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New Lauraceae from the Malayan Region. I

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(Hausa, "kubewa," Ffululde, "baskoje," "takkei," soup of okra) which is, however, of sufficient value to be sent to town markets—"yakua," or "red sorrel" (Ffululde, "fulle") *Hibiscus Sabdariffa*—beans with their leaves—leaves of the kuka (Ffululde, "bokki") *Adansonia digitata*, with ground-nut oil and Sesamum leaf and seed.

To these cultivated plants are almost equally added parts of several wild species besides the "kuka" already mentioned, of which the following are the most used:—an Asclepiadaceous twiner "yadia" (Ffululde, "sokotoro") with viscid juice, the leaves of which are used all over the Protectorate in soup, or by the pastoral "borroro," boiled and pounded up with beans, the leaf of a large tree called "zuwo" (Ffululde, "wanko"), the young leaves of which are used in soup as well as a fodder for domestic animals, and lastly the bark of a shrub, *Grewia mollis* ("dargaza," Ffululde, "Kelli,") which is widely used as a food or as a thickening for soup.

Besides the small grass called "acha" (*Digitaria ternata*?) which is cultivated much more widely in the central provinces, and the "tamba," *Eleusine coracana*?, which is also sometimes cultivated, a number of wild fodder grasses are used for human food in time of scarcity. Some of these are:—"tumbinjaki" (etym. "donkey's belly," probably because unwholesome to donkeys if fed on it too long), *Paspalum scrobiculatum*, a sort of "hungry rice," the seeds of which may not infrequently be seen being ground like cultivated grain in riverside markets of the Bashima and Batta tribes on the Benue; "burburwa" or "komaiya," *Eragrostis tremula*; "gudegude," *Dactyloctenium aegyptiacum*, probably only used in famine; "baia," *Panicum* sp. near *P. albidulum*; "tuji," *Eleusine indica*, and others of which I can at present only give the native names, "Zarikia," "Sabbe" and "aburo" or "ibiru."

XXI.—NEW LAURACEAE FROM THE MALAYAN REGION. I.

J. S. GAMBLE.

Cryptocarya Wrayi, Gamble [Lauraceae-Cryptocaryeae]; affinis *C. densiflorae*, Blume, sectionis *Caryodaphne*, sed foliis percoriaceis orbiculari-ovatis vix 7 cm. longis margine cartilagineis differt.

Arbor parva, ramulis puberulis paullo angulatis. *Folia* percoriacea, ovata vel orbiculari-ovata, apice vix acuta, basi truncata; 5-7 cm. longa, 4-5 cm. lata; supra glabra, nitida, infra glauca, minute puberula, margine cartilaginea; 3-costata, costis lateralibus infra apicem desinentibus, nervis costae mediae utrinque 2-3, reticulatione obscura infra areolata; petioli crassi, 5-10 mm. longi. *Cymae* paniculatae, terminales vel axillares, fulvo-pubescentes, ad 3 cm. longae, pedicellis brevissimis, bracteis deciduis. *Perianthii* tubus infundibularis, 1.5 mm. longus; lobi tubum aequantes, orbiculares, intus ad faucem villosi. *Stamina* ordinum I et II 1.5 mm. longa, connectivo acuto, filamento crasso villosa; ordinis III breviora, connectivo obtuso; staminodia ordinis IV triangulari-acuminata, 1 mm. longa, breviter stipitata; glandulae glabrae, 0.5 mm. longae, breviter stipitatae. *Ovarium* ovoideo-cylindricum, stylo tenui,

stigmatē brevi capitato. *Drupa* depresso-globosa, glabra, obscure sulcata, ad apicem lobis perianthii persistentibus ornata, 1.5 cm. longa, 2 cm. diametro. *Semen* drupae conforme, testa membranacea, cotyledonibus crassis.

MALAY PENINSULA. Perak; at Gunong Bubu, Larut, 1500 m., *Wray*, 3853.

