. Lingga.

Face thickly covered with long hair; its centre bare, smooth and shining; its lower sides have a yellowish tint. Front deeply excavated laterally; the hinder ocelli each bordered by a deep curved furrow behind. Clypeus transverse in the middle above, its sides rounded. Metanotum thickly covered with black hair. The petiole is more roundly convex than usual; the sides of the 2nd segment are not depressed at the base; the 3rd to 6th segment have a large roundish fovea on the sides near the middle, the foveæ becoming successively smaller. There is a faint curved cloud in the 1st cubital cellule at the base and a clearer, smaller pyriform one below the lower part of the 1st transverse cubital nervure; the 2nd abscissa of the radius is slightly, but distinctly, longer than the 3rd.

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Iphiaular Wallacei, sp. nov.

Black, the head, scape of antennæ, thorax and 4 front legs, ferruginous; the wings uniformly dark fuscous, the face with 2 deep short furrows in the centre immediately below the antennæ; the petiole with a narrow longitudinal keel down the centre, almost entirely smooth; the 2nd and the basal half of the 3rd segment closely longitudinally striated; the keel is broad at the base, becomes gradually narrowed to the middle, is closely longitudinally striated and extends to the apex of the segment. The suturiform articulation is deep, closely longitudinally striated and with both lateral branches deep, narrow, straight, oblique and striated. Sheaths of the ovipositor broad and thickly covered with longish black hair. ♀.

Length 15 mm.; terebra 18 mm.

Hab. Kuching.

Antennæ originating from prominent, almost biarticulate, tubercles; the scape longer than the 2nd and 3rd joints united; the 3rd and 4th joints are equal in length. Front hardly excavated; there is a narrow keel between the antennæ; the raised part, separating the furrows below the antennæ, becomes gradually narrowed above. Face in the centre smooth, the sides punctured sparsely and pilose. Clypeus depressed; the top transverse, the sides rounded. There is a short stout keel between the scutellum and post scutellum. Petiole with an irregular band of fine striæ before the middle. The depressions on the base of the 2nd segment are narrow, deep, oblique. The furrow on the 3rd segment is smooth. The hinder tibiæ are deeply grooved on the outer side from near the base to near the apex.

The 2nd abscissa of the radius is as long as the third; the apex of the middle tibiæ and their tarsi are blackish; the metanotum is broadly blackish; the hypopygium does not extend beyond the apex of the dorsal segment; the 2nd segment is square and is longer than the 3rd.

This is a broader and stouter insect than any of the other species here described.

Iphiaular syleus, sp. nov.

Black, the head, pro- and mesothorax and the front coxæ, trochanters, femora and tibiæ, rufous; the wings dark fuscous;

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the apex of the petiole with a stout keel down the centre and 2 or 3 oblique lateral ones; the area on the 2nd segment extends to the middle, becomes gradually narrowed, has raised sides and is irregularly striated; the part bordering it irregularly, stoutly reticulate; the 2nd, 3rd and basal half of the 4th closely, longitudinally striated; the ovipositor thickly pilose, the apical fourth white. ♀.

Length 11 mm.; terebra 14 mm.

Hab. Kuching, February.

Scape of antennæ about 3 times longer than broad; the 3rd joint about one fourth longer than the 4th and about twice the length of the 2nd. Face raised in the centre, flat, impunctate, transverse below, rounded above; the cheeks distinctly punctured. Clypeus raised, narrowed above; its apex as long as its length from the top to the bottom. Palpi blackish. Front not deeply depressed, the depression not including the ocelli. Scutellar depression narrow, closely crenulated, the central part of the 2nd segment is stoutly, transversely irregularly reticulated on the inner side; the outer and the apical parts longitudinally striated; the base laterally is smooth, shining and is not depressed; the outer sides are depressed and stoutly obliquely striated. The two transverse furrows are deep and closely striated; the outer furrow on the 2nd segment is long, wide, distinct and closely striated; that on the third is more curved and striated like the rest of the segment; the basal part is smooth; the curved furrow on the 4th is smaller, narrow, striated, the basal part being also striated. The 4th segment is closely striated to near the apex.

This species is not unlike *I. pitrous*, but that has the scape red; the raised central part of the 2nd segment has its sides curved inwardly and is narrower at the apex, the lateral furrows are not distinctly bordered behind by furrows and the median segment is black.

ii.—*Head, more or less of the thorax and fore legs red. the wings fuscous, yellow at the base.*

Iphiaulax sadyates, sp. nov.

Black, the head, thorax and 4 anterior legs ferruginous; the anterior wings yellowish, suffused with fuscous, the posterior

yellow, with the apical third and the lower two-thirds fuscous; the basal three segments of the abdomen coarsely longitudinally striated; the basal half of the four in the centre more finely, and the base of the 5th still more finely, striated; the 4th and 5th segments with a crenulated curved furrow at the base, the plate on the base of the second segment is small, smooth and shining; a narrow, indistinct keel leads from it to the centre. There is a cloud on the lower side of the 1st cubital cellule, which is continued downwards along the recurrent nervure on the upper half and along the cubital nervure; the 2nd abscissa of the radius is longer than the 3rd. ♂.

Length 16 mm.

Hab. Santubong, 2600 feet.

Antennæ longer than the body; the face thickly covered with long hair; the clypeus rounded above. The petiole is stoutly keeled in the middle; the striæ on the sides are stout, irregularly curved and more or less broken. The sides are depressed and irregularly striated; the striæ along the keel run into reticulations. The suturiform articulation and the keel on the third segment are stoutly longitudinally striated; that on the 4th is less strongly; there are no apical transverse furrows.

The scape of the antennæ is rufous above; it is slightly more than twice longer than wide; the 3rd and 4th joints are equal in length.

Iphiaulax varipennis, sp. nov.

Pale yellow, the back of the abdomen, the vertex, the middle of the front broadly, a mark, rounded on the top, in the centre of the face, the sides of the mesonotum and a large mark in its centre at the base, an irregular mark on the base of the metanotum, the mesosternum, a curved mark, narrowed behind, on the centre of the mesopleuræ, two marks on the prosternum and the hinder legs, black. Wings with the basal half, the 1st cubital cellule and a narrow curved spot, dilated below, underneath it, yellowish-hyaline; the rest of the wing dark fuscous, the hinder wings yellowish hyaline to beyond the middle, the apex dark fuscous, the band on the lower side extending to near the middle; the basal half of the stigma is orange-yellow. ♀.

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Length 13 mm.; terebra 4 mm.

Hab. Matang, 3600 feet.

Antennæ longer than the body, black; the 3rd joint hardly longer than the 4th and twice the length of the 2nd; the scape about 3 times longer than wide and thickly pilose. Head and thorax smooth and shining. The top of the petiole stoutly, irregularly and not very closely longitudinally striated; its sides below pale orange yellow; the centre of the 2nd segment is stoutly irregularly longitudinally striated; the suturiform articulation is crenulated in the middle; the apical segments are narrowly banded with white on the apex.

The ventral surface is marked laterally with black spots; the abdomen is about twice the length of the thorax; the 2nd abscissa of the radius is shorter, but not much, than the 3rd.

Iphiaulax portius, sp. nov.

Head and thorax ferruginous, the ocellar region black, the metanotum infuscated; the 4 front legs rufous-yellow; the wings to the stigma yellowish hyaline, the rest fuscous, the base of the stigma yellow; the hinder wings yellowish to the middle below, above beyond the middle; the greater part of the 2nd abdominal segment coarsely longitudinally striated; the 3rd less strongly and distinctly to near the apex; the plate on the 2nd segment large, triangular, its keel slightly shorter than it; the part surrounding it depressed. ♀.

Length 9 mm; terebra 7 mm.

Hab. Kuching.

Antennæ black; the scape triangularly projecting on the apex below; the 3rd joint, shortly but distinctly, longer than the 4th, front and vertex smooth and shining; the face closely rugosely punctured; the clypeus depressed, almost smooth, rounded above, transverse below. The petiole behind the basal slope is irregularly punctured; near the apex it is much more strongly and distinctly punctured; the band is prolonged in the middle and does not reach to the apex, which is smooth. The second segment is smooth in the middle at the apex; the suturiform articulation is crenulated; the furrows on the 3rd and 4th segments are also crenulated, but not strongly. The recurrent

nervure is not quite interstitial, being received shortly behind the transverse cubital.

Iphiaulax hautesus, sp. nov.

Ferruginous, the abdomen, antennæ except at the base, and the hinder legs, black; the fore wings to the transverse basal nervure, the 1st cubital cellule and an oblique spot on the upper edge of the 2nd cellule, yellowish-hyaline; the petiole keeled in the centre; the 2nd and 3rd cubital cellules closely longitudinally striated, the basal plate on the 2nd segment elongated, the sides and centre keeled; the keel extends to the apex of the segment. Face sparsely punctured; there is a square depression below the antennæ. Parapsidal furrows distinct. Petiole broad, as long as the 2nd segment; its lateral keels indistinct at the base. The keel bordering the lateral depression on the 2nd segment is narrow, straight and oblique; the part bordering it on the outside is closely obliquely striated, the apical segments are narrowly lined with pale yellow. Legs moderately pilose; the middle tarsi infuscated.

Length 16 mm.; terebra 17-18 mm.

Hab. Kuching.

Antennæ shorter than the body; the basal two joints obscure rufous: the 3rd and 4th joints are about equal in length; the 2nd abscissa of the radius is slightly shorter than the 3rd; the transverse median nervure is not quite interstitial, being received in the discoidal cellule, but almost touching the transverse basal; and therefore differs from the typical *Braconinae* in which it is completely interstitial. In other respects the species is a typical *Iphiaulax*.

iii.—*Head, thorax and fore legs red; the wings yellow at the base, hyaline at the apex.*

Iphiaulax crassitarsis, sp. nov.

Head, thorax, anterior legs, the greater part of the middle emora and tibiae and the scape of the antennae, ferruginous; the basal half of the fore wings yellowish hyaline, the apical clear yellow, the hinder wings fuscous, hyaline at the apex; abdomen short, ovate, broader than the thorax, closely, but not very distinctly or strongly longitudinally striated. ♀.

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Length 8 mm.; terebra 6 mm.

Hab. Kuching.

Scape of antennæ fully three times longer than wide; its apex below sharply projecting; the 3rd joint is distinctly longer than the 4th. Face punctured; the clypeus convex; its base rounded; its apex below obliquely depressed; the labrum is distinctly seen below it, and is rounded at the apex. Vertex deeply depressed and with a deep furrow in the middle. Temples obliquely narrowed. The petiole rises straight from the base and forms an angle with the second segment; its base, in the centre, is rufous, its apex closely, rugosely longitudinally striated. The plate on the second segment is smooth and shining; it is large, its length slightly longer than the width at the base; it becomes gradually narrowed towards the apex with the sides curved at the apex; there is no keel issuing from it; the lateral furrows are straight, wide, moderately deep and oblique. Suturiform articulation crenulated; its apical lateral furrows wide, shallow; there is an indistinct furrow on the apex of the segment; and a more distinct, crenulated one on the apex of the 3rd, 4th and 5th segments; the apical segments are clearly separated at the edges. Legs stouter than usual, the hinder pair having the tibiæ and tarsi distinctly thickened; they are thickly pilose; the pile on the front of the middle tibiæ is rufous; the basal joint of the hinder tarsi is thickened. The 2nd abscissa of the radius is slightly shorter than the apical; the 2nd transverse cubital nervure is faint; the stigma is shorter and broader than usual.

iv. *Entirely luteous, the wings fuscous, yellow at the base.*

Iphiaulax matangensis, sp. nov.

Luteous, the head and mesonotum paler; the back of the abdomen suffused with black; the wings fuscous, the base to the transverse basal nervure, and a cloud in the 1st cubital cellule yellowish-hyaline; a small hyaline spot below the bottom of the 1st transverse cubital nervure; the stigma black, narrowly yellow at the base; the keel on the 2nd segment is not much dilated at the base, becomes gradually narrowed and extends to the apex. ♀.

Hab. Matang, 2800 feet.

Antennæ longer than the body, entirely black, the scape somewhat more than twice longer than broad, not dilated; the 3rd and 4th joints equal in length. Clypeus rounded on the top, narrow. Front not much depressed, furrowed in the centre. The 3 lobes of the mesonotum are largely fuscous. The raised central part of the petiole is not much longer than broad; is rugosely punctured on the top, its lateral slopes smooth, brownish and bearing 3 keels in the centre; the lateral furrows are wide and deep; the sides above are furrowed and striated. The 2nd segment on either side of the keel is widely reticulated; the sides at the base are depressed and bear curved stout striæ. The suturiform articulation is wide and striated; the furrow on the base of the 3rd is smooth; on the 4th closely crenulated; the apical 2 segments are smooth.

Iphiaulax annulitarsis, sp. nov.

Luteous, the head more yellowish in tint, the 3rd and following segments black, their apices pale yellow; the apex of the hinder tibiæ and of the joints of the hinder tarsi, black; the wings fuscous from the transverse basal nervure, behind it yellow; the basal half of the hinder wings yellow; the stigma black, with a small yellow spot on the base; the antennæ black. ♀.

Length 11-12; terebra 9 mm.

Hab. Kuching.

Scape of antennæ about 4 times longer than broad: the 3rd joint slightly, but distinctly, longer than the 4th. Face and clypeus rugose; the face broadly raised in the centre and with a depression near the apex, where it has an oblique slope; the top of the clypeus is transverse, its sides rounded. Centre of petiole coarsely, longitudinally punctured; the sides on the inner side at the apex, transversely striated. The 2nd segment is closely rugosely punctured; in the centre longitudinally striated; in length the plate is about twice the length of the width at the base; it becomes gradually narrowed, and a narrow keel runs from it to beyond the middle of the segment; the part bordering the sides of the plate is depressed and is stoutly transversely striated. The suturiform articulation and the fur-

rows on the 3rd and 4th segments are crenulated. The 2nd abscissa of the radius is distinctly shorter than the 3rd.

The raised central part of the 2nd abdominal segment is large and has straight sides, it being therefore of equal width; the lateral furrows are closely striated; and are wide at the base. The abdomen is slightly longer than the head and thorax united; it is wider than the latter and is ovate in form.

Iphiaular hirpinus, sp. nov.

Luteous, the antennæ black, yellow at the base; the wings yellowish-hyaline to the transverse basal nervure, the rest dark fuscous, with the stigma black; the plate on the base of the 2nd abdominal segment not clearly defined, not narrowed towards apex and rugosely punctured. ♀.

Length 9 mm. terebra 3 mm.

Hab. Kuching.

Antennæ longer than the body, the scape rufous, black on the middle above, about twice longer than wide; the 3rd and 4th joints are equal in length. Face closely rugose, keeled below the antennæ; the clypeus rounded on the top. Median segment thickly covered with white hair. The central part of the petiole is rugosely punctured; it becomes narrowed towards the apex which is rounded. Second segment stoutly irregularly striated to near the apex; the striae are more or less twisted; the sides are broadly depressed and are finely striated. Sutureform articulation wide, deep and crenulated; the 4th and 5th segments have distinct crenulated furrows on the base; there are also transverse furrows on the apices of the 3rd, 4th and 5th segments. The sheaths of the ovipositor are black and covered with black hair. The 2nd abscissa of the radius is perceptibly shorter than the 3rd; the 2nd abscissa of the cubitus is slightly shorter than the 3rd.

Iphiaular amestris, sp. nov.

Luteous, a broad curved black mark across the ocellar region extending to the eyes, the basal 4 dorsal segments of the abdomen more or less black; the wings yellowish-hyaline to the transverse basal nervure and on the hind wings to near the middle, the rest fuscous-black; the basal third of the stigma yellow.

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low; there is a cloud in the 1st cubital cellule which extends from near the top, at the base, to the lower apical corner and above extends along the top to the apex; the plate on the base of the 2nd segment extends to the centre and becomes gradually narrowed, the basal five segments of the abdomen are closely longitudinally striated; the abdomen ovate, not longer than the thorax and wider than it. ♀.

Length 11 mm., terebra 8 mm.

Hab. Kuching.

Antennæ longer than the body, black, the flagellum brownish beneath towards the apex; the 3rd and 4th joints equal in length; the scape about twice longer than broad; its apex projecting into a spine. Petiole in the centre finely irregularly longitudinally striated; the depressed sides are broad and are finely, indistinctly striated; the 2nd to 5th segments are closely longitudinally striated, the striation becoming weaker on the apical segments; on the base of the 2nd segment is a straight, narrow, deep oblique furrow, which is sparsely striated, the suturiform articulation is distinctly crenulated; the apices of the 3rd and 4th segments are depressed, smooth and have a narrow indistinct transverse furrow; the lateral furrow on the 3rd segment is broad, curved and striated.

Entirely luteous, the wings entirely yellow, long, with a black spot at the base of the stigma.

Iphiaulax laertius, sp. nov.

Luteous, smooth and shining; the suturiform articulation stoutly, but not closely, striated in the middle, the other furrows smooth; antennæ for the greater part black; the wings long, yellow, the anterior smoky round the apex of the stigma and the costa at its base, black, the posterior pair smoky at the apex and round the apical lower margin, the cloud becoming gradually narrowed on the inner side; an oblique cloud at the base of the stigma; the temples obliquely narrowed; the legs thickly covered with long fulvous hair.

Length 13; terebra 7 mm.

Hab. Kuching.

Antennæ longer than the body, the scape rufous and covered with long pale hair. Face and clypeus covered with long

fuscous hair, each originating from a pit; the clypeus behind is bordered by a rounded narrow keel. Mandibles paler coloured than the head; their teeth black. Abdomen shining, impunctate; the suturiform articulation has 7 or 8 stout, longitudinal, clearly separated longitudinal keels in the middle; the petiole is distinctly longer than the 2nd segment and appears narrower than usual; it is depressed at the base; from the base a keel runs to near the apex. The keel on the second segment is smooth and shining; the oblique and lateral furrows on the 2nd and 3rd segments are smooth; there are no transverse furrows on the 3rd and following segments.

Ipihaular leptopterus, sp. nov.

Luteous; antennæ dark brownish, paler towards the apex; the scape black above; the wings long, yellowish, a dark cloud at the base of the stigma along the cubitus and extending shortly beyond the middle of the 1st cubital cellule; the lower part of the apex of the front and the entire apex of the hinder wings smoky; the transverse furrows on the base of the 2nd, 3rd and 4th segments crenulated. Legs thickly covered with longish pale fulvous hair. ♀.

Length 17 mm., terebra 7 mm.

Hab. Matang, 3600 feet.

Face irregularly punctured and covered with long fuscous hair; the middle above indistinctly keeled. The top of the clypeus is transverse in the middle, the sides rounded. Frontal furrow deep. The apical lobe of the pronotum is widely and deeply depressed, the depression is rounded above, transverse at the base laterally at the base, there is a crenulated band. The 1st abdominal segment is longer than the 2nd being in length twice the width of its apex; its centre is stoutly keeled; the keel being larger at the base; the sides of the segment, on either side of it, are irregularly punctured and striated. The lateral depression on the 2nd segment is wide, deep and is irregularly striated at the base. The suturiform articulation is wide, deep and is stoutly longitudinally striated; the apical lateral furrow is smooth. The transverse furrows on the 3rd and 4th segments are distinct, narrow and longitudinally striated. There are no apical transverse furrows.

This is probably the species recorded by Smith (Journ. Linn. Soc. 1857, 122) from Sarawak as *Bracon aculeator*, Fab.; but the present is different from the Indian species I have regarded as *aculeator*, Fab., *Sec.* Brullé. According to Brullé the latter has the basal 3 segments of the abdomen finely longitudinally striated and it has a transverse furrow on the base of the 5th segment.

In colouration this species is identical with *I. laertius* here described; but that species is easily known by the head being obliquely narrowed behind the eyes.

Black, the wings fuscous, hyaline at the apex. Short broad species.

Iphiaulax trichiosoma sp. nov.

Black, thickly covered with black hair, the head, scape of antennæ and the fore femora in front rufo-testaceous, the wings dark fuscous to the base of the stigma, beyond that milk white; the stigma from near the base pale testaceous, the radial and cubital nervures pale, almost white. ♀.

Length 7-8 mm., terebra 1 mm.

Hab. Kuching.

Scape of antennæ short, about twice longer than broad. Face sparsely punctured and covered with fuscous hair. The scutellar depression is rufous. Post-scutellum irregularly longitudinally closely striated and with a smooth keel in the centre which becomes wider at the apex. The 2nd to 5th segments are closely longitudinally striated, the striæ intermixing all over; the basal plate on the 2nd segment is elongate, extends to the middle of the segment and becomes gradually narrowed; it is bordered laterally by 3 stout oblique keels. The 3 transverse furrows are wide, deep and longitudinally striated; the lateral furrows are wide and shallow; they are dark rufous in the centre. Legs thick y covered with black hair. The 1st and 2nd abscissæ are together not equal in length to the 3rd; the recurrent nervure is not quite interstitial, it being received at the apex of the 1st cubital cellule.

The eyes are distinctly margined; the ocellar region black; the temples are distinctly, roundly narrowed; the occiput is transverse; the abdomen is elongate-ovate, narrowed towards the base and apex.

Iphiaulax Carnasius, sp. nov.

Black, the head and median segment thickly covered with longish black pubescence; the wings, to the base of the stigma, black, with a violaceous tinge; beyond that milky-white; the apical two-thirds of the stigma pale yellowish-white; the apical nervures white; the abdomen ovate, much wider than the thorax: coarsely and closely rugosely punctured. ♀.

Length 7 mm., terebra 2 mm.

Hab. Kuching.

Antennæ longer than the body; the scape thickly covered with pubescence. Face irregularly punctured. Its centre slightly raised and smooth; the part over the oral incision raised above; its centre hollowed. Mandibles black; their basal half brownish below. Apical joints of the palpi fuscous. Thorax smooth and shining; the transverse furrow at the base of the scutellum shallow, straight and irregularly, stoutly crenulated. The apical abscissa of the radius is shortly, but distinctly, longer than the basal two united; the upper part of the 1st cubital cellule is hyaline. The basal segment of the abdomen is smooth and shining; the other segments are closely, rugosely punctured and more or less striated in the centre; the basal keel on the 2nd segment is smooth, shining, long and narrow; its keel is narrow and indistinct and extends to the apex of the segment, which is irregularly reticulated on either side of it; this part is obliquely bounded by a raised border: the lateral depression is, on the inner side, closely striated. The suturiform articulation is deep, clearly defined and longitudinally striated; the other furrows are less clearly defined. Legs stout, thickly covered with short, stiff black pubescence.

Iphiaulax brunneomaculatus, sp. nov.

Black: the greater part of the head and the fore part of the thorax more or less brownish; the wings to the base of the stigma dark fuscous, beyond that milky-white; the stigma, except at the base, and the apical nervures pale yellow. ♀.

Length 7; terebra 1½ mm.

Hab. Kuching.

Antennæ longer than the body, the flagellum brownish. Head shining; the vertex for the greater part black, the rest

brown; smooth. On the base of the median segment are two broad, shallow, slightly oblique furrows. Mandibles brownish-yellow, black at the apex. The apical part of the petiole is closely rugosely punctured; the 2nd segment is coarsely longitudinally punctured; the base of the keel is irregularly triangular, is shining and aciculated; the keel extends beyond the middle; the part bounding it is depressed and irregularly striated; the lateral furrows are broad, distinct and striated; the 2nd furrow is distinct and striated; the 3rd and 4th are narrower and less distinctly striated. The legs are more or less brownish and are thickly covered with black hair; the metatarsus is stouter than the other joints.

This species is very similar in form and colouration to *I. carnosius*; it may be easily separated from it by the rugosely punctured petiole and by the smooth and shining plate on the base of the 2nd segment, with its stronger keel.

Chavilla juscipennis, sp. nov.

Black, the head, thorax and 4 front legs ferruginous; antennæ black, the scape rufous; the abdomen, except the apical two segments, closely and distinctly punctured, its furrows striated. ♀.

Length 16 mm. terebra 17 mm.

Hab. Kuching.

Scape with a triangular hollow on the apex beneath; the corners projecting into short stout teeth. Front depressed, its centre furrowed. The frontal plate is large, becomes gradually narrowed towards the apex, which is rounded; the central keel is stout, does not reach to the apex and becomes gradually smaller. Antennal tubercles large, tuberculate on the outer side above. Thorax smooth and shining; the metanotum black to near the apex, where there are some irregular striæ in the centre. Legs thickly haired, the hinder tibiæ grooved on the outer side. The raised central part of the petiole is rugosely, longitudinally striated; the striæ are irregular and internix; the depressed sides are longitudinally striated, more regularly and distinctly than in the centre. The 2nd 3rd and 4th segments are closely longitudinally striated; on the 4th the long-

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itudinal striæ are mixed with transverse finger striæ. The sutures are closely striated. The area on the base of the 2nd segment is long and narrowed, extends to shortly beyond the middle and becomes drawn out into a fine point. The oblique depressions on the 3rd and 4th segments are shallow and not very distinct. The sheaths of the ovipositor are thickly covered with hair.

The toothed apex of the antennal scape is not so prominent as it is in the type (*C. lamellata*, Cam.) A characteristic of the genus is the long front tarsi which are more than twice the length of the tibiæ.

In Mr. Ashmead's generic synopsis of the genera of *Braconidæ* (U. S. Nat. Mus. Bull. xxiii, 137) no mention is made of the broad front plate, stress being laid on the toothed apex of the scape which is probably only of secondary importance. *Chaolta* Cam. (Manchr. Memoirs, 4th May, 1899, No. 3, p. 81) is identical with *Blastomorpha*, Szepligeti, Termesz. Fuzetek; xxiii, p. 50, 1900. To it also belong *Bracon intrudens*, Sm., from Celebes, *B. perplexus*, Sm., *B. inquietus*, Sm., from Borneo and *B. vulturousus*, Sm., from Singapore.

Elpheu, gen. nov.

Abdomen long and narrow, almost cylindrical; the segments, except the apical, longer than broad, smooth without transverse furrows, the 2nd and 3rd segments separated like the others and without a suturiform articulation; the 2nd segment with a large shield-shaped plate on the base of the second segment. Hypopygium large cultriform. Antennæ long and stout, the scape large, globose. Temples large, roundly narrowed; occiput roundly incised. Eyes large, slightly incised on the inner side; the malar space of moderate length. Wings long and narrow; the transverse median nervure interstitial; the transverse basal is united to the cubital a short distance from the base of the latter, which issues from the costa and not from the transverse basal; the recurrent nervure is received at the apex of the 1st cubital cellule and is not interstitial; the anal nervure is received shortly below the middle. Fore tarsi about one-fourth longer than the tibiæ: the 1st joint of the tarsi not much longer than

the 2nd. Tegulæ large, projecting. Hind wings as in *Bracon*. Radius reaching to the apex of the wing. Thorax longish and narrow.

A genus of *Braconinæ* easily known by the long narrow body; the long abdomen without transverse furrows or suturiform articulation, large conchiform tegulæ, short thick scape. The metathoracic spiracles large and placed behind the middle. Tarsi spined. It comes near to *Campsobracon*.

Elphea lutea, sp. nov.

Luteous: the front, vertex, occiput and half of the outer orbits and the 5th and 6th abdominal segments on the back, black; the wings yellowish-hyaline; a broad cloud at base of the stigma extending to the opposite side, a shorter one at its apex extending only to the cubitus; a broader one on the apex commencing near the 2nd transverse cubital nervure and the apex of the hinder wings with 2 clouds behind, smoky; the stigma and nervures yellow. Abdomen long and narrow: smooth; the suturiform articulation crenulated; there are no other furrows. ♀.

Length 13; terebra 20 mm.

Hab. Kuching.

Antennæ as long as the body, black, brownish beneath towards the apex. Head smooth, shining and impunctate; the ocelli bordered by furrows: the face with a distinct, deep furrow down the centre; there is a furrow on the lower part of the front which becomes gradually wider towards the apex. The face has a distinct yellow tint. The 1st cloud in the wings is irregularly rounded behind, is narrowed above, behind it follows the transverse basal and transverse median nervures, at the apex the recurrent nervure; the 2nd is of almost equal width: the apical cloud commences near the 2nd transverse cubital nervure and below extends backwards to nearly opposite the lower part of the 1st transverse cubital. The raised area on the 2nd segment is large, extends to the middle of the segment, becomes gradually narrowed to the apex, with the sides rounded, not straight; its sides are depressed; at the apex is a depression which has a keel in the middle.

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Elphea flavomaculata, sp. nov.

Black, smooth, and shining; the face, except for a narrow black line in its centre above, and a large black mark on its lower half below, a mark on the hinder edge of the pronotum, broadest behind the tegulæ, a broad curved mark below them, a mark under the hind wings, the apices of the abdominal segments and the greater part of the ventral surface, pallid yellow, as are also the 4 front legs, except for a black line on the tibiæ; the hinder legs black, the base of their tibiæ testaceous. wings hyaline, with a fulvous tinge; the lower part of the apex of the anterior and the whole of the apex of the posterior smoky; the stigma dark fuscous in front, pale yellow behind; the nervures fuscous. ♀.

Length 14 mm., terebra 8 mm.

Hab. Kuching.

Antennæ black, short, longer than the body. Median segment sparsely covered with long fuscous hair, its apex all round and a large mark on the pleuræ are testaceous. Abdomen smooth and shining: the base and sides sparsely haired.

Plesiobracon, gen. nov.

Median segment with a keel down the centre. Temples sharply obliquely narrowed, the occiput transverse. Malar space large. Transverse median nervure interstitial; the recurrent nervure widely distant from the transverse cubital. Abdomen as in *Iphiaular*, with distinct transverse crenulated furrows; the 4th segment produced in the middle above.

The cubitus originates from below the upper part of the transverse basal; the stigma is large; the hypopygium is large, cultriform; the antennæ are long; the mandibles are broad at the base, curved and end in a sharply-pointed tooth.

This genus is allied to *Iphiaular* by the form of the abdomen but is readily separated from it by the recurrent nervure not being interstitial, by the stout keel on the metanotum and by the temples being sharply obliquely narrowed behind the eyes.

Plesiobracon carinata, sp. nov.

Black, the face, oral region, the inner, outer and the lower outer eye orbits narrow; the malar space and mandibles rufo-

testaceous; the palpi white; the wings hyaline; the lower part of the clypeus and the nervures testaceous; the back of the five basal segments of the abdomen, striated longitudinally and closely.

Length 5-6; terebra 7 mm.

Hab. Kuching.

Antennæ longer than the body; the scape and basal joint of the flagellum black, bare and shining; the other joints brownish black. Face aciculated, almost shining; the clypeus impunctate, shining. Apex of mandibles black. Thorax covered with longish white pubescence. Legs covered with white pubescence, the front pair testaceous, the middle tarsi dark testaceous. The 1st and 2nd abscissæ of the radius are together shorter than the 3rd. Post-petiole rugosely punctured; the base smooth, its sides striated; its middle with a smooth furrow which projects into the punctured apical part. The basal plate on the base of the second segment is longer than broad, narrowed towards and longitudinally striated; the keel is narrow; the suturiform articulation and the furrow on the 3rd and 4th segments are striated closely; the 4th dorsal segment projects bluntly in the centre; the 3rd and following segments are narrowly edged with whitish-yellow on the apex.

Sigalphogastra, gen. nov.

Abdomen with 5 segments, the 3 middle ones broader than long, the basal and apical longer in proportion to the breadth; all the segments longitudinally striated; the last broadly rounded at the apex; the apical 3 with transverse crenulated furrows on the base. Median segment with a stout keel in the centre at the base and two curved narrower, sharper keels on the apical half. Temples broad, slightly roundly narrowed. Malar space large. Wings as in *Bracon*. Legs rather slender, the tibiæ and tarsi densely pilose.

This genus possesses all the characteristics of the *Braconini* except as regards the marked difference in the form of the abdomen. In the *Braconini* there are 7 segments which become gradually smaller; in the present genus there are only 5 large segments of almost equal size. The form of the abdomen reminds one of the *Chelonina*, but that group does not belong to

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the *Cyclostomi*. In our genus the mesonotal furrows are complete: there is a crenulated furrow at the base of the scutellum which is moderately convex; there is a distinct curved furrow at the base of the median segment; the scape of the antennæ is long and slender, the pedicle is of equal width, broader a little than long and transverse at the apex; the first 3 joints of the flagellum are long, fully 3 times longer than wide and of equal length.

This genus clearly comes close to *Chelonogastra*, Ashmead (Bull. U. S. Mus. xxiii, 139) from Japan. It may be known from our genus by the abdominal segments being unequal in length; the 1st and 2nd occupy most of the surface, the 4th and 5th being very short; the first three joints of flagellum are scarcely longer than thick, etc.

Sigalphogastra Ashmeadi, sp. nov.

Head and thorax ferruginous, the antennæ, abdomen and hinder legs black; the fore legs rufous; the middle dark testaceous; the head and thorax smooth and shining, the metanotum with a few irregular keels in the centre; the back of the abdomen strongly, irregularly longitudinally striolated; the wings hyaline, the nervures black; the stigma fuscous below. ♂?

Length 7 mm.

Hab. Kuching.

Sides of the face sparsely punctured; the centre raised, clearly separated and smooth; it is separated from the clypeus. Tips of mandibles black; the palpi pale rufous. Front flat in the centre, bordered laterally from near the top by a blunt, stout keel which runs into the antennal scape. The centre of the petiole is raised, clearly limited; its sides raised, broad at the base, its apex narrowed; there is an irregular row of oblique keels on the sides. The area on the 2nd segment is large, broad at the base, becoming gradually narrowed to the apex; it is finely irregularly longitudinally striated, the rest more strongly transversely striated; there is an oblique keel outside this; the part on either side of this is stoutly obliquely striated; the last segment is more closely and regularly striated than the others.

RHOGADINÆ.

Dedanima, gen. nov.

Occiput, cheeks and temples margined. Temples broad. Fore wings with 3 cubital cellules; the recurrent nervure in fore wings interstitial; the transverse pabrachial received in the discoidal cellule. Radial nervure in hind wings reaching to the apex of the wings; the pabrachial nervure in it placed half way between the lower part of the præbrachial and the base of the wing; stout. Eyes large, distinctly incised on the inner side. Parapsidal furrows deep; the middle lobe of the mesonotum raised. Abdomen sessile; the basal segment longer than the 2nd, which is as long as the 3rd and 4th united; the 3rd 4th and 5th segments are equal in length and width. The suturiform articulation is distinct throughout, wide, deep. The basal 4 segments are closely punctured and obscurely striated; the apical segments are bluntly pointed; the ovipositor not projecting. There is a deep curved furrow on the lower side of the mesopleuræ in the centre. The radius originates behind the middle of the stigma; the 2nd transverse cubital nervure is faint. The hinder coxæ are elongate; they are slightly longer than the trochanters which are long, slender and curved. The spurs are short. The hypopygium is large. The 1st abscissa one-third of the length of the 2nd.

If it were not for the absence of keels on the basal abdominal segments I should have felt inclined to have placed this genus with the *Rhogadini*. The only other group in which it can be placed is the *Rhyssalini*. Characteristic is the well-marked furrow on the mesopleuræ.

Dedumima longicornis, sp. nov.

Luteous, covered with a pale pubescence; the ocelli and the antennæ black; the wings hyaline, the stigma and nervures black; the basal 4 segments of the abdomen closely longitudinally striated. ♀.

Length 7 mm.

Hab. Kuching.

Antennæ longer than the body, densely covered with a fuscous pile. Parapsidal furrows deep; the middle lobe of the mesonotum raised and clearly separated. Propleuræ depressed and punctured in the centre. Mesopleural furrow, curved, deep, lightly widened and rounded at the apex; it occupies the central part of the pleuræ. The striation on the abdomen is strongest on the 2nd segment, whose sides are tuberculate near the base. The sheaths of the ovipositor are black and short.

Halycaea, gen. nov.

Antennæ longer than the body, filiform. The joints of the flagellum not clearly separated. Head cubital, rounded in front transverse behind, the occiput margined; the malar space large almost as long as the length of the eyes. Palpi long and filiform. Mesonotum flat; the middle lobe separated, broadly furrowed down the middle; between its apex and the base of the scutellum is a broad, shallow depression, which is irregularly longitudinally striated. Scutellum flat throughout. Median segment closely reticulated, long, flat above and with a short apical slope. Legs long; the front tarsi more than twice the length of their tibiæ. Wings with 3 cubital cellules: the 2nd longer than the 1st and shorter than the 3rd. In the hind wings the pabrachial transverse nervure is interstitial with the præbrachial. The costal areolet is much longer than the radial; the pabrachial nervure is obsolete. The transverse median nervure in the fore wings is not interstitial being received shortly beyond the transverse basal. Abdominal petiole long, longer than the 2nd and 3rd segments united; it is of uniform thickness throughout and is nearly as wide as the 2nd segment. The 2nd segment bears 2 narrow furrows which extend from the base to the apex; the suturiform articulation especially at the sides, and is slightly curved. The ovipositor is long. The anal nervure in the hind wings is interstitial. The hinder coxæ are not produced in front.

This genus does not fit very well into any of the tribes of the *Cyclostomi* but may, for the present, be referred to the *Doryctides*. Its characteristic features are the long filiform antennæ, margined occiput, flat scutellum, depressed mesonotum, longish reticulated median segment, long petiole of equal

width and long slender anterior tarsi whose basal joint is nearly as long as the tibiæ.

Halycaea erythrocephala sp. nov.;

Black, the head rufous, the long palpi, the base of the 4 hinder tibiæ and the 4 hinder tarsi white; the wings hyaline, distinctly tinted with fuscous of a violaceous tinge, the stigma and nervures black. ♀.

Length 15 mm., terebra 18 mm.

Hab. Kuching, 25th March.

Face closely rugosely punctured and covered sparsely with long fuscous hair; the space between the keels deep; the apex bears some stout longitudinal keels. The upper part of the meso- stoutly irregularly striated at the base; the lower furrow is wide and deep and is stoutly striated, the metapleuræ are more stoutly reticulated than the base, with its base almost smooth. The basal segment of the abdomen is closely and rather strongly rugosely punctured; the punctures run into reticulations in the centre and become finer towards the apex; its base is depressed. The triangular area on the second segment is closely, finely rugosely punctured; there is a smooth line down the centre of the face with a furrow in its middle. The furrow on the base of the mesonotum is wide and smooth: the depression behind it is bordered laterally by 2 irregular keels and there is also a curved keel on the inner side at the base; the space between the 2 keels and outside them are irregularly crenulated. Scutellum depressed in the centre, finely punctured, depressed and rufous in the centre; at its base are 4 short keels. Post scutellum depressed in the centre; its sides broad. Propleuræ stoutly keeled in the centre at the base, the rest is much more finely and closely punctured; the bordering furrows are deep and rufous. The 3rd and 4th segments are alutaceous, opaque; the others smooth and shining. The apices of the tarsal joints are spinose.

MACROCENTRINÆ.

Zele filicornis, sp. nov.

Luteous, smooth and shining; the antennæ almost twice the length of the body; very slender, black, the scape rufous; the

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flagellum covered with a microscopic pile; the wings clear hyaline; the nervures and stigma black; ocelli large, and in a black patch; the parapsidal furrows striated on the apical half; the metanotum shagreened and obscurely transversely striated. ♀.

Length 9 mm.

Hab. Kuching.

There is a distinct keel on the metapleuræ above the middle; a roundly curved one on the apex of the metanotum; the hinder tibiæ are long, compressed and reach near to the apex of the petiole; it is distinctly narrowed at the base behind the spiracles, which project; it is as long as the 2nd and 3rd joints united. The marginal cellule is not divided, in the hind wings, by a transverse nervure.

AGATHIDINÆ.

Balvemena, gen. nov.

Areolet narrowed at the top, the nervures, however, not touching. Second transverse cubital nervure without a process. Radial cellule long and narrow. First cubital and first discoidal cellules not separated. Front not much depressed and without keels; there are two short keels between the antennæ. Central lobe of mesonotum raised; the parapsidal furrows indistinct. Apex of scutellum with a stout transverse keel. The base of the median segment obliquely depressed; there are two longitudinal keels which form a closed longitudinal narrow area in the centre, these being the only keels on it. All the claws are bifid. The ovipositor is short; its sheaths broad. The antennæ are longer than the body and taper towards the apex; the basal joints of the flagellum are equal in length. The apical three joints of the maxillary palpi are not lentical or compressed and are not much shorter than the basal.

May be known by the long, narrow wings, with the long cubital and radial cellules in both wings, by the very short ovipositor which hardly projects, by the single central area on the median segment, by the short, raised, distinctly separated middle lobe of the mesonotum, which does not reach to the middle, and by the long antennæ and hind legs.

R. A. Soc., No. 39, 1903.

Balcmena longicollis, sp. nov.

Black, smooth and shining; the head, pro- and mesothorax ferruginous; the antennæ longer than the body, black, the scape rufous below; the wings long, ample, uniformly dark fuscous, with a violaceous tinge; the nervures and stigma black; there are two small hyaline spots below the base of the stigma. ♀.

Length 14 mm.

Hab. Kuching.

The antennæ taper towards the apex; almost bare. Face and clypeus thickly covered with fuscous pubescence. Teeth of mandibles black. Prothorax elongate; the middle lobe of the mesonotum roundly raised and separated from the lateral, which are flat. Scutellum sparsely haired; its apex bounded above by a flat plate with rounded sides. Post-scutellum deeply depressed and bordered by stout keels; behind its centre is a stout longitudinal keel. Median segment thickly covered with black pubescence. There is a narrow oblique furrow below the tegulæ; the large oblique depression on the apex of the mesopleuræ below is stoutly crenulated. Legs, with the calcaria, thickly covered with short black hair. The ventral surface of the abdomen is white at the base; the sheath of the ovipositor is black, and is covered with black hair.

Troticus melanopterus, sp. nov.

Head below the eyes and the pro- and mesothorax rufous; the four front legs of a paler rufous colour; the wings dark fuscous, the base of the 1st cubital cellule and a small narrow cloud below it, hyaline; the antennæ black, thickly covered with stiff black pubescence. ♀.

Length 8 mm.

Hab. Kuching.

Face and clypeus distinctly punctured and thickly covered with fuscous pubescence. Mesonotum rufo-fuscous. The central area on the metanotum is coarsely transversely striated, extends from the base to the apex and is slightly narrowed at the base; there are two lateral areas; a large basal one extending beyond the middle, coarsely aciculated on the outer side at the base and with two or three stout transverse keels near the centre, the lower

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one being roundly and deeply curved and is united to a curved outer keel which extends to the apex of the segment; the apical area has a short upper and a longer curved lower keel; below the spiracles are 3 stout irregular keels. Abdomen smooth and shining; the 2nd segment is slightly depressed on the sides at the base.

Disophrys fuscicornis, sp. nov.

Black: the head, prothorax and mesonotum rufous; the front tibiae and tarsi rufo-testaceous; the wings dark fuscous to the 2nd cubital cellule, beyond that, milk-white; the base of the stigma broadly black; the rest pale rufo-testaceous. ♀.

Length 9 mm.; terebra 7 mm.

Hab. Kuching.

Cheeks and clypeus thickly covered with long white pubescence; the front, vertex and occiput black. Scape of antennæ dark rufous beneath; the base of the flagellum broadly dark brown. Scutellar fovea large, deep and with four stout keels. The central area on the metanotum is obliquely narrowed at the base and apex; there are three stout transverse keels between the middle and the apex of the narrowed upper part; the upper area next to it is broader than long; the lower two are large, of nearly equal size and longer than broad; the spiracular area is large, 3-angled on the inner side, rounded and irregular on the outer, the area next to it is rounded and narrowed above, straight and oblique below. On the centre of the metapleuræ are two irregularly curved keels with some oblique keels between them. Abdomen smooth and shining; the 2nd segment is broadly depressed laterally; the suturiform articulation is broad and smooth.

ICHNEUMONIDÆ.

OPHIONINI.

Aglaophion, gen. nov.

Fore wings without dark coloured blisters; the transverse median nervure in hind wings broken shortly above the middle. Apex of clypeus broadly rounded. Ocelli not large, distinctly separated from each other and from the eyes, which are moder-

ately large and are distinctly separated from the base of the mandibles; they are slightly emarginate on the inner side.

Claws pectinated. Disco-cubital nervure originating distinctly before the discoidal nervure. Scutellum large, longer than broad, distinctly raised and separated. The median and submedian cellules in front wings equal in length; there is no stump of a nervure on the disco-cubital nervure. Meta-thorax stoutly longitudinally and transversely striated. Ovipositor short.

In Ashmead's arrangement (Bull. U. S. Nat. Mus. xxiii, 86) this genus would come nearest to the American *Thyreodon*, which may be known from it by the apex of the clypeus being sub-angularly pointed, not broadly rounded, by the transverse median nervure in the hind wings being broken near the top and by the disco-cubital nervure being broadly rounded, not sharply angled in the middle as in the present genus. The transverse median nervure is received very shortly behind the transverse basal, almost interstitial with it. The apex of the 3rd abdominal segment, on the back, is roundly narrowed towards the base and is incised in the centre above.

Aglaophion flavinervis, sp. nov.

Black, with a metallic blue tinge, the face, clypeus, the lower half of the outer orbits, the malar space, the outer edge of the mesonotum at the base, the scutellum, post-scutellum, the centre of the median segment at the base, its apical half, the lower edge of the pronotum, the base and lower edge of the mesopleuræ and the greater part of the metapleuræ, rufotestaceous; the four anterior legs of a paler, more yellowish testaceous colour; the hinder legs black, their femora with a bluish tinge. Wings yellowish-hyaline, the nervures yellow; their apex smoky. ♀

Length 22 mm.

Hab. Matang, 3,200 feet.

Antennæ as long as the abdomen, stout, tapering towards the apex, black, covered with a microscopic down. Face closely, distinctly and uniformly punctured; the clypeus more strongly and sparsely punctured in the middle; the foveæ large, black. Mandibular teeth black, the centre punctured. Palpi dark

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testaceous. Front and centre of vertex smooth and shining; the sides of the latter closely punctured; the vertex widely and deeply furrowed in the centre. Mesonotum closely and minutely punctured; the scutellum rugosely punctured. Base of median segment with two stout wrinkled keels down the centre; the sides stoutly, irregularly transversely striated; the apical slope is stoutly, irregularly longitudinally striated; the striae are curved. Pro- and mesopleurae smooth; the former obliquely striated below; the meta- coarsely reticulated except on the obliquely depressed base, there is a longish black mark on the base, which becomes obliquely, gradually wider towards the apex, on the apex above there is a large, oblique, somewhat square, black mark. Abdomen smooth and shining; the sides and lower side of the petiole testaceous.

Enicospilus nigrinotatus, sp. nov.

Dark luteous; the mesonotum, the base of the scutellum, the breast and the third and following segments of the abdomen black, the face and the eye orbits narrowly pallid yellow; the wings hyaline, the nervures and stigma black; the disco-cubital cellule with a small round and a narrow curved longish horny point. ♀.

Length 30 mm.

Hab. Kuching.

Face slightly blistered in the centre, the sides minutely punctured; the clypeus smooth. Mesonotum smooth and shining. Scutellum obscurely punctured at the base, the rest minutely, irregularly longitudinally striated. Median segment at the base behind the keel smooth; the rest in the centre stoutly, longitudinally striated; the striae being curved; laterally it is stoutly obliquely striated and irregularly reticulated. Pro- and mesopleurae smooth; the lower half of the latter finely and closely longitudinally striated. The basal half of the meta-pleurae bears some curved narrow striae; the rest is stoutly obliquely striated. Abdomen smooth and shining; the apical segments covered with a white down; the sheath of the ovipositor black. Tibiae and tarsi thickly covered with short stiff fulvous pubescence.

PIMPLINI.

Rhyssa maculipennis, Sm.

This fine species has been taken at Kuching by Mr. Shelford. It varies in size from 20 to 27 mm. and the yellow markings on the thorax vary in size and number, as does also the amount of black on the legs.

Epirhyssa nigrohaltata, sp. nov.

Luteous; the vertex, occiput, the front broadly in the middle except for a square mark in the centre. The mesonotum, except for a squarish mark in the centre, the apical slope of the scutellum, a curved line on the apex of the median segment, the propleuræ broadly in the middle, the base of the mesosternum, an oblique mark on the lower side of the mesopleuræ at the base, the base and lower side of the metapleuræ and the base and apices of the abdominal segments, black. Legs coloured like the body; a line on the femora above, the knees, the apical joint of the four front tarsi; the apices of the other joints of the apex of the hinder tibiae and the whole of the hinder tarsi, black. Wings hyaline, with a faint cloud in the apex of the radial cellule; the stigma and nervures black. ♀.

Length 17; terebra 17 mm.

Hab. Kuching.

Antennae black, fuscous underneath. Face punctured, transversely in the centre. Mandibles black. The basal slope of the middle lobe of the mesonotum is smooth and has a plumbeous hue; so also is the apical slope which is oblique. Scutellum closely transversely striated in the middle. The middle segments of the abdomen are punctured and finely transversely striated in the middle. The black basal band on the 2nd and 3rd segments are incised in the middle, on the others it becomes prolonged down the middle, the prolongation becoming gradually longer, until on the penultimate segment it extends to the apex; on this segment it is of equal width throughout; the last segment is entirely black. The recurrent nervure in the fore wings is interstitial.

To *Epirhyssa* clearly belongs *Macrogaster flavopictus* Sm. (Proc. Linn. Soc. 1857, 121) from Singapore.

Epirhyssa bimaculata, sp. nov.

Luteous: the vertex and front broadly, the occiput, the mesonotum, except for two small lines in the centre, the apex of the scutellum and post scutellum, a mark on the lower side of the propleuræ, the sides and apex of the 2nd segment and the others, except for a transverse band near the apex, black. The femora more or less brownish above; the base of the 4 posterior tibiæ and the apex of the hinder tibiæ, the apices of the fore and hinder tarsi and the middle entirely, black. Wings hyaline, with a fulvous tinge, the stigma testaceous, the nervures darker. ♀

Length 12 mm. terebra 13 mm.

Hab. Kuching.

Mandibles black. Face closely transversely punctured. The basal lobe of the mesonotum is more strongly transversely striated than the others and is widely depressed at the base. The scutellum is not distinctly transversely striated. Pleuræ smooth. The recurrent nervure is not quite interstitial, being received very shortly beyond the transverse cubital, which is longer than usual; the transverse median nervure is received shortly beyond the transverse median. The basal segment of the abdomen is short and broad and of uniform breadth.

Echthromorpha laeva, sp. nov.

Black, smooth and shining: the face, clypeus, mandibles, palpi, outer orbits, the inner more narrowly, two lines on the mesonotum, dilated at the base. scutellum, post-scutellum, the median segment except for a broad band in the centre, the base of the propleuræ, the tubercles, the mesopleuræ broadly and the apices of all the abdominal segments, pale yellow. Wings hyaline, the stigma testaceous, the apical cloud extends half way into the cubital cellule. Antennæ black, the scape yellow, the base of the flagellum brownish beneath. ♂

Length 12 mm.

Hab. Singapore.

Antennæ longer than the body; the middle and apical joints are dilated at the base and apex and are covered with short stiff pubescence; the apical joint is flattened and is distinctly

longer than the preceding. The front is raised in the middle; the raised part has oblique sides. Parapsidal furrows obsolete. Scutellum roundly convex, distinctly raised above the mesonotum; its sides are not margined. The transverse furrows on segments 2 to 5 of the abdomen are distinct and smooth. There is a black mark on the apex of the hinder coxæ above; the hinder coxæ are broadly lined with black above on both sides and below; the hinder tibiæ are black at the base; the hinder tarsi black. The black line on the metanotum has the basal half dilated.

Comes near to *E. ornatipes*, Cam., which may be known by the punctured thorax and abdomen, etc.

Trichiothecus, gen. nov.

Wings uniformly dark fuscous; the areolet oblique, the apical abscissa twice the length of the basal, shortly, but distinctly appendiculated; the recurrent nervure is received near the apex. Clypeus not separated from the face; its apex depressed and roundly emarginated. Transverse median nervure in hind wings broken shortly below the middle. Abdominal segments closely rugosely punctured; segments 2 to 5 with rounded furrows at base and apex. Claws large, simple. Metathorax smooth without keels.

Eyes large, the malar space moderate; the temples are also moderate and are obliquely narrowed; the occiput roundly incised, above obliquely narrowed. Antennæ moderately stout, as long as the abdomen; its last joint is distinctly shorter than the preceding two united. Eyes entire, diverging very slightly above. Metatarsus nearly as long as the other joints united. Ovipositor long.

A genus easily known by the incised apex of clypeus, by the black wings with the appendiculated irregular areolet and by the peculiar colouration. It comes near to *Erythropimpla*, Ashm., and *Charitopimpla*, Cam. The latter may be known from it by the clypeus being separated from the face by a transverse furrow, by the areolet being small, triangular, not appendiculated or oblique, by the hyaline wings, and the abdominal segments are wider than long, not longer than wide. There are two bullæ on the 2nd transverse cubital and two on the recurrent nervure.

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To this genus probably belongs *Pimpla viridipennis*, Sm. from Celebes. It has the same general colouration as our species, but with the hinder femora red; the median segment being also red.

Trichiothecus ruficeps, sp. nov.

Black; the head pro- and mesothorax and the 4 anterior legs ferruginous; the wings uniformly fucous-violaceous. ♀.

Length 18 mm. terebra 15 mm.

Hab. Kuching.

Antennæ black, the scape rufous. Head smooth and shining; the face sparsely covered with black pubescence; the clypeus with longer hair. Mandibles ferruginous, their teeth black. Metanotum covered with black pubescence, its base rufous. Petiole smooth and shining; its centre broadly raised in the centre which bears some large scattered punctures. The 2nd to 5th segments are closely and somewhat strongly punctured, except on their apices; the depressions have a stout keel in the middle. Tibiæ and tarsi thickly covered with stiff black pubescence. Sheath of the ovipositor thickly covered with short, stiff black pubescence.

Xanthopimpla lateballeata, sp. nov.

Rufous-yellow; the vertex, the front broadly in the middle, the upper part of the vertex to the middle, the mesonotum except at the base, the base of the metanotum to shortly below the middle of the areola and broad transverse bands on all the abdominal segments—occupying more than the basal half of the segments and the whole of the apical one—black. Wings hyaline, the apex slightly infuscated. Areola large, longer than wide. Legs immaculate. Antennæ black, brownish beneath; the scape yellow beneath. ♂.

Length 14 mm.

Hab. Kuching.

Face distinctly punctured, thickly covered with white pubescence. The basal central part of the mesonotum is more distinctly raised than usual; the furrows do not extend beyond the basal third. Scutellum and post-scutellum stoutly keeled laterally. Areola distinctly longer than wide, the basal two thirds obliquely narrow; the lateral keel is received shortly, but clearly, beyond its middle; the apex is transverse. The

tooth-bearing area is 4-angled, and is narrowed on the inner side.

Would come into Krieger's section G, if it were not for the black mark on the occiput.

Xanthopimpla nigratarsis, sp. nov.

Yellow, a triangular mark enclosing the ocelli, a broad band on the mesonotum, trilobate at the apex, between the base of the tegulae and the base of the mesonotum; its apex and the scutellum on the lower part of the basal slope, a line of almost equal width throughout on the base of the metanotum; a large mark on the 1st and apical two segments and two large broad marks on the others, black. A line on the under side of the hinder femora, their apex narrowly, the base of the hinder tibiae and the four hinder tarsi, black. Wings hyaline, their apex slightly infuscated, the stigma and nervures black. ♂.

Length 12 mm.

Hab. Kuching.

Face and base of clypeus closely, but not strongly, punctured. The 3 lobes of the black line on the mesonotum are rounded. The parapsidal furrows are deep at the base and extend near to the middle. The scutellar keels are narrow, leaf-like and become narrowed towards the apex. The areola is large, 6-angled; the base obliquely narrowed, the apex transverse; the tooth-bearing area is 4-angled, transverse of equal width and is not much smaller than the area at its base. The basal abdominal segment smooth, its keels stout; the other segments are closely and distinctly punctured, with their furrows striated. The black mark on the 1st segment is large, incised at the base and apex in the centre; the basal incision is small, the apical larger and wider and with oblique sides. The ten intermediate marks are large and wider than long; the 1st and last pair are smaller than the others.

Belongs to Krieger's section G. *l. c.* p. 92.

Xanthopimpla maculifrons, sp. nov.

Luteous: the ocellar region, the occiput in the middle, the middle of the front, the mesonotum, except for a large squarish mark in the middle, close to the apex, the base of the meso-

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notum—the mark narrowed in the middle—a large mark on the 1st and on the apical two segments and two large marks, broader than long, on all the others, a mark on all the tibiæ at the base, a large mark on the hinder coxæ, one on the outer and inner side of the hinder trochanters, a large line on the outer and inner side of the hinder femora and on the base of the last joint of the four hinder tarsi, black. Wings hyaline, the apex with a distinct smoky cloud. Areola large, 6-angled, of almost equal width at base and apex and projecting angularly in the middle. Ovipositor shorter than the hinder tibiæ. ♀.

Length 14 mm.; terebra nearly 3 mm.

Hab. Kuching.

Antennæ black; the scape yellow below; the base of the flagellum beneath and the apical joints brownish. Face closely punctured and thickly covered with white pubescence. The parapsidal furrows are deep and distinct only on the basal third of the mesonotum. The scutellum is distinctly keeled on the sides, not so sharply behind; the post-scutellum is distinctly keeled laterally. The tooth-bearing area is large and is of equal width. The black on the areola does not reach to its middle, on the sides it extends near to the middle of the tooth-bearing area. The keel on the metapleuræ does not reach the base. The middle segments of the abdomen are closely punctured.

Comes into Krieger's Section E, *l. c.* p. 81.

Xanthopimpla brunneicornis, sp. nov.

Luteous, the ocellar region, three roundish marks on the base of the mesonotum, the central being broader than long, the lateral longer than broad, two marks on the 1st, 2nd, 3rd, 4th and 6th abdominal segments and a mark on the base of the hinder tibiæ, black: the wings hyaline, the nervures and stigma black; the areola is wider than long and gets gradually wider towards the apex; the spiracular area is triangular; the ovipositor is longer than the hinder tibiæ. ♀.

Length 12 mm. ovipositor 4 mm.

Face, clypeus and labrum closely and finely punctured, the face more strongly than the clypeus and it is thickly covered with pale pubescence. Thorax smooth and shining; the parapsidal

furrows do not reach to the centre of the mesonotum. The areola is 4-angled; it becomes gradually, but not much, widened towards the apex, which is transverse; it is moderately large, is wider than long and is transverse at the apex: the tooth-bearing area is longish, oblique, triangular, the keels uniting on the inner side. The keel on the metapleuræ is narrowed at the base. Abdomen smooth at the base and apex; the 2nd and 3rd segments are closely, but not strongly punctured; the apical transverse furrows are longitudinally striated. The marks on the 3rd segment are larger and more oval than the others; on the 4th they are smaller; on the 5th they are longer and broader, the last pair are oval. The antennæ are brownish-red below; the scape largely black above.

Comes near to *X. ruficornis*, Krieger.

Pæcilopimpla, gen. nov.

Abdominal segments smooth, impunctate, broader than long, without transverse or oblique depressions; the petiole broad, scarcely narrowed at the base. Scutellum roundly convex: its basal slope only keeled. Mediar. segment with three large areæ on the base. Temples moderately large, roundly narrowed. Occiput rounded inwardly, margined. Vertex obliquely, roundly depressed. Eyes emarginate on the inner side, large, reaching near to the base of the mandibles. Clypeus short, separated from the face, depressed obliquely below and with the apex distinctly margined. Labrum not projecting. Mandibular teeth large and of equal size. Parapsidal furrows only indicated at the base. Areolet small, oblique, 5-angled, narrowed above. Transverse median nervure not interstitial, being received shortly beyond the transverse basal. The transverse median nervure in hind wings broken shortly above the middle. Legs stout; the claws long, simple. The apical abdominal segment is broad, not narrowed as usual, at the apex; it is furrowed down the middle, this being also the case with the 2nd segment.

The antennæ are stout, as long as the body and hardly taper towards the apex. The apical abscissa of the radius is not curved upwards; there is a short stump of a nervure on the cubito-disco nervure.

Comes near to *Xanthopimpla* which may be known from it by the orbits being straight and oblique, not rounded, by the occiput being transverse, not roundly incised, by the abdomen being distinctly punctured and marked with transverse furrows and by the scutellum being keeled along the sides. The middle vein in the hind wings is, like the others, distinct to the apex.

Pacilopimpla lucida, sp. nov.

Luteous, the ocellar region, the vertex broadly behind them, three broad marks on the mesonotum, occupying almost all the lobes, a small central and a larger mark on either side on the base of the metanotum, all three rounded at the apex, the base of the propleuræ, the abdominal segments broadly, the base and apex of the four hinder femora and tibiæ and the hinder tarsi, black. Wings hyaline, the nervures and stigma black. Antennæ black, the scape yellow, the flagellum brownish beneath. ♂.

Length 10 mm.

Hab. Kuching.

Face closely punctured, roundly concave, keeled in the middle. Parapsidal furrows distinct at the base only. Median segment smooth and shining, the areola square, the tooth bearing area confluent with that at the base. Abdomen smooth and shining; the 2nd segment is deeply furrowed in the middle at the base; its oblique lateral furrows are smooth.

XORIDINI.

Cyanovorides, gen. nov.

Antennæ stout, densely covered with short stiff pubescence: the 3rd joint hardly longer than the 4th, the apex from the 20th joint geniculated, bent back and separated from the rest like the lash of a whip. Clypeus short, broad, clearly separated from the face, depressed; its apex transverse. There is a stout keel between the antennæ. Occiput not very distinctly margined. Mandibles edentate, broad at the base, becoming gradually narrowed towards the apex. Mesonotum trilobate. Median segment areolated; the central area extends from the base to the apex and has the apical half much wider than the basal. Spiracles linear. The apical half of the mesosternum separated from

the pleuræ by a curved furrow. Areolet in fore wings absent; the transverse cubital nervure is short, the recurrent nervure is received shortly beyond it; the transverse median very shortly behind the transverse basal, almost interstitial. In the hind wings the cubital nervure is broken below the middle. The basal segment of the abdomen is large, becoming gradually wider from the base to the apex; the spiracles are placed shortly behind the middle; the basal three segments bear curved or oblique depressions; the last segment is larger than the preceding and bears distinct cerci; the hypopygium is smooth; the ovipositor is not quite so long as the body.

The prothorax is long, the tegulæ being placed not far from the middle of the thorax; the sides, at the base, project into teeth; there is an oblique keel near the base of the propleuræ; the ocelli are widely separated from the edge of the vertex; the tarsi are short, compared with the tibiæ; the basal joint of the hinder is slightly longer than the others united; the four front tibiæ are sharply contracted at the base, as is also the case, but to a less extent, with the posterior; the claws are smooth and simple. The temples are large and there is a distinct malar space.

To this genus probably belong *Glypta fracticornis*, Sm., from Mysol and *Xylonomus fracticornis*, Sm., from Batchian.

Cyanoroides Brookei, sp. nov.

Metallic blue, thickly covered with white pubescence, the antennæ black with a white band beyond the middle; the wings hyaline, the nervures and stigma black; there is a narrow fuscous cloud bordering the transverse basal and the transverse median nervures behind; and a broader cloud on the basal half of the radial cellule, extending along the inner side of the recurrent nervure to the opposite side of the wing. ♀.

Length 16 mm.; terebra 11 mm.

Hab. Kuching.

Front and vertex smooth and shining, with a few scattered punctures; the outer edge of the vertex and the temples thickly covered with white hair. Face closely punctured, its upper part finely transversely striated and covered with white pubescence; the clypeus impunctate; the labrum fuscous, smooth, with a row of long hairs on the middle and apex. Mandibles

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black. Apical half of the middle lobe of the mesonotum coarsely transversely reticulated, its apex stoutly longitudinally striated; the basal half is sparsely punctured. Scutellum sparsely punctured laterally; the post-scutellum is furrowed on the inner side of the lateral keels. The metapleuræ at the base are sparsely punctured; the rest of them on the upper half are closely and rather strongly punctured, the punctures forming rows. The basal 3 segments of the abdomen are closely punctured, except on the central depression on the petiole; the oblique furrows are finely striated. The apical segments are smooth. The anterior tarsi are black; thickly covered with white pubescence; the anterior tibiæ are black in front; the rest of the legs are of a darker blue than the body.

Spilorori *les*, gen. nov.

Antennæ slender, short, ringed with white, the apical four joints geniculated and angularly bent back from the others; the 3rd joint is distinctly longer than the 4th. Face raised in the centre, clearly separated from the lateral part; its apex rounded. Occiput distinctly margined. The apex of the scutellum distinctly keeled on the sides; the post-scutellum stoutly keeled laterally. The areola is widened at the apex and is separated from the posterior median by a stout transverse keel. The transverse median nervure is placed behind the transverse basal; the recurrent nervure is received distinctly beyond the transverse cubital by a greater distance than the length of the latter. The cubital nervure is broken shortly below the middle. The 1st segment of the abdomen is roundly convex and is without any depressions or furrows; the 2nd and 3rd segments have oblique depressions on the base. The basal joint of the hinder tarsi is shorter than the following joints united.

This genus may be separated from *Cyanoxorides* as follows:

Antennæ short, slender, not densely pilose, the 3rd joint distinctly longer than the 4th; the lash of the antennæ only 4-jointed, the face clearly separated from the orbits; the body not metallic blue: the areola separated from the posterior median area by a stout transverse keel; the basal joint of the hinder tarsi shorter than the other joints united.

Spiloxorides.

Antennæ long, stout, densely pilose, the 3rd joint not much longer than the 4th; the lash of the antennæ many jointed; the face not clearly separated from the orbits; body metallic blue; the areola not separated from the posterior median area; the basal joint of the hinder tarsi longer than the other joints united. *Cyanozorides*.

Spilozorides ruficeps, sp. nov.

Black, the head, the scape of the antennæ and the greater part of the fore legs, red; the base of the flagellum and a band beyond its middle and the apices of the 3rd to 6th abdominal segments narrowly and a broad band on the sheath of the ovipositor, white; the wings hyaline, the base of the stigma broadly white; there is a large fuscous band at the base of the stigma where it is narrow and it becomes gradually wider towards the end; there is a smaller fuscous cloud on the transverse cubital nervure extending into the radial cellule to the end of the recurrent nervure on its inner side. ♀.

Length 11 mm.; terebra 6 to 7 mm.

Hab. Kuching.

Vertex smooth and shining; the front keeled down the centre and closely and finely transversely striated. The centre of the face is broadly raised; this raised part is slightly narrowed and rounded at the apex, is bordered laterally by a keel and is coarsely, irregularly transversely striated; the depressed sides have a paler, more yellowish tint and are finely transversely striated on the inner side. The clypeus is separated from the malar space by a furrow; its apex is obliquely depressed and is transverse. The labrum is slightly rounded from the middle and is thickly covered with long golden hair. Mandibles black, narrowly dark rufous at the base. Mesonotum shining, aciculated crenulated, round the edges. Scutellum smooth and shining; the post-scutellum is broadly depressed and has the lateral keels much stouter than those on the scutellum. The metanotum is aciculated; its keels are bordered by short broken ones on either side. Pro- and mesopleuræ smooth and shining; the upper half of the meta-coarsely reticulated. Abdomen thickly covered with white pubescence; closely, minutely

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punctured, more strongly on the basal than on the apical segments; the depressions are minutely striated. The ventral surface is pale brick-coloured. The front legs are dark rufous, the trochanters and tarsi darker coloured; the tibiæ have a pale yellow streak in front; the middle femora are bright rufous in front, dark behind.

Lethulia, gen. nov.

Areolet absent: the recurrent nervure united with the transverse cubital. Antennæ long and slender, the flagellum broadly ringed with white. Head cubital; the occiput margined, temples large, the malar space wide. Clypeus clearly separated from the face, depressed, its apex transverse and with a distinct margin, below which it is obliquely depressed. Mandibles broad; they have a short blunt subapical tooth. Parapsidal furrows wide, deep, the mesonotum distinctly trilobate. Metanotum with 3 distinct aræ at the base; spiracles linear, placed distinctly behind the middle. The hind legs longer than the others; their coxæ large, their trochanters long and distinctly narrower than the femora which are stouter than usual; their tibiæ are much longer than them; calcaria short; the 2 hinder claws are simple. The anterior tarsi are twice the length of the tibiæ; their claws and those of the middle bifid; the basal joint of all the tarsi is shorter than the 4 following united. If any thing, the recurrent nervure is received on the outer side of the transverse cubital; there is no stump of a nervure on the cubito-disco nervure.

This genus comes near to *Fislistina*; it may be known from it by the transverse, not rounded, apex of the clypeus and by its being clearly separated from the face, by the antennæ being longer, more slender and broadly ringed with white, by the very long hinder trochanters, by the petiole being more slender and longer than the 2 following segments united and by the hinder tibiæ being much longer compared with the tarsi.

Lethulia flavipes, sp. nov.

Black, the legs yellow, with the hinder coxæ and femora black; the antennæ white, broadly black at the base and apex;

the abdomen yellow broadly banded with black; the wings hyaline, with a narrow cloud below the stigma, and the apex is narrowly smoky. ♀.

Length 15 mm.; ovipositor 12 mm.

Hab. Kuching.

Head black, the face and clypeus and the malar space yellow, the face with a black mark in the centre; the inner orbits are yellow to near the upper ocelli. Front and vertex smooth and shining; the front with a distinct keel down the middle, extending from the ocelli to the base of the antennæ. Mandibles black, the base with large elongate punctures. Palpi yellow. Thorax smooth; the centre of the propleuræ striated; the lower part of the meso- obscurely and the meta- more distinctly punctured. Parapsidal furrows and the depression at the apex of the middle lobe transversely striated. The part behind the basal areæ on the median segment is irregularly longitudinally striated and there are some irregular transverse keels down the sides; the centre at the apex is depressed; the depression becomes gradually wider to beyond the middle, it then becoming gradually obliquely narrowed to the apex, this part being bounded by distinct keels. Legs thickly covered with white pubescence. The basal two-thirds of the 1st and the basal halves of the 2nd to 5th abdominal segments black.

CRYPTINA.

MESOSTENINI.

Skatia flavipes, sp. nov.

Black; the middle of the flagellum of the antennæ broadly white; a large mark of equal width throughout on the centre of the face, a small mark on the vertex touching the eyes, the tegulae, scutellum, post-scutellum, a minute mark on the tubercles, a triangular mark under the hinder wings, the sides of the metanotum, a narrower line round the top and the spines, lemon-yellow. Legs lemon-yellow; the hinder trochanters, apical third of hinder femora, and the apical fourth of the hinder tibiæ black. The abdominal segments banded with yellow at the apex; the last segment is entirely yellow. Wings hyaline, the nervures and stigma are black. ♀.

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Length 13 mm. ; terebra 3 mm.

Hab. Kuching, April 25th.

Face rugose, on the lower side obscurely longitudinally striated. Front with a distinct keel down the middle; the sides with irregularly twisted longitudinal or oblique keels. The ocelli are bordered laterally by a furrow. Mesonotum aciculated, closely and finely transversely striated along the furrows, which bear some transverse striæ. Scutellar depression with a stout, longitudinal keel in the centre. Scutellums smooth. Behind the postscutellum is a curved keel, with a more distinct longitudinal one running down from its centre. The basal area on the mesonotum is slightly longer than its width at the base; it becomes narrowed towards the apex which is transverse. The base behind the keel is strongly aciculated; the rest of the segment is longitudinally reticulated; the apical slope transversely so; the spines are long and project obliquely outwardly. Propleuræ stoutly in the middle and at the apex longitudinally striated. Mesopleuræ stoutly obliquely reticulated, except at the apex above; the furrow is crenulated. Metapleuræ closely and rather strongly obliquely striated; the striæ are more or less curved. Petiole smooth and shining; the 2nd and 3rd segments are aciculated; the others smooth. The 4 front tarsi are black.

Skeatia varipes, sp. nov.

Black; the inner orbits, the outer broadly from near the top, the face and clypeus, a line on the pronotum, a mark in the centre of the mesonotum, the scutellar keels, the scutellums, the sides of the metanotum, a curved line on its top uniting the lateral lines, the spines, the tubercles, the lower part of the mesopleuræ broadly—the mark with a curved incision in the middle above—the mesosternum, a mark under the hind wings and a large oblique mark in the centre of the metapleuræ, yellow. The 4 front legs pale yellow, their femora lined above with black, as are also the middle tibiæ behind; the hinder coxæ yellow, largely marked with black on the outer side; the hinder femora rufous, black from shortly beyond the middle, the tibiæ; and tarsi yellow, with the apical third of the tibiæ, black. Wings hyaline, the stigma and nervures fuscous black. ♀.

Length 14 mm.

Hab. Matang.

Antennæ black, the 5th to 6th joints white. Face strongly, but not very closely, punctured; the centre above closely transversely striated; the clypeus is more sparsely punctured. Mandibles black, broadly pale-yellow at the base. Front irregularly transversely striated and keeled down the centre. Mesonotum closely rugosely punctured; the parapsidal furrows transversely striated; the apex is more strongly transversely striated. The basal area on the median segment is smooth and shining; the rest of the metanotum is coarsely irregularly reticulated and punctured. The upper part of the propleuræ is punctured in front, striated behind; the lower part is stoutly distinctly striated. Mesopleuræ strongly and closely striated; obliquely below, more irregularly at the base above. Meta-pleuræ irregularly obliquely striated. Post-petiole irregularly punctured, the 2nd and 3rd segments closely and regularly punctured.

May be known from *S. flavipes* by the large yellow mark on the mesopleuræ, by the yellow mesosternum, by the mark on the mesonotum, by the rufous hinder tibiæ, by the yellow line on the metanotum, being semicircular, not transverse, etc. It is a much more robust species.

Skeatia carinata, sp. nov.

Black; the face, clypeus, inner orbits narrowly, the malar space, the pleuræ, the scutellum, post-scutellum, the space at their sides, the apical slope of the metanotum, a semicircular mark in the middle above it, the spines and the apices of the abdominal segments, yellow; the four front legs pale yellow; the hinder legs black, their coxæ for the greater part yellow, the tarsi white; the wings hyaline, the nervures and stigma black. ♀.

Length 13 mm.; terebra 5 to 6 mm.

Hab. Kuching.

Antennæ black; the 5th to 14th joints white. Face punctured, and obscurely transversely striated in the middle; on the top is a longitudinal keel which extends upwards between the antennæ. The lower part of the front is yellow; the black upper part is wrinkled in the middle. Middle lobe of mesono-

tum coarsely transversely striated, the lateral irregularly rugose-ly punctured; the apex is rufous and bears four stout longitudinal keels. There are 4 longitudinal keels on the scutellar depression; the scutellum is broadly black on the base. The lateral scutellar depressions and the depression on the base of the metanotum are stoutly striated. The basal area on the metanotum is raised, smooth and open at the sides on the base; the rest of the metanotum is closely, strongly striated; the striæ are straight at the base, on the rest they are curved downwards in the middle. Mesopleuræ on the lower side obliquely striated at the base; the meta- stoutly obliquely striated and broadly depressed in the middle. The spines are short, broad and rounded at the apex. Abdomen smooth and shining.

**Melcha maculipennis*, sp. nov.

Black; the median segment for the greater part red; the tegulæ, scutellum, post petiole; the apical third of the 2nd abdominal segment and the whole of the apical two whitish-yellow; the four front legs rufo-testaceous, the coxæ paler, the middle joints of their tarsi white, the base and apex black; hinder coxæ rufous; the trochanters, femora and base of tarsi blackish; the apical and basal joints of tarsi black, the middle joints white. Wings hyaline; there is a brownish cloud between the base of the stigma and the areolet and extending nearly to the opposite side of the wing where it becomes fainter and narrower; the apex is faintly clouded. ♀.

Length 9 mm.; ovipositor 2 mm.

Hab. Kuching.

Antennæ long, black, the 7th to the 11th joints white except above, the scape dark rufous. Front above obscurely longitudinally, below obscurely transversely striated. Thorax shining; the mesopleuræ alutaceous; the furrows more or less crenulated. Scutellum smooth and shining. Base of median segment smooth and shining; the part between the two keels rugose, the apical slope reticulated, the upper part more distinctly than the lower. Abdomen shining; the 2nd and 3rd segments are closely punctured; the ga-troceli smooth and rufous.

* *Melcha*, Cam. Ann. and Mag. Nat. Hist. Ser. 7, Vol. IX, 153.

The metanotal area does not reach to the base of the segment; it is open behind, almost square and of almost equal width throughout.

Melcha annulipes, sp. nov.

Black, shining, the apical slope of the median segment, the apices of the 1st, 2nd and 5th in the centre and the whole of the 6th and 7th segments above, white; the base and sides of the petiole rufous; the 4 anterior coxæ and trochanters; the femora rufous, the tibiæ pale, fuscous behind, the anterior tarsi blackish, the middle fuscous, white in the middle; the hinder coxæ rufous; the apical joint of the trochanters black; the femora rufous black above; the tarsi white, the last joint black; the basal third of the hinder tibiæ white. Wings hyaline with a faint cloud behind the areolet and a fainter one on the apex; the stigma and nervures dark fuscous. ♀.

Length 8 mm.; terebra 3 mm.

Hab. Kuching.

Face rugose, the clypeus smooth and shining. Mandibles white, rufous in the middle, the apex black. Palpi white. Front keeled, in the middle obscurely striated, the sides smooth and shining. Mesonotum shining; the tegulæ, tubercles, scutellum and post scutellum white. Base of median segment smooth; the area small, triangular, the nervures uniting before reaching the keel; the rest of the segment closely reticulated; the centre of the apical slope has a rufous tint. Propleuræ striated in the middle: the meso- more closely longitudinally striated, except at the apex above: the meta- closely, somewhat obliquely striated and reticulated. Abdomen very smooth and shining.

Friona varipes, sp. nov.

Black, shining; the scutellum, the post-scutellum, a large mark at its sides behind the wings, a large mark, rounded above, transverse below on the metapleuræ, the apices of the basal 6 abdominal segments and the whole of the 7th, pale yellow; the four anterior legs pale fulvous, the middle pair with a rufous tint; the hinder coxæ dark rufous, broadly yellow at the base above; the trochanters black: the tibiæ blackish, dark rufous at the

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base; the tarsi white; the wings hyaline, the stigma and nervures black. ♀.

Length 13 mm.

Hab. Singapore.

Antennæ slender, black, the 11th to 19th joints white. Face coarsely alutaceous, a short mark on it under each antennæ; opaque sparsely covered with short white pubescence. Clypeus roundly convex, smooth and shining. Mandibles broadly white at the base. Labrum and palpi white. Front pro- and mesopleuræ striated, as with the other species of the genus; the metanotum from the transverse keel is transversely, but not very strongly, striated; in the centre of the striated part is a broad yellow line, which unites with a transverse one on the apex. The median segment is thickly covered with long white hair. Abdomen smooth and shining. The coxæ, trochanters and femora are covered with long white; the extreme base of the hinder tarsi and their apical joint black.

ICHNEUMONINA.

JOPPINI.

Cratojoppa maculiceps, sp. nov.

Black; largely marked with pale yellow; including the sides and apex of the scutellum narrowly, the areola and two oblique marks on the apex of the median segment; the legs pallid yellow; the four front femora above, the hinder entirely; the apical half of the middle tibæ behind, almost the apical two-thirds of the hinder and a narrow band on their base, black; the wings hyaline, the nervures and stigma black. ♀.

Length 17 mm.

Hab. Kuching.

Antennæ black; the 9th to 23rd joints white. Head smooth and shining; the face and clypeus sparsely punctured; on the face are two black lines which become wider below and run into the foveæ. Mandibles and palpi whitish-yellow; the mandibular teeth black. On the thorax, a narrow line on the pronotum, the tubercles, the mesopleuræ below, two small spots on the centre of the mesonotum, the sides and apex of the scutellum narrowly, its keels, the post-scutellum, a conical mark behind

the spiracles, the elongated areola, two oblique marks on the apex of the metanotum outside the posterior median area and the apices of all the abdominal segments (the line on the 2nd being broader than the others), pallid yellow. Mesonotum distinctly and irregularly punctured, except at the apex; the scutellum is more strongly punctured, with a smooth line in the middle on the basal half. Metanotum strongly, deeply and irregularly punctured; the basal areæ on the base and inner sides smooth; the areola has two elongated closely punctured spots in the centre; the posterior median area is stoutly, transversely striated, as is also the spiracular area beyond the spiracles. Pro- and mesopleuræ smooth; the meta- above the keel closely rugosely punctured. Petiole smooth and shining; the 2nd and the 3rd segments are closely punctured, the 2nd more strongly than the 3rd; their base closely longitudinally striated in the centre; the gastrocoeli smooth and shining.

The colouration of the body is almost identical with that of *C. robusta*, Cam., but that species may be known from it by the four front legs being without black; and the hinder femora are rufotestaceous, with the apical third black.

ACULEATA.

FOSSORES.

Mutilla attila, sp. nov.

Black, the basal two segments of the abdomen ferruginous; the wings dark fuscous-violaceous paler at the base; the apex of the clypeus transverse, the tegulæ large, black; the outer edge turned up and paler in tint. ♀.

Length 13 mm.

Hab. Lingga.

Front and vertex almost uniformly rugosely punctured; sparsely pilose; the face, clypeus and cheeks thickly covered with long griseous hair. Apical half of clypeus convex, the base flat; its apex transverse. Middle of mandibles rufous. Pronotum and upper part of propleuræ closely rugosely punctured; the rest of pleuræ smooth. Mesonotum shining; bare; the furrows deep; there is an impressed line down the centre. Scutellum coarsely rugosely punctured, the punctures large and

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almost forming reticulations; it is not much raised and there is no smooth space. Median segment coarsely reticulated; the basal area reaches to the middle of the segment; it is not much widened at the base and there is a large, wider area on either side at the base. The 2nd cubital cellule is not much shorter than the 3rd; the 2nd cubital nervure is broadly, roundly curved outwardly; the apex of the radius is straight and oblique. The 2nd abdominal segment is narrowed at the base and bulges roundly outwardly; the ventral keel is not very prominent and is narrowed at the apex. The last segment is smooth in the middle; its apex is distinctly raised.

Mutilla Caccina, sp. nov.

Black, thickly covered with white hair; the 1st and 2nd abdominal segments ferruginous; the wings fuscous with a violaceous tinge: the extreme base of the front and almost the basal half of the posterior pair hyaline, the nervures and stigma black; the apex of clypeus incised. ♂.

Length 12 mm.

Hab. Lingga. November.

Front and vertex some what strongly longitudinally striated; the vertex behind and between the ocelli much more finely striated. Antennal tubercles bright red. Face and clypeus smooth, thickly covered with soft white hair; the apex of the clypeus with a round incision; its middle flat. Mandibles black, rufous in the middle; the palpi black, mixed with fuscous. Pronotum strongly rugosely, closely punctured; its apex thickly covered with depressed dark grey pubescence; the mesonotum is more shining, and more strongly but not so closely, punctured. Scutellum strongly rugosely punctured and covered with long black hair. Median segment strongly reticulated; its central area not quite reaching to the middle; its basal half dilated. The basal half of the propleuræ rugosely reticulated; the apical smooth, with some obscure longitudinal striæ. Mesopleuræ closely rugosely punctured. Metapleuræ irregularly reticulated except in the middle and at the base above. Legs thickly covered with white hair; the spurs pale. The basal abscissa of the radius is slightly curved outwardly; the apical broadly, roundly curved and is longer than the middle two unit-

ed; the 3rd cubital cellule above is distinctly shorter than the 2nd. The 2nd abdominal segment becomes gradually wider towards the middle, it is not being dilated in the middle, nor narrowed at the apex; the last segment has a broad, smooth glabrous band extending from near its base to the apex and becoming gradually wider towards the apex. The ventral keel is slightly dilated at the apex. Tegulae black on the inner side, the middle rufous, the outer edge paler.

This is a more slenderly built species than *M. atilla*; it may be known from it by the incised apex of the clypeus and by the front and vertex not being uniformly rugosely punctured.

Discolia ocina, sp. nov.

Black; the vertex and the upper half of the outer orbits pale orange; the wings uniformly dark purple-violaceous; the apical half of middle lobe of the mesonotum almost impunctate; the median segment strongly punctured except laterally at the base. ♀.

Length 13 mm.

Hab. Java.

Vertex smooth; the upper part of the front strongly irregularly punctured; the lower opaque, shagreened and distinctly furrowed in the middle. Clypeus smooth, flat, slightly narrowed towards the base; its depressed apex stoutly longitudinally striated. The scutellum is more strongly and closely punctured than the mesonotum. Post-scutellum punctured at the base and the sides. Pleurae closely punctured. Meso- and metanotum thickly covered with stiff black hair. Abdomen smooth and shining and sparsely covered with short black hair. The hair on the legs is long, stiff and black.

Comes near to *D. humeralis*.

Triscolia crassiceps, sp. nov.

Black, shining, above covered with black hair; the front closely and strongly punctured, the vertex almost impunctate; the temples large, nearly as long as the front half of the head; their sides broadly rounded; the clypeus raised in the centre, flat; its apex with a row of small punctures, the central part of the metanotum and the outer part of the lateral parts closely

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and strongly punctured; the abdomen shining, finely punctured on the base of the segments; the hair fringe black; it has a violaceous tint in certain lights; the wings uniformly fuscous-violaceous. ♀.

Length 15 mm.

Hab. Matang, 3600 feet.

Characteristic of this species is the large head, largely developed behind the eyes and as wide as the thorax. Antennæ short, thick and bare. Mandibles almost impunctate, fringed below with long rufous hair. The centre of the prothorax is smooth and shining; the sides strongly and closely punctured. There is a distinct, deep longitudinal furrow on the sides of the mesonotum, which is strongly, but not closely, punctured and has two smooth longitudinal bands near the centre. Scutellum with a band of large punctures round the edges and with a curved row in the middle. Post-scutellum strongly punctured, most sparsely in the centre. The apical slope of the median segment is impunctate. The raised middle part of the mesopleuræ is strongly punctured; the upper and apical parts of the metopleuræ sparsely and not very strongly punctured. Pygidium covered thickly with long black hair.

Comes near *T. Kollari*, Sauss., and *T. macrocephala*, Grib.

Agenia acilla, sp. nov.

Black, shining, smooth, covered with a silvery pile; the wings hyaline; a narrow cloud along the transverse basal and the transverse median nervure (the larger part of it on their outer side) and a wider cloud extending from the base of the stigma to shortly beyond the middle of the 2nd cubital cellule and backwards extending to the discoidal nervure. ♀.

Length 9 to 10 mm.

Hab. Kuching.

Head opaque, alutaceous, the apex of the clypeus smooth and shining. Mandibles rufous behind the apex. Palpi black, the apical joints fuscous; the hair bundle long and black. Hinder ocelli separated by a slightly less distance from each other than they are from the apex. The scutellum and post scutellum shining. The apical half of the median segment is

obscurely transversely striated and thickly covered with silvery pubescence. The tibiæ are not grooved and are sparsely covered with short spines; the tarsi are more thickly spined; there is a straight tooth near the middle of the claws. The 1st transverse cubital nervure is rounded, obliquely bent on the top; the 2nd abscissæ of the radius and cubitus shorter than the 3rd; the 1st recurrent nervure is received almost in the centre of the cellule; the transverse median nervure is received distinctly beyond the transverse basal; the accessory nervure in the hind wings is distinctly appendiculated.

The temples are well developed and rounded broadly behind; the median segment is longer than usual, has an obliquely rounded slope and is indistinctly furrowed down the middle; the pronotum is as long as the mesonotum and is rounded at the apex; the pygidium is thickly covered with long fuscous hair, is opaque, with a shining line in the centre.

Pompilus pangasis, sp. nov.

Black; thickly covered with silvery pile; the wings fuscous-hyaline, the apex from the base of the stigma much darker and with a distinct violaceous tinge; the base of the mesonotum with the sides straight and oblique, the apex of the pronotum therefore not rounded. ♀.

Length 12 mm.

Hab. Penrissen.

Apex of clypeus broadly rounded. Eyes parallel, very little converging above. Hinder ocelli separated from the eyes by more than double the distance they are from each other. temples very little developed; the occiput transverse. Pronotum moderately large, the sides rounded. Median segment short, rounded; pilose and thickly covered with long pale hair. Tibiæ and tarsi stoutly, but not thickly, spined. Second cubital cellule about one-third shorter than the third; the 1st transverse cubital nervure is oblique and rounded; the 2nd is not oblique and is broadly, roundly bent towards the apex of the wing; the 1st recurrent nervure is received shortly beyond the middle; the 2nd near the apex of the basal third of the cellule; the accessory nervure in the hind wing is interstitial. The transverse basal nervure is roundly curved.

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Salius robertianus, sp. nov.

Black; the head, the pronotum, mesonotum, tegulæ, scutellums, the scape of antennæ, the under side of the flagellum and the legs, except the coxæ and trochanters, fulvous; the wings dark yellowish-hyaline, the radial, the apical 3 cubital cellules, the apical two discoidal and the apical cellules, fuscous, with a distinct violaceous tinge. ♂.

Length 23 mm.

Hab. Kuching.

The joints of the flagellum are roundly curved below. Head and fore part of the thorax covered with a short golden pile. Apex of mandibles black. The front, vertex and occiput are infuscated; the front is distinctly furrowed down the centre. Post-scutellum prominent, broadly roundly convex, not raised above the level of the scutellum, and not raised in the centre. The median segment transversely, but not strongly striated, except on the apical slope. The 2nd and 3rd abscissæ of the radius are almost equal in length; the 1st discoidal cellule is almost hyaline, and has an elongated fuscous streak in the middle; the 3rd transverse cubital nervure has its upper half straight and oblique; the apical abscissa of the radius is straight and oblique; the basal nervure is roundly curved. The eyes are only slightly curved on the inner side and only slightly converge above and not at all below. The prothorax does not project outwardly above in the middle; the base of the mesonotum is broadly rounded, its sides not straight and oblique, as in *S. flavus*. The fore coxæ are only black behind; the hinder femora are blackish at the base.

Belongs to the group of *S. flavus*, except that the yellow colour in the wings is not clear.

Salius brookei, sp. nov.

Fulvous-yellow: the pleuræ dark fuscous, the apex of the median segment black; abdomen black; the ocelli in a black mark; the wings clear yellowish-hyaline; the stigma and nervures fulvous-yellow. ♀.

Length 14 mm.

Hab. Kuching. February.

Head in front longer than usual. Eyes distinctly curved on the inner side. Pronotum with a distinct wide furrow in the centre. The post-scutellum is more narrowed towards the centre than is the scutellum. The striation on the median segment is indistinct on the basal half. Tibiæ and tarsi distinctly, but not thickly, spined; the claws have a stout tooth at the base. The 2nd cubital cellule at the top is about two-thirds of the length of the first; below not much shorter than it; the 3rd transverse cubital nervure is roundly curved; the first recurrent nervure is received close to the base of the apical third of the cellule; the transverse basal nervure is straight and sharply oblique; the transverse median nervure is straight and sharply oblique and is separated by almost its own length from the transverse basal. The accessory nervure in the hind wing is not interstitial. The apex of the abdomen is dark fulvous and is thickly covered with pale fulvous hair.

Stizus Borneanus, sp. nov.

Black; the face below the antennæ, the clypeus, except for a large mark beneath, the labrum, the lower side of the scape a narrow line on the apex of the pronotum, interrupted in the centre and not extending to the outer edges, the tubercles, the outer edge of the tegulæ—their base entirely—a large oval mark on the sides of the scutellum, a small mark behind it, the greater part of the post scutellum, the sides of the median segment in the middle; a large mark, much broader than long, on the apex of the first abdominal segment, a line on the apex of the 2nd segment, dilated at the sides, a narrower one on the 3rd and 4th, a mark on the sides of the 5th and the sides of the 2nd and 3rd ventral segments—the marks narrowed on the inner side—yellow. Legs black, the apex of the 4 front femora, and the greater part of their tibiæ and tarsi anteriorly; and the basal half of the hinder tibiæ behind, yellow. Wings hyaline, the nervures and stigma black. ♀.

Length 11 mm.

Hab. Kuching.

The basal seven joints of the antennæ are brownish beneath. The black mark on the clypeus is narrowed towards the top; its centre above is roundly incised. The centre of the front is

shagreened; the sides bear silvery pubescence and the lower inner orbits are yellow; the vertex is impunctate and is, as is also the occiput, thickly covered with long fuscous hair. Thorax shining, impunctate, thickly covered with pale pubescence, which is longest on the median segment. Abdomen shining; the apices of the middle and apical segments covered with stiff black hair; the last smooth and bare in the middle. The posterior angles of the median segment are broadly rounded; the front is narrowed beneath; there is no violet iridescence on the thorax or abdomen.

Belongs to the group of *S. semperi*, Hand. *S. socius*, Hand. has been taken at Sarawak by Mr. Shelford.

Ampulex foveifrons, sp. nov.

Green, largely marked with blue, the lateral lobes of the mesonotum, and the basal area of the metanotum purple; the pleuræ brassy; the four posterior femora red; the antennæ short and thick; the 3rd joint distinctly longer than the 4th; the apex of the median segment bluntly rounded and without teeth on the apical lateral margins; the keels on the metanotum short, not extending much beyond the middle and three in number; the outer united at the apex with the central. Wings fuscous with a violaceous tinge; the apex of the radius broadly rounded, extending slightly beyond the top of the apical transverse cubital nervure. ♀.

Length 18 mm.

Hab. Kuching.