Cryptocarya bracteolata, *Gamble* [Lauraceae - Cryptocaryeae]; species sectionis *Eucryptocaryae* foliis infra caeruleo-glaucis, siccitate albis, et panicularum bracteis et bracteolis linearibus insignis.

Arbor mediocris, ramulis teretibus minute griseo-puberulis, cum innovationibus et inflorescentia fulvo-tomentosis. *Folia* coriacea, ovata vel elliptica, apice obtuse acuminata, basi cuneata; 10-18 cm. longa, 4-8 cm. lata; supra parce lucida, glabra, infra caeruleo-glaucis, siccitate alba, in costa et nervis fusco-puberula; nervis utrinque 6-8, nervulis transversis irregularibus et reticulatione subprominente junctis; petioli 1-2 cm. longi, torti. *Paniculae* terminales vel axillares, nigrescentes, tomentosae, foliis multo breviores, ad 5 cm. longae, bracteis et bracteolis linearibus ad 1 cm. longis, pedicellis 1-2 mm. longis. *Perianthii* tubus infundibuliformis, ad 5 mm. longus, superne incrassatus; lobi oblongi, rotundati, 3.5 mm. longi. *Stamina* ordinum I et II connectivo obtuso et filamento villosa, ordinis III connectivo acuto; staminodia ordinis IV cordato-acuminata, apice penicillata; glandulae rotundatae eximie stipitatae. *Ovarium* cum stylo gracili glabrum, stigmatē capitato. *Drupa* nigra, glabra, depresso-globosa, 15 mm. longa, 18 mm. diametro, apice conspicue perianthio persistente munita. *Semen* drupae conforme, testa membranacea, cotyledonibus crassis, hemisphericis.

MALAY PENINSULA. Perak; near Larut on hills, 150-450 m., *King's Collector*, 6732, 7521.

Cryptocarya Scortechinii, *Gamble* [Lauraceae - Cryptocaryeae]; species *C. Wightianae*, Thw., affinis, sed drupa oblongo-ellipsoidea crassiore praecipue differt.

Arbor ad 24 m. alta, trunci diametro ad 50 cm., ramulis angulatis puberulis, innovationibus fusco-pubescentibus. *Folia* coriacea, elliptica, elliptico-oblonga vel elliptico-lanceolata, apice plus minusve acuminata, basi attenuata; 10-20 cm. longa, 5-10 cm. lata; supra nitida, glabra, infra purpureo-grisea vel purpureo-glauciscentia, in costa et nervis pubescentia; nervis utrinque 6-9, nervulis transversis distantibus paucis et reticulatione prominente junctis; petioli crassi, 1-2 cm. longi. *Paniculae* ramosae, terminales vel axillares, ad 20-25 cm. longae, minute griseo-fusco-pubescentes, bracteis et bracteolis ovato-lanceolatis pubescentibus, pedicellis 1 mm. longis. *Perianthii* tubus infundibuliformis, 1.5 mm. longus; lobi ovati, tubum aequantes, intus puberuli. *Stamina* ordinum I et II antheris apice rotundatis, filamento villosa, ordinis III antheris apice cristatis; staminodia ordinis IV cordato-acuminata, dorso villosa; glandulae rotundatae, glabrae, parum stipitatae. *Ovarium* lanceolatum, glabrum, stylo gracili. *Drupa* oblongo-ellipsoidea, apice truncata, glabra, 3 cm. longa, 10-15 mm. diametro, exocarpio crasso rugoso. *Semen* oblongum, acutum, testa membranacea, cotyledonibus carnosis.

MALAY PENINSULA. Perak ; at Thaiping, *Ridley*, 2966 ; at Gunong Haram, *Scortechini*, 568, 619 ; near Larut up to 1500 m., *King's Collector*, 6281, 6297, 6298, 6871, 8686, 10895. Sungei Ujong, *Ridley*, 5849.

Cryptocarya areolata, *Gamble* [Lauraceae-Cryptocaryeae] ; species *C. amygdalinae*, Nees, affinis, foliorum nervulis et reticulatione prominulis differt ; a *C. Scortechinii*, *Gamble*, praecipue differt paniculis brevioribus etiam foliorum reticulatione.

Arbor ad 20 m. alta, trunci diametro ad 50 cm., ramulis crassis, angulatis, fulvo-pubescentibus sicut innovationes et inflorescentia. *Folia* coriacea, ovata vel elliptico-ovata, apice obtusa vel obtuse acuta, rarius acuminata, basi cuneata (saepe inaequaliter), supra glabra, lucida, areolato-reticulata, infra purpureo-glaucata ; 10–20 cm. longa, 5–8 cm. lata ; costa et nervi pubescentes, costa crassa, nervi utrinque 5–10, distantes, nervulis gracilibus, paralleli et reticulatione areolata conspicue juncti ; petioli curvati, 2 cm. longi. *Paniculae* cymarum terminales vel axillares, fusco-pubescentes, ramosae, ad 15 cm. longae, bracteis et bracteolis ovato-lanceolatis caducis. *Perianthii* tubus cylindricus, 1.5 mm. longus ; lobi ovati, aequales, 2.5 mm. longi, intus pubescentes. *Stamina* ordinum I et II antheris cristatis et filamentis villosis ; ordinis III longiora prominenter cristata ; staminodia ordinis IV sagittata, acuminata, basi et dorso villosa ; glandulae magnae, rotundatae, villosostipitatae. *Ovarium* cylindricum, stylo gracili et stigmate capitato. *Fructus* non visus.

MALAY PENINSULA. Perak ; at Sungei Larut, *Wray*, 2456 ; on low ground up to 250 m., *King's Collector*, 6017, 6171, 8630.

Cryptocarya bubongana, *Gamble* [Lauraceae - Cryptocaryeae] ; species distincta *C. amygdalinae*, Nees, et *C. areolatae*, *Gamble*, affinis, sed notis plurimis differt, praecipue foliorum nervis prominentibus et reticulatione.

Arbor ad 20 m. alta, trunci diametro ad 60 cm., ramulis crassis angulatis fuscis. *Folia* coriacea, elliptica vel elliptico-oblonga, apice parum acuminata, basi rotundata et saepe inaequalia ; utrinque glabra ; 10–16 cm. longa, 3–6 cm. lata ; nervi utrinque 6–9, supra parum impressi, subtus maxime prominuli nervulis transversis numerosis gracilibus et reticulatione minute areolata juncti : petioli curvati, parum puberuli, 10–15 mm. longi. *Paniculae* laterales, pauciflorae, quam folia breviores, fructiferae tantum cognitae. *Flores* ignoti. *Drupa* globosa, glabra, siccitate nigra, 10–12 mm. diametro.

MALAY PENINSULA. In open mixed forest on Ulu Bubong, 150–250 m., *King's Collector*, 10570.

Cryptocarya argentea, *Gamble* [Lauraceae-Cryptocaryeae] ; species *C. Kurzii*, *Hook. f.*, peraffinis, foliis minoribus minus acuminatis differt.

Arbor ad 20 m. alta, trunci diametro ad 50 cm., ramulis gracilibus pallide brunneis lenticellatis, ultimis minute puberulis. *Folia* coriacea, saepe bullata, oblonga vel oblongo-lanceolata, apice breviter obtuse acuminata, basi cuneata ; utrinque glabra, supra nitida, infra argenteo-grisea, siccitate caeruleo-glaucata ; 8–15 cm. longa, 3–6 cm. lata ; nervi et costa puberuli costa superne impressa, nervis utrinque

8-10 parum impressis, nervulis transversis irregularibus et reticulacione obscura; petioli graciles, 9-12 cm. longi. *Paniculae* axillares vel terminales, graciles, ad 6 cm. longae, florentes ignotae. *Fructus* ignotus.

MALAY PENINSULA. Perak: in dense forest, 90-180 m., *King's Collector*, 7966.

Cryptocarya paucinervia, *Gamble* [Lauraceae - Cryptocaryeae]; species *C. costatae*, Blume, affinis, fructu globoso nec oblongo, pedicellis crassis nec gracilibus et foliis minus nervosis differt.