Antennæ stout, black, nearly as long as the thorax. Head large, nearly as wide as the mesothorax. Temples largely developed, not narrowed behind the eyes and rounded behind. Front closely and distinctly, but not strongly, punctured; the vertex more sparsely punctured; behind the ocelli are three large, elongated and two small foveæ in a row; the eyes are separated by about four times the length of the antennal scape. Clypeus broadly keel; its apex roundly projecting below. The raised part of the pronotum is broader than long, slightly narrowed and rounded at the base and about one fourth shorter than the mesonotum; the lower depressed part is coarsely longitudinally

punctured and deeply furrowed in the centre. Parapsidal furrows complete; deep and crenulated. The scutellar depression narrow, deep, crenulated. The central keel of the metanotum is straight; the lateral are curved and become united to the central, forming a large curved area, broader at the base than at the apex and marked with seven stout transverse keels: outside it is a large curved depression not bounded on the outer side by a keel and ending at the inner apical part in a round fovea; the middle part of the apical slope on the sides are irregularly punctured; the lower transversely striated. Pleuræ sparsely punctured; the upper part of the meta-bordered by a wide longitudinal furrow, which is irregularly striated. The anterior tibiæ and all the tarsi are brownish; the fore femora are black, green above; the middle tibiæ black, marked with green behind; the hinder bluish-green. Tarsal joints thickly spined; the joints narrow, longish; the claw-tooth broad at the base, becoming gradually narrowed towards the apex, which is sharp-pointed. The basal segment of the abdomen above is large, rounded, but not narrowed, at the base above, slightly broader than long and not very much shorter than the 2nd segment; the 3rd segment is not much shorter than the 2nd. The base of the 2nd segment projects straight downwards; the apex of the 1st segment in front of it projects roundly, but not much, downwards.

There are only two transverse cubital nervures; the upper three-fourths of the 2nd is straight and oblique, the lower is also straight, but without an oblique slope; it is united to the radius at a short distance from its apex.

This species is easily known by the broadly rounded, toothless apex of the median segment; by the short central keels on the metanotum and by there being no lateral ones, by the broad head and thorax, by the short, thick antennæ, by the straight, obliquely bent 2nd transverse cubital nervure and by the basal three segments of the abdomen being of almost equal length.

It is possible that this species may be *A. hospes*, Sm. (which Kohl thinks may be a var. of the Javanese *A. cognata*, Kohl.) but Smith's descriptions are not sufficient to enable me to decide this; as is unfortunately the case with too many of his Malay species.

Ampulex rufo-femorata, sp. nov

Green; largely marked with blue, the pleuræ with brassy tints; the antennæ black, the 3rd joint about one half longer than the 4th; the temples sharply obliquely narrowed; metanotum closely transversely striated; all its keels reach close to the apex of the segment; the central one bifurcates obliquely at the apex, the end keels uniting to the apex of the 3rd keel; all the trochanters and femora and the fore tibiæ are red; the tarsi black; the wings infuscated; the apical third darker clouded; the 1st transverse cubital nervures obliterated; the 3rd is received at a short distance from the apex of the radius; the 2nd segment is distinctly longer than all the following united; at its base below it has a rounded oblique slope. ♀.

Length 14 mm.

Hab. Mount Sibou.

Front and vertex sparsely punctured; the latter depressed broadly in the middle; the inner orbits are margined; the keels leading into the antennæ are long, stout and oblique; between them, below, are some curved furrows: the eyes at the top are separated by the length of the antennal scape and pedicle united. The raised part of the pronotum is shortly, but distinctly, longer than its breadth at the apex and is slightly narrowed at the base. The metanotum is not much shorter than the mesonotum; its teeth are stout and long; its apical slope is covered, except in the centre above, closely with curved striæ and is thickly covered with white pubescence. Mesopleura strongly punctured under the wings; the upper part of the meta obliquely striated, the striæ becoming closer and extending lower down on the apex. The abdomen, seen from the back, is as in *A. spectabilis*, cf. Kohl's fig. Ann. Hof. Mus. Wien. VIII, pl. XII, f. 35.

The ventral segments are as in his figure 36 pl. XII, but with the slope not quite so gradual. The hinder tibiæ are blue behind.

In Kohl's table this species would come in near *A. erythropus*.

Trirogma nigra, sp. nov.

Black, shining; the head and thorax thickly covered with long white hair, as are also the coxæ, femora and ventral sur-

face of the adomen; wings hyaline, infuscated towards the apex, the nervures and stigma black. ♂.

Length 12 to 13 mm.

Hab. Santubong.

Antennæ as long as the body, black; the apical joints slightly curved. Vertex strongly, but not closely, punctured, more sparsely behind the ocelli; the front closely reticulated; both are sparsely covered with long white hair. Face and clypeus thickly covered with long depressed white hair, which hides the texture. Prothorax smooth and shining; the pleuræ with some striæ in the middle; the pronotum at the apex cleft, the sides rising into large, oblique pyramidal, oblique tubercles. Base of the mesonotum is coarsely rugosely punctured, and in the middle irregularly striated; its middle at the apex is smooth, shining and roundly convex. Scutellum not much raised, smooth and shining. Metanotum shining; in the centre is an oblong area, with straight sides and apex; from its apical angles issues a short curved keel, and from the sides, near the middle, two curved longer ones; outside this are two oblique keels; united at the apex by a shorter one, which is roundly curved inwardly; from these keels the segment slopes obliquely to the tubercles, to which they are united by some keels; there being also some keels behind them. From the tubercles a keel runs round the sides and apex. Abdomen smooth and shining; the petiole, sides and ventral surface thickly covered with long white hair. The first transverse cubital nervure is obliquely bent at the top; the second is roundly curved.

This species is easily separated from the known species by its black body. The metathoracic spines, too, are more prominent than usual.

Cerceris malayana, sp. nov.

Black; the face, clypeus, the scape, 2 broad marks on the pronotum, tegulae, post-scutellum, two large marks, irregularly oval in shape, on the apex of the median segment, a large broad mark on the base of the 2nd abdominal segment; a broad band—widest on the sides—on the apex of the 3rd segment; and a narrow band on the apices of the 5th and 6th, yellow. The four front legs yellow, with a broad band on the femora behind; the

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hinder femora, the base of the hinder tibiæ narrowly, their apex more broadly and the hinder tarsi black. The area on the metanotum smooth, with a deep crenulated furrow in the centre. Wings hyaline, the radial cellule and the apex of the 4th cubital cellule smoky; the stigma dark fuscous. ♂.

Length 8 mm.

Hab. Kuching.

Flagellum of antennæ below and the apical joint also above brownish-red; the pedicel entirely black. Front and vertex closely and strongly punctured; the face and clypeus less closely and covered with white pubescence; the yellow on the face is obliquely, sharply narrowed above; laterally it extends along the eyes to the base of the antennæ. Thorax strongly and closely punctured, except the metanotal area which is smooth and shining except at the apex; its central furrow does not commence at the base which is obliquely depressed. Abdomen strongly punctured; the pygidium is only slightly narrowed at the base and apex; its basal half strongly punctured, its apex transverse; the apex of the hypopygium is roundly incised.

* *Pison Sarawakensis*, sp. nov.

Black; densely covered with silvery pubescence; the apex of the median segment with a rather steep slope, its base closely and finely obliquely striated, the striae springing from the central furrow, which is shallow, the wings hyaline, the nervures blackish, the tegulæ and calcaria testaceous.

Antennæ black, thickly covered with silvery pubescence. Front and vertex alutaceous; the rest of the head thickly covered with silvery pubescence. Mandibles for the greater part rufous; the palpi brownish. The thorax is thickly covered with silvery pubescence, closely, minutely punctured: on the centre of the mesonotum are two shining, longitudinal lines. The furrow on the metanotum is wide and shallow; in its centre is a thin irregular keel: the base of the segment is obscurely obliquely striated; the apical furrow is wide. Abdominal segments banded with silvery pubescence; closely, microscopically

* *Pison* is treated by Bingham as a neuter word. It is, however, a masculine word—the name in fact of some Biblical or Classical personage, I forget which.

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punctured. The wings are slightly infuscated at the apex; the first recurrent nervure is received in the 1st cubital cellule, distinctly in front of the transverse cubital nervure; the 2nd in the centre of the 2nd; the pedicle is distinctly longer than the branches of the transverse cubital nervures.

Tryporylon annulipes, sp. nov.

Black; the head and thorax thickly covered with golden pubescence, the anterior tarsi and the base of the tibiæ testaceous; the front stoutly keeled above the antennæ: the 2nd and 3rd segment more or less rufous; the wings hyaline. ♀.

Length 17 mm.

Hab. Matang, 2500 feet.

Antennæ black; the scape on the under side covered with white pubescence. The head, except on the front, is thickly covered with golden pubescence; the front is alutaceous; its upper part is obscurely furrowed in the centre; its lower stoutly keeled. Clypeus keeled in the middle. Mandibles piceous at the base. Palpi white. Thorax thickly covered with long golden pubescence; smooth and shining. The furrow on the base of the metanotum shallow, indistinct and becoming wider towards the apex; on the apical slope it is deeper, wider and with obliquely sloped sides. Legs covered with a pale pile. Abdominal petiole as long as all the other segments united.

There are no lateral furrows on the base of the metanotum.

VESPIDÆ.

Montezunia flavobalteata, sp. nov.

Black; the clypeus, except for a broad line in the middle, not reaching to the apex and obliquely narrowed below, the eye orbits—the inner entirely and the outer from near the top—the mandibles, except on the inner side, the prothorax, except on the basal slope, and an oblique mark—narrowest below—on the propleuræ, two narrow lines on the mesonotum, the basal half of the scutellum, except narrowly in the centre, the post-scutellum, the median segment except for a curved mark at the base, a line down the centre and an irregular mark on the centre of the metapleuræ above, yellow. Wings hyaline, the apex

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slightly infuscated, the stigma fulvous. Legs yellow; the apices of the four front femora above, the hinder almost entirely, the base and lower side of the hinder tibiæ and the basal joints of the hinder tarsi, black. Abdominal segments narrowly lined with yellow; two longish lines near the base of the petiole and two long, curved, somewhat pyriform, (the narrow end at the base) marks on the base of the 2nd segment and the whole of the apical segment, yellow. ♀.

Length 14 mm.

Hab. Penrissen.

Front and vertex strongly and closely punctured; the lower part of front reticulated. Clypeus broadly but not deeply incised. Mandibles on the top and at the apex black. The clypeus is as long as its greatest width. Thorax strongly and closely punctured; the longitudinal and the vertical furrows on the base of the mesopleuræ are deep; the furrow on the median segment is deep and is keeled in the centre. The petiole is about one fourth longer than the 2nd segment; it becomes gradually wider towards the apex. The 2nd cubital cellule is much narrowed at the top, the nervures almost touching there; the 2nd recurrent nervure is almost interstitial; if anything it is received in the 3rd cubital cellule. Petiole distinctly punctured; the other segments smooth.

The wings are longer than usual and extend beyond the apex of the abdomen the 2nd segment of the abdomen is broad at the base and is not contracted there. Maxillary palpi apparently four jointed; the last joint minute; the joints bearing stiff long hairs.

This is not a typical *Montezumia*, but it fits better into that genus than into any other. It has also some affinity with *Pterochilus fulvipennis*, Cam. (which is not a typical *Pterochilus*), having the palpal characters of that species (cf. Manchr. Memoirs, 1898), the joints being sparsely covered with stiff hairs and the last minute. Characteristic is the greatly narrowed at the top 2nd cubital cellule and the interstitial 2nd recurrent nervure.

Zethus rufofemoratus, sp. nov.

Black; the four hinder coxæ, trochanters and femora red, the clypeus, except for a black mark in its centre, which is pro-

duced slightly in the middle above and largely and roundly in the middle below, a small square mark in the middle above the antennæ, a line on the under side of the scape, a line on the apex of the pronotum, narrowed in the centre, two marks on the centre of the scutellum, two of similar size on the post-scutellum, a small oval mark on the sides of the median segment, two large oblique ones on its sides, which become gradually wide towards the apex and a large longish mark, broader on the upper than on the lower half, on the pleuræ below the tegulæ and a narrow line, slightly interrupted in the middle, on the apices of the 1st and 2nd segments, yellow. Wings almost hyaline, with a distinct violaceous tinge; its apex and the apex of the costal cellule smoky-violaceous, the nervures and stigma black.

Length 14 to 15 mm.

Hab. Kuching.

Front and vertex strongly and closely punctured, except on the former on the sides below. The clypeus is as strongly but not so closely, punctured; its apex, sides and a mushroom-like mark in the centre are black; it is wider than long; its apex is about half the width of the top and is slightly, broadly incised, not transverse. Pronotum smooth and shining. Mesonotum, except on the sides at the apex, strongly and closely punctured. Scutellum flat, somewhat strongly, but not closely, punctured; on the basal depression are five stout keels. Metanotum with a large, triangular punctured band in the centre at the base; the central depression becomes gradually wider from the upper third, which is a little narrowed at the base and is bounded by a stout transverse keel at the apex. Pro- and mesopleuræ coarsely rugosely punctured. Metapleuræ coarsely shagreened and sparsely punctured. The basal three segments of the abdomen are closely punctured. The fore femora are broadly yellow beneath and there is a line, narrowed above, on the upper half of the fore tibiae. The 2nd cubital cellule is triangular, the nervures almost touching above; the 2nd transverse cubital nervure is interstitial. When fresh the body was probably thickly covered with pale pubescence.

Comes nearest *Z. 4-dentatus*, Cam., "Entomologist," December, 1902, 314. There is a smooth longitudinal line on

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the centre of the vertex behind. There are two longish subapical closely united, not very distinct, subapical teeth on the mandibles; there is a distinct raised transverse keel on the base of the petiole; near it on the sides is a tubercle.

Odynerus rugifrons, sp. nov.

Black; the clypeus, mandibles except at the apex, a line on the front broadly dilated below and not reaching to the ocelli, the inner eye orbits, broadly below, narrowly above the sinus, the outer orbits, the prothorax broadly in front, two narrow lines on the mesonotum, two large marks on the scutellum, post-scutellum, the greater part of the mesopleuræ, the median segment, except for a black band down the centre, the apices of the abdominal segments narrowly and two large, somewhat pyriform, marks—the narrow end at the base—near the base of the 2nd segment, yellow. Legs similarly coloured; a line on the apical half of the middle femora, a shorter one on the base of the middle tibiæ, the hinder femora and tibiæ broadly above and the base of the hinder tarsi black. Wings hyaline, the apical three-fourths of the radial cellule and the cubital cellules in front below it and the apex of both wings more faintly all round, smoky. ♀.

Length 12 to 13 mm.

Hab. Kuching.

Front and vertex closely and strongly punctured, the front much more strongly than the vertex, which is almost smooth in the middle; the punctures on the front run into reticulations above. Clypeus sparsely punctured; it has an oblique slope from the middle towards the base and apex; the apex has a wide, round incision; the apical angles stout. Thorax above coarsely, strongly rugosely punctured. The postscutellum is separated from the post-scutellum by a moderately, almost smooth, furrow and is not clearly separated from the metanotum, which has a rather steep, oblique slope. The 2nd cubital cellule is narrowed above; the 1st transverse cubital nervure is oblique and roundly curved downwards; the 2nd is broadly roundly curved outwardly; the 2nd recurrent nervure is almost interstitial. Abdomen shining, the 2nd segment large, longer than its width at the apex and more than twice its width at the base.

The head is large and is well developed behind the eyes: the temples are broadly rounded; the base of the thorax is rounded, not transverse; the sides of the median segment are rounded, without any angles and the stigma is fulvous.

This species has the colouration of *O. hyades*; that species may be known from it by the apex of the clypeus being transverse, by the temples not being rounded, by the base of the thorax being transverse and by the sides of the median segment projecting and its apex transverse.

Odynerus hyades, Cam.

This species (described Journ. Str. Br. R. A. Soc., 1902 112), is variable as regards the amount of yellow on the body and of the black on the legs. The pronotum is transverse, not rounded.

Odynerus 7—fasciatus, Sm.

This species has been taken at Matang, 3,600 feet and at Sabras. It is easily known by the body being thickly covered with black erect hair, and by all the abdominal segments being banded with yellow. It is probably a variable species as regards the quantity of yellow on the head and thorax and also as regards the amount of black on the legs. The ♂ has the clypeus entirely yellow; not broadly marked with black in the centre as in the ♀; it is also slightly roundly incised at the apex, not transverse as in the ♀. Characteristic is the fact the first two transverse cubital nervures are almost united at the top.

The species has a close resemblance in form and colouration to a *Vespa*. It is probably of wide range in Malaya and has been recorded from Sumatra by Gribodi who describes it in full in Bull. Soc. Ent. Italiana, XXIII.

Odynerus carinicollis, sp. nov.

Black; the prothorax red; the clypeus, except for a black transverse mark in the middle, the eye incision, a mark, roundly dilated at the apex on the lower part of the front, a line on the upper half of the eye orbits, the edge of the median segment and

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of all the abdominal segments, yellow. Wings hyaline, the greater part of the radial cellule smoky, the cloud projecting into the upper part of the cubital cellules. ♂.

Length 7 mm.

Hab. Kuching.

Scape of antennæ yellow beneath; the flagellum brownish, black above. Front and vertex closely and strongly punctured, on the front running into reticulations; the front keeled between the middle. Clypeus sparsely punctured; its greatest width slightly greater than the length; the apex depressed and slightly, roundly incised. Base of thorax transverse, sharply keeled; the scutellum is more widely punctured than the mesonotum. The apex of the median segment is transverse, keeled and with a slight incision in the centre; the yellow line is dilated on either side of the incision. The lower half of the base of the meso- and the greater part of the base of the metapleuræ smooth, impunctate. The basal three abdominal segments are obscurely punctured; the base of the first is indistinctly bordered. The hinder tibiæ are for the greater part black, the four anterior greater part yellow; all the tarsi are for the greater part yellow.

Odynerus Robertianus, sp. nov.

Black; the clypeus except for a broad curved black mark above the narrowed part, a minute spot behind the eyes and a line on the apex of the 1st and 2nd abdominal segments, yellow; the legs black, with the four anterior tibiæ yellow in front; the wings almost hyaline, the apical two-thirds of the radial cellule and the anterior half of the apical cubital cellule smoky; the petiole keeled at the base. ♀.

Length 9 mm.

Hab. Kuching.

Head above the antennæ coarsely rugosely punctured and covered with a pale pubescence; the outer orbits sharply keeled; the clypeus sparsely punctured, its greatest width as great as its length; its apex longitudinally depressed in the centre; the apex black, widely, but not deeply, incised; the sides not projecting into teeth. Thorax rugosely punctured; the post-scutellum and metanotum more coarsely than the rest, the punctures

almost forming reticulations; the apex of the median segment slightly projects on the top; the sides have a straight, slightly oblique slope from the top to the bottom. The 1st and 2nd abdominal segments are closely and strongly punctured; the 1st is cup-shaped, broader than long; its base is stoutly, irregularly keeled; the 2nd is longer than its width in the middle and is narrowed at the apex.

The clypeus is not bordered laterally by a keel as in *O. Sichehi*; the antennal keel is not so stout nor so well defined as it is in that species, which has not the apex of the fore wings clouded.

Rhynchium Matangense, sp. nov.

Black; the apex of the thorax and the basal segment of the abdomen dark rufous; the under side of the scape and a large mark, roundly narrowed above, on the clypeus, yellow; the ventral surface and the apex of the abdomen densely covered with silvery pubescence; the wings hyaline, radial and the apical cubital cellules fuscous with a distinct violaceous tinge; the greater part of the hinder femora and a line on the middle, rufous. ♂.

Length 13 mm.

Hab. Matang.

Flagellum of the antennæ brownish beneath; the apical spine stout, slightly roundly curved. Front and vertex closely rugosely punctured; the eye incision more widely and strongly punctured than the rest; the clypeus is less strongly and closely punctured; its apex is slightly roundly incised, broad. There is a white mark on the base of the mandibles. Thorax coarsely rugosely punctured; the scutellums more coarsely than the mesonotum, and the median segment more coarsely—running into reticulations—than the mesonotum. The apex of the median segment has an almost vertical slope; its centre furrowed; the sides broadly rounded and without spines forming two broad lobes. Mesonotum covered with short fuscous pubescence. First segment of abdomen cup-shaped, with a short, but distinct, neck; the 2nd segment is barrel-shaped; obscurely rugose; the 3rd and 4th segments are more strongly and distinctly punctured.

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Ischnogaster fuscipes, sp. nov.

Black; the clypeus except for a somewhat elongated pyriform mark on its upper half in the centre, yellow; the legs dark fuscous; the wings hyaline, with a violaceous tinge, highly iridescent and infuscated at the apex; the 3rd abscissa of the radius is somewhat more than one-half the length of the 2nd and about one-third longer than the 4th; the 3rd transverse cubital nervure has the upper half almost straight, the lower has an oblique slope towards the recurrent nervure.

Length 25 mm.

Hab. Klackang.

Antennæ black, only slightly infuscated at the apex beneath. Clypeus covered with a silvery pubescence; the black mark is rounded and shortly stalked at the base; at the apex it is joined to the eyes by a transverse line; its upper half is closely, minutely and distinctly punctured; the face is more strongly and less closely punctured and projects slightly in the centre. Vertex sparsely punctured. There is a short yellow line, dilated in the middle on either side of the apex of the pronotum. Mesonotum closely and distinctly punctured; the punctures at the base form almost reticulations and there is there a distinct central and less distinct lateral keel on either side of it; it is thickly covered with longish fuscous pubescence. Scutellum less strongly and more sparsely punctured than the mesonotum and thickly covered with long brownish hair, this being also the case with the post-scutellum. The furrow on the centre of the mesopleuræ is curved; rounded on the basal half, straight and slightly oblique on the apical.

The clypeus is not so distinctly separated from the face as usual; the wing nervures are black; the stigma is fuscous; the clypeus is longer compared to its breadth than usual. It is readily known from the other Bornean species by the absence of yellow markings on the meso- and metathorax.

Icaria Malayana, sp. nov.

Black; the scape beneath, the sides of the clypeus broadly—the black central mark pyriform with a short broad pedicle at the base—the upper part of the pronotum narrowly, the upper

part of the sides broadly, the tegulæ, two large marks on the scutellum, transverse at the base, rounded at the apex and almost united, the post-scutellum, the metanotum, except in the centre; the apex of the 1st abdominal segment broadly, of the 2nd more narrowly, and of the 3rd still more narrowly, yellow. Legs black; the fore coxæ beneath broadly, a narrow line on the outer side of the middle and a broader one on the hinder pale yellow; the tibiæ and tarsi rufo-testaceous. Wings clear hyaline; the anterior half of the radial cellule smoky; the stigma and nervures dark fuscous. ♀

Length 7 mm.

Head and thorax covered with a pale pile. Front and vertex distinctly, but not very closely punctured; the punctures round and shallow; the clypeus is much more shining, more sparsely punctured, its greatest width greater than its length; its sides rounded above, its apex ending in a sharp tooth; its centre above is lightly roundly curved downwards. Mandibles shining, there is a yellow mark, longer than broad near the base; their apices piceous. Thorax closely and uniformly punctured except on the apex of the meso- and the base and lower part of the metapleuræ which are only sparsely punctured; the upper part of the latter bears some stout, curved striæ. Abdominal petiole short and stout; the 2nd segment as long as its width at the apex. Flagellum of antennæ black.

The head is larger than usual; the temples being broader and less obliquely narrowed than in most of the oriental species; its front, too, projects more broadly and roundly. The tegulæ are pallid yellow, darker on the inner side; there are two small yellow marks on the mesopleuræ.

A distinct species. Characteristic are the deep black body and large head, with well developed temples and almost transverse occiput.

Icaria maculifrons, sp. nov.

Head and thorax black, the petiole brownish, a longish line — narrowed below, transverse above—between and above the antennæ, a line on the inner orbits, commencing on the inner side of the lower part of the incision and becoming broader and

rounded, the side and apex of the clypeus—the black central mark, becoming gradually roundly, narrowed towards the apex—the prothorax, except the lower half of the propleuræ, tegulæ, scutellum, post-scutellum, a large oblique mark on the mesopleuræ two elongated pyriform marks on the metanotum, the apical fourth of the 2nd segment and the greater part of the others, yellowish. The legs black; the apices of the femora narrowly and the tibiæ and tarsi testaceous; the radial cellule lightly smoky, except at the base; antennæ rufo-testaceous. ♀.

Length 9 mm.

Hab. Santubong.

Front and vertex closely, but not deeply punctured, except over the antennæ. The clypeus is much less distinctly punctured; it is slightly longer than its greatest breadth; rounded downwards; the apical tooth is indistinct. Thorax closely punctured, the punctures, in places, running into reticulations; the apex of the post scutellum and the metanotum impunctate; the metanotum is widely and deeply furrowed in the centre; the sides of the furrow are oblique; the side sparsely, finely, obscurely striated. The abdominal petiole is elongated as in *I. variegata*; only about the basal third is narrowed; the 2nd segment is distinctly longer than its width at the base; it is brownish at the base. The 2nd cubital cellule is narrowed at the top, being there about one-fourth of the length of the 3rd.

Comes near to *I. marginata* and *I. variegata*. The Bornean species of *Icaria* seem to have the clypeus broadly black in the middle, e. g. *Ma'ayana* and *latebaltata*, Cam.

Mr. Shelford has taken at Kuching *I. ornaticeps*, Cam., hitherto only known from the Khasia Hills in Assam.

ANTHOPHILA.

Megachile Cæcina, sp. nov.

Black; the front, face and clypeus thickly covered with long fulvous hair, as are also the mesonotum, scutellum, the sides of the metanotum, the upper part of the mesopleuræ and the basal segment of the abdomen; the hair on the rest of the body is pale; the wings hyaline, with a slight violaceous line, the stigma dark testaceous, the nervures black. ♀.

Length 10 mm.

Hab. Trusan.

The vertex is strongly and closely punctured, the punctures all clearly defined; the sculpture on the front and clypeus is hid by the dense hair. Base of mandibles punctured; the apical tooth is long and sharp-pointed; the two sub-apical are of almost equal size. Mesonotum and scutellum closely punctured. The area on the metanotum is bare, opaque and is bordered by broad curved, shallow furrows. The basal segments of the abdomen are obscurely punctured; the penultimate segment is strongly and closely punctured and is covered with longish black hair; the last segment is much more closely and uniformly, but not so strongly, punctured; its base has an almost vertical slope; the apex projects and has a wide shallow incision in the centre above which is a spot of golden pubescence. The hair on the legs is long and pale, on the base of the hinder tarsi below, golden.

Megachile Borneana, sp. nov.

Black, the pubescence on the front, upper part of the thorax and on the apices of the dorsal segments of the abdomen, fulvous; on the clypeus and pleuræ pale; the apex of the abdomen with a broad, rounded incision; the wings hyaline, the radial and cubital cellules infuscated, the stigma fuscous, the nervures darker. ♀.

Length 10 mm.

Hab. Kuching.

Front and vertex rather strongly and closely punctured; the clypeus is quite as strongly, but not so regularly punctured and has an irregular, smooth line in the centre of the upper two-thirds. Mandibles rugosely punctured, smooth at the apex; the apical tooth is long; the 2nd and 3rd short, bluntly pointed; the 2nd is much shorter than the 3rd. Mesothorax, with the scutellum, closely and uniformly punctured; the median segment is not so strongly or closely punctured; the basal area is strongly aciculated and finely striated. Abdominal segments, including the transverse depressions, closely punctured; the last is more strongly punctured than the others; the basal segment is covered entirely with fulvous pubescence; the others

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with narrow bands only. The hair on the legs is pale, on the under side of the base of the tarsi fulvous.

Megachile esora, sp. nov.

Black; the head, pro- and sides of mesonotum thickly covered with rufo-fulvous pubescence, the median segment laterally thickly covered with long white hair; the abdominal segments with narrow bands of white pubescence; the wings almost hyaline to the transverse basal nervure, beyond it fuscous violaceous; the scape white; the apex of clypeus bidentate. ♀

Length 11 mm.

Hab. Kuching.

Head rugosely, closely punctured; on the temples the punctures are larger and more distinctly punctured. The apex of the clypeus in the middle ends in two short, broad shining teeth; the part between them is roundly curved; the front and vertex are thickly covered with long rufous hair; the clypeus with pale fulvous pubescence, which is only visible when looked at laterally or from above. Mandibles strongly punctured on the apical half, the punctures are large and clearly separated; the base is rugosely punctured; there are only two teeth; the apical is large, the 2nd shorter and broader, more broadly rounded at the apex; the inner part forms two shallow curves. Pro- and mesothorax closely and strongly punctured and covered with rufous pubescence; the pleuræ more sparsely with longer, pale hair. The basal area on the median segment is smooth; the furrow at the base is crenulated, the rest closely punctured and covered with long white hair. The abdominal segments are fringed with white hair; the ventral scopa is white; the basal three segments are closely punctured all over; the 4th is smooth at the base and more narrowly at the apex, the intermediate space irregularly punctured; the 5th is irregularly punctured near the apex which is sparsely covered with long black hair; the 6th is thickly covered with short, stiff black pubescence. The apical part of the fore wings, from the transverse basal and the transverse median nervure (the cloud following their curves), dark fuscous-violaceous; the part behind clear hyaline; the hind wings are hyaline to shortly beyond the middle, the apex fuscous, with a violaceous tint.

Is not unlike *M. faceta*, Bing., but that species has the apex of the clypeus transverse, not incised in the middle of the apex.

Megachile gadara, sp. nov.

Black; the hair on the head, thorax and on the abdominal segments, white; the mesonotum closely covered with small, round punctures; the white bands on the abdomen are narrow; the apical segment has a rounded, shallow incision in the middle; the wings hyaline, slightly infuscated at the apex; the stigma and nervures dark fuscous. ♂.

Length 9 to 10 mm.

Hab. Kuching.

Head in front thickly covered with long, pale fulvous hair; the clypeus closely and strongly punctured, as are also the front and vertex; the outer orbits thickly covered with long white hair. Mandibles at the base closely, but not very strongly, rugose; the top with irregular, scattered punctures; the teeth smooth and shining; the apical tooth is long, narrowed and rounded at the apex; the 2nd is shorter and bluntly pointed; the 3rd triangular, broad at the base, becoming gradually narrowed towards the apex and it is distinctly longer than the 2nd. Thorax strongly closely punctured; the median segment finely rugose; the thorax is thickly covered with long white hair. Legs covered with long white hair: on the under side of the tarsi the pubescence is golden; on the hinder part of the posterior tibiae is a thick line of depressed white pubescence. There is a shallow, curved incision on the base of the fore tibiae, the part at its base projecting into a small tooth; the incision at the base of the tarsi is larger and deeper. Abdomen closely, but not strongly, punctured; the basal transverse furrows are smooth, the apical closely punctured the last segment has a rounded shallow incision on the apex; above it is a large deep fovea, which is rounded and narrowed above. The penultimate segment is narrowed at the sides and has a broad, rounded incision at the base in the middle.

Nomia violaceipennis, sp. nov.

Black, shining; the thorax closely and strongly punctured, except on the centre of the median segment; the hair white; the

area on the metanotum closely longitudinally striated; the wings dark violaceous, darker at the apex; the tegulae rufous. ♀.

Length 12 mm.

Hab. Kuching.

Clypeus and face strongly, but not closely, punctured, the clypeus slightly depressed in the centre and with a thin irregular keel down the centre; the face convex in the centre; the front and vertex are strongly and closely punctured, except at the ocelli; they are, as are also the outer orbits, thickly covered with long soft hair. Mesonotum closely, strongly and uniformly punctured; the scutellum is more strongly, but not so closely, punctured as is also the metanotum, except for a triangular smooth space near the top and a line down the centre; the furrow on its top is long, narrow and is closely, stoutly longitudinally striated. Propleurae smooth, above thickly covered with white hair; the meso- closely and uniformly punctured and covered sparsely with short white hair; the meta- thickly covered with long white hair. Abdomen shining above, the segments, except at the apex, closely, minutely punctured. Ventral segments fringed with white hair. Legs thickly covered with long, soft white hair. The wings are paler in the middle and darker at the apex than at the base.

The basal slope of the 1st abdominal segment is thickly covered with long white hair; the apices of the segments are glabrous; the apex of the clypeus is transverse; the median segment has a vertical slope; the scutellum and post-scutellum are sparsely covered with long black hair; the median segment has a vertical slope; the hinder tibiae and tarsi are not densely pubescent on the inner side and have a castaneous hue; the under side of the flagellum is fuscous.

Comes near to *N. fuscipennis*, Sm.

Nomia bicarmata, sp. nov.

Black; covered with pale pubescence; the head and thorax closely punctured; the apical half of the median segment deeply furrowed; the sides from shortly above the middle keeled; the apices of the abdominal segments covered with depressed white pubescence; the wings hyaline; the stigma fuscous. ♀.

Length 7 to 8 mm.

Hab. Kuching.

The scape of the antennæ appears thinner and longer than usual; the flagellum is brownish beneath. Head closely and distinctly punctured, the front more strongly than the rest; the clypeus is broadly, roundly raised in the centre, where it is bare, smooth and shining; its top and the face above it are bordered by smooth lines, mandibles rufous, black at the base; the hair is long and pale; the occiput is sharply margined. Mesonotum closely and strongly punctured, the hair on it is thicker and whiter round the edges; the scutellum has the hair longer and thicker; the post-scutellum is thickly covered with white pubescence, the furrow at the base of the scutellum is longitudinally striated. Median segment with an oblique slope; the centre on the apical half is furrowed; the sides on the apical half are distinctly keeled. The flocus on the hinder tibiæ is long and pale; on the tarsi it has a rufous tint. The basal four segments have a band of depressed white pubescence; the hair on the ventral surface is long and white. Characteristic of this species is the smooth, roundly convex, shining clypeus and the two keels on the sides of the median segment.

Nomia iridescens, Sm.

This species has been taken at Kuching. It has been recorded from India and Sumatra.

Ctenonomia, gen. nov.

Fore wings with three cubital cellules, of nearly equal size. Head narrow, the temples short, ocelli in a curve. Abdomen short, ovate; the ♀ with a dense ventral scopa; its apical segment with a rima. Pronotum keeled; the keel widest on the sides. Metonotum large, transverse, flat, stoutly keeled on the sides and apex and longitudinally striated; its apex with a perpendicular slope. Legs densely covered with long hair; the spurs toothed; the claws cleft unequally. The body is short and broad. The wings are large: their stigma thick; the basal nervure is roundly curved; the transverse median nervure is received shortly behind it; the 1st recurrent nervure is received

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near the apex; the 2nd not quite so close to the apex. The eyes are large, reach close to the base of the mandibles and converge distinctly on the top. The face is roundly convex; the clypeus is nearly as long as it, is broader than long and transverse at the apex. The tegulae are moderately large. The scape of the antennae is long and slender; the flagellum thick.

The affinities of this genus appear to be with *Nomia* from which it may be known by the pectinated spurs, by the large, keeled median segment, by the ventral surface being thickly covered with long hair, by the distinct anal rima and by the stoutly keeled collar. Having only a single specimen I have not been able to make an examination of the trophi, but the maxillary palpi appear to be 6-jointed.

Ctenonomia carinata, sp. nov.

Black; the head and thorax sparsely covered with short, the legs and ventral surface thickly with long white hair, on the under side of the tarsi it has a fulvous tint; the wings hyaline the nervures and stigma black. ♀.

Length 6 to 7 mm.

Hab. Matang.

Head opaque, the vertex more shining and smoother; the front has a narrow keel down the centre; the clypeus is irregularly punctured on the apex. Mesonotum opaque, closely, minutely punctured; in the centre are three impressed longitudinal lines. The striae on the median segment are stout, clearly separated, irregular, and mostly reaching to the apex of the basal part; the bounding keels project as teeth at the apical angles; it is bare, shining and impunctate as is also the apical slope. Abdomen shining: the apices of the segments brownish and bare; their base covered with close white pubescence; the anal rima is brownish.

Xylocopa caerulea, Fab.

Mr. Shelford has taken the rare ♂ of this species. The head is narrower than in the ♀; and instead of the head, thorax and base of abdomen being covered with blue pubescence, they are covered with light soot-coloured hair; the hair on the abdo-

E. A. Soc., No. 39, 1903.

men is darker soot coloured; and the antennæ and legs are piceous. The wings are lighter coloured, wanting the deep violaceous tint found in the ♀.

Smith (Trans. Ent. Soc. 1874, 269) appears to have had a ♂ with blue hair on the head and thorax. Mr. Shelford's example is only 17 mm. in length. The species is common all over the Oriental Region, but no author, except Smith, l. c., has described the ♂.

Xylocopa (Koptortsoma) Sarawakensis, sp. nov.

Black; the head, thorax and basal segment of abdomen thickly covered with olive-green hair; the 2nd abdominal segment with darker olive-green pubescence; all the tibiæ and the four front tarsi fringed with long pale olive-green hair; the hair on the hinder tarsi black mixed with dark olive hairs on the under side; on the base of the 3rd and following dorsal segments of the abdomen are two patches of whitish depressed hair which are rounded at the apex; the part underneath them is brown and shining; the apex of the last segment is fringed with whitish hair. The hair on the ventral segments is black; paler on the edges and on the sides of the basal segments. Wings dark fuscous, with a distinct violaceous tinge ♂.

Length 22 mm.

Hab. Matang.

Flagellum of antennæ brownish beneath; the base of the scape fuscous. Clypeus closely punctured, a black hair issuing from each tubercle; its centre is not keeled; its apex is smooth, shining and raised. Mandibles shining, shagreened in the middle to near the apex: they have only one tooth which is long and roundly curved on the inner side. The 3rd transverse cubital nervure is roundly curved outwardly; the 2nd recurrent nervure is received at fully the length of the 2nd transverse cubital nervure from it. The fore femora and tibiæ are slender; the upper spur is long and curved and below has a broad white, rounded at the apex, membranous projection. The base of the hinder femora projects oblique downwards into a stout triangular tooth; in front of this is a shorter, more slender tooth which is roundly curved at the apex. The fore trochanters project triangularly behind.

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Comes near to *X malayana*, Cam. The white patches on the back of the abdomen may be hidden under the apex of the preceding segments.

On a Collection of Coins from Malacca.

BY R. HANITSCH, PH. D.

(*With two plates.*)

About three years ago, during some excavations near the mouth of the Malacca river, a considerable number of coins was found scattered in the mud. These were collected together and handed over to the Hon'ble W. Egerton, Resident-Councillor of Malacca at the time, and presented by him to the Raffles Museum. The collection has proved to be of the greatest interest. It contains coins of both Asiatic and European origin, the European coins, Portuguese, Dutch and English, embracing practically the whole history of the various European occupations of Malacca, covering thus a period of about four hundred years. The most interesting of the coins are those of Portuguese origin, all of tin. They are probably quite unique: the British Museum does not possess any, and numerous enquiries I have made about them in various places, including Lisbon, have remained without result. With regard to their discovery Mr. Egerton writes:—

“The Malacca Coins were found in digging a channel from the mouth of the river seawards. Outside the mouth there is a deep pool, and beyond that a bank submerged at high water, extending some half mile or more seawards. It was in this bank the coins were found scattered here and there, not in large pockets. The bank contained quantities of household detritus, broken crockery and old ironware, bricks, earthenware, etc. I think it is quite possible buildings on piles, like those now seen on the foreshore, may have been built on this bank, or possibly all this rubbish was thrown out of ships at anchor, or washed down out of the river. Most of the coins were found in the first hundred yards outside the big pool referred to above. There must be many still there.”

I. THE ASIATIC COINS.

That tin coins, struck by the inhabitants of the place, existed in Malacca before the arrival there of the Portuguese is

proved by certain accounts in Albuquerque's Commentaries (2)*, but the fact seems to have almost escaped numismatologists, for Millies (12), p. 140, speaking of the currency of the Malay Peninsula says: "Même l'état malai si célèbre de Malaka, qui était parvenu à son apogée au commencement du XVI^e siècle, lorsqu'il tomba sous la force matérielle majeure et l'héroïsme des Portugais, ne nous a laissé aucun monument numismatique connu, et nous ne savons même pas, si ce état malai possédait déjà une monnaie propre." In this Millies is certainly wrong, for in Albuquerque's Commentaries (2), Vol. III, p. 77, we find a mention of native coin which tells how King Xaquendarxa (i. e. Iskander Shah), ruler of Malacca, went to see the king of China, wishing to become his vassal and took with him many presents, receiving in return, amongst other privileges, permission to coin small "money of pewter, which money he ordered to be made as soon as he reached Malacca; and to it he gave the name of Caixes which are like our (i. e. Portuguese) ceitils, and a hundred go to the calaim, and each calaim was worth, to an appointed law, eleven reis and four ceitils. Silver and Gold was not made into money, but only used by way of merchandise." The fact that Malacca possessed native pewter coins on the arrival of the Portuguese becomes indisputable when we read that Albuquerque after the occupation of Malacca minted coins under the name of his king, D. Manuel, "in order to withdraw and suppress the coinage of the Moors and cast their root and their name out of the land," and that when the new coinage was ready, he gave orders "that all the Moors who held coin of the King of Malacca should convey it thither" (i. e. to the mint) "without delay under pain of death; and so great a quantity of money was thus carried there out of fear of the penalty which had been appointed to them, that the officers could not dispatch their business fast enough." (Vol. III, p. 138).

I am sorry I cannot furnish absolute proof that the collection really contains coins of that early period. There are about 150 tin coins with Arabic inscriptions, but those few which are clear enough to be deciphered are of a much later date. It may be that the most worn and defaced coins belong to the period

*These numbers refer to the list of Literature at the end of the paper.

before the arrival of the Portuguese. Their average size is 21mm = $\frac{1}{2}$ in., and their weight 2.5 grammes. It is noteworthy that the collection does not contain any of the well-known perforated tin coins which are still current in Trengganu and Kelantan.

The coins which have been partly or wholly deciphered are:—

(1) a coin with the date 1173 in Arabic characters, ١١٧٣ which would correspond to the year 1757 A. D.

(2) two coins with the date 1174 ١١٧٤ i. e. 1758 A. D.

(3) two coins with the inscription on the obverse

سلطان i. e. Sultānu

العاذل i. e. 'l-'ādil (=the just)

on the reverse

احمد بن i. e. Ahmad Bin

محمود i. e. Mahmūd

In one of these two coins, this inscription is delicate, but exceedingly sharp and clearly defined.

(4) a coin with the inscription on the one side

خان i. e. Khan

محمود i. e. Mahmūd

The letters on the other side are too much worn to be deciphered.

I am indebted to Captain R. P. Jackson, S. C., 13th Madras Infantry, for having kindly identified these six coins for me.

(5). There is an exceedingly well preserved coin, with one side quite smooth, but bearing on the other side the inscription

ملك i. e. maliku

العاذل i. e. 'l-'ādil

which means 'The just king.' Its size is 24mm = $\frac{1}{2}$ in. and its weight 3.3 grammes (See pl. I, fig. 5). Mr. R. J. Wilkinson kindly identified this coin for me, and I subsequently found it figured and described by Netscher and Van der Chijs (*13*,) p. 179, pl. XXVI, fig. 245, and by Millies (*12*,) p. 148, pl. XXIII, fig. 250. The specimen described by the former two authors has also one side entirely smooth, and they state that the title maliku 'l-'ādil is used by several rulers of Western Borneo. According to them the coin would have come from Sambas or Mampawa in West Borneo and date from the year 1822. Millies, however, refers the coin to Trengganu.*

(6). The coin figured on pl. II, fig. 2, seems to bear only a portion of the inscription maliku 'l-'ādil on the one side, whilst the characters on the other side are too indistinct to be deciphered.

Some of these tin coins may possibly have come from Sumatra. Marsden (*9*), p. 401, speaks of tin coins current in Acheen, and Netscher and Van der Chijs (*13*), p. 162, too describe such coins from Acheen, as well as from Palembang, Jambi and the neighbouring island of Banka, but I have not been able to identify any of the Malacca coins with them.

The collection also contains a few Chinese coins, cash, which, however, are too much corroded to be identified.

II. THE EUROPEAN COINS.

1. The Portuguese Coins.

The European coins found at Malacca are Portuguese, Dutch and English, and, as I stated before, their dates embrace the whole period of the occupation of that place by these three nations.

*Since writing the above I have seen a paper by Lt. Col. Gerini, 'A Malay Coin,' Journal, Royal Asiatic Society, April 1903, pp. 339-343, in which certain small gold coins, found in Jaring, near Patani, are described. Their obverse is 'an imitation of a Southern Indian fanam bearing the figure of a maneless lion,' whilst their reverse bears the inscription **المادل**, reminding thus strongly of the tin coins described above. Dr. Codrington is of opinion that those gold coins had come from Acheen.

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Malacca was taken by the Portuguese under Albuquerque in 1511 and held by them until 1641. The kings of Portugal during that period were :—

Emmanuel, 1495—1521

John III, 1521—1557

Sebastian, 1557—1578

and four others to whom it will not be necessary to refer in this paper. From 1641 to 1795 the Dutch held possession of it, from 1795 to 1818 the English, from 1818 to 1824 the Dutch again, and since then the English.

The coins in the collection which date from the time of the first Dutch occupation are nearly all well known, but it is otherwise with a large number of tin coins struck by the Portuguese in Malacca itself; in fact as I said before, it seems doubtful whether any more of these coins exist at the present day. However, the record of the first mint established by Albuquerque in Malacca, as given in his "Commentaries," and quoted below, leaves no doubt as to their identity.

This mint was the only one ever established in Malacca by Europeans. This was in 1511, immediately after the conquest of the place. In the previous year, 1510, Albuquerque had conquered Goa, and had established a mint there, and as the circumstances under which those two mints were founded were very similar, and since, as will be shown below, the Malacca coins were struck after the same pattern as those in Goa, although not of the same metals, it may be well first to shortly narrate the history of the founding of the mint in Goa.

Soon after Goa had been taken in 1510 the principal Moors and Hindus of the country went to Albuquerque and told him how the trade of the people suffered because there was no proper currency, begging him to coin some money or at least to permit the coinage of the Cabaio, the former ruler, to pass current, which he had forbidden. Albuquerque thereupon called a meeting of the goldsmiths, some Portuguese experts, and the native merchants, and discussed the matter, after which he gave orders for the coinage of money in gold, silver and copper, and on the one side they were to stamp a cross of the order of Christ, and on the other a sphere,—the device of the King D. Manuel. And when the money was ready (March 12th,

1510), Albuquerque "gave the word to take the royal flag, and the trumpets and kettle drums, and assemble all the men in the fleet, and ordered Tristao Déga to go and proclaim it; and he went with all this company of people all round the city, and at each proclamation that was made they scattered quantities of the new money over the heads of the crowds, which were great, and they went on proceeding in this manner round the city." (Vol. II, p. 131).

When a few months afterwards Goa had been retaken by the Moors, and Albuquerque had reconquered it, he established a new mint at Goa (Vol. III, p. 41).

Albuquerque arrived before Malacca in the middle of June 1511, made the first attack on July 25th, conquered it in August, and then took speedy measures for restoring order in the place. Ninachatu, a rich Hindu merchant, being of the greatest service to him in this matter. Ninachatu and some of the "Governors of the land" soon approached Albuquerque and told him what inconvenience the people suffered from the want of a currency, and begged he would give orders for some system of coinage. Albuquerque thereupon called together the merchants, governors, and principal men of the city, and arranged with them that gold, silver, and pewter coins should be struck, substituting thus pewter for the copper coins of Goa and utilizing the natural wealth of tin in the Malay Peninsula. We saw above that the native coinage before the arrival of the Portuguese had been pewter, just as now-a-days coins of that metal are current in Trengganu and Kelantan.

The gold coin, called *Catholico*, should weigh a quarter of a tundia which, amongst the Portuguese, was worth a thousand reis. The silver coins, called *Malaqueses*, i. e. Malacca pieces, should have the same value of a quarter tundia. The pewter coins were to be of three different denominations, viz:

1. *dinheiro* (i. e. money), the smallest coin, equal to two of the previously existing caixes of the ruler of Malacca, bearing the sphere of the King D. Manuel,

2. *soldo*, equal to ten dinheiros,

3. *bistardo*, equal to ten soldos.

A mint was immediately established, and orders were given that under pain of death the old coinage of the King of Malacca

should be delivered there to be reminted. When this had been done, and sufficient money had been coined, Albuquerque fixed a day for the proclamation of the new currency, and the principal men of the people met Albuquerque with the Captains, Fidalgos and Cavaliers of the fleet in the fortress to form a procession through the town. The account given of this procession and proclamation is so interesting and picturesque, that I give it literally :

“There went first, in front of all the people, one of the principal Governors of the City mounted upon an elephant with his castle caparisoned with silk, and carrying in his hands a flag of the arms of the King of Portugal upon a long spear, and behind him went all the people on foot on one side and the other, as it were in procession ; and in the midst of these people there went a Moor mounted upon another elephant, likewise caparisoned with silk, making the proclamation ; and behind this one came the trumpets ; and after them the Governors of the City, and all the Merchants, and principal men thereof ; and at the rear of this throng there went Antonio de Sousa the son of Joao de Sousa of Santarem, and the son of Ninachatu, both together upon a large elephant, which had been kept for the King’s own use, with his castle caparisoned with brocaded cloths, and they carried with them a large quantity of gold, silver, and copper * coin, which they kept on throwing out over the heads of all the people at each publication of the proclamation which the Moor made. The crowd was so great that the streets could scarcely contain it, and with many songs and blowing of horns, according to the native custom, the people gave great praise to Afonso Dalboquerque for giving orders for this distribution of money by the advice and in accordance with the opinions of their natives.” (Vol. III, p. 141). Accounts of this first mint in Malacca are also given by Danvers (*5*), Vol. I, p. 230, and Stephens (*15*), p. 162.

Besides these two mints at Goa and Malacca, others were established by the Portuguese in Ceylon, Cochin, Diu, Bassein, Damao and Chaul. The following are the mint marks of six of

* This is probably an error : no copper coins of Malacca are previously mentioned. Probably pewter coins are meant.

these towns according to Da Cunha (4), part 1, p. 273; part 3 p. 202; part 4, p. 21.

G or G—A	... ..	Goa
M or M—A	... ..	Malacca
C—LO	... ..	Ceylon
D	... ..	Damao
D or D—O	... ..	Diu
B	... ..	Bassein

Finally the letter A which is found on some coins, is supposed to stand for 'Asia' (see Da Cunha, part 1, p. 271), but 'Albuquerque' has also been suggested.

Da Cunha, the first authority on this subject, alludes to the many difficulties which the study of the coins issued by these mints presents, he states that the coins were issued by the viceroys or even by the officers of the mint in the most capricious fashion, that they frequently bore effigies and legends which had no connection whatever with the reigning monarchs of the periods when they were issued, that some of them were struck years after the kings, whose busts they bore, had ceased to live (4, part I, p. 267). Da Cunha continues: "But these difficulties are increased tenfold by an absolute want of examples of the early periods of the Portuguese rule in India, their place being but inefficiently supplied by some written official reports and private memoirs. The coins of the seventeenth and eighteenth centuries are not only scarce, but even the written documents relating to them are rare or deficient." To Valentyn (16) they seem to have been entirely unknown. Millies (12), p. 140, says: "Un des monuments même de la victoire du grand Alfonso d' Albuquerque, la monnaie qu'il fit frapper à Malaka, a tellement disparu, que nous n'avons nullepart pu en decouvrir un exemplaire." Birch (2), in a foot note to Albuquerque's 'Commentaries,' Vol. II, p. 130, refers for descriptions of the earliest Portuguese coins to the works of De Faria (6) and Fernandes (8) and states that "the coins themselves are so rare that they may almost be described as no longer extant," and that those writers had not figured any of them. I have not been able to see the works of De Faria and Fernandes, but I am glad to say that the collection unearthed in Malacca does contain some of those earliest

coins, in fact some of them may be the identical specimens which Albuquerque threw out over the heads of the admiring crowd during his procession and the proclamation of the new coinage in Malacca in 1511.

The oldest specimens are three coins in excellent condition belonging to the reign of King Emmanuel who was reigning when Malacca was captured. Their diameter is 30 mm. = $1\frac{3}{8}$ in., their weight 10.3 to 10.8 grammes, and they are probably *bastardos*. They bear on the obverse the Portuguese coat-of-arms, and around it the inscription:

EWANVEL: R: P: ET: A: DOVINE.

The second and fourth letters of the first word are inverted, and the last word, consisting of five or six letters, is less distinct than the rest. It might stand for **DOMINE**. The meaning of the other letters is of course 'Emanuel Rex Portugalie et Algarbiorum. The Algarves were first conquered by the Portuguese about 1188, and their name is still mentioned on the coins of the present day. The reverse of the coin bears the sphere, the "device of the King D. Manuel," like the coins struck at Goa. The device of the sphere, by the way, is used as a symbol of the glorious world-wide conquests of Portugal (see pl. I, figs. 2 and 2^a).

Albuquerque died off Goa on Dec. 16th 1515, and King Emmanuel in 1521. From the reign of the next king, John III, 1521-1557, between fifty and sixty coins are in the collection. The first kind, probably the *Soldo* (size 24mm. = $1\frac{1}{2}$ in.; weight 3.2 to 3.9 grammes), is of a very clear stamp, bearing on the obverse a cross, and around it the inscription

IOA: III: POR: ET: AL: R.,

i. e. *Ioannes III Portugalie et Algarbiorum Rex*, on the reverse the usual sphere. This tin coin therefore tallies exactly with the description of the gold, silver and copper coins struck at Goa, which bore on the one side "a cross of the Order of Christ, on the other a sphere—the device of the King D. Manuel." Of this coin there are only three specimens (pl. II, figs. 9 and 9^a).

Another kind, of which there are fifteen specimens, resembles this last in all details except that it is of a much ruder make and that the cross is slightly different: thus



Of a smaller size of this coin, possibly the Dinheiros, there are about forty specimens, some in excellent condition. Size 19mm = $\frac{3}{4}$ in; weight 2 to 2.3 grammes. The obverse bears around the cross the inscription

IOA: III: POR: ET: AL.

The reverse has the sphere (pl. II, figs. 10 and 10^a).

There are some coins which on the obverse round a coat-of-arms merely bear the inscription.

IOANNES. R. P. ET. AL. D. G.

i. e. Ioannes Rex Portugalie et Algarbiorum Dei Gratia, and on the reverse the sphere. Although not clearly assigned to the reign of John III, still there is no reasonable doubt that they too belong to his time, and not to that of John IV, 1640-1656, during the second year of whose reign Malacca was lost to the Portuguese, nor to the time of John V, 1706-1750. There are about twenty specimens of it, but most of them in a very indifferent condition. Size 24 mm. = $\frac{1}{2}$ in; weight 6.3 to 6.4 grammes. (pl. II, figs. 8 and 8^a).

A smaller coin, of which there are two specimens, has on the obverse a cross, with the letters ISMA in the four angles of the cross, and on the reverse again the sphere. These letters probably stand for 'Ioannes, Malacca,' shewing that the coin was struck at Malacca during the reign of a King Ioannes, probably again John III. The cross is very like the cross on certain coins figured by Da Cunha (part 1, pl. I, figs 3, 4 and 7) from the mints of Goa and Diu and belonging apparently to the eighteenth century. Size 17.5 mm. = $\frac{1}{2}$ in; weight 3.8 to 3.9 grammes (pl. II, figs. 13 and 13^a).

Belonging probably to the reign of the next king, Sebastian, 1557-1578, there are six specimens of a large coin which has on the reverse the two letters S. B. with three crossed arrows between them, and on the reverse the coat-of-arms. The S. probably stands for 'Sebastian', and the letter B. may stand either for

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for 'Bassein,' one of the mint towns, or for 'Bastardo,' the name of the largest tin coin. The arrows are symbolic of the martyrdom of St. Sebastian after whom the king was called. The size of the coin is 30 mm. = $1\frac{3}{8}$ in; weight 11.3 to 11.9 grammes (pl. I, figs. 4 and 4*).

Another coin, which very probably also belongs to this reign, bears on the obverse the letters B and A, with three crossed arrows between them, and on the reverse the sphere. The coin is too small for the letter B to stand for 'Bastardo,' and it is probably the mint mark of Bassein, whilst the letter A may stand either for 'Asia' or 'Albuquerque' (see above p. 190). The three crossed arrows show that the coin was struck during the reign of Sebastian, like the previous coin, and the two dots above them probably indicate its value in dinheiros. Eight specimens were found: size 17 mm. = $\frac{1}{2}$ in; weight 3.5 to 3.7 grammes (pl. II, figs. 12 and 12*).

The coin pictured on pl. I, fig. 1, of which there is only one specimen, was probably struck at Goa, as its obverse bears a device very like the wheel, the symbol of the martyrdom of St. Catherine, the patron saint of Goa. This wheel is often found on coins struck at Goa, as it commemorates the conquest of Goa by the Portuguese on St. Catherine's Day, November 25th, 1510. Its reverse is entirely smooth. Size 27 mm. = $1\frac{1}{8}$ in.; weight 8.9 grammes.

A small coin, represented by five specimens, shows on the obverse a coat-of-arms, and on the reverse a ship, but no inscription whatever. Size 18 mm. = $\frac{3}{4}$ in.; weight 2.2 to 2.4 grammes (pl. I, figs 6 and 6*).

A considerably larger coin shews on the obverse the coat-of-arms, and on the reverse the sphere, but has no inscription either. There are five specimens of it. Size 28 mm. = $1\frac{1}{2}$ in.; weight 10 to 11.2 grammes (pl. I, figs. 3 and 3*).

Finally there is a coin represented by only one specimen shewing on the obverse a small coat-of-arms surrounded by large and deeply impressed Roman letters, and on the reverse the sphere. Notwithstanding that the letters are deeply impressed and only little worn, they are so very rough, that my efforts to decipher them have not been successful. Size 24 mm. = $\frac{1}{2}$ in; weight 3.7 grammes (pl. II, fig. 7).

2. The Dutch, French and English Coins.

The Dutch during their possession of Malacca (1641-1795, and 1818-1824) never minted any coins especially for that place, but naturally used the coinage current in Java. That island has changed its rulers several times since the end of the sixteenth century, viz :

- {1594-1602 : Compagnie van Verre te Amsterdam.
- {1597-1602 : Compagnie van Verre te Middleburg.
- 1602-1799 : Vereenigde Oost-Indische Compagnie
- 1800-1807 : Batavian Republic.
- 1807-1811 : French Government.
- 1811-1816 : British Government.
- 1816 : Dutch Government.

Coins belonging to four of these epochs were discovered at Malacca.

The two Companies van Verre seem to have issued silver coins only, but none are in the collection.

The Dutch East India Company issued gold, silver and copper coins. The first copper coins were minted in 1644, but in the Malacca collection which contains no gold or silver coins, the earliest copper coins date from 1729. From the fact that the earliest copper coin figured by Netscher and Chijs (*13*) dates from 1726 we may conclude that still earlier ones are rare in numismatic collections.

The Batavian Republic issued gold, silver and copper coins, but the collection does not contain any. The Raffles Museum, however, possesses a copper coin of that period. The obverse shows the Dutch coat-of-arms consisting of a crowned shield enclosing a lion rampart, with the figures 5 and $\frac{1}{8}$ to the right and left of the shield respectively. The reverse bears the inscription *INDIÆ BATAV. 1802.*

The French Government issued silver and copper coins, and two of the latter were found at Malacca.


The British Government issued gold, silver, copper and lead coins during its occupation of Java, but the Malacca collection contained none of them. The Raffles Museum, however, possesses silver Rupees of the years 1812 and 1816, half Rupees of 1813, copper Stuivers of 1814, half Stuivers of all the years

1811 to 1815, copper Duits of the years 1811 to 1813 and lead Duits of 1814.

The Dutch Government of Java has so far issued no gold coins. The first silver coins, Guilders, seem to have been struck in 1821, the first copper coins in 1817 or 1818. The Malacca collection contains four copper coins.

In addition to coins current in Java also some of the well-known tokens issued by British merchants and traders in Sumatra were found, further some coins struck by the British East India Company for Penang, and finally a coin from India and one from Holland.

(a). *Coins of the Dutch East India Company (1602-1799.)*

Most of the coins issued by this Company bear the monogram , formed of the letters V. O. C., standing for 'Vereenigde Oost-Indische Compagnie,' i. e. United East India Company.

1. Copper. One Duit.

Obv. Coat-of-arms consisting of a crowned shield containing two lions passant.

Rev.  1729.

See Netscher and Chijs, p. 103. No. 21; pl. IV, No. 21*

2. Copper. One Duit.

Obv. Coat-of-arms consisting of a crowned shield containing one lion rampant.

Rev.  1730.

Except for date similar to Netscher and Chijs, pl. III fig. 21*.

3. Copper. One Duit.






Dated 1731. Otherwise similar to No. 1.


4. Copper. One Duit.

Obv. Coat-of-arms with two lions rampant. Around it the legend 'SP NOS IN DEO' (i. e. Spes nostra in Deo).

Rev.  1732.

Except for date similar to Netscher and Chijs, pl. IV, No. 21*.

5. Copper. One Duit.
Obv. Coat-of-arms with two lions rampant. Around it the legend 'SPES NOSTRA IN DEO' (written in full).
Rev.  (Date effaced).
6. Copper. One Duit.
Obv. Coat-of-arms with one lion rampant; no legend.
Rev.  1735.
Except for date similar to Netscher and Chijs, pl. IV, fig. 22^a.
7. Copper. One Duit.
Date 1737. Otherwise identical with No. 6.
8. Copper. One half Duit.
Obv. Coat-of-arms consisting of a crowned shield without lions. The shield is divided by a diagonal line, a bende, the upper and sinister portion of the shield being argent, the lower and dexter portion gule.
Rev.  1753.
See Netscher and Chijs, pl. IV, fig. 22^c.
9. Copper. One half Duit.
Date 1754. Otherwise identical with No. 8.
10. Copper. One Duit.
Obv. Coat-of-arms consisting of a shield similar to that of Nos. 8 and 9, but supported on the left and right by two rampant lions.
Rev.  1786.
Except for date similar to Netscher and Chijs, pl. IV, fig. 21^c.
11. Copper. One Duit.
Obv. Coat-of-arms consisting of a crowned shield, the lower half of which contains three horizontal wavy lines, the upper half a demi-lion.
Rev.  1786.
Except for date similar to Netscher and Chijs, pl. IV, fig. 22^b.
12. Copper. One Duit.
Dated 1790. Otherwise similar to No. 10.

13. Copper. Two Duits.
Dated 1790. About twice as large as No. 12, but otherwise similar to it.
14. Copper. One Duit.
Obv. Coat-of-arms, consisting of a crowned shield containing two lions passant.
Rev.  1792.
Except for date similar to Netscher and Chijs, pl. IV, fig. 22^c.

(b). *Coins of Java under French Rule (1807-1811.)*

1. Copper. One Duit.
Obv. 'JAVA, 1810'. Below this the letter 'Z.'
Rev. A monogram of the two letters 'L. N.', standing for Louis Napoleon.
See Netscher and Chijs, p. 112, No. 60; pl. VII, fig. 60^a.
2. Copper. Two Duits.
Obv. 'JAVA'. Date effaced.
Rev. 'L. N.'

(c). *Coins of Java under Dutch or British Rule?*

The Malacca collection contains a copper coin, probably one Duit, of the following description:

Obverse: Coat-of-arms consisting of a crowned shield enclosing a lion rampant, with the figures '5' and '16' to the right and left of the shield respectively.

Reverse: the legend INDLĒ BATAV. 1816.

In 1816 Java was handed back by the British to the Dutch, and as the coin bears a coat-of-arms used by the Dutch East India Company throughout the eighteenth century, there is no reasonable doubt that the coin is of Dutch, not British origin. Coins identical with it, except for the date, were issued by the Batavian Republic previous to the English occupation of Java, and by the Dutch Government after the English occupation, and the Raffles Museum contains such coins of the years 1802, 1818, 1819, 1821 and 1824. But the Museum also contains a coin of 1815, that is a coin struck in Batavia with the Dutch coat-of-arms during the time of the English rule. Therefore it is just

possible that the above coin of 1816, found at Malacca, may also have been struck under English rule. I cannot offer any explanation of this.

A coin of this kind, but of the year 1802, is figured by Netscher and Chijs, pl. VI, fig. 39. The figures '5' and '18' to the right and left of the shield respectively are somewhat mysterious. Netscher and Chijs (p. 108) say that they are not able to offer any explanation of their meaning, nor am I in a position to do so.

(d). *Coins of Java under Dutch Rule (from 1816).*

1. Copper. $\frac{1}{8}$ Stuiver.

Obv. A coat-of-arms consisting of a crowned shield enclosing a lion rampant, with the figure $\frac{1}{8}$ to the right and the letter S to the left of the shield.

Rev. NEDERL. INDIE 1823.

See Netscher and Chijs, pl. IX, fig. 85.

2. Copper. $\frac{1}{4}$ Stuiver.

Date 1826. Except for size, date and the figure $\frac{1}{4}$ instead of $\frac{1}{8}$, similar to No. 1.

3. Copper. One Cent.

Obv. The usual coat-of-arms enclosing a lion rampant with '1' and 'Ct' to the right and left of the shield respectively.

Rev. NEDERL. INDIE 1838.

4. Copper. One Cent.

Date 1856. Identical with the currency of the present day.

(e). *Tokens of the British East-India Company of Sumatra.*

1. Copper. One Keping.

Obv. The Company's coat-of-arms, and around, in Roman characters, the legend 'Island of Sumatra, 1804.'

Rev. The legend, in Malay characters, 'Satu Keping, 1219.'

See Rodgers (14), Vol. II, pl. VIII, No. 12081; Ellis (7) p. 9, No. 1; Atkins (1), p. 204, No. 24.

2. Copper. One Keping.
 Obv. A Bantam Cock, with the legend, in Malay characters, 'Tanah Malayu' (i. e. the Land of the Malays).
 Rev. In Malay characters: 'Satu keping, 1247,' (i. e. 1831 A.D.)
 See Rodgers (*14*), Vol. II, pl. VIII, No. 12083; Millies (*11*), pl. II, fig. 23.
3. Copper. One Keping.
 Obv. As in No. 2.
 Rev. A star of sixteen points, with the legend, in Bugis, 'The Land of the Bugis, One Keping, 1250' (i. e. 1834 A. D.)
 See Netscher and Chijs. p. 188, No. 254 ; pl. XXVII, fig. 254.

(f). *Coins of the British East India Company struck for Penang.*

1. Copper. Three Keping.
 Obv. A heart-shaped shield diagonally divided into four sections with the letters V. E. I. C. respectively (i. e. United East India Company). The shield is surmounted by the figure '4'. Below the date 1798.
 Rev. 'Tiga Keping. 1213' in Malay characters.
 See Netscher and Chijs. p. 123, No. 100 ; pl. X, fig. 100b.
2. Copper. Four Keping.
 Obv. The Company's coat-of-arms with the legend 'East India Company' in Roman letters around it. Below, the date 1804.
 Rev. 'Ampat Keping. 1219', in Malay.
 See Netscher and Chijs. p. 123, No. 99 ; pl. X, fig. 99.
3. Copper. Two Keping.
 Obv. Smaller than, but otherwise identical with, No. 2.
 Rev. 'Dua Keping, 1219,' in Malay.
 See Millies (*11*), p. 93, No. 14 ; pl. I, fig. 14.

III. OTHER COINS.

There are two more coins which belong to none of the above sections.

1. A copper coin of the East India Company, struck in the name of Shah Alam II. The obverse shows an inscription in Arab, the reverse in Bengali, Malay and Hindostani. See Rodgers, Vol. II, p. 124, No. 12138; pl. VII. No. 12138.

2. Copper. Two Stuivers.

This is the only coin of European origin found in the collection, coming from Zeeland in Holland.

Obv. The Dutch coat-of-arms consisting of a crowned shield. The lower half of the shield has three horizontal wavy lines, the upper half a demi-lion, therefore exactly similar to the coat-of-arms of the coin No. 11 of the Dutch East India Company described above (p. 196). The figure 2 to the right and the letter S to the left of the shield indicate its value, two Stuivers.

Rev. The legend

ZEE
LAN
DIA
1730

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References to the Illustrations.

PLATE I.

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PLATE II.

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Fig. 1.



Fig 2.



Fig. 2a.



Fig. 3.



Fig. 3a.



Fig. 4.



Fig. 4a.



Fig. 5.



Fig. 6.



Fig. 6a.



Tin Coins from Malacca.

Short Notes.

A Swarm of Butterflies in Sarawak.

On January 12th ult. a great flight of butterflies was observed at Kuching, Sarawak, at 1.30 p.m. All the individuals of the swarm belonged to the well-known species, *Cirrochroa bajadeta*, Moore (syn. *ravana*, Moore); in the male the wings on the upper side are bright chestnut in colour with the outer margins of the fore wings broadly, of the hind wings narrowly, fuscous, the under side is pale brown with darker markings and an oblique pale fascia; the female differs in small details only. A bright westerly wind was blowing at the time and the butterflies flew before it all over the town of Kuching towards Mount Matang in a continuous flood for about 15 minutes whilst stragglers followed up in ever-decreasing numbers for the rest of the day. The colour of the insects, their prodigious numbers and their weak and wavering flight produced an effect that irresistibly reminded the beholder of a heavy shower of falling leaves on a gusty autumn day in England. The swarm or some part of it arrived at Mt. Matang towards evening and streamed up to the summit. At Sadong the same phenomenon was witnessed at the same time on the same day as in Kuching but whether this was a separate swarm or merely one of enormous size sweeping over the whole area between Sadong and Kuching it is impossible to say as I can get no records from intermediate places. On the 13th between 1.30 and 2 p.m. another flighting was noticed in Kuching, but the number were infinitesimal compared to those flying on the 12th, and they did not attract the attention of many observers. Of 18 specimens captured on the 12th, 13 proved on examination to be males, whilst only 5 were females; at the present time of writing—a month after the swarm was observed—this species is quite the most common met with in and around Kuching, but now nearly all the specimens captured are females. The rainfall of the N. E. monsoon months has so far (October—January) been below the average (39.45 inches as

against the average 75.17 inches) and to this comparative drought perhaps may be indirectly attributed the abnormal numbers of this butterfly—*Cirrochroa bajadeta*. That the monsoon has been an exceptionally favourable one for insects is shewn also by the following occurrences:—(1) The number of swarms of social wasps and bees has been greater than usual during the past 3 months. (2) Captain A. Balsler of the s.s. "Rajah of Sarawak" reports that on the 20th January ult., a swarm of dragon flies came aboard his ship when about 50 miles west of the island of St. Pierre; the wind was very unsteady at the time; the insects appeared to be making their way North. (3) Mr. H. B. Crocker, officer-in-charge at Paku, Upper Sarawak, informs me that on January 27th ult., he noticed a swarm of some Pierine butterflies (species not identified, probably *Catopsilia crocale*, Cram.) flying in a solid phalanx some 20 fathoms long by 8 fathoms wide in a westerly direction.

R. Shelford.

Work on Sakais by Messrs. Skeat and Blagden.

In a letter from Mr. Blagden lately received he states that the important work on the wild tribes of the Malay peninsula by Mr. W. D. Skeat and himself will shortly be out. It is an attempt to combine in one work all that is of any permanent value in previous publications both books and periodicals, as well as Mr. Skeat's own independently collected matter collected during the Cambridge Exploring Expedition, in the Northern States of the Peninsula and in Selangor, Mr. Blagden's own notes, and the various information collected by Mr. D. F. A. Hervey, Hugh Clifford, Vaughan Stevens and others. The book which will be well illustrated will be found to be as complete as it is possible to make it, and should prove of the greatest interest to all Europeans in the Malay peninsula. It is unnecessary to point out that in many cases the language and customs of these most interesting tribes are gradually disappearing so that a good record of them is of the greatest importance, and the names of the authors are a guarantee of the excellence of the work.

H. N. R.

Jour. Straits Branch

A Buddhist Votive Tablet.

Some years ago the late Mr. H. Vaughan Stevens discovered in Kédah in a cave, nine feet below the floor, a number of fragmentary clay tablets stamped with inscriptions. These he forwarded to the Singapore Museum, where they now are, accompanying them with a letter explaining where he had found them.

By the courtesy of the Curator I have been enabled to submit a photograph of the largest and best preserved of these tablets to Professor Kern of Leyden, who in reply to my request was good enough to examine it and writes as follows:— "After repeated attempts I have given up the hope of deciphering the whole. The writing is Nāgari of the 10th century, approximately, and therefore the tablet is from *Northern India*. At the top I discern parts of the well known Buddhist formula :

ye dharmā hetu prbha, etc.,

The first line shows *hetuprabha* ; the second *sām hetu-tathāga-*; the third *tesām . . ca (?) yo nirodha-*; the fourth . . *vādi manah sarve*; the fifth *sams Kāvā*. Further I can distinguish some letters, but without being able to make out an intelligible context. Most probably the whole tablet is filled up with the common formula of the Buddhist creed."

The formula here referred to is clearly the one which occurs also in certain other inscriptions found in Kédah and Province Wellesley, which will be found in *Indo-Chinese Essays*, Series I, Vol. 1. These were dealt with, by Professor Kern, in *Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, Afdeeling Letterkunde, 3de Reeks, Deel 1*. He assigns them to the period 400 A. D. These however are in a *South Indian* form of alphabet (and from such form the existing *Far Eastern* alphabets are in the main derived), whereas the clay tablet now dealt with points to influences from *Northern India*.

Evidently, therefore, both Northern and Southern India have contributed something towards the civilization of the Malayan regions.

I take this opportunity of pointing out, as regards the date to which this Indian influence can be traced, the following few acts:—

(1) In the 2nd century, Ptolemy gives Indian place names to several of the islands of the Archipelago, notably Java, which he calls *labadios* i. e. *Yava-dvipa* “the island of Java” (or the island of millet,” if that is what the name meant) as well as to certain ports on the coast of Indo-China and the Peninsula.

(2) Early in the 5th century, Fa-Hian going from Ceylon to Java, finds in the latter island “heretical Brahmans, but no Buddhism worth mentioning.” He was a Buddhist pilgrim himself and stayed five months in Java and after spending some years in India, so he may be supposed to know what he was talking about.

(3) Late in the 7th century I. Tsing, another Chinese Buddhist, found Buddhism (of the Sanskrit-using variety) flourishing in South-eastern Sumatra.

The inscriptions found in the Peninsula, though few in number and of little intrinsic interest, supply further links in this chain of evidence, and negative Mr. Hugh Clifford’s assertion (*Encyclopædia Britannica* supplement s. v. *Malays*) that the traces of Hindu influence do not extend to the Peninsula. They are only fainter there than in Java and Sumatra, not absent altogether.

Unquestionably Indian influence was by far the most potent of the forces which have led the Javanese and Malays to such civilization as they have attained. It has made a far deeper impression upon them than the Arab and European teaching by which it has been succeeded.

C. O. Blagden.

A new *Balanophora* from Tenimber Islands.

When Mr. H. O. Forbes visited the Tenimber islands in 1882, he obtained among his collections, specimens of a *Balanophora* which however perished in the disastrous conflagration by which the greater part of his collections were destroyed. No other person has since visited this group with a view of collecting botanical specimens though Orchid collectors have lately taken to exploring the spot usually for the sake of the beautiful *Dendrobium Phalaenopsis*. Mr. Micholitz during a recent visit came across the *Balanophora*, and brought a quantity of it preserved in Formaline which he has kindly given me, and I may here remark that this seems to be about the best way of preserving these fleshy plants. If preserved in ordinary spirit, not only does the spirit become black, though often changed, but the plants which are ordinarily red, yellow or white also become black. The specimens in formaline retain to a considerable extent the yellowish white color which they possessed in life.

B. Micholitzii, n. sp.

Rhizome rather small about $\frac{1}{2}$ inch through, rounded and shortly lobed, minutely irregularly pustulate. Stems two or three on a rhizome, 2 inches tall thick, leaves about 8, orbicular to orbicular ovate, apex rounded $\frac{1}{2}$ an inch long, $\frac{1}{2}$ to $\frac{3}{4}$ inch wide white. Capitulum ovoid globose 1 inch long yellowish bisexual.

Male flowers in two or three whorls at the base, pedicels $\frac{1}{2}$ inch long thick. Sepals 4 oblong fleshy, apices thickened incurved, shorter than the pedicel, reflexed, androecium thick, anther-capitulum rounded, anthers 4 horse-shoe shaped. Female portion broad globose rounded. Flowers obconic clavate, apex rounded tessellate, spadicels numerous nearly as long as the pistil, base and apex slender filiform centre swollen.

This plant is nearly allied to *B. Zollingeri* Fawcett, Trans. Linn. Soc. Ser. ii. Vol. ii. p. 234. Plate 34 figs 11-14 which was collected by Zollinger in the island Selayar, south of Celebes. It is however much larger in all its parts, and the female flowers are more club shaped with a longer stalk armed with large well developed spadicels.

H. N. Ridley.

On the supposed evil influence exercised by ghosts in the Malay Peninsula.

Some four years ago when I was engaged in certain prospecting operations in the highlands of Pahang on the borders of that State with Perak, I had occasion to make a somewhat lengthy stay at a place called Kampar on the Tué river, one of the tributaries of the Betok, in its turn a tributary of the Jelai, the principal feeder of the Pahang River. I selected this spot because it had already been cleared of large trees and had only recently been in occupation as a Sakai Settlement, from the remains of which, we reared our unpretentious little camp. The Sakais however strongly advised us to go elsewhere alleging that this place was haunted by elephant ghosts and that they had been the direct cause of a number of deaths among them, principally among their children, whose remains lie buried there. It is necessary to explain that at the back of this place, not fifty yards away, is to be seen one of those peculiar muddy pools which animals of all kinds frequent for their saline properties, this particular one being known as the Kubang Gajah Hantu (the mud pool of the ghostly elephants). These salt licks are also known as *genuts* in Malay. When the Sakais refer to this place it is usually with bated breath and a mysterious and awesome gesture. These men declared that almost nightly elephants are seen and heard breaking twigs and branches and wallowing in this mud pool, and yet in the morning, not a vestige of their spoor can be seen anywhere. Of this I am certain, the prints of deer and pigs were always plentiful and fresh, but no elephant could have been within miles of the place during my residence in that locality. My mandor's wife, an oldish person, who always followed her husband in his journeys doing the cooking for my followers, declared that the first night we slept there, she and all my men heard continued long drawn wails, like a long weê-ê-ê which went on without intermission until almost daylight. This noise they said came from those Sakai children buried there.

This account is interesting from an ethnological standpoint in so far as it illustrates the beliefs and superstitions of a race of very primitive people. As for the number of children dying

at the time, this would only seem natural when it is remembered that an epidemic of measles was then and had been for some time after raging.

A. D. Machado.

Malay Witchcraft.

Towards the end of 1901 while I was in charge of a country district in Alor Gajah, complaints were made to me of a certain Pawang Musah who was said to bewitch children by means of a familiar spirit called a Polong. One man stated that one of his children had died from the effects and that another was affected. As his house was only about a mile from where I lived, I and the colonial surgeon from Malacca, who happened to be with me on one of his periodical visits decided to go and see the child. When we arrived at the house we found a large number of people in the house and lying at one end of the verandah, the child (a little girl of 7 or 8 years old) in a semi-unconscious state. The doctor examined it and found that it was in a high fever and evidently dying. While we were there the father sat down and spoke to the child. She opened her eyes and when asked by the father "who sent you here and who is your father" or words to that effect, she replied "Pawang Musah." This was taken by the bystanders to be the voice of the Polong speaking through the child. We were also told that the child had been asked who would be the next victim and had pointed out her older sister a girl of 18 or 19 years old. This girl was examined by the doctor and found to have nothing the matter with her. We assured her she had nothing to fear, and as far as I know she is still alive, at any rate she was alive in February 1902 when I left Malacca. The dying child was suffering from malarial fever, enlarged spleen and starvation and though we sent up stimulants they were of no avail and she died a very few hours after we left. Pawang Musah lived about 2 miles from where the child lived and had a bad reputation as a wizard. He originally came from the other side of Malacca about 30 miles away and had moved about from village to village everywhere getting the credit for the deaths of child-

ren being driven out. I have very little doubt that he traded on the reputation as the people were quite willing to give him anything he asked for through fear that he would otherwise bewitch their children. The explanation appears sufficiently obvious. If any person thought he had in any way offended the Pawang the next case of sickness in his house would in all probability be attributed to him, the illness then being considered supernatural no ordinary remedies would be tried and incantations alone would be used to drive out the evil spirit. The result to the patient is very easy to imagine and as he or she being familiar with the story of the Polong, it is not surprising that the answers given to the well known formulæ coincide with the suspicion of the relations especially when it is remembered that the patient is a young boy or girl in high fever.

H. Marriott.

**Corrigenda in Mr. C. O. Blagden's paper "A Malayan
Element in some of the Languages of Southern
Indo-China, Journal No. 38, pp. 1-27**

Page	1,	line	4,	<i>for</i>	Khmet	<i>read</i>	Khmer.
					5,	<i>for</i>	hand <i>read</i> Land.
	2,		11,	<i>for</i>	dua	<i>read</i>	dva.
	5,		8	from bottom, <i>after</i>	and	<i>insert</i>	the.
	6,		5,	<i>for</i>	leureux	<i>read</i>	heureux.
	8,		13,	<i>for</i>	sěmbilon	<i>read</i>	sěmbilan.
					3	from bottom, <i>for</i>	of <i>read</i> cf.
	11,		1,	<i>for</i>	tamov	<i>read</i>	lamov.
					16,	<i>for</i>	hagaton <i>read</i> hagatou.
					20,	<i>for</i>	dita <i>read</i> ditá.
	13,		11.	<i>after</i>	rarely	<i>end</i>	the bracket.
						<i>for</i>	iu <i>read</i> in.
					3,	<i>delete</i>	van.
					4,	<i>for</i>	metoyam <i>read</i> metyoam.
	14,		5	from bottom, <i>insert</i>	a	<i>before</i>	Malayan.
	19,		13	from bottom, <i>for</i>	dewatan	<i>read</i>	dewätau.
	20,		14,	<i>for</i>	chin chin	<i>read</i>	chinchin.
					15,	<i>for</i>	ainbau <i>read</i> ambau.
						<i>for</i>	ainbang <i>read</i> ambang.
	21,		6,	<i>for</i>	being	<i>read</i>	bring.
	22,		4,	<i>for</i>	Papuan	<i>read</i>	Melanesian.
	24,		2,	<i>for</i>	southeast	<i>read</i>	south-east.
					2	from bottom, <i>for</i> ;	everything <i>read</i> . Everything.
	25,		3,	<i>for</i>	wards	<i>read</i>	words.
	27,		6,	<i>for</i>	Himby	<i>read</i>	Himly.
					11,	<i>for</i>	Landen <i>read</i> Land- en.

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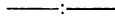
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of the Sarawak Museum—Part I, Musical Instru-
ments, by *R. Shelford* page 1

musical

Errata.

- Page 5, bottom line *for* "Subdived" *read* "Subdivided."
Page 7, 6th line ,, "Plate VI" ,, "Plate VII."
Page 12, in foot note ,, "Kenyah-Kyan" ,, "Kelamantan."
Page 22, bottom line ,, "Stopes" ,, "Stops."
Page 32, 7th line ,, "Plate VIII, figs. 11 and 21"
 read "Plate VIII, figs. 11 and 12."
Page 52, 14th line ,, "Plate IV, fig. II"
 read "Plate IV, fig. 11."
Page 53, 8th line from bottom *for* "tangkat krutak"
 read "tongkat krutak."
Page 54, lines 13, 24 and 30 *for* "finical" *read* "finial."

An Illustrated Catalogue of the Ethnographical Collection of the Sarawak Museum.

INTRODUCTION.

The nucleus of the ethnographical collection of the Sarawak Museum is a collection made by Mr. Hugh Brooke Low, during the greater part of his service under the Sarawak Government (1869-1886); Mr. Low made full use of his opportunities and got together nearly 500 different objects of ethnographical interest chiefly from the natives of the Rejang and Batang Lupar rivers. The collection was sent to England and for some time was exhibited at the South Kensington Museum. In 1887, however, His Highness the Rajah of Sarawak purchased the collection, and in 1891 it was deposited in the newly-opened Sarawak Museum. To this nucleus have been added by constant additions nearly 1,500 specimens and so recently as 1899 a competent critic was able to assert that the Sarawak Museum contained "the best and most instructive collection of Sarawak ethnography extant" ("Nature" Aug. 31st 1899, p. 415.)

Unfortunately the Museum is but rarely visited by serious students of anthropology and as with the exception of Ling Roth's "Natives of Sarawak and British North Borneo" and one or two papers by Hein (Vienna, 1890), the culture-history of the Borneans has never been adequately pictured, it seemed advisable to compile an illustrated catalogue of this fine ethnographical collection, so that those interested in the natives of Borneo might have some sort of picture of them even if a more personal acquaintance was out of the question.

Even in Sarawak, well-protected as it is against European exploitation, great changes have taken place amongst the natives within the last thirty years; the great incursion of Chinese has

2 SARAWAK ETHNOGRAPHICAL COLLECTION.

had its effects; the dominant Sea-Dyak has increased enormously in the Rejang River, driving the Kyan, Kanowit and other tribes less robust than himself before him, so that the ethnographical variety of the chief river of Brooke Low's collecting area is now sadly diminished; finally the influence of the European on the change of native habits must not be left out of account.* The catalogue, then, is not begun a day too soon, reliable information on many specimens must be obtained now, or before many years it may be too late. As it is, the Srus, a tribe apparently allied to the Tanjongs, living near Kalaka, have forgotten all their old customs and culture, a fragmentary language alone remaining to suggest a less ignoble past; whilst the Tanjongs themselves, thanks to the gin-bottle and the immorality of their women are rapidly drawing near to the abyss of extinction. The project of such a catalogue as this was for some time in my mind, but the ways and means of production were difficult to find. However, at the end of 1902 the Council of the Straits Branch of the Royal Asiatic Society generously came to the rescue and the catalogue will be published in parts under their auspices.

The ethnographical collection now to be catalogued cannot claim to be absolutely complete, and there are many specimens scattered amongst European Museums which are unrepresented in the Sarawak Museum. These will be alluded to in the catalogue whenever possible and specimens known to the writer but unrepresented in any museum will also be noted. No particular order in the series of objects described will be observed, but each part will be produced as soon as it is ready. I have been fortunate in securing the collaboration of Dr. C. Hose, Resident of the Baram district, in at least one part of the catalogue and other local authorities have been as generous in supplying me with information as they have been in obtaining specimens for the Museum.

* To give a concrete example of change:—It is no longer easy to obtain specimens of the *niabar* a variety of short sword formerly much in use amongst the Sea Dyaks, the *jimpul* and *tilang kamarau* are much more common, the former was invented less than 20 years ago, the latter only last year. Numerous other examples might be quoted.

PART I.

Musical Instruments.

BY R. SHELFORD, M. A., F. L. S., ETC.

Curator of the Sarawak Museum.

The musical instruments of the Bornean tribes fall naturally into four main groups:—

1. Stringed instruments.
2. Wind instruments.
3. Jews harps.
4. Instruments of percussion.

They are described in this order. Each group can be subdivided into classes and under the class-headings are described the different 'species' frequently represented by more than one specimen. In addition to describing each specimen fully, I have quoted its number in the Museum catalogue and have recorded how and when it came into the possession of the museum; all measurements are given in centimetres. It will be seen that the Museum is indebted to many friends for valuable specimens; as it would be tedious to detail here all their names, I must express my thanks to them as a collective body; the names of Mr. D. J. S. Bailey, of the Sarawak service and Mr. E. W. Byrde, of the Borneo Co., cannot however pass without special notice, as to these two gentlemen I am indebted not only for many interesting and opportune specimens but also for much valuable information concerning them. My friend Mr. H. Balfour, curator of the Pitts-Rivers Museum, Oxford, has given me much useful advice and help, and his papers on musical instruments have served as models which I fear that nevertheless I have but imperfectly copied.

STRINGED INSTRUMENTS.

There are four main classes of stringed instruments in use amongst the tribes of Borneo* :—

- I. Primitive musical bow—perhaps the progenitor of
- II. Fiddles and guitars.
- III. Upright harps.
- IV. Cylindrical harps.

CLASS I.—PRIMITIVE MUSICAL BOW.

This instrument is used only by the Tanjongs, a small isolated tribe living at Kapit, Rejang River, Sarawak. It consists of a flattened bow (*busoi*) with a rattan string laid across a pot of earthenware or metal, the mouth of the pot being closed by a wooden diaphragm (*aran*); the handle of the bow is grasped in the right hand and the taut bow string is tapped with a short stick held in the left hand; different notes can be produced either by fingering the string or by moving the bow so that different parts of its arc rest on the wooden diaphragm closing the pot. A very fair volume of sound can be produced. Until quite recently no specimens of this interesting musical instrument had found their way to European Museums, but there are now examples in the Anthropological Museums of Oxford and Cambridge Universities. The "Natural History of the Musical Bow" by H. Balfour (Oxford, 1899) should be consulted for a full and detailed account of the geographical distribution and evolution of this primitive type of musical instrument.

* Dr. A. W. Nieuwenhuis figures in "In Centraal Borneo" Vol. II Pl. LVII a Kayan girl beating with a stick on a string stretched longitudinally across a shield and bridged up with two cylindrical wooden plugs at the end; underneath the plate is printed "Het Voordragen van zangen, de overleveringen van den stam, behelzende":—i.e. the overture to a song, delivered by the assembled tribe."

But there is no reference to the illustration in the text and I believe that this is merely an improvised musical instrument, and one seldom in use.

1. Tanjong—*Busoi and Aran*.*a.* (Plate I, fig. 1, upper specimen).

The *busoi* is a slightly bowed slat of hard black wood 93.6 cm. long and 4.4 cm. broad about its middle. One end is fretted and moulded and forms the handle, the other end has one border slightly excavated in the way shown in the figure. A strip of split rattan is strung through a hole near the handle and laced through two holes near the other end.

The *aran* is a disc of wood, 28 cm. in diam. with a large hole in the centre; the border for a depth of 2.5 cm. has been sloped down and a dog's tooth pattern is cut in low relief on it, the back ground being stained black with soot or indigo.

Catalogue No. 59. Brooke Low collection.—This specimen has been figured in "The Natives of Sarawak and British North Borneo" by H. Ling Roth, 1886 Vol. II p. 260, and in "The Natural History of the Musical Bow" by H. Balfour (1899) p. 69, fig. 49; the latter illustration is taken from a photograph of this specimen in the possession of Sir Hugh Low.

b. (Plate I, fig. 1, lower specimen).

The *busoi* is of soft white wood, 82.3 cm. long and 4 cm. broad in the middle. The concave side has a geometric pattern cut in bas-relief, the outstanding background being stained red with dragon's blood; the handle is unstained, it is moulded and fretted forming an S-shaped curve; the opposite end has its borders notched and curved, it is stained with dragon's blood and has a rosette (*bauh trong*) cut in it. A strip of rattan is strung through a hole near the handle and laced through two holes near the distal end.

The *aran* is a disc of wood 30 cm. in diam. with an incised phyllomonic pattern surrounding a central rosette; it is not perforated. The rattan *plectrum* is 31 cm. long. The pot over which the *aran* is laid is a common bazaar pot of Chinese make, light-blue in colour and glazed; 22.5 cm. diam.; 13 cm. high.

Catalogue No. 1230. (Hon. H. F. Deshon, [P. i. 03])

CLASS II.—FIDDLES AND GUITARS.

This main class may be subdivided into two sub-classes:—

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(A) Fiddles with straight wooden stem transfixing a resonator usually made from a hollowed-out coconut shell or gourd, and with one or more strings. Such are the one stringed *enserunai* of the Sea-Dyaks and the *sigittuad* of the Land-Dyaks and the two- or three-stringed *engkerbap* of the Sea-Dyaks. The performer on any of these instruments sits on the ground and holding the stem of the fiddle in his left hand rests the resonator against the calf of his left leg or else grasps with his toes the part of the stem that projects through the resonator; the string is sawed with a very simple bow (*pengayat*) held in the right hand; generally no sound can be produced until the string has been well moistened with saliva and even then the volume of sound is not great. The Sea-Dyaks imitate on the *enserunai* the dirges sung at deaths and at burial.

(B) Guitars, cut out from a solid block of wood, the resonator being hollowed out either from the back or from the front, and with from two to six strings, which are *strummed* with the fingers. Examples of such instruments are found amongst the Kayans, Kenyahs, Malohs, Dusums, Malays, and Sea-Dyaks, the latter people having probably borrowed from the Malohs. The fiddle figured by Ling Roth l.c. Vol. II, p. 262 is undoubtedly Chinese; numbers of these are made in Hong-Kong for export and can be bought any day in the Sarawak bazaars. The Malay fiddle figured on p. 266, Vol. II, of Ling Roth's work is Javanese and though the instrument is described as being of Borneo make, it cannot be regarded as typical of Borneo Malays. A very similar specimen bought from a Bugis is in the Raffles Museum, Singapore.

A. FIDDLES.

1. Sea-Dyak—*Enserunai* (Plate I, fig. 2.)

a.—(Second specimen from the left.)

Stem straight, transfixing the resonator and projecting considerably beyond; the head is flattened and slightly enlarged; its front border notched and moulded. The resonator is half a gourd (*genok seluing*), the bottom is perforated; a diaphragm of monkey skin is lashed on with a rattan binding and tightened up with wedges (Plate VII, fig. 1). The string which is of rattan

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(*rotan seya*) at one end is looped over the part of the stem which projects beyond the resonator and passes from this point of attachment to the lower part of the head of the stem which is deeply grooved longitudinally; the string runs along the groove and out through a hole at the side and is then wound round the head (Plate VI, fig. 2); a notch on each side of the groove is evidently intended for the reception of a cross-bridge. There is no bridge for the string opposite the resonator. A bracing string of grass is present. The bow is of bamboo with a grass string. Total length of fiddle 68 cm.; diameter of resonator 9.5 cm.

Catalogue No. 55. Brooke Low Collection.

b. Stem straight of a hard dark wood, transfixing resonator and projecting considerably beyond. The head is not expanded; the front of the stem has a deep longitudinal groove for the greater part of its length; there are some shallow transverse grooves and incised lines distad and proximad of the longitudinal groove by way of decoration. The resonator is half a gourd, closed by a diaphragm of wood luted on with dammar, the bottom is perforated. The rattan string at one end is looped round the part of the stem that projects beyond the resonator, at the other it is wound round a slip of wood driven transversely through the stem (Plate VII, fig. 3) there are notches on each side of the groove for the reception of a cross-bridge. Two bracing strings of grass. Bow of bamboo, with grass string. Total length 60.5 cm., diam. of resonator 11.5 cm.

Catalogue No. 56. Brooke Low collection. This specimen has been figured by Ling Roth (l. c. Vol. II, p. 260).

c. (1st specimen on right). Stem straight, hemispherical in section, of a brown soft wood, transfixing resonator and projecting considerably beyond it, the head of the stem is enlarged flattened and bent forward at an angle to the stem. each side is carved in low relief with a phylomorphic pattern and painted in three colours, red, yellow, and green. The resonator is half a cocoa-nut shell closed by a diaphragm of wood luted on with dammar; one of the "eyes" of the cocoa-nut has been bored forming an orifice at the bottom of the resonator. The

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rattan string at one end is looped round the part of the stem that projects beyond the resonator, the other passes into a groove and round a tuning peg that traverses the stem just below the head. Bridge missing; a long and stout bamboo bow with rattan string. Total length 78 cm; diameter of resonator 11.5 cm.

Catalogue No. 974. Brooke Low collection.

d. (2nd specimen from right). Stem straight, flattened, of hard brown wood; it transfixes the resonator but does not project much beyond; the head is enlarged, its front edge is notched and carved. The resonator is made from a section of bamboo, cut just above and just below a node; the septum of the bamboo is perforated with a star-shaped hole; the top of the resonator is covered with a diaphragm of skin lashed on with rattan (Plate VII, fig. 1); the plaited band of rattan (c.) encircles the resonator at the zone of the leaf-scars. The single rattan string is at one end looped over the stem in the usual manner, at the other end is lashed round the lower end of the head, passing through a hole in the front border; there is no tuning peg. There is a wooden bridge shaped like an inverted V, resting on the diaphragm of the resonator and a grass bracing string. The bow is of rattan with a string made from a strand of the stem of the bracken, *Pteris aquilina*. Total length 59.7 cm.; diameter of resonator 6.2 cm.; height of resonator 7 cm.

Catalogue No. 1228. D. J. S. Bailey, Esq. [P]; from the head waters of the Undup River.

e. (1st specimen on left). Stem of soft wood, almost square in transverse section; it transfixes and projects beyond the resonator; the head is much enlarged, flattened laterally and bent back at an angle to the rest of the stem; on each side a phyllomorphic pattern (*resam*=*Glöichenia dichotoma*) is carved in deep relief. The resonator is half a cocoanut shell, one of the "eyes" at the bottom has been perforated; the mouth is covered with a diaphragm of monkey skin with the hair still on fastened with rattan lashings in the usual manner (Plate VII, fig. 1) The single rattan string at one end passes through a hole pierced in the part of the stem that projects beyond the resonator

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and is prevented from slipping through by a knot; the other end is attached to the tuning peg; this transfixes the head just above the angle, and in order to expose a length of peg round which to wind the string a deep short longitudinal groove is cut in the anterior face of the head, into this the string runs, is wound round the peg, passes out through the peg hole and is knotted to the peg outside the groove (Plate VII, fig. 4). A wooden inverted V-shaped bridge is set on the diaphragm and a small slip of wood is thrust under the string just before it enters the tuning-peg groove. There is a bracing string of grass. The bow is of bamboo with a grass string. Total length 83.5 cm; diam. of resonator 12.5 cm.

Catalogue No. 1229. D. J. S. Bailey, Esq. [P. ii. 03].

Except that there is only one string this instrument might be called an *engkerbap*, the shape and carving of the head of the stem being very characteristic of that instrument. From the Undup River.

2. Land-Dyak—*Sigittuad* or *Sigitot*. (Plate VII, fig. 7.)

Stem a length of bamboo (*tongon*). Resonator a hollowed-out coconut shell with the top third cut off, it is transfixed by a piece of wood (*benoah*) which then passes a short way up the cavity of the bamboo stem; in the bottom of the coconut shell is pierced a quincunx of holes; the top is covered by a circular sheet of sago-palm leaf, which is not secured in any way. There is one tuning peg (*than*) which transfixes the stem back to front not from side to side as in the *enserunai*. The single string (*ooi*) which is the adventitious root of some epiphytic plant is knotted at one end of the piece of wood transfixing the resonator, at the other it is wound round the tuning peg. A triangular block of wood (*tikyey*) stands on the diaphragm and serves to bridge up the string. There is a small bow of bamboo with a string made from a strand of the stem of the common bracken, *Pteris aquilina*. Total length 62 cm. From the village of Krokong, Upper Sarawak.

Catalogue No. 1277. E. W. Byrde, Esq. [P. vij. 03]

The instrument is of very simple construction, in fact it was made in about half-an-hour, the taut string serves to keep every thing together, if this is slackened the diaphragm slips off

the resonator and the resonator itself becomes detached from the bamboo stem. The Krokongs occasionally make more finished fiddles than the one described above, but there are no specimens of such in the Sarawak Museum nor have I ever seen one; in some instances the head of a *sigittuad* stem may be carved to resemble a hornbill's head.

3. Sea-Dyak—*Engkerbap*.

Stem straight of a soft wood, transfixing resonator and projecting slightly beyond; the resonator is half a coconut shell with a diaphragm of lizard (*Varanus salvator*) skin, secured by rattan lashings and wedges in the usual manner. The head of the stem resembles that in the *enserunai* No. 1229; the pattern has been painted red, blue, green and yellow. The two strings of split rattan are at one end tied to that portion of the stem which projects beyond the resonator, at the other they pass round two tuning pegs which are fitted as in the *enserunai* No. 1229. (Plate VII, fig. 4) The bow (*pengayat*) is of rattan with a grass string. Total length 97 cm. From the Batang Lupar.

Catalogue No. 1342. D. J. S. Bailey, Esq. [P. 29. ix. 03]

B. GUITARS.

1. Kyan—*Sapeh* (Pl. II, fig. 4.)

Two-stringed guitar strummed with the fingers. A large heavy instrument cut out of a block of *tapang* wood. The resonator has been hollowed out at the back to a depth of from 7 cm. to 10 cm.; the cavity is not closed by a diaphragm. The face of the resonator is somewhat convex; it is decorated with seven white discs formed of ground *Trochus* shells and at the base with an incised geometrical design typically Kayan in character arranged on either side of a pointed ridge. The stem is straight, thickening to the head which is carved to represent the head of a dragon (*asu*); a shell disc is let into the top of the dragon's head. There are two tuning pegs, one end of these is roughly shaped, the other is split to receive the strings which pass through holes in the stem (Plate VII, fig. 5) and so into the split ends of the pegs. The strings are of rattan.

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at their lower ends they pass through holes in the face of the resonator and are knotted to prevent slipping through. Bridge lost.

Total length, 12·5 cm.; length of stem, 46·8 cm.; greatest breadth of resonator, 28·8 cm.; breadth of resonator at the bottom 19 cm.; greatest depth of resonator 14·3 cm.

Catalogue No. 52. Brooke Low collection.

A diminutive model of a very similar instrument is hung on the wall of a model of a Kajaman house (Belaga, Rejang R.) recently presented to the Sarawak Museum. Ling Roth, (l. c. Vol. II, p. 261) figures a similar instrument in the British Museum. This however was made by the Long Wai, who dwell on the Mahakkam River, they are grouped by Dr. C. Hose amongst the Kayars; the Long Wai name for this instrument is *impai*.

2. Dusun.—Two stringed guitar (? native name) (Pl. VII, fig. 6).

This is carved from a block of soft white wood. The stem is long, square in section about its middle, expanding at its junction with the resonator and at the head which is carved and moulded; on its front face five little blocks of wood are pegged on (3-3½ cm. apart), apparently to mark the fingering of the strings. The resonator which is somewhat boat-shaped is hollowed out from the back and the cavity is closed by a sheet of sago-palm leaf laced on with rattan stitchings to the wood. Both the front and the back of the resonator are perforated in their centres by two triangular holes, the apices of the triangles being conjoined. Part of the resonator is not hollowed but is produced distally as a solid piece, curved slightly upwards. A shaped ridge of wood terminating proximally in a square block is left on the face of the resonator; the two brass-wire strings are looped through holes in the ridge, pass through the square block up to the lower end of the head which they pierce and then are wound round two tuning pegs.

Total length 119·5 cm.; length of stem, 67 cm.

Catalogue No. 1274. Collected by the late Dr. A. Dennys Acquired by exchange from the Raffles Museum, Singapore.

A somewhat similar specimen is figured by Whitehead in "Exploration of Mount Kina Balu," (1893) p. 108.

3. Maloh and Sea-Dyak—*Blikan*.

a. Maloh—*Blikan* (Plate II, fig. 3). Two-stringed guitar cut from a block of soft white wood. The resonator is hollowed out from the front and the cavity is closed by a tightly-fitting wooden lid, securely pegged on; this lid is decorated with a geometrical design painted in indigo. The end of the resonator is produced and solid, it has been whittled and fretted to form a scroll. Four triangular holes, their apices conjoined are cut in the lid of the resonator and a block of wood is left attached to the lid just distad of the four holes. The stem is quite straight, somewhat triangular in section, it is very deep from front to back in its lower (distal) portion where it joins the resonator and the back of it here is scrolled and decorated with lines of black dammar; three chevrons of dammar are painted across the back of the stem higher up. The proximal end is expanded into a head carved to represent the head of a hornbill (*Buceros rhinoceros*) with a seed in its mouth, the neck is stained black. Two tuning pegs transfix the stem below the head. The two rattan strings distally are fastened to two little wooden spikes stuck into the wooden block on the lid of the resonator; proximally they pass through holes in the stem just over the tuning pegs, out through the tuning-peg-holes and are gripped in the split-ends of these pegs (Plate VII, fig. 5). Total length 89.8 cm.; length of stem 52 cm.; breadth of resonator 15.5 cm.

Catalogue No. 54. Brooke Low collection. Brooke Low (quoted by Ling Roth l. c. Vol. II, p. 262), describes a *blikan* in use amongst Saribas and Kalaka Seu-Dyaks; in this, the head

* The Malohs whose headquarters appear to be the Kapuas river, Dutch Borneo, are an unsettled wandering people who frequently come over into Sarawak for trading purposes. Dr. A. C. Haddon, F.R.S., who measured 7 individuals finds that these had an average cephalic index of 76.2; he does not group them in any of the five classes into which he divides the natives of Sarawak, but it is likely that they fall into the Kenyah-Kayan division (cf. A sketch of the Ethnography of Sarawak, Haddon, Archivio per l'Antropologia et l'Etnologia, Vol. XXXI, 1901).

of the stem is actually formed from the bill of a hornbill glued on to the stem, and is not a carved representation of a hornbill's head as in the Maloh specimen described above.

Hose and McDougall, in a paper—"The Relations between Men and Animals in Sarawak" (*Journ. Anthropol. Institute*, Vol. XXXI, 1901, p. 198) write:—"The hornbill must be included among the sacred birds of the Iban (i.e. Sea-Dyaks), although it does not give omens. On the occasion of making peace between hostile tribes, the Ibans sometimes make a large wooden image of the hornbill and hang great numbers of cigarettes on it, and these are taken from it during the ceremony and smoked by all the men taking part in it." Smaller figures of the hornbill (*Penchallong*—*Buceros rhinoceros*) are suspended in Sea-Dyak houses during harvest feasts and food is either put into the mouths of the figures or else hung beneath them, (cf. Ling-Roth l. c. Vol. I, p. 256). There are several examples of these *Penchallong* in the Sarawak Museum; the birds are invariably represented as holding one or more seeds in their beaks. Amongst the Kenyahs the hornbill *Anorrhinus comatus* gives omens of minor importance. It is not surprising that so important a bird should figure in the decorative art of the Borneans.

b. Sea-Dyak—*Blikan*. Very similar to the preceding specimen, but roughly made and undecorated with carving or paint. The shape of the head suggests that it was intended eventually to carve it into a representation of a hornbill's head.

Total length, 79 cm. Length of stem, 52 cm.

Catalogue No. 1341. D. J. S. Bailey, Esq. [P. 25, viii. 03].
From the Batang Lupar.

It is highly probable that the Sea-Dyaks borrowed this instrument and its name from the Malohs; some of them at any rate assert so much.

5. Malay—*Gambus*, six-stringed mandolin, (Plate II, fig. 5).

The instrument is cut out from a block of *mirabou* (*Azelia bijuga*) wood and is shaped like the European mandolin, i.e. the stem passes insensibly into the resonator and the shape of the instrument is that of a pear longitudinally bisected. Both the stem and the resonator are hollowed out from the front; the

cavity of the stem is closed by a piece of wood nailed on, the cavity of the resonator by a diaphragm of skin, edged with blue cloth and nailed to the sides with brass-headed nails. The back of the resonator is perforated with a circular hole and the cover of the stem near its junction with the resonator is similarly perforated. This orifice is surrounded by incised lines forming a conventional flower design. A rectangular block of wood is driven into the lower (distal) end of the resonator and through holes in this the strings pass to be attached to a cross bar of wood at its back. The stem is expanded proximally to form a curved head, the cavity of the stem is continued up into the lower part of the head, but not only is not closed in front, but the back of the head is here cut away leaving the two sides only, these are perforated with six holes for the tuning pegs; the rest of the head is solid and its sides are decorated with a phylomorphic pattern in deep relief, in front with a phylomorphic design in shallow relief and three brass headed nails. There are six tuning pegs (*peturan*) and six cotton strings. An inverted V shaped bridge rests on the diaphragm.

Total length 93 cm.; greatest breadth of resonator 16.9 cm. Catalogue No. 1207. [Pd. xii. 02.] It appears probable that this instrument has been borrowed from the Arabs. There is a similar specimen in the Cambridge Anthropological Museum obtained by W. W. Skeat, Esq., in the Malay Peninsula.

CLASS III.—UPRIGHT HARPS.

(Plate II, fig. 6.)

These instruments, which appear to be used only by Muruts Dusuns (?) and Sea-Dyaks are roughly rectangular boxes (resonators) with a handle and an upright or a handle alone at each end. Strings are stretched in a vertical plane from one handle or upright to the other and are kept taut by upright bridges standing on the lid of the box; the addition of tuning pegs seems to be a modern development. The Murut harp is simpler in construction than the Sea-Dyak forms and its strings being looped through the handles, not tied separately as in the Sea-Dyak harps are in two parallel vertical planes instead of in one. The strings are strummed with the fingers of one hand

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whilst the lid of the resonator is tapped with the fingers of the other.

I am inclined to believe that the Sea-Dyak *engkratong* at any rate is derived from a stringed instrument like the *enserunai* through a guitar stage. In my private collection is a roughly made Sea-Dyak six-stringed guitar very like the Dusun guitar in shape but with a much longer projection distad of the resonator and this instrument is known to Sea-Dyaks as an *engkratong*. If the stem of this guitar was shortened to correspond in length with the distal projection and if the string were stretched between two uprights in a vertical plane the instrument would become an *engkratong*. It is at least curious that the guitar in this form should be known to the Sea-Dyaks only under the name of *engkratong*, and that it should have disappeared almost entirely from use.

Ling Roth (l.c. Vol. II, p. 260), figures a zither from S. E. Borneo in the collection of the Leyden Museum. It is a flat board with eight strings stretched across it and bridged up with a cylindrical piece of wood at each end; there is no information as to the tribe from whom the instrument was obtained. I do not consider that the instrument is connected in any way with the *engkratong*, and have doubts as to the correctness of the locality quoted.

1. Murut—Upright Harp. (Plate II, fig. 6, upper specimen).

A long narrow wooden box, truncate at one end, at the other tapering and produced into a handle; it is cut out of one piece of wood and hollowed out from the bottom, the cavity being closed by a wooden cover pegged on with wooden pegs. The handle is a flattened oval. Two loops of rattan (making four strings) pass through two holes in the handle to the opposite end of the instrument, where they perforate a projection from the wall of the box and are knotted to prevent slipping. The four strings are raised clear from the resonator by two upright bridges set in holes in its roof; the bridges have two notches on each side to receive the strings. The strings were originally of *bemban* (*Donax* sp.) but having been destroyed by insects, are replaced by rattan.

Total length, 117.6 cm. ; greatest breadth, 7 cm. ; depth, 6 cm. Catalogue No. 732. Dr. G. D. Haviland coll. From the head waters of the Tengoa River., British N. Borneo.

2. Sea Dyak.—*Engkratong*.

a.—A wooden box roughly rectangular in shape, the lower sides rounded, a projection at each end, all cut out of one block ; the cavity is hollowed out from the top and closed by a tightly fitted lid of wood securely pegged down ; the lid is perforated with a triangular hole in the centre, into the terminal projections are set two large flattened handles, carved and fitted into a phylломorphic design. A slender wooden upright is stuck into each projection just where it issues from the resonator. Four separate rattan strings pass from one upright to the other, to one they are knotted by slip-knots, to the other by double hitches. Two wooden upright bridges stand on the lid of the resonator. they are notched on one side only to receive the strings.

Total length 106 cm. ; resonator 41 cm. \times 16.9 cm. \times 10.1 cm.

Catalogue No. 53. Brooke Low collection.

This specimen has been figured by Ling Roth (l.c. Vol. II, p. 261) : on the same page Ling-Roth also figures another specimen, one handle of which is a fowl's head, the other its tail, and describes this as being in the Brooke Low collection ; I have been unable to find any trace of this particular instrument in the Sarawak Museum.

(Plate II, fig. 6, lower specimen).

b.—A rectangular wooden box with a handle at each end, all cut from one block ; the box is hollowed from the top and the cavity is closed by a wooden lid nailed on ; the lid is perforated with a circular hole in the centre ; the handles are scrolled. Into each handle is set a stout wooden upright quadrangular in section, their tops are expanded and shaped to a leaf form, one in addition has one side carved in relief. Five rattan strings pass through holes in one upright to tuning pegs in the other, over notches in an upright bridge. Resonator, 58 cm.—15.6 cm.—14 cm. ; height of upright, 29.3 cm.

Catalogue No. 1258. D. J. S. Bailey Esq., [P. xii. 02.]

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CLASS IV.—CYLINDRICAL HARPS.

(Plate III, fig. 7. Plate VI fig. 14).

These are made from a joint of a large species of bamboo; the strings, four to twelve in number, are cut out from the bamboo but are left attached at their ends and are tightened with slips of wood thrust under them. The septa of the bamboo joint are generally perforated and to increase the resonance of the instrument a longitudinal slit or a hole is cut in it. This class of instrument is in use amongst the Kyans, the Kenyahs, the Longkiputs, the Kadyans, the Dusuns, and the Land-Dyaks. The method of performing on this instrument amongst the Land-Dyaks of the Sadong River is as follows:—

The performer sits on the ground, rests one end of the instrument against the side of his right foot and the back of it against his left thigh; the strings are struck with a short stick held in the right hand and with the left hand the player alternately opens and closes the upper and open end of the instrument; the strings can be tuned by altering the position of the bridges. Several men usually perform together and a sound like distant gongs can be produced by experts; other men accompany with the *lalipok* and *pelonchong*; the former is a portion of bamboo joint shaved down so that the wall is quite thin, one end is open and is struck against some hard substance; the latter is a piece of bamboo joint with a hole cut in the side and it is struck with a stick (Plate VI fig. 14). The Krokong Land-Dyaks still play on these harps at their festivals, the Sadong Land-Dyaks only occasionally play on them and then not seriously, whilst at Quop these instruments are merely toys made and played on by children.

1. Dusun—*Tangkungang*. (Plate III, fig. 7, left hand specimen).

Made from a single joint of bamboo which is cut off flush with the septa so that nothing projects at either end; both the septa are perforated. There were originally five strings arranged more or less equidistantly round the instrument; all but two of the strings broken. Total length 51.4 cm.; diameter, 10.5

cm.; distance between the strings, (measured along the curve of the bamboo) about 6.5 cm.

Catalogue No. 775. Drs G. D. and H. A. Haviland coll. [P. v. 92]. From Kiou, Mt. Kina Balu. The equidistant strings and the absence of projections beyond the septa show the primitive nature of the instrument; it is roughly made and is devoid of ornamentation. I have no information as to the method of performing on this instrument, but I imagine that it is held upright between the feet and that the strings are twanged with the fingers of both hands.

In the Raffles Museum, Singapore are two cylindrical harps purchased from the late Dr. Dennys and said to be Dusun. These are much more complicated in structure than those in the Sarawak Museum example. Both have twelve strings. In one these are arranged in groups of three, four and five, in the other in a group of seven, with the other five strings round the remaining periphery; in both, the bamboo projects considerably beyond the septa and the upper tubular projection so formed is deeply notched; one of the instruments has two longitudinal slits to increase its resonance.

2. Kanowit—Cylindrical Harp. (Plate III, fig. 7, right hand specimen).

At one end (the lower) the bamboo is cut off almost flush with the septum, at the other end (the upper) the bamboo projects 4.5 cm. beyond the septum and at one part still further, 11.6 cm., to form a shaped handle 7 cm. long. Round the top of the instrument runs a band of geometric pattern, roughly carved in low relief, the background stained with dragon's blood. There are only four strings arranged in pairs one on each side of a longitudinal slit in the body of the harp; this slit, which is enlarged at each end in the manner shown in the figure is on the same aspect (the front) of the harp as the handle. A band of plaited rattan encircles the harp at the levels of attachment of the strings to prevent them splitting off. The septa are not perforated. Length (exclusive of the handle) 63 cm.; diameter 11.8 cm.; distance between one pair of strings and the other, measured along the curve of the instrument in front, 11 cm.; measured along the curve at the back 13.5 cm.

Catalogue No. 563. Brooke Low collection. From the Kanowit River.

This instrument could be laid on its back and whilst the handle was grasped with one hand, the strings could be strummed with the fingers of the other, but I have no information as to how the Kanowits actually perform on the harp.

3. Long Kiput*—*Pagang* or *Kantom* (Plate III, fig. 7, middle specimen).

The bamboo projects 9 cm. beyond the septa and is there shaved down so as to be quite thin; on these shaved down portions are carved bands of simple design, such as rows of triangles, rows of dots, rows of oblique bars, the background is whitened with chalk or else the pattern itself is chalked and the background is blackened with indigo or soot. The septa are not perforated. There are six strings arranged in groups of three, one on each side of a middle line. A rattan plait encircles the harp at the level of attachment of the strings to prevent them splitting off. Down the front of the instrument run two short longitudinal slits, end to end; at the upper end of one slit and at the lower end of the other are three incised circles, between the two a group of five incised circles; the cuticle of the bamboo immediately bordering the slits is stripped off and on these areas is carved in relief in one case a chevron pattern in the other a dog's tooth pattern, the background is black and the relief chalked. Total length 77.5 cm.; diameter, 9.1 cm.

Catalogue No. 1069. R. S. Douglas Esq. [P. v. 00.] From the Baram River.

A Long Kiput harp is figured in Ling Roth's work (l.c. Vol. II, p. 262); it is from Dr. C. Hose's collection and is called a *Satong*.

4. Land-Dyak (Menggrat sub-tribe)—*Ton-Ton*. (Plate VI fig. 14).

a. Made from a joint of bamboo; the bamboo is not cut flush with its septa, but at either end projects considerably; one septum is broken through. Three strings or rather three broad

* This tribe is placed by Dr. A. C. Haddon, (l.c.) in his group of Kalamantans.

strips (1 cm.) are cut out from the body of the instrument on one side but are left attached at each end and are prevented from stripping off by bindings of rattan. The central strip is bridged up with a block of wood in the middle and emits a high note; the side strips are bridged up at their ends and give a much lower note; under each side strip a diamond shaped hole is cut in the body of the instrument. A short stick for striking the strings is attached by string to the harp. Length 69 cm.; diam. 7.8 cm.

Catalogue No. 1295. [Pd. viij. 03.] From Piching. Upper Sadong.

b. A specimen entirely similar to the preceding. Length 67 cm.; diam. 9 cm.

Catalogue No. 1296. [Pd. viij. 03.]

WIND INSTRUMENTS.

The wind instruments used by the tribes of Borneo may be grouped as follows* :—

A.—Without special vibratory apparatus.

I. Shell-trumpet.

* In any wind instrument sound is produced by causing the column of air contained in it to vibrate, and the instruments have been classified according to the means employed to produce this vibration. An outline of such a classification will help to elucidate that which I have adopted for the wind instruments of the Bornean peoples.

1. Trumpets—in these air is driven forcibly into the instrument through the almost closed lips of the player, the lips vibrating act as a partial valve and the air enters the instrument in a pulsatory manner.

2. Flutes, pan-pipes, flageolets, whistles, etc. In instruments of this class a jet of air is directed against the edge of the sound hole (technically known as the "voice") and so is cut in two, causing an interference which sets the air in the instrument vibrating and produces a musical note.

- a. Transverse flutes—in which a jet of air is directed by the lips against the edge of the "voice."
- b. End-flutes, pan-pipes—in which the jet of air is directed by the lips across the open end of a tube so as to impinge against the edge.

II. Transverse flutes.*

III. Nose flutes.

IV. Flageolets and bird-calls with a directive duct built up outside the instrument.

V. Flageolets and whistles with a directive duct formed inside the instrument.

B. With special vibratory apparatus.

VI. Pipes with single "beating" reed (clarinet type).

VII. Mouth organs with single "free" reed (harmonium type).

CLASS I.—SHELL-TRUMPET.

Some Brunei Malays recently informed me that a trumpet, made by merely knocking off the top whorl of the large helmet-shell—*Cassis tuberosum*—, is used by them for calling their buffaloes together; their name for the trumpet was "*buyong*." I can hear of no other people in Borneo who employ a similar instrument.

CLASS II.—TRANSVERSE FLUTES.

I know of only one example of this type of wind-instrument, the *sulieng san* of the Sea-Dyaks; it is more difficult to play than

-
- c.* Whistles—in which the jet of air is directed against the edge of the "voice" through a duct built on the outside of the tube.
 - d.* Flageolets, whistles, etc. (flute à bec group) in which the jet of air is directed against the edge of the "voice" through a duct formed inside the tube.
3. Reed instruments.
- a.* Clarinet, recorder, etc. with single vibrating reed ("beating reed.")
 - b.* Accordion, harmonium, etc.—with single reed vibrating equally on either side of a frame ("free reed.")
 - c.* Oboe, bassoon, etc.—with double valve both sides of which are flexible ("oboe reed.")

(There are of course many variants of these main types.)

* Classes II—VI are all bamboo instruments.

the nose flute or than any of the flageolets and this probably accounts for its sparse distribution.

1. Sea-Dyak—*Sulieng san* (Plate VIII fig. 1.)

Made of bamboo, one end (the distal)* open and slightly obliquely truncate; the natural septum closes the other end; the bamboo has not been cut flush with this but projects considerably beyond it. The sound-hole is a long quadrangular slit cut close to the node of the bamboo. There are four open stops all on the same side and about 3 centim. apart. Total length, 83.3 cm.; diameter, 2.5 cm.

Catalogue No. 62.

Brooke Low collection.

None of the Bornean tribes adopt any standard of measurement when boring stopes in their flutes, but bore them at the distances apart the most convenient to the maker.

CLASS III.—NOSE-FLUTES.

(Plate III fig. 8 and Plate VIII fig. 2.)

These are employed by Dusuns, Kanowits, Tanjongs, Kaysans, Kenyahs and allied tribes, Sea-Dyaks and Land Dyaks.

A photograph of a Tanjong playing on a nose flute is given in Beccari's "Nelle foreste di Borneo" (1902) p. 424; the performer is seated cross-legged on the ground and holds the long bamboo flute across his body from right to left and almost at arm's length, the left nostril is applied to the proximal end of the instrument and directs a jet of air against the edge of the hole pierced in the natural septum of the bamboo.

Air is driven through only one nostril, the other is plugged with cloth or tobacco or moss (cf. Ling-Roth l. c. vol. II, p. 258). These instruments are generally long and are made from a single joint of bamboo, the distal end is open and the proximal end is closed by the natural septum which is perforated by an irregularly shaped hole; the leaf-scars and the wall of the bamboo immediately adjacent to the septum are shaved and smoothed down. Fig 2 Plate VIII is a representation of the proximal end of a nose-flute. The number of stopes varies.

*I term the end near or at which the sound hole is situated the *proximal* end; the opposite end, the *distal* end.

1. Dusun—*Turati*.

Made from a long joint of bamboo, the distal end is open and cut square, the proximal end is closed by the natural septum and the surrounding leaf-scars have been shaved off. The flute has been stained black with indigo. An irregular hole in the septum. There are four open stops, one on the underside for the thumb 34 cm. distant from the proximal end, three on the opposite side 5.5 cm. apart, bored in a flattened strip formed by removing the cuticle of the bamboo.

Length 70 cm. ; diam. 2.2 cm. Catalogue No. 776.

2. Kanowit—*Sangoi* (Plate III, fig. 8, right hand specimen).

Of large size, the proximal end closed by the natural septum of the bamboo which is perforated with a single irregular orifice. There are four open stops, one on the underside for the thumb of the right hand, distant 55.2 centim. from the proximal end of the flute, and three on the upperside, 4-4.5 centim. apart for the first or second fingers of the right hand and the first and second or third of the left hand.

The flute has been stained red with dragon's blood. At a distance of 12 centim. and extending to a distance of 51 centim. from the proximal end is a design made up of four black bands spirally twisting round the instrument, this is followed by two circular black bands and six dog's-tooth pattern bands, which are succeeded by a repetition of the spiral design 72.8 centim. distant from the proximal end and 21.5 centim. in length; there is a terminal dog's-tooth design, beyond which the bamboo is fretted, eight diamond-shaped apertures being formed, the rim of the bamboo is notched, between the notched rim and the frets is a very rough dog's-tooth pattern. These patterns are painted on the bamboo with indigo though in parts it is partly in low relief as if the artist had first sketched out the patterns with a knife. A small tassel of variously coloured beads depends from the distal end of the flute.

Total length 107.3 cm.; diam. 3 cm.

Catalogue No. 60. Brooke Low collection.

Ling-Roth (l. c. p. 258) figures a Kenyah nose-flute (*Silingut*) in the collection of Dr. C. Hose.

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3. Sea-Dyak—*Sulieng idong* (Plate III, fig. 8).

All these are of much less diameter than Tanjong, Kauowit, and Kenyah examples.

a. Third specimen from right.

The proximal end is closed in the usual manner, the distal end is closed by the septum of the joint and the bamboo projects beyond this; a large oval hole is cut in the flute just proximad of the distal septum, so that the flute has one end practically open. There is a stop on the under-side 51 centim. from the proximal end and three stops on the opposite side 4·5–5 centim. apart. The stops have been bored with a red-hot iron. Total length 98·5 cm.; diam. 2·7 cm.

Catalogue No. 558. Brooke Low collection.

b. Middle specimen.

Of similar construction to the preceding specimen, but the distal end quite open and cut obliquely. One stop on the under-side 46 centim. from the proximal end, three stops on the opposite side, about 5 centim. apart. Nine red bands formed by removing a strip of the cuticle of the bamboo and staining the exposed surfaces with dragon's blood—encircle the instrument; the stops are situated in four of these bands. three are proximad of the stops, two distad, the last being terminal; the bands are about 1·5 centim. broad. Total length 83 cm.; diam. 3 cm.

Catalogue No. 559. Brooke Low collection.

c. Similar to 559 but not decorated. The note-hole on the under-side is 51 centim. from the proximal end, the three stops on the opposite side are 3–3·5 centim. apart. Total length 75 cm.; diam. 2·5 cm. Badly damaged by beetle.

Catalogue No. 560. Brooke Low collection.

d. (Fifth specimen from the right).

Of the usual construction: the hole perforating the septum is regular, the distal end is cut square except for a triangular projection. The stop on the under-side is 40 centim. from the proximal end, the three on the opposite side are about 5,

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centim. apart. Four pairs of incised lines run round the flute, a stop being situated between each pair; it was evidently the intention of the maker to decorate the flute like No. 559. Total length 75 cm.; diam. 2·3 cm.

Catalogue No. 561. Brooke Low collection.

e. (Fourth specimen from the right).

Of the usual construction, the distal end obliquely truncate and the edges curved. The stop on the under-side is 35·5 centim. from the proximal end, the other three are about 5·5 centim. apart. The whole instrument, with the exception of a band at each end, has been scraped down and stained with dragon's blood, a dog's-tooth pattern has been cut in the proximal unstained band. Total length 70 cm.; diam. 2·7 cm.

Catalogue No. 562. Brooke Low collection.

CLASS IV.

Flageolets and Bird-Calls. With a directive duct built up on the outside of the instrument. (Plate III, fig. 8. and Plate VIII, figs. 3-10).

a. FLAGEOLETS.

This class of flageolet or whistle is in use amongst the Sea-Dyaks, the Land-Dyaks, the Muruts, and possibly some other tribes. There are four distinct ways in which the directive duct is formed:—

A.—A curved slip of bamboo is tied on to the flageolet with string or rattan, it occupies the space between the proximal end of the instrument (which may be open or closed by the natural septum) and the sound-hole (Plate VIII fig. 3).

B.—The bamboo is not cut perfectly flush with the septum but projects *slightly* proximad of it; the portion of the instrument between the proximal end and the sound-hole is shaved down and one side is cut flat, over this shaved-down portion a ring of bamboo is fitted. (Plate VIII figs. 4 and 5).

C.—Similar to the preceding except that a loop of rattan is fastened round the shaved-down portion (Plate VIII fig. 6).

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D.—The bamboo is not cut flush with the septum but projects *considerably* proximad of it, in this projecting "tube" a hole is bored, a gutter runs from it to the sound-hole, and is roofed over with a slip of bamboo luted on with resin (Plate VIII figs 7 and 8).

A.

1. Sea Dyak—*Sulieng nyawa*.

(Plate III fig. 8. 5th specimen from left and Plate VIII fig. 3).

Flageolet of bamboo the proximal end cut square and open the distal end obliquely truncate with a projection and the edges notched. The sound-hole is 1.7 centim from the proximal end; just proximad of the sound hole a slip of bamboo naturally curved, is lashed with cotton to the instrument and projects slightly beyond its proximal end. There are four stops the uppermost is 12.2 centim. distant from the sound-hole, they are about 3 centim. apart from each other. The flageolet is covered with phyllomorphic patterns carved in low relief, the background being stained with dragon's blood. Total length 30.5 cm.

Catalogue No. 1113 [Pd. xii. 03.]

2. Land-Dyak (Bukar sub-tribe)—*Banchi*.

Flageolet of bamboo. The distal end is open, the proximal end is closed by the natural septum and the bamboo is cut flush with this. The directive duct is formed by shaving flat a strip between the sound-hole and the proximal end and tying over this with a piece of bark a slip of bamboo naturally curved. There are three stops situated on the opposite side to the sound-hole, they have been bored with a red hot iron in a flattened strip formed by removing part of the wall of the bamboo, they are 3.5 centim. apart. Total length 33.5 cm. diam. 2 cm.

Catalogue No. 1293 [Pd. viii. 03.]

From Lanchang, Upper Sadong district.

This flageolet is played with the sound-hole downwards; the Sea-Dyaks always bore the stops on the same side as

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the sound-hole which is therefore directed upwards when the flageolet is played.

B.

3. Land-Dyak (Krokong sub-tribe)—*Telarli*. (Plate VIII fig. 4 and 5.)

a. Distal end open and obliquely truncate, proximal end closed by the natural septum, the bamboo not projecting much beyond it. The wall of the bamboo distad of the septum is obliquely sliced on one side and in the exposed surface the sound-hole is bored; between the sound-hole and the proximal ends the wall of the bamboo is shaved down and one side (that corresponding with the sound-hole) is cut flat; over this portion of the flageolet a ring of bamboo (*bak*) is fitted. On the side opposite the sound-hole are five stops bored with a red-hot iron in a flattened strip formed by cutting away the cuticle of the bamboo; the distances between the stops range from 2·3 centim to 3·7 centim., the uppermost is 19 centim. from the sound-hole. This form of flageolet is known as *luki*, i. e. male, it is played in the same way as the *bauchi*, with the sound-hole downwards. Total length 43 cm.

Catalogue No. 1280. E. W. Byrde Esq. [P. vii. 03.]

From Krokong village, Sarawak River.

b. Much the same as the preceding but the distal end is not obliquely truncate; there are only two stops and these are on the same side as the sound-hole. they are 4·5 centim. apart and the upper one is 25·5 centim from the sound-hole. This form is known as *puan*, i. e. female. Total length 46 cm.

Catalogue No. 1281. E. W. Byrde, Esq. [P. vii. 03.]

From Krokong village; Sarawak river.

4. Murut—*Flageolet*.

Distal end open and cut square, proximal end closed by the natural septum and the bamboo cut flush with it; the sound-hole is bored 4·5 centim. from the proximal end and the intervening portion of the bamboo wall is shaved down and one side is

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flattened, over this is fitted a ring of bamboo. There are two stops bored in a flattened strip on the same side as the sound-hole. They are 5.5 centim. apart, the upper one is 44.5 centim. from the sound-hole. The flute is decorated with an incised phylomorphic design roughly executed. Total length 64.5 cm.; diam 1.7 cm.

Catalogue No. 1292. F. J. D. Cox, Esq. [P. viii. 03.]
From the Trusan river.

5. Sea-Dyak—*Sulieng nyawa*.

(Plate III fig. 8, second specimen from the left).

Distal end open and cut square, proximal end closed by the natural septum, the bamboo projecting slightly beyond it. The sound-hole is bored just distad of the septum and the bamboo wall between it and the proximal end is shaved down in the usual manner; the bamboo ring that fits over this portion has been lost. There are three note-holes about 3 centim. apart from each other, the uppermost being 25 centim. from the sound-hole. Total length 41.3 cm.; diam. 2 cm.

Catalogue No. 64. Brooke Low collection.

It is quite possible to play on this flageolet and the three preceding ones even if the bamboo ring is removed, the upper or lower lip in that case helping to form the directive duct; it is therefore just possible that the Sea-Dyak flageolet never was furnished with a bamboo ring but I think that this is unlikely and at any rate the Sea-Dyak specimen falls naturally into position with the Murut and Land-Dyak ones.

C.

6. Land-Dyak—*Kroto* (Plate, VIII fig. 6.)

Distal end open and slightly obliquely truncate, proximal end closed by the natural septum, the bamboo projects slightly beyond this; slightly distad of the septum the bamboo is obliquely sliced and in the exposed surface the sound-hole is bored with a hot iron; between the sound-hole and the proximal end the bamboo wall is shaved down and has one side flattened in the

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usual way. Instead of a bamboo ring fitted over this portion a strip of split rattan is wound round it, knotted once, then carried down the back of the instrument and tied round it six times in the manner shown in the drawing. There are five stops on the opposite side to the sound-hole bored with a red-hot iron in a strip flattened by stripping off the cuticle of the bamboo. They are 2.5 centim. apart. Total length 39 cm.

Catalogue No. 1282. E. W. Byrde, Esq. (Pd. vii. 03).

From Sambas, Dutch Borneo.

D.

a. Murut—Flageolet. (Plate VIII figs. 7 and 8.)

Distal end open and cut square, proximal end closed by the natural septum, the bamboo has not been cut flush with this but projects considerably beyond it; in the wall of this projecting part a small hole is bored quite close to the septum, and a groove runs on the outside of the flute from this hole to the sound-hole, the groove being covered by a slip of bamboo luted on with dammar. The edge of the sound-hole is sharpened by a piece of palm-leaf stuck on to it. The sound-hole is 5 centim. from the proximal end; there are two stops 8.5 centim. apart bored with a red-hot iron in a flattened strip on the same side as the sound-hole, the upper one is 32 centim. from the sound-hole. Total length 52.5 cm.; diam. 2.5 cm.

Catalogue No. 1291. F. J. D. Cox, Esq. (P. viii. 03). From the Trusan river.

b. (Plate III fig. 8, second specimen from right).

Very similar to the preceding; there are two lashings of split rattan round the distal end of the instrument to keep it from splitting; the slip of bamboo roofing over the directive groove has been lost. Some rude representatives of animals (? buffaloes) have been scratched with the point of a knife on the wall of the instrument but there is no attempt at a decorative pattern. The two stops are 7.5 centim. apart; the upper is 45 centim. from the sound-hole, which is 7.5 centim. from the proximal end. Length 72 cm.; diam. 3 cm.

R. A. Soc., No. 40. 1904.

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Catalogue No. 733. Dr. G. D. Haviland (P. 1890). From the head of the Tengoa valley.

b. BIRD-CALLS.

Though these are not musical instruments in the strictest sense of the word they deserve notice here since morphologically at least they are musical instruments. I know of two distinct forms of bird-calls used in Borneo:—

1. Kyan—*Bulo wok* (Plate VIII fig. 9.)

These are constructed on the same principle as the bamboo flageolets of type D, but they are made of a larger species of bamboo and are much shorter. With these the Kyans imitate the cry of the owl *Ninox scutulata* and the cry of the gibbon *Hyllobates mulleri*.

a. Distal end open, proximal end closed by the natural septum, the bamboo not cut flush with this but projecting almost as far proximad of it as it does distad; in this proximal portion a large hole is bored, the very large sound-hole is bored just distad of the septum and leading to it from the other hole on the outside is a wide gutter or groove roofed over with a slip of bamboo luted on with dammar. The instrument is decorated with a characteristic Kyan design carved in low relief. Length 12·7 cm.; diam. 5·1 cm.; diam. of sound-hole 2·3 cm.

Catalogue No. 1289. [Acquired by exchange from Dr. C. Hose. ix. 03]. From the Baram river.

b. The distal end open, proximal end closed by the natural septum. The bamboo projected considerably proximad of this but nearly all has been cut away leaving only a small flange in which a hole is bored (*see* figure); the sound hole and directive duct as in the preceding example. The instrument, which is not ornamented in any way, is illustrated on Plate VIII, fig. 9. Length (including flange) 13·5 cm.; diam. 4·9 cm.

Catalogue No. 1290. [Acquired by exchange from Dr. C. Hose ix 03]. From the Baram river.

The Sea-Dyaks, Kenyahs, Kadyans and Muruts employ an interesting form of bird-call for attracting within reach pigeons

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and ground-doves. It consists of a section of a large species of bamboo, with a sound-hole bored in it and with one end open, the other closed by the septum; to this section of bamboo a long bamboo stem, with the septa broken through so that a long tube is formed, is obliquely attached so that a current of air directed down the tube impinges against the edge of the sound-hole bored in the bamboo section. The hunter conceals himself amongst herbage or in a leafy shelter and scatters some grain around, and then blows his call; if any bird comes within reach it is captured by a noose at the end of a long stick, the noose being generally spread round the mouth of the bird-call; sometimes the birds are limed. The bird-call is, in fact, a wind-instrument with a directive duct (the bamboo tube) attached to it and falls into Class IV in the classification given above. Ling-Roth (l. c. vol. p. 44) gives a good figure of a Murut bird-call and quotes Burbidge's account of its use.

2. Sea-Dyak—*Bumbun*. (Plate VIII fig. 10)

a. Bamboo section of 6 cm. diameter and 51 cm. in length with one end closed by the natural septum the wall not cut flush with this but projecting considerably proximad of it, the other end open and very obliquely truncate so that a projecting spout is produced. The sound hole is bored at a distance of 10.5 cm. from the septum on the distal side. The portion of the bamboo projecting proximad of the septum is vertically transfixd by a wooden upright with a large circular hole in it. The bamboo tube is 233.5 cm. long; it passes through the hole in the wooden upright and is lashed to the bamboo section by rattan; its distal end is obliquely truncate and fits the curvature of the bamboo section leaving only a narrow passage through which the current of air passes to impinge against the edge of the sound-hole; the joint is made secure by a luting of dammar.

Catalogue No. 686. Ven. Archdeacon J. Perham [P.]

b. A very similar specimen, but the spout-like projection of the bamboo section much more pronounced. A long bamboo rod to which a noose should be attached is tied to the bamboo

stem of the instrument. Length of bamboo section 51 cm., diam. 6 cm. Length of bamboo tube 221.5 cm.

Catalogue No. 1035. J. E. A. Lewis, Esq. [P. ix. 98.]

CLASS V.

Flageolets and whistles, with a directive duct formed on the inside of the instrument. (Plate III, fig. 8, and Plate VII, fig. 8 and Plate VIII, figs. 11 and 21).

This type of flageolet seems to be in use amongst the Sea-Dyaks only.

1. Sea-Dyak—*Salieng nyawa*. (Plate III, fig. 8, and Plate VIII, figs. 11 and 12).

a. (First specimen on the left). Distal end open and obliquely truncate, proximal end cut square and closed by a disc of wood; the sound-hole is quadrangular and is cut quite close to proximal end; the disc of wood closing the proximal end is narrowly grooved on the side corresponding to the sound-hole. There are four stops, 1.9 centim. apart, the uppermost 18.8 centim. from the sound-hole. Length 37 cm.; diam. 1.8 cm.

Catalogue No. 63. Brooke Low collection.

b. (Fourth specimen from the left). Very similar to the preceding; one stop on the opposite side to, and distant from the sound-hole 31.3 centim. three stops on the same side as the sound-hole about 3 centim. apart. Length 51.5 cm.; diam. 1.9 cm.

Catalogue No. 65. Brooke Low collection.

c. (Third specimen from the left). Very similar to No. 63, but proximal end slightly obliquely cut in a opposite direction to the oblique truncation of the distal end. Four stops 3-3.5 centim. apart, the uppermost 19.2 centim. from the sound-hole. Length 44.6 cm.; diam. 2 cm.

Catalogue No. 66. Brooke Low collection.

d. A long slender instrument; proximal end slightly obliquely truncate and closed by a disc of wood grooved as in the preceding specimens. Sound-hole quadrangular, cut close to the proximal end. Three stops about 4 centim. apart, the uppermost 38 centim. from the sound-hole. The instrument is elaborately carved; the distal third is ornamented with bands of phyllomorphic patterns in low relief, the background being stained red with dragon's blood; proximad of this is a zone 10 centim. broad of five bands of phyllomorphic patterns in low relief, the background composed of hatched incised lines (very unusual in Sea-Dyak carving); proximad again of this zone is a zone 12 centim. broad of bands of phyllomorphic patterns which have just been sketched out with the point of a knife and never completed. Lengths 54 cm.; diam. 2 cm.

Catalogue No. 556. Brooke Low collection.

e. Somewhat similar to the preceding specimen, but much smaller. Proximal end very obliquely truncated, the opening filled by a plug of wood which has been grooved to form the directive duct; distal end cut square, the wall of the flageolet projects beyond the node but the septum has been broken through. Sound-hole large; there are eight stops, seven on the same side as the sound-hole, one is on the opposite side, they are about 1.5 centim. apart, uppermost 17 centim. from sound-hole. Five bands of tin encircle the instrument in the interspaces between stops 2 to 7; the rest of the instrument is covered with phyllomorphic patterns carved in low relief, the background being stained red with dragon's blood. Length 32 centim.; diam. 1.6 centim.

Catalogue No. 1044. Presented to the Museum by a Sea-Dyak boy at the S. P. G. Mission School.

It is more than likely that this specimen is copied from a European model; the number of stops and the very oblique truncation of the proximal end are most unusual; still No. 556 is more or less intermediate between this school-boy's specimen and such a one as No. 63, so that I have thought it worth while to include a notice of it.

The next instrument of this class is of a different type, it is a clay whistle not unlike the "Ocarina" of European manufacture.

2. Sea-Dyak—*Penyipu*. (Plate VII fig. 8).

A hollow ovoid of white clay, sharply pointed at one end, truncate at the other. There is a large sound-hole putting the cavity of the instrument in communication with the exterior. A narrow duct runs from the closed truncate end through the wall of the whistle to the lip of the sound-hole; it has evidently been bored with a fine piece of wire or grass stem whilst the clay was still soft. There are two key-holes of narrow diameter on the opposite side to the sound-hole. Length 13.3 cm.; greatest diam. 5 cm.

Catalogue No. 990. D. J. S. Bailey, Esq. [P]. From Kabong, Saribas River.

CLASS VI.

PIPES—With single "beating" reed (Clarinet type).*

(Plate VIII fig. 13.)

I long believed that this extremely primitive form of reed instrument was non-existent in Borneo; it is true that St. John (quoted by Ling-Roth l.c. Vol. II. p. 259) describes a musical instrument in use amongst the Muruts,† which appears

* For an interesting account of wind-instruments of this class see H. Balfour "The Old British Pibcorn or Hornpipe and its affinities" (Journ. Anthrop. Inst. Nov. 1890). Mr. Balfour figures and describes reed-pipes from England, Grecian Archipelago, Egypt and India; nearly all are double pipes like the Bornean simpler instrument, but they all are probably derived from a single pipe cut from a cornstalk, reed or bamboo. Mr. Balfour's quotations from Vergil, Chaucer, Spenser and Shakespeare are very much to the point.

† "Two thin bamboos, about twelve inches long, were fastened very neatly side by side; in one was cut four holes like those in a flute, while the other had a piece of grass inserted in the lower end. A slight incision was then cut across both towards the upper portion. The performer thrust this instrument rather deep into his mouth and blew, and then, with the aid of tongue, fingers and moving the grass, produced some very agreeable and wild tunes."

to have some simple sort of vibratory apparatus, but the description is rather vague so that it is not easy to recognise the construction of the instrument from it. Recently Mr. E. W. Byrde presented to the Sarawak Museum two primitive bamboo pipes with "beating" reeds from the Land-Dyaks of Upper Sarawak and later I myself had the opportunity of seeing similar instruments played by Land-Dyaks of the Upper Sadong district. I have now no doubt that St. John's description of the Murut pipe applies to an instrument entirely similar to the Land-Dyak examples. No other tribes in Borneo but these two—Muruts and Land-Dyaks—appear to employ this instrument.

1. Land-Dyak—*Serubayi* or *Seruné*.

a. (Plate VIII fig. 13.)

Two slender tubes of bamboo bound together with a grass strapping; the proximal ends are closed by the natural septa and the wall of the tubes has been pared down for a length of about 7 centim. so as to be quite thin; a vibrating tongue (*jorah*) has been cut in this part of the wall in each tube by slitting from above downwards a slender strip) thus forming a "beating" reed; a fine hair is tied round one pipe to restrict the play of the tongue. One of the tubes, known as the *laki* or *male tube* is provided with five stops (*quayet*) about 2·6 centim. apart, the other, known as the *puan* or *female tube*, has none. The *laki* has a short length of bamboo (*tubu*) fitted over its distal end whilst the distal end of the *puan* or drone-pipe is obliquely truncated. Length of *laki* 49·1 cm.; length of drone-pipe 37 cm.

Catalogue No. 1275. E. W. Byrde, Esq. [P. 6. vii. 03.]

b. A very similar specimen, but each pipe has a short length of bamboo fitted over its distal end; length of *laki* 46 cm. length of drone-pipe 40 cm.

Catalogue No. 1276. E. W. Byrde, Esq. [P. 6. vii. 03.]

Both of these come from Krokong village, Upper Sarawak, and are known as *Serubayi*. The note of the drone-pipe is supposed to be the same as the note of the *laki* when all the stops but the fourth are closed, and in order to tune the pipes either

a length of bamboo is added to one or to both or the distal end of one is obliquely truncated, thus practically reducing its length. If in spite of these devices the pipes are still out of tune a length of grass or wood splinter (*adjok*) is pushed up the drone-pipe and moved up and down until the correct note is hit off. Mr. Byrde informs me that one of the specimens just described was cut to almost accurate lengths and required no tuning with the *adjok*.

c. Very similar to the two preceding specimens, the *laki*, however, has only four stops about 3 centim. apart, the drone-pipe is pierced with five stops but they have all been plugged up with wax. The distal ends of the pipes are cut square and are not fitted with lengths of bamboo. Length of *laki* 43.5 cm.; length of drone-pipe 38.7 cm.

Catalogue No. 1324. [Pd. viii. 03.]

From Piching village, Upper Sadong. Known as *Seruné*. The performer on this instrument tuned it by thrusting a piece of grass up the drone-pipe and moving it up and down until he hit off the correct note. As the vibrating tongues are cut at some little distance from the proximal ends of the pipes, these have to be thrust well into the mouth; a continuous blast was given by inhaling with the nostrils and blowing into the instrument with the mouth simultaneously, just as in using the chemist's blowpipe.

The Land-Dyaks of Quop, Sarawak river, also play these pipes; they always leave the proximal ends open and close them, when playing, with the tongue, the 'beating' reed is cut much closer to the proximal end than in Krokong or Sadong examples; sometimes three pipes are bound together, two being drone-pipes. A good set will be kept in a bamboo full of water, as the pipes are generally made from fresh-cut bamboo stems and when they become dry the tongues will not vibrate effectively.

CLASS VII.

MOUTH-ORGANS—with single 'free' reed. (Plate III fig. 9).

These instruments, which are figured in almost every book on Borneo, consist of a hollowed gourd with a long neck the

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mouth piece of the instrument; into the gourd are set six to eight bamboo tubes, the joint being made air-tight with a luting of dammar; the tubes are closed at their lower ends but into each near its lower end * is let a small frame of *apeng* palm wood (*Arenga* sp.) or of brass with a vibrating tongue (Plate VII fig. 10); each tube has a stop and if these are not closed by the fingers no sound can be produced by blowing into the neck of the gourd; the tubes are of unequal length and are tuned by being cut more or less obliquely at their upper ends, and one is generally much longer than the others.

This form of mouth-organ seems to be essentially a Mongolian type very similar instruments being found in China (the *Seng* or *Cheng*), Japan and Siam; Hein (Die Bildenden Künste bei den Dayaks auf Borneo. Vienna, 1890 p. 116 fig. 78,) figures a Chinese *Seng*, a mouth-organ of the Mrung of India and a Kyan mouth-organ, and notes that all are constructed on essentially the same principle, he does not, however, describe the form of the vibratory apparatus in any of these instruments so it is quite possible that the Mrung mouth-organ is furnished with 'beating' reeds instead of 'free' or 'framed' reeds.

A good figure of a Kyan youth playing on a mouth-organ is given in "In Central Borneo" by Dr. A.W. Nieuwenhuis, Vol. II. pl. lxxxviii.

The instruments are played more by suction than by blowing. The Bornean tribes who use this instrument are the Kyans, Kenyahs and allied tribes, the Dusuns, Punans and the Sea-Dyaks, it is almost certain that the latter and very probable that the Punans have borrowed this instrument from the Kyans or Kenyahs.

1. Kyan—*Klerdi*.

a. (Plate III fig. 9 right hand specimen).

Of large size; six bamboo tubes open at the top are inserted into a large hole cut in a hollow gourd (*lubu ayer genok*.) the joint being rendered air-tight by a luting of dammar;

* i.e. in that portion of the tube inside the gourd.

the gourd has a long curved neck which forms the mouth-piece of the instrument. One of the bamboo tubes is 130 centim. long from its point of insertion into the gourd, its top is slightly obliquely truncate, its note is lower C; another is 75.5 centim. long with the top cut square and its note is lower E; a third is 75 centim. long, with note lower F; a fourth 74.6 centim. long with note lower G; a fifth is 74 centim. long but is so obliquely truncate that its functional length may be reckoned as 56.8 centim. only, its note is middle B; the sixth is very similar but its length may be reckoned at 55.2 centim. with the note middle C. The bundle of tubes is bound together by an encircling band of plaited rattan. A cap of bamboo cut from a node, with a long projecting tongue rests on the top of the longest tube, to the lower end of the tongue is attached a string tied at its other end to a plaited band of rattan that slips freely over the bundle of tubes, the outside of the cap has a frill of shavings scraped partially off it; when the cap is pulled down hard over the top of the long tube the note of that tube is rendered more resonant. Total length (in a straight line) 119.3 cm.; length of gourd (in a straight line) 23.8 cm.

Catalogue No. 1085. [Pd. 10. x. 00].

This specimen is in good working order and as it has not been dissected it is impossible to say whether the vibratory apparatus is of brass or of palm-wood. Ling Roth (l.c. vol. II p. 259) figures an almost identical specimen and gives the notes produced by it.

b. Very similar to the preceding, but in bad condition when received and it has been dissected to exhibit its construction. The gourd has a star-shaped hole cut in it to receive the tubes. One of the tubes is 72 centim. long, the rest vary between 60 centim. and 60.5 centim. two are very obliquely truncated at their top ends. The vibratory apparatus is made of *apeng* palm (*Arenga* sp.) the tongues have each a little knob on their ends (Plate VII fig. 10) to increase their range of vibration.

Catalogue No. 1246 Hon. C. A. Bampfylde. [P. 26. ii. 03].

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2. Punan—*Mouth-Organ*.

The gourd of the preceding specimens is replaced by two hollowed pieces of wood, joined together with a luting of dammar and three stitches of rattan; the two halves have been shaped to form a very fair imitation of a gourd with a long neck. The usual six tubes are let into this sham gourd and luted with dammar. The longest tube measures from its point of insertion into the gourd 67.5 centim.; its top is slightly obliquely truncate and it is covered by a bamboo cap like that of No. 1085, its note is middle A flat. Three tubes are shorter their lengths varying from 46.7 centim. to 47.2 centim. their tops are cut square and their notes are middle B, middle C (not quite true) and middle D. Another measures 46.4 centim.; but it is very obliquely truncate so that its functional length may be reckoned at 34.3 centim.; its note is upper F. The sixth tube is 43.8 centim. with functional length of 33.5 centim. and note upper G. Total length (in a straight line) 72 centim.

Catalogue No. 1260. [Pd. iii. 03].

The Punans are a nomadic jungle tribe who neither plant nor sow; having probably borrowed the idea of the mouth-organ from neighbouring Kyans or Kenyahs, it was necessary to make imitation gourds of wood as they have no real gourds of their own.

3. Sea-Dyak—*Engkerurai*. (Plate III fig. 9 left hand) specimen.

Much smaller than the Kyan *klerdi*. The longest tube measures 67.5 centim. the others 44 centim. to 44.5 centim. two of these are very obliquely truncate. The bundle of tubes is bound round a central upright of wood by a band of plaited rattan. The vibratory apparatus is of brass. The instrument is not in working order. Length (in straight line) 70 cm.

Catalogue No. 61. Brooke Low collection.

The Sea-Dyak mouth-organ is generally much smaller than the Kyan one; the longest reed is usually provided with a cap of bamboo to act as resonator, but the most efficient resonator that I have seen was a small tin through the bottom of which the

long tube passed. Ling-Roth (l.c. vol. II p. 259) figures a Dyak engkerurai with seven reeds and states:—"Some of the notes appear to be F A C F—F octave nearly; two holes in one reed, note unascertainable; two reeds appear to have no note [? defective vibratory apparatus. R.S.] Longest reed (one which has no note) to junction with gourd, 31 in.; diam. of gourd, 3 $\frac{3}{4}$ in. (Edinboro' Mus)."

The Kenyah mouth-organ is known as *Slidap*. The Dusun mouth-organ has eight reeds set into the gourd in two rows of four, four are short and equal, four are longer and unequal, there are no stops but the fingering is performed on the ends of the four equal short pipes, the others acting as drone-pipe (cf. Ling-Roth l.c. vol. II p. 260).

There is no specimen of a Dusun mouth-organ in the Sarawak Museum.

JEWES-HARPS.

The jewes-harp of the Borneans are made either of Palm wood such as *Arenga* sp. (*Aping*), *Arenga saccharifera* (*ijoh*) and *Orania macrocladus* (*ibul*) or else of brass. In all, sound is produced by causing the tongue of the instrument to vibrate, either by jerking upon a string attached to one end of the instrument or else by jarring the frame of the instrument by repeated taps with the finger. "A single note is thus produced, and, in order to gain a variety of notes, the instrument is held to the performer's mouth, which also performs the function of a resonator. To quote Sir George Grove, 'A column of air may vibrate by reciprocation with a body whose vibrations are isochronous with its own, or when the number of its vibrations are any multiple of those of the original sounding body. On this law depends the explanation of the production of sounds by the jewes-harp. The vibration of the tongue itself corresponds with a very low sound; but the cavity of the mouth is capable of various alterations; and when the number of vibrations of the contained volume of air in any multiple of the original vibrations of the tongue, a sound is produced corresponding to the modification of the oral cavity.'" (H. Balfour Journ. Anth. Inst. Vol. XXXII p. 169, 1902). The Sea-Dyaks employ wooden and brass

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jews-harps which are caused to sound by jerks on a piece of string attached to one end of the frame of the instrument, the other end of the frame is held between the finger and thumb of the other hand. The Dusuns employ a wooden jews-harp but play it by repeatedly striking one end of the frame with the fore finger of the right hand and the Land-Dyaks play on a brass jews-harp in the same way. The Dusun and Land-Dyak jews-harps are produced at one end to form a handle but the Sea-Dyak forms have usually no handle the instrument consisting merely of a tongue and a frame the ends of which are roughly symmetrical.

1 Sea-Dyak—*Ruding*.

a. (Plate V fig. 13, second specimen from the bottom).

Made of apeng wood (*Arenga sp.*) with the cuticle still left on the face of the instrument; the back of the instrument is longitudinally concave and the wood has been scraped down so that it is quite thin except at the ends which are thick and almost flat. The tongue is 8 centim. long its proximal half is 0.5 centim. broad, its distal half only 0.2 centim.; there is a marked 'shoulder' half way down the tongue. The frame follows the outline of the tongue. The ends of the instrument are bluntly pointed. To one end of the instrument a short piece of string with a slender wooden toggle is attached; through a hole in the other end passes a short loop of string, which is stretched taut by the third and fourth fingers of the left hand when the instrument is held ready for playing between the finger and thumb of the same hand. The instrument is contained in a small case of bamboo decorated with a phylloporhic design in low relief with the background stained red by dragon's blood.

Total length 10.8 cm. ; breath 1.5 cm.

Catalogue No. 204. Brooke Low collection.

b. (Plate V fig. 13, third specimen from the bottom).

Very similar to the preceding, but the ends more pointed. It is contained in a bamboo case decorated in the same way as the case of No. 204. Length 14.7 cm. ; breath 1.5 cm.

Catalogue No. 1112. [Pd. xii. 00].

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2. Dusun—*Teruding*. (Plate V fig. 13 bottom specimen, and Plate VII fig. 9).

Made of *apeng* wood. It differs from the Sea-Dyak *ru ding* in the following points:— i.) the back of the instrument is not concave; ii.) one end is produced to form a handle almost square in section; iii.) one half of the frame is shaved down so as to be very thin, the other half is comparatively thick; iv.) in order to give a greater range of vibration to the tongue a lump of dammar is attached to it about its middle; the peculiar shape of the tongue is shown in Plate VII fig. 9.

The cuticle of the wood is left on the handle, as a narrow transverse strip across the middle of the instrument and on the end opposite to the handle, where there also occurs a small dab of resin. The instrument is enclosed in a small bamboo case decorated with incised geometrical designs.

Length 13 cm. ; breadth 0·8 cm.

Catalogue No. 777. From Kiou, Mt. Kina Balu.

Drs. G. D. & H. A. Haviland coll. iv. 92 [P].

Ling-Roth (l. c. Vol. II p. 257) figures a similar example.

3. Land-Dyak—*Stobeong*.

a. (Plate V fig. 13 top specimen).

Jews-harp of brass. The tongue (*jarah*) and frame (*bak*) are very thin and quite flat, one end is produced to form a slightly thicker handle (*kopwong*) the opposite end is shaped and notched. The handle is well-marked off from the frame. The tongue has been smeared with lime in order to make it heavier and so to tune the instrument in accord with others.

Length 9·3 cm. greatest breath 1 cm.

Catalogue No. 1273. From Teringoo, Sarawak River.

E. W. Byrde, Esq., [P. 23. vi. 03].

b. (Plate V fig. 13 second specimen from the top).

Almost exactly similar to the preceding specimen, but end opposite to the handle cut square.

Length 9·2 cm. ; greatest breadth 1 cm.

Catalogue No. From Krokong village. Upper Sarawak.
[E. W. Byrde, Esq. P. vii. 03].

The Land-Dyaks of Quop call this instrument *traing*; the Land-Dyaks of the Upper Sadong call it *jingun*.

These instruments are made very carefully and the owner of a good specimen will not readily part with it. If the tongue, when just cut out from the frame, does not vibrate properly it is carefully filed with the cuticle of a species of bamboo and until it vibrates freely the instrument is said to have no "life" or "soul." At Krokong several men will play jews-harps in concert tuning them by smearing lime on to the vibrating tongues.

4. Sea-Dyak—*Engsulu* or *Ruding sulu*.

a. (Plate VI fig. 13 middle specimen).

Jews-harp of brass; markedly concavo-convex longitudinally, suggesting that it is derived from a wooden model. The tongue tapers to its end. One end of the frame is cut out into three points, the other end is bifurcate, and the two limbs of the bifurcation are rolled up into spirals; a loop of string passes through a hole at this end, a short string with a brass toggle attached to it passes through a hole at the other end.

Length 9 cm.; breadth 0.8 cm.

Catalogue No. 1251. From Lobok Antu, Batang Lupar.
[R. Shelford, Esq. P. 5. iv. 03]

b. (Plate V fig. 13 third specimen from the top).

Differs from the preceding specimen in being nearly flat; one end is produced to form a sort of handle but it is quite thin and flat and is fretted and cut into a pseudo-phyllomorphic pattern. The opposite end of the instrument is "stepped" and a string with a bamboo toggle is passed through a hole here. The tongue does not taper, its proximal half is twice as thick as the distal (cf. *ruding*).

Length 10.1 cm.; greatest breadth, 0.8 cm.

Catalogue No. 610. Brooke Low collection.

Ling Roth (l. c. Vol. II p. 257) figures a handled brass jews-harp but with a string attached to the frame; it is evidently a Sea-Dyak *engsulu* but it has been wrongly named *rodiung*.

This is one of the musical instruments which Dyaks say are possessed of "*Jako*" i. e. articulate speech; the *enserunai* is another but the *ruding* is not. The *engsulu* is played by young men and girls who are lovers; a young man desirous of marrying a girl will, previous to matrimony, visit at night his *inamoratu* in her mosquito curtains and will play to her on his jews-harp, she will reply on her jews-harp and it is said that the notes of the instruments can be translated by experts into articulate language in the form of a poem.

PERCUSSION INSTRUMENTS.

- I. Wooden resonators and harmonicums.
- II. Metal gongs.
- III. Bells.
- IV. Drums.

CLASS I.—WOODEN RESONATORS AND HARMONICUMS.

These have been superseded almost every where by metal gongs made for the most part in Java and China.

1. Land-Dyak—*Lalipok*. (Plate VI fig. 14).

These are merely portions of a bamboo joint with the wall scraped quite thin, one end is closed by the septum the other is open. The open end is knocked against some hard substance such as an ironwood post. They are played in accompaniment with the *ton-ton* (cf. antea p. 17). Length 24.2 cm. and 37 cm. diam. 5 cm. and 5 cm.

Catalogue Nos. 1297 *a* and *b*. [Pd. ix. 03.] From the Upper Sadong District.

2. Land-Dyak—*Pelouchong*. (Plate VI fig. 14).

Two pieces of bamboo joints, the walls not scraped thin but with a hole cut in one side; one end is closed by the septum

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the other is open. The instruments are beaten with a short stick to accompany the *ton-ton*. Length 49 cm. and 43 cm. diam 5 cm. and 5.2 cm.

Catalogue Nos. 1298 *a* and *b*. [Pd. ix. 03]. From the Upper Sadong district.

3. Land-Dyak—*Krotong*—Wooden harmonicum.

A set of six slabs of hard red wood (*mellobi*) ranging in length from 49 centim. to 40 centim., in breadth from 7 centim. to 5 centim., in thickness from 3.5 centim. to 1.5 centim. The notes emitted when the slabs are struck do not form a regular scale. Three slabs (*anak*) are marked at one end with a streak of white paint and these give higher notes than the three others (*endor*) which are marked with a cross. The slabs are laid on a block of soft wood or on the legs of the performer and are tapped with two sticks (*bokan*); sometimes two men play, one striking the *anak* the other the *endor*.

Catalogue No. 1280. E. W. Byrde, Esq. [P. 9. vii. 02].

This example was made at Krokong, Upper Sarawak, and was in use for many years at feasts and funerals. Brooke Low mentions similar specimens, but made also of stone in use amongst the Sea-Dyaks. Burbidge gives an account of a Kadyan "triangle or its music rather, being represented by two or three steel hatched leads which were laid across laths on the floor and beaten in time with a bit of iron" (cf. Ling-Roth l.c. Vol. II p. 263).

4. Maloh—*Tengkuang*—(Plate IV fig. 11, left-hand specimen).

A long narrow rectangular block of *tapang* wood with a scroll handle projecting from the left-hand end (upper end in the figure). It is narrower at the top (right-hand side in the figure) than at the bottom, the sides sloping in from a line just below the middle line. A deep longitudinal cavity is scooped out of the block of wood; it slopes up at either end. On one side (that seen in the figure) there is at either end a perpendicular border of of phyllomorphic design carved in deep relief whilst a broad horizontal border of incised phyllomorphic design runs along the lower half of the instrument; on the other side the

two perpendicular borders consist of incised lines bounding a series of diamond shaped figures, the horizontal border is similar to that on the other side.

There are two drum sticks also of *tapang* (*Abauria excelsa*) wood ; each is bored at the top with a hole and they were once joined together by a length of string ; they are slightly decorated with incised lines but the patterns which it was intended to form have never been completed. Length 61 cm. ; breadth at top 7.5 cm. ; breadth at bottom 11 cm. ; height 22 cm. ; length of stick 24 cm.

Catalogue No. 57. Brooke Low collection.

The instrument has been figured by Ling-Roth (l. c. Vol. II p. 263.) A large block of wood shaped like a pig and hollowed out, hangs by the antimony works of the Borneo Co., at Busau, Upper Sarawak ; it is beaten to call the men to work and emits a very loud resonant sound ; it was made by a Malay.

CLASS II—METAL GONGS.

From a native point of view these are the most important of all musical instruments. Formerly certain varieties of gongs were in universal use as currency and at the present day fines levied on natives by the Sarawak Government are paid in many cases in gongs, brass ware, and old jars. The large heavy gongs known as *tawaks* are worth any thing from \$30 to \$100, not only their weight but their tone and resonance being taken into account by the appraisers. The wealth of a chief consists chiefly of gongs and jars, and his collection of the former, is if he is in prosperous circumstances, always increasing. They are played at ceremonies and festivals of every description and the noise produced by the beating of twenty or thirty gongs all at the same time can be better imagined than described. The Land-Dyaks of Quop have definite names for the different rhythms with which a series of gongs can be beaten and I have no doubt that the same is the case amongst other tribes.

The four principal varieties of gongs are:—

1. *Gongs* proper ; large shallow gongs with flat boss or none at all.

2. *Tawak*; large deep gongs with hemispherical boss.
3. *Chanang*; medium sized gongs with hemispherical boss, sometimes elaborately ornamented.
4. *Kromong*; small gongs with hemispherical boss, always sold in sets of seven or eight and played somewhat like a chime of bells.

All are made of brass and most are cast by a *cire perdue* process, though the older and more valuable ones have been melted and hammered into shape.

The place of origin of some specimens is extremely doubtful, but generally speaking the following may be regarded as fairly accurate:—*Gongs* proper come from China, their value is small and but few are bought by Dyaks and other natives; *Tawak* are made in Java and perhaps by Malohs, as already noted their value is considerable; *Chanang* are made in Java, in Kuching by Sarawak Malays, and in Brunei by Brunei Malays, the latter being usually highly ornamental and worth \$15 to \$25, a Javanese *Chanang* may fetch a very high price; *Kromong* were formerly made in Java but all modern specimens are made chiefly in Kuching by Sarawak Malays, modern specimens are moderate in price.

1. *Gong*. (Plate IV. fig. 12, specimen in the background) large shallow gong of (?) Chinese origin, with a flattened boss. Diam. 66 cm.; depth 8 cm.

Catalogue No. 1225. [Pd. xi. 02].

2. *Tawak* or *tetuwak*. Large brass gong, said to have been made by Malohs, with large hemispherical boss and slightly raised central area. It is very deep and the sides slope in from front to back. It has been cast and then hammered. Diam. in front 60 cm.; at back 45 cm.; depth 27 cm.; thickness 0.5 cm.; weight 37 lbs.

Catalogue No. 1256. The Sarawak Government. [P. 14. iii. 03].

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This specimen some years ago was deposited in Sibü fort as a pledge of good faith by a native chief but it was never redeemed ; it has been valued by Malays at \$70.

3. Brunei Malay—*Chanang naga*. (Plate VI. fig. 15).

Brass gong with hemispherical boss ; the face is decorated with two dragons in bold relief and with a geometric pattern round the border and between the dragons in lower relief, the side is also ornamented with a geometric pattern in low relief. The gong is suspended by a chain with two diverging limbs, one of the links in the middle of each diverging limb is cast in the form of a bird and the junction of the diverging limbs with the main chain is marked by a similar but larger link. Diam. in front 49 cm. at back 39.4 cm. ; depth 12 cm. Total length of chain 58 cm. ; of diverging limbs 35 cm.

Catalogue No. 1268. [Pd. ii. vi. 03].

These gongs are cast by a *cire-perdue* process ; a rough model of the gong is first made in wood, over this is spread a layer of wax the surface of which is carved and tooled into the desired pattern, the wax is lifted off the wooden model in two pieces—the front and the side,—these are then joined and backed with more wax, and a mould of clay mixed with sand is built up so as to completely enclose the wax pattern, a small spout being left at one point ; the whole is then burnt in a kiln and the melted wax is poured out of the spout of the clay mould and the molten brass poured into it. A new wax pattern has of course, to be made for every gong.

The dragons certainly suggest a Chinese origin for these gongs, still the dragon is also prominent in Indonesian art so that it would be rash to dogmatize on the subject. The significance of the bird-links in the suspensory chain I have been unable to discover.

4. Sarawak Malay—*Chanang*.

Small brass gong with hemispherical boss and raised central area ; cast by *cire-perdue* process in Kuching. Diam. in front 33.9 cm., at back 30.1 cm. depth 7.8 cm.

Catalogue No. 1208. [Pd. xii. 02].

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5. Sarawak Malay—*Kromong*. (Plate IV fig. 12).

A set of eight small brass gongs, each with hemispherical boss and slightly raised central area. They rest on strings fastened to the cross-pieces of a long wooden frame and are struck with two wooden beaters. Diam. of largest gong 19·6 cm., of smallest gong 17·8 cm.; all are 6·5—6 cm. deep.

Catalogue No. 1209. [Pd. xii. 02].

These *Kromong* were cast in Kuching. The process is much the same as that previously described; the wax is spread thinly over a wooden model (*chuan*) pitted all over with small depressions, the purpose of which is to give an appearance of hammer-marks; the old Javanese *Kromong* were all melted and beaten into shape and distinctly shewed the hammer-marks all over their surface, and the same appearance is simulated in the modern article. The wax is peeled off the wooden model as already described and enclosed in a mould of clay mixed with sand (*tanah balut*) with a spout for the exit of the melted wax and the entry of the molten brass. When the gongs are removed from their clay moulds they are roughly smoothed down with a file and are set in a row on a frame like that shewn in the figure, the maker then tunes them by tapping them with a hammer and finally blackens them with a mixture of copper sulphate and an extract of *hirang* a plant used also medicinally for skin diseases.

CLASS III. BELLS.

1. Brunei Malay—*Grunong*, cow-bell.

A spheroidal brass rattle flattened from side to side, cast in brass, hollow with a slit running half way round the lower border; the handle of the rattle is in the form of a bird with a ring springing from its back, on each side of the rattle is a snake in bold relief and an outstanding ring; there is a ring just above each end of the slit running round the lower border of the rattle. A small brass sphere inside the hollow of the rattle acts as a clapper.

R. A. Soc., No. 40, 1904.

50 SARAWAK ETHNOGRAPHICAL COLLECTION.

Length (in a straight line) 9·8 cm. ; diam. 6·1 cm. × 4·8 cm.
[Pd 6. xi. 02.]

Catalogue No. 1187.

This is the only form of bell that I have met with in Borneo with the exception of small metal rattles that are worn as ornaments (trimmings to kirtles, buttons to necklets, etc.)

CLASS IV. DRUMS.

These are used by every tribe in Borneo ; they are played with gongs at feasts and funerals.

1. Land-Dyak (Bukar sub-tribe).—*Gehong*.

Single membrane drum made from one and a half joints of a very large species of bamboo ; the intervening septum is broken through ; one end is open, the other is closed by a diaphragm of monkey's skin (*Macacus nemestrinus*), secured by rattan in the manner shewn in fig. 1, Plate VII., the loops of rattan however being connected by a transverse double twist of rattan. Height 84 cm. ; diam. 12 cm.

Catalogue No. 1294. [Pd. viij. 03].

From Lanchang, Upper Sadong.

I noted in the rafters of the head-house (*baluh*) at Lanchang village, a very large drum known as *sabang* cut out from a tree trunk, it was at least 5 feet high and 1 foot in diameter, but I was unable to secure it for the Sarawak Museum as it was used only at head-feasts and was regarded as "*pemati*." Similar gigantic drums are used at Krokong, Upper Sarawak.

Sea-Dyak—*Gendang*. (Plate III fig. 10, left hand specimen).

Single membrane drum made of a hard black wood, roughly shaped like an hour-glass, hollow throughout, the cavity in shape corresponding to the external form ; the lower end is open, the upper is closed by a skin diaphragm secured by rattan lashings and loops ; the method of lashing the diaphragm on to the drum-head is slightly different from the usual method and is

Jour. Straits Branch

shown on Plate VIII fig. 14, the edge of the diaphragm is not doubled over, the rattan loops pass alternately over and under the encircling band *a* and then down to and round a plaited rattan band which is prevented from slipping by wedges. Below the plaited rattan band is a raised zone on which is carved in bold relief the following patterns:—

- 1.) A conventional flower *buah andu*, (*Plukenetia corniculata*).
- 2.) On each side of this a rough geometrical design, three scrolls in a square.
- 3.) An intertwisted double loop pattern, *ensilup* (i. e. interlocking).

Twelve shirt buttons are let into the centre of (1), two are let into each scroll of (2) and there is one in each loop of (3). Below this zone is a circle of incised triangles, *puchok rebong* (i.e. young shoots of bamboo) and round the foot of the drum runs an incised single loop pattern. Height 18 cm.; diam. at top 13·4 cm.; diam. at bottom 20 cm.

Catalogue No. 58. Brooke Low collection.

The Sea-Dyaks of the Balau River and the Sibuyaus call this instrument *Ketubong*. I have seen specimens with a diaphragm of *Varanus* skin. The performers on this instrument and the Land-Dyak *Gehong* sat cross-legged on the ground, the drum lying across one thigh and kept from slipping by the opposite foot, and the diaphragm was beaten with the tips of the fingers and the palmar surface of one hand.

A Murut *gendang* is figured by Ling Roth (l. c. Vol. II p. 263).

3. Malay—*Gendang prang*.

(Plate III fig. 10, right hand specimen).

Double membrane drum formerly used in warfare, but now employed at festivals. It is almost cylindrical, hollow throughout and made of *mirabou* wood (*Azelia bijuga*), it is slightly narrower in diameter at one end than at the other and its greatest diameter is across the middle. Both ends are closed with dia-

phragms of parchment, secured in the following manner :—the edge of the parchment is gripped between two strips of split rattan encircling the drum, these gripping bands are given a half-turn up, a continuous loop of split rattan is laced through holes in the double fold of parchment (formed by turning up the gripping bands) and passes to the other end of the drum to be similarly laced through holes in the diaphragm there ; the adjacent limbs of the loops are braced together by bands of plaited rattan (Plate VIII fig. 15). A small square hole is cut in the side of the drum to increase the resonance and a string sling passes through holes above and below this. Height 53 cm.; diam. at one end 22 cm. ; diam. at the other 20 cm.

Catalogue No. 1227. [Pd. 29. 1. 03].

4. Malay—*Gendang rebana*. (Plate IV fig. II right hand specimen.)

Bowl-shaped drum of *mirabou* wood, the top is closed by a diaphragm of sheep's skin, the bottom is open. Into the rim of the bottom are driven ten square wooden pegs, their free ends rest on and press against a circle of rattan round which pass the rattan loops that secure the diaphragm ; the chief function of this rattan circle and pegs is to act as an insulator, raising the drum from the ground and so increasing its resonance. The diaphragm is secured in the same way as shown in Plate VII. fig. 1. except that the descending loops of rattan are in ten groups of four or five loops, any one group being widely separated from that on either side of it ; there are ten such groups and they correspond with the ten wooden pegs in the bottom rim of the drum ; further, the edge of the diaphragm is doubled back to cover the rattan lacing and this is kept in position by a single encircling rattan laced through it.

Immediately before use the diaphragm is tightened by pushing between it and the upper rim of the drum from the inside a circle of thick unsplit rattan, known as the *sidak* ; when the drum is not in use the *sidak* is kept coiled up inside the drum.

Height 18 cm.; diam. at top, 44·5 cm.; diam. at bottom 24·8 cm.

Catalogue No. 1246. [Pd. 23. 1. 03].

Addenda.

Since going to press my friend Mr. W. Howell has sent to the Museum a toy musical instrument used by Sea-Dyak children; as it is so very different from every other form of musical instrument found in Borneo, I cannot refrain from adding a brief description of it:—

Sea-Dyak—*Sulieng*—toy “squeaker.”

A piece of the stem of a species of *Calamus* known as *Kerniong*, 21 centim. long and 1 centim. in diameter; one end is open and cut square, the other is closed by the natural septum, a very narrow crack runs down the whole length of the instrument on one side, in fact it is so narrow as to be hardly perceptible from the outside. A blast of air driven into the tube just forces apart the sides of the crack, but they quickly close again by virtue of their elasticity and curvature. If the pressure of air is maintained they are forced open again, close again and so on; in other words the sides of the tube bordering the crack vibrate and constitute a “partial” valve through which the air issues in a pulsatory manner producing a loud and penetrating squeak. The instrument may be compared with the trumpet class though in that class the lips of the performer constitute the “partial” valve, not the walls of the instrument itself. Malays know this instrument as *seruné*, the same term as that employed by Land-Dyaks of the Bukar sub-tribe for their pipes with “beating” reeds.

Catalogue No. 1363. Rev. W. Howell [P. 6. xij. 03].

The wooden clappers used by Sea-Dyaks are also worthy of note. These instruments, which are known variously as *tongkat be-igi*, *tangkat krutak tugal be-igi*, *tugal bekurong*, and *tugal klek*, are long staves of hard wood with an enlarged head, the head is hollowed out but a loose block of wood occupies part of the hollow and slides up and down when the staff is shaken; this block is cut out of the head itself, the hollowing of the head and the freeing of the block being negotiated through four longitudinal slits in the head. The staves are used as paddy-bibblers, and they are carried and sounded at intervals by the

principal celebrant at that part of the religious festivals when the *Mengap* is being recited; they are also carried and rattled by any one when walking in the dark to give notice of his coming to spirits, men and animals.

Sea-Dyak—*Tongkat krutak*.

a. A long staff of hard wood, the lower end thickened and pointed and with an enlarged four-sided head 40·5 centim long; the angles of the head are marked by wide slits, through which the head has been hollowed out, a sliding block of wood 20 centim long being left in the hollow. The passage of the stem of the staff into the head is sudden and is marked by a little carving and a narrow band of plaited rattan; the top of the head is crowned with a finical and a tuft of grass.

Total length 239 cm.

From the Krian River. I. Kirpatrick, Esq. [P. 28. xiii. 96.]

Catalogue No. 999.

b. A similar specimen, but the lower end is much thicker and less pointed; the head is round in transverse section and the hollowing of it and the freeing of the sliding block has been conducted through three slits only; the rest of the staff instead of being of equal diameter throughout is marked with seven circular blunt ridges at unequal distances apart; the passage of the stem into the head is very gradual; the head has a long carved finical but no tuft of grass.

Total length 262 cm.; length of head 36·5 cm.; of sliding block 23·5 cm. From the Lamanak River. Brooke Low collection.

Catalogue No. 517.

c. Much shorter specimen, the head rather slender and without a finical, which is replaced by a stout projection; the staff is encircled by several narrow ridges some of which are carved to imitate the nodes of bamboo; there are four slits in the head.

Total length 193 cm. ; length of head 38 cm. ; of sliding block 12·4 cm. From the Engkari River. Brooke Low collection.

Catalogue No. 518.

Explanation of Plates I.—VI.

- Fig. 1. Two Tanjong *busoi* and *aran*, musical bows.
- Fig. 2. Sea-Dyak *enserunai*, fiddles.
- Fig. 3. Maloh *blikan*, two-stringed guitar.
- Fig. 4. Kyan *sapeh*, two-stringed guitar.
- Fig. 5. Malay *gambus*, six-stringed guitar.
- Fig. 6. Murut and Sea-Dyak *engkratong*, upright-harps.
- Fig. 7. Dusun Long Kiput and Kanowit bamboo-harps.
- Fig. 8. Murut Kanowit and Sea-Dyak bamboo flutes.
- Fig. 9. Sea-Dyak and Kyan mouth organs.
- Fig. 10. Sea-Dyak and Malay *gendung*, drums.
- Fig. 11. Maloh wooden gong and Malay drum.
- Fig. 12. Malay playing on a set of *kromong*, a large *gong* in the back ground.
- Fig. 13. Dusun Land-Dyak and Sea-Dyak jew's-harps.
- Fig. 14. Land-Dyak *ton-ton*, bamboo-harps, *lalipok* and *pelon-chong*, bamboo resonators.
- Fig. 15. Brunei Malay *chanang naga*, ornamental gong with suspensory chain.

Explanation of Plate VII.

- Fig. 1. Diagram illustrating the method by which a skin diaphragm is fastened over a resonator of a fiddle or over a drum. The skin is tightly stretched over the mouth of the resonator and tied with a string (*a*), the edge of the skin is then turned up and through the double fold so formed is laced a continuous loop of split rattan (*b*); the lower ends of the loops pass

round a band of plaited rattan (*c*) encircling the resonator at the lower level; wedges (*d*) are driven between this band and the resonator to make all taut.

This method of securing drum-heads and diaphragms is common all through the Malay Archipelago: I have seen a drum from Timor in the Raffles Museum, Singapore, the diaphragms of which are fastened in identically the same way as this.

- Fig. 2. Portion of head of stem of Sea-Dyak *enserunai* showing method of attachment of string. (cf. p. 7)
- Fig. 3. ditto. (cf. p. 7)
- Fig. 4. ditto. (cf. p. 9)
- Fig. 5. Portion of stem of Maloh *blikan* (cf. p. 12)
- Fig. 6. Dusun guitar $\times \frac{1}{8}$ (cf. p. 11)
- Fig. 7. Land-Dyak *siyittuad* $\times \frac{1}{6}$ (cf. p. 9)
- Fig. 8. Sea-Dyak *penyipu*, clay whistle $\times \frac{1}{4}$ (cf. p. 33)
- Fig. 9. Dusun *teruding*, bamboo jew's harp, seen in profile with the tongue elevated. Nat. size. (cf. p. 43)
- Fig. 10. Bamboo "reeds" of a Kyan mouth-organ. Seen in face and in profile.

Explanation of Plate VIII.

- Fig. 1. Proximal end of Sea-Dyak *sulieng san*-transverse flute (semidiagrammatic).
- Fig. 2. Proximal end of a nose-flute (semi-diagrammatic.)
- Fig. 3. Proximal end of Sea-Dyak *sulieng nyawa*. Flageolet with outside duct (semidiagrammatic).
- Fig. 4. Proximal end of Land-Dyak *telarti*. Flageolet with outside duct (semidiagrammatic).
- Fig. 5. Diagrammatic longitudinal section of above.
a. sound-hole.
- Fig. 6. Proximal end of Land-Dyak *kroto*. Flageolet with outside duct (semi-diagrammatic).
- Fig. 7. Proximal end of Murut flageolet with outside duct (semidiagrammatic) a. luting of dammar; b. fragment of leaf stuck on the edge of the sound-hole.

- Fig. 8. Diagrammatic longitudinal section of above.
- Fig. 9. *Kyan bulo wok*, bird-call $\times \frac{1}{2}$
- Fig. 10. Diagrammatic longitudinal section of Sea-Dyak *humbun*, bird-call, *a.* bamboo tube; *b.* wooden upright; *c.* septum of bamboo joint; *d.* sound-hole.
- Fig. 11. Proximal end of Sea-Dyak *sulieng nyawa*. Flageolet with inside duct. (semidiagrammatic).
- Fig. 12. Diagrammatic longitudinal section of above.
- Fig. 13. Land-Dyak *serubagi*, pipes with 'beating' reeds. $\times \frac{3}{4}$.
- Fig. 14. Method of attachment of diaphragm in Sea-Dyak *gendang* (cf. p. 50) — diagrammatic. *a.* encircling band of rattan.
- Fig. 15. Method of attachment of diaphragms in Malay *gendang prang* (cf. p. 51) — diagrammatic. *aa.* gripping bands of rattan. The limbs, *bb.* of the loops are braced together by bands of plaited rattan not shewn in the drawing.

Addenda II.

A very simple form of wind-instrument was quite recently presented to the Sarawak Museum and is briefly described below:—

Land-Dyak—bashi.

This is a length of a large species of bamboo with a large circular hole cut in each internode (seven in number), the holes facing different directions. The instrument is fastened at the top of a high tree and the wind blowing across one, or perhaps more, of the holes makes a loud howling noise.

From the village of Quop.

Total length 311·5 cm.; diameter 5·7 cm.

Rev. F. W. Nichols [P]

Catalogue No. 1384.

Sometimes rather a different instrument is in use; one internode only of bamboo is employed and a large hole is cut in it, the internode spins (vertically) on a pivot and is fitted with a vane so that the sound-hole is always turned at the right angle to the wind from whatever direction it may blow.

The bull-roarer can hardly be omitted from a catalogue of musical instruments, even though the specimen described below was used, like the bull-roarers of the Malay Peninsula, merely as a scarecrow. A popular account of the bull-roarer is given by Dr. A. C. Haddon in his book "The Study of Man" pp. 277-327 and some remarks on the relationship between the bull-roarer and other wind-instruments are given by Mr. H. Balfour in a recent number of the Journal of the Anthropological Institute (Vol. XXXII. pp. 173, 174.)

Narom—bull-roarer.

A flat piece of wood shaped something like a spear-head, 27·2 cm. X 6·1 cm.; both ends are sharply pointed, but at one end are two projecting "ears," a string passes through a hole

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at this end and serves to attach the piece of wood to a wooden stick, 85 cm. long.

D. A. Owen Esq. [P. 24. v. 01].

Catalogue No. 1121.

Dr. C. Hose first discovered the bull-roarer in Borneo in a Kenyah house up the Tinjar River, Baram district and was told that it was used to scare birds off the *padi* fields; Dr. Hose bought the unique specimen and subsequently showed it to some Narom, a tribe living near Claudetown, Baram River; the Narom stated that they were well acquainted with the instrument and frequently used it; they made several specimens to order, one of which is that described above. The Narom constitute a tribe that falls into the Kalamantan division according to Drs. Haddon and Hose—and so may be considered as amongst the most primitive tribes of Borneo.

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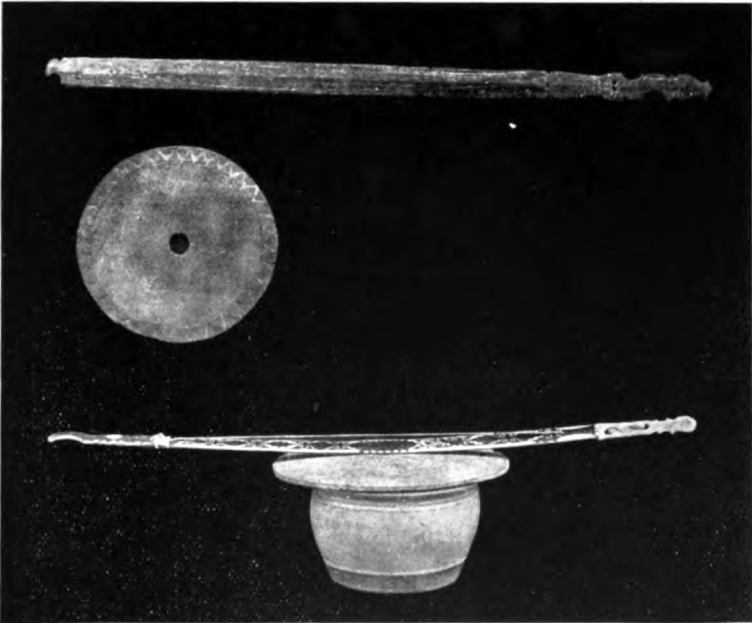


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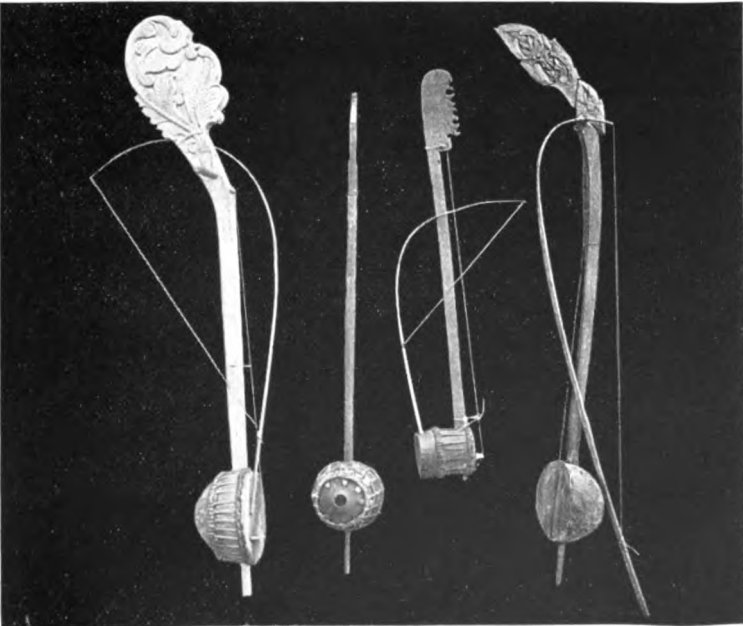


Fig. 2.