Arbor?, ramuli teretes, nigri, puberuli. *Folia* coriacea, lanceolata vel oblongo-lanceolata, apice obtuse acuminata, basi saepe inaequaliter attenuata; supra et infra glabra; 9-13 cm. longa, 3-5 cm. lata; costa gracilis supra impressa; nervi laterales utrinque 3-5, obliqui, distantes, supra impressi, nervulis nullis vel perpaucis obscuris sed reticulacione minutissime areolata; petioli breves, 1 cm. longi, curvati. *Paniculae* axillares, foliis breviores, rhachi angulata. *Fructus* globosus, costatus, siccitate niger, 12-14 mm. diametro; cotyledones crassi, hemisphericici.

SUMATRA. Mt. Goening, 200-250 m., *H. O. Forbes*, 2588.

Cryptocarya longepaniculata, *Gamble* [Lauraceae]; species insignis *C. Griffithianae*, Wight, et *C. crassinerviae*, Miq., affinis, paniculis ramosis patentibus longissimis, floribus distantibus paullo vestitis, et bracteis minimis differt.

Arbor, ramuli crassi, sulcati, fulvo-puberuli. *Folia* coriacea, elliptica vel elliptico-oblonga, apice abrupte acuminata, basi rotundata; 15-25 cm. longa, 6-11 cm. lata; supra plus minusve lucentia et nervis exceptis glabra, infra glauca et griseo-pubescentia, intra nervos fusco-tomentosa; costa crassa, profunde impressa, nervi omnes impressi laterales, utrinque 7-9, marginem versus curvati, nervulis multis parallelis inter se junctis, reticulacione conspicua; pedicelli crassi, puberuli, 1-2 cm. longi. *Paniculae* terminales vel laterales, pubescentes, ad 30 cm. longae et 20 cm. latae; pedunculi primarii ad 12 cm. longi, secundarii distantes, ad 6 cm. longi; cymulae pauciflorae; flores sessiles, bracteis tribus 1-2 mm. longis muniti. *Perianthii* tubus 3 mm. longus, infundibuliformis; lobi ovati, subaequales, glandulosi, 2 mm. longi. *Stamina* ordinum I et II 1.5 mm. longa, connectivo supra rotundato, filamento hirsuto; ordinis III caeteris aequilonga vel paullo longiora, connectivo longe producto; staminodia ordinis IV cordata, longe acuminata, antice glabra, postice longe villosa, 1.5 mm. longa; glandulae glabrae stipitatae rotundatae, .5 mm. longae. *Ovarium* glabrum, oblongum, cum stylo gracili 2 mm. longum; stigma obtusum. *Fructus* adhuc ignotus.

BORNEO. Sarawak; near Kuching, *Haviland & Hose*, 3295.

Cryptocarya fagifolia, *Gamble* [Lauraceae-Cryptocaryeae]; species foliis chartaceis parvis iis *Fagi sylvaticae* similibus, paniculis multifloris et perianthii tubo distincto supra compresso insignis.

Arbor?, ramuli graciles, striati, praecipue ad innovationes puberuli. *Folia* chartacea, elliptico-ovata vel lanceolata, apice obtuse caudato-acuminata, basi cuneata, juniora puberula, matura costa et nervis exceptis glabra; 7-10 cm. longa, 3-4 cm. lata; costa gracilis sicut nervi supra impressa infra distincta, nervi utrinque 5-6

marginem versus curvati et inter se nervulis paucis subparallelis et reticulatione pulchre areolata junctis; petioli breves, 7-10 mm. longi. *Paniculae* axillares et laterales, fulvo-pubescentes, folia longe superantes et aliquando ad 15 cm. longae; rami patentes cymulis multis multifloris: bracteae lineares; bracteolae caducae minutae; flores subsessiles. *Perianthii* tubus cylindricus, superne constrictus, 1 mm. longus; lobi ovato-oblongi, acuti, 1.5-2 mm. longi, intus parce villosi. *Stamina* ordinum I et II rotundata, apiculata, filamentis villosis; ordinis III apice cristata; staminodia ordinis IV cordata, acuminata, dorso villosa; glandulae glabrae rotundatae, pedicellis brevibus villosis. *Ovarium* oblongum, glabrum, in stylum attenuatum, stigmatate capitato. *Fructus* ignotus.