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Fig. 3.



Fig. 4.



Fig. 5.

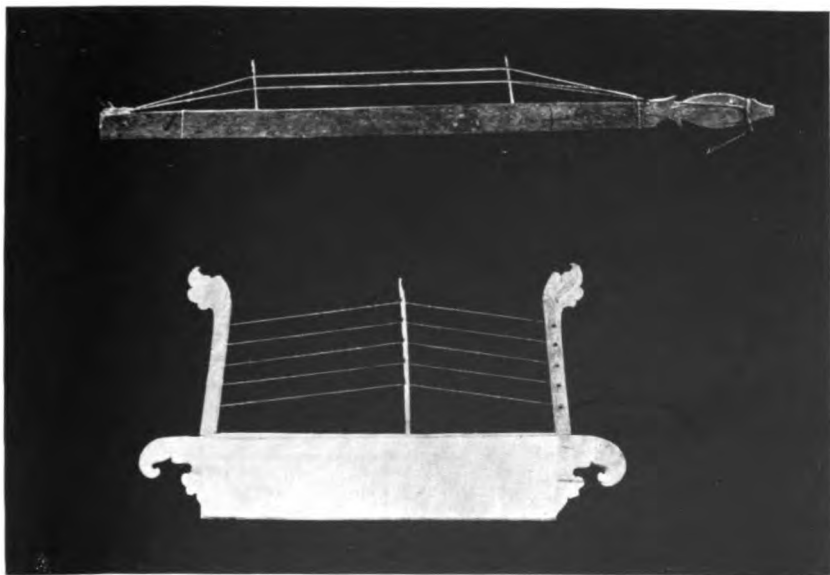


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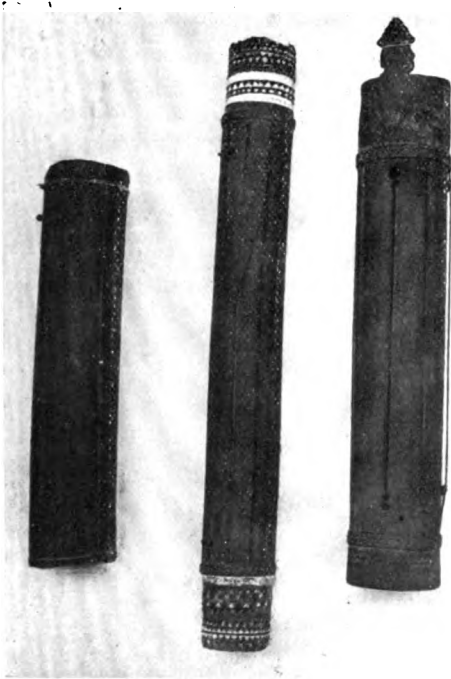


Fig. 7.



Fig. 8.

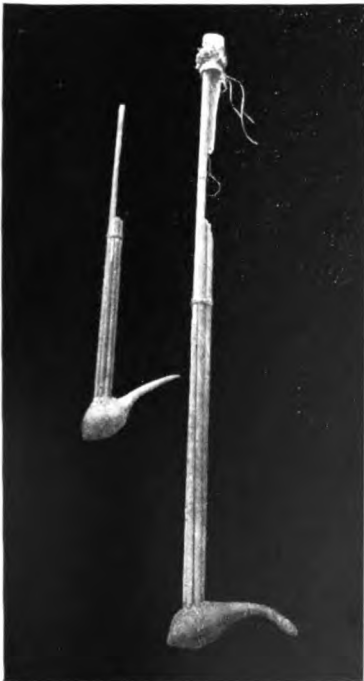


Fig. 9.





Fig. 11.

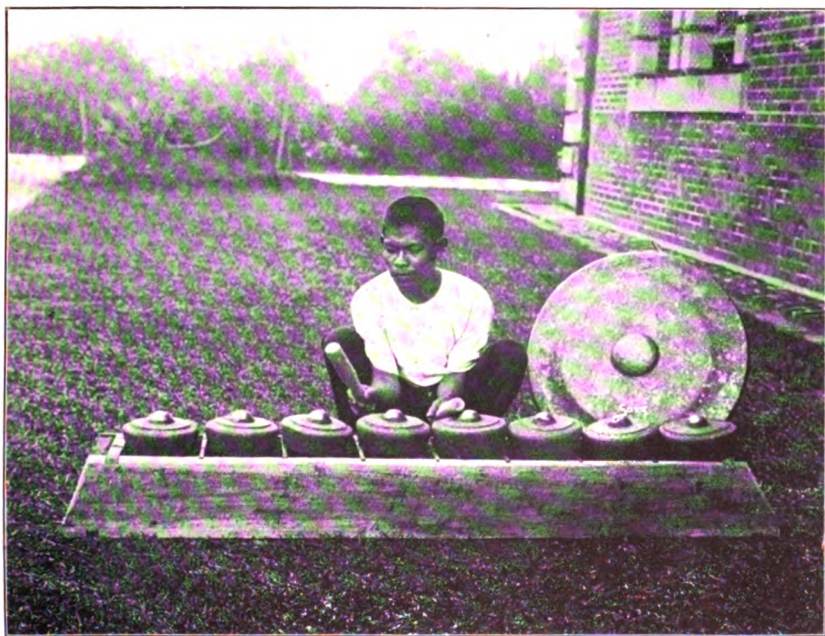


Fig. 12.

STRAITS BRANCH, ROYAL ASIATIC SOCIETY,

JOURNAL 40, PLATE V.

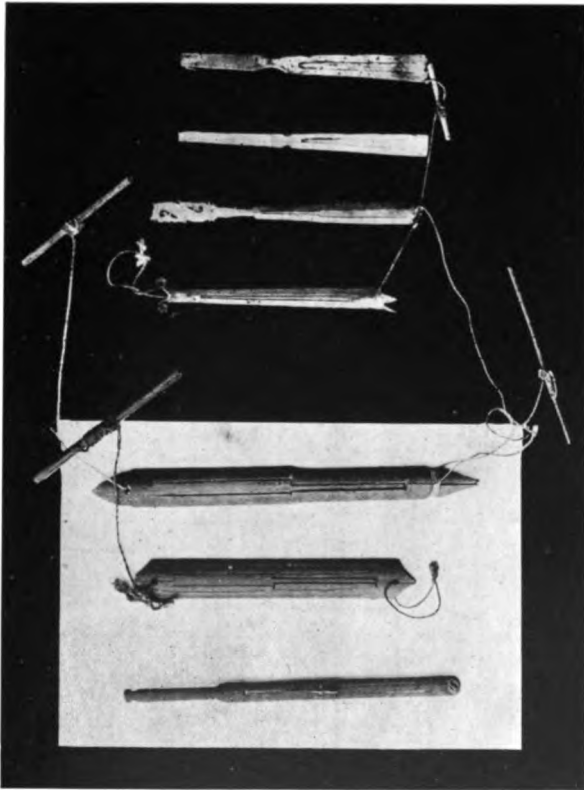


Fig. 13.

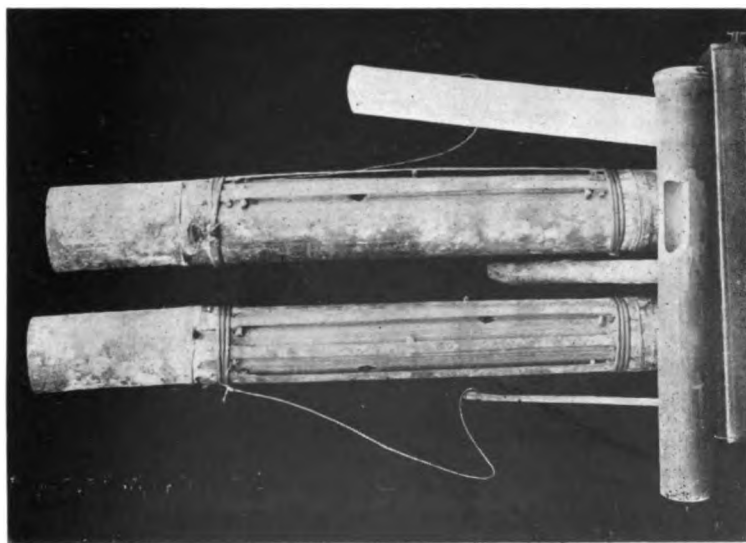


Fig. 14



Fig. 15.

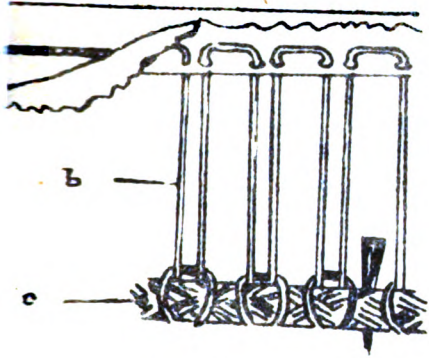


Fig 1



Fig 2



Fig 3

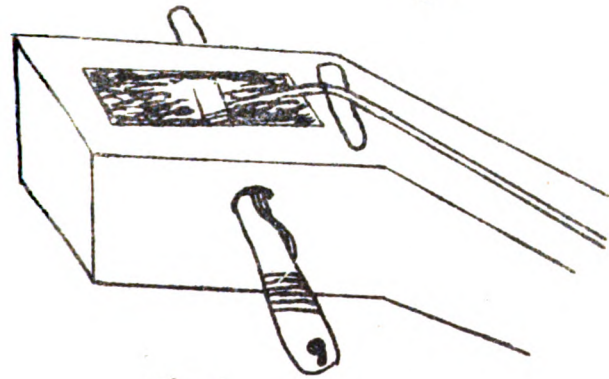


Fig 4

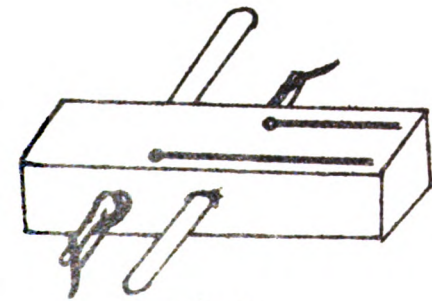


Fig 5

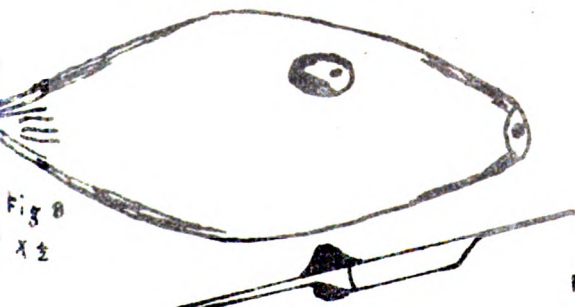


Fig 6
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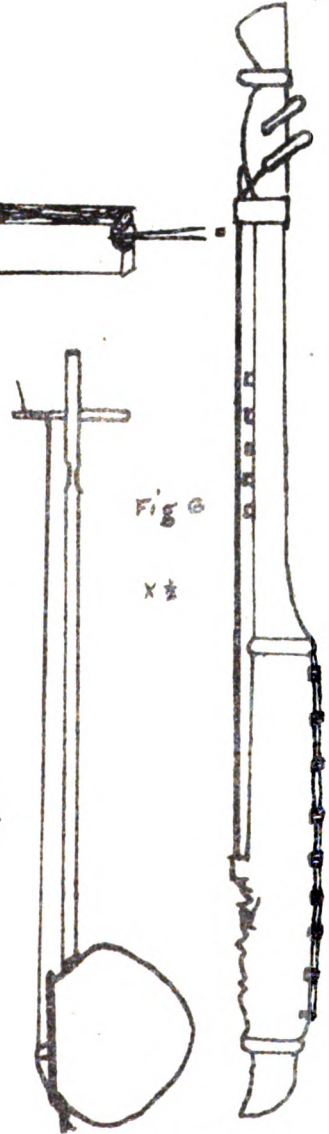


Fig 7

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Fig 7
x 1/2



Fig 10



Fig. 1



Fig. 2.



Fig.

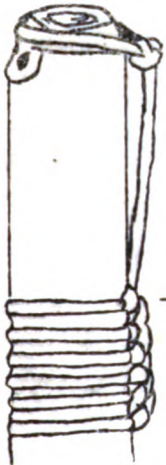


Fig. 5.



Fig. 11.

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STRAITS BRANCH
ROYAL ASIATIC SOCIETY

[No. 41]

JOURNAL

January, 1904

Agents of the Society

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JANUARY 1904

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1904

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THE
STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

COUNCIL FOR 1904.

The Right Rev. BISHOP HOSE, *President.*

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Hon. DR. W. C. BROWN, *Vice-President for Penang.*

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REV. W. G. SHELLABEAR,

W. G. ST. CLAIR, Esq.,

} *Councillors.*

PROCEEDINGS
of the
Annual General Meeting

The Annual General Meeting was held on January 19th, 1904.

There were present :—The Right Reverend Bishop ROSE (in the Chair), the Hon'ble C. W. KYNNEERSLEY, the Hon'ble W. R. COLLYER, Messrs. W. G. St. CLAIR, A. KNIGHT, H. ESCHKE, C. B. KLOSS, P. J. BURGESS, M. HELLIER, Dr. R. HANITSCH, H. N. RIDLEY,

The minutes of the last General Meeting were read and confirmed.

A letter from Mr. Fleury asking that Lieut.-Colonel G. C. E. van Daalan, might become a subscriber to the Journal was read and the request agreed to.

The election of the new members during the past year was confirmed.

The Annual Report of the Council was laid on the table and on the proposal of Mr. BURGESS seconded by Mr. HELLIER was adopted.

The Chairman suggested that when the Catalogue of the library had been completed, any additions should be recorded in future in the Journal and those of special interest should be recorded in the Annual Report. This was agreed to.

PROCEEDINGS

The Treasurer's statement of Accounts, audited by Mr. KNIGHT was laid on the table, and on the motion of Mr. C. B. KLOSS seconded by Mr. HELLIER was adopted.

The Officers and Council for the ensuing year were then elected, viz :

President : Right Reverend Bishop HOSE.

Vice President for Singapore : Hon. C. W. KYNNEERSLEY.

Vice President for Penang : Dr. BROWN.

Hon. Secretary : H. N. RIDLEY.

Hon. Treasurer : Dr. HANITSCH.

Councillors : Hon. W. R. COLLYER, H. ESCHKE, W. G. St. CLAIR, P. J. BURGESS, Rev. W. G. SHELLABEAR.

The President reminded the Meeting that the Society had attained its twenty-fifth year of existence, having being founded on November 4th, 1877.

A vote of thanks to the President was proposed by Mr. COLLYER and carried by acclamation, and a vote of thanks to the Secretary and Treasurer was proposed by Mr. KNIGHT which was also carried unanimously.

Annual Report for 1903.

The Council have the pleasure to state that the financial position of the Society continues satisfactory, as may be seen by the Treasurer's Balance Sheet.

The number of members at present is 145, including the following gentlemen elected during the year.

DR. ABBOTT,	MR. F. C. MARSHALL,
MR. ERIC MAXWELL,	„ R. D. HUDSON,
„ GEORGE MAXWELL,	„ F. W. DOUGLAS,
„ W. H. CRADDOCK,	„ W. S. GIBSON,
„ A. H. BURN MURDOCH,	„ T. C. HINKS,
„ E. W. BIRCH,	„ HON. H. F. DESHON,
„ W. MAKEPEACE	„ REV. H. C. IZARD,
„ A. S. HAYNES,	„ S. MOORHOUSE,

They have to express their great regret at the loss by death of Mr. A. W. O'Sullivan, long a member of the Society and at one time the Secretary, and also of Mr. D. H. Wise and Mr. James Driver.

Only one Journal No. 39 was published during the year but another will be shortly in the hands of the members. An important article by Mr. R. Shelford of Sarawak Museum on the Musical Instruments of Borneo illustrated by a large number of plates will follow as soon as it can be printed.

Referring to the resolution passed at the general meeting last year to procure and publish Malay Manuscripts, the Council desire to state that they have kept the matter in view, but up to the present no Manuscripts considered worthy of publication have as yet been obtained. Two important Manuscripts however have recently been offered to the Society by Mr. George Maxwell, and it is hoped they may appear in the course of this year.

The Library was rearranged and is being catalogued. Many books, journals and pamphlets were received and a number were bound.

During the year a letter was received from the Royal Asiatic Society of Bengal stating that the members of that Society had decided that the members of the Straits Branch of the Royal Asiatic Society should have the right of admission to the Society's meetings whenever they were in Calcutta.

The Society has now attained its twenty-fifth year having been founded on Nov. 4, 1877, and it may be noted that in spite of early prophecies of its soon becoming extinct it has steadily thrived to the present day.

The Treasurer's statement of accounts is appended.

HONORARY TREASURER'S ACCOUNT FOR THE YEAR 1903.

	\$	c.	\$	c.
Balances brought forward from 1902:—				
Mercantile Bank, Fixed Deposit	2595	54		
Chartered Bank, Fixed Deposit	700	81		
Mercantile Bank, Current Account	348	10		
Chartered Bank, Current Account	58	95		
			3703	40
Receipts in 1903:—				
Subscriptions for 1901	10			
do. " 1902	50			
do. " 1903	510			
do. " 1904	25			
do. for Life Membership	100			
Sale of Journals	310	25		
Sale of Maps	902	21		
Sundry Recoveries	350			
Bank Interest	120	71	20	67
			5795	07
Payments in 1903:—				
American Mission Press	414	50		
Thacker and Spink	27	37		
Mounting of Maps and Binding of Books	315	25		
3 New Book-cases, at \$85 each	255			
Clerk's Salary	93	15		
Peon's Salary	15			
Postages and Pettyes	78	24		
			1198	51
Balances carried forward:—				
Mercantile Bank, Fixed Deposit	2700			
Chartered Bank, Fixed Deposit	1000			
Mercantile Bank, Current Account	549	29		
Chartered Bank, Current Account	347	27	45	96
			5795	07

Examined and found correct.
A. KNIGHT.

R. HANITSCH,
Honorary Treasurer, Straits Branch, Royal Asiatic Society.

OBITUARY.

Mr. Arthur W. S. O'Sullivan.

Since the date of the last report the Society has had to lament the of Mr. Arthur W. S. O'Sullivan, a member of our Council for several years, and at one time Secretary.

Mr. O'Sullivan was born in 1860 and after a distinguished career at Trinity College, Dublin (scholar and gold medallist), he entered the Straits Settlements Civil Service in 1883.

Throughout his service of twenty years in this Colony he was distinguished as an able hard-working officer and showed a marked talent for languages—he was proficient in Dutch, Tamil, Malay, and more than one dialect of Chinese, which is a record rare amongst Europeans in this climate. He had held the post of Assistant Colonial Secretary for five years and had just been selected by the Colonial Office for the post of Colonial Secretary at Trinidad when he was struck down after a brief illness. Although he was not a frequent contributor to the Journal, the Society has lost in him an intellectual force—a man who took a keen interest in scholarship of every kind. For three years before his death he was engaged in intervals of leisure in the translation of Dr. Snouck Hurgroyne's Acheen—a valuable and interesting piece of work which will shortly be published at Leiden in Holland.

In endeavoring to open up the wide field of Dutch learning and experience in Netherlands India to English readers, he has set an example for which the Society may well be grateful.

R. N. Bland.

Two Sea-Dyak Legends.

By the REVD. EDWIN H. GOMES, M.A.

There are many fairy tales and legends known to the Sea-Dyaks of the present day. These seem to be handed down, by word of mouth, from generation to generation from ancient times.

These stories may be roughly divided into two classes:—

I. Those which are purely fabulous and related as such, and are simply meant to interest and amuse, and in these respects resemble the fairy tales familiar to us all; and

II. Those which are believed to be perfectly true, and to have actually taken place, and are the traditions respecting their gods and preternatural beings. These form in fact the Mythology of the Dyaks.

To the first class belong a large collection of stories corresponding to the Adventures of Brer Fox and Brer Rabbit. In the Dyak tales, the *Plandok* and the *Kekura* (the mouse deer and the tortoise) act always in concert, and their combined intelligence is victorious over the rest of the animal world. To this class also belong the numerous stories related of *Apai Samumang* the Dyak type of cunning and wiliness—and *Apai Saloi*—the typical Dyak fool.

To the second class belong the many and varied adventures of *Ktieng*, the great hero of ancient times, and his wife *Kumang*, the Dyak Venus, as well as the traditions relating to the gods believed in by the Dyaks of the present day. To these must be added certain stories which give a reason for some of the curious customs observed by the Dyaks. The two Dyak Myths which follow belong to this latter class.

I.

Danjai and the Were-Tiger's Sister.

Once upon a time there lived a great Chief named *Danjai*. He was the head of one of the longest Dyak houses that were ever built. It was situated on a hill in the midst of a large plantation of fruit trees. *Danjai* was said to be very rich indeed. He possessed much farming land, many fruit trees, many *Tapang* trees, where the wild bees make their abode, and from which the sweet honey is obtained, and in his room there were many valuable jars of various kinds, and also a large number of brass vessels; for the Dyaks convert their wealth into jars and brass-ware to hand down to posterity. Every year he obtained a plentiful harvest of paddy much more than he and his family could consume and he had always much paddy for sale, so much so that the news of his wealth travelled to distant lands, and many from afar off would come and buy paddy from him. *Danjai* also possessed many slaves who were ready to help him in his work. All the people in his house had a very high opinion of his judgment, and were ready to obey his decisions, whenever he settled any of their disputes. So great indeed was his reputation for wisdom, that men from distant villages would often consult him and ask his advice when in any difficulty. He had also great fame as a brave warrior, and during expeditions against the enemy, he was the leader of the men of his own village and of many villages around, for all liked to follow such a brave man as *Danjai*, who was sure to lead them to victory. Over the fireplace in his verandah he had, hanging together in a bunch, the dried heads of the enemies whom he himself had killed.

Now this man *Danjai* had a very pretty wife whom he had recently married, but the marriage feast had not been held, because he had not yet obtained a human head from the enemy as a token of his love for her: for this girl was of a good birth and a Chief's daughter and wanted the whole world to learn, when they attended her marriage feast, what a brave man her husband was.

Danjai said to his young wife, "I will hold a meeting of the Chiefs around, and tell them that we must all get our war-boats ready, as I intend leading an expedition against the enemy.

I should like to bring you a human head as a token of my love, so that you may not be ashamed of your husband. And as soon as I return, we will have the wedding feast."

And though his wife was sorry that her husband intended leaving her, still she did not oppose his wishes, for she wished him to come back covered with glory.

So a council of war was held, and *Danjai* told the assembled Chiefs what he intended to do, and it was decided that all should begin at once making war-boats, which were to be ready in two months' time.

Danjai assisted by his slaves and followers, had been at work at his boat for several weeks, and it was nearly finished. It was a beautiful boat made out of the trunk of one large tree, and *Danjai* was proud of his work. He was so anxious to finish his boat, that one day he started very early in the morning, before his breakfast was ready, and he asked his wife to bring his food to him later on to the part of the jungle where he was working at his boat.

So Mrs. *Danjai* cooked the food and then ate her own breakfast. Then she made up small bundles of rice and also put together some fish and salt, and placed all in a little basket to take to her husband. She had never been out in the jungle by herself before, but she was not afraid, for her husband had told her the way, and she could hear the sound of his adze as he worked at his boat not very far off. She hung her basket over her left shoulder and, holding her small knife in her right hand, went cheerfully on. Presently she came to the stump of a tree on which was placed a bunch of ripe rambutan fruit. They looked so tempting that she could not help eating some of them, and as they were very nice, she put what remained in her basket, saying to herself, "Perhaps *Danjai* forgot to take these fruits with him and left them here. I will take them to him myself, he will no doubt be glad to eat these ripe fruits after his hard work."

Now there was in that land a Were-Tiger, that was much feared by all who lived around. He had the appearance of a man, but at times would transform himself into a tiger, and then he would attack human beings and carry off their heads as trophies to his own house. But he never attacked any unless

they had first done wrong by taking something which belonged to him. So this Were-Tiger would leave tempting fruit by the side of jungle paths, and on the stumps of trees, in the hope that some tired traveller would take and eat them. And if any one ate such fruit, then he or she was doomed to be killed by him that same day. But all knew about him, and though he placed many tempting baits in all parts of the jungle, no one touched his fruit, for all feared the fate which awaited them if they did any such thing. But *Danjai's* wife knew nothing about the Were-Tiger. No one had told her of him, and she had never been out before in the jungle by herself, and she had never been warned not to touch any fruit she might find lying about.

"Oh *Danjai*," she said, as soon as she met her husband, "I am afraid I am rather late. You must be very tired and hungry, working the whole morning at your boat without having had anything to eat. Never mind! Here is your breakfast at last." And she handed the basket which contained his food to her husband.

Now *Danjai* was really very hungry, so he was glad to see his food had arrived. He thanked his wife and at once began to empty the basket.

The first thing he saw was the ripe rambutan fruit at the top, and he asked his wife where she got them from. She told him she had found them on the stump of a tree by the wayside, and she said she thought they had been left there by him. She added with a smile, that they were very good as she had eaten some herself.

Then *Danjai*, brave man though he was, turned pale with fear and anxiety.

"We must not linger here a moment," he said to his wife. "Hungry though I am, I will not eat my food here. We must both hurry home at once. You have taken and eaten fruit belonging to the Were-Tiger, so much feared by all. It is said that whoever touches his fruit will surely die a terrible death: and you are the first person I know who has done so."

Danjai hurriedly gathered together all his tools and told those that were with him of his trouble, and they all started and walked silently back. *Danjai* was wondering how he was to

avert the fate which awaited his young wife. She was silent, because she saw her husband was troubled, and she was sorry that she had caused him grief.

As soon as they arrived at the house, *Danjai* sent for all the men round about and told them what had happened, how his wife had taken and eaten the fruit of the Were-Tiger. He begged them all to help to shield her, for the Were-Tiger was sure to have his revenge, and come and take the head of his wife.

So they all prepared themselves for the tiger's visit by sharpening their knives and spears. Some men placed themselves on the roof of the house, others in the verandah. The ladder leading up to the house was also guarded, and so were all parts of the house by which he was likely to force an entrance. As for *Danjai's* wife, they hid her beneath some mats and sheets in the room, and twelve brave men stood round her with their swords drawn, ready to save her life even at the cost of their own.

Just before dark they heard the roar of the tiger in the distance. Though still a long way off, the sound was very terrible to hear, and the men all grasped their swords and spears firmly, for they knew the tiger would soon be upon them.

Once more the tiger's roar sounded, nearer and clearer, and then they heard him crash through the leaf thatch roof and fall into the room. There was a great commotion among the men, but though all tried to kill the animal, none could see him. Soon after they heard a roar of triumph from the tiger outside the house. They lifted up the mats and sheets which covered *Danjai's* wife, and there they saw her headless body! The Were-Tiger had succeeded in his attack, and had carried off the head of his victim!

Loud was the weeping and great the lamentation over her dead body. She was so young to die! And what death could be more terrible than hers whose head had been carried away by her murderer! All in the house mourned her loss for seven days and during that time the house was very quiet, as all lived in their separate rooms, and did not come out into the common verandah to do work or to talk to each other.

The death of his wife grieved *Danjai* very much. But though his grief was great, his desire for revenge was greater still.

Very early on the morning of the next day, *Danjai* started after the tiger. The drops of blood which had fallen could plainly be seen on the ground, and he had no difficulty in finding out in what direction the tiger had gone. On and on he tracked the blood till he came to a cave at the foot of a high mountain. The sides of the cave were splashed with blood, so *Danjai* walked boldly in, determined to revenge the death of his wife. It was not very dark in the cave. In the distance he could see an opening and he hurried towards it.

He came out on the other side of the mountain, and saw a large plantation of sugar-cane and plantain trees. Beyond this he saw a long Dyak house.

"This," he said to himself, "is surely the abode of the Were-Tiger, and soon I shall have an opportunity of revenging the death of my wife."

He planted two sticks across one another in the ground to mark the opening in the mountain, so that he might not miss his way on his return, and then he boldly walked towards the house.

He followed a path through the sugar-cane plantation—still tracking the drops of blood upon the ground—until he came to the ladder leading up to the house. He was so anxious to attack his wife's murderer, that he did not pause to ask—as is the usual Dyak custom—whether he might walk up or not, but went straight on into the house. Men sitting in the verandah asked him, as he passed them, where he was going and what he wanted, but he did not answer them. His heart was heavy within him, thinking of his dead wife, and wondering whether he would be able to accomplish his task, and whether he would succeed in leaving the house as easily as he came in. But he was determined to avenge his wife's murder, and he would not shrink from any difficulties in the way.

He stopped at the room of the head of the house, and a girl asked him to sit down, and spread a mat for him. He did so, and the girl went into the room to fetch the brass vessel containing the betelnut ingredients which the Dyaks love to chew. As he sat down, he saw drops of blood on the fire-place, and looking up he noticed a fresh head, still dripping with blood, among the other skulls hanging there. He recognised it at a glance—it was the head of his loved wife!!

The girl came out with the brass vessel of betelnut and said: "Help yourself *Danjai*. We did not expect you to visit us so soon. Please excuse me for a little while, I have to attend to the cooking. But you will not be alone for my brother will soon be back. He has only gone to the plantation to fetch some sugar-cane."

So *Danjai* sat on the mat by himself, thinking what he was to do next and what he was to say to his wife's murderer when he came in. Soon the Were-Tiger arrived, carrying on his shoulder a bundle of sugar-cane.

"I am very pleased to see you *Danjai*," he said, "would you like some sugar-cane? If so, help yourself."

Danjai was so sad thinking of his wife, that he did not notice how curious it was, that they should know his name when they had never seen him before. He did not feel at all inclined to eat sugar-cane, but lest his host should think he had come to kill, and to put him off his guard, he pretended to eat a little. He heard the Were-Tiger say to his sister in the room, that she was to be sure to have enough food cooked, as *Danjai* would eat with them that evening. Then he left them and went to the river to bathe.

The sister came out of the room, and spoke to *Danjai*, who was still sitting in the verandah, and asked him to come into the room as she had something to say to him.

"Yes, *Danjai*," she said to him in a kind tone of voice, "I know of your trouble and I am sorry for you. However, if you follow my advice, all will be well. You must be careful, for my brother is easily put out, and has no scruples about killing any who displease him. Even our own people here hate him, for he is so merciless; but no one dare attack him, for all fear him greatly. Now listen attentively to what I have to say. When I put out the plates of rice in the room presently, do not take the one he tells you to have: take any of the others, for the one he wishes you to have is sure to contain some poison. Later on, when you retire to rest, do not spend the night on the mat spread out for you, but sleep somewhere else, and put the wooden mortar for pounding paddy on the mat in your stead: and so again on the second night, place the wooden mill for husking the paddy on your mat: and on the third night a roll of

the coarse matting used for treading paddy. If his three attempts to kill you are unsuccessful, then he will be in your power and will do what you command. But even then there is still danger, and you must not do anything rash, but ask my advice again later on. But go outside now into the verandah, for I think I hear my brother returning from his bath. I must make haste and put out the food for you all to eat."

Soon the Were-Tiger came in and sitting on the mat by *Danjai* asked him the news and how matters were in his country. *Danjai* answered little for he was very sad, besides his host always laughed at him whenever he spoke. The fact was that he was amused at the idea of the man, whose wife he had killed, sitting in his verandah and talking to him in a friendly way.

The sister came out of the room and asked them in to have their meal. All happened as she said it would. *Danjai* remembered her advice and did not take the plate of rice his host offered him. But he was too sad to eat.

In the evening *Danjai* and the Were-Tiger sat by a fire in the verandah. Over this fire hung several human heads. The tears came into *Danjai's* eyes as he sat there and saw the head of his dear wife being scorched by the fire. He felt inclined there and then to grasp his sword and attack the murderer of his wife; but he restrained himself remembering the advice of the Tiger's sister.

The Were-Tiger said to him with a nasty laugh, "What is troubling you that you should weep?"

"I am not troubled about anything," said *Danjai*, "but the smoke of the fire is too much for my eyes, and it makes them water and feel sore."

"If so," said his host, "let us put out the fire and retire to rest, as it is very late."

Two mats were spread out for them, one on each side of the fire-place, and they lay down to sleep. But *Danjai* kept awake, and when his companion was asleep, he rose and placed the wooden mortar for pounding paddy on his mat, and covered it over with a sheet; and he himself retired to a safe place as he was advised to do by the Tiger's sister. He watched to see what would happen and he was not disappointed. Not long after, he saw the Were-Tiger wake up and fetch a sword, and walk

up to the place where he was supposed to be asleep. With the sword he made two or three vicious cuts at the wooden mortar and said:

"Now *Danjai*, this will settle you. You will not think of revenging yourself on me any more."

Then *Danjai* cried out from where he was, "What is the matter? What are you doing?"

"Oh *Danjai*! Is that you?" said his host, "I did not mean to hurt you. I had a bad dream, and I sometimes walk in my sleep. How lucky it is you were not lying on the mat! I should have certainly killed you, and I should never have forgiven myself for doing so. Please understand I meant no harm to you, and let us lie down to rest again."

On the two following nights the Were-Tiger attempted to kill *Danjai*, but failed each time, because following the advice given him, *Danjai* placed first the wooden mill for husking the paddy on his mat, and next a roll of coarse matting used for treading paddy. His host made the same excuse for his strange behaviour each time.

On the morning of the fourth day, after the Were-Tiger had left the house to see whether any fish had been caught in his fish trap, his sister asked *Danjai* to come into the room as she had something to say to him before he left to return home.

"Now *Danjai*," she said, "as I told you before, since my brother has not been able to kill you these three days, he is in your power. After breakfast ask him to accompany you and show you the way back to your country. When you have both come to the further end of the sugar-cane plantation, ask him to sit down for a little while, and say you would like to eat some sugar-cane, before you leave him and go on your journey alone. When he gives you the sugar-cane, ask him to lend you his sword, giving as an excuse that yours is not sharp enough for peeling the sugar-cane, or that it is stuck fast in its sheath and cannot be drawn. When he hands you his sword, you must attack him with it and kill him. My brother is invulnerable to any other sword but his own. When you have killed him, cut off his head and bring it to me, and I will give you your wife's head in exchange for it. On no account are you to take his head away with you. If you do so, I will follow you to your country and take my revenge."

A few minutes after this conversation, the Were-Tiger returned with a basket full of fish. Some of these were soon cooked, and they sat down to breakfast.

Soon after they had eaten, *Danjai* told his host that he must be returning to his own country, and asked him to accompany him and show him his way back. So they started together and walked through the sugar-cane plantation.

Just as they came near the end of it, *Danjai* asked his companion to stop. He said he would like to have some sugar-cane before going on.

"I am sorry I did not offer you any," said the Were-Tiger: "it was very forgetful of me. Never mind, I will at once cut down some sugar-cane for us."

When he had brought the sugar-cane and had finished peeling the piece he wanted for himself, *Danjai* said to him,

"Please lend me your sword, for mine is stuck fast in its sheath and I cannot draw it out."

The Were-Tiger suspecting nothing, handed the sword to him, and *Danjai* began peeling his sugar-cane.

Just then the Were-Tiger turned round to look at his house, and *Danjai* seizing his opportunity, gave him a blow with the sword in his hand and killed him. Then he cut off the head and carried it back with him to the house he had just left.

When he came near, he saw the sister watching for his return, and standing at the top of the ladder leading up to the house. He followed her into the house, and gave her the head of her brother.

"You ought to be quite satisfied now, *Danjai*," she said, "for you have killed my brother, and have taken your revenge for the death of your wife. I want you to promise me certain things before you go. First of all, you must not let anybody know that you have killed my brother. Next, on your return, you must go on the war-path and bring back to me the head of a woman, to enable me to put away the mourning of myself and my relatives, for the death of my brother. And when you return, I hope you will take me with you to be your comforter in the place of your dead wife: so that I may have some one to care for me, now that my brother is dead. And I give you now some locks of my hair, to be used as a charm to

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make you invisible to the enemy, when you are on the warpath. Lastly, I advise you and your people, never to eat or to take away any fruit you may find lying about in the jungle, on the stump of a tree, or on a rock, without knowing for certain who put it there and to whom it belongs, or making sure that it has fallen from some tree near. This must be remembered from generation to generation. Whoever disobeys this advice will be punished either by death, as in the case of your wife, or in some other dreadful way. You may now have the head of your wife to take back to your country; and as you may have forgotten the way, I will send one of my slaves with you, to show you in what direction you are to go."

As she finished speaking, she handed him his wife's head, and *Danjai* started off at once for he was anxious to get back.

He reached his house late that same evening. All his friends were glad to see him come back safe and sound. They had given up all hope of seeing him again. They were also pleased to see he had been successful in bringing back the head of his dead wife.

Soon after *Danjai's* return from the Were-Tiger's country he gathered all his followers together and told them that he intended going on the war-path. As soon as they were able to get everything ready, they started for the enemy's country. They were very successful and succeeded in taking many heads; but *Danjai*, protected as he was by the charm which he had received from the Were-Tiger's sister, was more successful than the others. They returned with much rejoicing, and a great feast was held in honor of their victory. The human heads were placed on a costly dish, and the women carried them into the house, with dancing and singing.

A few days after, *Danjai* started to fulfil his promise to the Were-Tiger's sister. He brought her back with him as his wife, and they lived very happily together for many years.

This story explains why the Dyaks, even at the present day, dare not eat any fruit they may find lying on the stump of a tree, or on a rock in the jungle. They fear that evil will happen to them, as it did to *Danjai's* wife.

II.

The Story of *Siu*,

Who first taught the Dyaks to plant Paddy and to observe the Omens of Birds.

Many thousands of years ago before the Paddy plant was known, the Dyaks lived on tapioca, yams, potatoes and such fruit as they could procure. It was not till *Siu* taught them how to plant Paddy that such a thing as rice was known. The story of how he came to learn of the existence of this important article of food, and how he and his son *Seragunting* introduced it among their people is here set forth.

Siu was the son of a great Dyak chief, but his father died when he was quite a child, and at the time this story begins, he lived with his mother and was the head of a long Dyak house in which lived some three hundred families. He was strong and active and handsome in appearance, and there was no one in the country round who was equal to him in strength or comeliness. When he was ready to go on the warpath, he was the admiration of all the Dyak damsels. On such occasions he appeared in a many coloured waistcloth, twelve fathoms in length, which was wound round and round his body. On his head was a plaited rattan band in which were stuck some long feathers of the hornbill. His coat was woven of threads of bright colours. On each well-shaped arm was an armlet of ivory. To his belt was fastened his sword and the many charms and amulets that he possessed. With his spear in his right hand and his shield on his left arm, he presented a splendid type of a Dyak Warrior. But not of his bravery nor of his deeds of valour against the enemy does this tale relate. It only gives an account of an adventure of his which ended in his discovery of Paddy.

One day *Siu* proposed to the young men of his house that they should take their blowpipes with them and go into the jungle to shoot birds. So one morning they all started early. Each man had with him his bundle of food for the day, and each went a different way, as they wished to see, on returning in the evening, who would be the most successful of them all.

Siu went towards a mountain not far from his house. He wandered about the whole morning in the jungle, but strange to

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say, he did not see any bird nor did he meet with any animal. Everything was very quiet and still. Worn out with fatigue, he sat down to rest under a large tree, and feeling hungry, he ate some of the food he had brought with him. It was now long past midday, and he had not been able to kill a single bird! Surely none of the others could be so unfortunate as he!

He determined not to be beaten by the others, and after a short rest, he started again and wandered on in quest of birds. The sun had gone half-way down in the western heaven, and he was beginning to lose heart, when suddenly he heard not far off the sound of birds. He hurried in that direction, and came to a large wild fig tree covered with ripe fruit, which a large number of birds were busy eating. Never before had he seen such a sight! On this one large tree, the whole feathered population of the forest seemed to have assembled together! On looking carefully, he was surprised to see that the different kinds of birds were not all intermingled together as is usually the case. Each species was apart from the others. Here he saw a large flock of wild pigeons on one branch, and next to them were the parrots, all feeding together but keeping distinct from them. Upon this tree there were hornbills, wood-peckers, wild pigeons and all the different kinds of birds he had ever seen.

He hid himself under the thick leaves of a shrub growing near, very much pleased at his luck. He took a poisoned dart and placed it in his blow-pipe, and taking good aim, shot it out. He had aimed at one bird in a particular flock, and he hit it. But that bird was not the only one that fell dead at his feet. To his astonishment, he saw that many of the other birds that were near it were killed also. Again he shot out a dart, and again the same thing happened. The bird that was hit fell down dead, and with it the birds that were near it. In a very short time, *Siu* had killed as many birds as he could carry. As the little basket, in which he had brought his food, was too small to hold them all, he set to work and made a large coarse basket with the bark of a *Pendok* tree growing near. Then he put his load on his back and started to return home, glad that he had been so successful.

He tried to follow the way by which he had come, but as he had not taken the precaution to cut marks in the trees he passed,

he very soon found himself in difficulties. He wandered about, sometimes passing by some large tree, which he seemed to remember seeing in the morning. He climbed up a steep hill and went several miles through a large forest, but did not find the jungle path which he had followed early in the day. It was beginning to grow dusk and the sun had nearly set.

"I must hurry on," said *Siu* to himself, "in the hope of finding some house where I can get food and shelter. Once it is dark, I shall be forced to spend the night in the jungle."

He hurried on and luckily came to a part of the jungle which had lately been a garden.

"There must be some path from this garden," said *Siu* to himself, "leading to some house;" and he began to walk round it.

He soon found an old disused path which he followed and which led him to another path. By this time it was quite dark, and *Siu* made haste to reach the Dyak house which he felt sure was not very far off. He soon came to a well, and not far off he saw the lights and heard the usual sounds of a Dyak house. He was glad to think that he would not have to spend the night in the jungle, but would be probably able to get food and shelter at the house.

He stopped to have a bath and hid the birds he was carrying and his blow-pipe and quiver in the brushwood near the well, hoping to take them with him when he started to return the next morning.

As he approached the house, he could hear the voices of the people there. When he came to the bottom of the ladder leading up to the house, he shouted, "Oh! you people in the house, will you allow a stranger to walk up?" At once there was dead silence in the house. No one answered. Again *Siu* asked the same question, and, after a pause, a voice answered, "yes; come up!"

He walked up into the house. To his surprise, he saw no one in the open verandah in front of the different rooms. That part of a Dyak house, usually so crowded, was quite empty. Nor did *Siu* hear the voices of people talking in any of the rooms. All was silent. Even the person who answered him was not there to receive him.

He saw a dim light in the verandah, further on, in the middle of the house, and he walked towards it. He wondered what could have happened to all the people in the house, for not long before he heard many voices.

"This seems to be a strange house," he said to himself. "When I was bathing and when I walked up to the house, it seemed to be well inhabited, but now that I come in, I see no one, and hear no voice."

When *Siu* reached the light, he sat down on a mat there. Presently he heard a woman's voice in the room say, "Sit down *Siu*: I will bring out the *pinang* and *sireh* to you."

Siu was very pleased to hear a human voice. Soon a young and remarkably beautiful girl came out of the room with the chewing ingredients, which she placed before him.

"Here you are at last, *Siu*," she said. "I expected you would come earlier. How is it you are so late?"

"I stopped a little while at the well to have a bath, as I was hot and tired."

"You must be very hungry as well," she said, "wait a moment while I prepare some food for you. After you have eaten we can have our talk together."

When *Siu* was left to himself, he wondered what it all meant. Here was a long Dyak house, built for more than a hundred families to live in, and yet it seemed quite deserted. The only person in it appeared to be the beautiful girl who was cooking his food for him. Then again, he wondered how it was she knew his name and expected him that day. All these things filled him with wonder and surprise.

"Come in, *Siu*," said the voice from the room, "your food is ready."

Siu was very hungry and went in at once, and sat down to eat his dinner.

When they had done eating, she cleared away the plates and put things back into their places and tidied the room. Then she spread out a new mat for him, and brought out the *pinang* and *sireh*, and bade him be seated, as she wished to have a chat with him.

Siu had many questions to ask, and as soon as they were both seated, he began :—

"Why are you all alone in this house? This is a long house, and many families must live in it; where are the others? Why is everything so silent now? I am sure I heard voices before I entered the house; but now I hear no sound."

"Do not let us talk about this house or the people in it for the present. I would much rather talk of other matters. Tell me of your own people, and what news you bring from your country."

"There is no news to give you," *Siu* replied. "We have been rather badly off for food, as our potatoes and yams did not turn out so well this year as we hoped."

"Tell me, what made you come in this direction and how it was you found out this house."

"While I was hunting in the jungle to-day, I lost my way. After wandering about a long time, I found a path which I followed and came to this house. It was kind of you to take me in and give me food. If I had not found this house, I must have died in the jungle. To-morrow morning I must ask you to show me the way to my country, and also I must beg of you some food for my journey back. My mother is sure to be anxious about me. She is left all alone, now that I am away. My father died a long time ago, and I am her only son."

"Do not go away as soon as to-morrow morning. Stay here a few days at any rate."

At first *Siu* would not consent, but she spoke so nicely to him that she succeeded in persuading him to stay there at least a week. Then he went out to the verandah, and she brought out a mat for him to sleep on and a sheet to cover himself with. As *Siu* was very tired, he soon fell sound asleep, and did not wake up till late on the following morning.

He saw some little children playing about the next day, but he did not see any grown up people. He went into the room to have his morning meal, but saw no one there, except the girl he had seen the evening before. He felt very much inclined to ask her again where the people of the house were, but he did not do so, as she did not seem inclined to speak about them.

Now though *Siu* knew it not, this was the house of the great *Singalang Burong*, the Ruler of the Spirit World. He was able to metamorphose himself and his followers into any

form. When going forth on an expedition against the enemy, he would transform himself and his followers into birds, so that they might travel more quickly. Over the high trees of the jungle, over the broad rivers, sometimes even across the sea *Singalang Burong* and his flock would fly. There was no trouble about food, for in the forests there were always some wild trees in fruit, and while assuming the form of birds, they lived on the food of birds. In his own house and among his own people *Singalang Burong* appeared as a man. He had eight daughters, and the girl who was cooking food for *Siu* was the youngest of them.

The reason why the people of the house were so quiet, and did not make their appearance, was because they were all in mourning for many of their relatives who had been killed some time back. Only the women and children were at home, because that same morning all the men had gone forth to make a raid upon some neighbouring tribe, so that they might bring home some human heads to enable them to end their mourning. For it was the custom that the people of a house continued to be in mourning for dead relatives, until one or more human heads were brought to the house. Then a feast was held, and all mourning was at an end.

After *Siu* had been in the house seven days, he thought he ought to think of returning to his own people. By this time he was very much in love with the girl who had been so kind to him, and he wished above all things to marry her, and take her back with him to his own country.

"I have been here a whole week," he said to her, "and though you have not told me your name, still I seem to know you very well. I have a request to make and I hope you will not be angry at what I say."

"Speak on; I promise I will not be angry whatever you may say."

"I have learnt to love you very much," said *Siu*, "and I would like to marry you if you will consent, so that I shall not leave you but take you with me, when I return to my own land. Also I wish you to tell me your name, and why this house is so silent, and where all the people belonging to it are."

"I will consent to marry you, for I also love you. But you must first promise me certain things. In the first place, you must not tell your people of this house and what you have seen here. Then also you must promise faithfully never to hurt a bird or even to hold one in your hands. If ever you break this promise, then we cease to be man and wife. And of course, you must never kill a bird, because if you do so, I shall not only leave you but revenge myself on you. Do you promise these things?"

"Yes" said *Siu*, "I promise not to speak of what I have seen here until you give me leave to do so. And as you do not wish it, I will never touch or handle a bird, and certainly never kill one."

"Now that you have promised what I wish, I will tell you about myself and the people of this house," said the maiden. "My name is *Endu-Sudan-Galinggam-Tinchin-Mas* (the girl Sudan painted like a gold ring), but my people call me by my pet names *Bunsu Burong* (the youngest of the bird family), and *Bunsu Katupong* (the youngest of the *Katupong* family). This house, as you noticed, seems very empty. The reason is that a month ago many of our people were killed by some of the people of your house, and we are all still in mourning for them. As you know, when our relatives have lately died, we stay silent in our rooms, and do not come out to receive visitors or to entertain them. Why are your people so cruel to us? They often kill our men when they go out fishing or hunting. On the morning of the day on which you arrived, all the men of this house went on the war-path, so as to obtain the heads of some of the enemy to enable us to put away our mourning. With us as with you it is necessary that one or more human heads be brought into the house, before the inmates can give up sorrowing for their dead relatives and friends. You see us now in the form of human beings, but all the people in this house are able to transform themselves into birds. My father *Singalang Burong* is the head of this house. I am the youngest of eight sisters: we have no brother alive. Our only brother died not long ago, and we are still in mourning for him, and that was the reason why my sisters did not come out to greet you."

Siu heard with surprise all she had to say. He said to himself that it was lucky he did not bring up to the house the

basket of birds which he had killed in the jungle, and that he had hidden them with his blow-pipe and quiver containing poisoned darts, in the brushwood near the well. He determined to say nothing about the matter, as probably some of her friends or relations were among the birds that were killed by him.

So *Siu* married *Bunsu Burong* and continued to live in the house for several weeks.

One day he said to his wife:—"I have been here a long time. My people must surely be wondering where I am, and whether I am still alive. My mother too must be very anxious about me. I should like to return to my people, and I want you to accompany me. My mother and my friends are sure to welcome you as my wife."

"Oh yes: I will gladly accompany you back to your home. But you must remember and say nothing of the things you have seen in this house. When shall we start?"

"We can start early to-morrow morning, soon after breakfast," answered *Siu*.

They started early the next day, taking with them food enough for four days, as they expected the journey would last as long as that. *Siu's* wife seemed to know the way, and after journeying for three days, they came to the stream near the house, and they stopped to have a bath. Some of the children of the house saw them there, and ran up to the house and said:—" *Siu* has come back, and with him is a beautiful woman, who seems to be his wife."

Some of the older people checked the children, saying:—"It cannot be *Siu*: he has been dead for a long time. Don't mention his name, for if his mother hears you talk of him, it will make her very unhappy."

But the children persisted in saying that it was indeed *Siu* that they had seen. Just then *Siu* and his wife appeared, and walked up to the house.

Siu said to his wife:—"The door before which I hang up my sword is the door of my room. Walk straight in. You will find my mother there, and she will be sure to be glad to welcome you as her daughter-in-law."

When they came into the house, all the inmates rushed out to meet them, and to congratulate *Siu* on his safe return.

They asked him many questions :—where had he been living all this time ; how he came to be married, and what was the name of his wife's country. But *Siu* answered little, as he remembered the promise he had made to his wife, that he would not speak of what he had seen in her house.

When they reached the door of his room, *Siu* hung up his sword and his wife went into the room. But she did not see his mother as she was ill and was lying in her curtain. Then *Siu* followed his wife into the room and called out "Mother, where are you? Her is your son *Siu* come back!"

But his mother made no answer, so he opened her curtain, and saw her lying down, covered up with a blanket. She had been so troubled at the thought that her son was dead, that she had refused to eat and had become quite ill.

She would not believe that her son had really returned alive, and she said, "Do not try to deceive me; my son *Siu* is dead."

"I am indeed your son *Siu*, and I have come back alive and well!"

"No!" she replied, "my son *Siu* is dead. Leave me alone, I have not long to live. Let me die in peace and follow my son to the grave."

Siu then went to the box in which his clothes were kept, and put on the things that his mother had often seen him wear. Then he went to her again and said, "Even if you do not believe that I am your son, at any rate you might turn round and look at me, to make sure that I am not your son."

Then she looked at him, and saw that it was indeed her son. She was so pleased at his return that she soon recovered from her illness, which was really caused by her sorrow and refusal to eat. *Siu* told his mother of his marriage, and she welcomed his wife with joy.

The women all crowded round *Siu's* wife and asked her what her name was. She answered *Endu-Sudan-Galingam-Tinchin-Mos*. (The girl Sudan painted like a gold ring). They looked at her in surprise; they had never heard of such a name before.

"Where do you come from?" they asked. "What is the name of your country?"

"*Nanga Niga Bekurong Bebali nyadi Tekuyong Mabong,*" (The mouth of the hidden Niga stream changed into the Mabong snail),* was the reply.

They were astonished at her answer! They had never heard of such a country. They asked her of her people, but she would not say anything more of herself or speak about her people.

Everybody admired the great beauty of *Siu's* wife. No more questions were asked of her, as she seemed unwilling to answer. Her parentage remained a mystery.

In process of time *Siu's* wife bore him a son whom they named *Seragunting*. He was a fine child, and as befitted the grandson of *Singalang Burong*, he grew big and strong in a miraculously short time, and when he was three years old, he was taller and stronger than others four times his age.

One day as *Seragunting* was playing with the other boys, a man brought up some birds which he had caught in a trap. As he walked through the house, he passed *Siu* who was sitting in the open verandah. *Siu* forgetting the promise he had made to his wife asked him to show him the birds, and he took one in his hands and stroked it. His wife was sitting not far off, and saw him hold the bird and was very much vexed that he had broken his promise to her.

She got up and returned to her room. *Siu* came in and noticed that she was troubled and asked her what was wrong. She said that she was only tired.

She said to herself:—"My husband has broken his word to me. He was done the thing he promised me he would never do. I told him he was never to hold a bird in his hands, and that if he did such a thing, I would leave him. I cannot stay here in this house any longer. I must return to the house of my father *Singalang Burong*."

She took the water vessels in her hands, and went out as if to fetch water. But when she came to the well, she placed the water vessels on the ground, and disappeared in the jungle.

In the meantime *Seragunting*, tired with his play came back in search of his mother. She was very fond indeed of him, and

*The Dyaks are fond of rhyming names, which often have no special meaning.

he expected her to come to him as soon as he called out to her. But he was disappointed. No one answered his call, and when he looked in the room, she was not there. He asked his father where his mother was, and he told him that she had just gone to the well to fetch water and would soon be back.

But hour after hour passed, and she did not return to the house. So *Seragunting* began to be anxious, and asked his father to accompany him to the well to look for her. At first his father refused to do so, but when he saw his son crying for his mother, he went with him to the well. They found the water vessels there, but saw no signs of her.

"Your mother is not here, *Seragunting*," said *Siu*. "Perhaps she has gone to the garden to get some vegetables for our dinner. Let us go back to the house. If your mother is not back, early to-morrow morning, we will go and look for her." So they both returned to the house, taking back with them the water gourds which *Siu's* wife had left at the well.

Early the next morning, *Seragunting* and his father went in search of her. They took with them only a little food, as they expected to find her not very far off. But they wandered the whole day and saw no signs of her. They spent the night under a large tree in the jungle. Early the next morning, they were surprised to find a small bundle of food, wrapped up in leaves, near *Seragunting*. This food was evidently meant for him alone, as it was not enough for two, but he gave some of it to his father, who ate sparingly of it, so that his son might not be hungry. They wandered on for several days, and every night the same strange thing occurred—a bundle of food was left near *Seragunting*. *Siu* suggested to his son that they should return; but *Seragunting*, who during the journey had grown up into a strong lad with a will of his own, would not consent to do so, as he was determined to find his mother.

They wandered on for several days, deeper and deeper into the jungle; but could find no signs of her whom they sought. At last they came to the sea-shore. Here they rested for some days, in the hope that some boat might pass. Still, as before, each morning a bundle of food was found by *Seragunting*. If it were not for this food, they would have long ago died of starvation. On this food they managed to live, waiting

hopefully to see some boat appear to take them on their journey.

One day as *Seragunting* was watching, he heard the sound of paddles, and saw in the distance several long boats approaching. He hailed the first, and asked the men in it to take him and his father with them. The boat made for the shore, but the man in the bows recognised the two wanderers, and shouted out:—"It is *Siu* and his son *Seragunting*: do not let them come into the boat." The boat went on and left them to their fate. The same thing happened in the case of each of the other boats. As soon as *Siu* and his son were recognised, no one would help them.

Now these were the boats of the sons-in-law of *Singalang Burong*:—*Katupong*, *Beragai*, *Bejampong*, *Papau*, *Nendak*, *Pangkak*, and *Embuas*. They were not pleased at their sister-in-law marrying a mere mortal like *Siu*, and so refused to help him and his son.

The next day *Seragunting* saw what seemed to be a dark cloud come towards him over the sea. As it came nearer, it took the form of a gigantic spider, carrying some food and clothes.

"Do not be afraid," said the Spider, "I have come to help you and your father. I have brought you food and clothing. When you have had some food and changed your clothes, I will take you across the water to the land on the other side. My name is *Emplawa Jawa* (the Spider of Java). I know your history, and I will lead you to your mother whom you seek."

After they had eaten and put on the new clothes brought them, the spider told them to go with him across the sea. They were not to be afraid, but to follow his track, not turning to the right hand nor to the left. They obeyed his words. Strange to say, the water become as hard as a sandbank under their feet. For a long time they were out of sight of land, but towards evening they approached the opposite shore, and saw a landing place where there were a large number of boats. Not far off where several houses, and one longer and more imposing than any of the others. To this house the Spider directed *Seragunting*, telling him that he would find his mother there. The Spider then left them. As it was late, they did not go up to

the house that evening, but spent the night in one of the boats at the landing place. Among the boats were those belonging to the Sons-in-law of *Singalang Burong* which had passed *Siu* and his son as they waited on the sea-shore for some boat to take them across the sea.

When *Seragunting* and his father woke up next morning, they saw that the road leading up to the house had sharpened pieces of bamboo planted close together in the path, to prevent their walking up it. As they were wondering what they were to do next, a fly came to *Seragunting* and said:—

“Do not be afraid to walk up. Tread on the spikes that I alight on; they will not hurt you. When you come to the house you will find swords with blades turned upwards fastened to the ladder. Tread on the blades that I alight on and walk boldly up into the house.”

They did as the fly advised them, and were not hurt. The bamboo spikes crumbled under their feet, and sword blades they trod on were blunt and harmless.

The people of the house took no notice of them, and they sat down in the verandah of the house. Then the fly came to *Seragunting* and whispered to him:—“You must now follow me into the room. Your mother is there, lying in her curtain. I will point out to you which it is, and you must wake her up and tell her who you are. She will be very pleased to see you. Then when you come out into the verandah and see the sons-in-law of *Singalang Burong*, you must greet them as your uncles. They will disown you and pretend that you are no relation of theirs. But do not be afraid. You will be victorious in the end.”

Seragunting followed the fly into the room and went to the curtain on which it alighted. He called out to his mother, and she awoke and saw with joy her son. She embraced him, and he said to her:—

“How is it you went away and left us? We missed you so much, and were so sorry to lose you, that my father and I have been travelling for many days and nights in search of you. Now our troubles are over for I have found you.”

“My dear son,” she said as she caressed him, “though I left you I did not forget you. It was I who placed the food by you

every night. I left your father because he broke the promise he made to me. But you are my own son, and I have been wishing to see you, ever since I left your house. It was I who sent the Spider to help you and show you your way here. My love for you is as great as it ever was. We will go out now into the verandah, and I will introduce you to your uncles and aunts and to your grandfather. They may not welcome you, because they were opposed to my marriage to your father. But do not be afraid of them. We will be more than a match for them all."

Then she spoke to her husband *Siu*, whom she was glad to meet again. All three then went out into the verandah, which was now full of people. *Seragunting* called the sons-in-law of *Singalang Burong* his uncles, but they refused to acknowledge that he was their nephew.

They proposed several ordeals to prove the truth of his words, that he was indeed the grandson of *Singalang Burong*. In all of these *Seragunting* came off victorious.

As the men and boys were spinning their tops, they asked *Seragunting* to join them. He had no top of his own, so he asked his mother for one. She took an egg and uttered some mysterious words over it, and immediately it became a top. This she gave to her son, who went and joined the others in the game. Whenever *Seragunting* aimed at a top, he always hit it and smashed it in pieces. None of the others were a match for him. In a short time, all the tops except that of *Seragunting* were broken in pieces.

Then they suggested a wrestling match. *Seragunting* was quite ready to try a fall with any of them, old or young. Some of their best wrestlers came forward. The first two were overthrown so easily by him, that the others saw it was no use their attempting to wrestle with *Seragunting*.

As a last trial they proposed that all should go out hunting. Here they hoped to be more fortunate. All the sons-in-law of *Singalang Burong* took their good hunting dogs with them, confident of success. *Seragunting* was told that he could have any of the other dogs left in the house. There he saw a few old dogs, weak and useless for hunting. With these he was expected to compete against the others, and if he was not successful, both he and his father were to be killed! *Seragunting*

consented even to such an unfair ordeal as that. He called to him an old sickly looking dog, and gently stroked it. At once it became young and strong! While the others went forth into the jungle with a pack of hounds, *Seragunting* was only accompanied by one dog. In the evening *Katupong*, *Beragai*, *Bejampong* and the others all returned unsuccessful. Soon after, *Seragunting's* dog appeared chasing a huge boar which made a stand at the foot of the ladder of the house. *Seragunting* asked the others to kill the beast if they dared. The spears cast at it glided off, and left the beast unharmed. Some of those who were rash enough to go near the animal, had a close escape from being torn in pieces by its tusks.

Seragunting armed with nothing better than a little knife belonging to his mother, walked up to the infuriated animal, and stabbed it in a vital part, and it fell down dead at his feet.

After these marvellous feats, all were compelled to admit that *Seragunting* was a true grandson of the great *Singalang Burong*. They all acknowledged him as such, and he was taken to his grand-father, who was pleased to see the lad and promised to help him throughout his life.

But *Siu* was unhappy in his new home. He could not help thinking of his mother whom he had left alone, and he was anxious to return to his own people. He begged his wife to accompany him back to his old home, but she refused to do so. It was decided that *Siu* and his son should stay in the house of *Singalang Burong* till they had obtained such knowledge as would be useful to them in the future, and that then they were to return to the lower world, bringing with them the secrets they had learnt from those wiser and more powerful than themselves.

All the people of the house were now most kind to *Siu* and his son, and were most anxious to teach them all they could. They were taken on a war expedition against the enemy, so they might learn the science and art of Dyak warfare. They were taught how to set traps to catch deer and wild pig. They were shown the different methods of catching fish, and learnt to make the different kinds of fish-trap used by the Dyaks of the present day. They remained in *Singalang Burong's* house that whole year, so that they might have a complete

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and practical knowledge of the different stages of paddy growing.

When the year was ended, *Seraqunting's* mother took him and *Siu* to see her father, *Singalang Burong*, so that they might receive from him his advice, as well as such charms as he might wish to give them before they left to return to the lower world of mortals.

Singalang Burong was sitting in his chair of state, and received them most kindly when they came to him. He bade them be seated on the mat at his feet, as he had many things to say to them. Then he explained to *Siu* and his son who he was, and the worship due to him, and they learnt also about the observance of omens, both good and bad.

"I am the Ruler of the Spirit World," said *Singalang Burong*, "and have the power to make men successful in all they undertake. At all times, if you wish for my help, you must call upon me and make offerings to me. Especially must this be done before you go to fight against the enemy, for I am the God of War and help those who pay me due respect."

"You have learnt here how to plant paddy. I will give you some paddy to take away with you, and when you get back to your own country, you can teach men how to cultivate it. You will find rice a much more strengthening article of food than the yams and potatoes you used to live upon, and you will become a strong and hardy race.

"And to help you in your daily work, my sons-in-law will always tell you whether that you do is right or wrong. In every work that you undertake, you must pay heed to the voices of the sacred birds:—*Katupong*, *Beragai*, *Bejampong*, *Papan*, *Nendak*, *Pangkas*, and *Embuas*. These birds, named after my sons-in-law, represent them and are the means by which I make known my wishes to mankind. When you hear them, remember it is myself speaking through my sons-in-law for encouragement or for warning. Whatever work you may be engaged in—farm work, house-building, fishing or hunting—wherever you may be you must always do as these birds direct. Whenever you have a feast, you must make an offering to me, and you must call upon my sons-in-law to come and partake of the feast. If you do not do these things, some evil is sure to happen to you. I

am willing to help you and to give you prosperity, but I expect due respect to be paid to me, and will not allow my commands to be disobeyed."

Then *Singalang Burong* presented them with many charms to take away with them. These were of various kinds. Some had the power to make the owner brave and fortunate in war. Others were to preserve him in good health, or to make him successful in his paddy planting and cause him to have good harvests.

Siu and *Seragunting* then bade their friends farewell, and started to return. As soon as they had descended the ladder of the house of *Singalang Burong*, they were swiftly transported through the air by some mysterious power, and in a moment they found themselves at the bathing place of their own house.

Their friends crowded round them, glad to see them back, safe and well. They were taken with much rejoicing to the house. Friends and neighbours were told of their return, and a great meeting was held that evening. All gathered round the two adventurers, who told them of their strange experiences in the far country of the Spirit Birds. The charms received from *Singalang Burong* were handed round for general admiration. The new seed paddy was produced, and the good qualities of Rice as an article of food explained. The people congregated there had never seen paddy before, but all determined to be guided by *Siu* and *Seragunting*, and to plant it in future. The different names of the Sacred Birds were told to the assembled people, and all were warned to pay due respect to their cries.

And so, according to the ancient legend, ended the old primitive life of the Dyak, when he lived upon such poor food as the fruits of the jungle, and any yams and potatoes he happened to plant near his house; the old blind existence, in which there was nothing to guide him; and then began his new life, in which he advanced forward a step, and learnt to have regularly, year by year, his seed-time and harvest, and to know that there were unseen powers ruling the Universe, whose will might be learnt by mankind, and obedience to whom would bring success and happiness.

Note.

On receiving the above legends from Mr. Gomes I pointed out to him the curious fact that in the first legend the tiger—a beast quite unknown in Borneo—plays a prominent part, and suggested that this story may have been of Malay origin. He replies by referring to A. H. Everett's paper on the Tiger in Borneo, in *Journal 5*, p. 157, and says "the 'Tree-tiger' *Felis marmorata* is common enough. The Dyaks call it by a distinctive name 'Kemaung dau' or 'Kemaung raras' (dau and raras both being words meaning the branch of a tree). These would lead one to suppose that at one time they knew of some other species they called simply 'Kemaung.'" Everett refers to traditions of the animal also, among the Sea Dyaks. One may compare these traditions of an animal apparently absent from the country with those of the Mias (Mawas) of the Malay peninsula.

H. N. Ridley.

New Malayan Plants.

By H. N. RIDLEY.

The following plants apparently undescribed have turned up lately in various collections made in the Peninsula.

SCITAMINEÆ.

Zingiber Wrayii, Prain mss. A slender plant over a foot tall. Leaves elliptic, lanceolate, glabrous, 9 inches long, 3 inches wide, narrowed at the base but not petioled. Peduncle 4 inches tall covered with large loose sheathing leaves, spike three inches long, ovoid obconic. Bracts thin elliptic $1\frac{1}{2}$ inch long $\frac{1}{2}$ inch wide or less. Flowers solitary yellow. Bracteole spathaceous, lip spotted and marked with purple. Anther narrow linear, beak half an inch long.

Upper Perak at 300 feet elevation (Wray 3735). The only specimen I have seen is in poor condition but it seems a distinct plant from any described, from its rounded head of thin bracts, most of the allied species having cylindrical spikes.

Elettariopsis cyanescens, n. sp. Rhizome $\frac{1}{4}$ inch through, violet inside, covered with dry sheaths, stems 18 inches tall, rather slender base, olivaceous. Leaves 8, lanceolate acuminate glabrous 6 inches long $1\frac{1}{2}$ inches wide, hardly petiolate, ligule rounded short. Spike short, peduncle half an inch long covered with long dry lanceolate bracts $1\frac{1}{2}$ inches long, flowers four. Ovary oblong pubescent $\frac{1}{4}$ inch long. Calyx tube $1\frac{1}{2}$ inches long, pubescent at the base, apex long acuminate. Corolla tube narrow $\frac{1}{2}$ inch longer pubescent, lobes oblong half an inch long $\frac{1}{6}$ inch wide lip, oblong rounded 1 inch long. All white except the tip of the lip which is blue. Stamen oblong, crest moderately large, stigma large cup-shaped with pubescent edges.

This pretty species was collected by Mr. W. G. Napier on banks at Bukit Tanga, Seremban; it is nearly allied to *E. pubescens* but has much shorter flower spikes and quite glabrous leaves. The flowers when bruised became of a blue color, perhaps containing indigo.

ORCHIDÆ.

Dendrobium mellitum, n. sp. A very small epiphytic plant, stems few 4 or 5 inches long, very slender above the lowest two or three joints, swollen a little for $\frac{3}{4}$ inch length. Leaves few terete subulate, 3 inches long $\frac{1}{6}$ inch thick. Flower solitary subterminal, from a short raceme, with small bracts. Pedicel and ovary $\frac{1}{2}$ inch long thick yellow. Upper sepal ovate $\frac{1}{4}$ inch long, lateral sepals ovate falcate obtuse, mentum short broad and blunt. Petals narrower and shorter, all yellow. Lip three-lobed, lobes broad short curved tips rounded yellow veined with pink inside, midlobe oblong truncate, edged minutely lacinate veins and a patch in the centre pink, three parallel raised veins white on the disc. Anther oblong hemispheric brown, column face flat stained pink.

Johore, at Castlewood on the Sungei Tebrau, May 1903, I found a single plant of this very weak slender little orchid on a tree, and flowered it in the Botanic Gardens. It is allied to *D. clavator*, Ridley, a native of Perak, but has the base of the stem much less swollen, and an entirely different lip. Considering the size of the flower, half an inch across, it was wonderfully strongly scented of honey.

Thricospermum crassifolium, n. sp. An epiphyte on coffee bushes, stem 6 inches tall, thick, leaves close set, thick leathery oblong obtuse, tip rounded, 4 inches long $1\frac{1}{2}$ inches thick, sheaths under half an inch long purple, scapes 3 to 5 inches long stiff, base purple, raceme $1\frac{1}{2}$ to 4 inches long flattened. Bracts distichous $\frac{1}{4}$ inch long close set, ovary and pedicel $\frac{1}{4}$ inch long. Sepals linear caudate from a broader base $\frac{3}{4}$ inch long, petals narrower linear caudate, all bright pellow. Lip $\frac{1}{4}$ inch long, pubescent orange

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passing into cherry red at the tip. Spur saccate blunt, side lobes arched blunt, middle fleshy blunt ovate. Callus on the disc tongue-shaped rounded depressed in the centre, column white with rounded and broad wings. Anther hemispheric. Fruit linear angled, 3 inches long $\frac{1}{4}$ inch through.

On old coffee bushes at Castlewood, Johore. This is allied to *Th. Arachnites* which was common in the same place, but has the short stout leaves and stem of *Th. Scortechinii*. The flowers however are much smaller than any other of this group.

AMARYLLIDEÆ.

Curculigo megacarpa, n. sp. A large tufted plant with a stout stem. Leaves dark green oblong lanceolate acuminate glabrous 20 inches long, 3 inches wide, petiole 8 inches long. Peduncle 4 inches long tomentose with large lanceolate acuminate bracts at the base, lower ones hairy on the edge only, upper ones more hairy. Spike broad conic-cylindric 2 to 4 inches long. Flower 1 inch across. Sepals lanceolate acute $\frac{1}{2}$ inch long dirty yellow outside and hairy at the tip. Petals bright yellow, stamens yellow, filaments short, anthers oblong, wavy, hairy, beaked. Fruit 2 inches long, Indian-club shaped $\frac{3}{8}$ inch through at the base, white seeds very numerous angled ribbed black.

Perak, in forests on the Thaiping Hills at 2000 to 3000 feet elevation.

This seems to be common on the Thaiping Hills and has probably been hitherto overlooked or taken for a form of *C. latifolia*, but it can hardly be referred to that species, variable as it is. It is larger in all parts of the flower and fruit, the latter being very long club shaped.

BURMANNIACEÆ.

Burmannia oblonga, n. sp. A slender saprophyte 5 inches tall with numerous wiry roots. Stem sparingly or not at all branched. Leaves sheath-like, scales few and distant. Flowers one or two on the ends of the stem $\frac{3}{8}$ inch long and $\frac{1}{4}$ inch broad across the wings, tube narrow wings oblong with straight edges, angles rounded. Sepals and petals short blunt. Petals much the shorter.

Penang on rocks at 1500 to 2000 feet altitude (King's collector 2270.)

This plant should be sought again. It resembles the common *B. coelestis* in the form of its flowers, but is saprophytic. The very broad oblong wings of the perianth tube are very striking.

Since publishing the paper on *Burmanniaceæ* in *Journal* 22, p. 332, I have been able to add to this group of plants:—*B. Championii*, Thwaites. A small ivory white plant like *B. tuberosa*, Becc., but more compact, with a short thick root stock covered with scales. from the Laba river in Selangor, and two additional species of *Thismia*; *Th. grandiflora*, Ridl., with rather large pink flowers collected by Lieut. Kelsall on the Sembrong river in Johor; and *Th. chrysops*, Ridl., a very pretty kind from Mount Ophir with pink and chocolate flowers with a yellow ring round the mouth of the tube; and *Bagnisia crocea* of Beccari, a very oddly shaped little brown species met with in the Perak Hills.

DIOSCOREACEÆ.

Dioscorea tenuifolia, n. sp. Stems slender leaves mostly opposite thin glabrous elliptic cuspidate, base rounded 5 nerved 2 to 3 inches long an inch wide, petiole slender an inch long. Male panicle long and slender a foot or more, spikes slender one to three inches long, 3 or more in a whorl, rachis angled minutely pubescent. Flowers very small distant pubescent. Bracts shorter ovate. Sepals oblong ovate. Petals nearly as long oblong obtuse. Stamens 6, filaments fairly long.

Singapore on Bukit Timah (Ridley 4596.)

This wild yam is remarkable for its very thin leaves and slender stems. I have only met with a male plant but it seems very distinct from all other described species.

LILIACEÆ.

Ophiopogon Malayanus, n. sp. Stem erect stout 4 inches or more tall covered with the scariosus sheaths of the fallen leaves and emitting long woody roots. Leaves linear acumi-

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nate, falcate striate, glaucous beneath 9 inches long $\frac{3}{8}$ inch wide. Scape 4 inches long base nude. Flowers small white. Bracts 2, bases broad ovate, tips linear, outer one $\frac{1}{4}$ inch long. Pedicel longer. Sepals and petals ovate subacute $\frac{1}{2}$ inch long. Stamens connivent filaments very short, anthers lanceolate. Style terete longer.

Perak at Padang Rengas (W. Fox) Lankawi on Gunung Raya (Curtis 2643). The *Ophiopogons* are abundant in the mountainous regions of North India and China, but get very scanty further south, in fact this is the only one from the Peninsula except the little known and doubtful *O. prolifera* from Penang. Though perhaps as near the common and variable *O. intermedius* of India, it is very distinct in its tall stout stem, broad leaves and ovate petals and sepals.

Tupistra violacea, n. sp. Terrestrial stem short and stout, leaves broadly oblong oblanceolate acute narrowed gradually to the base, 3 feet long, 3 inches wide, dark green stiff, spike very dense about 8 inches high. Flowers sessile $\frac{1}{2}$ inch across, tube hemispheric violet, lobes oblong recurved darker. Anthers 6 sessile elliptic. Style cylindrical white, spotted with violet. Stigma club-shaped rounded obscurely three-lobed.

Perak, Bujong Malacca; Penang, Highlands (Curtis).

This *Tupistra* differs from the other Peninsular species, *T. grandis*, Ridl., in its smaller lighter colored flowers and the rounded club-shaped stigma which is flat and circular in *T. grandis*. Though not perhaps as striking as that species it is a pretty plant.

Dracaena conferta, n.sp. Stem 4 to 10 feet tall, little or not branched. Leaves narrow linear acuminate 24 to 27 inches long $\frac{3}{8}$ inch wide, base broadly sheathing, midrib very strong at the base, thinning upwards and disappearing before the tip. Raceme 2 feet long, erect, simple or occasionally branched, the base with numerous reduced leaves with broad bases, and acuminate upwards, peduncle rather stout with a few small sheathing leaves, inflorescence long dense. Flowers white, three or four in a tuft, with very short pedicels, and 2 or 3 ovate acuminate bracts $\frac{1}{2}$

inch long. Perianth tube $\frac{1}{4}$ inch long, narrow lobes linear $\frac{1}{4}$ inch long. Fruit globose as large as a pea.

Perak, Selama at 300 to 500 feet elevation (King's collection 3149); Thaiping Hills near the Tea Gardens. There is also a specimen in Cantley's collections without locality, either from Malacca or Sungei Ujong. This *Dracaena* is allied to *D. Porteri*, Bak., but has longer and stiffer leaves with a very dense raceme of flowers. It is known to Malays as "Poko San Juan hutan jantan."

Dr. penangensis, n.sp. A shrub about 8 or 10 feet tall, with the stem an inch through, leaves when young oblong petioled, adults shorter. Upper leaves lanceolate acuminate 6 to 7 inches long, 1 to $1\frac{1}{4}$ inch wide, petiole 1 inch long, sheathing at the base. Panicle erect 8 to 10 inches long with about eleven or twelve stiff branches four inches long or less with lanceolate acuminate bracts at the base $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Flowers in twos and threes on slender pedicels $\frac{1}{4}$ inch long. Perianth lobes narrow, white. Fruit as large as a cherry, 1 to 3 seeded, scarlet.

Penang at Batu Feringhi on the banks of the stream and at Highlands (Curtis 2369). Dried specimens of this often resemble those of *D. Mainyayi* our biggest tree *Dracaena*, but the living plant is much smaller and the leaves are very variable in form.

D. Jackiana, Wall. Cat. 5145. This plant obtained in Penang by Wallich was confused by Baker (Journ. Linn. Soc. XIV, 5-32) with *D. aurantiaca*, Wallich, under the name of *D. spicata* var. *aurantiaca*; and Hooker in the flora of British India puts it under imperfectly known species. I have not seen Wallich's specimens but Dr. Prain says that a plant collected on the Thaiping Hills by Kunstler (No. 2719) is exactly like the Wallichian plant. This plant is I think identical with a plant I collected in Pahang and described under the name of *D. longivolia* (Trans. Linn. Soc. III, 388). Hooker refers the Perak plant to Kurz's *D. pachyphylla*, an Andamanese plant, which however is probably distinct to judge from his description.

D. pendula, n.sp. A tall shrub with a moderately stout stem about 6 feet tall, leaves broadly oblong lanceolate acum-

inate narrowed to the base and subpetiolate. Petiole winged, 8 to 14 inches long $1\frac{1}{2}$ to $3\frac{1}{2}$ inches wide. Panicle graceful nodding 15 inches or more long with a few distant branches slender 7 or 8 inches long bracts small ovate lanceolate. Flowers in tufts of 2 or 3 distant white on pedicels $\frac{1}{4}$ inch long, slender $\frac{3}{4}$ to nearly an inch long split into segments for one-half their length; the lobes linear dilated upwards, stamens about as long, anthers oblong.

This fine plant grows in damp swampy spots in forests. I collected it in the Dindings on Gunong Tungal (No. 9448 of my collections) and have it also from Panchar in Malacca; and from Kwala Dipang and Gopeng from King's collections (Nos. 8279 and 4643). The Malacca specimens have broader and more distinctly petiolate leaves, and the panicle is stouter, but it appears to be specifically the same. It belongs to the *nutantes* section of *Dracaena*, in which the flowers are in long pendulous lax panicles.

Dracaena elliptica, Thunb. I found this common and variable plant growing abundantly in muddy swampy places along the Sungei Tebrau, this Easter. In this locality it had quite a different appearance from the common lowland dry forest form, being altogether a much larger and stouter plant, almost a small tree in fact.

We have now no less than sixteen species of *Dracaena* recorded from the Malay Peninsula, but there are doubtless more than this for I have seen several plants in our forests which appear quite distinct from any described, but of which I have not been able to obtain flowers.

COMMELINACEÆ.

Forrestia gracilis, n. sp. Stem creeping then ascending for about three feet a quarter of an inch through, twiggy dark green and glabrous, internodes 2 inches long terete. Leaves lanceolate acuminate narrowed into a winged petiole, dark green and glabrous above, velvety beneath, margined with red appressed hairs, 8 inches long 2 inches wide, petiole and mouths of sheaths hairy. Heads small

few-flowered; bracts ovate pubescent white with a green keel. Sepals oblong hooded ciliate white $\frac{1}{6}$ inch long; petals longer lanceolate acute white; stamens 6; filaments contorted with a tuft of white hairs on the top. Anthers ovate deeply grooved white. Style filiform flexuous acuminate. Stigma minute, ovary small covered with white hair; capsule oblong pink.

F. mollis, Clarke, Monogr. Commel. p. 236 (in part. not of Hasskarl).

Very common in woods, Singapore. Tanglin, Pulau Ubin (Ridley 4130), (Walker 155); Johore: Tanjong Bunga (Ridley 6320); Pahang: Pulau Tijau (2381, 2382); Malacca: Sungei Buluh (10512); Selangor: Kuala Lumpur, Sungei Ujong; Gunong Berumbun, (Cantley's Coll.); Dindings: Telok Sera, Kedah Peak.

It is curious that this our commonest species has escaped being described till now, but it seems to have been mixed up with the rarer *F. mollis*. It is known as "Setawa betina" and the Sakais use a decoction of its roots for rheumatism.

F. irritans, n. sp. Stem tall and stout $\frac{1}{2}$ inch through, leaves elliptic lanceolate with a broad flat petiole, acuminate 9 inches long, 3 inches across, hairy on both sides, sheaths $1\frac{1}{2}$ inches long, glabrous except for the hispid edges. Heads large and dense over an inch through, densely covered with red spiny hairs, sepals lanceolate covered with similar hairs. Stamens 6, anthers oblong, style filiform.

Selangor, on the Tras route at the 15th mile; Perak Bujong Malacca (Ridley 9784), Sungei Ujong, Bukit Kupayiang (Cantley's collection.) Rather rare in woods at an altitude of about 2,000 feet. A very distinct species, from its large globose heads of flowers covered densely with sharp pungent red spines. I have never seen fruit of it.

PALMÆ.

Pinanga Singaporensis, n. sp. Stems tufted dark green 6 to 15 feet tall $\frac{3}{4}$ inch through; internodes 8 inches long.

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Leaves concolorous or a little paler along the back about 3 feet long, sheath tubular, petiole 8 inches long, leaflets sigmoid acuminate about 13, sub-opposite, terminal one forked; 12 inches long by 3 inches wide or less, nerves 5 to 7. Spike branched erect 4 inches long, with 5 branches. Spathe thin boat-shaped papery with a short point brownish pink $1\frac{1}{2}$ inch long. Rachis cream color scurfy, flowers distichous. Males $\frac{1}{4}$ inch long, ivory white. Sepals very small acute. Petals oblique ovate acuminate much larger. Stamens 14 white, filaments very short, anthers oblong, no pistillode. Female petals and sepals broadly oblong pink, edges ciliate, stigma small, sessile papillose circular white.

This pretty palm occurs in Singapore in forests at Bukit Timah, Mandai, Stagmount and Selitar, and is No. 11267 of my collections. I have not seen it outside Singapore, and it is rather scarce there.

Ptychoraphis longiflora, n. sp. Habit and stems of *Pt. Singaporensis*. Leaf three feet or more long, rachis brown scurfy, leaflets linear acuminate 5-ribbed, alternate about 40 pairs 18 inches long, $\frac{1}{2}$ inch wide. Peduncle stout 1 inch long ribbed and scurfy, branches of inflorescence slender 4 or 5 scurfy, 6 or 7 inches long. Flowers in distinct pairs, one male and one female together about 20 pairs on a branch; males $\frac{3}{16}$ inch long, with two orbicular gibbous bracts at the base. Calyx lobes orbicular fringed. Petals lanceolate obtuse much longer. Stamens 6 shorter than the petals, filaments with a broad base narrowed upwards, anthers oblong dorsifixed. Pistillode conic stout as long as the stamens. Female flowers. Bract single small. Sepals orbicular ciliate. Petals ovate orbicular imbricate, pistil ovoid.

Johore on the top of Gunong Banang at Patu Pahat, (Rid'ey 1121). Besides this there are two other species of this genus described. *Pt. Singaporensis*, Becc., the Korintin palm, abundant in the South of the Peninsula, and *Pt. augusta* of the Nicobars, a plant of totally different habit. This new species closely resembles *Pt. Singaporensis*, but the petals of the male are very much longer.

Iguanura spectabilis, n. sp. Stem from 3 to 8 feet tall, tufted or solitary very stout over $1\frac{1}{2}$ inch through. Leaves entire and cuneate bilobed at the apex, margins crenulate toothed strongly ribbed, three or more feet long one foot across, petiole. Inflorescence from among the leaves, peduncle over a foot long with two sheaths 6 inches long, and a bract-like ovate acute leaf $\frac{1}{4}$ inch long above, branches stout ascending, six inches long, deep green. Flowers spirally arranged sunk in the rachis. Male, sepals ovate. Petals oblong acute twice as long $\frac{1}{2}$ inch long. Stamens 6, longer than the petals, filaments thick connate at the base with the long cylindrical obtuse pistillode. Females, sepals rounded, petals ovate rounded. Fruit elliptic tip curved, black when ripe, $\frac{3}{4}$ inch long, on the thickened rachis.

This superb palm known to Malays as the "Teruno" occurs on the Hermitage Hill in Perak, and at Bruas in the Dindings where it was first obtained by Mr. Curtis and later by myself, (No. 8403) of my collections. Young living plants sent home by Mr. Curtis were described by Dr. Masters in the Gardener's Chronicle (1898, XXIII, 258) under the name of *Geonoma Pynartiana*. In the Dindings it forms a bush with numerous short stems, on the Hermitage Hill I found it with a stout tall stem. It is a most beautiful palm when well grown, the broad leaves deep green when adult, and pink when first put out, making it most attractive.

I. ferruginea, n. sp. Stem slender, leaves 18 inches long, petiole four inches long, rachis red-scurfy, leaflets 5 or 6 pairs alternate trapezoid, base narrowed, apex acuminate, margins more or less toothed, 6 inches long 3 inches through. Spathes 6 inches long acuminate. Inflorescence on a peduncle 6 to 8 inches long, red tomentose, branches thick 9 to 11 some-times branched again, 6 inches long covered with red wool. Flowers scattered distichous in foveolæ, covered with red wool. Male flowers glabrous. Sepals ovate rounded, petals lanceolate ribbed, $\frac{1}{2}$ longer. Female flowers sepals similar, petals shorter and

blunter. Drupe cylindric curved, slightly narrowed towards the tip, black, half inch long. Seed cylindric acute curved rugose $\frac{3}{8}$ inch long; albumen equable.

On the Thaiping Hills common from about 2000 feet elevation upwards (10684; 11405 of my collection) and Bujong Malacca (Curtis 3164). This palm has the habit of *I. polymorpha*, Becc., but the stouter inflorescence on a longer peduncle and covered with red wool, the larger flowers, and curved cylindric fruit, make it very distinct.

The Iguanuras are not an easy group of palms to separate, as they are apt to be very variable especially in the form of the inflorescence. There appear to be seven kinds at present known from the Peninsula. The commonest species is *I. geonomaeformis*, Mart. A lowland species with usually one simple spike. Of this there are the following forms: (a) *typica*, with a simple stout tomentose spike, (b) *ramosa*, a similar spike but branched, with 2 or 3 branches, (c) *malaccensis*, with a slender glabrous simple spike (occasionally branched). The leaves of all these forms may be quite entire. *I. Wallichiana*, Hook fil., with a compound inflorescence of several slender branches, is allied to this latter form. It also varies in the form of the leaves. Two plants described by Hooker and Beccari from Scortechini's collection, viz., *I. diffusa* and *I. parvula*, appear to me to be forms of these species. The first is a large plant with an inflorescence more compound, the second a dwarf abnormal form. I have only however seen sketches of them and very little of the plants appears to have been collected. *I. corniculata* has also only once been collected. The fruit is curiously curved, and is possibly abnormal, *I. polymorpha*, Becc., including *I. brevipes*, Hook. fil., is a distinct plant, not rare on the Thaiping Hills. *I. ferruginea* is allied to it but seems to me to be distinct. *I. bicornis* has curiously bilobed fruit, and occurs also on the Thaiping Hills, but seems to be rare.

Livistona rupicola, n. sp. Stem short and thick about 3 feet long and 6 inches through, densely covered with brown fibers from the leaf sheaths. Leaves orbicular about 2 feet across with about 12 leaflets rather narrow very acumi-

nate tips setaceous; petiole slender 20 inches long nearly thornless. Spadix slender, much branched. Spathes split striate cuspidate dark brown, the two basal ones three inches long, upper ones slightly dilate cuspidate. Branches many long slender with many very long and slender sinuous spikes 1 to 2 inches long, lengthening to 4 inches in fruit. Bracts at the base of the branches linear narrow caducous. Flowers very small globose; sepals rounded gibbous. Petals similar. Staminal crown with 6 subulate teeth.

Selangor Limestone rocks at the Kuala Lumpur caves (8285 of my collection), Lankawi Islands, (Curtis).

This charming palm, the Serdang Batu of the Lankawi Islands, is probably the smallest species of the genus. It is remarkable for its very short thick stem densely covered with brown fibres, the remains of old leaf sheaths. The inflorescence is also very small for the genus. It grows on the limestone rocks of the Selangor caves from the lower part to the top of the cliffs.

Licuala longepedunculata, n. sp. Stem 2 to 8 feet tall, 1 to 1½ inch through, leaves 4 to 5 feet long orbicular, lobes 6 or more narrowed at the base and broadened upwards with broad blunt teeth 15 to 16 inches long and 3 inches across at the tip, deep green, petiole slender not thorny. Inflorescence slender 3 feet or more long, peduncle broad flattened at the base, quite glabrous over 2 feet long, sheaths distant long, spikes 3 inches long, in fours. Flowers scattered over ½ inch long, rachis moderately stout, calyx urn-shaped sessile not lobed. Petals lanceolate obtuse.

Perak, Gunung Batu Putih (Wray 254) (King's Coll. 8148). I only know this species from the above mentioned collections. Beccari labels it "*L. glabra*, foliis latioribus," but it is certainly very distinct from *L. glabra*.

L. (Pericycla) paniculata, n. sp. Leaf large, lobes 2½ feet long, rather narrow, with short teeth ½ inch broad. Inflorescence panicle wide-spreading 3 feet long, spathes 6 not split, the lowest 8 inches long ½ inch wide, upper part reddish, upper spathes shorter dilated upwards. Branches

panicled, spikes long and slender 5 to 7, glabrous or scurfy, 7 inches long or less. Flowers scattered sessile $\frac{1}{8}$ inch long. Calyx cylindric with a broad base, truncate obscurely and irregularly lobed glabrous. Petals short and broad ovate acute. Staminal ring with 6 teeth. Pistil sometimes bilobed, stigma lateral.

I collected a specimen of this on the Hermitage Hill in Perak, and have never seen it since, and unfortunately omitted to record the size of the plant. It is evidently allied to *L. pericycla*, Zipp., *Pericycla penduliflora* of Blume, a native of New Guinea, from which it differs in having solitary sessile, not stalked flowers in pairs. The panicled inflorescence is unique in Malay Licualas as at present known, and is the characteristic of the section *Pericyclus* of which the New Guinea species is the only other one known. It is to be hoped that any one visiting the Hermitage Hill will recollect this curious plant and bring full details of its habit and size.

Calamus aquatilis, n. sp. Stem fairly stout about 30 feet long covered with dense bristle-like black spines. Leaf large flagelliferous armed with copious black spines in short rows, petiole a foot long stout black rounded, edge armed with spines of different sizes flattened 2 inches long or less, those at the base black long or slender, leaflets numerous equidistant linear acuminate 1 foot long an inch broad, bristles short scattered along the edges and back, flagellum 4 feet long, hooks in half whorls numerous. Panicle very large and stout, lower sheaths tubular an inch through with numerous decurved spines single or in twos and threes black tipped, chiefly on the back and sides on the upper part. Branches about 2 feet long, secondary spathes tubular unarmed an inch long, male branchlets numerous 6 inches long, spathels tubular about $\frac{1}{2}$ inch long, spikes subdistichous recurved $\frac{3}{8}$ inch long green. Spathellules saucer-shaped with a small ovate limb, sepals oblong lanceolate. Petals as long oblong lanceolate thicker. Stamens, filaments rather long slender, anthers long narrow. Female branchlets 2 to 3 inches long, spathels funnel-shaped. Spathellules

small saucer-shaped. Flowers solitary, sepals ovate as long as the petals and quite similar. Fruit small globular beaked $\frac{1}{2}$ inch long scales in 6 whorls, rhomboidal as broad as long, yellow or brownish yellow, tips darker, grooved.

This rattan is common in tidal river swamps, and is known as "Rotan Bakau." There is a trade rattan of the same name but I am not yet certain that it belongs strictly to this plant. The general appearance of this species when out of flower is that of *Daemonorops angustifolius*. It does not seem to flower very frequently, as I have seldom found it in flower or fruit, abundant as it is, which is probably why it has never hitherto been described. Professor Beccari who is engaged on a work on our rattans to be published in the Annals of the Botanic Gardens of Calcutta, considers it to be quite a distinct plant from any described.

I have met with it in Singapore, on the Serangoon Road, and at Changi (6275 of my collections), Johore, Panchur on the Johore river; on the Sungei Tebrau river, and at Batu Pahat (11216), and in Pahang at Kuala Pahang.

AROLDEE.

Cryptocoryne purpurea. n. sp. Aquatic, stem creeping stoloniferous. Leaves ovate or elliptic ovate, base broad 3 inches long $1\frac{3}{4}$ inch wide, petioles 4 inches long, peduncle short about half an inch long, spathe 3 or more inches long, tube twisted $\frac{1}{4}$ inch through, white, limb ovate caudate $\frac{1}{2}$ to 1 inch long, half an inch wide deep purple brown with a yellow mouth, pustular, tail $\frac{1}{2}$ inch long, valve over the inflorescence oblong truncate pale yellow. Female flowers 6 to 8 connate in a circle, styles very short, stigmas discoid, neuters above the pistils 5 or more, nude portion of spadix slender. Male flowers few yellow obtuse, appendix small elliptic clubbed.

Johore, Kota Tinggi (4214 of my collections). This plant cultivated in the Singapore Botanic Gardens for several years, was sent to Kew Gardens where it flowered

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and was figured in the Botanical Magazine plate 7719 under the name of *C. Griffithii*. It is however quite distinct from that in its more numerous, female flowers, smaller appendix to the spadix, and much longer tube. It grows very readily in water, and is perhaps the easiest to cultivate. I have only seen it in the one locality mentioned, our commonest species being the short tubed *C. Griffithii*.

Typhonium fultum, n. sp. A small herb with a short stem above the ground propped on strong roots. Leaves 5 or 6 ovate or deltoid hastate 2 to 3 inches long 2 inches wide deeply cordate, apex acute, lobes rounded, petiole $2\frac{1}{2}$ inches long. Peduncle $\frac{1}{4}$ inch long, spathe with a green base dilated $\frac{1}{4}$ to $\frac{1}{2}$ inch long, limb 2 inches long $\frac{1}{2}$ inch broad; subacute or acuminate purple-veined, tip green. Spadix about as long. Appendage orange brown cylindric from a thick base tapering upwards, below a short nude portion. Male portion of about 6 rows of oblong yellowish anthers, then a longer nude portion. Neuters numerous horn-shaped white up-curved. Females in one whorl oblong, one ovuled.

Selangor at the limestone caves near Kuala Lumpur (8165) also found in Lankawi Islands by Curtis.

This odd little aroid is remarkable for the stem standing up supported on its roots above ground after the manner of a Pandanus, a habit not observed in any other species, the rest of them having small underground tubers.

T. filiforme, n. sp. A very small herb, tuber globose $\frac{1}{3}$ inch through. Leaves 2 or 3 deltoid hastate acuminate, lobes divaricate acute 2 or 3 inches long, $\frac{3}{4}$ to $1\frac{1}{2}$ inch wide, petiole slender 2 to 5 inches long. Peduncle $\frac{1}{4}$ inch long. Spathe 3 inches, base elliptic $\frac{1}{4}$ inch long olive green, limb linear very narrow, apex eventually coiled up yellowish spotted with red. Spadix very slender $3\frac{1}{2}$ inches long, appendix ochre yellow filiform nearly 3 inches long, male portion short below them a long slender nude portion, neuters filiform contorted long, female flowers few oblong.

I found this at the foot of the limestone cliffs at Kuala Dipang in Perak. It is evidently allied to *T. bulbiferum*, Dalz., of the Concan, differing in the absence of any trace of bulbils, the longer appendage and neuters, and longer bare space below the male flowers.

Amorphophallus Malaccensis, n. sp. Tuber 4 inches through hemispheric with a depressed top. Leaves not certainly known. Peduncle 7 inches tall rough. Spathe tube wide trumpet-shaped 3 inches long, limb broad rounded six inches long and as wide. Spadix longer, appendage fusiform acuminate 6 inches long rugose hollow, loose textured and fibrous within. Male portion one inch long anthers crowded oblong. Female portion $2\frac{1}{2}$ inches long. Flowers numerous, ovaries ovoid, style $\frac{1}{4}$ inch long.

I only know this from some dried specimens which were collected by a native collector on Bukit Panchor in Malacca. It belongs to the section including *Amorphophallus, Rex.*, and *campanulatus*, but is distinct in its longer peduncles, and longer narrower appendage. I have several times met with foliage of a plant very much resembling that of a *Rex* with a tall stout dark green scabrid petiole which may perhaps belong to this species. A very large spike of fruit over a foot longer with berries half an inch long which was obtained by Mr. Hervey on Bukit Payong in Malacca is very probably the fruit of this plant. It should be looked for again.

A. minor, n. sp. Tuber an inch through. Leaf petiole slender 9 inches long, blade three branched each branched again, leaflets numerous thin green (red when young) lanceolate acuminate inaequilateral 3 inches long by one inch wide, nerves numerous close joining an inner intramarginal one. Peduncle 8 to 12 inches long with loose brown sheaths at the base, the largest truncate 4 inches long. Spathe 3 to 4 inches long convolute at the base lanceolate acuminate 1 to $1\frac{1}{2}$ inch across. Spadix 3 inches long. Appendage cylindrical-conic an inch long. Male portion as long as the appendage. Flowers very numerous crowded. Females few. Style very short.

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Perak on the Thaiping Hills; and in Province Wellesley at Tasek Gelugor. This is allied to *A. sparsiflorus*. Hook. fil., differing in the shorter appendage and longer male portion of the inflorescence.

- A. carnea* n. sp. Tuber hemispheric 3 inches across. Leaf unknown. Peduncle 3 inches and a half long, smooth gray green with brown blotches, sheath at base 2 inches long. Spathe 5 inches long, loosely convolute at the base with a broad limb pinkish with brown blotches, paler within. Spadix rather longer. Appendix conic obtuse 3 inches long 1 inch through at the base fleshed low obscurely cancellate. Male portion 2 inches long stout greenish. Stamens densely crowded. Female portion ovaries shortly pedicellate, broad flask shaped, style short and thick. Stigma lobed.

Lankawi Islands (Curtis). This plant was flowered from a tuber brought in with tubers of *Arisaema* from Lankawi Islands, in the Penang Gardens. I have only seen a drawing of it but I know nothing quite like it.

- Alocasia ovalifolia*, n. sp. Stem about a foot tall, leaves ovate cordate acute dark green one to 2 feet long 5 to 12 inches wide with 20 pairs of nerves, petiole stout over a foot long. Peduncle six inches long or less. Spathe 3 to 6 inches long, tubular portion $1\frac{1}{2}$ inch long, limb 3 inches long $\frac{1}{2}$ inch wide oblong obtuse. Spadix slender, appendage cylindrical $\frac{3}{4}$ to 2 inches long. Male portion 1 inch long. Flowers oblong crowded, below them a nude portion. Female portion 1 inch long.

Johore, base of Gunong Panti; Selangor, Tras Route at the 15th mile (No. 8487), Ginting Peras, Bukit Kuta; Perak, Sungei Larut (Wray 2457), Larut Hills; Penang, Moniots Road (Curtis). Rather a dull looking *Alocasia* not uncommon in the hill woods.

- Pothos inaequalis*, n. sp. Stem rather slender much branched. Leaves elliptic oblanceolate with a long point and acuneate base intramarginal vein often far from the edge undulate with another very inconspicuous one close to the edge, main nerves often large and remote 4 to 7

inches long 1 to 2 inches wide. Petiole $\frac{1}{2}$ to 1 inch long sheathing to the thick knee which is half an inch long. Bracts several, upper one sheathing $\frac{1}{2}$ inch long, lower ones small. Peduncle $1\frac{1}{2}$ to 2 inches long fairly stout curved. Spadix an inch long cylindric dense flowered. Sepals cuneate with a broad flat triangular top. Pistil top broad rounded. Pahang, Pulau Tawar (2391).

P. ellipticus, n. sp. Stem fairly stout leaves elliptic cuspidate 5 inches long $2\frac{1}{2}$ inch wide, pale green when dry, keel stout, base rounded, inner intermarginal vein some way from the edge, outer one close to the edge, parallel nerves fine and close. Petiole 3 inches long sheathing rather broadly to the knee $\frac{1}{4}$ inch long. Peduncle stout 2 inches or less deflexed. Spadix nearly sessile $\frac{3}{4}$ to 1 inch long thick cylindric dense flowered. Flowers fairly large. Sepals oblong with a broad inflexed top. Stigma discoid shortly elevated. Fruit oblong $\frac{1}{2}$ inch long.

Pahang on the Pahang river, at Kuala Tembling and Pulau Tawar.

P. grandispatha, n. sp. Stem slender less than $\frac{1}{2}$ inch thick. Leaves lanceolate cuspidate 6 to 8 inches long, 2 to $2\frac{1}{2}$ inches wide, cusp $\frac{1}{2}$ inch long base narrowed blunt. Petiole 2 inches long sheathing rather broadly to the very short $\frac{1}{2}$ inch knee, sheaths eventually breaking up into fibres. Peduncle slender 2 inches long. Spathe broadly ovate acuminate, apparently purple in life, narrowed at the base $2\frac{1}{2}$ inches long 1 inch wide. Spadix very slender 1 inch long sessile. Flowers very small, sepals oblong truncate, style distinct with a small discoid stigma.

Penang, West Hill (Curtis). Allied to *P. brevistylus*, Engler. This plant is remarkable for its large spathe.

PANDANACEAE.

Pandanus immersus, n. sp. A stout pandan growing immersed in water, the stem rising but little above, leaves many feet long broadly linear 4 inches across, glaucous beneath, acuminate with a long point, thorns numerous brown. Female spike solitary on a stout flexuous peduncle 2 inches long $\frac{1}{2}$ inch through, oblong thick green 4 inches long $1\frac{1}{2}$

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inches through, carpels small with a very stout simple curved style $\frac{1}{2}$ inch long.

Selangor in the Labu River, forming dense thickets.

Native name "Mengkuang Ayer."

P. bicornis, n. sp. Stems short, only one or two feet tall. Leaves dark green glaucescent at the top of the stem 2 feet or more long 2 inches wide broadly linear and tapering quickly into a very thorny tail 3 inches long, edge and keel armed especially at the base with numerous recurved thorns. Female bracts broad ovate, outer ones rather abruptly acuminate 6 inches long with a slender point 2 inches long thorny, inner bracts obtuse, head solitary oblong rounded at the top 4 inches long and nearly as broad green, carpels nearly $\frac{1}{2}$ inch through $\frac{3}{4}$ inch long top broad free obscurely angled. Style broad short with two spreading short sharp horns with broad bases about $\frac{1}{2}$ inch long.

Perak, Thaiping Hills in dense forest at 2500 to 3000 feet altitude.

P. aurantiacus, n. sp. A large branching shrub with stems 2 or 3 inches through and about 12 feet tall. Leaves over 3 feet long, $1\frac{1}{2}$ inch wide, glaucous green, linear long acuminate, tips deflexed, with numerous close-set short thorns on the edge and keel. Female inflorescence with a stout rachis about a foot long and five globose oblong heads $2\frac{1}{2}$ inches long 1 inch through, orange colored. Carpels large $\frac{3}{4}$ inch long, apex conic ending in a long stout but not very hard beak.

Singapore, Bukit Mandai Road; Johore, Tanjong Bunga (6288 of my collection); Perak, Larut Hills; also in Sarawak.

This grows on swamps on river banks usually near the sea, and is known in Johore as "Pandan Akar". This may possibly be the *P. Yvoni* of Solms-Laubach (Linnaea XLII, 20) based on a plant collected by Yvan in Malacca, but the description is too poor to identify any pandan.

P. stelliger, n. sp. A slender stemmed pandan 4 to 10 feet tall, branched. Leaves linear acuminate shining grey green

over a foot long and an inch wide, the point narrow 3 inches long, thorns distant except at the point which is very thorny. Heads oblong ovoid 2 inches long and over an inch through in a cluster of four nearly sessile. Carpels $\frac{1}{4}$ inch through the style oblong, top square with from 3 to 6 horizontal points sharp and rough at the tip.

Selangor, on the Tras Route at the 20th mile (8775;) Perak, Thaiping Hills at 2500 feet altitude in forests.

This was referred to *P. minor*, Ham., by the Kew authorities but differs in the clustered heads of fruits and the curious style which is quite flat and square at the top with from 3 to 6 horizontally spreading points.

- P. glaucophyllus*, n. sp. Stems 10 to 12 feet tall $\frac{1}{2}$ to 1 inch through. Leaves crowded at the top 1 to 2 feet or more long 2 inches wide glaucous broadly linear oblong, tip abruptly acuminate, edge minutely denticulate rather flaccid, midrib prominent with very small thorns, capitulum globose 2 inches long on a stout peduncle about 3 inches long. Fruit rounded tapering into a stout upcurved simple spine $\frac{1}{6}$ inch long grooved above the tip acute.

Perak, Thaiping Hills in dense forests, about 2500 feet altitude. Rather local, growing in small patches. Allied to *P. parvus*, Ridl, but very much larger in all its parts.

- P. penangensis*, n. sp. A tall stout tree about 20 feet tall and four inches through the stem. Leaves very long linear acuminate 6 to 12 or 14 feet long 4 inches across often especially when young marbled light and dark green, edges and keel armed with stout thorns crowded towards the tip of the leaves. Heads 4 or 5 together on a short peduncle, green oblong 6 inches long, 3 inches through. Carpels an inch long, free portion conic angled $\frac{1}{3}$ inch long. Styles strong simple hard dark brown polished curved forward $\frac{1}{2}$ an inch long.

Penang Hill from the base to the top, in woods. This resembles *P. furcatus*, Roxb., in habit but has a compound inflorescence.

CYPERACEÆ.

Mapania triquetra, n. sp. Stem ascending or erect 6 inches tall, trigonous broad from the very broad leaf. Sheaths 12 inch long and one inch wide green edged with pink. Petiole green 2 to 3 inches long, blade oblong dark green above, paler beneath, base broad apex rounded ending abruptly in a tail $1\frac{1}{2}$ inch long, edges aculeate, whole blade 6 to 8 inches long, 2 inches wide. Scapes slender 3 inches long red. Head of flowers very small $\frac{1}{2}$ inch long narrow. Bracts shorter lanceolate red. Squamellæ 6, two outer ones with ciliate keels. Stamens three white anthers twisted linear oblong. Style long. Stigmas 3 short.

Woods, Dindings, Lumut (Ridley), Pangkor (Scortechinii); Negri Sembilan, Bukit Tumiang (Cantley's collection); Penang Hill (Curtis). Also in Sarawak.

This pretty and curious plant has been confused with the common *M. humilis*, Naves and Villar, but is really totally distinct in the broad triangular stem shorter and broader leaf blade and the very small head of flowers.

Notes on a Cruise in the Southern China Sea.

C. BODEN KLOSS.

In 1900 I spent about eleven weeks, including the months of August and September, cruising about with Dr. W. L. Abbott in his Schooner "Terrapin" which had just been launched. Our purpose was to make collections of mammals and birds and of any other objects zoological that might fall in our way. As the islands of the Southern China Sea amongst which the time was spent, have received either but scanty notice or none at all, the following pages may have some interest. Unfortunately for the present purpose I kept only the very baldest log of our voyage so that the account of our experiences, drawn up after an interval of three years, is far from being as satisfactory as I could wish.

I was unable to accompany the schooner when she sailed at the beginning of July so arranged to join her at Linga, and in the middle of the month therefore left Singapore in the *S. S. Malacca*.

We stopped a night at Rhio *en route* and I was thus enabled to get from the Resident a permit to travel in the Rhio-Linga Dependency in which the whole of our cruise was to take place. The town of Rhio is prettily situated and laid out, but very small and quiet; it possesses an hotel and a good fruit-market; every other one of its shops appears to be run as a pawn-broking establishment. A long walk in the surrounding country showed me nothing more inviting than clayey hills covered with bracken and the S'ndudu tree (*Melastomu polyanthum*), and everywhere dotted with Chinese tombs.

From Rhio to Linga—we called at Sinkep Island on the way with provisions for the tin mines—was, I think, four days steaming through smooth seas and green islands. The *Macassar* is an old wooden tub capable of doing about 7 knots in calm water with the wind astern. The only accommodation

she could offer was the open bridge crowded with natives, where I found room for a deck chair. Had this been all there would have been nothing to kick at, but unfortunately the vessel swarmed with a certain highly objectionable and active *Rhynchota* that spoilt all pleasure, and when I hailed with delight the appearance of the "Terrapin" lying off Tanjong Buton on the south side of Linga, I was, after four days of an inferno, in a state that I had never been in before and fervently pray never to attain again.

Linga.

Lying about mid-way between Singapore and Banka, Linga is an island of irregular shape about 33 miles in length in a north-west and south-east direction, and is surrounded by smaller islands of various sizes. Unlike its near neighbour Sinkep, it is not worked for tin, and is best known as being at one time the head quarters of the numerous pirates who used to ravage the western seas of the Malay Archipelago in the early part of last century.

The schooner had to anchor a mile or so from the land since off-shore for some distance extended banks of soft black mud through which we were compelled to wade when the tide was low while at other times the sea broke on them with some force for the roadstead is exposed to south-easterly winds. At Tanjong Buton were a few Chinese *kedais* and the house of a Dutch Assistant-Resident (now withdrawn) and from here a road had been made to the town of Linga.

The best collecting ground was on the outskirts of the village of Maruang, lying two or three miles away between the road and the sea. The surrounding country was, for the most part, a sago swamp, but in the fruit plantations of the Kampong certain birds and small mammals were numerous. The village itself consisted of a settlement of Sumatran Malays, the houses—about forty in number—built in two orderly rows with the mosque in the centre. The thousands of huge durian trees that surround it, were just then fruiting and at the little watch-houses in the plantations freshly fallen durians could be had in piles at a cent or two apiece while the few small steamers that call were constantly taking cargoes up to Singapore.

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Learning from the people of the village that flocks of fruit-bats visited their fruit-trees nightly, we, one evening when there was a little moonlight, went up the plantation for the purpose of obtaining specimens.

Accompanied by half the boys of the Kampong, we took up places beneath a huge rambutan tree—the gathering point of great numbers of bats—but for a time made very poor practice at the dark bodies flitting between the branches in the dim light. Swarms of mosquitoes did not help to improve matters. At length however I hit on a plan that gave better results; choosing a large bunch of fruit that was frequently visited, I rested my gun against a convenient tree-trunk and took careful aim at it. Holding the barrels steadily in position all I had now to do was to stand up and watch the target: whenever a bat settled on that particular bunch I pressed the trigger and the shot was invariably followed by a thud on the ground or crashing and squawking among the branches as a wounded animal dropped slowly downwards. In a couple of hours the boys had picked up a dozen specimens of *Pteropus vampyrus* with which we returned to the boat, leaving sundry others to be recovered on the morrow.

On the way back a bullet was kept in readiness for wild-pig. None were seen, however, though nightly rootings along the road showed their presence in the neighbourhood.

The following day was given over to the preparation of skins and skeletons from the specimens obtained.

The 24th of July, our last day in the island, was spent in visiting Linga Kampong to bid farewell to the Sultan and to buy supplies for the voyage ahead.

The town is distant about an hour and a half from the sea and is reached by a road constructed by the Dutch Assistant-Resident. Although roughly made it is passable for the Sultan's gharry and for the few local rickshaws which, old and dilapidated, generally traverse it at a walking pace.

For the first two miles it runs through a swamp planted with sago palms, then coming out on hard clay ground is bordered with scrub and lallang until near the town it passes through plantations of various fruit-trees, sugar-cane and bananas.

Although the actual control is in the hands of the Dutch from whom he receives an income of some \$80,000 a year, the Sultan of Linga is nominally ruler over neighbouring parts of Sumatra, all the islands between Sinkep and Singapore and all the various small groups in the Southern China Sea.

The town of Linga—his capital—is situated on the banks of a stream navigable by small praus at high water, about two miles from its mouth. To the north a fantastically split peak, the highest summit of the Linga group, rises to a height of 3,921 feet, densely covered with jungle and scrub and scarcely ever free from clouds.

The population of the town, Malays and Chinese, number about 6,000. All the houses are built on piles, those of the Chinese on a muddy expanse by the banks of the river which not infrequently overflows. A number of substantial brick buildings have at one time also been erected by them but are now in a ruinous condition.

The houses of the Malays, shaded by fruit trees, arecas and coco-palms were scattered about without regard to orderly arrangement. Amongst them stood the Sultan's school, which was apparently well patronised, and the Sultan's palace, a large and ugly barn-like structure of wood.

The Sultan was absent and we proceeded at once to the Chinese portion of the town to get through with our marketing.

The Chinese community is under a "Captain China" who in the Linga Sultanate is responsible to the Dutch only for the good behaviour of his charge and who collects for them the poll tax of \$3 a head every year.

The bazaar was of fair size and sold the usual merchandise found in such places that includes various articles ranging from a bottle of scent to an onion. Our requirements of rice, vegetables, curry stuffs etc., were soon satisfied and from the sarong shops kept by Klings we got a few European cotton sarongs for use on board. The Malays here were apparently like the lillies of the field. "They toil not neither do they spin," and it was with difficulty that we got from them even a few eggs and chickens.

We returned to the "Terrapin" by way of the river in a canoe with a small roof of kajangs. The water was very low

and paddling between muddy banks we were unable to see anything of the country on either side. Crocodiles are said to be numerous but none were met and after crossing the bar at the river mouth, we got up sail and in short time reached the schooner.

Previous to my arrival Dr. Abbott had made an expedition to the peak. He spent eight days in a hut built at an altitude of about 1000 feet and ascended on three occasions to 3000 feet, but each time the mist was so dense that he could not proceed higher. Animal life was remarkably scarce in the mountain forest; the lotong, however, was seen occasionally and at the highest elevation reached the "house" of a pig was found. Birds were very few in number. The mountain seemed to offer most attraction to a botanist: orchids occurred in great abundance.

In order to give a complete list of the mammals known from Linga I have included here the further material obtained by Dr. Abbott during a second visit to the island in 1901. All species that were described for the first time from both collections are distinguished by the addition of *sp. nov.*

1. *Semnopithecus maurus.*
2. *Macacus cynomolgus.*
3. *Pteropus vampyrus.*
4. *Tupaia tana.*
5. *T. malaccana.*
6. *Viverra tangalunga.*
7. *Arctogalidia simplex, sp. nov.*
8. *Tragulus javanicus.*
9. *T. pretiosus, sp. nov.*
10. *Sus vittatus.*
11. *Ratufa notabilis, sp. nov.*
12. *Sciurus vittatus.*
13. *Sciurus tenuis.*
14. *S. notatus.*
15. *Rhinosciurus laticaudatus*
16. *Mus lingensis, sp. nov.*
17. *M. fremens, sp. nov.*
18. *M. firmus, sp. nov.*

The birds of Linga show no peculiarities and do not differ from those occurring in the adjacent mainlands. The most complete collection recorded is that made by the native hunters of the late Mr. A. H. Everett. The list of species is given in "Novitates Zoologicæ."

Pulo Taya and the Nyamok Islets.

We left Linga at 2 a.m. on the morning of July 25th bound for a group of three small islands forty miles to the south-eastward. With the wind ahead all the way it was not until mid-day on the 26th that we anchored off Taya the largest of the three.

The island is fairly steep-to, of granite formation rising to a double peak about 600 feet high. It is about a mile and a half long north and south, oval in shape and covered with forest,

Landing on the east side on a sandy bay in a bight between the hills we found at the south end of the beach just within the jungle a spring of good water. Near the shore the bay was blocked up with coral over which at low tide we had to scramble. A little party of Orang Laut in their crazy praus, visiting the island for "ikan merah" for which it is well known, told us that rats, squirrels, and a "biawak" were to be got; but during the three occasions we were ashore we saw neither. The only birds obtained were the Nicobar (*Columas nicobarica*) and Nutmeg pigeons (*Myristicivora bicolor*), which last occurs on nearly all islands in this region: the glossy starling (*Calornis chalybeus*) with dark metallic green plumage and red irrides; a gaudy little sunbird (*Anthothreptes rhodolaema*), the Eastern reef heron (*Leptorodius sacer*), and *Halcyon chloris*, the blue-and-white kingfisher. Last and best of all was one specimen of *Columba grisea*, a bird of extreme rarity in collections.* In general appearance it is somewhat similar to the cream-and-black Nutmeg pigeon if the former colour were replaced by a pale grey.

On the Nyamok Islands about a mile north of Taya, two islets, the larger no more than two or three hundred yards in

* The British Museum Catalogue and Pigeons records a single specimen only.

diameter, we shot a blue-and-white king fisher and the reef heron.

These islets, neither of which is more than 150 feet high, are covered with thin jungle in which we saw several specimens of the Nicobar pigeon—the “burong mas” or golden bird of the Malays.

Taya was left at midday on the 28th and soon after making sail a squall from the south-west struck us. We ran before it, goosewinged with scandalised sails, the seas racing up behind and breaking in showers of spray under the counter. In the couple of hours it lasted we had made nearly twenty miles of our way to Pulo Pengiki Besar and afterwards sailing with a wind that allowed an easy course to be laid, anchor was dropped in a bay on the north side of the island at six o'clock on the evening of July 31st.

Pulo Pengiki Besar or St. Barbe Island.

Seen from a distance Pengiki appears like two or three separate islands, being lower at the centre than in the north-east and west. Its height is about 750 feet and it is covered with trees except at those places on the hill sides where large outcrops of rock occur. On such spots what vegetation exists is of a sparse and stunted type.

For some distance from the shore a reef filled up the bay where, indeed, the conditions are most favourable for the growth of corals. As one rowed over the pellucid green water, looking down they were to be seen in indescribable variety—great heads formed like massive boulders and tiny sprays no less delicate than a piece of moss. Corals of all shapes and shade were there—pink, grey, yellow, brown, blue, green, red, while among the crevices and branches swam fish as gorgeous as their surroundings—little fellows half an inch in length, blue, red, and yellow and others of larger size whose brilliancy of colouring passed almost unremarked by comparison with the grotesqueness of their forms.

In the centre of the bay and connected at low tide with the shore stood a rocky islet frequented by numbers of the white tern (*Sterna bergii*) with rose-tinted breasts from which the flush fades immediately after death.

From several small streams within the jungle good water may be obtained; they are, however, too weak to force a passage to the sea and must be looked for above the beach.

At Pengiki we spent two days but found the island, although of fair size—three miles long and nearly two wide—very scantily furnished with animal life. Pigeons both Nicobar and *bicolor*, were fairly numerous as were the glossy starling and blue-and-white kingfisher, but no other birds were seen with the exception of an eagle and a single grey wagtail. A python and viper were obtained and a glimpse was caught of a small animal in a tree that may have been a musang. Macaque monkeys (*cynomolgus*?) were, however, common and a new species of squirrel (*Sciurus miniculus*), a dwarf form of *S. prevostii*, was obtained.

The jungle was of fair height but possessed scarcely any undergrowth and all day long in the cool green light, swarms of bats (*Hipposideros barbenis*, sp. nov.) flitted about circling in and out amongst the trees.

When we left—in darkness at three o'clock one morning—the anchor proved to be jammed fast in the coral. It was only by setting full sail, after all other means were exhausted, that we were enabled to break it free.

The Tambelans.

The Tambelan group, about sixty miles to the northward, was the next place of call. With a wind abeam and a squall to help we arrived in twelve hours and anchored between two small islands, Selendang and Gilla. Exploring the former in the afternoon we got two or three birds. It possesses a curious cone-shaped bill about 700 feet high; Gilla is much lower. The scenery in the little strait between the two was very lovely—jungle and coco palms, granite boulders and yellow sand, bright blue sea and waves of white surf at the far end of the passage.

Early next morning (Aug. 4th) we boated over to Great Tambelan and met many canoes going off to the outlying islands. The sea was running very high a few hours later and the sail back again was somewhat exciting.

The Tambelan group consists of the three principal islands of Tambelan, Bunoa and Wai, with a number of smaller islands

massed fairly close together over thirteen or fourteen miles of sea. Only Great Tambelan is inhabited but on the others the people have numerous *ladangs* and *pondoks*. The population consists of Malays, 500-600 in number.

Bunoa.

As Gilla and Selendang were too small to be productive, after one more visit we transferred operations to Pulo Bunoa close by. The islands form roughly two parallel lines lying N. E. and S. W. Bunoa is the largest of the south-western group. It is about four miles long and two and a half wide, on the whole gently rounded in contour with gradual forested hills rising to a height of 900 feet. On the northern side is a bay that offers good anchorage in the S. W. monsoon.

We tramped through the island for three days after birds and leaats. A form of "Krah" was common and from those collected here, and later on in the Anambas, a new species *Macacus pumilus* has been described which differs from *M. cynomolgus* in being paler and much smaller. The little pied hornbill (*Anthracoceros concurus*) was numerous: their chattering resounded through the jungle like the yelping of puppies. Once in stalking them I lost my bearings and at last crossing a slight trail followed it up on the wrong hand and passing by a little stream that suddenly disappeared subterraneously, came on a ladder path and log-slide running down a steep hill side to a strange beach that in the end proved to be on the further side of the island. Thinking it easier to return to the boat by following the coast than by retracing my steps, I let myself in for a five or six miles scramble in mangroves and mud, over soft sand and rocks, across coral reefs and through water breast high before I found the schooner again.

Arenga palms are numerous in the jungle and are worked for sugar by the natives. The trees are tapped near the top and bamboo receptacles are fastened beneath the incisions to receive the sap. Here and there we came across the boiling-down furnaces that consisted of large flat iron pans raised above the fire on clay walls. Before concentration the sap is carefully strained through a bunch of fibre to remove impurities and is then boiled down either to a treacly consistency or to a still

greater density when it is poured into bamboo moulds and crystallizes into a dark brown sugar.

A coconut shell of the warm sweet liquid in its early stage is most refreshing during the course of a hard tramp and was always offered when we passed a concentrator at work.

Great Tambelan.

On the 8th of August we made sail at day-break and with a native pilot crossed to Tambelan Island and anchored in the harbour three hours later.

This, the largest island of the group, is nearly $4\frac{1}{2}$ miles long and roughly triangular. Near its north-east coast are several hills, the highest of which—Tambelan Peak—rises to an elevation of 1300 feet while a short distance to the eastward of it is Thumb Peak, a remarkable pointed hill 950 feet high. The island is nearly divided into two parts by an inlet of the sea which runs in a north-easterly direction into its western side. This creek is nearly a mile in width but is fringed and choked with reefs. The remains of a breakwater built of coral cross it about a mile and a half from the entrance. A stockade once ran behind this and a fort stood on the shore, all being constructed to defend the village which lies higher up, from the attacks of Illanum pirates who occasionally visited these islands years ago.

We threaded our way amongst the coral and anchored in a clear patch of water near a couple of small native schooners, well protected by reefs from any south-westerly swell and in sight of the Kampong. The conditions permitted some delightful baths in perfect safety for the Malays said crocodiles and sharks never ventured into the neighbourhood. The pilot refused money payment for his services but gladly received drugs for an ailing relative, and later when the people took to bringing us specimens they always preferred medicine of sorts by way of recompense.

We first landed on the southern side of the harbour and climbed a small hill of granite and laterite. It was covered with scanty scrub and absolutely devoid of life. A reward however lay in the view. Below the slope of the hill stretched the still green waters of the harbour, purple-patched with coral; on the further side sand, jungle and palms, while the Kampong—

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long line of brown houses on land and water, following the course of the shore—lay higher up the creek. Beyond rose the jungle and hills, with the quaintly-shaped Thumb Peak—abrupt and solitary—standing out prominently against the sky.

A white man is a bit of a curiosity in these parts and for the rest of the day it was but seldom that twenty or thirty heads were not poked through the skylight windows watching our goings-on.

Next morning we went up to the village to visit the Dato and show him a letter written by the Sultan of Linga who, under the Dutch, rules all these islands.

A roofed-in platform with benches and flight of steps forms a pleasant landing and lounging place before the village, near which was anchored a stranger vessel—a little prau about the size of our whaleboat packed with a large and unprepossessing family of Orang Laut.

From the *jambatan* we were led to the Dato. The village consists of about 250 houses threaded by tidy paths and supplied with water by numerous bamboo *penchurans* leading from the higher ground in the rear. No women were visible but from the houses came the clacking of numerous looms: good strong sarongs are made here, dyed, however, with aniline colours purchased in Singapore: indeed though Dutch possessions, the Straits dollar was the only coin current in all the islands of our cruise. Passing the mosque, a pucca triple-roofed structure of wood and stone, and a number of old cannon that lay scattered about, we reached the Dato's, a well-built shingle-roofed house, with a long enclosed verandah running its length, in which we were welcomed.

The Dato was an amiable old gentleman, treated by his people as he treated the Sultan's letter—with great respect. Chairs were arranged at one end of the room and when we took our seats the lower end was crowded by the populace while women stared through the latticed windows of the inner rooms. An official, bent double with respect, read the Sultan's *hukum*, which explained our object and recommended all assistance, and then the Dato and the audience descanted on the local fauna, its paucity in those islands and how much better off other places—Pahang, for instance—were in this res-

pect. On leaving, the hand-camera was brought into play for the first time and all the juveniles among our escort fled screaming.

The little community appeared to be very well off and was one of the few places remarkable for the absence of the ubiquitous Chinaman, a solitary trader of which race seemed to have been recently starved out. On the shores of the harbour twenty to thirty schooners of local construction were drawn up: these seemed to be owned by the villagers in general, and with them all the trade was done and all the produce shipped from time to time to Singapore direct.

Ship-building bulked large as an industry of the village and we saw half a dozen or more hulls from thirty to forty feet in length, in all stages of construction. These vessels are built of locally grown chengai and merbau and are fastened with tree-nails throughout. Each seemed to be the work of about a couple of men in partnership and takes two years or so to complete. A few frames are first set up and completely planked and afterwards the other ribs are fitted in until sufficient strength is attained. It was said that a 35 foot craft (10-tonner) could be purchased all complete for \$350, and although perhaps their lines were capable of some improvement they were fine roomy little boats strongly built of thoroughly sound material. The local canoe, however, was a thing of beauty: strongly built of two prettily contrasting white and brown hardwoods without a single nail, with upward-projecting stem and stern and gaudily painted bird's-head bracket on the bow to support the lowered sail and mast, it was as workmanlike as it was handsome. The sail was a square cotton lug slung by the middle of the yard and set with the forward end of the boom snubbed down to the lee-bow well forward.

Having sent the Dato a photograph of the "Ferrapin" we received a call one evening from him and his understudy to acknowledge the picture and to obtain a little medicine. Amongst other things he told us how in his boyhood the village suffered the last attack from pirates and how all the inhabitants were driven out by the raiders to a hill at the back of the island where they built a fort of refuge. In those days there were only about a hundred people on the group.

But little was to be obtained by way of supplies from the village. Coconuts and copra were plentiful, eggs and fowls scarce: we could get plenty of bananas and one evening bought from a canoe homeward bound from fishing, three splendid parrot fish (*Scarus sp.*), weighing together between sixty and seventy pounds for a dollar!

The jungle was intersected with paths leading to the arenga palms and trying-down sheds and by shooting along them and in the cocopalms we obtained a new squirrel (*Sciurus abbottii*), a pale form of *S. notatus*.

After investigating the birds and mammals on several occasions with good results, we devoted a morning to butterflies getting about a dozen species round the village and along the forest paths. The fauna of the island was neither numerous nor diversified and on the morning of the 15th we moved the schooner over to Pulo Wai, anchoring off its N. E. coast.

Pulo Wai.

This island is the most north-westerly of the group. It is about two miles long and rises in several peaked hills attaining near the eastern end a height of 1000 feet. Being farther from the Kampong than the others it is least visited but plantations of coconuts and bananas, plantains, yams and sweet potatoes are common on its hillsides, a good deal of which are cleared.

It provided us with a handsome squirrel (*Sciurus mimellus sp. nov.*) with black, chestnut and white pelage—a dwarf form of the well-known *S. prevostii*.

A walk across the island proved very bad travelling but from the hills a distant view was obtained of Gap Rock about twelve miles to the northeast. This remarkable islet consists solely of two huge boulders—the larger of which is 124 feet above the water—lying on a flat platform of rock utterly devoid of soil or vegetation.

This was the last of the Tambelans visited and I will therefore conclude this notice of them with a list of the principal collections.

Mammals.

1. *Macacus pumilus*, sp. nov.

2. *Pteropus lepidus*, sp. nov.
3. *Megaderma spasma*.
4. *Tupaia bunoe*, sp. nov.
5. *Tragulus* sp. (said to occur).
6. *Sciurus memellus*, sp. nov.
7. *Sciurus abbotii*, sp. nov.
8. *Mus tambelanicus*, sp. nov.

Birds.*

1. *Gracula javanica*.
2. *Eulabes javanicus*.
3. *Calornis chalybeus*.
4. *Hypothymis azurea*.
5. *Hirundo javanica*.
6. *Motacilla melanope*.
7. *Halcyon chloris*.
8. *Anthrococeros convexus*.
9. *Cypselus* sp.
10. *Osmotreron bicincta*.
11. *Carpophaga aenea*.
12. *Myristicivora bicolor*.
13. *Chalcophaps indica*.
14. *Calænas nicobarica*.
15. *Turtur tigrinus*.
16. *Esacus magnirostris*.
17. *Totanus hypoleucus*.
18. *T. calidris*.
19. *Lepterochus sacer*.

The Rocky Islets.

Eleven miles in seven hours is not good sailing but it was afternoon when we landed on the Rocky Islets—the Pulo Mandariki of the Malays. They consist of two small barren islets and a rock. The sea is steep to all round and the schooner lay on and off with a kedge anchor hanging down while we care-

* It is interesting to note that no birds smaller than the fly catcher have effected a lodgement on the Tambelan group.

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fully humoured the swell and jumped ashore on the larger of the two, which is northernmost. The central islet which is next in size is much more broken and is a wild confusion of little peaks and precipices.

Climbing to the top of our islet (134 feet) we found that quartz predominated in its formation, which presented an exceedingly rough surface where grew here and there only the scantiest tufts of coarse grass. Two or three dead bushes crowned the summit and everywhere the ground was fouled with the guano of sea-birds that use the rocks as a breeding place.

The air was full of squalling, squawking, croaking gulls and among the crevices of the island's surface we discovered numbers of nestlings, and a few eggs all added. The birds were of two kinds:—a black noddy with grey head (*Anous stolidus*) and a tern (*Sterna* sp.) with black head and wings, grey back and grey-white breast. The remaining fauna included fishing-eagles, crabs and a solitary bee. The mid-day sun, shining down on the bare rocks, made the heat, combined with the scent of the birds, overpowering and we soon left, having knocked over sufficient specimens for the collection in a very few minutes.

Saddle Island.

Instead of proceeding straight to the Anambas we stopped for a night and morning at Pulo Kayu Ara, a little island about half a mile long covered with jungle and thus contrasting strongly with the place we had just left. It is nearly 400 feet high and is formed of two round hills having a dip between that make together a contour from which it has gained its English name.

The feet of the hills were fringed with black rocks but between lay a delightful little beach inhabited by a pair of white-collared kingfishers, on which we landed and found the laying places and tracks of turtles: the sea, of wonderful limpidity invited to a bath. The only birds seen in the forest were fruit pigeons and glossy starlings,—the only terrestrial mammal a squirrel (*Sciurus klossii*), a small blue-bellied member of the *notatus* group. The trees bore considerable quantities of fruit,

particularly noticeable being wild nutmegs and mangosteens, the last of which seemed to form the principal food of the squirrels. To complete the tale of our acquisitions were the small fruit bat (*P. lepidus*) previously taken in the Tambelans, some geckoes and two or three tree-snails.

Waiting until the tide turned in one favour we left in the afternoon, bound for the Anambas, a hundred miles away. Until sunset next evening the wind held light but then with a series of squalls coming up from astern we made from six to seven knots an hour, the breeze constantly shifting a point and back and compelling us to make continual gybes. Late at night we entered the channel between Pulos Peling and Riabu and dropped anchor close to the former.

The Anambas Islands.

On the morning of the 17th it was evident that we were fortunate to have anchored when we did; for dead ahead, just a hundred yards away, an abrupt bit of coral reef on which the schooner could have piled up very awkwardly, lay five or six feet beneath the surface.

Pulo Peling, which we worked for a day, is only a small island without inhabitants where clearings were just being commenced; we saw no mammals except many monkeys, but got a little blue brown flycatcher (*Cyornis tickelli*) with reddish breast for the first time on the cruise.

Riabu, which we next prospected, is much larger, being high and about six miles in length. It possesses a very good bay affording excellent harbourage in the S. W. monsoon as it is only open between N. and W. As we rowed along the shore we shot a large "baiawak" from the boat and then landing found the country very rocky and densely covered with forest. Our best catch was a squirrel—the only one seen—a pale and rather small form of *Sciurus notatus*. It has been named *anambensis* and occurs on most of the islands of the Anambas group but the Riabu specimen differs from the others in having the audital bullæ markedly smaller.

At daylight on the 19th there was scarcely a breath of wind and after getting up anchor we nearly drifted on to the reef

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through which we had so nearly come to grief before, but missing it with the rudder by a bare yard we soon afterwards got a fair breeze and, running past eight or ten small islands, made Terempa, which is the chief kampong of the Anambas, by 2 p. m.

The Anambas Islands are situated in lat. 3 N., long. 106 E. and extend over an area 65 geographical miles long N. and S. and 55 miles wide. They practically form two groups of which, though the western includes the larger island, the other is greater in area. All the islands are hilly, covered with forest, and afford numerous bays and channels where safe anchorage may be found in spite of the coral reefs that occur everywhere. Although the population is mainly confined to the larger islands, Malays are thinly scattered over most of the rest and there are Chinese Settlements in either group.

Siantan.

Terempa lies in a little bay on the north coast of Siantan which is the largest of the easterly Anambas, having probably an area of about 20,000 acres: it is densely covered with heavy forest, is very hilly and rises 1855 feet.

The kampong is a thriving little place with a Chinese cemetery, twenty or thirty Chinese shops with galvanised iron roofs and a good proportion of its population Chinese. A small steamer the "Banka" calls once or twice a month and yet it is against these islands that the dear old China Seas Directory (3rd edition) still contains the antediluvian warning that "it is dangerous to land without due precaution, for the Malays who reside on them may probably massacre or make slaves of strangers if they perceive a convenient opportunity." *A propos* of this sort of thing I remember once asking a Danish sailor whom I met on the other side of Sumatra whether he used the English Admiralty publications for these seas, but the skipper of that very old-fashioned little barque the "Hans of Fano" shook his head and replied that he always consulted certain continental sailing directions as our own were far too obsolete and scrappy.

Terempa is built along the head of the bay and has a small saltwater creek opening out behind it. As one faces it from seaward an orderly street of Chinese stores with the opium-farmer's place and a Chinese school lie to the left with a few

Malay houses at the far end. In the centre is the Dato's house—a wooden building in civilised style; a large house belonging to the Sultan of Linga and then stretching away on the right the houses of the bulk of the Malays: behind the flat on which the village is built, hills covered with jungle and coco palms rise steeply in a half circle, the whole having a very pretty effect which, however, is quite matched by the view presented from behind the town from whence looking down the long slope of the hill one sees the roofs of the houses, the semi-circular bay with boats lying at anchor, and then across a strip of water the forested hills that rise opposite.

A mile and more to the north of Siantan lie the two fairly large islands of Mobur and Mata with a channel about a mile wide between them. Between Mata and Siantan runs a very pretty strait which although obstructed by many islets and shoals at its eastern end, has deep water in the west where Terempa Bay is situated. Not only in the latter itself can a vessel lie in deep water sheltered from all winds, but beyond the point forming its eastern shore is another bay where a ship can anchor in 10–15 fathoms near the beach, entirely land-locked. Better harbours on a small scale could not be wished for and wood and water are close at hand.

The Dato of Terempa was in an advanced state of consumption and in spite of possessing a new and rather showy house lived in a second more modest dwelling. He showed us specimens of black iron ore of which large quantities were said to occur in the hill behind the village.

We could get various supplies here, thanks to the presence of the Chinese; extremely good coconuts* were plentiful and water was at hand in a large pool on the beach. The only practicable shooting ground near at hand was mostly covered with small scrubby jungle in which we shot squirrels and a number of fairly common birds and trapped plenty of rats. I met with

*This group of islands would appear to be a convenient place for obtaining seed nuts to form a coco-palm plantation. The Malays always maintain, and apparently with some show of reason, that island nuts are far superior to those of the mainland. Some of the Anambas nuts are very good, in fact, almost equal those of the Nicobars: though small, they are extremely sweet and the deposit of flesh is very thick.

bees in this place and was put out of action for a day or two in consequence, for while chopping at a liana that crossed the path I disturbed a swarm that were clinging to it a little to one side. They were about me in an instant and though by retreating to the sea at an unaccustomed pace I shook off the majority, nevertheless those that had secured a hold made things sufficiently painful and my right hand and arm were so swollen that for a time I could do nothing with them.

The canoes of these islands were very similar to those of the Tambelans; they differed principally in having a much higher stem and stern and were shallower, lighter and narrower, with much less beam forward than aft, and they were propelled with a double-bladed paddle. The sampan used by the Chinese was of a very bulky model with an elongated and upward pointing prow: it sailed under a battened dipping-lug.

Having been told by a son of the Sultan of Linga who was staying in the village, of a large waterfall on the east side of Siantan we set out at sunrise one morning to visit it in the whale-boat. The wind was dead ahead and we had to pull all the way—about eight miles—but the result was well worth the labour. The way lay right up the channel between Siantan and Mata, then a short distance down the east coast and finally an approach by a passage through mangroves that enabled us to bring the boat to the very foot of the falls themselves. Bordered by jungle these fell in a series of cascades down a bare strip of rock about 400 feet high. There were twelve or thirteen falls in all and their chief charm lay in their variety—broad ribbons of foamy water slithering over smooth faces of rock, long threads dropping uninterruptedly from a height, and series of little cascades tumbling down flights of stone steps, while here and there in between were delightful cool-looking pools, seeming so inviting after our hot row that we feet compelled to have a swim, following the example of the fish that had somehow found their way there.

The raja had agreed to accompany us but was late in setting out, though he arrived before we left and we both started together to sail back, as this time the wind was fair. We were not long in company however, for the other boat—curiously, built in Singapore in the same yard as our own—a little larger

and with more sail soon left us behind and we reached home badly beaten.

The days between August 24th and September 5th were passed in visiting the northern island but on the latter date we sailed round Siantan and the islands extending from its south-east extremity since the channel on the north was untraversable, drifting on a reef on the way in a calm but easily getting off by the use of a kedge anchor, and in the evening putting in at Telok Ayer Bini, a bay on the south coast partially protected by an island at the entrance.

The shores rose very steeply and were uncleared except in one or two places where the people of a house there had made gardens and planted hill rice. It was hard work climbing about the slopes which were rendered excessively slippery by rain that continued incessantly throughout our stay. A stream with two arms ran into the head of the bay and up one we rowed until stopped by a small cascade, while the other was merely an almost dry bed of granite boulders.

The wretched weather made specimens scarce and after three or four unprofitable days we sailed on our final visit to Terempa. Four more days were spent here working fresh ground and making fairly good collections of mammals and birds and then we left for Pulo Telaga to the westward.

Mobur.

The 24th of August was the first day of our stay at Mobur Island, about 5 miles to the northward of Siantan. Like all the Anambas it is hilly with a broken surface covered with forest, and on the south it is cut into by a narrow gulf with an islet at the entrance; a notable feature of the western group is the number of these inlets and narrow channels that occur. Good as the harbour was with depths of 12 or more fathoms we passed up the strait separating Mobur from the larger Mata and anchored in a big bay on the north side, landlocked for more than three quarters of its perimeter. Four or five miles seawards we could perceive the Tokong Belauer, a remarkable white rock bearing at a distance a most extraordinary resemblance to a modern battleship. We found coco palm and banana plantations on the island but very few inhabitants, for the people

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are mainly confined to Terempa and only isolated settlers occur elsewhere.

One afternoon we rowed to a little island in the bay called Langor. It was only about 100 feet high and consisted of sand and rocks covered with scrub and a few cocopalms. Everywhere the ground was strewn with pigeon's feathers and by waiting we found that large flocks of the orange-breasted pigeon (*Osmotreron bicincta*) came off at sunset from surrounding islands and used this spot as a roosting place in company with smaller numbers of glossy starlings and nutmeg pigeons. The whirring noise made by the wings of the flocks as they flew round and round the island, disturbed by our shots, was very great and continued until we departed with bags stuffed with birds that appeared later in a most delicious stew.

Kelong, Manguan and Tobing.

We next sailed round the north end of Mata and anchored between it and Pulo Kelong, a narrow island about 5 miles long in a N. and S. direction and less than a mile wide: the ground sloped upward to a ridge 600-700 feet high and every where the soil and jungle were very poor. Most of the channel dividing Kelong from Mata is filled with sand banks and coral, dry at low tide. Fishing-stakes had been set up here and there by the Malays but to us the place proved a good ground for the common shore birds of this region and we also collected a number of beautiful starfish while our crew hunted for trepang and chopped tridacnas out of the coral. Other animal life was scarce and we soon moved southward to Pulo Manguan, a small island shaped like a dumb-bell, flat and swampy in the centre; but doing no better there, anchored the schooner off Tobing, an islet near the eastern entrance of the Siantan channel, and from thence again visited the waterfall, and next day, previous to sailing for the south of Siantan, rowed to Terempa and back for our mails.

Telaga.

The second stay at Terempa concluding on the 13th of September we made for Jimaja, the chief of the westerly Anambas, first however after a few hours sail stopping about mid-way, at a group of small islands of which Telaga is chief. This is a

narrow hog-backed island about 5 miles long N. and S. with a picturesque peak rising 1740 feet near its northern end. We spent a couple of days here and on the neighbouring island of Midai finding the forest fairly open except for patches of rattans and a prickly holly-like shrub. Only one village of three or four houses was seen. The coconuts seemed much troubled with squirrels and the people made use of an ingenious trap set on a long bamboo leading from the jungle to the palm trunks.

Jimaja.

On the 16th we made sail at daybreak and rounded the southern end of Telaga. The wind was ahead but we did most of the seventeen miles, which is the distance between that island and Jimaja, in one board and then working short tacks got close to the entrance of Kwala Maras Bay on the east coast by night-fall. After that the wind fell light and the tide carried us away to the northward so we let go the anchor in 10 fathoms about three-quarters of a mile from shore and next morning after a couple of hours beating got into the bay. A line of rocks extends above water from the north shore and beyond them on the other side is a coral reef: we found a good berth between the two, well protected from all but easterly winds.

Jimaja is the largest of the Anambas with an area of perhaps 30,000 acres. It is of an irregular Y-shape about 14 miles N. and S. and 9 miles wide. The contour is very uneven and there are many peaks between 700 feet and 1530 feet, the greatest elevation attained in Gunong Tujoh. The irregularity of the coast line has resulted in many bays, the largest being in the north and in the south-east, but Telok Kwala in the centre of the east coast, although smaller than these is the most important as having the greatest population and being the port of call of the steamer. Its shores rise steeply to heights of 1000 feet in places free from forest, but beyond the head where a river embouches is some flat swampy land overgrown with mangroves.

The kampong lies on the north shore and consists of thirty to forty houses, a small mosque, the Dato's house and the buildings of the opium-farmer—shop, godowns, etc., surrounded by a stockade 8-10 feet high closely built of small saplings from whence ran a small jetty.

The Dato's was a well built house, the largest in the place, with a flag staff in front. We were given the rarely used chairs brought out, as always, from somewhere in the roof and seated on these awaited the Dato who was making himself presentable. He was a rather big man with an Irish countenance and wore a "baju tangan kanching" having a ridiculous resemblance to the obsolete night shirt, and a purple smoking cap whose large black tassel persisted in lying in his right eye. There were only a few people in the audience and after the Dato had stumbled through the Sultan's letter and the scholar of the party recorded our visit in the brown-paper-covered archives of Jimaja, conversation took a zoological turn and we were told also of two deep lakes with waterfalls that existed up in the hills of the interior, the description being such as to give one an idea of something impressive.

We collected first on the south side of the bay with no great result; the ground was very steep and difficult and the forest small having evidently been cleared at some former period. However, a new species of rat—*Mus flaviventer*—was obtained and we came across parrots (*Palaornis longicauda*) for the first time. Every day flocks crossed the bay and passed near the summit of some steep rocks where I several times lay hid in the vain hope that they might stop. It was interesting to note how the parrots' call as they flew by always drew a loud response from all the small birds roosting in the bushes.

On the other side of the bay we found a good path running for some distance through a former mangrove swamp now planted with coconuts, and afterwards up hill amongst most beautiful jungle. It crossed two small streams of perfectly clear water one running among granite boulders and the other, about a foot deep, in a smooth sandy bed. Toward midday nothing was more pleasant after five or six hours' tramping in the forest than to find a round stone for pillow and recline full-length in the flowing water of the latter until thoroughly refreshed by its coolness. But beside providing pleasure of this sort we also obtained good specimens along its banks.

Our third collecting ground was along the river falling into the head of the bay. At first this was bordered by broad growths of tall mangrove, but after a mile or so where the current

began to make itself felt these ceased and the vegetation became more varied with interminglings of nipa's, palms, and fruits trees. Onward from here the stream—the Sungei Maras—runs up the centre of a winding valley with a narrow strip of flat land at the bottom and steeply rising sides. At the head of navigation—and in fact when the tide was low we had to wade with our dinghy for some distance, though all the way the stream was broad enough to use oars—was a village of eight or ten houses and a mosque, one or two of the former being of large size and well built of panels of carved wood, though now old.

In the valley we got specimens of the parrots at last as they fed in the fruit trees bordering the river, and also a lovely little two-toed kingfisher (*Ceyx rufidorsa*) with coral red beak and feet, yellow breast and brick red head and back that were tinged with a beautiful glossy lilac: the best of the bag however were specimens of a big squirrel (*Ratufa anambæ* sp. nov.) black above with tawny yellow cheeks and underparts. It weighs about 3½ lbs with a total length of 33 inches of which head and body are 15 inches: thus, contrary to the general rule, it is an insular race characterised by increase of size. In these China Sea islands it is found that when a species of mammal occurs in a solitary island, however small that may be in area, it is confined to that island alone, but when a species is present on an island of a group it will generally be obtained throughout the group. In the case, however, of the *Ratufa* of Jimaja this is not so; it was neither reported nor did we find it ourselves on any other of the Anambas.

On the 25th we set out early in the morning with the intention of seeing what truth there was in the report given us of the "telaga" in the centre of the island. The first stage was to the village up river—Kampong Ayer Maras—where the Penghulu provided us with a guide. While waiting for the latter we inspected a small waterfall about 20 feet high at the back of the village. It was not much to look at however as there was very little water in it at the time. We were then told that there were two series of lakes, so voted for the larger set and when the guide arrived started him off accordingly.

The path traversed sago swamps for the greater part of the way and was very muddy; then passed through a small kampong surrounded by fruit trees and soon after that through a stream

where a sago-making apparatus was erected, next came thickets of dense scrub followed by another sago plant where a number of men were at work. Now the track degenerated into a muddy ditch knee deep for the most part and after crossing several brooks we came to the bank of a small river with a clean sandy bed. When we had waded upward for some distance the bed became rocky and we then soon reached the "lakes." These were disappointing being merely large rocky basins in the river bed about 60 feet long and 30 feet wide and, as we found by diving, 17 or 18 feet deep. They were connected by a fall and there was a second above the upper pool both some 30 or 40 feet high. The water was perfectly clear and the whole very pretty, rock and water being shaded and hedged in by dense jungle, nevertheless the actual state of affairs was not quite the phenomenon it had been painted by our informants.

We found the steamer in the bay when we got back and her serang came off with a message from the commander that we had stolen his anchorage! As however we had been there some time and the other was still under steam we returned word that we felt no inclination to move; thereupon the steamer's master obstinately took up a berth a few yard off until he swung with the tide when, our main-boom end doing considerable damage to his bridge dodger, he was persuaded to seek a more convenient anchorage.

Both in the Tangelans and in Siantan we had made efforts to get one of the canoes of the place without avail, people did not want to sell or would not be ready in time. Here as a last chance one of the built up kind was to be had for \$40, though graceful dugouts on exactly the same lines were just half that while rough models could be purchased for as little as \$3. One canoe, a good example of the type—was brought alongside with the sail lightly rolled up and bound round and round with every conceivable cord; undoing this tangle of course showed the cotton to be mildewed and full of holes and the chagrined vendor was sent off for another. There was further trouble in concluding the purchase as the islanders would not accept either Dutch coin or Singapore notes and we had run completely out of Straits money. Happily a couple of Tringanu men visiting the island in a small prau were willing to change our notes on condition that

we invested in sarongs from their trade-stock. Having with the assistance of these men—who contrasted greatly with the islanders in many ways—brought the canoe business to an end we left Jimaja on September 28th and sailing round the south of the island reached Singapore on October 8th via Tiuman where we spent a few days.

The principal result of our visit to the Anambas lay in the first record of the animals and birds found in them, an outcome of our investigations being also the description of many new insular species. So far as is represented by the collections the mammal fauna of these and of the other islands visited consists of local forms of the widely distributed and characteristic Malayan types. Each island and group of islands has its representative of the common genera and species; but in scarcely an instance is an insular race identical with that occurring on another island, unless of the same group, or on the mainland.

Mammals of the Anambas.

- Macacus pumilus*.
- Nyctcebus tardigradis*.
- Emballonura anambensis*, sp. nov.
- Rhinolophus minutus*, sp. nov.
- R. rouxii*?
- Tupaia chrysomella*, sp. nov.
- Paradoxurus*, sp. (reported).
- Tragulus*, 2 sp. (reported).
- Sciurus anambensis*, sp. nov.
- S. tenuis*.
- Funambulus castaneus*, sp. nov.
- Ratufa anambæ*, sp. nov.
- Mus siantanicus*, sp. nov.
- M. strepitans*, sp. nov.
- M. anambæ*, sp. nov.
- M. flaviventer*, sp. nov.

Birds.

The birds obtained were all common peninsular forms and are enumerated below.

- Malacopterum magnirostra*.

Jour Straits Branch

Anuropsis sp.
Mixornis gularis.
Ægithina viridissima.
Pycnonotus simplex.
Iole sp.
Dissemurus platurus.
Orthotomus atrigularis.
Lanius cristatus.
Eulabes javanensis.
Calornis chalybeus.
Hypothymis azurea.
Cyornis tickelli.
Cittocincla macrura.
Munia semistrata.
Hirundo gutturalis.
H. javanica.
Motacilla melanope.
Anthothreptes rhodolæma.
Æthopyga siparaja.
Æ. hasselti.
Dicæum trigonostigma.
Halcyon bengalensis.
H. chloris.
Ceyx rufidorsa.
Cypselus subfurcatus.
Collocalia fransica.
Macropteryx longipennis.
M. comata.
Rhamphococcyx erythrognaous.
Graculus sumatrensis.
Palæornis longicauda.
Loriculus galgulus.
Spizaëtus or *Spilornis* sp. (observed).
Haliæetus leucogaster.
Osmotreron bicincta.
Carphophaga ænea.
Myristicivora bicolor.
Calænas nicobarica.
Chalcophaps indica.

Charadrius fulvus.
Ægialitis sp.
Esacus magnirostris.
Totanus calidris.
T. hypoleucus.
Strepsilas interpres.
Tringa hypoleuca.
Fregata aquila (observed).
Anous stolidus.
Sterna bergii.
S. media.
Lepterochus sacer.
Butorides javanicus.

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China Sea Directory Vol II.

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A List of the Butterflies of Borneo with Descriptions of New Species.

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Part I.

(DANAINÆ TO AMATHUSINÆ).

Only three lists of the butterflies of Borneo that can pretend to any completeness have been published hitherto. One by Messrs. Distant and Pryer appeared in the "Annals and Magazine of Natural History" 1887; another by Messrs. Pryer and Cator in the "British North Borneo Herald" of 1894—a list remarkable for the number of *nomina nuda* contained in it, and a third by Mr. E. Bartlett in the "Sarawak Gazette" of 1896, reprinted in the "Zoological Note-Book of Sarawak" by the same author. All three lists are now out of date and many new species have been described even since the compilation of the last one; for example Mr. Bartlett records only 139 *Lycænidæ*, whereas the number of species of this family now known from Borneo just exceeds 300. Consequently I feel justified in adding to the literature on Bornean Lepidoptera, especially as I do not expect that many more discoveries of new species will be made in the future in an island that has been so well explored faunistically as Borneo; in short, this list has some claim to completeness and finality.

A few new species are described for the first time, and as considerable trouble has been taken in consulting all available literature on Oriental butterflies and as most of the specimens have been referred to Dr. A. G. Butler and Mr. F. A. Heron, of the British Museum, and by these well-known authorities de-

clared to be in every probability undescribed, I trust that my new species are really "good species."

The question of nomenclature has been rather a difficult one; the systematist has to steer between the Scylla of "lumping" and the Charybdis of "splitting," for to regard all geographical varieties (topomorphs) of a wide-spread species as identical is unscientific, to regard each variety, on the other hand, as a separate species is almost equally unscientific and, further, tends to obscure the problems of geographical distribution. There is a third alternative and that is, to adopt the cumbersome trinomial system, distinguishing well-marked topomorphs of a wide-spread species as sub-species, giving them separate names* and noting the distribution of the species as a whole. Such is the method adopted in this list; a species is recorded, if the typical form occurs in Borneo that fact is noted and the distribution of the typical form and the sub-species (component parts of a species) occurring outside Borneo are also noted; if the typical form does not occur in Borneo, the name of the sub-species that does occur follows the name of the species and the distribution of the species as a whole is recorded.

Unfortunately some of the families of butterflies have not been studied so thoroughly as others, whilst some families again have been studied from a different point of view to others: for example, Messrs. Elwes and Edwards in their "Revision of the Oriental Hesperiidæ" (Trans. Zool. Soc. Vol. XIV part IV, 1897), do not allow a single sub-species, whereas Hon. W. Rothschild and Dr. K. Jordan in their memoirs on the Papilioninæ and on the Nymphaline genera, *Eulepis*, *Charaxes*, etc., regard every topomorph of a wide-spread species as a sub-species and this to my mind appears to be the more scientific method. Much work along these lines still remains to be done, but it can be done only by one who has frequent access to extensive collections and well-stocked libraries, therefore though this list lays claim to some completeness so far as an enumeration of the forms of butterflies

* For an able exposition and defence of the trinomial system of nomenclature see *Novitates Zoologicae* Vol. IX. Supplement, 1903, pp. xxvi et seq.

occurring in Borneo goes, it does not claim in every instance to discuss the relationships between these Bornean forms and close allies inhabiting other areas.

At the end of this list will be given a table showing at a glance the geographical distribution of the various species. A few field notes are put in square brackets after the records of distribution of the respective species.

I am indebted to Mr. F. Moore and to Herr H. Fruhstorfer for their kind help; the late Mr. L. de Nicéville was a most valued correspondent whose sound advice and generous aid I sadly miss now.

LEPIDOPTERA RHOPALOCERA.

Fam. NYMPHALIDÆ.

Sub-fam. DANAINÆ.

Genus *Hestia*.

1. *Hestia lynceus*, Drury.

H. lynceus, Drury. Illustr. Exot. Ent. ii. pl. 7 f. 1 (1773).

H. reinwardti, Moore, P. Z. S. 1883, p. 218.

Sub-sp. *H. lynceus druryi*, Moore, with a melanic form *fumata*, Fruhst.

Fruhstorfer (Berl. ent. Zeitschr. Bd. xlii. p. 314. 1897) divides *H. lynceus* into five sub-species occurring in Malacca, Penang, Singapore, Nias, Sumatra, Mentawai Is., Natuna Is., Borneo and Java. The species is a common one and the Bornean sub-species with its melanic form is distributed throughout the island; *H. lyn. druryi* occurs also in Sumatra and the Natuna Is.

[Two males were observed courting a female in the jungle at Santubong: the female was situated on a leaf about 12 feet from the ground, over her a pair of males fluttered with a peculiar short up-and-down flight as if they were sliding on perpendicular wires; the female slowly opened and closed her wings but otherwise remained immovable for about three minutes when she suddenly dashed off with the males in hot pursuit, and all three were soon lost to sight].

2. *Hestia belia*, Westw.

H. belia Westwood. Cab. Orient. Ent. pl. 37. fig. 2

Sub-sp. *H. belia hypermnestra*, Westw.

Sub-sp. *H. belia belina*, Fruhst.

The typical form of *H. belia* occurs in Java and Sumatra, the two sub-species mentioned above in Borneo, another (*H. bel. linteata*, Butl.) in the Malay Peninsula, and a fourth in Java. Distant (Rhop. Malay p. 406) records *H. linteata*, Butl. from Banjarmassin, but this is probably the same as sub-sp. *belina*.

Genus *Nectaria*.3. *Nectaria leuconoë*, Erichs.

Idea leuconoë, Erichs. Nova Acta. Ac. Nat. Cur. xvi p. 283 (1834).

Sub-sp. *N. leuconoë nigriana*, Grose-Smith.
North Borneo, Taganac Island.

Sub-sp. *N. leuconoë chersonesia*, Fruhst.

South Sarawak, Malay Peninsula, Singapore and adjacent islands, Billiton.

Sub-sp. *N. leuconoë natunensis*, Swell.

I am not at all certain that the varieties and local races of this species are all worthy of sub-specific rank; *Natunensis* in especial seems to possess no well-marked characteristics. In the Sarawak Museum collection there is a male from Buntal, Sarawak, which might be either *nigriana* or *natunensis* and a female from Trusan, N. Sarawak is intermediate in character between *nigriana* or *chersonesia*. Other sub-species occur in Japan, Philippines Palawan, Talaut, Sangir, Java, Engano.

The species frequents the sea-shore.

Genus *Ideopsis*.4. *Ideopsis daos*, Boisdu.

Idea daos, Boisduval, Spec. Gén. Lep. I, pl. 24. f. 3 (1836).

Borneo and Lingga Archipelago, with sub-species *n*, Singapore, Penang, Malay Peninsula, Sumatra, Niasi China, Hongkong.

The Natuna island forms appears to belong to another sub-sp. *I. daos perakana*, Fruhst.

[This common and distasteful species is mimicked by a Chalcosiine moth, *Isbarta pieridoides*, and by the female of *Papilio delesserti*].

Genus *Danais*.

Sub-genus *Radena*.

5. *Danais (Radena) vulgaris*, Butl.

Danais vulgaris, Butler., Entom. Month. Mag. xi, p. 164, (1874).

A common and widespread species, occurring in Singapore, Malay Peninsula, Sumatra, Java, Nias and Natuna Islands.

[This species and *Parantica eryx*, Fab., are mimicked in Borneo by the following butterflies :—*Elymnias lais*, ♂, *Euripus halitherses*, ♂ and *Papilio megarus*].

6. *Danais (Radena) juvena*, Cram.

Papilio juvena, Cramer. Pap. Ex. ii, pl. 188 B. (1779).

A common sea-side species, ranging nearly all over the Malay Archipelago.

Sub-genus *Tirumala*.

7. *Danais (Tirumala) septentrionis*, Butl.

Danais septentrionis. Butler, Ent. Month. Mag. vol. xi, p. 163, (1874).

Occurs also in India, Ceylon, Burma, Siam, Malay Peninsula, Java, Sumatra, Formosa.

Mimicked in Borneo by :—*Papilio macareus macaristus*.

8. *Danais (Tirumala) microsticta*, Butl.

Danais microsticta. Butler, Ent. Mouth. Mag. vol. xi, p. 163. (1874).

Occurs also in Java and Nias.

Fruhstorfer considers this to be merely a sub-species of *septentrionis*.

Sub-genus *Limnas*.9. *Danais* (*Limnas*) *chrysippus*, L.

Papilio chrysippus. Linnaeus. Mus. Ulr. p. 263, (1764).

[This very widely distributed insect is common in N. Borneo but of extreme variety in the more southern parts of the island; it is interesting to note that the females of *Hypolimnas misippus* which mimic it very closely are hardly ever met with except in N. Borneo though the males are somewhat less rare in the southern part of the island; in other words, the local distribution of the mimics closely follows that of the model].

Sub-genus *Salatura*.10. *Danais* (*Salatura*) *plexippus* L.

Papilio plexippus, Linnaeus Mus. Ulr. p. 262, (1764).

Sub-sp. *D. plexippus intensa*, Moore.

The typical form ranges from Japan through India to the Nicobars, it occurs also in the Philippines. The sub-species *intensa* occurs only in Borneo, Nias and Java; another sub-species is found in Malacca, Singapore and Sumatra.

11. *Danais* (*Salatura*) *melanippus*, Cr.

Papilio melanippus, Cramer, Pap. Exot. ii. pl. 127 fig. A. B. 1779.

Sub-sp. *D. melanippus hegesippus*.

Fruhstorfer (l. c. 1899 p. 74) has united these two old species. The typical form of *melanippus* he restricts to Java, Nepal, Assam and Penang? (fide Marshall and de Nicéville). The form *hegesippus* occurs in Sumatra, Singapore, Natunas, Malay Peninsula, Penang, Billiton, Mergui Is., and is now recorded for the first time from Borneo. Another sub-species occurs in Burma, Orissa and Bengal.

12. *Danais* (*Salatura*) *lotis*, Cr.

Papilio lotis, Cramer, Pap. Exot. p. 111, pl. 230, Fig. D. E. (1777).

The typical form is confined to Borneo, sub-species occurring in the Philippines and Celebes.

Sub-genus *Bahora*.

13. *Danais (Bahora) aspasia*, Fab.

Papilio aspasia, Fabricius, Mant. Ins. ii, p. 15, n. 145 (1787).

Range from Burma, to the Philippines and Banca.

[Mimicked by the female of *Nepheronia lutescens*.]

D. (Bahora) cleona, Cram., is a Moluccan species and has been wrongly recorded from Borneo. I cannot agree with Fruhstorfer in regarding *D. aspasia* as merely a sub-species of *D. cleona*.

Sub-genus *Parantica*.

14. *Danais (Parantica) eryx*, Fab.

Papilio eryx, Fab. Ent. Syst. Suppl. p. 423. (1789).

Occurs in Borneo with a sub-species in Nias.

Sub-genus *Caduga*.

15. *Danais (Caduga) crowleyi*, Jenner Weir.

Cadugacrowleyi, i. Jenner Weir. Entomologist, 1894, p. 109.

The species is confined to Borneo, occurring on Mts. Kina Balu and Penrissen. Fruhstorfer considers this to be merely a sub-species of *D. (Caduga) melaneus*, Cr., but this must be quite wrong for *D. melaneus* is a typical *Caduga*, with both patches of scent-scales on the hind-wing traversed by a lengthened swelling of the vein (cf. Moore, Lepidoptera Indica, p. 60). Whilst in *D. crowleyi* only the patch on the sub-median vein is so traversed, the patch on the internal vein is almost obsolete, whilst that on the lower median vein is large and spatulate as in *Parantica*; in short *D. crowleyi* is not a true *Caduga* at all.

16. *Danais (Caduga) luzonensis*, Feld.

Danais luzonensis, Felder, Wien. Ent. Mon. iv. p. 398. n. 17 (1860).

Sub-sp. *D. luzonensis prænacaristus*, Fruhst.

From N. Borneo. (Mt. Kina Balu) and Mt. Penrissen. The Bornean form has been confused with the Javan *Caduga larissa*, Feld., another sub-sp. of *luzonensis*; other sub-species occur in the Lesser Sunda Is., Sumatra and the Malay Peninsula; the typical form is confined to the Philippines and Palawan.

[The species was common on Mt. Penrissen and often flew in company with *Caduga crowleyi*; *Elymnias lais* ♂ mimicked both species.]

Genus EUPLEA.

Sub-genus *Menama*.

17. *Euplœa (Menama) lorzæ*, Moore.

Menama lorzæ, Moore, P. Z. S. 1883, p. 265, pl. 31, fig. 5.

Occurs in North Borneo only.

Sub-genus *Tronga*.

18. *Euplœa (Tronga) crameri*, Lucas.

Euplœa crameri, Lucas, Rev. Zool. 1853, p. 318.

Tronga brookei, Moore, P. Z. S. 1883, p. 268, n. 8.

Tronga labuana, Moore, l.c. p. 268, n. 9.

Tronga daatensis, Moore l.c. p. 268, n. 10.

I agree with de Nicéville & Fruhstorfer in uniting the Labuan and Daat Is. forms with the mainland species *crameri*, and with de Nicéville in sinking *brookei* as another synonym. *E. crameri typica* is confined to the Philippines, Borneo and the Natunas, with doubtful sub-species ranging from India to all the Sunda Islands.

[This and the following species are mimicked by:—*Hypolimnys anomala* ♀, *Elymnias pellucida*, *Papilio paradorus telesicles* ♀ ab. *russus* and ab. *leucothoides*, *Papilio leucothœ ramaceus* and the Chalcosiine moth *Isbarta macularia*.]

19. *Euplœa (Tronga) bremeri*, Feld.

Euplœa bremeri, Felder, Wien. Ent. Monat. iv, p. 398, n. 16 (1860).

Tronga pryeri, Moore, P.Z. S. 1883, p. 269.

The differences between specimens in the Sarawak Museum of *E. bremeri* (*E. Marsdeni*, syn.) from Singapore and *E. pryeri* from British North Borneo are so small and so inconstant that I have no hesitation in writing the two species under one name. Fruhstorfer divides the *Trongas* into two groups:—

1. Hindwing with a prominent row of submarginal dots.
2. Hindwing with a double series of very large clear white spots.

In the former group he places *E. bremeri*, as a sub-species of *E. Cramerii*, in the latter he places *E. pryeri*, yet all the specimens of *E. bremeri* that I have seen should be placed in group 2. In any case the species is rather a doubtful one. It ranges from India through the greater part of the Indo-Malayan region.

Sub-genus *Adigama*.

20. *Euplœa* (*Adigama*) *scudderi*, Butler.

Crustia scudderi, Butl. Journ. Linn. Soc. Zool. xiv, p. 297 (1878). Confined to Borneo.

[Mimicked by the *Chalcosiine* moth, *Amesia hyala*].

Sub-genus *Penoa*.

21. *Euplœa* (*Penoa*) *uniformis*, Moore.

Penoa uniformis, Moore, Lepid. Ind. vol. i, p. 99 (1890).

Confined to Borneo; possibly only a sub-species of *E. alcathor*. God. or *E. ménétrièrei*, Feld.

[Mimicked by *Elymnias lutescens* and *Mimeuplœa tristis*].

22. *Euplœa* (*Penoa*) *zonata*, Druce.

Euplœa zonata, Druce, P.Z. S. 1873, p. 338. Confined to Borneo.

[Mimicked by *Papilio slateri hewitsoni*].

23. *Euplœa* (*Penoa*) *masina*, Fruhst.

Euplœa (*Penoa*) *masina*, Fruhstorfer, Berl. Ent. Zeit. XLII, 1897, p. 16. Confined to Borneo.

Sub-genus *Trepsichrois*.24. *Euplœa* (*Trepsichrois*) *claudius* Fab.*Papilio claudia*, Fabricius, Gen. Ins. p. 263, (1777).Sub-sp. *E. claudius mulciber*, Cr.

The typical form occurs in India, Burma, Siam, Malay Peninsula, Sumatra and some of the lesser Sunda Island; the sub-species *mulciber* is confined to Borneo, other sub-species occur in Southern India, Java, Nias, Mentawai Island and the Philippines.

[The pupa is a most brilliant object, of a bright burnished gold reflecting like a mirror, with spots and dashes of reddish brown and orange. It is nevertheless not at all conspicuous, since it is always suspended from the underside of a leaf and gives the effect of a hole in the leaf through which the sun is shining. I shall never forget my astonishment, when, on one occasion I attempted to thrust my finger through such a hole and encountered instead the resistance of a large and apparently brilliant pupa.

The *imago* is widely mimicked, the following is a list of the mimics:—

Males. *Euripus halitherses* ♀ *forma cinnamomeus*, *Hypolimnias anomala* ♀, *Elymnias borneensis*, *Papilio paradoxus telesicles* ♂, *Pompelion subcyanea*, *Callamesia striata* ♂.

Females. *Elymnias lais* ♀, *Papilio paradoxus telesicles* ♀, *Callamesia striata* ♀].

Sub-genus *Calliplœa*.25. *Euplœa* (*Calliplœa*) *adyte*, Boisd.*Euplœa adyte*, Boisdual, Bull. Ent. Soc. Fr. 1859, p. 156.Sub-sp. *E. adyte aristotelis*, Moore.

No less than sixteen sub-species of *E. adyte* are distinguished by Fruhstorfer, ranging all through the Malay Archipelago to Melanesia: *aristotelis* is confined to Borneo—*natuensis* occurs in the Natuna Is.

Sub-genus *Macroplea*.26. *Euphea* (*Macroplea*) *corus*, Fab.

Papilio corus, Fab. Ent. Syst. iii, p. 41, (1793).

Sub-sp. *E. corus butleri*, Moore, (*Syn. E. Godmani* Moore).

This sub-species is confined to Borneo; the typical form occurs in Ceylon and other sub-species range from Burma through the Malay Peninsula and Sunda Islands to Palawan and Celebes.

Sub-genus *Danisept*.27. *Euphea* (*Danisept*) *diocletianus*, Fab.

Papilio diocletianus. Fabricius, Ent. Syst. III. 1. p. 40, n. 118 (1793).

Papilio Radamanthus. Fabricius, Ent. Syst. III. 1, p. 42, n. 127 (1793).

Sub-sp. *E. diocletianus lowei*, Butler.

The typical form according to de Nicéville occurs in India, Burmah, Indo-China, Malay Peninsula, Sumatra, Billiton, Banka, Natuna Is. The sub-sp. *lowei* is confined to Borneo. *E. schreiberi*, Butler, has been wrongly recorded from Borneo, it is apparently confined to the island of Nias.

[As I pointed out elsewhere* the females of *E. diocletianus lowei* are extremely rare whilst the males are common; in Singapore both males and females of *E. (Dan.) diocletianus*, Fab., are common. It is at least curious that the female *lowei* should differ noticeably from female *E. diocletianus* whilst the males of both form are almost identical.

The species is mimicked by :—Males :—*Euripus halitherses* ♀ forma *pygæfferæ*, *Papilio caunus mendax* ♂,

Females :—*Euripus halitherses* ♀ forma *eupheoides*, *Papilio caunus mendax* ♀ *Mimeurphea* and also *hodamanthus*].

From Borneo; it occurs in Nias.

*Journ. As. Soc. Straits Br., No. 35, p. 31.

Sub-genus *Salpinx*.

- 28.
- Euplæa (Salpinx) leucostictos*
- , Gmel.

Papilio leucostictos Gmelin (Pap. L.) Syst. Nat. I. 5, p. 2289, n. 889 (1788-1791).

Sub-sp. *E. leucostictos syra*. Fruhst.

Sub-sp. *E. leucostictos kadu*. Esch.

The typical form occurs in Java. I have taken the form *syra* on Mt. Matang. *kadu* occurs in N. Borneo, Palawan and Philippines and is another proof of the Philippine element in the N. Bornean fauna.

Sub-genus *Isamia*.

- 29.
- Euplæa (Isamia) ægyptus*
- , Butl.

Euplæa ægyptus, Butler, P. Z. S. 1866, p. 277.

Occurs in Borneo, with sub-species in Billiton and Philippines including Palawan.

[The species is synaposematic with *E. Crameri* and is mimicked by the same species of butterflies and moths].

- 30.
- Euplæa (Isamia) lowei*
- , Moore.

Isamia lowei, Moore, P. Z. S. 1883, p. 316.

Confined to Borneo, possibly a sub-species of *ægyptus*.

- 31.
- Euplæa (Isamia) rafflesi*
- , Moore.

Isamia rafflesi, Moore, P. Z. S. 1883, p. 314.

Sub-sp. *E. rafflesi sophia*, Moore.

Borneo and Sumatra, other sub-species occur in Singapore, Nias, and Mentawai, the typical form occurs in Java—De Nicéville (J. A. S. B. vol. lxx, 1901), considers all the above species to be synonymous with *Isamia chloë*, Guér. from Malay Peninsula.

Sub-genus *Stictoplæa*.

- 32.
- Euplæa (Stictoplæa) dufresnei*
- , Godt.

Danaïd dufresnei, Godt. Euc. Méth. ix. Suppl. p. 815 (1823).

Sub-sp. *E. dufresnei tyrianthina*, Moore.

The sub-species occurs only in N. Borneo, where there is a distinct Philippine element. The typical form occurs in the Philippines, other sub-species in Sumatra, Java, Lombok, Sumba, Sumbawa, Alor, Palawan.

Messrs. Pryer and Carter in their list recorded *E. binotata*, Butl., from N. Borneo, but this is certainly erroneous as the species is otherwise only known from N. India. They also record *E. (Stictoplea) susah*, n. sp. which, however, is a mere *nomen nudum*, no description of the insect being given.

Sub-fam. SATYRINÆ.

Genus *Mycalesis*.

Sub-genus *Satou*.

33. *Mycalesis (Satou) maianeas*, Hew.

Mycalesis maianeas, Hewitson, Exot. Butt. iii, p. 87
Myc. t. 5, f. 27, 28 (1864).

Occurs also in the Malay Peninsula and Sumatra.

Sub-genus *Orsotrizna*.

34. *Mycalesis (Orsotrizna) medus*, Fab.

Papilio medus, Fabricius, Syst. Ent. p. 488, (1775).

Ranges over the Indian regions, Malay Peninsula, Sunda Islands, Celebes, Timor, Philippines and Hainan. The dry season form (*runeka*, Moore) does not occur in Borneo.

Sub-genus *Calysisme*

35. *Mycalesis (Calysisme) perseus*, Fab.

Papilio perseus, Fabricius, Syst. Ent. p. 488 (1775) ♀

Various authors record this species from Borneo, but I have not yet met with it. It occurs in the Indian region, the Malay Peninsula, Sunda Is., Philippines, Hainan and Formosa. The dry-season form does not occur in Borneo.

36. *Mycalesis (Calysisme) polydecta*, Cram.

Papilio polydecta, Cramer, Pap. Exot ii, pl. 144 Fig. e. f. ♀
(1777).

In the Sarawak Museum collection is a long series of this species, corresponding very well with the figures 1b, 1d, 1e, 1g. of Plate 61, in Moore's *Lepidoptera Indica*

The species appears to have been previously recorded from India and Ceylon only; its validity is rather doubtful.

Sub-genus *Culapa*.

37. *Mycalesis (Culapa) mnasicles*, Hew.

Mycalesis mnasicles, Hewitson, Exotic Butt. iii, *Myc.* pl. 5, figs. 32, 33 ♂ (1864).

The species is also recorded from Upper Burma, Tenasserim, Malay Peninsula and Sumatra.

Sub-genus *Martanda*.

38. *Mycalesis (Martanda) janardana*, Moore.

Mycalesis janardana, Moore. Cat. Lep. Mus., E. I. C. i, p. 234, (1857).

Previously unrecorded from Borneo, Dr. R. Hanitsch collected two specimens at Kiou, Kina Balu. Other localities: Malay Peninsula, Singapore (Davison), Java, Sumatra, Celebes (Hose).

Sub-genus *Mydosama*.

39. *Mycalesis (Mydosama) fuscum*, Feld

Dasyonma fuscum, Felder, Wien. Monats. iv, p. 401, (1860).

Malay Peninsula, Singapore, Sumatra, Borneo.

40. *Mycalesis (Mydosama) anapita*, Moore.

Mycalesis anapita, Moore, Cat. Lep. Mus., E. I. C. i, p. 232, (1857).

Malay Peninsula, Sumatra, Borneo.

41. *Mycalesis (Mydosama) pitana*, Staud.

Mycalesis pitana, Staudinger, Iris. vol. ix, p. 230, 1896.

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Mt. Kina Balu. I have only seen one specimen captured by Dr. R. Hanitsch at Kiou, Kina Balu.

Sub-genus *Nebulara*.

42. *Mycalopsis* (*Nebulara*) *amæna*, Druce.
Mycalopsis amæna, Druce. P. Z. S. 1873, p. 339, pl. 32,
 f. 1. Confined to Borneo.
43. *Mycalopsis* (*Nebulara*) *kina*, Staud.
Mycalopsis kina, Staudinger. Iris. vol. v, p. 451 (1892).
 Mt. Kina Balu.

Sub-genus *Suralaya*.

44. *Mycalopsis* (*Suralaya*) *orseis* Hew.
Mycalopsis orseis, Hewitson, Exot. Butt. iii, p. 89, *Myc.* pl.
 6, figs. 36, 37, ♂ (1864).
 Occurs also in Tenasserim, Malay Peninsula, Sumatra,
 and Nias.

Genus *Neorina*.

45. *Neorina lowi*, D. & H.
Neorina lowii, Doubleday and Hewitson, Gen. D. Lep. p.
 369, pl. 61, f. 4 (1851).
 Originally described from Sarawak, sub-species occur
 in the Malay Peninsula and Sumatra, and in Nias.
 Mr. W. Doherty (J. A. S. Bengal 1889, p. 124) sug-
 gests that this species is a mimic of *Papilio helenus* and
 writes "it may possibly be advantageous for a scarce
 rather weak-flying insect of *Morphid* or *Satyrid* affinities
 to resemble a common *Papilio* of powerful and irregular
 flight"; as far as my experience goes *N. lowi* is much
 more common than *Papilio helenus*, it is in fact one of
 the common butterflies of W. Sarawak.

Genus *Celites*.

46. *Celites nothis*, Westw.
Celites nothis, Westwood, Doubleday and Hewitson's
 Gen. D. Lep. p. 367, pl. 66, f. 2 (1851).

Sub-sp. *Cœlites nothis epiminthia*, Westw.

The typical form occurs in Siam, *epiminthia* in Borneo, Sumatra and the Malay Peninsula and other sub-species in Borneo and Tonkin.

47. *Cœlites euptychioides*, Felder.

Cœlites euptychioides, Felder, Reise Nov. Lep. iii, p. 499, (1867).

Borneo, with a sub-species in the Malay Peninsula.

Genus *Lethe*.

48. *Lethe mekara*, Moore.

Debis mekara, Moore, Cat. Lep. Mus., E. I. C. i, p. 219, (1857).

Occurs in Sikkim, Assam, Khasias, Burma, Malay Peninsula and Borneo. The dry-season brood does not occur in Borneo.

49. *Lethe cerama*, sp. n.

♂ *Upperside*; very similar to dry season forms of *Lethe mekara*, Moore, from Upper Burma, but of a richer brown and the ocelli on the hind-wing, smaller, but less diffuse. *Underside*, almost exactly the same as in *Lethe delila*, Staud. but the ground-colour is paler and the lilac suffusion less bright; the sub-marginal ocellus on the hind-wing is smaller. Expanse 72 mm.

♀ *Upperside*; forewing, rufous brown merging into fuscous at apex and external margin; hindwing, rufous brown with the abdominal margin pale fuscous and the lower two-thirds of the external margin pale ochreous. The six sub-marginal ocelli of the underside are indistinctly seen on the upperside, the first two as ill-defined black discs, the third as a small black pupil with surrounding ring, the fourth and sixth are hardly visible, the fifth as a large black pupil with surrounding ring. A black marginal line. *Underside*; as in the male, but very much paler, the first ocellus on the hind-wing larger. Expanse 68 mm. *Habitat*: Kuching, Sarawak. Types in the Sarawak Museum.

The male might readily be confused with *L. delila*, Staud. but the female is so very different to the female of that species that I have little hesitation in separating this low country form from the mountain species *L. delila*. The genus *Lethe* is in need of careful revision, a work that is, however, only possible to one who has access to the types of the various species.

50. *Lethe delila*, Staud.

Lethe delila, Staudinger, Iris. vol. ix, p. 225, pl. v, f. i. (1896)

Mt. Kina Balu.

51. *Lethe europa*, Fab.

Papilio europa, Fabricius, Syst. Ent. p. 500, (1775).

Occurs in the Indian region, Malay Peninsula, Siam, Sunda Is., Philippines, Hainan, Formosa, China.

52. *Lethe perimede*, Staud.

Lethe perimede, Staudinger, Iris. vol. ix, p. 226, (1896).

Apparently confined to Borneo.

53. *Lethe darena*, Feld.

Lethe darena, Felder, Reise Nov. Lep. iii, p. 498, pl. 68, f. 4.5 (1867).

Sub-sp. *Lethe darena borneensis*, Staud.

The typical form occurs in Java; the sub-species occurs on Mt. Kina Balu.

54. *Lethe dora*, Staud.

Lethe dora, Staudinger, Iris, vol. ix, p. 226 (1896)

Borneo only.

Genus *Ypthima*.

55. *Ypthima pandocus*, Moore.

Ypthima pandocus, Moore, Cat. Lep. Mus. E.I.C. i, p. 235, (1857).

Malay Peninsula and the Sunda Is.

56. *Ypthima fasciata*, Hew.

Ypthima fasciata, Hewitson, Trans. Ent. Soc. (3) vol. ii, p. 287, n. 12, (1865.)

Malay Peninsula, Sumatra and Borneo.

57. *Ypthima abnormis*, sp. n.

♀ *Upperside*; fuscous, without ocelli; the hind-wing is clothed with long hairs especially along the internal margin.

Underside—pale brown with dark fuscous striæ which on the forewing are segregated in three areas to form indistinct fasciæ—a sub-basal, a discal and a sub-marginal; on the hind-wing the striæ form five indistinct fasciæ,—a basal, a sub-basal, two discal and a marginal. There are no ocelli. The abdominal margin of the hind-wing is rather deeply excised and the outer margin is slightly sinuate. Cilia fuscous. Expanse, 57 mm. *Habitat*, Kuching, Sarawak.

This is a very aberrant species of *Ypthima*; it has been suggested to me that it is merely a seasonal variation but as I shall have occasion to point out later, the Bornean butterflies do not show seasonal variation; all the species of *Mycalesis*, for instance, correspond to the wet-season phase of the same species, from other countries where the distinction between the fine and wet monsoons is better marked than it is here; the dry-season phases of these species are not found in Borneo.—Type in the Sarawak Museum.

Genus *Ragadia*.58. *Ragadia crisis*, Hübn.

Euptychia crisis, Hübner, Zutr. Ex. Schmett. f. 675, 676, (1832).

Occurs in the Malay Peninsula, Penang, Singapore.

The commonest species of the genus.

59. *Ragadia annulata*, Grose-Smith.

Ragadia annulata, Grose-Smith, A. M. N. H. 1887, p. 435. N. Borneo.

60. *Ragadia melita*, Staud.

Ragadia melita, Staudinger, Iris. vol. v., p. 449 (1892).
N. Borneo and Kina Balu.

Genus *Erites*.

61. *Erites argentina*, Butl.

Erites argentina, Butler, Cat. Satyr. B. M. p. 188, pl. 5, f. 8 (1868).

Upper Tenasserim and Borneo.

62. *Erites elegans*, Butl.

Erites elegans, Butler, Cat. Satyr. B. M. p. 147, pl. 2, f. 4 (1868).

Confined to Borneo.

63. *Erites thetis*, sp. n.

♂. *Upperside*; semi-transparent cinereous, on the hind-wings the colour and markings of the underside are seen shining through; a yellow ringed, white pupilled, black ocellus occurs between the second and third median nervules with two much smaller but similar ocelli beyond it.

Underside; forewing of same colour as on the upper-side, more transparent at base and this area is crossed by numerous irregular striae; two indistinct ochreous bands cross the wing, one is medial the other post-medial; a row of five sub-marginal small ocelli extends from below 5th sub-costal nervule to the first median interspace, they increase in size from above downwards; a marginal pale band. Hind-wing; basal areas and abdominal margin covered with fine fuscous striae; a medial ochreous band crosses the wing; the outer half of the wing is ochreous; a row of four black ocelli with silvery centres extends from below the 2nd sub-costal nervule to the first median interspace, the lowest of the series is large and has a fuscous suffusion bordering its inner half, the other ocelli are minute; a marginal fus-

cous line. Cilia on forewing cinereous, on hind-wing yellowish-white. The hind-wing is dentate and subcaudate. Expanse 48 mm. *Habitat*: Kuching, Sarawak. Type in the Sarawak Museum.

Genus *Melanitis*.

64. *Melanitis ismene*. Cram.

Papilio ismene, Cramer, Pap. Exot. i. pl. 26. figs a. b. (1775).

This common species ranges throughout India, Ceylon, Burma, Andamans and Nicobars, Malay Peninsula, Sunda Is., Hainan, Formosa, Philippines, China and Japan.