NEW GUINEA. *H. O. Forbes*, 218.

Cryptocarya apamaefolia, *Gamble* [Lauraceae-Cryptocaryeae]; species fructu oblongo-conico et foliis infra glaucis, nervulis transversis conspicuis subregularibus insignis.

Arbor?, ramuli graciles, lenticellati, praecipue ad innovationes puberuli. *Folia* chartacea, oblongo-lanceolata, apice obtuse cuspidato-acuminata, basi saepe inaequaliter cuneata; supra lucida et costa excepta puberula, infra glauca et glabra; 12-18 cm. longa, 5-7 cm. lata; costa gracilis supra impressa, nervi laterales utrinque 5-6, obliqui, marginem versus curvati et cum eo nervulis arcuatis conjuncti, pare infimo gracili prope marginem, nervulis transversis gracilibus subparallelis subregularibus, reticulatione minuta; petioli 1 cm. longi. *Paniculae* laterales, pauciflorae, brevissimae. *Fructus* oblongus, apice conicus, siccitate niger, 20 mm. longus, 6-8 mm. latus (immaturus).

NEW GUINEA. *H. O. Forbes*, 401.

Cryptocarya Forbesii, *Gamble* [Lauraceae-Cryptocaryeae]; ad *C. tomentosam*, *Blume*, accedit, at floribus majoribus et foliis minus tomentosus subtus haud glaucis differt.

Arbor, ramuli crassi, sulcati, adpresse fulvo-puberuli. *Folia* coriacea, ovata vel ovato-oblonga, apice obtusa vel obtuse acuminata, basi rotundata saepissime inaequalia; siccitate rufa, supra glabra, lucentia, subtus parce fulvo-puberula, ad costam et nervos villosa; 10-15 cm. longa, 5-10 cm. lata; costa crassa supra impressa; nervi laterales 8-12, supra haud impressi, subtus prominentes, patentes, marginem versus curvati et nervis paucis secundariis et nervulis plus minusve parallelis inter se juncti, reticulatione minuta; pedicelli crassi, fulvo-puberuli, 10-15 mm. longi. *Paniculae* laterales, fusco-puberulae, ad 10 cm. longae et 5 cm. latae; pedunculi primarii 2 cm. longi, secundarii 1 cm. longi, cymis multifloris corymbosis; flores pedicellati, bracteis parvis cito deciduis muniti. *Perianthii* tubus 2 mm. longus, cylindricus; lobi oblongi, tubo aequilongi, intus fulvo-villosi. *Stamina* ordinis I et II 1.5 mm. longa, connectivis supra obtuse acutis incurvis, filamentis hirsutis; ordinis III caeteris aequilonga, connectivo breviter cristato; staminodia ordinis IV cordata, obtuse acuta, postice fulvo-villosa, antice glabra, 1 mm. longa; glandulae rotundatae, glabrae, 0.5 mm. longae, villosostipitatae. *Ovarium* glabrum, stylo gracili et stigmatate obtuso. *Fructus* ignotus.

NEW GUINEA. *H. O. Forbes*, 640.

Cryptocarya macrophylla, *Gamble* [Lauraceae - Cryptocaryeae]; species foliis magnis et fructu costato insignis, speciebus adhuc cognitis haud propinqua.

Arbor?, ramuli crassi, siccitate nigri, sparse lenticellati. *Folia* chartacea, obovata, apice breviter acuminata, basi attenuata, utrinque glabra, supra pallide virentia, subtus caesia; 25–30 cm longa, 10–12 cm. lata; costa crassa supra paullo immersa, nervi laterales utrinque 9–12, distantes, marginem versus curvati, et nervulis subparallelis vix conspicuis juncti, reticulatione minuta; petioli crassi, 15 mm. longi. *Paniculae* laterales et axillares, foliorum dimidium aequantes; rami angulati, patentes; pedicelli breves, vix 1 mm. longi. *Flores* ignoti. *Fructus* globosus, profunde costatus, costulis circa 15, 1 cm. diametro, glaber, siccitate niger, rugosus.