[Both the dry-season form *ismene* and the wet-season form *leda* occur in Borneo, but irrespective of the season; I have taken both forms on the same day in the middle of the wet-monsoon and in the middle of the fine monsoon, in fact the two forms fly together. The form, markings, and colouration of the imagines of these seasonal varieties are dependent on the degrees of damp or dryness to which the young stages (egg, larva and perhaps pupa, are subjected, hence a spell of wet weather in the fine monsoon—an event by no means unusual—would produce a brood of wet-season forms and conversely a spell of fine weather in the wet-season a brood of dry-season forms. *M. ismene* in its dry-season phase is remarkably leaf-like, and the insect has the habit of settling amongst fallen leaves and leaning, with both wings closed, over to one side, so that its phyllomorphic appearance is very much increased].

65. *Melanitis zitenius*, Herbst.

Papilio zitenius, Herbst, Natursyst. Schmett. viii, p. 5, pl. 182, f. 1, 2 (1796).

This species has previously been recorded only from the Indian region and the Malay Peninsula. The Sarawak Museum collection includes one female in the wet-season phase.

Sub-fam. ELYMNIINÆ.

Genus *Elymnias*.66. *Elymnias nigrescens*, Butl.

Elymnias nigrescens, Butler, P. Z. S. 1871, p. 520, pl. 42, f. 1.

The typical form occurs in Borneo, sub-species are found in the Malay Peninsula, Indo-China, Hainan, Sumatra, Billiton, Lombok, Flores, Sumbawa, Sumba.

This is a non-mimetic species in Borneo, and it is quite the commonest species of the sub-family.

67. *Elymnias hecate*, Butl.

Elymnias hecate, Butler P. Z. S. 1871, p. 520, pl. 42, f. 2.
Confined to Borneo.

This species according to Fruhstorfer is merely a mountain form of *E. nigrescens*, however it is by no means confined to mountains, as it occurs at Labuan and Kuching as well as on Mts. Mulu and Kina Balu and I prefer to look upon it as a distinct and good species.

68. *Elymnias panthera*, Fab.

Papilio panthera, Fabricius. Mant. Ins. II, p. 39, n. 40, 407 (1787).

Elymnias lutescens. Butler, A. M. N. H. 1867, p. 404, pl. 9, f. 10.

Sub-sp. *E. panthera labuana*, Staud.

Labuan, Sandakan and Kuching, Sarawak.

The typical form occurs in Malacca, Sumatra, Singapore and Natuna Is., sub-species in Java, Banguay, Sulu Archipelago, Palawan, Upper Tenasserim, Nicobars. Nias, Bawean, Engano.

69. *Elymnias dara*, Dist.

Elymnias dara, Distant. A. M. N. H. 1887, p. 50.

The male has never been described; a description of

a specimen taken in Kuching follows:—♂ Smaller than ♀ and darker. *Upperside*, dark purplish-black, fasciae on both wings as in ♀ but narrower and shorter and with a lilac tinge.

Underside, dark chocolate, the spot on the costal margin smaller than in the ♀, fascia on the fore-wing not so extended. Expanse 57 mm.

The species is confined to Borneo. *E. daedalion*, de Nicév. from Burma is possibly a sub-species. Both *dava* and *daedalion* belong to Moore's sub-genus *Melynius*, not to his genus *Elymnias* as erroneously stated in Lep. Ind. vol. II, p. 154, 155.

70. *Elymnias brookei*, sp. n.

♂. The outer margins of both wings are scalloped; the outer margin of the forewing is produced in the first median interspace into a slight lobe; the outer margin of the hind-wing is produced at the third median nervule to form a short tail. No modified scales on upperside of forewing; androconia on upperside of forewing as in *E. nigrescens*, Butl. *Upperside*: black, on the forewing a sub-apical macular fascia, a few indistinct striæ on the costa and an indistinct spot at external angle, blue-green; on the hind-wing an indistinct marginal series of blue-green spots. *Underside*: ground-colour fuscous mottled with dark fuscous, paler along costal margin and apex of forewing and at base of hind-wing, on the hind-wing a sub-marginal series of degenerate ocelli, six in number, black with white centres, the fourth and fifth the largest, the sixth very minute. Cilia on forewing fuscous, on hind-wing fuscous and white alternately. *Antennæ* reddish ochreous. Expanse 70 mm. *Habitat*, Kuching, Sarawak (July). ♀ Unknown. Caught in a trap baited with rotten bananas. In colouration the species approaches *E. esaca* Westw. but the shape of the wings is exactly like that in *E. panthera* Fab. Type in the Sarawak Museum. The species is named after His Highness the Rajah of Sarawak, G. C. M. G.

71. *Elymnias lais* Cram.

Papilio lais, Cramer, Pap. Exot. ii, pl. 114, f. A.B. (1779).

Occurs in the Malay Peninsula, Sumatra, Billiton, Java and Borneo, with a sub-species in the Indian region.

[For an account of the habits of this mimetic species see P.Z.S. 1902, p. 259.]

72. *Elymnias pellucida*, Fruhst.

Elymnias pellucida Fruhst. Ent. Nach. xxi (1895 No. 11 p. 1) ♀

Elymnias aroa, Shelford, P.Z.S., 1902, p. 273. ♂ & ♀

The species is most closely related to *kumara*, Moore: it has been found on Mt. Penrisen, Sarawak, and Kina Balu, N. Borneo.

Messrs. Pryer & Cator record *Elymnias anneæ* n. sp. from Sandakan, but give no description of it whatever! It may possibly be the same as *E. pellucida*, Fruhst.

73. *Elymnias penanga*, Westwood.

Melantis penanga, Westwood, Gen. D. Lep. p. 405 ♀ (1851).

Sub-sp. *E. penanga trepsichroides*, nom. nov.

(*Elymnias borneensis*, Grose-Smith, A.M.N.H. 1892, p. 428.)

There has been much confusion over this species—or sub-species as I prefer to call it. In 1869 Dr. Wallace described (Trans. Ent. Soc. London p. 324,) a female *Elymnias* from Borneo as *E. borneensis*. This species belongs to Moore's sub-genus *Mimadelias* and is a Pierine mimic. In 1887 Staudinger figured (Exot. Schmett. pl. 86) what he supposed to be the male of this species, but Fruhstorfer in 1899 (Berl. Ent. Zeitschr. Bd. xlv p. 57) rightly points out that this is the figure of a female, however he then states that the male of *E. borneensis*, Wall. is "ganz blau und gehört mit *Mehida* Hew. und *Sumatrana*, Wall. zusammen in eine andere

Gruppe und zwar in das sub-genus *Bruasa*, Moore." This is quite wrong, for Grose-Smith in 1892 (l. c.) described both sexes of an *Elymnias* of the sub-genus *Bruasa* from Borneo under the name of *Elymnias borneensis*; the male is blue above and is a mimic of the Euploëine butterfly *Trepsichrois claudius*, the female resembles the females of other species of the *Bruasa* section and is not a Pierine mimic as is the female of Wallace's species. Grose-Smith's name *borneensis* being then already occupied by Wallace's species, I venture to propose the new name *trepsichroides*. To make "confusion worse confounded" Grose-Smith described as the female of his *E. borneensis*, the female of another species of *Elymnias* of the section *Bruasa*—*E. konga*—the male of which was described by him in 1899. (A.M.N.H. p. 317.) An undoubted female of *E. penanga trepsichroides* (*E. borneensis* Grose-Smith) from N. Borneo is in the Sarawak Museum collection and is now described for the first time:—Very like the female of *E. penanga*, Westwood, but the sub-apical white fascia on the upper-side of the fore-wings narrower and more outwardly oblique, the costa of the fore-wing striated with white. Underside as in the male but less rufous and darker, the sub-costal primrose-coloured spot, larger than in the male. Expanse 65 mm. Hab. N. Borneo.

74. *Elymnias abrisa*, Dist.

Elymnias abrisa, Distant A.M.N.H. 1886, p. 531.

Sub-sp. *E. abrisa konga*, Grose-Smith.

As stated above, Grose-Smith's description of the female of his *E. borneensis* is in reality the description of a female *konga*; it is very like the female of *E. abrisa*, forma typica, but has more white on the upperside of both wings.

The following is a table of the species and sub-species of the section *Bruasa* of this genus.

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Elymnias penanga, Westw., forma typica. Penang, Malacca and Singapore (syn. *E. mehida*, Hew.)

” ” *sumatrana*, Wall. Sumatra.

” ” *trepsicoroides*, nom. nov. Borneo.
(=*borneensis*, Grose-Smith.)

Elymnias abrisa, Dist., forma typica. Malay Peninsula.

” ” *konga*, Grose-Smith. Borneo.

75. *Elymnias esaca*, Westw.

Melanitis esaca, Westwood. Gen. D. Lep. p. 405 (1851).

Sub-sp. *E. esaca borneensis*, Wall.

N. & S. Borneo.

Fruhstorfer has done something to clear up the confusion surrounding the species of the sub-genus *Agrusia* (Berl. Ent. Zeitschr. Bd. xlv. p. 56, 57. 1899) but I consider the following table to be a more correct statement of our knowledge of the relationship between the different species and sub-species :—

Elymnias esaca, Westw., forma typica. Assam.

” ” *borneensis*, Wall. Borneo.

” ” *godferyi*, Dist. Malay Peninsula, Sumatra.

” ” *andersoni*, Moore. Mergui Archipelago.

” ” *leontina*, Fruhst. Nias.

” ” nov. sub-spec. (fide Fruhstorfer) Batu Is. (Mus. Tring.)

” *maheswara*, Fruhst. Java.

” *egialina*, Feld. Philippines.

E. esaca, Westw., has been wrongly recorded from Borneo. Bornean male specimens have a red patch at the base of the hind-wing below, which males of *E. esaca* have not, and I have no doubt at all but that the so-called *esaca* (male) of Borneo is nothing but the male of Wallace's species *Elymnias borneensis* (cf. *antea*). Distant has confused the female of *godferyi* with the females of

Wallace's species and so has wrongly recorded this species also from Borneo ; as pointed out by Fruhstorfer *E. esacoides*, de N., described from a male only, is probably the male of *E. godfreyi*, Dist. *E. andersoni*, Moore., I regard as a sub-species of *E. esaca*. The female of *E. esaca* has not yet been described, it will prove to be a Pierine mimic.

Sub-fam. AMATHUSIINÆ.

Genus *Zeuxidia*.

Sect. i.

76. *Zeuxidia amethystus*, Butl.

Zeuxidia amethystus, Butler, P. Z. S. 1865 p. 485.

The species appears to have been recorded previously from the Malay Peninsula and Sumatra only.

[In common with nearly all the *Amathusiinae*, this species can be taken in traps baited with rotten fruit].

77. *Zeuxidia doubledaii*, Westw.

Zeuxidia doubledaii, Westwood, Gen. D. Lep. p. 329 pl. 52, f. 1 (1851).

Previously recorded from the Malay Peninsula and Penang only.

78. *Zeuxidia wallacei*, Feld.

Zeuxidia wallacei, Felder. Reise Nov. Lep. p. 461, pl. 62, f. 3.

Confined to Borneo.

Sect. ii. *Zeuxaltis*.

79. *Zeuxidia pryeri*, Butler.

Zeuxidia (Zeuxaltis) pryeri, Butler. A. M. N. H. 1897. vol. 19, p. 469.

N. Borneo

Genus *Amathuridia*.80. *Amathuridia amythaon*, Doubl.

Amathusia amythaon, Doubleday, A. M. N. H. 1847, p. 175,
A. amythaon ottomana, Butl.

The typical form occurs in the Indian region, *ottomana*
 in Borneo and another sub-species in the Malay Penin-
 sula.

Genus *Amaxidia*.81. *Amaxidia aureliana*, Honr.

Amaxidia aureliana, Honr. Berl. Ent. Zeit. 1889, p. 162.
 Confined to Borneo.

This may perhaps be only a sub-species of *A. aurelius*
 Cr., from the Malay Peninsula and Sumatra.

Genus *Amathusia*.

Sect. i.

82. *Amathusia phidippus*, Joh.

Papilio phidippus, Johanssen. Amoen. Acad. vi. p. 402
 (1764).

Borneo, Java, Sumatra with sub-species in the Malay
 Peninsula, Burma, Tenasserim, Nias, Mentawai, Celebes,
 Torres Straits (?)

83. *Amathusia schönbergi*, Honr.

Amathusia schönbergi, Honrath. Berl. Ent. Zeitschr. p. 347
 T. vi. f. 1 (1887).

Sub-sp. *A. schönbergi borneensis*, Fruhst.

Bantermassin. The typical form occurs in Pegu,
 Tenasserim and the Malay Peninsula.

Sect. ii. *Pseudamathusia*.84. *Amathusia ochreofusca*, Honr.

Pseudamathusia ochreofusca, Honr. Iris. 1886, p. 348.

Malay Peninsula, Borneo, Sumatra.

Genus *Thaumantis*.

Sect. i.

85. *Thaumantis odana*, Godt.*Morpho odana*, Godart, Enc. Meth. ix. p. 445, (1823).

Malay Peninsula, Nias and the Greater Sunda Is.

Sect. ii, *Kringana*.86. *Thaumantis noureddin*, Westw.*Thaumantis noureddin*, Westwood, Gen. D. Lep. p. 337, (1851).

Malay Peninsula and Borneo.

87. *Thaumantis lucipor*, Westw.*Thaumantis lucipor*, Westwood, Gen. D. Lep. p. 337, (1851).

Malay Peninsula and Borneo.

Sect. iii, *Thauria*.88. *Thaumantis aliris*, Westw.*Thaumantis aliris*, Westwood, Trans. Ent. Soc, 1856, p. 176, pl. 17.

Confined to Borneo.

Genus *Discophora*.89. *Discophora necho*, Feld.*Discophora necho*, Felder, Reise Nov., Lep. iii, p. 462, (1867).Sub-sp. *D. necho cheops*, Feld.The typical form occurs in Java, *cheops* in Borneo. other sub-species in Sumatra, Nias, Palawan and the Philippines.90. *Discophora tullia*, Cr.*Papilio tullia*, Cramer, Pap. Exot. i, pl. 81, figs. A. B., (1775).

Sub-sp. *D. tullia sondaica*, Boisd.

The typical form occurs in Hongkong, *sondaica* in Java, Sumatra and Borneo, other sub-species in India, Tenasserim, Malay Peninsula and the Philippines.

91. *Discophora amethystina*, Stich.

Discophora amethystina, Stichel, Berl. Ent. Zeitschr. xlv. S. B. p. 4, (1901).

Borneo. I am not acquainted with this recently described species.

Messrs. Pryer and Cator also record *Discophora celinde*, Stoll. and *Discophora ogina*, Hubn, from Borneo, but without having actually taken specimens of these species, so that the records must be regarded as extremely doubtful.

Genus *Enispe*.

92. *Enispe milvus*, Staud.

Enispe milvus, Staudinger, Iris vol. ix, p. 231, pl. v. f. 4, (1896).

Mount Kina Balu.

Marshall and de Niceville in Butterflies of India, vol. i, p. 312, record *Stichophthalma nourmahal*, Westw. from India, Sikkim and Borneo; the latter locality is evidently erroneous and I can find no confirmation of it in any other publications on Oriental butterflies.

Genus *Clerome*.

93. *Clerome phaon*, Erichs.

Papilio phaon, Erichson, N. A. Acad. N.C. p. 401, pl. 50, figs 1, 1a (1834).

Philippines and Borneo.

Westwood (Trans. Ent. Soc., London, 1856, p. 186), gives Borneo as one of the localities of this species, the locality has up to the present never been confirmed; there are however several undoubted specimens of this

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species in the Sarawak Museum collection from Limbang and Trusan, N. Sarawak. As before mentioned there is an infiltration of Philippine forms to be discerned in the N. Borneo fauna.

94. *Clerome gracilis*, Butl.

Clerome gracilis, Butler A.M.N.H., 1867, p. 401, pl. 8, f. 7.
Malacca, Singapore, Borneo, Sumatra.

I cannot agree with Fruhstorfer in regarding this as a sub-species of *phaon*.

95. *Clerome stomphax*, Westw.

Clerome stomphax, Westwood, Trans. Ent. Soc., 1856,
p. 186, pl. 21, figs. 3, 4.

Borneo.

96. *Clerome besa*, Hew.

Clerome besa, Hewitson, Exot. Butt. iii, *Cl.* pl. 1, fig. 1,
(1863).

Fruhstorfer considers this to be merely an aberration of the preceding species.

Borneo.

97. *Clerome arcesilaus*, Fab.

Papilio arcesilaus, Fabricius, Mant. Ins. ii. p. 28, (1787).

Indian region, Siam, Malay Peninsula, the Greater Sunda Is. and Bali.

98. *Clerome kirata*, de Nicév.

Clerome kirata, de Nicéville, Journ. Bombay Nat. Hist. Soc. 1891, p. 344, Pl. F. fig. 3.

Malay Peninsula, Borneo (Kina Balu), Sumatra.

Genus *Tenaris*.

99. *Tenaris occulta*, Grose-Smith.

Tenaris occulta, Grose-Smith, A.M.N.H. 1889. p. 316,
Borneo.

Genus *Xanthotænia*.100. *Xanthotænia busiris*, Westw.

Xanthotænia busiris, Westwood, Trans. Ent. Soc. London, 1856, p. 187.

Tenasserim, Malay Peninsula, the Greater Sunda Is., and Nias.

Genus *Amnosia*,101. *Amnosia baluana*, Fruhst.

Amnosia baluana, Fruhstorfer, Ent. Nachr. xx, No. 19, p. i, (1894).

N. and S. Borneo.

Herr Fruhstorfer informs me that in his collection is a female of this species from S. Borneo which differs somewhat from the type female from Kina Balu; I have only seen specimens from Mt. Matang near Kuching and these do not appear to differ in any way from the published description of the Kina Balu form: Herr Fruhstorfer's S. Borneo specimen is evidently from the low-country.

The position of this genus is very doubtful. I follow Fruhstorfer in placing it amongst the *Amathusiinæ*; de Nicéville suggested that it should come at the end of the *Satyrinæ*, whilst Felder and Schatz-Röber placed it amongst the *Nymphaliniæ*, probably its correct position.

The Sakais of Batang Padang, Perak.

BY G. B. CERRUTI.

The word Sakai is the Malay name for the aborigines who inhabit the forest on the high slopes of the lower half of the main ridge and some subsidiary ridges of mountains of the Malay Peninsula. As the Malays were the first to come into intercourse with these aborigines, the influence of the Malay, as well as the fear of them, is strong upon them. Malay history in Perak reaches with certainty no farther back than the 16th century, and Malays have no written records relating to the Sakais, whom they treated as slaves and less than human beings.

The Sakais themselves have neither written records nor signs to represent language, whatever information regarding their origin is supplied by them rests solely in tradition.

The narrative of events, which is extracted from them with difficulty, very seldom passes beyond the time of a grandfather, and may be regarded as inexact if not incoherent.

We shall, therefore, have to look for knowledge of their origin to the results of a morphological study of the race.

PHYSICAL CHARACTERS.

The average height of the male Sakai may be taken approximately at 5 ft. 3 in : and that of the female at 4 ft. 11 in : These figures are for the present only tentative. The colour varies from a light to a chocolate-brown, the eyes are slightly almond shaped, the nose is flat, the forehead straight, the lips full and separate, but not negro like, the teeth regular and well-formed though blackened by sireh, the hair copious, black, somewhat wavy, occasionally crisp, but never woolly. The senses are unusually keen and well developed. In his native jungle he sees better, hears better, and apparently uses his sense of smell better than other races. His touch is delicate and sensitive, as is that of most savage races, and his sense of

taste is his criterion to judge of the good or ill effects of many objects.

The body and limbs are generally speaking well formed. Cripples and deformed children are extremely rare amongst the Sakais, nor are abnormalities of anatomical structure frequent amongst them.

MENTAL AND MORAL CHARACTERS.

A desire for what may be called independence, but what in reality is a dislike of restraint is remarkable in this race. Work for a Sakai must be voluntary; the moment that it becomes compulsory it becomes distasteful.

Not less notable is his distrust of strangers. The approach of a white man will often scatter a whole habitation of Sakais; and even the presence of natives of other races, such as Malays, Tamils or Chinese, is a frequent cause of their speedy removal from an accustomed haunt. Once the Sakai confidence is secured, he is like a child, and must be treated as such. All obligations entered into with him must be scrupulously observed, for, like the natural child, he is not prone to deceit or falsehood. He is also possessed of the child's simple idea of morality, as expressed in his words and acts. Early marriage being the custom, the immorality of civilized races, with its literature and influence on social relations, is unknown.

DRESS.

Bark beaten finely and elongated until it resembles coarse ramie fibre, is the material from which the primitive clothing is made. Both sexes fasten strings of this bark, about six inches or more wide, around the waist, by tying them in back and in front. A thin fillet of the same stuff, dyed and coloured in a simple pattern, is used to tie the hair, which is generally filled by the women with combs, made of bamboo and ornamented in various styles.

Flowers are universally worn by the women in the hair, around their necks as necklaces, and occasionally in their waist-belts of odorous grass. In both sexes the nasal septum is perforated for the insertion of straight pieces of bamboo, and the ear only by the women for the insertion of some bamboo with

some odorous grass, of shell, and of animal teeth, to serve as ornaments.

ORNAMENTS.

The use of necklaces belongs to attire. Ornamentation of the body is effected by painting the skin in different colours, mostly red, yellow and black, by dyes obtained from plants, gutta and lime. Two lines, one drawn from the vertex of the head over tip of nose to chin, and the other from ear to ear, bisecting the first, divide the face into four areas, the painting of two of which on one side must correspond to the painting of the two others of the opposite side.

The chest and body are generally divided also by a vertical line cleaving the trunk in two halves, right and left, upon which similar patterns are painted.

The object of this adornment by painting is not merely decoration, it is what formerly would have been called dedicated to superstitious uses. The painting of the face and body is, in fact, a species of charm and is supposed to act as amulets and talismans are presumed to act, by warding off dangers, driving afar evil spirits, and filling the wearers with unusual courage.

RELIGIOUS SENTIMENT.

It is a peculiarity of the Sakai that, like many of his characteristics, his religious belief is extremely simple. The idea of a Creator, of an all-powerful, all-just and all-merciful Ruler, is absent from his scanty mythology. The origin of the world and the life of mankind on the earth present no problems to him. He believes simply in good and evil spirits. The good spirits are to him vague, indefinite beings, who manifest themselves rarely fatally, and about whom, therefore, he knows and believes little. The evil spirits, on the contrary, are feared, because they are considered to dwell in dangerous ravines, in abandoned *kampongs*, in caverns, and in places regarded according to popular Sakai report as uncanny, whence they issue to infect the Sakais with famine and disease. They also are believed to make themselves felt in thunder, in lightning, and most particularly of all in wind. The early morning breeze

which blows on the tropical hills after 2 a.m. is for the Sakai the work of bad spirits. It is the hour when he feels the fall of temperature most, and it is for him a fatal hour. Accordingly, all true Sakais are awake at this time to chat and smoke and wait until the biting blast passes away. Tattooing is little known amongst them; and though they have a certain knowledge of the ways of tigers and snakes, these are neither worshipped nor considered to be directly concerned with evil spirits.

SOCIAL RELATIONS.

The most important circumstance of a man's, and of woman's life, marriage, does not loom large in the Sakai's mind. For him it is neither a religious ceremony nor a civil contract, it is merely a mode of sexual union founded upon mutual sympathy. Rites in connection with it have so far not been proved to be practised. There is neither capture, nor purchase, nor selection. The elders, moreover, do not appear to interfere in the choice of their sons and daughters.

It is probable that it is owing to this fact that these aborigines are gradually decreasing in numbers, even though consanguinity in matrimonial relationship is forbidden, about the only prohibition of any kind that the Sakais know, and to which they submit.

Polygamy exists, but it is rare. Divorce also exists, and is common. The marriage tie, being as loose as is described, is unable to consolidate a union; the slightest incompatibility of temper, temporary sterility of the wife, lasting about three durian seasons, or an attack of dangerous disease, is a sufficient cause for a divorce, which is accomplished without resentment or apparent jealousy on either side. Deformed persons which are very rare amongst the Sakais, or those attacked by dangerous disease, must make a vow of celibacy. The women give birth to their children with only old women attendants, but in a place prepared by the husband. The child is not allowed to touch the earth, either from a superstition that the child would be injured by contact with the earth, or that the child would soil the ground, but is laid upon a couch of dry leaves, which cover a rudely made clay embankment. Directly after birth only old women and young children who are not able and

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strong enough to enter the jungle to find their daily food are permitted to approach the child. All others are excluded for a certain period, as there is a certain superstition among them that able bodied persons approaching a newly born baby will contract its smell and take it to the jungle with them when out looking for food. The evil spirits, it is said, are always on the look-out for persons with this smell, and will follow them on their return to their huts to the birth place of the child. At the end of that time the child receives what may be called a ceremonial purification of water, and is presented to him at the village.

HABITS.

The Sakais are essentially nomadic, and clear only very limited areas in the hill forests for cultivation; of rice culture they know little, for corn or maize and the Sikoi, sweet potatoes, and tapioca, are their principal crops. The most primitive of the Sakais still subsist by the chase, using the Sumpitan, or blow-gun, and poisoned darts to kill wild animals and birds. As is well-known, the darts are poisoned by being dipped in a gummy or glutinous extract of Ipoh which hardens on the tips, and of another and more dangerous poison extracted from the roots of a kind of creeper named by the Sakais *Legop*.

The Sakai dies as he lives, surrounded by powers of nature which he understands not. If a disease be regarded as contagious, a noise is made on rude drums made of big bamboo to drive away the evil spirits. It is remarkable that there are not musical instruments to express grief; but in expression of joy a flute played through the nose, and a kind of mandoline made also of bamboo, are performed upon particularly by women. After death comes burial in a deep grave, the body generally standing erect in the grave about 4 feet deep or in a sitting posture with tobacco, betel-nut, potatoes, fruits and also with his blow-pipe and poisoned darts by his side. The grave is closed by felling some jungle surrounding it and for about a week they bring the usual food, if a female also some flowers, and afterwards abandon the neighbourhood; for a dead person frequently drives the timid Sakais miles away from promising slopes on which they were beginning to grow their necessary food.

On Some Hymenoptera From the Raffles Museum, Singapore.

BY P. CAMERON.

Dr. Hanitsch having sent me to be named some undetermined Hymenoptera from Singapore, I give a list of them as a small contribution towards the knowledge of the Hymenopterous Fauna of the Island.

Evania appendigaster Lin. A cosmopolitan parasite in the egg-cases of Cockroaches.

Stilbum splendidum, Fab.

Macromeris violacea, Lep.

Discolia decorata, Burm.

This species (which = *D. flavopicta* Lm.) is in the collection of the Raffles Museum from the Dindings.

I think it very probable that *D. ergenna*, Com. (Journ. St. Br. Royal Asiat. Soc., 1902, p. 82) is its male.

This species is recorded by Magretti (Ann. ch. Museo Civico di Storia Nat. di Genova (2) xii, 243) from Schwegoo, Burma; but it is not included by Bingham in the Fauna of British India, Hymen. It has been reported from Java and Sumatra.

Salix flavus, Fab.

Sceliphron violaceum, Fab.

Irypoxylon petiolatum, Sm. Found in the Museum Workshop.

Piagetia ruficollis, sp. nov.

Black the scape of the antennæ, the greater part of the clypeus, the prothorax, the mesonotum in front of the tegulæ, the tegulæ, the abdominal petiole, except at the base, and the

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legs, red; the 4 front coxæ above, the hinder entirely, the basal point of the 4 front, trochanters, of the hinder above, a line on the fore femora behind, the apical two thirds of the hinder above, the greater part of the hinder tibial and the base of the hinder coxæ, black. Wings hyaline, the basal half of the radial cellule, the apex of the 1st cubital cellule, the greater part of the 2nd and 3rd and the discoidal along the recurrent nervure smoky; the nervures and stigma black. Head and thorax covered with silvery pubescence ♀

Length nearly 10 mm.

Hab. Singapore, June.

Clypeus indistinctly keeled down the centre; there is a semi-circular depression in the middle at the apex, which has a distinct margin and has a slight incision. Base of mandibles broadly yellowish testaceous. The base of the hinder femora is slightly thickened below, the apex of the thickened part ending in an indistinct tooth.

Comes nearest to *P. rufivenis*, Cam. which may be known from it by the antennæ being almost entirely red, and the sides and apex of the median segment are also red.

Rhynchium hæmorrhoidale, Fab.

Vespa cincta, Fab.

Icaria Singaporensis, sp. nov

Brownish-black, the head below the antennæ, except for a narrow black line down the centre, a mark, twice longer than wide and dilated above, a mark twice longer than broad, transverse above, narrowed and rounded below, on the front the eye incision and the lower inner orbits broadly, the upper orbits narrowly, the line dilated above to the hinder ocelli, the outer orbits entirely below, the inner half of the upper part, the mandibles, except the teeth, a line on the pronotum, the base and the lower half of the propleuræ, the meso and metapleuræ, except for an oblique black line on the former and extending from the lower furrow downwards and with a short line on either side of its top, 2 lines on the mesonotum, the base of the scutellum, the post-scutellum, 2 large lines on the centre of the

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metanotum, the sides of the petiole to near the apex, 2 round marks on the centre of the post-petiole, the extreme base of the 2nd segment, its sides to shortly beyond the middle broadly, the mark at the apex diverging towards the middle of the segment, 2 large marks on the basal half of the 3rd, the marks broader than long and rounded on the inner side, the 2nd segment below, except along the sides and apex, the latter with the sides broadly and roundly dilated and the centre transverse, the base of the 3rd segment, the line narrowed and transverse in the middle and lines on the sides of the apical segments, yellow, legs black, all the coxæ, the lower side and the apical half of the femora above, the underside of the tibiæ and their apex above, yellow; the apical joint of the fore tarsi of a more obscure yellow. Wings hyaline, with a violaceous-tinge, the nervures and stigma black.

Length 14 mm. ♀

Hab. Singapore.

Scape of antennæ below yellow, the flagellum beneath and its apex above, rufous. There is an indistinct keel on the lower part between the antennæ. The black on the front is tinged with rufous. Thorax smooth, the scutellum closely, minutely punctured, its apical half furrowed in the centre. The petiole is longish as long as the 2nd and 3rd segments laterally together; the dilated apex is somewhat twice longer than wide. Head broader than the thorax.

Comes near to *I. 4-maculata*, Cam. The present species is more slenderly built and with a more slender petiole in particular being more slender and not dilated in the middle.

Icaria rufinoda, sp. nov.

Deep black, densely covered with white pubescence, the apex of the clypeus and the base of the mandibles pallid yellow, the petiole ferruginous; the wings hyaline, the whole of the radial cellule and the greater part of the apex from the 2nd transverse cubital nervure smoky, with a violaceous tinge, the nervures and stigma dark fuscous. ♀

Length 12 mm.

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Hab. Singapore, June.

Front and vertex alutaceous, the face and clypeus densely covered with a white pile. Thorax alutaceous, covered with a white pile. Metanotal furrow deep, the sides oblique, the bottom with a narrow smooth impression; it is not striated. Scutellum and post-scutellum coarsely alutaceous, almost rugose; the apical slope of the post-scutellum smooth and shining. Abdominal petiole nearly as long as the 2nd segment, the basal third narrowed; the basal half of the dilated part obliquely narrowed towards the base, the 2nd segment bell-shaped, its length slightly greater than its width at the apex, which has a distinct crenulated furrow, the apical segments with a silky pubescence. Legs primrose, the spurs black.

Comes close to *I. lugubris* Sm. which may be known from it by the black abdominal petiole.

Nomia iridescens, Sm.

Crocisa emarginata, Lep.

Anthophora zonata, Lin.

Malay Hymenoptera Addenda and Corrections

In my paper (J. S. B. R. A. No. 39, 1903) I have omitted to state that Mr. Shelford reared *Spinaria curvispina* Cam. from the larva of a species of *Thosea*, a moth of the Family *himacodidae* and *Dedanima longicornis* Cam. from a species of *Charocampa*.

I take this opportunity of adding the descriptions of two new Malay species of *Bracon*.

Bracon teius sp. nov.

Black; the head pallid yellow; the pro. and mesothorax and the sides of the median segment on the basal half, ferruginous; the 4 front legs ferruginous, the middle tarsi fuscous, the hinder legs black, thickly covered with black hair, the calcaria dark testaceous. Wings dark fuscous, violaceous, with an indistinct hyaline, oblique cloud in the 1st cubital cellule. ♀

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Length 16; terebra 20 mm.

Hab. Ternate.

Face rugose, covered with long pale hair. Apex of 1st abdominal segment closely, distinctly longitudinally striated; the plate on 2nd segment clearly longer than its greatest width irregularly striated in the centre, its keel reaching to the base of the apical third of the segment; from its outer side a keel runs obliquely to the apex; the part between the keels bears curved, oblique, clearly separated striæ; the securiform articulation and the furrow on the next segment striated; in the centre the striæ are continued on to the centre of the segment. The 2nd and 3rd abscissæ of the radius together are about equal in length to the 1st. The abdomen is narrow not dilated in the middle and is clearly longer than the head and thorax united.

Bracon spilogaster, sp. nov.

Black, the head pallid yellow, the thorax and 4 front legs ferruginous; the wings fuscous, the stigma and nervures black. ♀

Length 9 mm.; terebra 4 mm.

Head smooth and shining; the face and vertex covered with fuscous pubescence. Thorax smooth and shining; the metanotum has 2 blackish marks on the apex. Abdomen as long as the head and thorax united; black, the basal 4 ventral segments pale, with 2 large black marks in the centre; broad in the middle, narrowed at the base and apex; smooth and shining; the securiform articulation stoutly striated; the keel on the 2nd segment is longer than broad, is broad at the base, becoming gradually narrowed towards the apex, which is prolonged into a short keel with a depression on either side, but not reaching to the apex of the segment; the furrows on the 3rd and 4th segments are narrow, curved and smooth.

The tibiæ and tarsi are thickly covered with a pubescence and, more sparsely, with pale hair; the hinder calcaria fuscous; the 2nd cubital cellule in front is about one-third longer than the 3rd. Mandibles pale yellow, the teeth black.

P. Cameron.

ERRATA.

In my paper in the "Journal" for 1902, No. 37 occur the following printer's errors.

- Page 30, 13th line from bottom for "covered" read "curved"
 " 31 & 32 for "Megiselens" read "Megischus."
 " 33, 10th line from top for "sharpened" read "shagreened"
 " 34, 1st " " for "smoothy" read "smoky."
 " 37, 17th " " for "Brule" read "Brulle."
 " 39, 5th " " for "expressed" read "depressed"
 " 39, 16th " " for " " read " "
 " 44, 7th " " for *acvenitini* read "*acoenitini*."
 " 44, 10th " " for *acvenites* read *acoenites*.
 " 47, 11th " " for Fah. read Fab.
 " 50, 3rd line from bottom add after "smooth" *peronatum*.
 " 50, add after "reticulated" in last line *fuscicorne*.
 " 51, above *anisobas cincticornis* add *Ichneumonini*.
 " 52 " *Bodargus* add *Joppini*.
 " 53 " *Diapetus* add *Cryptini*.
 " 62 2nd line from bottom for "slope" read "shape"
 " 71 14th " top *Joppini* should be placed above *Zono-*
joppa.
 " 73, 5th " bottom for "are" read "areæ."
 " 81, top line for "metapleurg" read "metapleuræ."
 " 91, 9th line from top for "sharpened" read "shagreened"
 " 114, 12th " bottom for "tubæ" read "tibiæ"
 " 125, 2nd " " for "tech" read "teeth"
 " 138, 3rd " " for "covered" read "curved"
P. Cameron.

Correction to Journal No. 39.

Page 54 after line 18 insert.

"Follow the principal noun with which they are connected: and the object."

Short Notes.

On the Flowering of *Barringtonia racemosa*.

The *Barringtonias* are trees of moderate size, belonging to the order *Myrtaceae* and usually to be met with along tidal rivers, or more rarely in the hill woods. The flowers are produced in long hanging racemes, or in some species in short erect spikes. In *B. racemosa* the pendulous spikes are about $2\frac{1}{2}$ feet long and bear about 30 flowers. They are sessile with a short $\frac{1}{8}$ inch ovary with 2 or 3 rounded green sepals and four lanceolate white petals, an inch long. The stamens are innumerable, with slender filaments an inch long and minute yellow anthers, the style is nearly as long slender with a minute capitate stigma and all deep crimson.

The peculiarity of its flowering consists in the fact that it is nocturnal. The flowers open about 4 or 5 to 16 on each spike at a time, the buds commence to split about mid-day, and remain partially open till nightfall, fully expanding at about half-past seven or eight. At that time the petals are spread out widely, and the stamens radiate in all directions, so that the flowers have a brush-like appearance.

Before daylight the petals and stamens have fallen in a mass, leaving only the calyx and the stiffly projecting style.

They exhale a rather coarse scent somewhat resembling that of meadow-sweet, and from a tree with about 20 flowers open at once I could perceive the scent distinctly at 25 paces off. The honey, abundant at night, is contained in a nectary formed by the connate bases of the stamens. The flowers are visited by moths, I caught a common grey Noctuid, and a rather curious looking light red brown *noctua* with plicate wings.

Moths were not very abundant at the flamers, when I observed them, but perhaps this was due to the strong moonlight.

The smaller brown moth plunged into the flower among the stamens so as to reach the honey.

I have little doubt that a large tree of the genus *Careya* (apparently undescribed) in which the flowers were of similar shape but borne in an erect short spike, is fertilized in the same way, as though in full flower no open flowers were procurable during the day time, but the whorls of stamens were found covering the ground in the mornings. In this lofty tree in the Botanic gardens jungle the stamens were white but the base of the filaments crimson.

The Myrtaceæ as a rule seem to be day flowering plants. The Eugenias, our biggest genus, have usually white flowers often produced in large corymbs. *Eugenia lineata* and similar species are haunted, when in flower, by abundance of bees. *Apis dorsata* and *A. florea*, *Trigona collina* and other species and the pollen-eating flies (*Syrphidæ*) and also by many butterflies.

E. Ridleyi peculiar from the flowers being light apple green in colour is visited by flies (*Muscidæ*).

Rhodamnia trivervia with small white sweet scented flowers produced in great abundance and lasting but a day each, is visited by bees, *Apis*, and *Trigona*, and by the *Syrphidæ*.

H. N. Ridley.

Fertilization of *Webera Stellulata*.

Webera Stellulata Hook. fil. is a small shrub 2 or 3 feet tall belonging to the order *Rubiaceæ*. It has smooth dark green shining leaves elliptic cuspidate, and a short dense corymb of light green flowers. The buds are peculiar in shape, being fusiform and narrowed towards the tip, the joints of the petals instead of being pressed together at the top into a point as in the other species of *Webera* are turned out to one side bent at an angle pointing from left to right. They are green and covered with white hairs and at the base they are connate into a short tube, in the mouth of which are long white hairs. The stamens five in number have short green filaments and long linear anthers, which split and shed their pollen before the

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flower opens. The style is long and cylindrical and covered entirely with white hairs. When the fully developed bud is touched on the tip, the petals suddenly spring open and lie quite flat in the form of a star. At the same time the pollen lying loose in the bud is thrown upon the other flowers already open. The mechanism by which this sudden expansion of the flower takes place seems to be very simple. The upper part of the petals are twisted in bud, and on the side opposite to the direction in which the bent tip points a portion of the edge is incurved so as to be tightly held by the next petal to it. A light pressure, as of an insect, on the horizontal tips of the petals by bending them down causes the petals to separate and fly back suddenly, jerking the pollen out over the other flowers, or possibly on the insect visitor. On the top of the ovary is a brown sticky ring which may perhaps secrete honey but I cannot detect any in the tube. The flowers possessed a faint scent, and may be fertilised by insects, but considering the inconspicuousness of the green flowers, as compared with the sweet-scented white blossoms of the other *Weberas* and the fact that it is quite easy for the pollen of one flower to be thrown by the mere opening of the flower on to the stigma of the adjacent one, it is more than probable that the plant itself fertilises one flower by the pollen of another.

Webera stellulata inhabits forests, usually in rather dry spots. I have found it in Singapore at Woodlands flowering in June, and Bukit Mandai, also in Johore, at Panchur; Selangor, Kuala Lumpur; Negri Sembilan, Gunong Angsi.

The Malays call it Kahwa hutan and Kuruseh putih and Pokoh Subiroh. It flowers from December to June.

H. N. Ridley.

Human Images among the Orang Mantong.

I have long suspected the existence of *Berhala*, or human images, among the "wild tribes" of the Rhio archipelago, but never actually met with any until the past summer (1903).

When at Pulo Sanglar or Lake Durian, Rhio archipelago, in July. I found two wooden images representing women, in a cave near the sea shore, not far from Kampong Telok Lanun.

Each image is about $3\frac{1}{2}$ feet high. One of harder wood was much more carefully carved than the other. It had 3 wooden horns about 6 inches long projecting upwards from the head. These horns were serrated on one edge. This figure also had straight rudely carved arms of soft wood, much decayed.

The teeth were represented by pieces of broken shell. A blackish line extended diagonally across the chest, meeting a horizontal line extending across just above the position of the nipple. A blackish spot was over the position of the heart.

The other figure was very rudely carved of soft white wood and was without arms.

The figures were lying face downward on the floor of the cave and had evidently not been disturbed for months, as roots were growing over them and the wood was beginning to decay.

Pulo Sanglar is inhabited by Orang Mantong, and latterly many Chinese have settled there cultivating gambier.

The Batin of Telok Lamun called himself a *Malay*, but he was more than half Orang Laut.

No true Malays live on Sanglar, but they inhabit the neighbouring small islands. These Malays call all the Sanglar people *Tambus*, except of course the Chinamen, and say there is not a Mussulman. All the Sanglar people eat pig. They are certainly not true *Tambus*. They were very shy, and I had a lot of trouble inducing them to be photographed.

No information in regard to the use of the images could be obtained. Every one denied the existence of such things, not knowing I had already found them.

The images cannot be regarded as true *berhala* or idols. Most probably they are a sort of "*Sakkat buang*" for use in

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sickness. Among the Orang Laut when a man is ill, a wooden figure of a bird, snake, fish or other animal is made, and the *pawang* or *bomo* exorcises the hantu or devil in the sick man and drives it into the figure, which is then carried out to sea and thrown overboard. Last year we picked up a wooden bird floating in Durian Strait.

Very likely the human figures were used in the same way, being carried out into the jungle instead of out to sea. Like the Rumah hantu to be seen in the woods near Malay Kampongs. These images resemble the *adu adu* of Pulo Nias.

Dr. Abbott.

The Orang Laut of Singapore

In Journal 83, p. 247, Mr. Skeat and I published some notes on the Orang Laut of Singapore, a race very nearly extinct, and of which very little is known, I have since come across an account of them in Finlayson's Mission to Siam and Cochin China, in 1821. The author somewhat naturally mistook them for Malays and thus describes them. "The condition of the lower class of Malays in these parts is wretched beyond what we should conceive to be the lot of humanity in an intertropical climate, almost the whole of their life is spent upon the water in a wretched little canoe in which they can scarce stretch themselves for repose. A man and his wife and one or two children are usually to be found in these miserable sampans; for subsistence they depend on their success in fishing. Their tackling is so rude and scanty that they are often reduced to the most urgent want, when they have made a meal they lay basking in the sun or repose under the dense shade of the mangrove till hunger again calls them into action. They have scarce a rag of cloth to secure them from the scorching noon-day sun or shelter them from the damp and noisome dews and exhalations of night. The women are not less dexterous than the men in managing their boats. Their only furniture consists of one or two cooking pots, an earthen jar and a mat made of the leaves of the Pandanus which serves to protect them from the rain. In the numerous bays inlets and creeks that surround Singapore an inconceivable number of families live in

this wretched manner who have never possessed a house nor any sort of abode on the land. They are constantly roving about from place to place in pursuit of fish. What they have succeeded in taking more than is required for their immediate use, they dispose of to the fixed inhabitants, taking rice, sago, betel and cloth in return. This description of Malays goes by the appellation of Orang Laut or men who live on the sea.

A number of the people called Orang Laut were brought to us for inspection. They were superior in condition, in appearance more civilized than many whom we had seen in the bays and creeks remote from the haunts of men. A portrait was taken of one of them illustrative of the physiognomy and general appearance of the Malay race, six of these men were more minutely examined. Their average height was five feet three inches, average weight nine stone eight pounds, average circumference of the chest two feet ten inches, circumference of the clenched fist about eleven inches, average of facial angle $66\frac{1}{2}$, average temperature under the tongue $100\cdot02$."

H. N. Ridley.

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Various methods of computing the time for planting among the races of Borneo.

BY DR. CHARLES HOSE.

Agriculture, even if rude, is at once a token and a cause of primitive culture. The native of Borneo has no special reason to pay attention to the phenomena among which he lives, unless he is a farmer. He may, like the Punan, know the lie of the land for miles around, and be able to judge the slightest indications of the jungle, but that is hardly knowledge which leads to civilization. The farmer, on the other hand, has to study the course of the seasons, the nature of the soil and the variability of animals and plants.

There are certain special problems which have presented themselves to the uncultured farmer in Borneo, which would not cause the least difficulty to an European in a temperate climate. In the tropics as everywhere else, agriculture is performed with the yearly regularity which is so familiar that to us it seems in no way remarkable. Near the equator, of course, seasons have not as a rule the same striking character that they have in higher latitudes. In Borneo from October to April the wind is usually from the north-east, and brings rain, more to some districts than to others, while during the rest of the year the monsoon is reversed, but there is little else to distinguish one month's weather from another. It is almost impossible to tell the time of year from temperature or moisture, and quite impossible to do so with any accuracy.

The farmers have found, nevertheless, that certain seasons are more favourable than others to their operations. It is not so much the crop which requires to be sown and reaped at particular times, as the ground, whose preparation is difficult in

wet weather. Rice will grow and ripen in a sufficiently warm, sunny climate provided there is enough water on the land, either from irrigation or continual showers.

In Borneo there is usually rain all round the year in magnificent quantity. It is not according to the rainiest season, but according to the driest that the farmer regulates his work. For the jungle is felled and left to dry before being burnt, and the success of the crop depends largely on the completeness of the clearing. The best crop will be generally obtained on land burnt off at the driest season.

How are these illiterate tribes to find out when a particular season has arrived? In England this is simple enough; we have almanacks galore, we have clocks which can tell us the length of time from sunrise to sunset. The native does not know how many days there are in a year, and would not take the trouble to keep count if he did. He may know how many moons there are, but like the Malays he would probably get about eleven days wrong every year, and eleven days is a large error of itself. In two or three years the crops would be planted far too early. Unfortunately, too, the length of the day varies very little in the tropics, and the native has no means of observing that variation. He is therefore obliged to have recourse to the stars or the sun to tell the time of year.

The Dayaks and many of the less important tribes look to the stars to guide them. Every day, as they know, these bodies rise a little earlier, and some wise man is appointed to go out before dawn to watch for the Pleiades. Dayaks use the Malay expressions "*bintang tiga*" for Orion's belt, and "*bintang banyak*" or *Apai andau* (the father of the day) for the Pleiades. When the "seven stars" rise while it is yet dark, it is time to begin.

Two of the house are sent into the jungle to find omens, while the others wait. In two days perhaps, or a fortnight, or at most a month, the favourable indications will appear, and then an end is made both of science and superstition and the Dayaks set to work on the forest. If they are so late that Orion's belt rises before daybreak, they must make every effort to regain lost time or the crop will be poor. What kind of land they will choose depends on circumstances: in any case it will have lain two or three years fallow and will be thickly covered with vegetation.

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The virgin forest, though less easy to fell, has this advantage over previously cleared ground, that no grass is growing on the land and much trouble in weeding is avoided. But the men do the felling, the women most of the weeding, and whether a choice is made of forest or scrub will depend largely on the courtesy and consideration shown by the men for their wives and daughters. If the forest is chosen, the men, sometimes helped by their womenfolk, cut down the undergrowth and small trees with their parangs, and then begin to attack the great trunks from slight platforms well above the ground, which enable them to avoid buttresses and roots. The felling is usually accomplished in this manner. The ground being as a rule the sloping side of a hill, each tree is cut through from one side nearly to the core, and on the opposite side an equal distance a little lower down the trunk. The lower cut is made on the side facing down hill. By dint of much labour, in which the various members of a village generally come to help their comrades, a whole hill side of trees is cut through till a slight blow will hurl them to the ground. Two heavy trunks at the summit are then felled, and made to fall on the neighbouring trees. These fall in their turn, and carry with them those below, till with a loud roar and a mighty rush of wind a V shaped space is cleared on the slope below. Like a pack of cards the forest monsters are laid low, to the intense excitement and delight of the howling spectators.

Then again the Dayaks await the permission of the stars for the next operation. Only when the Pleiades are at the zenith before dawn do they think it advisable to burn and sow. By this time, unless the weather has been wet, an unlikely circumstance at the season of year, the boughs are dry as match wood and the leaves are dead, though still on the twigs. Some hot day, towards noon, when a breeze is blowing, they take down special charms to secure wind, and also endeavour to attract the Æolian spirits by keeping up a loud whirr. The mass of dead wood is then set on fire. The flames rise to the skies and fill the country with smoke, while the added heat of the fire is almost insupportable. Insects with singed wings buzz around, and the hawks dive into the smoke to find their prey. The spectacle is grand indeed. Sometimes wet weather keeps

the wood damp until the leaves fall from the twigs, and then the land is often left untilled, for it is nearly useless. When the fire has passed over the fallen timber, deep layer of ashes and charred trunks is all that is left. The partially burnt wood is heaped round a stump and again ignited, till little save ashes, occasional stumps, and islands of green trees left to preserve valuable fruit, are to be seen in the clearing. The rice is then dropped by the women, a few grains at a time, into holes made by the men with pointed sticks; perhaps cucumber, maize and other sundry plants are sown round stumps or where the ash is especially thick; and the crop is left to the weeding of the people and the fertility of a warm, moist climate and virgin soil.

The Kenyahs and Kayans judge the seasons by the sun, and the method they adopt displays a wonderful knowledge of the precautions necessary to accuracy. The Kenyahs measure the shadow cast at midday with an instrument the Greeks would have called a gnomon. It is a pole set up near the village, guarded by a fence to keep away mischievous children and animals. In height it is more than a fathom by the span of the thumb and first finger. A piece of string weighted at each end and thrown over the top shows when it is perfectly upright. The length of the shadow is measured by a stick called "*asu do*" which is marked with notches gradually approaching one another more closely as they get further from the pole.

The interval between successive notches represents the change in the length of the shadow in three days. Midday is known to be the time when the shadow cast by the sun is at its shortest, and the Kenyahs are also aware of the fact that the direction of the shadow at noon, though sometimes to the north sometimes to the south, is always in the same straight line. The Kayan method, which differs more in practice than in theory from the Kenyah, is to let in a beam of light through a hole in the roof and measure the distance from the point immediately beneath the hole to the place where the light reaches the floor. Their measure is a plank, made level so that round discs do not roll on it, and fixed in position and direction by chocks placed at the side. This shows that they know the sun to be always due north or due south at noon.

I can only suggest one reason why these people though they have got so far, have not invented a sun-dial. That is this. In the tropics there are many days near each equinox on which no sun-dial would be of use. When the sun in its yearly course passes from the north of the zenith to the south, its shadow is due west in the morning hours, due east in the afternoon. Any time-piece depending on the direction of the shadow must therefore fail. The difficulty might indeed be obviated, but no sundial could be devised which would in the tropics tell the time in every month of the year.

This then is their instrument, in which no point essential to accuracy has been neglected. The measuring stick has been notched in accordance with the experience of previous years, and when the shadow, after lengthening during May and June, begins again to grow less, the house assembles and by mutual consent they decide when to plant. The best time for planting has not arrived until the noonday shadow is the length of the forearm from the tip of the fingers to the inside of the elbow. When the shadow is less than the length of the hand, sowing is not likely to prove very productive. The measuring stick is left in charge of some old and presumably wise man, less capable than his fellows of hard work, who sees to it that the shadow is not measured obliquely and reports the favourable moment. This man is excused from farming and is supplied with necessaries in return for his services. In good years he naturally is very well treated.

It would be pleasant to stop here, and say that otherwise the Kenyahs care nothing about the heavenly bodies. But having given the bright side of the picture and shown how they have acquired some accurate knowledge, the result of long and genuine experience, it is only fair to state that they lay almost equal importance on the meaningless mummerly with which these mysterious measurements are accompanied. Such important operations could hardly fail to be overlaid with superstition.

Notes of Visits to Puket, Ghirbee and Trang.

By C. W. KYNNEERSLEY.

Left Penang at 5 p.m. on Friday, 27th February, 1903, in s. s. *Avagjee*, (owned by KOE GUAN,) which trades between Penang and Rangoon calling at the Siamese ports *en route*.

Arrived at Puket at 2.30 p.m. on 28th. Since I was there two years ago quarantine sheds have been put up opposite the light-house and there is said to be a good water supply there.

The harbour continues to silt up and undoubtedly the mining works have made matters worse. Where I landed last time is now a high mud flat which I hear is going to be mined.

The site of the present town is all tin land. The principal road to the landing place has been diverted to allow a mine to be opened. Borings are being taken by the Government Offices and if tin is found the site will be sold and new Offices built elsewhere. Everything is sacrificed to the mines. At the present price (\$97) it pays well to work mines which were given up at my last visit when tin was about \$60. SIM BEE has been very busy laying out new roads. The road which the late Commissioner was opening up has of course been abandoned as a bad one. A new road (60 feet) has been laid out by the edge of a new mine parallel to the principal shop street, the land on either side which is low being filled in with the overburden from the mine. Shop houses will be built and a new market erected. I noticed several improvements since my last visit. Then the place swarmed with pigs. These have been banished outside the town. On the outskirts of the town among the brushwood I noticed the mounds of new Chinese graves. SIM BEE said he was going to stop indiscriminate burying and have a Chinese Cemetery. The last Commissioner said the same. The last

Commissioner told me he had put a stop to clearing hill sides for hill padi. SIM BEE said he had stopped it. Jungle fires are still frequent and there is no timber to speak of left near Tongkah. SIM BEE talks of a Forest Department under an Officer from Bangkok. A beginning has been made to put the main road to Naito (the other mining centre) into repair and a mile and a half has been done. A new road is also being made in the direction of Pa Prak, the old telegraph trace made by the former Commissioner, with poles and wires still standing, being abandoned as bad. New poles have been ordered and the wire will shortly arrive. I was assured that the line would be in working order in a few months. The trace goes through Kesúm, Pungá, Ghirbee and Trang to Na-kón when it joins the line from Kedah to Siam.

Cultivation does not seem to be encouraged and no one cares to plant so long as mining pays so much better. The mines absorb all the labour. Rice, fruit and provisions of all kinds are imported. It is a splendid place for coconuts but hardly any are planted. Fruit and vegetables come from Penang. I went to see the Judge sitting in Court. He is not overworked. There are about two cases a day. Only five people were present including a prosperous looking Chinese interpreter. We then went to the Court below which is presided over by the Ampir who takes all petty cases and preliminary enquiries. Most cases are compromised. There is said to be little crime or disorder. Everybody is hard at work making money at the mines. The Ampirs are poorly paid and it cannot be wondered at that they supplement their salaries.

After lunch I started for the mining town at Naito. We were escorted by two Siamese armed Police mounted on little Siamese ponies which trotted behind the carriage. At the place where the good road ends and a bridge is to be built we got into a Java pony-trap. From this point the state of the road is too awful for words, big stones, ruts and holes. It is certainly the worst road I ever attempted to drive over but we got along somehow—generally at a walk. When it was hilly we got out and walked. The jolting was frightful. Naito is about six miles off and we passed through open grass country with scrub on which buffaloes were grazing. The whole coun-

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try seems full of tin. Among the low jungle hills cuttings have been made and in the wet season the tin is washed down. Naito has a large Chinese mining population and consists of a long street. Hundreds of coolies were assembled and the Gambling Farm was densely packed. Only Chinese are allowed to gamble, not the Siamese. We looked in at the Ampur's Office and then walked on a mile or so along a sort of road in the direction of the highest hills (about 1,700 feet) through which there is a pass where there is a wonderful aqueduct on trestles across the valley constructed by Chinese for bringing water to the mines. We had no time to go there but I have seen a photograph of it. Returning to Naito we had some tea at a Chinese Toukeh's. I asked what he thought of the road. He seemed hopeful and said it would be all right next year. He added that it used to be worse but this I think is impossible. There is a great deal of traffic on it, a stream of mining coolies, a good many buffalo carts and some gharries such as are used in Province Wellesley. Naito is famous for its water melons which are sent to Penang. One of the duties of the Ampur, who is a sort of District Officer, is to report on mining applications and find out if the land is owned by anyone. They get low salaries, and are often corrupt.

After saying goodbye I entered a small dug-out which was hauled by 8 Siamese over a mud flat (dry) into the river or creek, whence in a boat we went off to the *Damrong Rat* which SIM BEE kindly placed at my disposal. He came on board to see me off and at 8-30 we steamed out of the harbour. The nephew accompanied me and I felt quite at home once more on the *Rat*. I had been solemnly warned in writing on good authority that the boilers of the *Rat* were pronounced to be in a dangerous condition and I was warned not to go in her. I had however arranged to go in her and it was only an additional peril to a voyage in this rock-studded sea. I mentioned to JOO KEAT that I had been told the boilers were rather old. He said the Engineer of the *Ran Ruk* had patched them up and there were to be new boilers *next year*. This was consoling. It was blowing fresh but was not very rough. As we dodged among some rocky islands I said "I suppose the Captain knows the way?" I was informed that there were two Captains. After

this I rested in peace. Passed a long island on the left of Pulau Panjang where there are said to be 300 or 400 Malays who plant mangostins, the soil being good, and a few Chinese who advance money to Malay fishermen. No signs of habitation were visible and it was said they were at the back of the island. Passed under some high limestone rocks with caves with rattans hanging down said to be used by edible birds-nest collectors. No sign of life till a little North of Ghirbee where there was a fringe of coconuts with a mountain somewhat like Kedah Peak inland (Khaw phanum.) There were masses of limestone hills as at Pungá but not so high. There are two mouths to the Ghirbee river and we followed the one to the right, the usual mangrove creek, and after two or three bends came to a landing stage on the right bank about 1.30.

The Assistant Governor came off in a house boat and I was received on the jetty by the Governor whom I had met before at Trang. Officials and a Police guard were drawn up. This is the new town site. The Governor took us to a temporary house where we were served with tea and cigarettes. He said "This is a poor house. I am making the new road you see and I hoped to move the town here but it will not be till *next year*." I said I should very much like to see it and we walked round preceded by Police with a man carrying an umbrella over me. The Siamese seem to have a craze for moving towns. It is interesting work no doubt and gives the Governor something to do but when these new roads—a kind of circular road with two roads leading to the sea and a very steep one to a wharf on the river—are completed the question is whether, except under compulsion, the people in the old town or village some miles further up the river will occupy the sites. The site is said to have been approved by Prince DAMRONG. I had not time to visit the present town so I cannot say if it is worth moving. As in all new Siamese roads trees are planted at intervals on either side of the road but the ansana stumps (*Pterocarpus indicus*) do not seem to grow as they do in the Straits probably owing to the prolonged drought. Other trees are doing well. The Governor is a pleasant genial man and a sportsman. He talks a certain amount of English. He said it was a very good country for sport. He had shot an elephant and another was shot a few days ago.

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There were also deer and rhinoceros and tigers. There is little cultivation in Ghirbee and no tin. The revenue is very small but no doubt it has undeveloped resources. The coal or rather lignite is of no value. He said that people were afraid to settle there till he came on account of dacoits. Two Siamese murdered a Chinaman and robbed his house and then killed an old woman to keep her mouth shut. They were caught and executed at the place. I had heard of an execution recently taking place and asked if that was the case. He informed me that the affair took place over two years ago and the men had just been executed. The law's delays were in this case protracted. I asked if it wasn't rather a long time to keep the men under sentence but he said: "We had to get the order from Bangkok and then they appealed." I told KEAT if they wanted a name for the new town they might call it Pi Nah (next year)* On our return we were regaled with long glasses of coconut water and cigars. At 2.30 we took leave as the tide was falling. We had intended taking a short cut through an inner channel inside Khaw Fu and Ma Fu but they said there was only a depth of 3 feet in places and many rocks, so we went out to sea and round Pulau Lantar. This took a long time and it got dark. We passed several rocks and islands and did not get to Telibon anchorage till 11.30 p.m. when I turned in on deck. The wind had blown from the West all day but at night there was a land wind. We found the Tongkah Police launch at anchor. She had been sent on ahead to inform the Governor of Trang of my visit.

Wednesday, 4th March.—Got up about 7 a.m. and after tea landed at the Custom House—a few Sam-sam huts—fine beach for coconuts but only one growing. A Chinaman advances money to fishermen and bark collectors. Very low tide early, turned about 7.30 when we started. Anchored at 9.30 at firewood jetty up Trang river and waited for tide to rise—breakfast. At 10.30 stuck on mud bank and waited $\frac{1}{2}$ an hour till enough water. Got to Kantán at 11.30. Pepper and fowls being put on junk for Penang. The Governor PHRA SUTHON on landing place, Police Guard, 3 carriages Scarlet (faded) livery. Drove

*Spain is the land of Manana, in Siam it is always "Pi nah."

to SIM BEE'S house and bathed. He mentioned Yong Setar the chief place in Pelian and I asked what 'Yong' was. He said it was the Siamese contraction of Tanjong. I think there is no doubt that Junk Ceylon is a corruption of Yong (Tanjong) Phalung or Salung. Phalung was the great mining place before Tongkah mines were worked at the end of the promontory or island which we call Junk Ceylon. I never quite believed in the 'Ujong Salang' derivation. There is no town at Kantán which is the seat of Government. The former town of Kuantáni was demolished about 10 years ago. It is about 6 miles higher up the river. On the opposite side of the road facing the wharf at Kantán is a row of about half a dozen Chinese shops and this constitutes the town. The houses of the Officials are built along a country road and the Government Offices (still in course of construction) stand on a low hill above the river and road. After lunch we went on board the launch with the Governor up the river which winds about till we got to the landing place near the site of the abandoned town. We might have driven the whole way but carriages were sent on. Along the banks is a fringe of jungle with padi land beyond. The site of the old town appeared to be a good one, high ground with fine old ansana trees. Only a Wat and a few attap huts remain among fruit trees. We stopped at one place near to see 33 big cannons taken from Kedah when it was overrun by the Siamese. They are piled up among brushwood. The road is a good one. We drove from Kuantáni. It is simply a red earth broad road and in dry weather dusty. There is hardly any wheel traffic but it is largely used by people walking from place to place. It would be excellent for bicycling. We crossed several streams on timber bridges, *gum* a hard wood being used for supports and planking. The village of Bong Rat was passed. Padi fields cultivated by Siamese extended on either side where the land was low. A drive of about 5 miles brought us to the town of Tap Tiang. Along the main street are brick shop houses and there is a considerable Chinese population. A great Market is held every three days. It has been held that morning and I was sorry to miss it for it must be an interesting sight. The Market which is farmed for \$100 a month is held in a large square building. Long attap sheds open at the side extend

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round the sides and there are two cross sheds. Produce from country is brought in on Market days and disposed of. Meat, fish, poultry, fruit and vegetables have divisions of the Market set apart for them. It is very largely attended. Chinese Societies have been suppressed and the former Kongsí house has been turned into the Ampú's Office. Along the road from Kantán newly cut telegraph posts were lying and are to be set up shortly. The telegraph goes to Na-kón. The wire from Kedah to Singgora goes through Na-kón to Bangkok. The line is being laid from Kantán to Ghirbee, Pungá, Kesún to Pukét. The posts are of hard wood and cost \$1.20 each where felled, being taken to the road by Government. They are said to be ready for putting up as far as Na-kón and in the Eastern State adjoining Trang the Pán palm which is said to be durable is used. Shade trees have been planted the whole way. From Tap Tiang we walked about 2 miles till we reached the Rest house where we were to sleep. It was built for the reception of the King who however did not use it. It is a good house standing high everlooking the plain with the hills in the distance. Trang is famous for its good pepper which commands a high price and is said to have a special aroma. There were plantations on either side of the road. The pepper vine is trained on two sorts of soft wood trees, mengkúdu and dedap. The vines are grown on red soil which is kept clean. During the dry season, which lasts several months, the plants are regularly watered from wells. The planters are all Chinese chiefly Cantonese and a few Hokiens. At Yong Setár pepper is grown in black soil by Tiochews who do not water the plants. If watered when young it has to be continued. To the East are the hills on the way to Na-kón, then the Pátalóng hills with the highest range Foi-dow, and further south Pelian and Setúl. The climate on the East of the hills is said to be quite different. Padi there is two months later and when it is dry this side it is wet beyond the hills. Trang, Ghirbee and Pungá were formerly under Na-kón which lies to the North of Sang-Kla called by the Malays Singgora. Na-kón is called by the Malays Le-gúr. The Malays, except the fishermen near the coast, hardly speak any Malay. They are Mahomedans and don't eat pork but in other respects they adopt Siamese ways. There are one or two Mosques but they

are badly attended. The Siamese keep pigs. The Chinese marry Siamese girls. No burial grounds are to be seen, the Siamese being cremated at the Wats. There is a Chinese burial ground at Tap Tiang. There are Siamese Schools about the country—education being free. One with 80 boys is about a mile beyond the Rest house and I meant to visit it but had not time. It is held at the Wat and boys from the villages beyond walking distance are lodged at the Wat. The Kam-nán makes boys go to School. There are also Chinese private Schools. The upkeep of the Government Schools, cost of books, etc., is defrayed from the Market rent at Tap Tiang.

The village administration is cheap and appears to be well adapted to the needs of the country. It is the Siamese system either based on, or like that of Burma. There is no forced labour. In Trang are 5 Ampúrs, 1 for Kantán, 1 for Pelian at Yong Setár, 1 for Bong Rat at Tap Tiang, 1 for Khaw Kow (white hill) North of Patálong and 1 for Si Kow near Ghirbee. The Ampúr holds a Court for the trial or settlement of small cases—cases of importance being sent before the Judge at Kantán. An Ampúr gets 100 Ticals a month and allowances and he probably adds to his income. The only police in the country are at Kantán where they are chiefly ornamental, 12 at Tap Tiang (Chinese town) and a few at Yong Setár, where there are Chinese pepper planters. The Siamese and Malays are very law abiding and give no trouble. Under the Ampúr is the Kam-nán or village headman. Of these there are about 30 in Trang. In one or two places where the Chinese predominate a Chinaman is Kam-nán. Under the Kam-nán is the Phoo-yai-bán or head of 10 houses. The people of 10 houses or any collection of houses up to 20 elect the Phoo-yai-bán and Phoo-yai-báns elect the Kam-nán, one of their number. The Phoo-yai-bán receives a badge of Office in the shape of 5 silver buttons which he wears on his coat and the Kam-nán has 5 gilt buttons. At intervals along the road are boards on which is notified the name of the village and the position of the Phoo-yai-bán's house. The village headmen look after the roads and bridges and road side trees, the road being kept up by the people except where it passes padi fields. The coolies who sweep the road and keep it clean are paid. The trees are planted twenty-four feet apart. The only land reve-

nue is a tax on padi land 8 cents a rei=120 square feet. This is paid to the Ampúr who keeps a register. He can keep \$300 in his sub-treasury. Over that he must send to Kantán. The Kam-nán and Phoo-yai-bán get 5% commission on this padi-land tax. The owners of padi land have a document of title (corresponding to the Malacca 'extract') giving the name of the owner, the extent of the land and its position. No charge is made for land for other cultivation than rice, *e. g.*, pepper, coconuts. There is an export duty on pepper of 60 cents a pikul (said to be fixed by treaty). The present price for pepper is high \$36 a pikul. The export duty on other produce timber, etc., is 10 per cent. *ad valorem* and the import duty is 3 per cent. Chinese get on well with Siamese and in the country go to the Wat. I noticed that men and women all have distinct vaccination marks, this is done by two Siamese doctors at the Ampúr's. There are no taxes—no house tax—except on padi land and on fishing which varies according to the fishing ground from \$1 to \$10 a year. If other taxes were imposed the Siamese would leave. There is no tax on fruit or coconut plantations or sugar or pepper. Land can be sold, the new owner getting the document of title. There is no tax on felling timber—only export duty. The population of Trang is 59,000—12,000 Malays and Sam-sams, 4,000 Chinese and the rest Siamese. The Revenue is about \$120,000 and the expenditure \$80,000. The Opium Farm is not included in the Revenue as it is reckoned as part of the Western States Farm. It may be taken as \$65,000.

The Revenue is made up as follows:—

Gambling ...	...	...	\$25,000
Spirits ...	...	...	25,000
Customs ...	...	...	60,000
Land, etc. ...	...	...	10,000
			<hr/>
			\$120,000
			<hr/>

Including the share in the General Opium Farm the Revenue exceeds the expenditure, (*i. e.*, what is sanctioned in the Budget) by about \$100,000 which is remitted to Bangkok to provide for the needs of the poorer States. There is a proposal

to abolish the Gambling Farm and impose a poll tax on all males over 18. In the Eastern States where there are few Chinese this has been done. Since the Siamese were prohibited from gambling there has been scarcely any crime. Cock fighting is very popular.

The expenditure may be roughly stated as follows:—

Salaries	...	...	...	\$30,000
Roads, etc.	...	...	...	20,000
Buildings	...	...	...	20,000
Other Expenditure	...	...	...	10,000
				\$80,000 *

(*Diary continued*)

We got to the Rest house at 7.30 p.m. and had to wait for the cook and boys.

Thursday, 5th March.—It was not as cool as it ought to have been. When we got there the Governor said "It is not cool now because there is a wind—if there is no wind it is cool." The wind died down and then it was unmistakably hot. We made a start at 6.40, KIAT driving me in a dogcart and the Governor following on a pony. The horse was inclined to jib and was only induced to go on (except down hill) by the syce shoving behind. I remarked that we should take some time to get to our destination (11 miles) but KIAT said "It will go very well when it gets tired." There seemed to be little prospect of this so long as the syce pushed us along but when once started it covered the ground well. On sighting a bridge the custom in Trang is for the syce to get down and test the bridge to see if it will bear. We passed through an extensive padi tract—a good deal of it being recently cleared. The Siamese, I should say, are quite as lazy as Malays if not more so. The ground planted with padi is only roughly cleared of timber, and stumps of trees are left. In time these become white ant mounds which are undisturbed—"too much trouble to remove" they say. I saw a large number of fine damar oil trees, some standing alone in the plain and some hundred or so together. The solitary

* Figures only approximate not official.

ones are tapped with burning holes and these trees would only last about 5 years. They are not allowed to be filled when the jungle is cleared for padi planting. The oil is sent to Penang in tins. There are said to be many damar trees on the Na-kón road and on the islands. SIM BEE told me that when he went to Trang the only talk was of dacoits and people were afraid to settle. Now they are not afraid and land is being taken up fast. The road was being swept like a drive and where there was a collection of houses the people turned out with their headmen and saluted by the roadside. The road was more or less level till we got to the foot of the hills (11 miles). At Chong is a rest-house and a clear stream from the hills. The road to Patálong here rises through a pass. We walked through jungle along a path to what is called a Waterfall, large slabs of rock and pools but not much fall. In the rains of course it is a cascade. We crossed the stream on stepping stones and looked for orchids. We found a few and then had some food by the stream. Then we drove back to the Rest-house and bathed at a well in the grounds. I noticed *Congea* climbing among the brush wood. We left Chong about 10.0 and got the Rest-house at 11.30. There is another Rest-house 1 hour up the pass above Chong in the jungle where the King of Siam stayed two nights but he is said to have found it too cold. This would be a good place for collecting plants, etc. There are trees planted on either side the whole length of the road—Mangoes, ansana and a Siamese tree with a narrow leaf and yellow flower from which they make hair oil.

As we passed through Tap Tiang to go to the landing place at Tha Chin we saw a dead black panther by the Market. Black panthers are said to be very common. There is a reward for tigers, 30 Ticals, but none for panthers which only take fowls, pigs, etc. There are too many for a reward. There were 12 junks at Tha Chin built locally and registered at Penang. We had a very hot and tedious row in a house-boat—the river winding backwards and forwards—till at 3.15 we got to the wharf at Kuantani where the S. S. *Artsudong* comes for cargo. Here a Malay Penghulu registered as a British subject came on board. We got to Kantin at 5.0. I landed and drove with the Governor to see the Public Offices—still unfinished. The bricks

are made by prisoners. The Offices will be finished "next year." Left Kantán in the *Damrong Rat* at 5.30. The tide was falling and we touched the first bar or mud flat at the 'Simpang'.

As we went up the river the serang had ordered firewood to be sent to Kantán for us but it never came so in their usual casual way we began our voyage without fuel. At the firewood depôt below the bar we had to anchor for two hours while we took in firewood. It was getting dark and there was no one in charge so they requisitioned boats passing down and eventually our men took a sufficient supply. It was very hot lying at anchor and mosquitoes came off. We had to dine there. As we got to sea there were very black clouds and thunder and lightning. There was a bit of a moon but it came on to blow and the rain drove us below.

Friday, 6th March.—Off the north of Lankawis early—cool—went very slow. Six tame porpises came and played within a foot of our bows and kept it up some time. We took hours to pass Kedah Peak and it was 4.0 p.m. before we got to the Penang Jetty.

Hunting Invocations.

By R. N. BLAND.

In the October "Blackwood" there is an article by George Maxwell on the subject of a Malay deer-hunt in Perak. I think he has given some excellent translations of the "Elmu Pawang" as applied to the rusa or sambur deer, and written a most interesting account of the way in which the Pawang sets to work. It may interest him and others to see an invocation I got from a Pawang in the Negri Sembilan (Kuala Pilah) years ago. My "Elmu Pawang" is not nearly so ornate as George Maxwell's, but no doubt every village and district has its own ritual in these matters. There is a family likeness, however, in all of them. The Pawang who is an educated man from the Malay point of view, will produce a much more elaborate "elmu" than the Pawang of a jungle village. It is interesting to compare notes in these matters and therefore I send you this "elmu" for the S. B. R. A. S.—but I feel as if I were betraying a secret in doing so. These matters are highly confidential. My Pawang only admitted me to his "craft" under promise of secrecy and in payment of the customary fees in cloth, knife, coconuts, and "wang baru", and after following the deer on foot for many days through the Muar jungles.

Elmu Pawang Buru Rusa.

(Negri Sembilan.)

Hei Che' Lanang, Che' Redup,
Che' Bendang, Che' Merah,
Mari-lah kita berburu
Dalam kandang bhagian engkau
Luar kandang bhagian aku
Apa main kita jangan di-rosakkan

Aku tahu jahat-nya
 Aku tahu baik-nya
 Jahat pulang pada engkau
 Baik pulang pada aku
 Salah sa'ekor srigala Che' Langsung
 Che' raia ini ia-lah melangkah bumi
 Yang lari Che' Rusing
 Kaki yang mengijar Che' Rimbun
 Ekor melompat patah kaki
 Menyenup patah pinggang
 Menyelodok badan kau lampoh
 Bukan-nya aku yang berburu
 Perpatih yang berburu
 Bukan-nya aku yang punya anjing
 Pa sidi yang punya anjing
 Bukan-nya aku yang berkuei
 Nenek Batin Telang yang berkuei
 Jangan engkau mungkirkan janji
 Jikalau engkau mungkirkan janji
 Drahka engkau pada Allah.
 Hei Che' Lanang Che' Redup
 Che' Bendang Che' Merah
 Ambil bagian engkau
 Yang terbawa bagian aku
 Yang tinggal bagian engkau.

Badi.

Hei Badi aku tahu asal engkau
 Jadi deri-pada Chaga
 Beranjak engkau deri sini
 Pulang engkau ka asal jadi
 Krokek nama-nya manchong
 Kiamang nama-nya kiak
 Che' Lanang orang gobala
 Tergak Dato' nibong salah
 Mari-lah kita membalakan anjing
 Bunobkan juga anjing aku
 Sa'ekor sa hari bunokkan juga
 Anjing aku.

Translation.

Ye (forest spirits that guard the red-deer)
 Che' Lanang—the Twister
 Che' Redup—the Dim One.
 Che' Bendang (the open plain)
 Che' Merah—the Red One
 I summon you to hunt with me
 What comes from the enclosed fields is your share
 What comes from the outer forest shall be mine
 Let nothing spoil our hunting
 I know what to avoid
 I know what to follow
 May all the bad luck be your share
 May all the good luck fall to me.

Whether it be Srigala or Che' Langsat
 Or the King of the Deer himself
 Yea, he who crosses the world at one leap
 Or Che' Rusing who flashes hither and thither
 May each one that leaps forth fall with broken legs
 May each glider be broken across the back
 May each one crushing through the bushes have broken
 bones
 It is not I who destroys you
 It is the Lord Perpatih who hunts you
 The dogs are not my dogs
 They are the dogs of Pa' Sidi
 It is not I who shouts on the dogs
 It is the shout of Nenek Batin Pelang
 Fail ye not in your compact
 If ye fail in your compact ye are rebellious against Allah.
 O Che' Langsat—the Twister
 Che' Redup—the Dim One
 Che' Bendang—the “open plain”
 Che' Merah—the Red One
 Take what is yours
 That which is carried away is mine
 That which remains is yours.

Badi—Invocation.

O Badi I know whence thou comest
Thou comest from Chaga
Get thee from hence
Get thee to the place whence thou comest
Che' Lanang the herdsman
Remember the elder of the magic nibong
Come hither and make atonement for our dogs
Shouldst thou wish to slay my dogs
Slay them, yes, one every day.

Descriptions of New Species of *Iphiaulax* and *Chaolta* (*Braconidae*) from Sarawak, Borneo.

By P. CAMERON.

It is evident that the genus *Iphiaulax* is, in the Tropics at least, one of the largest of the Parasitic Hymenoptera. Mr. Shelford, the collector of the species here described, informs me that he has a large number of species which still remain to be described or named.

IPHIAULAX FOERSTER.

a. Luteous, the wings large, yellowish-hyaline, the stigma with a black mark at the base. The group of leptopterus.

Iphiaulax megapterus sp. nov.

Dark luteous, the 2nd. and following segments of abdomen much darker, almost black; flagellum of antennæ black; wings very large, yellowish-hyaline; a somewhat square black spot at the base of the stigma, commencing shortly behind the cubitus and transverse basal, and backwards extending shortly beyond the cubitus; there is a narrow cloud on the lower side of the wing at the apex; the hind wing has the apical fourth fuscous, the cloud on the lower side extending backwards to the middle; basal 5 segments of abdomen closely, longitudinally striated; the area on 2nd segment large, reaching to the end; broad at the base, becoming gradually narrowed to the apex. Apical abscissa of radius long; more than half the length of 2nd., which is distinctly shorter than the 3rd., that being not much longer than the basal two united; the recurrent nervure is received in the apex of the 1st cubital cellule; the 1st transverse cubital nervure is roundly obliquely curved. ♀.

R. A. Soc., No. 42, 1904.

Length 20; terebra 17 mm.

Hab. Matang.

Scape of antennæ not much longer than the following 2 joints united, slightly gradually dilated towards the apex, which is toothed slightly below; the pedicle short, not clearly separated, thickly pilose, not half the length of 3rd. joint. Front and vertex smooth and shining, almost bare, the former not furrowed: face irregularly shagreened, thickly covered with long fulvous pubescence; its centre bounded by longitudinal furrows; apex of mandibles black. Thorax shining, smooth; the middle lobe of mesonotum raised; median segment short, covered with pale fulvous pubescence. Legs coloured like the thorax, sparsely haired; the fore tibiæ not quite so long as the basal 3 joints of the tarsi. Abdomen large, its middle clearly broader than the thorax, and twice its length; its first segment keeled down the middle; the dilated apical part with some stout longitudinal striæ and obliquely narrowed at the base; the 2nd. segment is closely, longitudinally striated throughout; the 3rd. similarly striated to the middle, the 4th. before the furrow; the base of the 3rd and 4th smooth and shining; the rest of them and the 5th closely rugosely punctured; the apical segments less strongly punctured; all the transverse furrows are deep and strongly striated; the obliqued lateral furrows are short, indistinct. Temples broad, rounded; occiput roundly incised.

This species has the large yellow wings, with black spot at the base of stigma and general colouration of *I. leptopterus*: but it is much larger and more stoutly built; otherwise it may be separated from *leptopterus* and its allies by the striated, punctured abdomen, by the curved 1st. transverse cubital nervure and by the much shorter, compared with the 3rd., 2nd. abscissa of radius.

Iphiaulax leptopterus Cam.

The ♂ of this species has been taken at Santubong, 2600 feet by Mr. Shelford. It agrees closely with the ♀.

Iphiaulax spilostigmus sp. nov.

Luteous; the wings and their nervures luteous, a square black mark, not extending beyond the cubitus, at the base of

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the stigma, the hind wings with a fuscous cloud at the apex; the 3rd. abscissa of radius almost equal in length to the 2nd.; the 1st transverse cubital nervure and recurrent straight, oblique, interstitial; the basal two segments of abdomen striated in part. ♀.

Length 12; terebra 6 mm.

Hab. Matang.

Face covered with long blackish hair; front deeply furrowed in the middle; temples roundly narrowed; occiput transverse. Scape and pedicels of antennæ rufous, the rest black. Thorax smooth and shining; the middle lobe of mesonotum raised in front. Fore tibiæ slightly shorter than the basal 3 joints of tarsi united. Wings long, large; yellowish-hyaline; the mark at base of stigma is square, does not project beyond the transverse basal or cubitus; the 2nd. abscissa of radius equal in length to the 3rd.; the recurrent nervure is interstitial. Abdomen as long as the head and thorax united. First segment of abdomen broad, shorter than the second segment; the central part roundly raised; irregularly longitudinally striated; a stout keel thickened at the base and furrowed laterally, down its centre; the 2nd. stoutly striated to near the apex; the central plate, broader than long, narrowed to a point, smooth and shining; its keel extending to the smooth apical border; on either side is a somewhat similar smooth, broader than long, triangular plate; the suturiform articulation closely striated; the other furrows, smooth; there is a striated transverse furrow before the apex of the 2nd. segment; the abdomen is as long as the head and thorax united and broader than the latter.

This species may be known from *I. leptopterus* by the basal abdominal segments being striated, by the shorter and broader abdomen and by the stigmal mark not extending beyond the cubitus.

b. Luteous, the wings large, yellowish-hyaline, without a black mark at the base of stigma; the hind femora black.

Iphiaulax minos sp. nov.

Luteous, the flagellum of antennæ and hind femora black; the apex of hind tibiæ blackish; wings longer than the body,

R. A. Soc., No. 42, 1904.

yellowish-hyaline; the stigma and nervures luteous; the costa darker coloured; the 3rd. abscissa of radius nearly as long as the basal two united; the 3rd. abscissa of cubitus distinctly shorter than the 2nd.; the 1st fully half the length of 2nd.; recurrent nervure received close to the apex of the 1st. cubital cellule. ♀.

Length 15; terebra 9 mm.

Hab. Matang.

Face distinctly punctured round the sides and top; the centre smooth and slightly convex; the front is less strongly punctured, its middle depressed and furrowed; temples roundly, obliquely narrowed. Thorax smooth and shining; the parapsidal furrows deep on the basal half of mesonotum. Scutellum smooth, roundly convex. Basal two segments of abdomen strongly, longitudinally striated; the 1st. if anything, more coarsely than the 2nd.; the basal half of the 3rd. finely and closely striated; lateral furrows of the 1st stoutly, transversely striated; the 2nd. and 3rd. are depressed largely on the sides; the suturiform articulation and the furrow on the next segment narrow, deep, closely striated. Legs densely covered with pale hair; the fore tibiæ distinctly longer than the following two, but not so long as the following 3, united.

Has the long yellow wings of the *leptopterus*-group; but wants the black stigmal mark; and hind femora are black, this last being a well-marked feature.

c. *Head, thorax and fore legs rufous, the abdomen and hind legs black; wings yellowish, obscured with fuscous; large.* The group of *I. Sadyates*.

Iphiaulax soranus sp. nov.

Black; head, thorax and 4 front legs ferruginous; wings hyaline, the basal half with a distinct yellowish tinge; nervures and costa testaceous-yellow, the costa black; third abscissa of radius slightly shorter than the 2nd.; recurrent nervure received in the apex of the 1st. cubital cellule; the transverse median nervure on the outerside of the transverse basal. ♀.

Length 15; terebra 16 mm.

Hab. Matang. December.

Abdomen longer than the head and thorax united (its basal 3 segments as long as the thorax) not dilated in the middle; the centre part, except at the base and narrowly at the apex, strongly irregularly longitudinally striated and laterally irregularly reticulated; the 2nd. segment strongly longitudinally striated; its basal area small, longer than broad, smooth, shining, gradually narrowed to the apex; its keel stout, reaching to the apex; on either side the base has a large smooth space, longer than broad and produced on the outer side towards the middle of the segment, this part being slightly curved and aciculated, almost striated. Sutureiform articulation wide, closely striated; the lateral branch is narrower, closely striated and curved; the space between it and the articulation raised, smooth and shining; the 3rd. segment is more finely and closely striated on the basal two-thirds and has a keel down the centre of the striated part; the furrow on the base of the 4th. segment is distinct, deep and irregularly sparsely striated; the base of the segment is finely irregularly, closely striated and with a keel in the middle. Ovipositor sheaths broad, densely covered with stiff black hair. Scape of antennæ about 4 times longer than wide, narrowed at the base. Temples rounded, slightly oblique, as long as the antennal scape; occiput transverse. Face irregularly rugose, pale yellowish. Palpi dark red; mandibles reddish, black at apex.

Iphiaulax ezerias, sp. nov.

Black; the basal 2 joints of antennæ, head, thorax and 4 front legs red; wings hyaline, highly iridescent, faintly tinted with yellow; the stigma and nervures pale testaceous, costa darker coloured, parastigma black; 2nd. and 3rd. abscissæ of radius equal in length.

Length 8 mm.

Hab. Kuching. September.

Scape of antennæ about 4 times longer than wide, covered with long glistening white hair; 3rd. joint longer than 4th. Front and vertex smooth and shining; front broadly depressed in the middle; the depression roundly narrowed above; in its centre are 2 short, stout keels, oblique and united together above.

B. A. Soc., No. 42, 1904.

Temples longer than antennal scape, broadly rounded behind; occiput not quite transverse. Face strongly and closely punctured; its centre raised, roundly narrowed above, more shining and more widely punctured. Clypeus clearly separated by a furrow from the face, smooth, except for a transverse row of large punctures in the middle. Palpi and mandibles rufo-testaceous, the latter black at apex. Thorax smooth; the middle lobe of mesonotum clearly separated; metanotum covered with pale hair, punctured, its apex blackish and obscurely punctured. Basal segment of abdomen raised in the middle; the sides stoutly keeled; and there is a stout keel down the centre; 2nd., 3rd. and 4th. segments closely, strongly, longitudinally striated; the apices of the 3rd. and 4th. smooth; the base of 5th. finely striated; the area on the base of 2nd. segment becomes gradually narrowed into the keel which reaches to the basal third of the segment; it is bordered by 2 oblique keels which form a large, somewhat triangular area, which is irregularly reticulated on the inner side and irregularly longitudinally striated on outer; the lateral depression stoutly, closely, obliquely striated; the sides of the 3rd. segments are depressed and less closely punctured.

Iphiaulax cyrenius, sp. nov.

Black; the 4 front legs, head, pro- and mesothorax and lower half of metapleuræ rufous; wings fuscous-violaceous, the nervures and stigma black; fore tarsi more than twice the length of tibiæ, their basal 2 joints being longer than the latter; basal plate of 2nd. abdominal segment small, roundly, gradually narrowed to the apex and with a smaller, smooth, triangular plate on either side; the keel extends to the apex, where it ends in a small, broader than long, plate. ♀.

Length 13-14 mm.; terebra 13 mm.

Hab. Kuching. December.

Face smooth and shining in the centre, the centre being flat, bell-shaped; the sides punctured; the sides and clypeus covered with long blackish hair. Ocelli enclosed by a U shaped furrow, from which a furrow runs to the base of antennæ. Temples longer than the scape of antennæ, rounded behind; the occiput roundly incised. Scape of antennæ thick about 3 times longer

than wide; the tubercles prominent; the base of scape incised on the outer side to near the middle. Parapsidal furrows distinct; the middle lobe of mesonotum not much raised. Apex of metanotum with longish narrow foveæ, bounded by raised keels; its centre with a fovea. First abdominal segment from near the basal depression stoutly, closely, longitudinally striated; the lateral furrows stoutly, closely transversely striated; 2nd segment closely, stoutly striated; a keel runs from the lateral basal plates to near the apex; the space on either side of it closely striated; the 3rd. segment has the middle and apex smooth, the rest closely, not very strongly, striated the centre of the base laterally being smooth; there are no distinct oblique furrows on the 2nd. and 3rd. segments; the suturiform articulation is closely striated. Sheaths of ovipositor broad, densely pilose. The legs are thickly pilose, but not so densely as the ovipositor's sheath.

d. Luteous, the apical segments of abdomen black, the 2nd. and 3rd. segments strongly striated; wings fuscous, broadly yellowish-hyaline at the base.

Iphiaulax zaraces, sp. nov.

Luteous, antennæ, front broadly in the centre, the mark continued on to the ocellar region and becoming united to a large black band on the vertex; this mark reaches to the eyes and extends half way down the outer orbits and on to the occiput, which is entirely black; the 2nd. and 3rd. abdominal segments are largely marked with black; the 4th. and following entirely black. Head and legs of a paler yellow colour than the thorax and abdomen; the apex of hind tibiæ and the tarsi black. Wings yellowish-hyaline to the transverse median and transverse basal nervures; the rest (except for a hyaline cloud in the fore half of the 1st. cubital cellule and a small one at the junction of the recurrent with the cubitus) dark fuscous; the base of the stigma yellow. ♀.

Length 14-15 mm.; terebra 4 mm.

Hab. Kuching.

Antennæ longer than the body; the scape slightly more than twice longer than broad. Head smooth; almost bare; the

face pale yellow; malar space hollowed; tips of mandibles black. Temples wide; occiput roundly incised. Thorax smooth; parapsidal furrows indistinct; furrow at base of scutellum smooth: the oblique furrow on mesopleuræ distinctly defined. The raised centre of 1st. abdominal segment is long, narrowed at the base; becoming gradually wider to the apex; the basal depression is triangular, deep, its lateral keels stout; the central part of the 1st. and the 2nd. and 3rd. segments are closely, strongly striated; there is no area on the base of the 2nd. segment; its sides at the base, as also those of the 3rd., are smooth; the furrows on the 3rd. and 4th are crenulated; 3rd. abscissa of radius about as long as the basal two united; the 3rd. abscissa of cubitus is distinctly shorter than the 2nd.

e. Yellow, the abdomen and hind legs black, wings fuscous, broadly hyaline at the base.

Iphiaulax thespis, sp. nov.

Head, thorax and 4 anterior legs luteous; the antennæ, abdomen and hind legs black; the wings to the base of cubitus and nervure yellowish-hyaline, the rest fuscous, the base at the base of the anal nervure hyaline; the hind wings yellowish hyaline to shortly beyond the middle; stigma black; the 2nd. abscissa of radius slightly longer than the 3rd. ♀.

Length 9; terebra 8 mm.

Hab. Matang. August.

Scape of antennæ about 4 times longer than wide, of equal thickness throughout, covered with short pale pubescence. Front and vertex smooth; the former deeply furrowed; face thickly covered with long white hair. Temples as long as the antennal scape, roundly narrowed; occiput transverse. Thorax shining, the middle lobe of mesonotum raised; the oblique furrow on mesopleuræ reaching near to the apex. Abdomen as long as the head and thorax united and wider than the latter; 1st. segment irregularly striated and with a distinct keel down the centre; the sides and apex yellowish, smooth; 2nd. segment closely, longitudinally striated; its basal area small, smooth, broader than long, obliquely narrowed to the apex; on either side of it is a smooth plate, longish, gradually narrowed to the

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apex; the 3rd. segment is irregularly, obscurely striated; the 2 transverse furrows are rufous, striated. Recurrent nervure interstitial.

Agrees closely with *I. portius* Cam.; that species is larger, has the median segment black; the plate on 2nd. abdominal segment larger, obliquely narrowed at base and apex, the 2nd. abscissa of radius distinctly shorter than the 3rd. and the recurrent nervure not interstitial.

Iphiaulax amyris, sp. nov.

Rufous, the abdomen, hind tibiæ and tarsi and antennæ black; the wings flavo-hyaline to the transverse basal nervure, the rest fuscous, except for a triangular hyaline cloud in the base of the 1st. discoidal cellule; the 1st. cubital cellule, except its lower third, along the cubitus, the base of the radial cellule, the parts outside the 1st. transverse cubital and recurrent nervures; base of stigma largely luteous; the 3rd. abscissa of radius about two-thirds of the length of 2nd.; the sides of the 1st. abdominal segment above pale yellow; the greater part of the 2nd. and the base of the 3rd. rufous. ♀.

Length 12 mm. terebra 14-15 mm.

Hab. Kuching. June.

Scape of antennæ and pedicle rufous below; the apex of scape incised; the 3rd. joint slightly longer than the 4th. Face impunctate, thickly covered with long white hair; temples longer than the scape of antennæ, broadly rounded behind; the centre of occiput transverse. The raised central part of 1st. abdominal segment roundly narrowed behind; the raised central part keeled, the apex closely striated. The 2nd. and 3rd. segments are closely, finely striated, with distinct, oblique lateral furrows; the basal plate of the 2nd. minute, shining, wider than long; the keel distinct, reaching to the apex; suturiform articulation closely striated; there is a narrower, less strongly striated, furrow on the base of the 4th. segment.

The abdomen is about as long as the head and thorax united and is not much widened in the middle; the fore tibiæ are as long as the basal 2 joints of tarsi united; the transverse median nervure is received on the outerside of the transverse basal.

f. Luteous, wings fuscous yellow at the base, the abdomen short, broad, ovate. The group of *matangensis*.

Iphiaulax Sibanensis, sp. nov.

Length 9 mm. ♂.

Hab. Mount Siban. May.

Very Similar in colouration to *I. matangensis*, having, like it, the head, thorax and legs luteous and the back of the abdomen for the greater part black, mixed with rufous, the wings yellow at the base, fuscous beyond the transverse median nervure; but it is more slenderly built; the scape of the antennæ and pedicel are fulvous, not black, more slender; the 2nd. abscissa of cubitus is only equal in length to the 3rd. not longer than it; it has no area on the base of the 2nd. abdominal segment, but there are two irregular keels uniting together shortly beyond the middle and having 2 or 3 irregular transverse ones; the space on either side of this instead of being, as in *matangensis*, widely, irregularly reticulated to the apex, is only reticulated at the base, the rest being closely, longitudinally striated; the punctuation on all the segments is closer and run more into longitudinal striæ; the abdomen is narrowed compared with the thorax and is more suffused with red, the red too, being lighter in tint; the suturiform articulation is more widely and distinctly dilated backwards at the apex.

Iphiaulax cilles, sp. nov.

Luteous, the abdomen darker coloured, the flagellum of antennæ and the hind tibiæ and tarsi black; the wings almost hyaline, iridescent, the stigma and nervures black; the plate on base of 2nd. segment smooth and shining, its length about equal to its greatest width; the apical half roundly narrowed; the keel extends to shortly beyond the middle; 3rd. abscissa about as long as the basal 2 united. ♀.

Length 7; terebra 3 mm.

Hab. Kuching. April.

Scape of antennæ luteous, narrowed at the base, about 3 times longer than wide; its apex produced below; pedicel rufous: the 3rd. joint distinctly longer than the 4th. Front and vertex

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smooth and shining, temples distinctly, roundly narrowed; face rugosely punctured. Middle lobe of mesonotum distinctly separated, the furrows deep. Abdomen as long as the thorax, ovate; the middle lobe of 1st segment is keeled down the centre and there is a keel on either side; the lateral depressions smooth, except for 2 or 3 keels near the apex; sides of 2nd. segment depressed at the base and obliquely striated; suturiform articulation wide, crenulated; the other furrow is less clearly defined especially at the sides; the 4th. and 5th. segments have narrow, shallow furrows on the apex.

The stigma and parastigma are large; the basal abscissa of the cubitus is roundly curved at the base; the recurrent nervure is not interstitial; the sculpture of the abdomen appears to vary in its intensity. Characteristic are the hyaline wings and black hind tibiae and tarsi.

Iphiaulax tenuilineatus, sp. nov.

Luteous, the ocellar region and antennae black; wings obscure hyaline to the transverse basal nervure, the rest fuscous, the 1st, cubital cellule lighter coloured than the rest, stigma black, yellow at extreme base; the area on 2nd. abdominal segment small, its width at the base, if anything, longer than its length; smooth, the sides rounded; the keel stout, reaching to the base of the apical third; the 3rd, 4th, and 5th. segments roundly projecting at the apex.

Length 11; terebra 6-7 mm.

Hab. Kuching.

Scape of antennae fully 3 times longer than wide covered with golden hair. Face irregularly rugose. Clypeus above rounded. Malar space as long as the antennal scape, furrowed in the centre; temples as long as them, rounded behind, not oblique; occiput transverse; an impressed line on the centre of vertex behind the ocelli. Median segment short. Centre of 1st. abdominal segment rugosely punctured, keeled in the middle; the sides closely striated; the centre of 2nd. segment reticulated, the sides closely striated; suturiform articulation wide closely striated; there is no distinct lateral apical branch, it being only represented by a fovea; there is a distinct irregularly

crenulated furrow on the apex of the 5th. segment ; the apices of the 3rd. and following segments are narrowly pale yellow.

Allied to *I. astiochus* and *I. matungensis* ; may be known by its larger size, longer ovipositor, by the temples being more rounded and not obliquely narrowed, and by the smooth, more clearly defined keel on 2nd. abdominal segment.

Iphiaulax paternus, sp. nov.

Luteous, the flagellum of antennæ black ; the wings yellowish to the transverse basal nervure, dark fuscous beyond, the stigma and nervures black, 2nd abscissa of radius distinctly shorter than the 3rd.; basal plate on 2nd. abdominal segment wider than long, roundly narrowed towards the apex which has a narrow keel, not much more than half its length. ♀.

Length 10 ; terebra 5 mm.

Hab. Kuching. September.

Scape of antennæ fully 4 times longer than wide. Temples roundly narrowed, not quite as long as the antennal scape. Front deeply furrowed. Face rugose, slightly reticulated. Top of clypeus rounded, it is less strongly rugose than the face. Tips of mandibles broadly black. The centre of middle lobe of 1st. abdominal segment with 2 stout keels ; the sides are also keeled ; the lateral depression wide, irregularly striated ; 2nd. segment longitudinally rugosely punctured ; the part bordering the area irregularly reticulated ; the sides are distinctly depressed on the basal half and closely, strongly, obliquely striated ; suturiform articulation wide, deep, crenulated and without an apical lateral branch ; the apex of the 3rd. segment has an indistinct crenulated furrow, there is a much more distinct one on the base of the 4th.; one on its apex and on the apex of the 5th.

The parapsidal furrows are distinct only on the basal half ; the apical half of the mesonotum is flat ; the basal 4 points of fore tarsi as long, together, as the tibiæ ; there is a distinct hyaline cloud below the base of the 1st. transverse cubital nervure, the 2nd. discoidal cellule is lighter coloured than the upper one.

Allied to *I. annulitarsis*, having a similar plate on the 2nd. abdominal segment, but may be known from it by the much shorter ovipositor, which, in *annulitarsis*, is as long as the body.

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Iphiaulax smenus, sp. nov.

Dark luteous; antennæ, ocellar region and centre of front the transverse furrows on the abdomen, the base of the 3rd. segment and of the 4th. and 5th. broadly in the centre, black; the wings to the transverse cubital and the transverse basal nervures yellowish-hyaline; the basal half of the stigma yellow; its apical and the parastigma black; the apex of the wings fuscous, tinged with yellow and violaceous; the transverse median nervure received shortly beyond the transverse basal, recurrent nervure interstitial; the 3rd. abscissa of radius nearly as long as the basal 2 united. ♀.

Length 8-9; terebra missing.

Hab. Matang. August.

Head smooth; clypeus clearly defined by furrows; temples straight, oblique; occiput transverse. Scutellum not much raised above the mesonotum; its sides and apex with a long, slightly oblique slope, clearly raised and separated and narrowed towards the apex gradually from the base. Raised central part of petiole rugosely punctured, almost reticulated, its middle indistinctly keeled; the depressed sides with some oblique keels. The middle of the 2nd. segment is irregularly reticulated, the basal half clearly separated, raised and bounded by a stout keel and slightly, gradually narrowed to the apex; the basal keel is small, longer than broad, gradually, roundly narrowed to a fine point at the apex and ending in a stout keel which does not reach to the middle of the segment; the space on either side of the keel is smooth; at the sides of the basal plate are some irregular curved striæ; the 3rd. 4th. and 5th. segments are stoutly, irregularly, closely, longitudinally striated, the 3 furrows being also striated; there is a less distinct, more irregularly, striated furrow on the apex of the 5th. segment.

The abdomen is long-ovate and as long as the head and thorax united; the base of the second segment is almost transverse and keeled; its sides at the base are distinctly depressed and irregularly covered with stout striæ. Scape of antennæ stout, about 3 times longer than wide; the 3rd and 4th joints equal in length.

g. Black, short and broad, basal half of wings black, apical lacteous. The group of I. trichosoma.

Iphiaulax pheres, sp. nov.

Black; antennæ nearly twice the length of the body; the wings dark fuscous to the recurrent nervure and, in front, to the base of the 1st. cubital cellule; the rest milky hyaline; stigma pale ochraceous, darker at the base; the apical nervures lacteous; basal two-thirds of hind wings dark fuscous, the rest clear hyaline. ♀.

Length 8; terebra 2 mm.

Hab. Kuching.

Head and thorax smooth and shining; the upper half of orbits with an irregular ochraceous band; the malar space, antennal tubercles and clypeous brownish; mandibles rufotestaceous, their apex black; palpi black, thickly covered with white pubescence. Front obliquely depressed, furrowed in the centre; ocelli laterally bounded by a deep furrow. Temples wide, not obliquely narrowed, rounded behind; occiput almost transverse. Pronotum with a curved, crenulated furrow before the middle, the part above this being narrowed and separated from the lower. On the centre of the basal half of the metanotum is a keel, bordered by an irregularly foveated furrow, which spreads out obliquely at the apex, the foveæ there being larger and more clearly separated; the apical slope is smooth and shining. Apical abscissa of radius shortly, but distinctly, longer than the basal two united; 2nd. abscissa of cubitus as long as the 3rd.; apical abscissa of cubitus equal in length; recurrent nervure received at the apex of 1st. cubital; transverse basal nervure interstitial. Apical half of 1st. abdominal segment rugosely, coarsely, punctured, the later depressions wide and bearing 2 or 3 irregular keels; 2nd. segment in the centre coarsely, irregularly longitudinally striated-punctured, the sides rugosely, closely punctured and broadly depressed in the middle; the basal plate smooth and shining, roundly narrowed to the apex; its width at the base more than its length; its keel is stout and reaches to the apex of the segment; the following 3 segments

are opaque, closely rugose; their furrows distinct, closely striated. Legs covered with short fuscous hair, the fore tibiae and tarsi with a pale pile.

The abdomen is slightly longer than the head and thorax united; broad in the middle, narrowed at base and apex, the face is alutaceous; the face is bordered laterally by a wide furrow; basal joint of hind tarsi thickened, not quite as long as the following 2 united; the furrow on the pronotum is continued down the centre of the propleuræ, where it is only crenulated on the top.

Belongs to the group of *I. trichiosoma* Cf. Journ. St. Br. R. A. Soc., 1903, P. 118.

Iphiaulax veneus, sp. nov.

Black; the wings hyaline, the base of both smoky, the stigma and nervures black; the 3rd. abscissa of the radius distinctly longer than the basal 2 united; 3rd. abscissa of cubitus shortly, but distinctly, longer than the 2nd.; recurrent nervure clearly separated from the 1st. transverse cubital nervure; area on 2nd. abdominal segment reaching near to the middle of the segment gradually narrowed to a sharp point; the base smooth, the rest longitudinally closely striated and with the sides sharply margined; 1st. abdominal segment smooth and shining in the centre, the sides and apex rugosely punctured; the depressed edges aciculated outwardly, the apical half deeply depressed. The 2nd., 3rd. and 4th. segments are closely rugosely punctured and irregularly striated; the striæ on the base of the 2nd. run into reticulations; on its basal half, mid-way between the middle and outside, is a striated shallow, longitudinal furrow; the suturiform articulation deep, closely, strongly striated; the other 2 furrows are not so clearly defined; the apical segments are smooth and shining. The abdomen is ovate, as long as the thorax and distinctly wider than it. Legs closely covered with short pubescence; the hinder more densely than the others; the basal joint of the hind tarsi thickened, as long as the following 2 united.

Face irregularly aciculated; clypeus surrounded by furrows, the upper transverse and narrower than the lateral; 2 short longitudinal keels run into it. Palpi black, covered with white pubescence; the apical 3 joints of maxillary testaceous; man-

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dibles with the basal half rufo-testaceous. Head and median segment covered with black hair; the middle lobe of mesonotum is covered with shorter pubescence; it is clearly separated from the lateral lobes by the parapsidal furrows which are deep, clearly defined and reach close to the apex. The apical slope of the metanotum has a distinct curved furrow on either side, with a few irregular ones between.

The wings in this species are lighter coloured than in the others of the group.

h. Black; head, more or less of thorax, and 2 or 4 front legs red; wings uniformly dark fuscous. The group of I. shelfordi.

Iphtaulax mobilis, sp. nov.

Black; the head, thorax, fore legs and the greater part of the middle tibiæ red, wings fuscous, the nervures and stigma black; basal area of 2nd. abdominal segment longer than its width at the base, opaque closely longitudinally striated, with a smooth, shining space, longer than broad and acutely pointed at the apex, the apex of the 1st. the 2nd. and the 3rd. and 4th. abdominal segments, except broadly on the sides at the base, closely longitudinally striated, the suturiform articulation and the furrow on the base of the 4th. segment crenulated.

Length 16 mm.; terebra 40 mm.

Hab. Kuching; April.

Face closely and distinctly punctured; the middle of the lower half smooth, the smooth part rounded above; top of clypeus transverse, the sides oblique, upper half smooth, lower-punctured. Front depressed and smooth in the centre and with a longitudinal furrow; its sides punctured. Temples oblique, rounded. Antennal scape as long as the 2nd. and 3rd. joint united; its apex on the lower side slightly produced. Middle lobe of mesonotum clearly separated, the furrows reaching to the apex. Basal depression of 1st. abdominal segment and the base of the apical part broadly in the centre smooth, the middle with a longitudinal keel, with some irregular, mostly transverse keels on either side. The centre of 2nd. segment irregularly reticulated more closely on the inner than on the outer side where the keels

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are much longer and not so much intermixed ; the 3rd. and 4th. segments are closely, regularly striated. The apical half of the sheaths of the ovipositor grey.

Comes close to *I. reticulatus* and *I. patrous* ; it differs from both in the central part of 2nd. abdominal segment not being clearly separated and bounded by keels ; the former may further be known by having the keel on the 1st. abdominal segment, much stouter and dilated upwards at the base, the median segment too being black, the latter species is smaller, the abdomen shorter compared with the thorax, the top of the clypeus is rounded, not transverse, and is more distinctly separated from the face ; the lateral bounding keels are stouter in *patrous*, with the top only oblique.

Iphiaulax reticulatus, Cam.

This species (described Journ. St. Br. R. A. Soc. 1902, p. 105) has been taken at Mount Sibau, and Mating, 3200 feet. At any rate I cannot separate the specimens taken at these places from those collected at Kuching. The species varies in size ; the scape of antennæ may be black or red ; the punctuation on the abdomen varies in intensity, and the apex on the sheath of ovipositor may be black or white. The characteristics of the species are the distinct, large fovea on the apex of the metanotum, the stout keel on the 1st. abdominal segment raised at the base, the distinctly raised and separated middle part of 2nd. segment, this part being bordered by a keel and it becomes narrowed towards the apex ; the longish, rounded temples, slightly roundly incised occiput and long narrow antennal scape.

The ♂ is similar ; the punctuation of the abdomen is coarser throughout ; the antennal scape red and middle femora and tibiæ red. In the ♀ the latter may be more or less reddish.

Iphiaulax longitarsis, sp. nov.

Black ; the head, thorax except the greater part of the metanotum, the fore legs and the greater part of the middle femora, red ; the wings fuscous violaceous, the stigma and nervures black ; the basal 2 segments of abdomen longitudinally striated ; the plate on the 2nd. segment smooth, its width the

length of its greatest length ; the apex obliquely narrowed ; its keel reaches to near to the apex of the segment, which is there smooth in the middle ; on either side of it is a smooth plate, broadly rounded on the outer side, narrowed to a point on the inner above ; suturiform articulation crenulated except at the sides ; its posterior lateral branch, wide shallow, obscurely striated ; the enclosed part smooth and shining, broader than long, rounded behind. ♀.

Length 10 ; terebra 10 mm.

Hab. Kuching. May.

Scape of antennæ more than twice longer than wide ; the pedicle clearly separated, wider than long. Face flat, smooth ; clypeus not very clearly separated, from it ; broadly rounded above. Temples long, as long as the antennal scape, straight, not obliquely narrowed behind ; occiput transverse. Malar space excavated. First abdominal segment distinctly longer than the second ; its basal depression longer than broad, rounded at the apex ; the striæ irregular, the outer more or less curved. Fore tarsi very long, more than twice the length of the tibiæ. The hair is not very thick on the legs ; the middle coxæ and trochanters fuscous. The abdomen is as long as the length of the head and thorax united. Characteristic of this species are the long front tarsi.

Black ; the head, thorax, antennal scape and fore legs red, the fore legs paler, more yellowish in tint ; wings fuscous, the stigma and nervures black ; face rugose ; 1st. abdominal segment with a stout keel down the middle and with 2 indistinct ones on either sides ; the 2nd. sparsely, irregularly striated ; the basal plate small, longer than broad, obliquely narrowed at the base and apex, its keel stout, reaching to the apex ; suturiform articulation wide, striated, the striæ extending beyond the furrow. Ovipositor densely covered with long black hair. ♀.

Length 8 ; terebra 12 mm.

Hab. Kuching. May.

Scape of antennæ somewhat more than twice longer than broad, the 2nd. joint of equal width, longer than broad ; the 3rd. narrowed at the base, slightly longer than the 4th. Sides of

front, distinctly, roundly raised. Temples as long as the antennal scape. Clypeus not clearly separated, rugose. Sides of 2nd. abdominal segment broadly depressed; those of the 3rd. more deeply, especially towards the apex; both depressions are irregularly striated; there is a curved, indistinctly striated furrow on the base of the 4th. segment. The basal 2 joints of the tarsi are fully, together, longer than the tibiæ.

Allied to *I. longitarsis* with which it agrees in having only the basal 2 segments of the abdomen striated; but it may be readily separated by the much longer ovipositor, rugose face and rufous antennal scape.

Iphiaulax pangæus, sp. nov.

Black; scape of antennæ, head, pro- and mesothorax, red; wings uniformly dark fuscous, with black stigma and nervures; the 3rd. abscissa of radius as long as the basal 2 joints united; 2nd. abdominal segment without a distinct basal area.

Length 14-15 mm; terebra 11 mm.

Hab. Kuching. October.

Scape of antennæ short, not quite twice longer than broad; the 3rd. and 4th. joints about equal in length. Temples distinctly, obliquely narrowed, straight, if anything longer than the basal 2 joints of antennæ, united; the occiput transverse; malar space as long as the scape of antennæ. Parapsidal furrows indistinct. Fore tarsi nearly twice the length of tibiæ, the basal 2 joints being as long as them. The central lobe of 1st. abdominal segment irregularly longitudinally striated and with a stout keel down the centre; the 2nd. segment stoutly irregularly striated, without a distinctly defined area at the base or distinct central keel; the basal half of the sides depressed, but not deeply or clearly; basal half of 3rd. segment closely, finely longitudinally striated; the suturiform articulation closely striated; its posterior lateral branch wide, shallow, not clearly defined; the transverse furrow on the 3rd. segment narrow, striated.

The lower half of the face in the centre is bare, smooth; the rest sparsely punctured and with longish black hair; the inner side of the clypeus has an oblique slope, its top with a row of large punctures; not separated by a furrow from the face.

Iphiaulax monticola, sp. nov.

Black, scape of antennæ, thorax, except the sides of the metanotum broadly and the front legs red; the wings dark fuscous, with black nervures and stigma; the basal 3 abdominal segments longitudinally striated; the area on base of 2nd segment closely longitudinally striated, longer than broad, not much narrowed towards the apex; its keel not quite reaching to the apex, bordered by some irregular reticulations, which again are bordered by broadly curved striæ; suturiform articulation crenulated; the furrow on the base of 4th segment is less strongly crenulated. ♀

Length 15 mm.; terebra 13 mm.

Hab. Mount Siban. May.

Scape of antennæ about 4 times longer than wide, as long as the 2nd. and 3rd. joints united. Face, except in the centre, sparsely punctured, its centre depressed, the top of the depression with a small tubercle. The middle of clypeus slightly curved downwards; the sides oblique. Temples slightly oblique, rounded behind, somewhat longer than the antennal scape; occiput not quite transverse. Mesonotum flat. Scutellar furrow narrow, smooth. The raised central part of the 1st. abdominal segment is rugosely punctured at the base; the apical part has a furrow down the middle with some irregular, stout striæ on either side; the basal lateral depression of the 2nd. segment has a stout, oblique keel in the centre, bordered at the base by some curved striæ, those on the outer side being stronger than on the inner; on the base of the 3rd. segment is a smooth, triangular space, bordered, except on the outer side, by crenulated furrows; the centre of the segment is depressed and there is a furrow down the centre. Second abscissa of radius shorter than the 3rd. Fore tibiæ longer than the basal 2 joints of the tarsi united.

Comes near to *I. pangæus*, having, like it, only the basal 3 abdominal segments striated; that species may be known by the temples being more oblique, straight, not rounded; the 2nd. abdominal segment is not closely striated in the centre at the base; the middle is not reticulated and all the striæ are longitudinal, those bordering the keel not being curved.

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Iphiaulax quassitorius, sp. nov.

Black, the head, pro- and mesothorax and scape of antennæ red; the wings fuscous, almost black, the nervures and stigma black; the basal 3 segments of the abdomen strongly, longitudinally striated, the area on base of the 2nd. segment not clearly defined opaque, closely striated; there is an elongated, triangular smooth plate on either side of it; its inner side with a striated narrow band; there is an obscure pale oblique streak on the lower side of the 1st. cubital cellule and a small clear hyaline spot below the 1st. transverse cubital nervure, on the outer side of the recurrent. ♀.

Length 15; terebra 13 mm.

Hab. Kuching. March.

Scape of antennæ fully 3 times longer than wide, longer than the 2nd. and 3rd. joints united; the 3rd. shortly, but distinctly, longer than the 4th. Face sparsely, strongly punctured along the top and sides and sparsely covered with long black hair; the clypeus clearly separated; its top transverse, the side oblique. Malar space twice the length of the 2nd. antennal joint, furrowed in the centre. Temples if anything longer than the antennal scape, not obliquely narrowed, rounded behind; the occiput transverse. Middle lobe of mesonotum not much raised; the furrows indistinct; the apex flat. Median segment covered with longish black hair; the lower part of metapleuræ obscure rufous. The 1st. segment of abdomen longer than the 2nd. broad; its base not much narrower than the apex; the raised central part is longer than broad, its base transverse and clearly separated from the basal depression it is strongly aciculated, irregularly striated in the centre; the depressed outer border smooth, flat and shining. The 2nd. segment has a keel down its centre; the striæ on either side are more curved and irregular; the lateral smooth triangle is bordered on the inner side by a striated furrow; the outer furrow is wide, deep and extends to the base of the apical third; the suturiform articulation deep closely striated, as is also the posterior lateral branch; the enclosed space is smooth and shining; the apical border of the 3rd. segment smooth and shining; there is a distinct crenulated

furrow near the base of the 4th. Legs densely pilose. Fore tarsi about twice the length of the tibiæ, the basal 2 joints together as long as them. Sheaths of ovipositor broad, densely pilose. The sides and ventral surface of 1st. abdominal segment white.

Iphiaulax trichiotheus, sp. nov.

Black, the head, thorax, front legs and more or less of the middle legs at the base, red; wings dark fuscous, the nervures and stigma black; the back of the abdomen suffused with brown; tips of sheaths of ovipositor broadly white; they are broad and densely pilose; 2nd, 3rd. and 4th. abdominal segments closely, strongly, longitudinally striated; the area on 2nd segment fully twice longer than its width at the base; it becomes gradually narrowed to a fine point; its base rounded, smooth, irregularly, closely longitudinally striated; there is a smooth plate, broad at the base, narrowed towards the apex on either side of it; its keel is narrow, irregular and reaches to the apex of the segment; the space on either side of it is irregularly reticulated; the sides depressed, closely obliquely striated; suturiform articulation deep, crenulated; the furrow on the 3rd. segment is more irregular and is irregularly striated; there is a smooth, curved furrow on the base of the 4th. segment. ♀.

Length 9 mm.; terebra 16 mm.

Hab. Kuching. April and May.

The 1st. abdominal segment is longer than the 2nd.; it is smooth, except the apical third in the centre; that is raised, keeled on the sides, the keels extending to the middle of the segment; there is a shorter keel in the centre; and there are a few irregular transverse striæ. Scape of antennæ about 4 times longer than wide, the 3rd. joint slightly longer than the 4th. Face closely, distinctly punctured except in the middle; clypeus punctured, depressed broadly in the middle; Malar space longer than the antennal scape, depressed down the centre. Mandibles rufous black at apex; the palpi of a paler rufous colour. Parapsidal furrows deep, clearly defined. Legs densely pilose; the fore tarsi more than double the length of the tibiæ, their basal 2 joints being equal in length to them. Temples not quite the length of antennal scape rounded and slightly narrowed.

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Iphiaulax abgarus, sp. nov.

Black; head, pro-mesothorax, the greater part of middle femora and the front legs; the metapleuræ, and the scape of antennæ below, red; wings dark fuscous-violaceous, the nervures and stigma black; apical half of 1st. abdominal segment finely, the 2nd. more strongly longitudinally striated; the plate on the base of latter does not reach to the middle; it is longer than its width at the base, becomes gradually narrowed to a point, the base smooth, the rest closely, finely striated. ♀.

Length 12; terebra 12-13 mm

Hab. Kuching. May.

Scape of antennæ and pedicle marked with red below; the scape about twice longer than wide. Face and clypeus smooth and shining, sparsely haired, the clypeus not clearly separated from the face. Temples longer than the antennal scape; occiput transverse. Parapsidal furrows deep, clearly defined; the middle lobe of mesonotum not raised. Sutureform articulation wide, strongly striated; its posterior furrow is curved and striated; the sides of the 3rd. segment are coarsely aciculated; there is a narrow, almost smooth furrow, which curves roundly backwards on the 4th. segments; on the ventral surface are three pairs of large black spots. Legs thickly covered with long hair.

Comes close to *I. syleus* but that may be known from it by the much longer antennal scape, it being three times longer than wide.

Iphiaulax tristator, sp. nov.

Black; the head and thorax red, the metanotum infuscated; the fore legs red; the apex of middle femora and base of tibiæ broadly of a darker red; wings dark fuscous, the nervures and stigma black, scape of antennæ dark rufous below; the basal five abdominal segments striated. ♀.

Length 12-13 mm.

Hab. Kuching.

Scape of antennæ short and thick, not much more than twice longer than wide. Face smooth in the centre, an elongated

fovea in its centre above ; the sides punctured. Clypeus short, obliquely sloped, its top rounded. Temples obliquely narrowed, straight, as long as the antennal scape ; occiput slightly, roundly incised. Parapsidal furrows obsolete. First abdominal segment distinctly longer than the 2nd., its length nearly twice the width at the apex ; the basal half of the centre with a stout central keel ; the sides and apical half stoutly, irregularly reticulated ; the lateral furrows stoutly, irregularly transversely striated ; the 2nd. segment stoutly irregularly reticulated, the striæ in the centre more irregular, broken and widely separated ; there is no basal area, but a distinct keel runs to the apex. The suturiform articulation deep, narrow, crenulated ; the lateral apical branch, wide, striated like the rest of the segment ; there is a distinct crenulated furrow on the base of the 4th. and 5th. segments.

Iphiaulax pampatensis, sp. nov.

Black, the pro- and mesothorax dark red ; the front, except in the centre above, the face, clypeus, lower two-thirds of outer orbits, base of mandibles and palpi, yellowish-testaceous ; fore-legs fuscous-testaceous, the middle coxæ, trochanters and femora darker yellowish-testaceous ; their tibiæ and tarsi almost black ; wings fuscous, highly iridescent, the stigma testaceous, darker in front ; 3rd. abscissa of radius longer than the basal two united. ♂.

Length 11-12 mm.

Hab. Pampat. May.

Scape testaceous below, pilose ; about 3 times longer than thick. Front and vertex smooth and shining, the front not much depressed, the ocelli surrounded by furrows which run into the frontal one. Face closely punctured, covered with long fuscous hair ; clypeus surrounded by a rounded furrow. Eyes large, projecting, broader below than above ; malar space small not much more than the length of the 2nd. antennal joint. Temples as long as the antennal scape, rounded, slightly obliquely narrowed ; occiput transverse. First abdominal segment narrow, longer than the second, aciculated ; the apex roundly convex, very smooth and shining ; the second closely, irregularly

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longitudinally striated ; the base roundly narrowed ; there is no area, but the centre at the extreme base is smooth and shining, the apex of the segment being also smooth ; the third segment is similarly formed, the basal half in the centre being roundly raised, the raised part being more rounded and more clearly separated than it is on the 2nd. Sutureform articulation narrow indistinct, striated ; the furrow on the base of the 4th. segment is wider and more distinct, the striation being also stronger ; it is continued down the sides, (but this part is not striated) obliquely at the base, more curved at the apex, to near the apical fourth of the segment. The abdomen is long and narrow, more than twice the length of the thorax, of equal width throughout. Antennæ longer than the body.

Iphiaulax leptogaster, sp. nov.

Black ; head, thorax, except the metanotum and the 4 front legs, red ; wings fuscous-violaceous, the nervures and stigma black ; the basal 2 segments of the abdomen twice longer than broad of equal length and longer than any of the others ; the 1st. irregularly rugose ; the area on the 2nd. an equilateral triangle, its base the width of the segment, its apex ending in a keel which reaches to the middle of the segment ; it is stoutly irregularly striated ; from either side of the base a keel runs obliquely to near the apex ; inside it are some broken irregular keels, mostly oblique ; outside it particularly on the base and apex, are some irregular broken keels ; the 3rd. segment bears short stout broken keels to near the apex ; the 4th. and 5th. to shortly beyond the middle, the reticulated part being narrowed and rounded at the apex.

Metanotum and basal segments of abdomen sparsely covered with long blackish hair ; antennæ longer than the body ; the scape about 3 times longer than wide ; temples rounded, not obliquely narrowed ; legs densely pilose ; abdomen narrow, twice the length of the head and thorax united. Parapsidal furrows indistinct. Length 13 mm. ♂.

Characteristic of this species is the long narrow abdomen with the large triangular plate on the base of the 2nd. segment and the irregularly reticulated segments.

Hab. Kuching. March.

i. *As in h. but with the apex of the antennæ broadly white.*

Iphiaulax ornaticornis, sp. nov.

Head and thorax red; the antennæ, except the scape which is rufous, and the apical 13 joints which are white; abdomen and the 4 hind legs, black; the front legs rufo-testaceous; the middle legs fuscous; wings fuscous, the nervures and stigma black; 1st. abdominal segment with some stout, irregular curved striæ; the area on 2nd segment reaches beyond the middle where its keels unite; its base is irregularly striated; its apical two-thirds are bordered by short, stout, curved keels: outside these closely, stoutly, longitudinally striated to near the apex; the depressed middle of the lateral region smooth for the greater part; suturiform articulation wide, deep and crenulated; 3rd. segment closely, longitudinally striated; the middle of the sides smooth; the base stoutly striated; the furrow on the apex is distinct and crenulated; the extreme apex of the segment and the whole of the following smooth, except that there is a crenulated furrow on the 4th. ♀.

Length 11-16 mm.; terebra 24 mm.

Hab. Kuching. May.

Scape of antennæ fully 3 times longer than wide narrowed at the base, the apex produced below; 2nd. joint larger than usual; the 3rd. distinctly longer than the 4th. its base dilated. Face and clypeus rugosely punctured; malar space small, not much longer than the 2nd antennal joint. Temples as long as antennal scape, occiput transverse. Parapsidal furrows indistinct. Hind legs long and slender; their femora more or less fuscous; the tarsi distinctly longer than the tarsi; middle tarsi longer compared with their tibiæ.

A distinct, well-marked species easily separated by the white apex of antennæ, long slender legs with all the tarsi clearly longer than their tibiæ and short malar space and by the basal 3 abdominal segments being striated. It appears to vary considerably in size.

Chaolta trituberculata, sp. nov.

Luteous, antennæ and a curved mark across the ocelli, black; wings fuscous, yellowish-hyaline to near the transverse basal and to the transverse median nervures; 2nd abdominal segment at the base tuberculate in the middle and at the sides; its area reaching to the middle of the segment; closely striated and becoming gradually narrowed to a sharp point. ♀

Length 11-12 mm.; terebra 9 mm.

Hab. Kuching. April.

Antennæ shorter than the body; its scape stout, about 3 times longer than broad, not hollowed below; its apex with a hollow, broadly bordered, longer than broad and rounded at the apex. Face irregularly punctured: below the antennæ is a plate, broader than long, with raised edges; a stout keel runs into it from between the antennæ. Temples broad, rounded behind; occiput transverse. Mesonotum, scutellum and metanotum on one level, flat; the parapsidal furrows obsolete; scutellum depressed, becoming roundly narrowed towards the apex. Central area of 1st abdominal segment strongly, closely longitudinally striated; of almost equal width throughout; the lateral depressions finely striated on the inner side; 2nd to 5th segments closely longitudinally striated, the striæ becoming weaker gradually; the 2nd, 3rd and 4th segments with strong oblique depressions on the base at the sides; the 2nd segment outside the furrow is irregularly striated; the striæ more or less curved. The abdomen is distinctly wider than the thorax and is not much longer than it. The 3rd abscissa of the radius is as long as the basal 2 united. The base of the stigma is ochraceous; there is a curved hyaline cloud, dilated above, on the lower side of the 1st cubital cellule and one along the outer side of the recurrent nervure. Legs short and stout; tarsal joints spinose at the apex; calcaria minute. Hypopygium largely projecting; fore tibiæ as long as the basal 2 joints of the tarsi.

The 1st abdominal segment rises sharply, obliquely from the base to the apex, forming a distinct angle with the 2nd; the

black mark on the vertex extends laterally to the eyes and becomes gradually narrowed to the middle behind.

Comes close to *C. lutea*; that species may be known by the immaculate front, longer ovipositor and yellow scape of antennæ

Chaolta sulcata, sp. nov.

Length 9; terebra 5-6 mm.

Hab. Kuching. July.

This species is very similar to *C. 3-tuberculata* and has, like it, the base of 2nd abdominal segment trituberculated; it is smaller and more slenderly built; has the facial plate smaller, and not raised along the apex; the scutellum is not flat and hollowed and on a level with the mesonotum, but is raised above it and the metanotum, it being slightly, but distinctly, convex; and the mesopleuræ have a distinct longitudinal furrow below; it being wider, deeper at the base, where it borders the mesosternum; the 2nd abdominal segment is smaller compared with the 3rd and the ovipositor is shorter. The furrow running from the metathoracic furrows is wide and deep; the centre of the metanotum is finely closely longitudinally striated; the top and inner side of the 1st cubital cellule are broadly hyaline and there is a small hyaline spot, longer than broad, in front of the upper side of the recurrent nervure; the lateral furrows on the sides of the 2nd, 3rd and 4th segments are distinct; the suturiform articulation is narrower than it is in *3-tuberculata*. The pleuræ, sternum and legs are covered with long white pubescence.

Chaolta maculifrons, sp. nov.

Length 9; terebra 8 mm. ♀.

Hab. Kuching. April.

Agrees closely with *C. trituberculata*, having, like it, the base of the 2nd abdominal segment trituberculata, but not so strongly; the front is black except in the centre; the black mark extends to the eyes, is continued behind them all over and, in the middle, is triangularly produced half-way on to the vertex; and the metanotum and back of abdomen are marked with black.

Antennæ black; the scape not quite 3 times longer than broad, the apex toothed at the sides below. Face with a clearly defined semicircular depression over the mouth; covered with pale hair. Front and vertex smooth and shining; the temples broad, not much narrowed, rounded behind; the occiput transverse. Frontal plate smooth, longer than the width at the base; the apex rounded; but not broadly, a furrow leads in to it from between the base of the antennæ, in the centre of which is a keel, which reaches close to the apex of the plate, becoming thicker as it does so. Mesonotum, scutellum and metanotum flat, on one level; scutellum roundly narrowed to the apex. Metanotum and mesosternum blackish. Middle lobe of 1st abdominal segment of equal width; stoutly longitudinally striated, the inner side of the sides more finely and closely striated; the 2nd to 4th segments closely rugosely punctured and striated; the keel on the 2nd segment reaches to the base of the apical fourth; it becomes gradually narrowed to a fine point, is closely longitudinally striated and is bordered laterally by a crenulated furrow; the oblique furrows on the 2nd, 3rd and 4th segments are straight, oblique and stoutly striated; the suturiform articulation is crenulated; the 2nd furrow is deep narrow and smooth. Wings yellowish hyaline to near the transverse basal and to the transverse median nervures; the 1st cubital cellule has a hyaline cloud which bifurcates near the middle, the lower branch being the longer, reaching to the apex of the cellule, below which is a smaller cloud projecting backwards from it; the 3rd abscissa of the radius is as long as the basal two united. Fore tarsi twice the length of tibiæ which are hardly the length of the basal two joints united.

A new species of *Chalcis* from Borneo.

By P. CAMERON.

Chalcis borneanus, sp. nov.

Black; the under side of the scape, the apices of the femora, the base and apex of the tibiæ, the tarsi and the tegalæ whitish-yellow; the hinder femora red, their middle teeth longish and clearly separated; the apex of the scutellum ending in 2 stout, longer than broad, teeth; the wings hyaline, the nervures black. ♀

Length $4\frac{1}{2}$ mm.

Hab. Borneo.

Antennæ stout, as long as the thorax; the 3rd joint distinctly longer than the 4th and narrowed at the base. Head closely, but not deeply, punctured, except in the centre of the front; the centre of the face shining and less strongly and closely punctured; the top of the clypeus shining and bearing 6 large foveæ. Mandibles rufous behind the teeth. Pro- and mesothorax rather strongly and closely punctured; the pronotum at the base on the sides with a distinct keel. Parapsidal furrows wide, curved. Scutellum more widely punctured than the mesonotum, its apex ending in 2 large, bluntly, rounded, longer than broad, finely rugose teeth. Metanotum irregularly reticulated; the central basal area is larger and longer, is obliquely narrowed at the base and becomes narrowed slightly towards the apex. Propleuræ rugose; the meso- smooth and shining and with some widely separated striæ at the base. Metapleuræ closely reticulated, abdomen shorter than the thorax, bluntly pointed and covered with white pubescence at the apex.

Chinese Names of Streets and Places in Singapore and the Malay Peninsula.

BY H. W. FIRMSTONE.

In two previous Journals lists of the Chinese names of streets in Singapore and in Penang have been published by Mr. Haughton and Lo Man Yuk (XXIII and .)

Mr. Firmstone continues and adds to this work the following Chinese names and translations.

I.—Chinese names of

English.	Hokkien.	Cantonese.
1. Albert Street ...	(i) Bo moa ^a -iu koi ...	Mo ma-yau kai ...
	(ii) Mang-ku-lu seng-ong-kong.	...
2. Almeida Street ..	Gu-chhia-chui hi-hng au.	Ngau-chhe-shui hei-yün hau kai.
3. Amoy Street ...	(i) Ma-cho-kiong au ...	...
	...	(ii) Kun-yam miu hau kai.
	(iii) Gi-oh khau ...	...
		(iv) Ha mun kai ...
4. Angus Street ...	Kam-kong Ma-lak-kah neng-chhun hi-hng tui-bin koi.	...

Streets in Singapore.

Chinese Characters.	Remarks as to Meaning.
街油蔴磨	(i) 'Grind oil of sesamum street': <i>i.e.</i> the street where oil is expressed from Sesamum.
公王聖魯久望	(ii) 'Bencoolen joss': <i>i.e.</i> the street of the Bencoolen street district joss.
街後園戲水車牛	'Behind the Bullock-cart-water theatre' <i>i.e.</i> the street behind the Chinese theatre in Kreta Ayer. (of Smith street and Sago street).
後宮祖媽	(i) 'Behind the temple of Ma-cho'.
街後廟音觀	(ii) 'The street behind the temple of Kun-Yam'. (The same temple is used for the worship both of the goddess Ma-cho, and of the goddess Kun-yam.)
口學義	(iii) 'Free school mouth' <i>i.e.</i> in front of the Free school, there being a Chinese School in Amoy street.
街門廈	(iv) 'Amoy street'. ('Ha-mun' is the Cantonese pronunciation of the characters representing the name of the place Amoy).
春恒呷呷嘛公監 街面對園戲	'Kampong Malacca chop 'Heng Chhun' theatre opposite street' <i>i.e.</i> the street in Kampong Malacca opposite the theatre of chop 'Heng Chhun'. (Angus street is one of a dozen or more streets in the

English.	Hokkien.	Cantonese.
5. Ann Siang Hill ...	Chui-lan teng ...	Sui-lan theng ...
6. Annamallai Chitty lane.	(i) Tek-kha Khut-thau hang.	(i) Chuk-keuk kwat-thau hong.
	(ii) Tek-kha tng-tiam tui-bin te-sa ⁿ -tiau.	(ii) Chuk-keuk tong-pho tui-min tai-sam-thiu.
7. Anson Road ...	(i) Lau toa-peh-kong hit-tiau.	...
	(ii) Ti ku pa-sat khi Tan-jong Pa-kat hai-ki ⁿ hit-tion.	...

Chinese Characters	Remarks as to Meaning.
亭蘭萃	Kampong Malacca district and no Chinaman would think of giving the name quoted, but would be content with the indefinite expression 'Kam-kong Ma-lak-kah.' The neighbourhood contains but few Cantonese, and they would use 'Kam-pong Ma-lak-kah.'
巷頭掘脚竹	(i) 'The 'chui-lan' pavilion'. (There used to be a club on this hill, known by this name). (i) 'The cul-de-sac in 'Tek Kha'.' (Tek Kha' means 'foot of the bamboos' and is the universal name for all the Selegie Road neighbourhood).
三第面對店當脚竹 條	(ii) 'The third (street) opposite the 'Tek-kha' pawnshop.' (There is a pawnshop in Selegie Road, and opposite it three narrow lanes lead off, viz. Veerappa Chetty lane, Nagapa lane, and this one.)
條那公伯老	(i) 'Old idol street.' (There is an old temple at Tanjong Pagar.)
巴戎丹去虱巴舊自 條那墩海葛	(ii) 'From the old market going to Tanjong Pagar (along) the shore, that street'. These names are such as may be used by Hokkiens. I can find no Cantonese name. Far a great part of the road

English.	Hokkien.	Cantonese
8. Arab Street ...	(i) Jiau-a koi ...	(ii) Yau-wa kai ...
9. Armenian Street ...	Seng Po toa chhu au...	Seng Po tai ok hau-pin.
10. Bain Court ...	(i) Chui-sien-mng be- liau hang-a lai. ...	... (ii) Shui-sin-mun ma- fong kwat-thau hong.
11. Bain Street ...	(i) Hok-im-kuan au koi. (ii) Sek-a-ni le-pai-tng tui-bin hang.	(i) Fuk-yam-kwan hau- kai. ...

Chinese Characters.	Remarks as to Meaning.
街亞爪 街華休	there are no houses and that accounts for the fact that there is no Chinese name as yet crystallised for the road.) 'Javanese street.' (Many Javanese live here, and the Chinese have distinguished them as the chief inhabitants of the street.)
後厝大寶成	'Behind Seng Po's big house'. (Sing Po, i.e. Tan Seng Po, a wealthy Chinaman, is now dead.)
內仔巷寮馬門仙水	(i) 'Water-fairy-gate stables lane within.'
巷頭掘房馬門仙水	(ii) 'Water-fairy-gate stables cul-de-sac.' (Bain Court is a lane off North Bridge Road. That part of North Bridge Road is called 'the Water-fairy-gate', why I cannot say, unless it is connected in any way with the fact that there was once a public bath in the vicinity. Douglas' Amoy Dictionary gives 'chui sien mng' 'gangway' but I know of no reason why this part of Singapore should be so called.)
街後館音福 面對堂拜禮年仔色巷	(i) 'Street behind the Gospel-house.' (ii) 'Eurasian Church opposite lane.' ((ii) applies also to Holloway Lane).

English.	Hokkien.	Cantonese
12. Balestier Road ...	(i) O Kio.	...
	...	(ii) Wu-hap thong ...
	(iii) Go-cho toa-peh-keng.	...
13. Bali Lane ...	(i) Sin Ba-li.	...
	...	(ii) Ma-li hong.
14. Banda Street ...	...	Fan-tsai mei.
15. Battery Road ...	(i) Tho-kho au ...	...
	...	(ii) Dho-fu fa-yün pin.

Chinese Characters.	Remarks as to Meaning.
橋烏 塘葉芋	(i) 'Black Bridge.' (ii) 'Taro Pond.' (ii) this name is also given to Delta Road (ii) there are fields planted with this vegetable in the Balestier Road neighbourhood.
公伯大曹鵝	(iii) 'Rochore Temple.'
厘峇新 巷厘馬	(i) 'New Bali.' (ii) 'Bali Lane.' (i) New Bali, to distinguish the lane from Shaikh Madaesah Lane or 'Old Bali' adjoining.)
尾寨番	End of the foreign brothels. ('Foreign' here means 'frequented by non-Chinese.' There is nothing but a roundabout way of expressing this Street in Hokkien; cf. Spring Street.)
後庫土 邊園花庫土	(i) 'Behind the godowns.' (ii) 'Beside the garden (near the) godowns. (There is no definite name. A Chinaman would undoubtedly have to go into further detail to distinguish Battery Road from adjoining Streets).

English.	Hokkien.	Cantonese.
16. Beach Lane. ...	Thih pa-sat khut-thau hang.	Thit pa-sat kwat-thau hang.
17. Beach Road. ...	(i) Sio-po hai-ki. ... (iii) Thih pa-sat khau. ... (v) Bang heng bi-kau. (ii) Kam-pong hoi-pin. (iii) Thit pa-sat hau ... (iv) Sha-tsui hung-mo thit-chhong tui-min. (v) Man heng mai-kau. (vi) Hoi-nam w u i - kwun hoi-pin kai.

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Chinese Characters.	Remarks as to meaning.
巷頭掘虱巴鐵	'The iron market cul-de-sac.' (The iron market is the market built of iron, i.e. Clyde Terrace Market).
坵海坡小	(i) 'Small-town sea shore.' ('Sio-po' is 'small town' i. e. that part of Singapore to the north of the Stamford Road Canal, as opposed to 'toa-po' or big town, the Singapore river end of the town.)
邊海榜金	(ii) 'Kampong' sea shore.' (Kampong means Kampong Glam, and is practically the Cantonese equivalent for 'sio-po'.)
口虱巴鐵	(iii) 'Iron market' i. e. the street to which the iron market opens or faces (see Beach Lane).
面對廠鐵毛紅嘴沙	(iv) 'Tanjong Rhu European foundry opposite.' (This would seem to be a roundabout way of describing Beach Road, and would probably only be used as explanatory of (ii) (but I heard it used).
郊米興萬	(v) 'Chop 'Ban Heng' rice-mill.'
街邊海館會南海	(vi) 'The street along the shore near the Hailam kongsi-house.'

English.	Hokkien.	Cantonese.
	(vii) Ji-chap keng ...	(vii) Yi-shap kan. ..
18. Belilios Road. ...	Phau-be po hang ...	Phau-ma po hong ..
19. Bencoolen Street...	(i) Chhai-tng au. (ii) Mang-ku-lu toa lo. ...	(ii) Chai-thong hau. ... (iii) Mong-kwo-lo.
20. Ben Hoon Road ...	Chin-long lai.	Chau-long roi.

Chinese Characters.	Remarks as to meaning.
間十二	(vii) 'Twenty buildings.' (This name is more generally given to Jalan Sultan, but the twenty houses in question were in Beach Road! This is only characteristic.)
巷坡馬跑	'Race Course Lane.' (There is no other name for this and half a dozen other streets leading from Serangoon Road towards the Race Course.)
後堂茶 後堂齋	(i) and (ii) Behind the Vegetarians' hall.' (There is a meeting house of a Chinese Vegetarian guild here.)
路大魯久望 路菓芒	(ii) 'Bencoolen' big street.' (iii) 'Bencoolen.' (A number of streets in this neighbourhood are spoken of as 'Bencoolen' by all classes of Chinese. It is usually exceedingly difficult to ascertain which street is meant).
內廊酒	'Within the spirit depôt (district).' (There was formerly a factory of Chinese spirit near where this road now lies. It is disused now. Cf. Cheang Hong Lim Lane, where there is also a disused spirit-factory.)

English.	Hokkien.	Cantonese.
21. Bernam Street ..	Tan-jong pa-kat chin-seng sha ⁿ khau.	Tan-yong pa-kat chan-seng shan hau.
22. Bernard Street ...	Go-cho lut bo-bue hang.	Lo-cho lut mo-mei hong.
23. Birch Road. ...	Phau-be po hang ...	Phau-ma po hong ...
24. Blanco Court ...	Gu-long lai ...	...
25. Boat Quay. ...	(i) Tiam-pang lo-thau	...

Jour. Strait Branch

Chinese Characters.	Remarks as to Meaning.
口山成振葛巴戎丹	<p>‘Tanjong Pagar Chin Seng Hill mouth’ i.e. the road on to which Chin Seng Hill opens (or faces) at Tanjong Pagar. (I do not suppose that this name would help one much to locate the street in speaking to a Chinaman, but there are no names for this or many other of the numerous new streets off Tanjong Pagar Road. However I was given this description as applicable to Bernam Street among others. ‘Chin-Seng Hill’ is what is usually called ‘Bukit Kim Cheng.’)</p>
巷尾無律槽鴉	<p>‘Rochore Road no end lane.’ (This is a small blind alley off Rochore Road.)</p>
巷坡馬跑	<p>‘Race Course Lane.’ (See Belilios Road).</p>
內墘牛	<p>‘Within the godowns (quarter).’ (‘Gu-lang’ is not Chinese, but is simply ‘godown’ pronounced in Hokkien fashion. I do not know why such a name is specified for such an insignificant street as Blanco Court.)</p>
頭路邦墊	<p>(i) ‘Sampan ghaut or landing-place.’ (This applies to the lower part of Boat Quay near Purvis Creek.)</p>

English.	Hokkien.	Cantonese.
	(ii) Chap-sa ⁿ kang ...	(ii) Shap-sam hong ...
	(iii) Khe-ki ⁿ ...	...
	(iv) Chap-peh keng ...	(iv) Shap-pat kan ...
	(v) Chui-chhu bue ...	...
26. Bonham Street. ...	Tuan Kat tho-kho au- bue ...	Tun kat tho-fu hau-mei.
27. Bras Basah Road...	(i) Lau kha-khu-keng khou. ...	... (ii) Kau ka-ku hau ...
	(iii) Ho-lan-se le-pai- tng pi ⁿ ...	(iii) Fat-lan-sai lai-pai- thong pin.
	(iv) Hai-ki ⁿ ang-neo toa-oh pi ⁿ ... ...	... (v) Tai shü-kwun-fong pin.
28. Buffalo Road ...	Kam-kong ka-la-bu phau-be po hang ...	Phau-ma po hang ...

Chinese Characters.	Remarks as to Meaning.
行三十	(ii) 'Thirteen shops,' <i>i. e.</i> the part near where Canton Street joins it.
嶼溪	(iii) 'River-side.'
間八十	(iv) 'Eighteen houses,' <i>i. e.</i> the part near Circular Road.
尾厝水	(v) 'Bathing-house end.' (This name is little used: it belongs to the Canton Street part.)
尾後庫土葛緞	'At the back of Mr. Katz' godown' <i>i. e.</i> behind Katz Brothers' Shop.
口間拘脚老	(i) & (ii) 'Old Gaol Mouth.' (The old gaol was between Stamford Road and Bras Basah Road. 'Kha-khu' means 'fettors' in Hokkien. The Cantonese is adapted.)
口古架舊	
邊堂拜禮西蘭和	(iii) 'Beside the French Church.'
邊學大毛紅嶼海	(iv) 'Beside the seaside English big school' (<i>i. e.</i> Raffles Institute).
邊旁館書大	(v) 'Beside the big school.'
埔馬跑武勝加公監巷	'Kampong (for Kandang) Kerbau Race-course Lane.'

English.	Hokkien.	Cantonese.
29. Buggis Street ...	Peh sua-pu ...	...
30 Bukit Timah Road.	(i) Tek-kha kang-a ki ⁿ ...	... (ii) Tek-kha chhung pin.
31. Canal Road ...	(i) Kam-kong Ma-lak-kah kang-a ki ⁿ . (ii) Pik-ki-lin au ... (iii) Kong chioh-a ... (iv) Pun-so chhia ...	... (ii) Pak-khi-lun hau- (pin kai).
32. Cantonment Road.	Pa-so bue ...	Pa-so mei ...

Chinese Characters.	Remarks as to Meaning.
浮沙白	'White-wash' (?) (Sua-pu is said to be the Malay 'sapu'; but no information is forthcoming as to the reason for the name, which I suppose be due to the houses there being once given an extra coat of whitewash).
坵仔港脚竹	(i) & (ii) 'The side of the stream in the Tek-kha (or Selegie Road) district.'
邊漏脚竹	(This only refers to the lower end of the Bukit Timah Road. The Wayang Satu and Bukit Timah village parts are differently called; see under the country districts.)
坵仔港甲六馬公監	(i) 'Beside the Kampong Malacca Stream. (This name is practically obsolete.)
後麟其畢	(ii) 'The street behind the 'Pickering' (office) i. e. the Chinese Protectorate.
仔石貢	(iii) 'Stone breaking.' (This is the general name for Havelock Road, but the name is also applied to Canal Road.)
車掃糞	(iv) 'Refuse sweeping carts.' (Municipal refuse carts are stationed here.)
尾梭巴	'End of (Bukit) Pasoh.'

English.	Hokkien.	Cantonese.
33. Canton Street ...	(i) Khai ki ⁿ hue ⁿ -koi-a. ... ...	... (ii) Shap-sam hong wang kai-tsai.
34. Carine Street ...	(i) Go-cho lut bo-bue hang. ... ...	... (ii) Lo-cho kwat-thau hong.
35. Carpenter Street...	(i) Hi-kuan koi ... (ii) Gi-hok koi ...	... (ii) Yi-fuk kai ...
36. Cashin Street ...	(i) Hok-im-kuan au hue ⁿ -hang. (ii) Ka-seng koi ...	(i) Fuk-yam-kwun hau- pin wang-hong. ...
37. Cavenagh Road ...	Toa-ong-sua ⁿ au koi ...	Tai-wong-shan hau kai.
38. Cecil Road ...	(i) A-phien kongsi ...	...

Chinese Characters.	Remarks as to Meaning.
仔街橫嶼溪 仔街橫行三十	(i) & (ii) 'Small cross street by Boat Quay.'
巷尾無律槽鵝	(i) & (ii) 'Cul-de-sac near Rochore (Road).' (cf. Bernard Street.)
巷頭掘槽鵝 街館戲	(i) 'Theatre Street.' (The first Tiechiu theatre was in this street.)
街福義	(ii) '‘Gi-hok’ Street.' (The old ‘Gi-hok’ society had a Kongsihouse here : cf. Clarke street.)
巷橫後館音福	(i) 'The cross street behind the Gospel-house.'
街興嘉 街後山王大	(ii) (This is phonetic for 'Cashin.')
司公片鴉	(i) 'Opium-Kongsi.' (The headquarters of the Opium Farm have

English.	Hokkien.	Cantonese.
	...	(ii) Si-shü kai ...
	(iii) Lau pa-sat ma-ta-chhu au.	...
39. Cheang Hong Lim Lane.	Kong chioh-a chiu-long lai.	Chau-long noi ...
40. Cheang Hong Lim Street.	Peh keng-a	...
41. Cheang Lim Hien Street.	Kong chioh-a chiu-long lai.	Chau-long noi ...
42. Cheang Wan Seng Road.	Chiu-long pi ^a	... Chau-long pin ...
43. Cheng Cheok Street.	Gu-kak hang	... Ngau-kok hong ...

Chinese Characters.	Remarks as to Meaning.
<p>詩書街 老吧虱馬打厝後</p>	<p>been in this street for the past 2½ years.) (ii) Phonetic (Si-shü for Cecil.) (iii) 'Behind the Police Station near the old market.'</p>
<p>貢石仔酒廊內</p>	<p>'Stone-breaking spirit-depôt within' i.e. 'within spirit-depôt (quarter) in the Havelock Road neighbourhood.' (All lower Havelock Road and district is called "Stone-breaking (place)." There is a disused spirit factory in Cheang Chong Lim Lane which leads off Havelock Road. Cf: Beng Hoon Road.)</p>
<p>八間仔</p>	<p>'Eight small buildings.' (This is a very short street, so the name is not altogether inappropriate.)</p>
<p>貢石仔酒廊內</p>	<p>(See under Cheung Hong Lim Lane.)</p>
<p>酒廊邊</p>	<p>'Beside the spirit-depôt' (cf. Beng Hoon Road.)</p>
<p>牛角巷</p>	<p>Ox-horn lane': so called because the street runs in a semicircle, more or less, from Tanjong Pagar Road back</p>

English.	Hokkien.	Cantonese.
44. China Street ...	(i) Kiau-keng khau (iii) Gi-hin kong-si ...	... (ii) Po-tsz-chheung kai
45. Chinchew Street...	Tau-hu koi	Tau-fu kai ...
46. Chin Hin Street...	(i) Toa-po sim koi-a (iii) Sin pa-sat sin koi..	... (ii) Chhiu-chau san kai.

Chinese Characters.	Remarks as to Meaning.
口閩賭	again to Tanjong Pagar Road, forming a crescent or pair of ox-horns.
街場字寶	(i) 'Gambling houses' mouth. i.e. the street on to which the gambling houses open.
司公興義	(ii) 'Gambling-hall street.'
街腐荳	(iii) 'Gi-Hin Kongsì house.' (There was formerly a Kongsì-house of the old Gi-Hin Society here.)
仔街新坡大	'Bean-curd street.'
街新州潮	(i) 'Big town new little street.' ('Big town' is distinguished from 'small town,' which is across the Stamford Road canal ; see under Beach Road. It is necessary to add the 'Big town' here, because there is another 'New Street'—Fraser Street—in 'small town.'
街新虱巴新	(ii) 'Tiechiu new street.' (The district is largely inhabited by Tiechiu, but the street itself is a Cantonese brothel street.)
	(iii) 'New market new street.' ('New market' is the Ellenborough Market close by.)

English.	Hokkien.	Cantonese.
47. Chin Swee Road...	(i) Kong chioh-a chiu-long lai.	Chau-long noi ...
...	(ii) Chin-sui koi ...	Chan-sui kai ...
...	(iii) Siok- ui sua ^a teng.	...
48. Chhoa Lam Street.	Siok-ui sua ^a teng ...	...
49. Church Street ...	Go-tai thien kiong ...	Ng-toi thim kiong ...
50. Circular Road ...	(i) Chap-sa ^a hang au ...	(i) Shap-sam hong hau.
	(ii) Chap-peh keng au.	(ii) Shap-pat kan hau.
51. Clarke Street ...	(i) Gi-hok kong-si au...	... (ii) San yi-fuk kong-si hau-pin ...

Chinese Characters.	Remarks as to Meaning.
<p>內屬酒仔石貫 街瑞振</p>	<p>(i) (See under Cheang Hong Lim Lane). (ii) (This is an adaptation, meaning simply Chin-swee Road—it is not commonly used except by Babas.)</p>
<p>頂山惠淑</p>	<p>(ii) 'Siok Wee's plantation.' (The land about here belonged to Kiong Siok Wee.)</p>
<p>頂山惠淑 宮天代五</p>	<p>(See under Chin Swee Road above.) 'Heavenly palace of the five generations. ('Thien kiong' Heavenly palace is an abbreviation for 'thien hok kiong' i.e. palace of heavenly bliss; there is a temple of this name in this street, in which five josses of different se" or clan-names are enshrined.)</p>
<p>後行三十 後間八十</p>	<p>(i) 'Behind the thirteen shops'. (ii) 'Behind the eighteen buildings'. (Cf. Boat Quay).</p>
<p>後司公福義 便後司公福義新</p>	<p>(i) 'Behind the Gi-hok Kongsí (house).' (ii) 'Behind the New Gi-hok Kongsí (house) Cf. Carpenter street. The new Gi-hok Kongsí house was near here.'</p>

English.	Hokkien.	Cantonese.
52. Clive Street ...	Kam-kong ka-poh ...	Kam-kong ka-pok ...
53. Club Street ...	(i) Toa-mng lai ... (ii) Chui-lan teng ...	(i) Tai-mun noi ... (ii) Sui-lan theng ...
54. Clyde Street ...	Thih pa-sat ma-ta-chhu tui-bin hang.	Thit pa-sat ma-ta-liu bui-min hong.
55. Clyde Terrace ...	Ua ^a -tiam khau ...	Wun-tim hau.
56. Coleman Street ...	(i) Chin-seng chhu-pi ^a (iii) Hiok-ni sin chhu... au.	... (ii) Chan-seng tai-ok fong pin.
57. Collyer Quay ..	(i) Tho-kho au ... ...	... (ii) Tho-fu hau hoi pin

Juor. Straits Branch

Chinese Characters.	Remarks as to Meaning.
薄加公監	'Kampong Kapor'. (This street is in the Kampong Kapor district and has no definite name. Cf. Dunlop street.)
內門大	(i) 'Within the big gate'. (This has disappeared).
亭蘭萃	(ii) 'Chu-lan pavilion' (see under Ann Siang Hill).
面對厝打碼虱巴鐵巷	'The lane opposite the Police Station near the iron market.'
口店碗	'Crockery-shop mouth,' <i>i.e.</i> opposite the mouth of the street where these shops are.
邊厝成振	(i) 'Beside Chin Seng's house.'
邊旁屋大成振	(ii) 'Beside Chin Seng's big house.' ('Chin Seng' was the chop of the late Tan Kim Cheng, a well known citizen of Singapore.)
後厝新尼勗	(iii) 'At the back of Tan Hiok Ni's new house.'
後庫土	(i) 'Behind the godowns.'
邊海後庫土	(ii) 'Behind the godowns by the seaside.'

English.	Hokkien.	Cantonese.
	(iii) Ang-teng lo-thau	...
58. Commercial Square.	(i) Tho-kho khau ...	...
	...	(ii) Tho-fu fa-yün pin.
	(iii) Hue-bng kak ...	...
59. Cornwall Street ...	Chiu-long lai ...	Chau-long noi ...
60. Craig Road ...	(i) Gu-chhia-chui kia	...
	(ii) Ka-lek lut ...	...
	...	(iii) San yiong tai uk pin
61. Crawford Road ...	(i) Go-cho bue ...	(i) Lo-cho mei ...
	(ii) Go-cho pa-sat ...	(ii) Lo-cho pa-sat ...
62. Cross Street ...	(i) Kit-ling-a koi ...	...
	...	(ii) Hoi-san kai ha kai

Chinese Characters.	Remarks as to Meaning.
頭路燈紅	(iii) 'Red lamp landing place' i.e. Johnston's pier.
口庫土 邊園花庫土	(i) 'Mouth of the godowns.' (ii) 'Beside the godowns' flower-garden.' (iii) 'Flower-garden square.'
內廊酒 崎水車牛 律力加	(See under Beng Hoon Road.) (i) 'Side of Kreta Ayer.' (ii) Phonetic only.
尾槽鵝 虱巴槽鵝 街仔靈吉	(iii) 'Beside Sam Yiong's big house.' (This street is largely inhabited by Babas, hence the 'Ka-lek lut.' 'San Yiong' was the chop of the late Tan Kim Tian and it is still used by his descendants; the name is not generally known.) (i) 'End of Rochore.' (ii) 'Rochore Market.'
街下街山海	(i) 'Kling Street.' (There are a large number of Kling shops in Cross Street). (ii) 'Hoi-san' street lower street.' (Hoi-san' street is Upper Cross street, <i>q.v.</i>)

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English.	Hokkien.	Cantonese.
63. Cumming Street ...	Kam-kong ma-lak kah hi-hng koi	Kam-pong ma-lak-kah hei-yün kai
64. D'Almeida Street	(i) Tho-kho le-long- kwan (ii) Hiap Hoat koi ...	(i) Tho-fu ham-lang kwun (ii) Hip fat kai ...
65. Damer Road ...	(i) Ong-ke sua ⁿ -kah be- liau pi ⁿ (ii) Ong-ke sua ⁿ -kha Kong-pan-ge phah chloh	(i) Wong-ka shan-keuk ma-fong pin ...
66. Delta Road ...	O kio ...	Wu khiu ...
67. De Souza Street ...	Lam-in-tang tho-kho kak-thau	Lam-yin-thung tho-fu kok-thau
68. Dickson Road ...	Kam-kong ka-poh ...	Kam-pong ka-pok ...

Jour. Straits Branch

Chinese Characters.	Remarks as to Meaning.
監公馬六甲戲園街	'Kampong Malacca theatre street.' (but see Angus Street).
土庫黎廳館	(i) 'The auction-rooms by the godowns.'
協發街	(ii) 'Yap Watt street.' (The first name refers to Powell and Crane's auction-rooms, and the second to the chop of a firm which recently occupied premises there).
王家山脚馬寮邊	(i) 'Beside the stables at the foot of the Government Hill' (i.e. Fort Canning).
王家山脚公班衙打 石	(ii) 'At the foot of Fort Canning where the Municipality breaks stones.' (There is a Municipal store-yard close by).
烏橋	'The black bridge.' (This name is also given by Hokkiens to part of Balestier Road <i>q.v.</i>)
藍烟筒土庫角頭	'Blue funnel godown corner.' (Mansfield & Co's godown is the corner of this street.)
監公加薄	'Kampong Kapor.' (cf. Clive Street, Dunlop Street &c.)

English.	Hokkien.	Cantonese.
69. Dunlop Street ...	Kam-kong ka-poh hue ^a (or toa) koi	Kam-pong ka-pok wang (or tai) kai
70. Duxton Road ...	(i) Gu-chhia-chui kia... (ii) Tok-sun lut ... (iii) Kam-kong-a lai...	... (ii) Tak-sun lut
71. Ellenborough Street	Sin pa-sat pi ^a ...	San pa-sat pin ...
72. Enggor Street ...	Chin-seng sua ^a khau...	Chan-seng shan hau ...
73. Esplanade ...	(i) Toa-kok cheng chhau-po	...
74. Farquhar Street ...	Go-cho lut bo-bue hang	Lo-cho lut mo-mei hong
75. Fish Court ...	Lo-ma pan-jiang hang	Lo-ma pan-yang hong

Chinese Characters	Remarks as to Meaning.
大或街橫薄加公監 街	'Kampong Kapor Cross (or big) street.' (This is perhaps is the biggest street in what is known as Kampong Kapor. The Chinese have not yet given names to the streets here.)
崎水車牛 律順德 內仔公監	(i) At the side of Kreta Ayer (cf. Craig Road). (ii) Phonetic, but commonly used. (iii) Within the little 'Kampong.'
邊虱巴新 口山成振	'Beside the New Market' (Ellenborough Market). 'Chin-Seng Hill mouth' (see under Bernan Street). (i) 'Grass field in front of Supreme Court.'
巷尾無律槽梧	'Rochore Road no end lane) or cul-de-sac.' (see under Carnie street).
巷讓班嗎路	'Rumah Panjang lane.' ('Rumah Panjong' = 'long house,' and is practically a house of ill fame: in Singapore it is the name given to a district in the neighbourhood of the junction of Rochore Road with North Bridge Road.)

English.	Hokkien.	Cantonese
76. Fish Street ...	Sin pa-sat pi ^a ...	San pa-sat pin ...
77. Fisher Street ...	Kam-kong ma-lak-kak Tan-seng-ong au	Kam-pong ma-lak-kah chan-sheng-wong hau
78. Flint Street ...	Tho-kho bue ...	The-fu mei ...
79. Fraser Street ...	(i) Sio-po sin-koi ... ...	... (ii) Kam-pong san-kai
80. Garden Street ...	(ii) Thih pa-sat gek-lu- ma hang (ii) Thih pa-sat tui-bin hang	... Thit pa-sat tui-min hong
81. George Street ...	(i) Po-le-au sun-hong koi ...	... (ii) Po-li-sz hau-pin kai
82. Gopeng Street ...	Cho-su-kong khau ...	Cho-sz-kung

Chinese Characters.	Remarks as to Meaning.
邊虱巴新	'Beside the New Market.' (See Ellenborough Street. Fish Street and the latter are one on each side of the Ellenborough Market).
呷叻麻公監 後王聖陳 尾庫土 街新坡小 街新榜金	'Behind the Tan-seng-ong (temple) in Kampong Malacca.' 'End of the godowns.' (i) 'Small town in New Street.' (ii) 'Kampong (Glam) New Street.' (Cf. Chin Hin Street).
巷馬呂玉虱巴鐵	(i) 'Lane of the 'Gek-lu-ma' idol near the iron market.'
巷面對虱巴鐵	(ii) 'Lane opposite the iron market.' (The lane runs into Beach Road opposite Clyde Terrace Market).
街豐順後黎保	(i) 'Behind the Central Police Station street of chop 'Sun Hong.' (Commonly spoken of simply as behind the Police Station).
街便後士璃玻 口宮師祖	(ii) 'Behind the Police Station Street.' 'Mouth of the Cho-su-kong temple.' (This name has to do duty for a number of

English.	Hokkien.	Cantonese
83. Guthrie Lane ...	Kat-ti-li hang-a lai ...	Kat-tei-lei hong-tsai ...
84 Haji Lane ...	(i) Huan-a kam-kong lai (ii) Jiau-a koi kam-kong lai ...	... ... (iii) Yau-wa kai hong tsai
85. Havelock Road ...	(i) Kong chioh-a ... (ii) Hong lim pa-sat ... (iii) Chiu long lai ... ...	... ... Chau-long noi ... (iv) Pak-khi-lin chik kai.
86. High Street ...	(i) Toa-kok Koi ...	(i) Tai-kot kai ...

Chinese Characters.	Remarks as to Meaning.
	streets in the Tanjong Pagar district, where as a matter of fact the streets have no fixed names).
內仔巷利地葛	'Guthrie Lane.' (This is a new thoroughfare and it is so far only know by its Municipal name).
內公監仔番	(i) 'Within the Malay Kampong.'
內公監街亞爪	(ii) 'Within the Arab Street Kampong.'
仔巷街亞爪	iii) 'Arab Street little lane.' (Haji Lane lies parallel to Arab Street).
仔石貢	(i) 'Stone-breaking.'
虱巴林芳	(ii) 'Hong Lim Market.' (This is the name of that part near the Police Station where the late Cheang Hong Lim built a market years ago. Stones for use on the roads used to be broken near the Police Station).
內廊酒	(iii) 'Within the spirit-depôt (district).' (See under Beng Hoon Road).
街直糞其北	(iv) 'Pickefing strait street,' i.e. the street in the same line as the Chinese Protectorate.
街咯大	(i) 'Supreme Court Street.'

English.	Hokkien.	Cantonese.
	(ii) Sang-che ^a lo ...	...
87. Hill Street ...	(i) Ong-ke sua ^a kha ...	(i) Wong-ka shan keuk
	(ii) Tiau-kio thau ...	(ii) Tiu-khiu thau ...
88. Hock Lam Street	Hok-lam koi ...	Fuk-nam kai ...
89. Hokkien Street ...	(i) Tso be-chhia koi ...	...
	(ii) Chhiang-thai koi e chat ...	...
	...	(iii) Cheung-thai ha kai
	-	
90. Holloway Lane ...	(i) Sio-po thih-chhio au koi	...

Chinese Characters.	Remarks as to Meaning.
路井雙	(ii) 'Two wells road.' (This name is not much used now. Formerly there were two wells at the foot of Fort Canning just where High Street joins Hill Street).
脚山家王	(i) 'Foot of Government Hill.' (Government Hill in the old days was Fort Canning Hill).
頭橋吊	(ii) 'End of the suspension bridge.' i.e. the bridge connecting Hill Street and New Bridge Road.
街南福	'Hok-lam' street.' (‘Hok-lam’ is the chop of Lau Kim Pong who owns many houses in this street).
街車馬做	(i) 'The street where (horse) carriages are made.'
節下街泰長	(ii) 'Lower portions of 'Chhiang Thai' Street.'
街下泰長	(iii) '‘Chhiang Thai’ lower street.' (The street is called the 'lower part of Chhiang Thai street,' because Upper Hokkien Street is 'Chhiang Thai' Street. 'Chhiang Thai' is the style of a well known temple in the street).
街後廠鐵坡小	(i) 'The street behind the iron foundry in 'small town' (see Beach Road).

English.	Hokkien.	Cantonese.
	...	(ii) Kam-pong ta-thit-chhong hau-pin
	(iii) Sek-a-ni la-pai-tng tui-bin hang	...
91. Hong Kong Street.	Ma-kau koi ...	Ma-kau kai ...
92. Hong Lim Quay...	(i) Kam-kong Ma-lak- kah hai-ki ⁿ	(i) Kam-pong ma-lak kah hoi pin
	(ii) Kam-kong Ma-lak- kah chha-chun thau	...
93. Hylam Street ...	(i) Hai-lam koi ...	(i) Hoi-nam kai ...
	(ii) Hai-lam hue-kuan au	...

Chinese Characters.	Remarks as to Meaning.
便後廠鐵打榜金	(ii) 'Behind the iron foundry in Kampong Glam.'
面對堂拜禮年仔色巷 街交馬	(ii) 'The lane opposite the Portuguese Church' (cf. Bain Street.) 'Macao Street.'
嶼海呷呷麻公監	(I cannot explain this name satisfactorily. I am told that the street is known to the Chinese as Macao Street, because many Chinese from Macao lived there. But the Chinese know Macao by the name "O-mun." I do not think therefore that that can be the correct explanation. More probably it is adopted from Malay. Malays call Cantonese "Orang Macao," and this street was the home of many Cantonese women at one time.)
頭船柴呷呷麻公監	(i) 'Kampong Malacca seashore.'
街南海 館會南海	(ii) 'Kampong Malacca timber-boat landing-place.' (i) 'Hailam Street.' (ii) 'Behind the Hailam kongsi house.'

English.	Hokkien.	Cantonese.
94. Jalan Besar ...	Kam-kong ka-poh thaitu long	Kam-pong k a - p o k thong-chü fong
95. Jalan Klapa ...	Tio ⁿ -sian-su pi ⁿ ...	Chheung-sin-sz (fong) pin
96. Jalan Kledek ...	(i) Huan-a thiong- cheng tong tiau ... ...	... (ii) Ma-lai fan tui-min chung-kan ko-thiu
97. Jalan Kubor	(i) Huan-a thiong- cheng be-liau ... ...	... (ii) Ma-lai fan tui-min ma-fong
98. Jalan Penang	Eng-chhai ti	...
99. Jalan Pisang	(i) Huan-a thiong- cheng thau-tiau	... (ii) Ma-lai fan tui-min tai-yat thiu
100. Jalan Sultan	Ji-chap-keng	Yi-shap kan

Chinese Characters.	Remarks as to Meaning.
廊猪劊薄加公監	'The Slaughter-pig depot in Kampong Kapor': referring of course to the Abattoir.
邊師先張	'Beside the 'Tio' Sian-Su' temple.'
條前塚仔番	(i) & (ii) "The Middle Street in front of the Malay Cemetery."
個間中面對墳拉馬 條	(i) & (ii) 'The stable in front of the Malay cemetery.'
寮馬前塚仔番	
房馬面對墳拉馬	(i) & (ii) 'The stable in front of the Malay cemetery.'
地菜子	'Ground where (a vegetable called) 'eng-chhai' is planted.'
條頭前塚仔番	(It is a kind of water-vegetable).
條一第面對墳拉馬	(i) & (ii) 'The first street in front of the Malay cemetery.'
間十二	'Twenty buildings.' The 20 houses referred to were those first put up in that part of Beach Road near Jalan Sultan.)

English.	Hokkien.	Cantonese.
101. Japan Street ...	(i) Ma-cho kiong pi ^a ... (ii) Tng-lang leng-su-hu hit-tiau (iii) Tit-loh a-ek Kit-leng bio pi ...	... ... ... (iv) Yat-pun kai ...
102. Java Road ...	(i) Peh-thah koi ... (ii) Sio-po phah-chioh koi ...	(i) Pak thap kai (iii) Kam-pong ta sheh kai
103. Jeddah Street ...	(i) Sio-po sam-pai-yang teng hang	...

Chinese Characters.	Remarks as to Meaning.
邊宮祖媽	(i) 'Beside the ma-cho temple.' (cf. Amoy Street).
條那府事領人唐	(ii) 'The street where the Chinese consul lives.' This name is accurate enough at present but obviously will not be permanent.)
邊廟靈吉逸亞落直	(iii) 'Beside the Kling temple in Telok Ayer.'
街本日	(iv) 'Japan Street.'
街塔白	(i) 'White Pagoda Street.'
街石打坡小	(ii) & (iii) Stone-breaking street 'small town' or Kampong (Glam).'
街石打榜金	
巷亭秩拜三坡小	(i) The lane of the praying pavilion in 'small town.' ('Sam-pai-yang' is the Malay town 'Sem-baiang.' The street leads from Beach Road to a mosque. The name illustrates the distinction drawn by Chinese between a Mahomedan place of worship and a temple of their own. (The essence of Mahomedanism is prayer, while Chinese pay more attention to vows and acts of adoration).

English.	Hokkien.	Cantonese.
	(ii) Thih pa-sat tui-bin hang	(ii) Thit pa-sat tui-min hong
104. Johore Road ...	Au-be-chhia lo chiong-kun-ia-kiong	Hau-ma-chhe lo che-ong-kwan-ye miu
105. Kallang Road ...	(i) Ka-lang kio ...	(i) Ka-lang kiu ...
	(ii) Ka-lang lut ...	...
	(iii) Heu-sia ^a ...	...
	...	(iv) Mui-hai kuk ...
106. Kampong Java Road	Ang-mo thiong ...	Hung-mo fan
107. Kampong Martin	Hu-liou lai ...	Yü-liu ...
108. Kampong Malayu	Ong-hu hang ...	Wong-fu hong ...
109. Kampong Glam-Beach	Toa-che ^a kha ...	Tai cheng keak ...
110. Kengcheow Street	(i) Kam-kong ma-lah-kah. Sam-pa-yang teng au	.

Chinese Characters.	Remarks as to Meaning.
巷面對虱巴鐵	(ii) 'Lane opposite the iron market.' (cf. Garden Street).
宮爺軍將路車馬後	'The temple of the idol 'Chiong-kun' near Victoria Street.'
橋籠加	(i) 'Kallang bridge.'
律籠加	(ii) 'Kallang Road.'
城火	(iii) 'Fire stronghold.'
局氣煤	(iv) 'Coal vapour office.'
塚毛紅	'European Cemetery.'
內寮魚	'Within the fishermen's village.'
巷府王	'Sultan's house lane.'
	(The late Sultan Ali owned property in this street).
脚井大	'Foot of the big well.'
	(There used to be an old well in the middle of the road at Sultan Gate).
讓拜三呷呔麻公監	(i) 'Behind the praying pavilion in Kampong Malacca.'
後亭	(A praying pavilion is a mosque, see Jeddah Street).

English.	Hokkien.	Cantonese.
	...	(ii) Kam-pong ma-lak-kak lai-thong hau-pin
	(iii) Keng-chiau koi ...	...
111. Kerbau Lane ...	Phau-be po hang ...	Phau-ma po hong ...
112. Kerbau Road ...	Phau-be po chhau-chhi	Phau-ma po chho-shi
113. Kerr Street ...	Kam-kong ma-lak-kah pun-so chhia tui-bin koi	Kam-pong ma-lak-kah lap-sap chhe tui-min kai
114. Killiney Road ...	Tang-leng pa-sat tui- bin hang	Tang-leng pa-sat tui- nim hong
115. Kim Seng Road...	Hong hin lo ...	Fung heng lo ...
116. Kinta Road ...	Phau-be po hang ...	Phau-ma po hong ...
117. Kling Street ...	(i) { Sua ⁿ -a teng ... { Sua ⁿ -kia teng	(i) Shan-tsai teng ...
	(ii) Thih thiau ...	...

Chinese Characters.	Remarks as to Meaning.
堂拜禮呷吹麻榜金 面對	(ii) Behind the Kampong Malacca place of worship.'
街照慶	(iii) 'Keng cheow street' (so-called after the late Tan Keng Cheow).
巷埔馬跑	'Race Course Lane.'
市草埔馬跑	'Race Course grass-market.'
車掃糞甲六馬公監 街面對	'In Kampong Malacca opposite the scavenging carts.'
巷面對虱巴陵東	'Lane opposite Tanglin Market.'
路興豐	'Hong Hin Road.' ('Hong Hin' was the chop of Tan Kim Seng).
巷埔馬跑	'Race Course lane.' (cf. Kerbau Lane).
頂仔山	(i) 'Small hill top.' (There was formerly more of a hill here than now exists. This has been levelled).
柱鐵	(ii) 'Iron pillars.' (Mr. Haughton says 'Many iron pillars were used in the construction of houses in this street').

English.	Hokkien.	Cantonese.
118. Krian Street ...	Chin-seng sua ^a khau...	Chan-seng shan hau ...
119. Lavender Street	(i) Go-cho toa kong-si	...
	(ii) Chhai-hng lai ..	...
	...	(iii) Kwong fuk miu kai
120. Lim Eng B e e Lane	(i) Kong-chioh hi-hng au koi ...	...
	...	(ii) Pak-khi-lun tui-min hei-yun hau kai ...
121. Little Cross Street	Jiau-a phah-thang koi	Yau-wa ta-thung kai...
122. Lorong Teluk ...	(i) Bih-lang koi ...	...
	...	(ii) Lo-chham kai ...
123. Macao Street ...	(i) Po-le pi ^a ...	...

Chinese Characters.	Remarks as to meaning.
口山成振	'Mouth of Chin Seng's Hill.' (cf. Bernam Street.)
司公大槽梧	(i) 'Big Kongsí-house in Rochore.' (This refers to the Kongsí house of an old society, the Thien Ti Huë.)
內園菜	(ii) 'Within the vegetable gardens.'
街廟福廣	(iii) 'Kwong Fuk' Temple Street.'
街後園戲石貢	(i) 'Street behind the thratre near Have-lock Road.'
後園戲面對麟麒北街	(ii) 'Opposite the Chinese Protectorate the street behind the theatre.' (The theatre is the Wayang Street theatre, and the word used for Chinese Protectorate is the Chinese equivalent of the name of Mr. Pickering, the first Protector of Chinese.)
街銅打亞爪	'Javanese coppersmith's street.'
街銅打華休	
篾籠街	} (i) & (ii) 'Bamboo-basket street.'
街羅寥	
邊黎保	(i) & (ii) 'Beside the Police Courts.'

English.	Hokkien.	Cantonese.
	...	(ii) Po-li-sy fong pin -
	(iii) Kua ^a -chha tian ...	...
	...	(iv) Kwun-chhoi p ^h - kai
124. Mackenzie Road...	Tek-kha chui-ti ...	...
125. Magazine Road...	Tan-seng-ong koi ..	Chhan-sheng-wong kai
126. Malabar Street..	Hai-lam hue-kuan ... hang	Hoi-nam wui-kwun hong
127. Malacca Street ...	(i) Lau pa-sat khau	(i) Kau pa-sat ...
	(ii) Ban-hin koi ...	Man-heng kai ...
128. Malay Street ...	(i) Jit-pun koi ...	...
	...	(ii) Yat pun chai kai.
129. Manila Street ...	Sek-a-ni koi ...	...

Chinese Characters.	Remarks as to Meaning.
邊傍士璃玻	(This name was given when the old court was in existence on the south side of the road).
店材棺	(iii) & (iv) 'Coffin-shop street.'
街舖材棺	
池水竹脚	'The Selegie-Road-district reservoir.' (see under Annamallai Chitty Lane)
街王聖陳	'Tan-Seng-ong temple street.' (There is a temple here to Tan Seng Ong the ancestral deity of the Tans).
巷館會南海	'Hailam Kongsí-house lane.'
口虱巴老	(i) 'Old market (mouth).' (The old market is not now in existence, but the present market at Teluk Ayer is often called the 'old market').
街興萬	(ii) 'Chop 'Ban Hin' street.'
街本日	(i) 'Japanese street.'
街寨本日	(ii) 'Japanese brothel street.'
街年仔色	'Eurasian street.' (Several streets in this neighbourhood are called by this name).

English.	Hokkien.	Cantonese.
130. Market Street ...	(i) Tiong koi ...	(i) Chung kai ...
	(ii) Lau pa-sat khau ...	...
131. McCullum Street	Tit lok a-ek bue-tiau koi	...
132 Merbau Road ...	Kam-kong sai-kong ang-mo phah thih	Kam-pong sai-kong hung-mo thit-chhong
133 Merchant Road ...	(i) Sin koi-a khau ...	(i) San Kai hau ...
	(ii) Sin koi-a khau hi- hng koi	...
134 Middle Road ...	(i) Mang-ku-lu ...	(i) Mong-kwo-lo ...
	(ii) Sio-po ang-mo phah thih	...

Chinese Characters.	Remarks as to Meaning.
街中	(i) 'Central Street.' (This refers to the five divisions of the town by the Hokkiens for the purpose of the Chingay procession: there were five Ko-thau). 股頭
口失巴老	(ii) 'Old market mouth.' (cf. Malacca Street).
街條尾逸亞落直	'Last street in Teluk Ayer.' (No definite name has yet been given to this street, but some such expression as this is used).
鐵打毛紅貢西公監 廠鐵毛紅貢西榜金	'European foundry at Kampong Saigon' i.e. Howarth Erskine & Co.
口仔街新	(i) 'New street mouth.' (New street is Chin Hin street and it opens in to Merchant Road).
街園戲口仔街新	(ii) 'The theatre street at the mouth of the little new street.'
路菓芒	(i) 'Bencoolen.' (see under Bencoolen Street).
鐵打毛紅坡小	(ii) 'Small-town European iron foundry' (see Beach Road for 'sio-po' there is no European foundry now).

English.	Hokkien.	Cantonese.
	(iii) Hai-lam hue-kuan pi ⁿ	(iii) Hoi-nam wui-kwun pin
	(iv) Sek-a-ni le-pai- tng pi ⁿ	(iv) Sai-yeung lai-pai- thong pin.
	(v) Mang-ku-lu thih- chhio ^a pi ⁿ	(v) Mong-kwo-lo thit- chhong pin
	(vi) Mang-ku-lu chhia kuan	...
	...	(vii) Mong-kwo-loshau- chhe kuk
135 Minto Road ...	Lau-chi hang ...	...
136 Mohamed Ali Lane	Toa-mang-lai hang-a lai	Tai-mun noi hong-tsai lai
137 Mosque Street ...	(i) Kit-ling bio pi ⁿ ...	(i) Kat-leng miu pin ...
	(ii) Hai-san choi ang- mo oh-au	...
	...	(iii) Hoi-shan kai hung- mo shü-kwun hau- pin
138 Muar Road ...	(i) Mua ⁿ lut
	(ii) Kit-ling-a le-pai- tng cheng	(ii) Kat-leng lai-p a i- thong min chhin

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Chinese Characters.	Remarks as to Meaning.
邊館會南海	(iii) 'Beside the Hailam Kongsí-house.'
邊堂拜禮年仔色	(iv) 'Beside the Portuguese church.'
邊廠鐵魯久望	(v) 'Beside the iron-foundry in Bencoolen.'
館車魯久望	(vi) & (vii) 'Jinrikisha depot in 'Bencoolen.'
局車手魯久望	
巷只栳	'Betel-nut lane.'
內仔巷內門大	'Lane off Club Street.'
邊廟靈吉	(i) 'Beside the Kling's temple.'
後學毛紅街山海	(ii) & (iii) 'Behind the European school in uppen Cross Street.'
後館書毛紅街山海 便	
街麻	(i) 'Muar Road' (phonetic).
前堂拜禮仔靈吉	(ii) 'In front of the Kling church'. (The 'Kling Church' is the church of 'Our

English.	Hokkien.	Cantonese.
139 Nagapa Lane ...	Tek-kha tug-tiam tui- bin te-ji-tiau	Chuk-keuk tongpho tui-min tai-yi-thu
140 Nankin Street ...	Siong-Pek koi ...	Chhung-phak kai ...
141 Narcis Street ...	Kim-lan bio ...	Kam-lan miu ...
142 Neil Road ...	(i) Gu-chhia-chui Kia	... (ii) Ngau-chhe-shui pin ma-ta-liu chek sheung
143 New Bridge Road.	(i) Sin pa-sat ma-ta- chhu cheng	(i) San pa-sat ma-ta- liu chhin
	(ii) Gu-chhia-chui ...	(ii) Ngau-chhe-shui ...
	...	(iii) Yi-ma-lo ...
144 New Market Road	(i) Kam-kong ma-lak- kah sin pa-sat koi	(i) Kam-pong ma-lak- kak san pa-sat kai
	(ii) Chhau-chhi ...	...

Chinese Characters.	Remarks as to Meaning.
	Lady of Lourdes', largely attended by Tamil Christians).
街柏松	'Second (road) opposite the Selegie Road pawnshop.'
廟蘭金	'Siong Pek' (kongsi) street.'
二第面對店當脚竹 條	'Golden lily temple.'
崎水車牛	(i) 'Steep (part of) Kreta Ayer.'
直察打馬邊水車牛 上	(ii) 'Near Kreta Ayer, straight up past the Police station.'
前厝打馬虱巴新	(i) 'In front of the New Market police station.'
水車牛	(ii) 'Kreta Ayer.'
路馬二	(iii) 'Second horse (carriage) road.'
虱巴新呷呷麻公監 街	(i) 'New market street in Kampong Malacca.'
市草	(ii) 'Grass-market.'

English.	Hokkien.	Cantonese.
145 Niven Road ...	Ji-ong sua ⁿ -kha ...	Yi-wong shan keuk ...
146 Noordin Lane ...	...	Lo Lam kai ...
147. North Boat Quay	(i) Kek-sng cheng ... (ii) Ong-ke sua ⁿ kha au (iii) Chin-heng toa chhu (iv) Tiau-kio thau bi-kau	... (ii) Wong-kash in-keuk hau-pin (iii) Chan-heng tai ok ...
148. North Bridge Road	(i) Chui-sien mng ...	...

Chinese Characters.	Remarks as to Meaning.
脚山王二	<p>(This only refers to that part of the road which runs up to the People's Park.)</p> <p>'Foot of second Governor's hill.'</p> <p>(Formerly Government Hill was Fort Canning and the Chinese still speak of Fort Canning by that name. The present Government Hill is called 'second Governor hill' to prevent confusion. 'Second Governor' is the idiom in Colonial Secretary.)</p>
街琳羅	<p>'Lo Lam's Street.'</p> <p>(I am told that one Lo Lam owns property here, but the Hokkien pronunciation ('Lo-Lim') sounds very like 'Noordin' in disguise.)</p>
前霜格 後脚山家王	<p>(i) 'In front of the ice-factory.'</p> <p>(ii) 'Behind the (road along the) foot of Fort Canning.'</p>
厝大興振	<p>(iii) 'Chin Heng' big house. ('Chin Heng' is the chop of Seah Liang Sean. This refers to the part lower down the river).</p>
郊米頭橋吊	<p>(iv) 'Suspension-bridge rice-stores.'</p>
門仙水	<p>(i) 'Water-fairy gate.' (See under Bain Court).</p>

English.	Hokkien.	Cantonese.
	(ii) Sio-po hue-chhia lo	...
	(iii) Lo-ma pano-jiang toa be-chhia lo	...
	...	(iv) Kam-pong taik ma lo
149. North Canal Road	(i) Kau-a ki ^a	...
	...	(ii) Tan-pin kai
150. Omar Road	Kam-kong mak-la-kah Sam-pai-gang teng hang	...
151. Ophir Road	Kit-ling le-pai-tng cheng chia ng-kun iapi ^a	...
152. Orchard Road	Tang leng pa-sat koi...	Tang-leng

Chinese Characters.	Remarks as to Meaning.
路車火坡小	(ii) 'Small town tramway.' (See Beach Road.)
路車馬大讓班媽羅	(iii) 'Rumah Panjang' big horse-carriage road.' (cf. Fish Court.)
路馬大榜金	(iv) 'Kampong (Glam) big horse-(carriage) road.'
坵仔溝	(i) 'Beside the little drain.' (The drain down the centre of the roadway was filled up some years ago.)
街邊單	(ii) 'One-side street' (There are houses on one side only cf. Upper Macao Street.)
秧拜三呷叻麻公監 巷亭	'Kampong Malacca praying-temple lane.' ('Sam pai yang' is the Malay 'Sēmbaiang' and a praying-temple is a mosque.)
軍將前堂拜禮靈吉 邊爺	'In front of the Kling church beside Johore Road.' (See under Muar Road and Johore Road.)
街虱巴陵東	'Tanglin market street.' (As a matter of fact 'Tang leng' is the most one gets from a Chinaman, unless he is pressed).

English.	Hokkien.	Cantonese.
153 Ord Road ...	(i) Ong-ke sua ⁿ -kha thih-chhio ⁿ ... (ii) Na-lei thih-chhong	...
154 Outram Road ...	(i) Si-pai po ... (ii) Si-kha teng ...	(i) Si-pai po
155 Padang Alley ...	Ong-hu khut-than hang	Wong-fu kwat-than hong
156 Pagoda Street ...	(i) Kit-ling-a le-pai au (ii) Kit-ling bio au ... ...	... ... (iii) Kat leng miu pin kai
157 Pahang Street ...	Ong-hu hang ...	Wong-fu hong ...
158 Palembang Road..	Peh thah koi au koi ...	Pak thap kai hau kai...