NEW GUINEA. Near Anda, *Teysmann*, Hort. Bog. 7453.

Beilschmiedia insignis, *Gamble* [Lauraceae-Apollonieae]; species cum sequente foliis percoriaceis magnis, paniculis etiam longis insignis.

Arbor mediocris ad 20 m. alta et 60 cm. trunci diametro, ramulis crassis glabris lenticellatis. *Folia* percoriacea, opposita vel alterna, oblonga vel oblongo-oblancoolata, apice acuta, basi attenuata, glabra, lucida; 20–35 cm. longa, 7–12 cm. lata; costa crassa infra siccitate carinata, nervis utrinque 10–15 supra parum impressis, nervulis transversis angulatis infra cum reticulatione conspicuis; petioli crassi, supra sulcati, 20–25 mm. longi. *Paniculae* axillares, graciles, ad 12 cm. longae, rhachi glabro complanato, ramulis paucifloris, pedicellis gracilibus, 2 mm. longis. *Perianthii* tubus cupularis 1 mm. longus; lobi ovati, obtusi, 1.5 mm. longi. *Stamina* ordinum I et II 1.5 mm. longa, filamentis latis albo-villosis et connectivo rotundato; ordinis III longiora glandulis ad basin 2 latis obtusis stipitatis; staminodia ordinis IV cordata, acuminata, stipitata, quam glandulae paullo longiora. *Ovarium* ovoideum, stylo brevi, stigmatibus bifido. *Drupa* globosa, aspera, 3–4 cm. diametro, breviter apiculata.

MALAY PENINSULA. Perak; on low ground, below 30 m. in alt., *King's Collector*, 6615, 8479.

Beilschmiedia Kunstleri, *Gamble* [Lauraceae-Apollonieae]; species insignis magnitudine foliorum ut in praecedente *B. insigne*, *Gamble*, a quo foliis obovatis perianthii lobis longioribus et staminibus longis differt.

Arbor magna, ad 30 m. alta et 60 cm. trunci diametro, ramulis crassissimis 1–2 cm. diametro, cortice aspero. *Folia* percoriacea, opposita vel alterna, obovata vel obovato-oblonga, apice obtusa vel obtuse acuta, basi longe attenuata, glabra, lucida, prominenter reticulata; 25–35 cm. longa, 9–12 cm. lata; costa supra impressa, nervis utrinque 10–12 supra impressis, nervulis transversis multis cum reticulatione irregularibus; petioli crassissimi, puberuli, 1.5–2.5 cm. longi. *Paniculae* axillares, ramosae, puberulae, ad 20 cm. longae, rhachi angulari complanato; pedicellis gracilibus, 1–2 mm. longis. *Perianthii* tubus brevissimus intus infra stamina villosus; lobi oblongi, obtusi, glandulosi, 4 mm. longi. *Stamina* ordinum I et II gracilia, 2–2.5 mm. longa, filamentis villosis, connectivo acuto; ordinis III similia glandulis 2 rotundatis stipitatis prope basim; staminodia ordinis IV cordata, acuminata, stipitata, dorso villosa, 1 mm. longa. *Ovarium* ovoideum, gradatim in stylum gracile

attenuatum, stigmatē obtuso. *Drupa* obovoidea, rugosa, glabra, apiculata (immatura tantum).

MALAY PENINSULA. Perak; on low ground near Larut, *King's Collector*, 6854. Singapore; at Bukit Timah, *Bayliss*, 5885.

Beilschmiedia Curtisii, *Gamble* [Lauraceae-Apollonieae]; species *B. malaccensi*, Hook. f., affinis, sed foliis tomentosissimis, foliorum nervatione, perianthii tubo obconico et staminodiis brevissime stipitatis differt.