Chinese Characters.	Remarks as to Meaning.
廠鐵脚山家王	(‘Iron foundry at foot of Fort Canning.’)
廠鐵利那	(ii) ‘Riley (Hargreaves) iron foundry.’ (‘Na-lei’ has to do duty in Cantonese for ‘Riley.’)
埔排施	(i) ‘Sepoy plain.’ (The Sepoy lines and Police Station and parade ground are at one end of Outram Road.)
亭脚四	(ii) ‘Four-footed pavilion.’ (There is a pavilion in the Cemetery adjoining this road, known by this name.)
巷頭掘府王	‘The cul-de-sac (near) the Sultan’s house.’ (See under Kampong Malayu.)
後堂拜禮仔靈吉	(i) ‘Behind the Kling place of worship.’
後廟靈吉	(ii) ‘Behind the Kling temple.’
街邊廟靈吉	(iii) ‘Street beside the Kling temple.’ (The Kling temple is a Mohamedan Kling mosque).
巷府王	‘Sultan’s house lane.’ (See under Kampong Malayu).
街後街塔白	‘The street behind ‘White Pagoda’ Street.’ (See Java Road.)

English.	Hokkien.	Cantonese.
159 Park Road ...	(i) Chhau-chhi	(i) Chho-shi ... (ii) Chan-chüshan kenk ...
160 Paterson Road ...	(i) Tang-leng ma-ta- chhu au	(ii) Tang-leng ma-ta- liu hau pin kai ...
161 Pearl's Hill Road	Chin-chu sua" ...	Chan chü shan ...
162 Pekin Street ...	I-sio" koi ...	Yi-seung kai ...
163 Phillip Street ...	(i) Lau-ia-keng khau	(ii) Ma-miu kai ...
164. Prinsep Street ...	Mang-ku-lu sau-lo koi	Mong-kwo-lo so-lokai
165. Pulo Saigon ...	(i) Thai-tu-long khau	(ii) Thong-chü fong ...

Chinese Characters.	Remarks as to Meaning.
<p>市草 脚山珠珍 後厝打馬陵東 街便後寮打馬陵登</p>	<p>(i) 'Grass-market.' (ii) 'Foot of Pearl's Hill.' (i) & (ii) 'Behind Tanglin Police Station.'</p>
<p>山珍珠 街箱衣</p>	<p>'Pearl Hill.' 'Clothing-box street.' (There are a large number of box-makers in this street.)</p>
<p>口宮爺老 街廟仔</p>	<p>(i) 'Mouth of the Idol's Temple.' (ii) 'Double temple street.' (Two temples are enclosed in one outer wall.)</p>
<p>街路掃魯久籃</p>	<p>'Scavenging street in the Bencoolen district.' (There are Scavengers' carts kept at the corner of Prinsep Street).</p>
<p>口廊猪劊</p>	<p>'Slaughter-pig-depot mouth,' <i>i.e.</i> near the Abattoirs.</p>
<p>房猪屠</p>	<p>'Slaughter-pig compartment.' (It would be necessary to add something like Kampong Malacca or Kampong</p>

English.	Hokkien.	Cantonese.
166. Queen Street ...	(i) Sek-a-ni koi Sek-kia ⁿ -ni koi	...
	...	(ii) Lam sam tai u k kai
167. Raffles Place ...	Tho-kha hue-hng	Tho-fu fa-yün (pin)...
168. Ramah Street ...	Toa-mng lai	Tai-mun noi chau-tim kak-lei
169. Rangoon Road ...	Na ⁿ -tau hang	...
170. Raub Street ...	Chin-seng sua ⁿ kha...	Chan-seng shan hau...
171 Read Street ...	Ong-ke sua ⁿ kha thih- cheio ⁿ pi ⁿ	Wong-ka shan keuk thit-chhong pin

Chinese Characters.	Remarks as to Meaning.
街年仔色	Saigon to avoid confusion with the Jalan Besar Abattoirs.) (i) 'Eurasian (serani) Street.' (Part of Queen Street will be included in 'Mang ku lu' see Bencoolen Street, and part again shares in the names of other streets.)
街屋大三林 邊園花庫土	(ii) 'Lim Sam's big house street.' 'The flower garden by the godowns.' (See Commercial Square.)
內門大 離隔店酒內門大	'Inside the big gate next to the spirit-shop.' (cf. Club Street: the spirit-shop is the present 'Hotel Trieste.')
巷兜籃	'Na ² -tau lane.' ('Na ² -tau' is the name of a plant with prickly leaves which grows here. Douglas' Dictionary says it is the 'pandanus' or 'screwpine.')
口山成振	'Mouth of Chin Seng's hill.' (See Bernam Street)
邊廠鐵脚山家王	'Beside the iron foundry at the foot of Fort Canning hill.' (The iron foundry is Riley Hargreives &

English.	Hokkien.	Cantonese.
172 River Valley Road	(i) Ong-ke sua ⁿ kha ... (ii) Leng-thau che ⁿ ...	(i) W ó n g - k a s h a n keuk ...
173 Roberts Lane ...	Phau-be po hang ..	Phau-ma po hóng ...
174 Robinson Road ...	Heng-liong koi	Heng-lung kai ... Lo-man-san kai ...
175 Rochore Road	(i) Mang-ku-lu kang-a ki ⁿ ...	(ii) M o n g - k w o - l o chung-pin

Chinese Characters.	Remarks as to Meaning.
	Co's Workshop. For the expression translated by 'Fort Canning hill' see Hill Street.
脚山家王	(i) 'Foot of Fort Canning hill.' (cf. Hill Street.)
井頭龍	(ii) 'Dragon's head fountain.' (There used to be a fountain at the end of this street with a Dragon's head for a spout.)
巷坡馬跑	'Race Course lane' (see Belilios Road). 'Heng-long' Street.'
街隆興	(Chop 'Heng-long' belonging to Lok yu, the well-known towkay, is in this street.)
街申民羅	'Robinson Street.' ('Lo-man-sen' is 'Robinson,' and the name which has been used to my knowledge, is quite Chinese in sound at any rate. I do not however guarantee the name as being intelligible to the ordinary Cantonese-speaking Chinaman. To interpret 'Robinson' Road clear to him, would require I feel quite sure, a very long rigmarole.)
坵仔港魯久望 邊涌路菓芒	(i) & (ii) 'Beside the canal in the Ben-coolen District.'

English.	Hokkien.	Cantonese.
176 Rochore Road ...	(i) Go-cho lut ...	(i) Lo-cho kai ...
	(ii) Lo-ma pan-jiang ...	...
177 Sago Lane ...	Ho-ban-ni ^a au koi ...	Ho-man-nin hau-pin kai
178 Sago Street ...	Gu-chhia-chui hi-hng-koi cheng koi	Ngau-chhe-shui hei-yün chhin kai
179 Samban Street ...	A-bit-no hang ...	...
180 Scott's Road ...	Tang-leng ma-ta-chhu tui-bin	Tang-leng ma-ta-liu tui-min
181 Selegie Road ...	(i) Tek-kha
	(ii) Tek-kha tit-koi

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Chinese Characters.	Remarks as to Meaning.
街律槽梧	(i) This is phonetic, but commonly used. (The character only suits the Hok-kien name, for in Cantonese it is sounded 'ng', 'lut' is simply 'road' from Chinese lips.)
讓班媽羅	'Rumah panjang.' (The name is really applicable to a District more than one street; cf. 'Fish Court and North Bridge Road.)
街後年萬賀	'The street behind 'Ho-man-nin.' ('Ho-man-nin' is the chop of a well known Chinese singing-hall in Sago Street.)
街前園戲水車牛	'The street in front of the theatre (street) in Kreta Ayer.'
巷奴蠻亞	'Habib Nor lane.' (Habib Nor was an Arab, now deceased: the street is so named because a 'Kramat' exists there which is dedicated to him.)
面對厝打馬陵東	'Opposite Orchard Road Police Station.'
脚竹	(i) 'Foot of the bamboos.'
街直脚竹	(ii) 'Foot of the bamboos, Straight Street.'

English.	Hokkien.	Cantonese.
	(iii) Tek-kha tng-tiam hit-tiau	...
182 Seok Wee Road	Siok-iu sua ⁿ teng ...	...
183 Serangoon Road ...	Au-kang ...	Hau-kong ...
184 Shaikh Madarsah Lane	Ku ba-li ...	Kau-ma-li ...
185 Short Street ...	Tek-kha so-si-tek hang	...
186 Smith Street ...	(i) Gu chhia chui hi- hng poi	Ngau-chhe-shui hei- yün kai
187 Solomon Street ...	Kam-kong ma-lak-kah bue-tiau koi	...
188 Sophia Road ...	(i) Ji-ong sua ⁿ kha ti tek-kha khi	...

Chinese Characters.	Remarks as to meaning.
條那店當脚竹	(ii) 'Street of the foot of the bamboos pawnshop.' ('Tek Kha' is the name for a large district. There are no bamboos visible now.)
頂山位叔	'Seok Wee's plantation.' (See under Chin Swee Road.)
港後	'Back creek.'
厘峇舊 巷竹施蘇脚竹	'Old Bali.' (See under Bali Lane.) 'So-si-tek lane in Tek Kha.' ('So-si-tek' is 'short' in Chinese guise: and Tek Kha means the Selegie Road district. There is no proper name for this street in Chinese.)
街園戲水車牛	'Theatre street in Kreta Ayer.'
街條尾呷叻麻公監	'End street in Kampong Malacca.'
起脚竹自脚山王二	(i) & (ii) 'Foot of Second Governor's hill going up from 'Tek Kha.'

English.	Hokkien.	Cantonese.
	...	(ii) Yi-wong shan-keuk yau chuk-tsai keuk hui
189 South Bridge Road	Gu-chhia chui toa be- chia lo (ii) Chhat-bok koi ...	(i) Ngau-chhe-shui tai ma-lo (ii) chhat-muk kai ...
190 South Canal Road	Po-le au kang-a ki ⁿ ...	Po-le hau ...
191 Spring Street ...	...	Fan-tsai mei ma-ta- liu pin
192 Stamford Road ..	(i) Lau-chui khe ⁿ (ii) Pun-kei fau-hai pho
193 Stanley Street ...	i) Ma-cho kiong hi-tai au	...

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Chinese Characters.	Remarks as to Meaning.
脚仔竹由脚山王二去	('Tek Kha' is the name of the Selegie Road neighbourhood.)
路馬大水車牛	(i) 'The big horse (carriage) road in Kreta Ayer.'
街木漆	(ii) 'Paint-wood street' <i>i.e.</i> 'Painter's street.'
坵仔港後黎保	(This refers to the part between the Police Court and the river.)
邊寮打馬尾寨番	'Behind the Central Police Station beside the canal.'
坑水流	(cf. North Canal Road and Macao Street.)
舖鞋番記本	'End of the foreign brothels beside the Police Station.'
後臺戲宮祖媽	(cf. Banda Street.)
	'Flowing-water ditch.'
	(This appears to refer to the Stamford Road canal, which is notorious for being so often practically stagnant.)
	(ii) 'Pun Ki' foreign shoe shop'
	(There is an old established Chinese shoe-makers' shop chop 'Pun ki' near the Bishop's House.)
	(i) & (ii) 'Behind the Ma-cho temple theatrical stage.'
	(cf. Amoy Street.)

English.	Hokkien.	Cantonese.
	...	(ii) Kun-yam miu hei-thoi hau
194 Sultan Gate ...	(i) Sio-po phah thih koi	(i) Siu-po ta-thit kai...
	(ii) Ong hu khau ...	...
195 Sultan Road ...	Phah-tang koi ...	Ta-thang kai ...
196 Sumbawa Road ...	Hue-long koi ...	Fo-long kai ...
197 Sungei Road ...	Tek-kha ma-ta-chhu tui-bin gu-long pi ⁿ koi	Chuk-tsai m a t a l i u tui-min ngau lan pin kai
198 Syed Alwee Road	(i) Sai-ek a-lui koi thai-tu-long pi ⁿ	...
	...	(ii) Thong-chü-fong pin sai a-lui kai
199 Synagogue Street	Po-le-au te-ji tiau koi	Po-le-hau tai-yi thiu kai
200 Tampinis Road ...	(i) Kam-kong sai-kong khoi-ki ⁿ	Kam-pong sai-kong chhung-pin

Chinese Characters.	Remarks as to Meaning.
後橋戲廟音觀	
街鐵打坡小	(i) 'Blacksmith's streets in 'small town.' (For 'Sio-po' see Beach Road).
口府王	(ii) 'Palace mouth.' (cf Kampong Malayu)
街銅打	Coppersmith's street.
街廊火	'Steam mill street.' (So called after the steam rice mill in Beach Road, which is not far off).
牛面對厝打馬脚竹 街邊廊	'The street beside the cattlepens opposite the Tek kha Police Station.' (Sungei Road starts almost opposite Kandang Kerbau Police station: for 'Tek kha' see Selegie Road).
廊猪劊街雷亞逸西 邊	(i) & (ii) 'Syed Alwee street beside the abattoirs.'
街雷亞西邊房猪屠	
街條二第後黎保	'Second street behind the (Central) Police (Station).
邊溪貢西公監	(i) 'Beside the creek at Kampong Saigon'

English.	Hokkien.	Cantonese.
	(ii) Kam-kong sai-kong phah-thih au	...
201 Tanglin ...	Toa Tang-leng ...	Tai Tang-leng ...
203 Tanjong Pagar Road	Tan-jiong pa-kat ...	Tan-yong pa-kat ..
203 Tank Road ...	Ong-ke sua ⁿ au ...	Wong-ka shan hau ...
204 Tan Quee Lan Street	Kui-lan hang ...	Kwai-lan kai ...
205 Tan Tye Place ...	Ong-ke sua ⁿ kha thih- long pi ⁿ thau	Wong-ha shan ke u k thih-chhong pin
206 Teluk Ayer Street	(i) Guan-sun koi ...	...
	...	(ii) Tai pak kong miu kai
207 Teluk Blanga ...	(i) Sit-lat mng ...	...
	...	(ii) Sai-pak mun ...

Chinese Characters.	Remarks as to Meaning.
後鐵打貢西公監	(ii) 'Behind the iron foundry at Kampong Saigon.' (The iron foundry is Howarth Erskine's.)
陵東大	'Big Tanglin.' (There is however no 'little Tanglin' that I am aware of.)
葛巴戎丹	(Phonetic.)
後山家王	'Behind Fort Canning hill.' (cf North Boat Quay (ii))
巷蘭桂	'Kui lan Street.'
頭邊廊鐵脚山家王	'Beside the iron foundry at the foot of Fort Canning hill.'
街順源	(i) 'Guan Sun' street.' (Guan Sun' is the name of one of the five divisions of Hokkiens who take part in the chingay procession once every three years.)
街廟公伯大	(ii) 'Toa-peh-keng temple street.'
門叻實	(i) 'Singapore gate.'
門北西	(ii) 'North-west gate.'

English.	Hokkien.	Cantonese.
208 Teochew Street ...	(i) Sin koi thau ... ... ...	... (ii) Chhiu-chau kai ...
209 Thomson Road ...	(i) Ang-kio thau ... (ii) Mi ⁿ -kua keng ... (iii) Hai-lam sua ⁿ	(i) Hung khiu thau (iv) Pek shan theng ...
210 Tong Watt Road	Kong chioh-a chiu-long thau	...
211 Tras Street ...	Cho-su kong khau ...	Cho-sz kong ...

Chinese Characters.	Remarks as to Meaning.
	(This is apparently what the name means, but it has been suggested to me that 'Sai-pak mun' is simply a Cantonese corruption of sit-lat mng).
頭街新	(i) 'Head of New Street.' (New Street is Chin Hin street.)
街州潮	(ii) 'Tiechiu Street.' (The street was at one time largely occupied by Teochew women.)
頭橋紅	(i) 'Head of the Red Bridge.' (The 'Red bridge is that connecting Thomson Road and Kampong Java Road.)
間乾麵	(ii) 'Vermicelli buildings.'
山南海	(iii) 'Hailam hill <i>i.e.</i> 'burying-place.'
亭山碧	(iv) 'Pek Shan theng (cemetery).'
頭廊酒仔石貢	'Head of the Spirit depot (quarter) in Havelock Road district.' (cf Beng Hoon Road.)
口宮師祖	'Mouth of the Cho Su Kong temple.' (cf)

English.	Hokkien.	Cantonese
212 Tringganu Street	(i) Gu-chhia-chui hue ⁿ -koi ...	... (ii) Ngau-chhe-shui hei yün wang kai
213 Upper Chinchew Street	Tau-hu koi	... Tau-fu kai ...
214 Upper Circular Road	Be-chhia koi	... Ma-chhe kai ...
215 Upper Cross Street	Hai-san koi	... Hoi-san kai ...
216 Upper Street	Hokkien Chbiang thai koi	... Chheung thai hai ...
217 Upper Street	M a c a o (i) Po-le-pi ⁿ ...	... (ii) Tan pin kai ...
218 Upper Street	N a n k i n Siong-pek koi	... Chhung-phak kai ...

Chinese Characters.	Remarks as to Meaning.
街橫水車牛	(i) & (ii) 'The cross street or cross theatre street in Kreta ayer.'
街橫園戲水車牛	(cf Smith Street, Sago Street.)
街腐荳	'Bean-curd street.' (See Chinchew street.)
街車馬	'Horse-carrage road.' (So called because there are coachbuilders there.)
街山海	'Hai-san street.' (So called after the Haisan Kongsí-house which was in the street.)
街泰長	'Chhiang Thai street.' (See under Hokkien Street.)
邊黎保	(i) 'Behind the Police Courts.' ('Po-le' is used either for the present Police Courts or in some cases for the site of the old courts where the Central Station stood till it was pulled down a few months ago).
街邊單	(ii) 'One-side street.' (cf North Canal Road.)
街栢松	'Siong-pek street.' (See under Nankin Street.)

English.	Hokkien.	Cantonese.
219 Veerappa Chitty Lane	Tek-kha tng-tiam tui-bin thau-tiau hang	Chuk-tsai-keuk tong-pho tui-min tai-yat thiu hang
220 Victoria Street ...	(i) Au be-chhia lo ... ...	... (ii) Kam-pong yi ma-lo
221 Wallich Street ...	Tan-jiong pa-ka seng-ong kang pi ^a	...
222 Waterloo Street	(i) Mang-ku-lu chhai-tng koi ...	... (ii) Kun-yam miu chaithong
223 Wayang Street ...	(i) Pek-ki-lin tui-bin hi-hng koi ...	(i) Pak-khei-lun tui-min hei-yün kai (ii) Thung-chai yi-yün kai
224 Weld Road ...	Kam-kong ka poh ...	Kam-pong ka-pok ...

Chinese Characters.	Remarks as to Meaning.
條頭面對店當舖脚竹巷	'First lane opposite the Selegie Road pawnshop.' (cf Nagapa Lane.)
路車馬後	(i) 'Back horse-carriage road.' (As distinct from the main street i.e. North Bridge Road.)
路馬二榜金	(ii) 'The second Horse road in Kampong (Glam.)
邊宮王聖葛巴戎丹	'Beside the Seng Ong temple in Tanjong Pagar.'
街堂菜魯久望	(i) 'The street in 'Bencoolen' where the Vegetarians' Hall is.
堂齋廟音潤	(ii) 'The Vegetarians' Hall near the temple of the goddess 'Kun Yam' or 'Kwan Im.'
街園戲面對麟麒北	(i) 'Theatre street opposite the Chinese Protectorate.' (cf Canal Road.)
街院醫濟同	(ii) 'Thang Chai Hospital street.' 'There is a Chinese Hospital in the street.'
薄加公監	Kampong Kapor.' (see Dunlop Street.)

English.	Hokkien.	Cantonese.
225 Wilkie Road ...	(i) Ji-ong sua ^a kha ti tek-kha khi ...	... (ii) Yi-wong shan keuk yau chuk-tsai keuk hui
<i>Bridges.</i>		
1. Cavenagh ...	Hai-Ki ^a thih tiau-kio	Hoi-pin thit tiu-khiu ...
2. Coleman ...	...	Yi-ma-lo khiu ...
3. Elgin ...	Thih tiau-kio ...	Thit tiu-khiu ...
4. Kallang ...	Ka-lang kio	Ka-lang khiu ...
5. Read ...	Kam-kong ma-lah-kah kio	Kam-pong ma-lak-kak khiu
6. Thompson Road ...	Ang Kio ...	Hung khiu ...
<i>Police Stations.</i>		
1. Central ...	It ho mata chhu	Yat ho ma-ta liu ...
2. Kandang Kerbau ...	Tek-kha ma-ta chhu...	Chuk-tsai keuk ma-ta- liu
3. Kreta Ayer ...	Gu-chhia-chui ma-ta- chhu	Ngau-chhe-shui ma-ta- liu
4. Marine ...	Hai-kuan ma-ta chhu	Hoi-kwan ma-ta liu ...

Chinese Characters.	Remarks as to Meaning.
起脚竹自脚山王二	(i) & (ii) 'Foot of 2nd Governor's hill going up from Selegie Road.'
脚仔竹由脚山王二 去	(See Sophia Road. This is descriptive more than an actual name. There is no name for the street.)
橋吊鐵邊海	'Iron suspension bridge by the sea shore.'
橋路馬二	'Iron suspension bridge'
橋吊鐵	'Kallang bridge.'
橋籠加	'Kampong Malacca bridge.'
橋呷呷麻公監	'Red bridge.'
橋紅	'No. 1 Police house.'
厝打馬號一	'Selegie Road District Police house.'
厝打馬脚竹	'Water cart Police house.'
厝打馬水車牛	'Sea office Police house'
厝打馬關海	

English.	Hokkien.	Cantonese.
5. New Bridge Road...	Sin pa-sat ma-ta chhu	San pak sak ma-ta liu
6. Orchard Road ...	Tang-leng ma-ta chhu	Tang-leng ma-ta liu ...
7. Rochore ...	Go-cho ma-ta chhu ...	Lo-cho ma-ta liu ...
8. Sepoy Lines ...	Si-pai po ma-ta chhu ...	Si-pai-lin ma-ta liu ...
<i>Government buildings and other public offices.</i>		
Chinese Protectorate	(i) Pek-ki-lin ...	(i) Pak-khei-luu ...
	(i) Tai-jin ge ...	...
	...	(iii) Phai Kwun ...
Colonial Secretary's Office	Ji-ong ge-mng ...	Yi peng-thau nga-mun
Court of Requests ...	(i) Tho-gun po-le ...	...
	...	(ii) Lo-ngau nga-mun...

Chinese Characters.	Remarks as to Meaning.
厝打馬虱巴新	'New market Police house.'
厝打馬陵東	'Tanglin Police house.'
厝打馬槽梧	'Rochore Police house.'
厝打馬埔排施	'Sepoy plain (or 'lines') Police house.'
麟麒北	(i) 'Pickering.' (After Mr. W. A. Pickering, C. M. G., the first Protector of Chinese).
衙人大	(ii) 'Tai-jin's office.' (Tai-jin, literally 'great man,' is a term of respect for officials, specialised in the Straits for officials of the Chinese Protectorate).
館牌	(iii) 'Licence Office.' (This refers mainly to the fact that brothels were licenced under the C. D. O. the name however still survives.)
門衙頭兵二	'Second governor's office.'
黎保銀討	(i) 'Sue for money Court.'
門衙銀囉	(ii) 'Sue for money office.'

English.	Hokkien.	Cantones.
Gaol ...	(i) Kha-khu keng ...	...
	...	(ii) Kam-fong ...
General Hospital ...	(i) Ong-ke pe ⁿ chhu ...	...
	(ii) Lo-kun chuu ...	...
	...	(iii) Tai yi-yün ...
Government House ...	(i) Toa-ong chhu ...	...
	...	(ii) Tai peng-thau chü-ka
Land Office ...	(i) Ga-lan Kuan ...	...
	...	(ii) Tei-shui sz ...
Lunatic Asylum ...	(i) Siau-lang keng ...	...
	...	(ii) Tin-fong ...
Magistracy ...	Po-le ...	Po-lei-sz ...
Marine Office ...	(i) Hai kuan ...	...
	...	(ii) Shun cheng theng

Chinese Characters.	Remarks as to Meaning.
間拘脚	(i) 'Ankle-fetters building.'
房監	(ii) 'Prison-room.'
厝病家王	(i) 'Government sick house.'
厝君老	(ii) 'Doctor's house.'
院醫大	(iii) 'Great medical hall.'
厝王大	(i) 'Governor's house.'
家住頭兵大	(ii) 'Governor's private house.'
館囑呀	(i) 'Grant Office.'
司稅地	(ii) 'Land tax Official.'
間人狂	(i) 'Mad person's buildings.'
房癲	(ii) 'Mad room.'
黎保	'Police (Court).' (It is said that this name was originally given to the Central Station, which formerly stood where the Court now stands.)
關海	(i) 'Sea office.'
廳政船	(ii) Ship management hall'.

English.	Hokkien.	Cantones.
Municipal Office ...	Kang-po-kek ...	Kung-po-kuk ...
Police Office ...	Toa-kau-thau-e ge-mng	Tai kang-thau nga-mun
Post Office ...	(i) Phue kuan ... ...	... (ii) Tai shü-sun kwun
Singapore Railway Station	Hue-chhia thau ...	Fo-chhe thau ...
Supreme Court ...	Toa kok ...	Tai kot ...
Tan Tok Seng's Hospital	(i) Nam-seng hue-ling pi" ... ii) Thia"-kha keng ... ...	... ... (iii) Lan-keuk kwun ...

Chinese Characters.	Remarks as to Meaning.
<p>工部局 大狗頭之衙門</p>	<p>‘Board of works’ office.’</p> <p>‘Chief big dog’s office or Chief Inspector’s office.’</p> <p>(Police officers are apparently all ‘dogs’, for all those above the rank of Sergeant are called ‘big dogs’; the Cantonese use another idiom: ‘foreman’, the same word as is used in speaking of an overseer or mandore.)</p>
<p>批館 大書信館 火車頭</p>	<p>(i) ‘Letteroffice.’</p> <p>(ii) ‘Big letter-office.’</p> <p>‘Fire-carriage head.’</p>
<p>大略</p>	<p>‘Big Court.’</p> <p>(‘Kok’ or ‘Kot’ is not Chinese, but an imitation of ‘Court’.)</p>
<p>南花生花園邊</p>	<p>(i) ‘Beside Nam Seng flower garden.’</p> <p>(Nam Seng was the chop of the Chinaman known to Europeans in Singapore as Whampoa, <i>i.e.</i> Mr. Ho ah Kee C. M. G., former owner of the property known as Bendemeer on Serangoon Road.)</p>
<p>痛脚間 爛脚館</p>	<p>(ii) ‘Sore feet (or legs) building.’</p> <p>(iii) ‘Broken leg office.’</p>

II Chinese names of country districts

English.	Hokkien.	Cantonese.
1. Alexandra Road ...	(i) Chui-bo lai ... (ii) Lau-chi kha ... (iii) Sang khau tia ^a ...	.........
2. Balestier Road ...	(i) Go-cho toa-peh-kong ... (ii) O-kio ... ...	... ... (iii) Wu-hap thong ...
3. The Barracks (Tang-lin)	Tang-leng peng-pang	Tung-leng peng-fong
4. Bedoh ...	But-lok ...	...
5. Blakang Mati ...	Gia-kang ma-ti ...	...
6. Botanical Gardens...	(i) Ang-mo hue-hng ... ...	... (ii) Wong-ka fa-yün...
7. Bukit Timah ...	Be-chhia lo-bue ...	...
8. Chancery Lane ...	Sang-chiau ...	...

in Singapore Island, and the Vicinity.

Chinese Characters.	Remarks as to Meaning.
內磨水	'Within the water (rice) mill.'
脚子嗎	'Foot of the sirih' <i>i.e.</i> 'near the Sirih gardens.'
鼎口雙	'Two boiling pans'—the 'tia' is the pan used for boiling gambier—the planters in the Alexandra Road district used two pans instead of one. I suppose there was some difference in the preparation of the gambier.
公伯大槽鵝	'Rochore Temple.'
橋烏	'Black Bridge.'
塘葉芋	'Taro pond.'
房兵陵東	'Tanglin Soldier's rooms.'
洛勿	
池子老意	
園花毛紅	(i) 'European flower-garden.'
園花家王	(ii) 'Government flower-garden.'
尾路車馬	'End of the horse-carriage road.'
雀雙	'Two birds,' referring to the eagles on the gateway of the drive leading to

English.	Hokkien.	Cantonese.
9. Changi ...	Chiang-gi ...	...
10. Chua Chu kang ...	(i) Chua-chu kang ...	...
	(ii) Kang-kia ⁿ ...	...
11. Fort Canning Hill	Ong-ke sua ⁿ ...	Wong-ka shan ...
12. Government Hill	(i) Toa-ong sua ⁿ ...	...
	...	(ii) Peng-thau shan ...
13. Holland Road ...	Hue-hng au ...	...
14. Jurong ...	Yu-long ...	...
15. Kampong Bharu...	(i) Sin kam-kong ...	San kam-pong ...
	(ii) Sin sua ⁿ ...	...
16. Keppel Harbour ...	Sit-lat mng ...	Shek-lat mun ...
	...	Chha-tin ma-thau ...
17. Kranji ...	Ka-lan-ji ...	...
18. Mandi ...	Man-li ...	...
19. Morai ...	Meng-sun kang ...	...

Chinese Characters.	Remarks as to Meaning.
宜章	Mohamed Alsagoff's house at the Thomson Road end of Chancery Lane.
港厝蔡	'Chua-chu creek.'
仔港	'Little creek.'
山家王	'Government Hill,' as it formerly was.
山王大	(i) & (ii) 'Governor's Hill.'
山頭兵	'Behind the flower-garden.'
後園花	(i) 'New Kampong.'
廊油	(ii) 'New hill or plantation.'
公監新	'Singapore gate.'
山新	'Jardine's wharf' <i>i.e.</i> the Borneo wharf.'
門叻寔	'Meng-sun creek.'
頭碼甸渣	
宜蘭加	
喇萬	
港順明	

English.	Hokkien.	Cantonese.
20. Pandan Besar ...	Toa pan lan ...	Tai pan-lan ...
21. Pandan kecil ...	Sio pan lan ...	Siu pan-lan ...
22. Pasir Panjang ...	Hong-heng sua ⁿ ...	...
23. Ponggol ...	Phong-hut ...	...
24. Pulau Brani ...	...	San chü-shek tui-min Chha-tin ma-thau tui-min
25. Pulau Obin ...	Chioh-sua ⁿ ...	...
26. Pulau Tekong ...	Ti-kong ...	...
27. Selitar ...	Chan-chu kang ...	...
28. Serangoon ...	Au-kang ...	...
29. Serimbun ...	Bu-kho kang ...	...
30. Siglap ...	Gi-lap ...	...
31. Tanjong Gol ...	Tanjong gu-thau
32. Tanjong Katong...	Ka-tong
33. Tanjong Rhu ...	(i) Tan-jiong gu
	...	(ii) Sha-tsui ...

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Chinese Characters.	Remarks as to Meaning.
蘭班大 蘭班小 山興豐 佛帮	'Hong Heng's plantation.'
而對錫煮新 面對頭碼甸渣	'Opposite the new tin smelting.' 'Opposite Jardine's jetty.'
山石	'Stone hill.'
公地	
港厝曾	'Chan-chu creek.'
港後	'Back creek.'
港可武	'Bu-kho creek.'
凹義	
頭牛戎丹	
冬加	
牛戎丹	
嘴沙	(ii) 'Sand spit.'

English.	Hokkien.	Cantonese.
34. Teluk Blanga ...	Sit-lat mng ...	Sai pak mun ...
35. Thomson Road Reservoir ...	(i) Chui-tham thau ... ...	... (ii) Tai shui thong ...
36. Tiong Bharu ...	O-chhai hng ...	...
37. Ulu Pandan ...	Sang-leng ...	...
38. Wayang Satu ...	Toa pa-io ...	...

III. Chinese names of Streets and

1. Bandar Hilir ...	Ban-i-bit ...	Yi-bit ...
2. Bandar Kaba ...	(i) Ban-la ka-ba ... ...	... (ii) Khau-chheung kai
3. Blacksmith Street	Kap-pan koi ...	Kap-pan kai ...

Chinese Characters.	Remarks as to Meaning.
門北西	cf. 'Keppel Harbour':—Sai-pak mun means 'north-west gate.'
頭氹水	(i) 'Water pond head.'
塘水大	(ii) 'Big water lake.'
園菜芋	'Taro vegetable garden.'
嶺雙	'Two hills.'
窰吧大	'Big swamp.' Pa-io is the Malay word 'paya' swamp.

Districts in Malacca town.

萬怡蜜	
萬遮加峇	
球場街	ii) "Khau" means 'bull' and "ohheung" means 'area' or 'open space' and the name is given because the cricket-ground adjoins the street.
甲板街	It is not clear why the name "Kap-pan street" should be given unless "Kap-pn-kai" is a corruption of or substitute for "Kap-ma kai" which would mean "box street." There are a number of box-makers' shops in the street.

English.	Hokkien.	Canotnese.
4. Bukit China ...	Sam-po chi ^a ...	Sam-pau cheng ...
5. Bunga Raya ...	Bong-ga la-ia ...	Mong-nga la-ye ...
6. 1st Cross Street ...	(i) Kit-ling-a koi ...	(i) Kat-leng kai ...
	...	(ii) Pat-chi-lan ...
	(iii) Poh-bian ...	...

Chinese Characters.	Remarks as to Meaning.
三寶井	<p>'Sampo's wells.'</p> <p>(There are wells at the foot of Bukit China and the name of "Sampo's well" is given to them, because there is a legend, in which the Chinese believe, that a Eunuch of the Ming Dynasty visited Malacca and dug these wells. Similarly the old Fort is called "Sam-po-kong Sia", 'the fort of Sam-po,' and there are various other names locally connected with the legend of Sam-po's visit.)</p>
望雅嘮耶 吉寧仔街	<p>(i) 'Kling Street.'</p> <p>(The chetties and Kling cloth-shop-keepers live at the northern end of the street.)</p>
八拜蘭	<p>(ii) 'Eight mansions.'</p> <p>(Chi-lan is the name of a flower and 'chi-lan chi shat' means according to Eitel "mansion of brightness and virtue," apparently a complimentary expression. The reason why this name was given is lost in obscurity.)</p>
泊酒	<p>(iii) This name is given to the part near the landing-place. It is the Malay 'pabeyan' or 'pebiyan' a 'customs-house' or 'wharf' (see Wilkinson's Malay Dictionary.)</p>

English.	Hokkien.	Cantonese.
7. 2nd Cross Street ...	(i) Ku pa-sat ... (ii) Kiau-keng khau ...	(i) Kau pa-sat
8. 3rd Cross Street ...	Hai san kongsi koi ...	Hai san kong sz kai ...
9. 4th Cross Street ...	Chui-sien mng ...	Shui-sin mun ...
10. Goldsmith Street	(i) Kam-kong ke-tek ... (ii) Kuan-im-teng koi	... (ii) Kun-yam teng kai
11. Heeren Street ...	(i) Ho lan koi ... (ii) Po siah kci ...	Ho-lan kai

Chinese Characters.	Remarks as to Meaning.
<p>舊巴剎 賭間口 海山公司街</p>	<p>(i) 'Old market.' (ii) 'Gambling-house mouth.' 'The Haisan kongsi street.' (The kongsi house of this society once stood in this street)</p>
水仙門	<p>'Water-fairy gate.' (So called, it is said, because there was once a public bathing place here: cf. north Bridge Road, Singapore. One can only grope at the reason why a public bathing place should be called a "water-fairy gate." It is a delightful name anyhow.)</p>
<p>甘光家德 觀音亭街</p>	<p>(i) 'Kampong Ketek.' (This is the Malay name.) (ii) 'Street of the goddess Kuan-im's temple.' (This is the common Chinese name for the street derived from the large temple in the street.)</p>
荷蘭街	<p>(i) 'Dutch street.' (There were Dutch residences here in the old days.)</p>
寶錫街	<p>(ii) 'Precious metal street.' (This name is not common and I cannot explain the meaning.)</p>

English.	Hokkien.	Cantonese.
12. Java Lane ...	(i) Ma-kau koi ...	...
	(ii) Sin koi ...	(ii) San kai ...
13. Jonker Street ...	Koi tio ⁿ koi ...	Kai chuen kai ...
14. Kampong Pantai...	Kam-kong pan-tai ...	Pan-tai ...
15. Klebang Besar ...	Kit-lai-bong but sat ...	Sai kat-leng-wang ...
16. Klebang Kechil ...	Kit-lai-bong kit-chik	Tai kat-leng-wang ...
17. Kubu Road ...	Ku-bu kak ...	Ku-wu kai ...
18. Mill Road ...	(i) Si-pai po

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Chinese Characters.	Remarks as to Meaning.
馬交街	(i) 'Ma-kau street.' (So called because the Cantonese prostitutes live in the street; cf. Hongkong street, Singapore.)
新街	(ii) 'New Street.' (It is a remarkable coincidence that Campbell street, Penang, Fraser street, Singapore and Java lane, Malacca,—all streets connected largely with houses of ill fame—are all known to Chinese as 'new street'.)
圭場街	(i) 'Cock-pit street.' (So called because a cockpit 'glangang' used to exist here.)
甘光班底	'Kampong Pantei,' <i>i.e.</i> , the village on the shore. (The Chinese have simply adopted the local name. The name is also applied to the adjoining ends of 2nd and 4th Cross streets.)
吉黎夢勿殺 吉黎夢吉疾	(The Hokkiens use transliterations of the Malay name, but the Cantonese translate into 'Big' and 'Little' Klebang.
龜務角	'Kubu corner,' 'Kubu street.'
四牌埔	(i) 'Sepoys' plain.' (The sepoy's barracks were formerly in this street.)

English.	Hokkien.	Cantonese.
	(ii) Sin pa-sat ...	(ii) San pa-sat ...
	(iii) Sa-kak po ...	...
19. Riverside ...	(i) Ho-lan chhiu kha ...	...
	...	(ii) Tai-chung kai ...
	(iii) Pa-sat khau ...	...
	(iv) Sin koi au ...	(iv) San kai hau pin ...
20. Trangkerah ...	Tang koi lak ...	Tong kai la ...

Chinese Characters.	Remarks as to Meaning.
新巴虱	(ii) 'New market.' (The new Municipal market is close by.)
三角埔	(iii) 'Three-cornered plain.' (There is a triangular bit of land here used as a vehicle-stand)
荷蘭樹脚	(i) 'Foot of the Dutch trees.' (The Dutch trees are the 'sena' trees which were probably introduced by Dutch.)
大鐘街	(ii) 'Big bell street.' (This refers to the clock tower.)
巴虱口	(iii) 'Market-mouth.' (Riverside is a long street and has various names in various parts. This name is given to that part near the fish-market.)
新街後	(iv) 'Behind Java Lane.'
東街蚋	

IV. List of towns and villages in Negri Sembilan.

English.	Chinese.	Characters.	Remarks.
<i>District of Seremban.</i>			
1. Ampangan ...	Tan-yung ...	旦容	
2. Batang Benar	Pa-tangman-long	吧燈文浪	
3. Batang Labu	Ma-tang la-wu	嗎燈摩烏	
4. Binjai ...	Min-ye ...	綿第	
5. Broga ...	Wu-leng-ngan ...	湖靈眼	
6. Bukit Putus...	Bu-kit Phu-tok	武吉浮禿	
7. Bukit Tangga	Bu-kit tang-nga	武吉東雅	
8. Bukit Jelotong	Bu-kit yu-lo-teng	武吉魚羅東	
9. Chedang ...	Chin-tang ...	珍燈	
10. Gadut ...	Kwa-tu ...	瓜都	
11. Gebok ...	Ngai-mok ...	蟻莫	
12. G e d a n g Lalang	Su-mau piang ...	蘇茅評	
13. Klambu ...	Ka-lam-bu ...	架林武	
14. Kuala Sawah	Kwa-la sa-wa ...	掛摩沙華	
15. Kuala Parit	Kwa-la ma-ngit	掛摩馬熱	

English.	Chinese.	Characters.	Remarks.
16. Lenggeng ...	Song-po ...	宋波	
17. Liat ...	Fo-che thau ...	火車頭	
18. Limbok ...	Lian-mok ...	連莫	
19. Linsum ...	Leng-sam ...	矜森	
20. Lobak ...	Lo-mak ...	羅脉	
21. Mantin ...	San sa-tu ...	新沙都	
22. Membah ..	Man-ma ...	萬峇	
23. Merabah ...	Mit-ya-na ...	物也峇	
24. Nendol ...	Mit-tu ...	蜜都	
25. Pantai ...	Pan-tei ...	板低	
26. Paroi ...	Pa-mi ...	馬尾	
27. P e n g k a l a n Kempas	Leng-gi k o n g - hau	鄰宜港口	
28. P e r h e n t i a n Tinggi	Ship-thiu shak...	十條石	
29. P e r m a t a n g Pasir	Pa-ma-tang pa- sia	巴嗎燈巴賒	
30. Rahang ...	Thin-khau mi ...	田溝尾	

English.	Chinese.	Characters.	Remarks.
31. Rantau ...	An-tau ...	晏斗	
32. Rasak ...	Ah-sa ...	亞沙	
33. Senaweng ...	Lok thiu shak ...	六條石	
34. Seremban ...	(i) Sai-lam-ban	西林崗	
...	(ii) Fu-yong ...	芙蓉	
35. Setul ...	Lo-sa-tu ...	老沙都	
36. Sikamat ...	Sio kam-mit ...	小甘蜜	
37. Siliau ...	Sai-liau ...	西料	
38. Sungei Pajam	Kong sang san- kai-che ong ...	廣生新街場	
39. Sungei Raia	Sin-kai la-ya ...	新街喙也	
40. Tampin Ling- gi	Tam-pin leng-gi	淡邊鄰宜	
41. Tanjong Ipoh	Tan-yong I-po...	丹蓉億波	
42. Temiang ...	Cham-yong-thau	沉香肚	
43. Terachi ...	Ti-la-chi ...	地喙知	
44. Ulu Bernang	Bu-lau ...	武廬	

English	Chinese.	Characters.	Remarks.
<i>District of Kwala Pilah.</i>			
1. Batang Jelai...	Pa-tang ya-nai	巴登也乃	
2. Batu Bersawa	Pa-tu bet-sa-wa	巴都勿沙華	
3. Belombong ...	Man-long-wong	文隆黃	
4. Beting ...	Mit-ting ...	蜜丁	
5. Bukit Limpit	Tai-pak-kongsan	大伯公山	
6. Johol ...	Yu-ho ...	由河	
7. Juaseh ...	Yen-ah-sia ...	源亞賒	
8. Junapoh ...	Yu-ma-po ...	由麻坡	
9. Kumoi ...	Ku-moi ..	咕每	
10. Kwala Gan- tam	Kwa-langan-tam	掛摩眼擔	
11. Kwala Jem- pol	Kwa-la cham-bu	掛摩占武	
12. Kwala Pilah	Pei-la ...	吡摩	
13. Langkah ...	Lang-kap ...	浪鴿	
14. Pasoh ...	Pa-sia ...	吧賒	
15. Plangai ...	Bu-lo-ngei ...	武羅蟻	

English	Chinese.	Characters.	Remarks.
16. Prigi Jerneh	Pi-lei-ngi ...	吡哩宜	
17. Rengo ...	Leng-ngo ...	羚莪	
18. Rompin ...	Lam-pin ...	林邊	
19. Sakt ...	Sa-ki ...	沙幾	
20. Selaroo ...	Sa-la-lo ...	沙唵羅	
21. Sonalin ...	Chin-chi-jen ...	陳致連	
22. Serting ...	Si-lo-teng ...	四羅丁	
23. Tebing Ting-gi	Thung-pin teng- ngi	同邊丁宜	
24. Terentang...	Ti-lan-tang ...	地蘭登	
25. Ulu Jelai ...	Wu-lu ya-nai ...	烏路也乃	
26. Ulu Muar ...	Wu-lu cham-ma	烏路占馬	
<i>District of Tampin.</i>			
1. Ayer Kuning	Ah-ek ku-jin ...	亞益咕連	
2. Batang Malaka	Pa-tang ma-lak- kah	把登嗎呔呷	
3. Bongek ...	Mong-yit ...	望熱	

English.	Chinese.	Characters.	Remarks.
4. Chenong ...	Chiu-long ...	賤籠	
5. Chindras ...	Chin-ya-la ...	賤也摩	
6. Gemencheh ...	Nga-man-che ...	雅文姐	
7. Jeram ...	Yit-lan ...	熱林	
8. K a m p o n g Batu	Kam-pong Pa-tu	金榜把都	
9. Kendong ...	Kan-tung ...	根洞	
10. Keru ...	Ka-lu ...	加路	
11. Kuala Gemas	Kua-la kam-bu	掛摩禁武	
12. Kundor ...	Kin-chung ...	見鐘	
13. Linggi ...	Lin-ngi ...	鄰宜	
14. Lobok China	Lo-mok chin-na	羅莫賤摩	
15. Makunyit ...	Ma-ku-yit ...	碼古熱	
16. Mantai ...	Man-thai ...	文梯	
17. Pedas ...	Mun-ta ...	門叮	
18. Pengkal an Durian	Peng-ka-lan lo- lin	兵架蘭老連	

English.	Chinese.	Characters.	Remarks.
19. Prigi Terentang	Pi-la ti-lan-tang	吡摩地蘭	
20. Rembau ...	Lam-mau ...	林茂	
21. Repah ...	Lam-pa ...	林把	
22. Salak Aamah	Sa-lat lo-pak ...	沙叻羅白	
23. Sompang Linggi	Seng-pang linggi	性邦鄰宜	
24. Tampin ...	Tam-pin ...	淡邊	
25. Tebong ...	To-bong ...	多黃	
26. Tanjong Kling	Tan-yong kat-leng	丹蓉吉寧	
<i>District of Port Dickson.</i>			
1. Arang Arang	Ah-lang ah-lang	亞冷亞冷	
2 Bagan Pinang	Ma-n-g-a-n mi-neng	嗎銀味寧	

English.	Chinese.	Character.	Remarks.
3. Chuah ...	Chho-nga ...	初雅	
4. Jimah ...	Ye-mok ...	夜莫	
5. Kwala Lukut	Chi-wo kong-hau	致和港口	
6. Labuan Belik	La-pan mi-leh...	摩班咪叻	
7. Lukut ...	Lu-kwat ...	路骨	
8. Pasir Panjang	Pa-sia pan-yeng	把除板影	
9. Port Dickson	Po-tak-sun ...	波德伸	
	Pu-lo a-lang ...	布羅亞石	
10. Pulau Babi	Pu-lo ma-mi ...	布羅馬味	
11. Pulau Bajudi	Bu-lo bu-chi-ti	無羅武致支	
12. Semdayan ...	Chin-ta-yin ...	賤打煙	
13. Sempang ...	Si-pong ...	四邦	
14. Siginting ...	Si-ngan-teng ...	四銀丁	
15. Si Rusa ...	Si lo-sa ...	四路沙	
16. Tanah Merah	Chi-wo kong ...	致和港	
17. T a n j o n g Gemok	Tan-yong ye- mok	丹蓉夜莫	

English.	Chinese.	Character.	Remarks.
18. Telok K e - mong	To-lo kam-pong	哆羅金邦	
<i>District of Jelebu.</i>			
1. G u n o n g Hantu	Khu-tung an-tu	古洞晏都	
2. Jelebu ...	Ngi-lok-wu ...	宜叻胡	
3. Jerang ...	Yi-lang ...	魚冷	
4. Kenaboi ...	Kha-la-moi ...	叻嗶美	
5. Kongoi ...	Kong-ngo ...	江莪	
6. Kwala K l a - wang	Hung-mo-lau ...	紅毛樓	
7. Peradong ...	Pa-tung ...	吧洞	
8. Pertang ...	Bu-lo-tang ...	武羅燈	
9. Semada ...	Seng kah lo-nga	星架羅雅	
10. Sungei Ke- pong	Chim-ma-la ...	占馬嗶	
11. Titi ...	Ti-chi kong ...	地支港	
12. Titi Petal- ling	Ti-chi ku-ta-lin	地支古打鄰	

V. Chinese names of

English.	Hokkien.	Cantonese.
1. Atok	A-tok	A-tuk
2. Batu Talam	Ba-tu ta-lam	Ma-to ta-lam
3. Batu Yon	Ha-tu yan	Wa-to yin
4. Bentong	Bun-tong	Man-tung
5. Budu	Kwu-lu	Wu-lu
6. Bukit Fraser	Peh-chhiu kang	Pak-su kong
7. Bukit Itam	Bu-kit i-tam	...
	...	Shim-pan
8. Bukit Koman	Bu-kit ko-ban	...
	...	Shim-pan
9. Bukit Telaga	Jih-si tiu	Ya-sz pei

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places in Pahang.

Chinese Characters.	Remarks as to Meaning.
亞篤 峇都藍打 華都燕 文冬 湖盧 白鬚港	<p>Also known as "Wun-tong."</p> <p>'White beard's mining land' (so called after Mr. Fraser the original proprietor of the concession now worked by the Sempam Mining Company. Mr. Fraser had a long white beard).</p>
武吉逸淡 暹板	<p>The Hokkiens use the Malay name, but the Cantonese call this place as well as Bukit Koman 'Shim-pan' or 'Shim-pan kim wo' the Sempam underground mine. The Sempam river makes a loop in the direction of these places, though it is about two miles off at the nearest point.</p>
武吉高閩 暹板 廿四碑	<p>(See under Bukit Itam above.)</p> <p>'Twenty four stones' <i>i.e.</i> 24 miles from Kwala Kubu on the old bridle path. It is 29 miles distant by the new trunk road.</p>

English.	Hokkien.	Cantonese.
10. Burau ...	Mo-lai or Po-lai ...	Po-lai ...
11 Chamang ...	Sam-meng ...	Sham-mang ...
12 Cheka ...	Chek-kau ...	Chek-ko ...
13 Durian Sabatang ...	Liu-lian si-ba-tang ...	Lau-lin sz-ma-tang ...
14 Gali ...	Ga-li ...	Nga-lei ...
15 The Gap ...	Jih-it tiau ...	... Fan shui au ...
16 Goa ...	Go ...	Ngo ...
17 Kechau ...	Kit-chhiu ...	Kat-chhau ...
18 Kelola ...	Kia-lo-la ...	Kei-lo-la ...
19 Kuala Lipis ...	Lip-pi ...	Lip-pei ...
20 Kuala Medang ...	Kua-la mian-teng ...	Kua-la min-teng ...
21 Kuala Tembeling ...	Kua-la tan-bi-ling ...	Kua-la tün-pok-lin ...
22 Kuantan ...	Kuan-tan ...	Kwan-tan ...
23 Panggong ...	Mang-kang ...	Phang-kong ...

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Chinese Characters.	Remarks as to Meaning.
布黎	
岑孟	
卽高	
流連四峇登	
牙利	
廿一條	‘Twenty one mile stones’ <i>i.e.</i> , from Kwala Kubu. The Cantonese name means.
分水凹	
鵝	
吉洲	
寄羅鐺	The character for the third syllable is ‘lui’ not ‘la’.
立卑	
哇拉免丁	
哇拉段卜連	The characters do not represent the Hokkien sounds.
關丹	
崩江	

English.	Hokkien.	Cantonese.
24 Pedah ...	Mun-ta ...	Man-ta ...
25 Pekan ...	Peh-kan ...	Pak-kan ...
26 Perting ...	Po-li-teng ...	Po-lei-teng ...
27 Pulau Tawar ...	Phu-lo ta-koa ...	Fu-lo ta-wa ...
28 Raub ...	Lah-ut ...	Lah-wut ...
29 Sega ...	Su-ga ...	Sz-nga ...
30 Selensing ...	Su-leng-seng ...	Sz-ling-seng ...
31 Semantan ...	Su-mian-tan ...	Sz-man-tan ...
32 Sempam ...	Sim-pan ...	Shim-pan ...
33 Sepan ...	Chioh-pan ...	Shak-pan ...

Chinese Characters.	Remarks as to Meaning.
<p>問打</p> <p>北根</p> <p>波厘頂</p> <p>湖盧打哇</p> <p>勝活</p> <p>士牙</p> <p>士零星</p> <p>士免丹</p> <p>蟾賓</p> <p>石班</p>	<p>The name refers to the district where the Perting River joins the Bentong River and especially to the mine owned by the Tong Shun Kongsí.</p> <p>Semantan Ulu though a different place is similarly named.</p> <p>The Chinese name is used for all that part of the district on the Sempam river between the lower part of Mr. Fraser's concession and the point where it flows into the River Semantan Ulu.</p>

English.	Hokkien.	Cantonese.
34 Sungei Lembing ...	Lim-beng	Lam-meng ...
35 Tanjong Besar ...	Tan-yong	Tan-yung mut-sat ...
36 Tanom ...	Tan-lim	Tan-lam ...
37 Tebing Tinggi ...	Ti-peng	Tei-peng ...
38 Telang ...	Tok-leng	Tuk-lung ...
39 Tembeling ...	Tan-bi-ling	Tün-puk-lin ...
40 Tranum ...	Bun-tong-khau	Man-tung hau ...
41 Tras ...	To-lai	To-lai ...
42 Tui ...	Tui	Tui ...
43 Ulu Dong ...	Long	Lung ...
44 Ulu Jelai ...	O-lo jit-lai	Wu-lo yat-lai ...
45 Ulu Tembeling ...	O-lo tan-bi-ling	Wu-lo tün-puk-lin ...

Chinese Characters.	Remarks as to Meaning.
林明	
丹容抹殺	
丹林	
地冰	
獨龍	
段卜連	The characters do not represent the Hok-kien sounds.
文冬口	'Bentong mouth.'
都儘	
堆	The character in Cantonese is pronounced 'thui'.
隆	
湖盧日黎 湖盧段卜連	See under Tembeling above,

VI Chinese names of places in Perak.

English.	Chinese.	Characters.	Remarks.
Bagan Serai ...	Ma-ngansek-hoi	馬登色海	The name is phonetic. The Tiechius call it 'Ma-tang sek-hai.'
Batu Gajah ...	Wa-tu nga-ye	華都呀爺	
Bidor ...	Mi-lo ...	美羅	
Chemor ...	Chü-mo ...	朱毛	
Chenderiang ...	Chek-ngo-ye ng	積莪營	
Enggor ...	Leng-lo ...	玲羅	
Gopeng ...	Mo-pin ...	毛邊	
Guntong ...	Sz-wui-kai ...	四會街	<i>i.e.</i> the street or place where people from the Sz-wui district of the Kwangtung province live. Similarly Macao is called O-mun kai; and I have heard Taipeng called Thaipeng kai by new arrivals.
Ipoh ...	Pa-lo ...	埧羅	This is the name by which the Kheh and Cantonese Chinese have always called Ipoh. Mr. W. D. Barnes informs me

English	Chinese.	Characters.	Remarks.
			<p>that formerly there were two Kampongs, one called Ipoh and the other Paloh. In Wilkinson's Dictionary Paloh is given as meaning "a hollow filled with stagnant water" while 'Ipoh' means 'upas-tree'. The Europeans and Hokkien Chinese called the town which was subsequently built, <i>Ipoh</i>, while to the Cantonese and Khehs the place became known as <i>Pa-lo</i>.</p>
Kampar ...	Kam-po ...	金寶	
Kampong Kepayang	Kam-pong Pan-yang	金榜班映	
Kamunting ...	San-kong-mun	新港門	<p><i>i.e.</i> New district. This name was given by the Chinese to Kamunting because mines were opened there later than near Taipeng. Kamunting is about 3 miles from Taipeng.</p>

English.	Chinese.	Characters.	Remarks.
Kinta ...	Tai-phek-lik ...	大吡叻	i.e. Big Perak, as distinct from Larut which is <i>Siu-phek-lik</i> or little Perak. The Tiechius call it Toa-pe-lak.
Kota ...	Ku-ta ...	古打	
Kota Bahru ...	Ku-ta ma-lu ...	古打馬路	
Krian ...	Ko-yin ...	高煙	This name is also applied to Nibong Tebal in Province Wellesley.
Kuala Kangsa...	Phu-lo kong-sau	浮勞江秀	
Kuala Dipang...	Mi-phang ...	美棚	
Kurau ...	Ku-lau ...	古樓	
Lahat ...	Na-hat ...	拿乞	
Larut ...	Siu-phek-lik ...	小吡叻	The Tiechius call it 'Sio-pe-lak', and this is more nearly the sound of the characters.

English.	Chinese.	Characters.	Remarks.
Matang ...	Ma-tang ...	馬登	
Padang Rengas	Siu-san ...	燒山	Burning hill, because lime stone used to be burnt here for lime.
Papan ...	Kap-pan ...	甲板	
Parit Buntar ...	Ko-yin ...	高煙	<i>Ko-yin</i> is simply Krian ; another name is <i>sin-ba-lai</i> meaning the new 'balai' or Police Station, in distinction to that at Nibong Tebal over the border.
Polai ...	Po-lai ...	波賴	
Pusing ...	Pu-sing ...	布星	
Salak ...	Sha-lak ...	沙叻	
Selama ...	Sü-lam-ma ...	絲南孖	

English.	Chinese.	Character.	Remarks
Selbin ...	Süt-li-ping ...	雪厘冰	
Siputeh ...	Pu-tei ...	步地	
Slim ...	Su-lam ...	上林	
Sungei Raia ...	Sung-kai la-ye	雙溝鱗爺	
Sungei Siput ... (near Kuala Kangsar)	Wo Fung kai- cheung	和豐街場	'Wo Fung' was a big mining kongsi here: Kai-cheung means 'town' or more liter- ally 'street-area.'
Sungei Siput ... (near Kampar)	Shek-san-ke uk	石山脚	'The foot of the (lime) stone hill.' The mines are at the foot of a limestone cliff.
Sungkai ...	Süng-khai ...	宋溪	
Taipeng ...	Thai-peng ...	太平	Also Phek-lik-tsai.
Tambun ...	Tam-mun ...	淡間	

English.	Chinese.	Characters.	Remarks.
Tanjong Malim	Phu-lo on-n a m	浮勞安南	Phonetic, probably from some Malay name. (?Pulau Anam.)
Tanjong butan	Ram-Hung-mo tan ...	紅毛丹	This is usual Chinese for the Rambutan fruit. Hung-mo or ang-mo red-haired, so t h e Chinaman has been happy in his choice of of a name for this fruit.
Tapah ...	Ta-pa ...	打巴	
Tekka Meng lembu	Man-li-mong ...	萬里望	
Teluk Anson ...	Sz-ma-tang ...	司馬登	This is the Chinese version of Sa'batang. The old port was Durian Sa'batang 3 miles from the present town, the Chinese however still use the old name. I have heard <i>An-sun</i> used on a few occasions.
Temoh ...	Luk-chi-pei ...	六枝碑	<i>i.e.</i> Six mile-stones, because Temoh is six miles from Kampar on the road to Tapah.
Tronoh ...	Tun-lok ...	端洛	

VII. Chinese names of places in Selangor.

English.	Chinese.	Characters.	Remarks.
Ampang ...	Om-pang ...	暗邦	The village between the 3rd and 4th milestones on the Kuala Lumpur Ampang road is Pungkong, <i>i.e.</i> , 'the half way mines,' or, 'the mines half-way between Ampang and Kuala Lumpur.'
Bangi ...	Man-yi ...	萬宜	The Hokkiens call it Ban-gi.
Batang Benar ...	Pat-tang mei-na	八登尾拿	
Batu ...	Wa-tu ...	華都	
Batu Tiga ...	Sam thiu shek ...	三條石	<i>i.e.</i> three (mile)-stones, because Batu Tiga is 3 miles from Damansara, where sam-pans discharged cargo in pre-railroad days.
Beranang ...	Fu-lu-ngan ...	芙蓉	This name is also applied indiscriminately to some other places in the same district, <i>e.g.</i> , Blau and Broga. It is apparently phonetic.

English.	Chinese.	Characters.	Remarks.
Bukit Raja ...	Mu-kit La-ye ...	毛結罽爺	
Cheras ...	Chui-lai ...	蕉賴	
Gombak ...	Ngo-mak ...	鵝墨	
Jeram ...	Yi-lam ...	宜霖	
Jugra ...	Chho-ka-la ...	粗加罽	
Kajang ...	Ka-yeng ...	架影	
Kanching ...	Kan-ching ...	間征	
Kapor ...	Ka-pa ...	加吧	
Kelumpang ...	Lung-pong ...	龍邦	
Kepong ...	Kap-tung ...	甲洞	
Kerling ...	Kat-lin ...	吉莪	
Klang ...	Pa-sang ...	吧生	Because the Malays give the name 'Pasang' to part of the town of Klang.
Kuala Kubu ...	(i) Kwu-mo ...	古毛	
	(ii) Sz-Nga-Ngok	師牙岳	<i>i.e.</i> Selangor in Cantonese guise. Kuala Kubu is the principal town in Ulu Selangor, and the Chinese have

English.	Chinese.	Character.	Remarks.
Kuala Langat ...	Nga-ngat kong-hau	牙兀港口	adopted the name of the district, and dropped the 'Ulu.' i.e. the mouth of the 'Nga-ngat river.' Nga-ngat=Langat obviously.
Kuala Lumpur	Kat-lung-po ...	吉隆坡	I have also often heard kai-(or ka-) lam-po.
Kuala Selangor	Sek-a-ngo kang-khau	昔仔午港口	These are Hokkien sounds, representing 'mouth of the river Selangor.'
Kuang ...	Kuang ...	轟	
Kuchai ..	Ku-tsai ...	古仔	
Kuyau ...	Ko-yu ...	高腰	
Padang Jawa ...	Pat-tang chiau-a	八登爪亞	
Pantai ...	Pan-tai ...	板底	
Parit Tengah ...	Pa-lit Teng-a ...	吧列丁亞	
Pasir Panambang	Pa-sa Pan-lampang	吧沙板梁 崩	
Pasir Panjang...	Pa-sa Pan-yeng	吧沙板影	
Pétaling ...	Ku-ta-lin ...	古打莪	

English.	Chinese.	Character.	Remarks.
Port Swettenham	Pa-sang kong-hau	吧生港口	See Klang 'Kong-hau' means 'river mouth.'
Pudoh	... Pun-shan pa ...	半山吧	i.e. half (way to the jungle).
Pulau Ketam	... Po-lau kit-tam ...	布流結系	
Rasa	... Lak-sü ...	叻思	(in Hokkien) Rasa is in Ulu Selangor, and this part of Selangor was proved by the census to be the 'Hokkien' part of the State—so the Chinese name of the place was a Hokkien name.
Rawang	... Man-lau ...	檳萬	This may be for 'Bandar': part of Rawang is known as Bandar Bharu.
Salak (South)	... Ku-ta-lin Sa-lak	古打莽沙 歷	
Selangor	... Sz-nga-ngok ...	師牙岳	Most commonly by residents outside the State called 'Kit-lang' (Klang)

English.	Chinese.	Character.	Remarks.
	Sut-lang-ngo ...	雪蘭鵝	
	Kit-lang ...	吉冷	
Sēmunyiĥ ...	Sz-wai-yik ...	四圍益	This is the recognised written name. It means "lucky all round." The colloquial is 'Sz-man-yik.'
Sēpang ...	Chi-wo kong ...	致和港	'Kong' is a river, and 'Chi wo' is the chop of a gambier and pepper Kongai, the largest in that district.
Serdang ...	Sa-tang ...	沙戩	
Sērendah ...	Seung-man-tan ...	雙文丹	Sometimes called 'Sz-man-tan. The river at this place is called Sungei Sēmantan.
Sētapah ...	Man-lung-kong ...	文龍港	I have not been able to ascertain the explanation of this name. It may have some connection with the name of a small river there called 'Sungei Bilong.'

English	Chinese.	Character.	Remarks.
Simpah ...	San-pa ...	新吧	
Sungei Ayer It-am	Sung-koi A-yi yi-tam	宋溪亞耶 意系	
Sungei Besi ...	San-kai-cheung	新街場	<i>i.e.</i> New town. Kai=street, cheung=open space—so that Kai cheung appears to mean 'street area' and so 'town.' It is not the usual form of expression. Sungei Besi got this name, because the locality of the town was changed some years ago.
Sungei Buloh ...	Sung-khoi Phu-lo	宋溪蒲蘆	
Sungei Dayong	Sung-khoi Na-yung	嵩溝拿容	
Sungei Puteh ...	Sung-khoi Phuthai	宋蟻菩提	
Sungei Tem-paian	Sung-khoi Tam-pa-yeng	宋溝担霸影	
Sungei Way ...	Sung-khoi Wai	雙溝威	
Tanjong Karang	Tan-yeung ka-lang	丹洋架冷	

English.	Chinese.	Characters.	Remarks.
Tanjong Malim	Fu-lo On-nam or Phu-lo On-nam	芙蓉安南 郭蘆安南	This sounds like an adaptation of a Malay name meaning 'sex Islands'. But there is no authority for that, and it is not unlikely that it is a Chinese attempt at 'Ulu Bernam.'
Ulu Klang	...Tham-kong ...	淡江	<i>i.e.</i> Dull-mine—Dull in the sense of not prosperous. The miners here met with little luck. But more probably another explanation is correct, <i>viz.</i> that the water of the river at Ulu Klang was much used for drinking purposes, 'tham' here meaning 'fresh.'
Ulu Langat	...Nga-ngatshan...	牙兀山	'Shan' practically corresponds to 'Ulu'—up-country.
Ulu Selangor	...U-lau Süt-lang-ngo	烏佬雪蘭莪	See under Kuala Kubu.
Ulu Yam	...Wa-tu-a-yam...	華都亞音	There is said to be a rock (batu) which serves as a landmark.

VIII. Chinese names of places most of which have commercial or other connections with the Straits Settlements.

English.	Hokkien.	Cantonese.	Character.
Acheen	... A-che	... Che-fau	亞齊
America ¹	... Bi-kok	... Mei-kwok	美國
	Hue-ki-kok	... Fa-khei-kwok	花旗國
Amoy	... E-mng	... Ha-mun	廈門
	E-mui	... ..	廈門
Annam	... An-nam	... On-nam	安南
Australia ²	... Sin-kim-sua ^a	... San-kam-shan	新金山
Austria	... O-kok	... O-kwok	奧國
Bangkok ³	... Bong-kok	... Mang-kok	網咯
	Siam-ki ^a	... ..	暹京
Batavia ⁴	... Ka-la-pa	... Ka-la-pa	加勝巴
	Ba-tau-i	... ..	目投夷
Batu Pahat	... Ba-tu Pa-hat	... Ma-tu-pa-hat	峇楮吧轄
Bombay	... Bong-bai	... Mang-mei	望眉
Borneo	... Bo-nio ^a	... Mu-neung	慕娘

1. Hue-ki-koh means 'flowery flag country.'

2. Sin-ki^a-sua^a means 'New gold fields' as distinct from California.

3. Siam-ki^a means 'Capital of Siam.'

4. Ka-la-pa may be for the Malay word 'Kelapa,' coconut.

English.	Hokkien.	Cantonese.	Character.
Calcutta	... Beng-ka-la ...	Mang-ka-la ...	孟加勝
	...	Ka-lei-kat-ta ...	加刺吉打
Canton ⁵	... Kng-tang ...	Kwong-tung ...	廣東
	Se ⁵ -sia ⁵ (Tiechiu)	Shang-sheng ...	省城
Cheribon	... Che ⁵ -li-bun ...	Cheng-lei-man...	井里汶
Chifu (or Chefoo) ⁶	Ian-tai	... Yin-thoi ...	烟台
China	... Tong-kok ...	Chung-kwok ...	中國
	Tng-sua ⁷	... Thong-shan ...	唐山
Christmas Island ⁷	Ka-su ma-su ...	...	嘉士嗎嶼
	...	Shek-tsai-fau ...	石仔埠
Cocob	... Ku-kok ...	... Ku-kok ...	龜咯
Colombo	... Ko-long-bo ...	... Ko-long-mo ...	高浪務

5. Se-sia means 'provincial capital'—This is the expression invariably used by Tiechiu—while Cantonese use the equivalent 'Shang Sheng.' In the same way 'hu-sia' will be used by the people of a prefecture to denote their prefectural city.

6. 'Smoky fort.' Yin Thoi is really the name of the foreign concession on the opposite side of the harbour to the Chinese town of Chi-fau 芝罘 and the name given to the site of the foreign concession has ousted the real name of the place.

7. 'Shek-tsai-fau' means 'Little stone port', alluding to the phosphate work.

English.	Hokkien.	Cantonese.	Character.
Corea	... Kau-li-kok	... Ko-lai kwok	高麗國
	Ko-le kok	...	
Cuba	... Ko-pa	... Ku-pa	古吧
Deli	... Jit-li	... Yat-lei	日裡
	Jin-li	...	
Dindings ⁸	... Pang-kok	... Pong-kok	邦咯
Edie	... I-li	... Yi-lei	怡里
England	... Eng-kok	... Ying-kwok	英國
Foochow	... Hok-chiu	... Fuk-chau	福州
Formosa ⁹	... Tai-wan	... Thoi-wan	台灣
France	... Ho-lan-se	... Fat-lan-sai	法蘭西
	Huap kok	... Fat-kwok	法國
Germany	... Tek-kok	... Tak-kwok	德國
Haiphong	... Hai-pong	... Hoi-fong	海防
Hoihow	... Hai-khau	... Hoi-hau	海口

8. 'Pang-kok' is Pangkor, the island and village at the mouth of the Dindings river.

9. 'Tai-wan' is the Chinese name, meaning 'Terraced bay.'

English.	Hokkien.	Cantonese.	Character.
Holland	... Ho-lan	... Ho-lan	荷蘭
Hong Kong	... Hiang-kong	... Heung-kong	香港
India ¹⁰	... In-to	... Yan-to	印度
	Kit-ling-a tso ke (Colloquial Tiechiu)	...	吉寧仔祖家
Italy	... I-tai-li	... Yi-tai-lei	意大利
Japan	... Jit-pun	... Yat-pun	日本
Jelebu	... Jia-li-bu	... Ya-lei-mu	惹裡務
Johor ¹¹	... Yu-hut	... Yau-fat	柔佛
	Sin-sua ^a	... San-shan	新山
	Ja-ga (Tiechiu)...	...	惹呀
Karimon	... Ka-li-mun	... Ka-lei-mun	家里汶
Kedah	... Kit-ta	... Kai-ta	吉打
Kelantan	... Kit-lan-tan	... Kat-lan-tan	吉蘭丹
Kopah	... Ko-pa	... Ko-pa	高吧

10. 'Kit-ling-a tsou-ke' means 'Klings' home' : it is of course only colloquial.

11. 'Sin-sua' means 'New hills' or 'New country,' distinguishing Johor, I suppose, from Singapore.

English.	Hokkien.	Cantonese.	Character.
Labuan	... La-buan	... La-mun	納閣
Langkat	... Lang-kat	... Lang-kat	籠葛
Langkawi	... Phu-lo kau-ui	...	浮羅交夷
Lingga	... Leng-ge	... Lung-nga	龍牙
Malacca	... Mua ^a lak-kah	... Ma-lak-kak	麻叻呷
Macao ¹²	... O-mng	... O-mun	澳門
	...	... O-mun-kai	澳門街
Macassar	... Mang-ka-siah	... Mang-ka-sat	望加錫
Manila	... Sio-lu-song	... Siu-lui-sung	小呂宋
Medan ¹³	... Sa-wan	... Sha-wan	沙灣
Mergui ¹⁴	... Tan-lau	...	丹荖
	...	... Tai-lau	大柁
Moulmein	... Ma-tang-lien	...	峇淡棉
	...	... Mu-lu-min	毛勞棉

12. 'O-mun' is the Chinese name for the place known to Europeans as Macao.

13. Medan is known to Chinese as 'Sawan' meaning 'Sand bay.'

14. 'Tan-lau' means 'Red Sirih.' I have not been able to ascertain the reason for this name.

English.	Hokkien.	Cantonese.	Character.
Muar	... Mua ^a -po	... Mo-fau	... 蘇埠
Muntok	... Bun-to	... Man-to	... 文島
Negri Sembilan ¹⁵	...	Kau-chau-fu	... 舊州府
Olehleh ¹⁶	... A-che	... Che-fau	... 亞齊
Padang	... Toa-pa-tang	... Tai-pa-tang	... 大吧冬
Pahang	... Paṅg-hang	... Pang-hang	... 彭亨
Pakhoi	... Pek-hai	... Pak-hoi	... 北海
Pangkor	... Pang-kok	... Pong-kok	... 邦咯
Palembang ¹⁷	... Ku-kang	... Kau-kong	... 巨港
Pekin	... Pak-kia ^a	... Pak-keng	... 北京
Penang ¹⁸	... Pin-nng-su	... Pun-long-yü	... 檳榔嶼
		Pei-nang	... 庇能
		San-fau	... 新埠
Perah	... Peh-lak	... Phek-lek	... 吡叻

15. 'Kau-chau-fu' is only a translation of Negri Sembilan. The name 'Fu Yung' *i.e.* (Sungei) Ujong is usually given to Negri Sembilan and all that part of the Peninsula.

16. This is 'Atjeh', the Dutch name of Acheen, in Chinese form.

17. 'Ku-kang' means 'great river.'

18. 'San-fau' means 'New town':—Penang was later known to Cantonese, than Singapore.

English.	Hokkien.	Cantonese.	Character.
Perlis ¹⁹	... Ka-yang	... Ka-yang	加央
Pontianak	... Khun-tian	... Khwan-tin	坤甸
Pulo Bërandan ²⁰	...	Fo-shui shan	火水山
	But-lan-tan	...	勿聳聳
Rangoon	... Liang-kong	... Yeung-kwong	仰光
	Ang-kong	... On-kung	晏光
Renong	... Lin-long	...	葬廊
Rhio	... Liau-lai	... Liu-noi	廖內
Russia	... Go-lo-su	... Ngo-lo-sz	俄羅斯
Saigon	... Sai-kong	... Sai-kung	西貢
Samarang	... Sam-pa-lang	... Sam-pa-lang	三吧壟
Sandakan	... Sin-ngia-kan	... }	山打根
	San-ta-kan	... San-ta-kan	
	Siang-hia k a n g	... }	
Sandwich I'ds ²¹	... Toa ⁿ Hiong Sua ⁿ	... Than - He ung shan	檀香山
San Francisco ²²	... Ku kim-Sua ⁿ	... K a u - k a m - shan	舊金山

19. 'Ka-yang' is apparently the Malay 'Ka-jang.' I know no explanation of the name.

20. Kerosine-oil hills.

21. 'Sandalwood hills'.

22. 'Old gold diggings' as distinct from Australia.

English.	Hokkien.	Cantonese.	Character.
Sarawak	... Su-la-wak	... Sa-la-wak	砂勝越
Selangor	... Kit-lang	... Kat-lang	吉隆
	... Sit-lang-ngo	... Su-lang-ngok	寔蘭莪
Serapong	... Sa-li-pong	... Sa-la-pong	
Shanghai	... Siang-hai	... Sheung-hoi	上海
Siam	... Siam-lo	... } Chhim-lo...	暹羅
	... Siam-ti		
Singkep	... Sin-kip	... San-kap	新汲
Situl	... Si-tüt	... Si-to	寔突
Sourabaya	... Su-li-ba	... Sz-shui	泗水
	... Si-li-buat	... Siet-lei-fa	泗里末
Spain ²³	... Toa-lu-song	... Tai-lui-sung	大呂宋
Swatow	... Sua ^a -than	... Shan-thau	汕頭
Sungei Ujong	... Hu-jiong	... Fu-yong	芙蓉
Tavoy	... Tho-a	... Tho-nga	土瓦
Tebing Tinggi	... Chiok-be t e n g n g i	... Shek-ma teng-yi	石馬丁宜

23. Toa-lu-song 'means 'Big Luzon', as distinct from Manila which is called 'Small Luzon.'

English.	Hokkien.	Cantonese.	Character.
Tokio ²⁴	... Tang-kia	... Tung-keng ...	東京
Tongkah	... Kong-ka	... Hung--ka ...	通和
	...	Kham-ka ...	禽卡
Tang ²⁵	... Tang li	...	董裡
	...	Wu-chiu-tang ...	胡椒等
Trengganu	... Teng-ka-no	... Teng-nga-nu ...	丁加奴
Wei-hai-wei ²⁶	... Ui-hai-ui	... Wai-hoi-wai ...	威海衛
Yokohama ²⁷	... Hue ⁿ -pin	... Wang-pan ...	橫濱

24. 'Eastern capital.'

25. 'Wu-chiu tang' means 'Pepper Thang.'

26. 'Strong sea protection.'

27. 'Cross shore.'

Chinese Names of Streets in Singapore and Malacca, together with a list of names of the most im- portant places in the F. M. S.

Some years ago the late Mr H. T. Haughton of the Straits Settlements Civil Service compiled a list of the native names, Chinese and Tamil, of some of the most important streets in Singapore.

Since this list was published, Singapore has grown and streets have multiplied, so that Mr. Haughton's list, useful as far as it goes, is somewhat out of date.

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I have in the previous pages endeavoured to bring it up to date, as far as the Chinese names are concerned. To do this satisfactorily, is impossible. Exact names for many streets do not exist. In this respect Singapore differs from Penang, where new streets are fewer and more easily identified. It is characteristic of the Chinese that in a matter of this kind, accuracy is the last thing that strikes them as essential. If you ask a Chinaman—or better still a Chinese woman—newly arrived and resident in Singapore, where he lives, the invariable answer will be “Singapore.” A second query will perhaps elicit information as to the district of the town or island, but it will take many questions before the actual address can be ascertained, though it might have been given directly, if the person questioned had thought that it was of any importance.

The Chinese have a happy-go-lucky way of using one expression to describe any one of perhaps a dozen streets. Any Chinaman living at the town-end of Bukit Timah Road, in Albert Street, Selegie Road, near Kandang Kerbau Police Station, Short Street, or in any of the numerous lanes in that neighbourhood will, if asked where he lives, reply “Tek Kah” (i. e. Foot of the bamboos), and unless cross-examined would not volunteer any further information, though the answer might mean any one of a dozen streets.

The more important thoroughfares have recognised names known to Chinese of all classes. There are, however, a number of new and smaller streets, and it appears to me that it is important that these should be easily identified. Especially is it important that official interpreters should have a through knowledge of the names, English and Chinese, for all the streets in the town, a matter in which, in my experience, many Government interpreters are lamentably ignorant.

As already remarked, in many cases there are no Chinese names for streets. Tanjong Pagar and Kampong Kapor districts are full of new roads and streets, nameless at present to the Chinese, and defying identification. The houses are new and often not occupied by Chinese, but Singapore is a Chinese town and any one who has watched its growth will realise that in all likelihood these new roads will be busy thoroughfares be-

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fore many years are past, and sooner or later no doubt the Chinese will find names for them. Now it seems a pity that street-names should be multiplied unsystematically in Chinese as well as in English, and I should like to see the Municipality step in and take the matter in hand. Suggestions need not be made here as to what plan should be pursued, but there are several alternative methods, and I think something ought to be done.

I should state that infallibility cannot be claimed for this list. Various informants have given contradictory information. However such as it is, it may, I hope, prove useful to any European with a knowledge of Chinese and to any Chinaman with a knowledge of English.

I have added the names for some of the more important bridges, police stations and public buildings, and where I have been able to ascertain them, the names of the country roads and districts. Here I found it very difficult to obtain exact information, most of what is given having been kindly furnished by Mr. Langham-Carter of the Land Office.

Following will be found a list some of the places with which Singapore has connections, commercial or otherwise. This includes the names of European States and, at the other extreme, local coast ports.

Mr. E. A. Gardiner of the Straits Police kindly sent me a list of the names of streets in Malacca, with some interesting notes by Mr. Go Lai Kui, the Government Interpreter there.

And through the courtesy of various officers of the Federated Malay States Civil Service, I have been furnished with the Chinese equivalents for the names of the most important places in the States.

Mr. A. M. Pountney contributed Selangor.

Mr. W. Cowan sent the Perak names, with notes by Mr. W. D. Barnes.

For Pahang I am indebted to the District Officers at Raub and Kuala Lipis.

The Negri Sembilan names were supplied through Mr. Ridges.

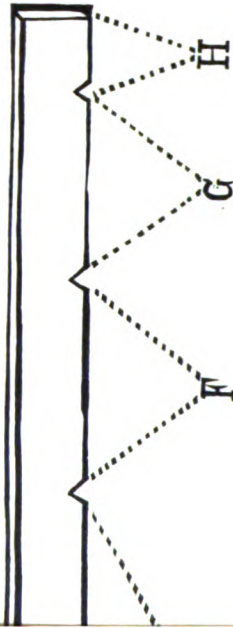
I was unable to obtain Chinese names for up-country Kampongs in Malacca—there are none apparently—and the Chinese population is comparatively thin there.

Penang and Province Wellesley have already been dealt with in the admirable notes of Mr. Lo Man Yuk.

Finally I must express my thanks to Messrs. Ho Siak Kuan and Leung Pui Kam of the Chinese Protectorate in Singapore and Penang respectively, for their assistance in filling in the Chinese characters for the names.

Penang, March, 1904.

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R. Shelford. $\times \frac{1}{3}$

Addendum to Mr. Hose's paper on Methods of Reckoning Time.

Since this paper was written a good deal more information about the Kenyah Sundial has come to hand, and it is evident that the methods employed by the different tribes in measuring the noon-day shadow and the omens attached to the respective lengths of the shadow vary considerably. This is but natural since the different tribes plant their crops at different times of the year. A figure of a measuring-stick (*asu do*) of the Aki Kenyahs, a down-river tribe who plant in July, is now given; the actual specimen is in the Sarawak Museum, and I am indebted to the curator, Mr. R. Shelford, for the drawing.

Explanation of the Figure.

Stick (asu do) used by the Kenyahs to measure the shadow cast by the Sundial (tukar do).

The stick is 72 centimetres in length and 1.7 centimetres broad; one border is notched. The end marked by an asterisk in the figure is held in the hand so that the stick lies along the extended arm, the notches corresponding to certain regions of the arm and hand. The relation of the length of the shadow cast at noon-day by the *tukar do* to the spaces between the notches determines the omen given by the *divong* as described in the paper. The letters A to H refer to the spaces between the notches.

- A. Known as *Kujut Kata*, the knuckles; this is a good time for planting, but there will be deaths in the house and the people of the house will always be crying and rubbing their eyes with their knuckles; in pounding out the padi, some padi will always remain mixed with the rice.
- B. Corresponds to the position of the string often worn round the wrist to tie in the soul of the wearer, a bead or some

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charm being often threaded on the string. This marks a good time for planting.

- C. *Leku Sang*, corresponds to the position of the wristlet made from fibres of the *sang* palm by men on the war paths to distinguish them from the enemy. A good time for planting.
- D. *Muga mipit*, marks a bad time for planting because the sparrows (*mipit*) will destroy the crop.
- E. *Idan ok*, i.e., the small part of the forearm, a bad time for planting.
- F. *Idan aiar*, i.e., the thick part of the forearm, a bad time for planting.
- G. *Selong jangin*, i.e., the brass armlet worn round the biceps; this marks a good time for planting.
- H. *Lingai Sapeh*, i.e., the junction of the coat-sleeve with the coat; a good time for planting.

Dr. Brandstetter's Malayo-polynesian Researches: An Appreciation.

There is (or was) in the East, a newspaper claiming to have the largest circulation in Asia, British India excepted. The exception is a big one. If in the same way I were to say that Professor Brandstetter of Lucerne is the soundest and most accurate Malayan scholar in Europe, outside of Holland, I should be merely stating in the fewest words a plain fact which in my judgment, is not as widely known as it deserves to be; and I hope that no one will so far misunderstand my meaning as to imagine that I am attempting to make a scurvy jest at the expense of that learned writer. Under the general title of 'Malayo-Polynesische Forschungen' he has issued a number of very valuable studies on Malayan subjects, whose titles I subjoin in a note for the benefit of all whom it may concern.* There

* *First Series.*

- I. Der Natursinn in den ältern Literaturwerken der Malayen.
- II. Die Beziehungen des Malagasy zum Malayischen.
- III. Die Geschichte des Hang Tuwah, ein älterer Malayischer Sittenroman, ins Deutsche übersetzt.
- IV. Die Geschichte von König Indjilai, eine bugische Erzählung, ins Deutsche übersetzt.
- V. Die Gründung von Wadjo, eine historische Sage aus Südwest Celebes, ins Deutsche übersetzt.
- VI. Das Lehnwort ins Bugischen.

Second Series.

- I. Die Geschichte von Djalalankara, ein Makassarischer Roman, in deutscher Sprache nacherzählt.
- II. Tagalen und Madecassen, eine sprachvergleichende Abhandlung, als Orientierung für Ethnographen und Sprachforscher.
- III. (In preparation) Beiträge zur Fixierung der Stellung welche die Südphilippinischen Idiome innerhalb des Malayo-polynesischen Sprachstammes einnehmen.

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is not room here to discuss them all, nor are they all of equal interest to readers in the Malay Peninsula; I will therefore confine myself to those which appeal more particularly to students of Malay.

His two studies on the "relation of Malagasy to Malay" (1893; pp. 43) and on "Tagal and Malagasy" (1902; pp. 85), taken together, give a very clear idea of the interconnection of these languages and throw considerable light on their past history and development.

Brandstetter's strong point is his strictly scientific method. He will not accept conjectural identifications or vague unsupported theories of relationship: he distinguishes most carefully between what he considers to be *proved* and what is merely *probable*. Consequently his results, when they are such as he himself considers certain, may be accepted with a high degree of confidence by his readers.

In choosing two languages so widely separated in geographical distribution as Tagal (or Tagalog) and Malagasy for his points of comparison, he brings out very strikingly the essential unity of the Malayan family of languages, a unity which is evidently due to common descent and not, as Crawford perversely maintained, to the influence of Malay or Javanese modifying a number of originally alien tongues. English students of this subject seem to find a difficulty in getting away from the idea that Malay is the normal type of a Malayan language: that, however, is very far from being the case. From the point of view of phonology, Malay is often relatively very archaic, much nearer to the original sounds, than some of the cognate tongues (e. g. Malagasy and Javanese); but even in this regard Malay is not always the truest representative of the primitive type. Then again Malay lacks many old words which have been preserved in distant and widely separated parts of the Malayo-polynesian region; and this, as van der Tuuk pointed out long ago, is proof enough that they do not owe their common element to Malay. Further, Malay is so much simplified in its grammar that it occupies in the Malayan family much the same relative position, that modern Persian or English occupy among the Indo-European languages: its system of agglutination has been re-

duced to a mere remnant, whereas some of these languages have preserved it in something like its primitive luxuriance. In this respect Tagal and Malagasy are more archaic than Malay. An example will best explain what is meant. The Malay *surat* "writing," is represented in Tagal by *sulat*, in Malagasy by *sóratra* (Malagasy *o* is pronounced *u*).

This verb can be conjugated thus in these two languages:—

	ACTIVE.	
	<i>Tagal.</i>	<i>Malagasy.</i>
<i>Present</i>	nanunulat	manoratra
<i>Preterite</i>	nanulat	nanoratra
<i>Future</i>	manunulat	hanoratra
<i>Imperative</i>	manulat	manaráta
	PASSIVE.	
	<i>Tagal.</i>	<i>Malagasy</i>
<i>Present</i>	sinusulatan	sorátana
<i>Preterite</i>	sinulatan	nosoratana
<i>Future</i>	susulatan	hosoratana
<i>Imperative</i>	sulatan	soráty*

Here, besides prefixes and suffixes, infixes and reduplication play, in Tagal, a great part.

It is not necessary to add here, by way of contrast, the meagre list of variations which the Malay verb usually assumes: they will be familiar to the reader. Apart from these, there are in Malay (as Dr. Luering pointed out in No. 39 of this Journal) a few scattered survivals which show that the language formerly had a more fully elaborated system of agglutination than it now possesses.

The comparison of some of the words common to Tagal and Malagasy (of which Brandstetter gives a remarkably long and interesting list) shows that in some cases a form more archaic than that of Malay must be inferred as the common original. Thus, for instance, it is practically certain that "fire"

* *y=i*, as in English at the end of a word: Malagasy spelling was invented by English missionaries.

was once *apui* not *api*, and "dead" *matai*, "liver" *hatui*, and so on. But even more interesting, perhaps, is the light which these common words throw on the state of civilization of the primitive ancestors of these tribes before their dispersion. It is clear from the comparative vocabulary that they were quite at home on the tropical seas: they have common words for the sea and the shore, for the crocodile, the prawn, the ray or skate (fish), and the dugong (though the Malagasy *trozona* now means whale, apparently); they had sails for their boats and they used hooks for fishing. Two, at least, of the points of the compass are represented by common words, though their relative directions have shifted and no longer correspond in the different languages. So too for words relating to life on land: they were acquainted with rice, yams, bamboo and, probably, the cocoanut and screw-palm (pandanus); their material civilization comprised acquaintance with iron and, apparently, silver; they had knives and files, and hewed wood into stakes and planks; they had houses with walls and roofs; they had pots, dishes and spoons (or ladles) and mortars with pestles (probably the large ones even now used for pounding rice); and they wore garments of some sort of cloth. They had some simple standards of measurement, notably the fathom (the distance across the outstretched arms). They had words for "month" and "year," and a series of numerals to 1000, inclusive. Words relating to the transactions of life in a social community are also not altogether absent; buying and borrowing, debt and payment, are ideas which appear to have been familiar to them; and they are not without words which indicate differences of social rank, e. g. the existence of chiefs to whom personal respect was due. The widespread institution of the "taboo" appears to have already existed among them in those early days.

This is by no means an exhaustive account of the condition of these people: I have merely picked out a few of the salient facts embodied in Brandstetter's list of words, and these it must be remembered are drawn from Tagal and Malagasy only. If the other Malayan languages (whose name is legion) were taken into account, many additional details could be added to this outline sketch: it is enough, however, to show that such

researches as these may lead to very interesting discoveries, quite apart from the merely technical details of philology.

These last I shall not pretend to deal with here, only referring the reader to these two valuable monographs, where he will find them set out and very skilfully handled.

I have left myself little space to notice the other numbers of the series to which I would draw particular attention. Of the *Hikayat Hang Tuah* I will merely say that it is an historical romance of the life of the well-known Malacca hero, and that while it is probably of no great value from the point of view of history strictly so called, it is a highly interesting picture of Malay life and manners and by no means deserves the unmixed contempt which Crawford thought fit to pour upon it. It dates probably from the early part of the 17th century and is a recognized specimen of the best type of Malay classical prose literature.

The only other of Brandstetters' works which I propose to mention here is his essay on the Malay appreciation of the beauties of nature (and their aesthetic sense in general) as evidenced in their literature. Here he lays a good deal of Malay prose and poetry under contribution and by a number of well selected examples reveals a side of the Malay character which is not, I think, in their every day life at least, very obvious to the ordinary observer. He has confined himself to literary works older than the 19th century, to the exclusion of all modern productions, and perhaps therefore European influence may be discounted: the question of the imitation of India models is more difficult, but on the whole Brandstetter is disposed to regard the mental attitude which he illustrates as being really original to the Malay mind, and he has not to take his examples from works, like the *Sri Rama*, which are avowedly based on Indian originals. Even in these, however, it may be remarked that the local colouring is distinctly Malay; and one need only look, for instance, at the beautiful passage quoted and translated by Maxwell on pp. 89 and 90 of No. 17 of this Journal, to be convinced that the Malay rhapsodist from whom Maxwell derived his version of the story has not servilely copied any Indian model but has given the rein to his own fancy and freely exercised his own descriptive power.

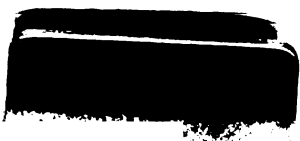
It is impossible to go into details here, but I hope that the indications I have given will induce some of the readers of this Journal to refer both to Brandstetter's essay and to his Malay originals. Victor Hugo did not disdain to translate Malay pantuns: a poet himself, he could appreciate the poetry which many of them so quaintly embody, and I venture to think that an anthology could be made up out of Malay literature which would be worthy to rank with many other such collections in better known languages. Unfortunately the Malay genius does not lend itself to sustained effort: it rises here and there to real heights of poetic fancy, but taken as a whole it is undoubtedly pedestrian. All the more reason, therefore, is there for picking out the gems which lie hidden amongst so much that is little better than dross.

This short notice can hardly do justice to the excellence of Brandstetter's work: I can say no more, in summing up, than that that he is a worthy pupil of the Dutch School, and that in attempting to carry on the work of Malayan research beyond the confines of Holland and Netherlands India, he is setting an example which may well be followed elsewhere. It is unfortunate that the work of Dutch scholars in this line of study is so little known to English readers. The initial difficulties are not nearly as great as they are supposed to be: one can easily pick up enough understanding of the Dutch written language to be able to read intelligently a Dutch essay on a Malayan subject. However, as Englishmen, persistently and very much to their own disadvantage, continue to ignore the Dutch authorities, perhaps it may be some help to such of them as have a fair knowledge of German to have Brandstetter's work to refer to. His work, however, is purely original, though he has been trained in the Dutch school and would be the first to acknowledge his indebtedness to it, as indeed he repeatedly does; and when one says that he is making for himself a place in the list of distinguished Malayan scholars which holds such names as van der Tuuk, Kern, Niemann and Brandes, one need, I think, say no more.

C. O. Blagden.

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