Arbor, ad 20 m. alta, ramulis crassissimis dense fusco-tomentosis. *Folia* coriacea, alterna, elliptica, apice rotundata, acumine brevissimo, basi etiam rotundata vel obtuse acuta, supra lucida et praeter costam et nervos glabra, infra purpureo-fusco-tomentosa, marginibus recurvis; 15-30 cm. longa, 8-13 cm. lata; costa crassa, nervis utrinque 10-12 supra impressis infra prominulis, nervulis transversis irregularibus, cum reticulatione supra prominentibus; petioli crassissimi, fusco-tomentosi, 2-3 cm. longi. *Paniculae* axillares, breves, corymbosae, fusco-tomentosae, ad 2.5 cm. longae, bracteis ovatis caducis, pedicellis gracilibus 1.5-2 mm. longis. *Perianthii* tubus obconicus; lobi ovati vel oblongi, prominenter ferrugineo-villosi, 3-3.5 mm. longi. *Stamina* ordinum I et II 1.5-2 mm. longa, obtusa, filamentis villosis; ordinis III longiora, glandulis 2 brevissimis cordatis prope basin; staminodia ordinis IV 1 mm. longa, brevissime villosa-stipitata. *Ovarium* conoideum, glabrum, stylo gracili, stigmatē parvo capitato. *Drupa* oblonga vel obovoidea, nigra, laevis, 2.5 cm. longa, 12-15 mm. lata, pericarpio lignoso, pedicellis ad 3 mm. diametro incrassatis.

MALAY PENINSULA. Penang; on Government hill, 600 m., *Curtis*, 1015. Singapore; in garden jungle, *Ridley*, 8075.

Beilschmiedia Scortechinii, *Gamble* [Lauraceae - Apollonieae]; species *B. malaccensi*, Hook. f., affinis sed foliis suboppositis et inflorescentia ferrugineo-pubescenti differt.

Arbor, ramulis crassis prominenter lenticellatis ferrugineo-pubescentibus. *Folia* coriacea, subopposita, oblongo-lanceolata, apice acuminata, basi attenuata, supra praeter costam glabra, infra ferrugineo-puberula; 12-20 cm. longa, 3-5 cm. lata; costa crassa, nervis utrinque circa 12, reticulatione irregulari areolata; petioli crassi, ferrugineo-pubescentes, 1.5-2.5 cm. longi. *Paniculae* axillares, ferrugineo-pubescentes, pauci-ramosae, ad 12 cm. longae et 6 cm. latae, ramulis et rhachi complanatis, pedicellis 2 mm. longis, bracteis et bracteolis minimis caducis. *Perianthii* tubus campanulatus, 1.5 mm. longus; lobi oblongi, 2.5 mm. longi, intus fulvo-villosi. *Stamina* ordinum I et II crassa, filamentis pubescentibus, connectivo obtuso vel emarginato; ordinis III caeteris aequilonga sed gracillima, apice emarginata, glandulis 2 cordatis stipitatis; staminodia ordinis IV cordata obtusa, antice concava, postice pubescentia, glandulis subaequalia. *Ovarium* puberulum, stylo gracili, stigmatē obtuso. *Fructus* ignotus.

MALAY PENINSULA. Perak; at Caulfield's Hill, 1220 m., *Scortechini*, 483, 493.

Beilschmiedia lumutensis, *Gamble* [Lauraceae-Apollonieae]; species distincta, foliis oppositis glabris, paniculis gracilibus paucifloris et floribus minimis insignis.

Arbor (?), ramulis gracilibus glabris purpurascensibus. *Folia* opposita, coriacea, reticulata, elliptica vel elliptico-oblonga, apice acuta, basi attenuata, glabra, nitida; 10–14 cm. longa, 4–6 cm. lata; costa gracilis, nervis utrinque 8–10, reticulatione prominenter areolata; petioli 7–12 cm. longi, purpurei. *Paniculae* axillares, glabrae, 4–6 cm. longae, ramis elongatis gracilibus, pedunculo crasso 2–3 mm. longo, floribus minutis subglabris. *Perianthii* tubus campanulatus praeter anulum villosum intus glaber, glandulosus; lobi breves, ovati vel orbiculares, glabri, cum tubo 1.5 mm. longi. *Stamina* ordinum I et II ad 1 mm. longa, connectivo acuto; ordinis III similia, glandulis 2 ad basin magnis; staminodia ordinis IV cordata, stipitata, glabra vel filamentis parce villosis. *Ovarium* ovoideum, glabrum, stylo brevi, stigmate obtuso.

MALAY PENINSULA. Perak; at Lumut Dinding, *Ridley*, 10323.

Beilschmiedia perakensis, *Gamble* [Lauraceae–Apollonieae]; species *B. longipedi*, Hook. f., affinis, foliorum forma et textura, nervis irregularibus et paniculis rufescentibus differt.

Arbor parva vel arbuscula ad 12 m. alta et 25 cm. trunci diametro, ramulis gracilibus fuscis parum pubescentibus. *Folia* alterna, chartacea, juniora membranacea, elliptica vel elliptico-obovata, apice brevissime acuminata, basi cuneata vel attenuata, supra praeter costam et nervos glabra, infra minute puberula; 8–15 cm. longa, 4–7 cm. lata; costa non nimis crassa, nervis utrinque 10–12, irregularibus, nervulis transversis prominentibus et reticulatione conspicua inter se junctis; petioli crassi, pubescentes, 5–10 mm. longi. *Paniculae* axillares, graciles, ferrugineo-pubescentes, ad 10–14 cm. longae, pedunculo longo, ramulis paucis; bracteis et bracteolis linearibus, pedicellis gracilibus. *Perianthii* tubus brevissimus; lobi ovati, obtusi vel parum acuti, 1.5 mm. longi. *Stamina* ordinum I et II gracilia, 1 mm. longa, connectivo rotundato, filamento puberulo; ordinis III longiora, glandulis 2 ad basin ovoideis stipitatis; staminodia ordinis IV ovata, acuta, brevia. *Ovarium* oblongum, stylo brevi, stigmate obtuso. *Drupa* oblonga vel obovoidea, nigra, 12–15 mm. longa, 7–8 mm. lata, pericarpio crasso; pedicellis vix incrassatis. *Semina* cotyledonibus crassis.

MALAY PENINSULA. Perak, *Scortechini*; on hills, 150–250 m., *King's Collector*, 8489, 10026, 10432.

Beilschmiedia penangiana, *Gamble* [Lauraceae–Apollonieae]; species floribus racemosis bracteatis, foliis membranaceis rufescentibus et ramulis albis distincta.

Arbor ad 10–12 m. alta, ramulis albis lucidis, lenticellis oblongis. *Folia* membranacea, alterna vel subopposita, glabra, elliptica vel elliptico-lanceolata, apice obtusissime acuminata, basi acuminata; 7–10 cm. longa, 3–4 cm. lata; costa lata, supra impressa, nervis utrinque 10–12 irregularibus supra et infra prominentibus, nervulis transversis etiam prominentibus, reticulatione obscura; petioli lati, 5–10 mm. longi. *Racemi* axillares, breves, bracteis sub floribus orbicularibus fimbriatis bracteolis 2 lanceolatis amplectentibus, pedicellis crassis. *Perianthii* tubus brevis; lobi ovati, ciliati, 1 mm. longi, subaequales. *Stamina* ordinum I et II 1 mm. longa, glabra, filamentis crassis; ordinis III similia, glandulis 2 ad basin suborbi-

cularibus stipitatis; staminodia ordinis IV cordata, brevissime stipitata, 5 mm. longa. *Ovarium* globosum, glabrum, stylo brevi, stigmate obtuso. *Fructus* ignotus.

MALAY PENINSULA. Penang; at Penara Bukit, 300 m., *Curtis*, 1098.

Beilschmiedia membranacea, *Gamble* [Lauraceae-Apollonieae]; species *B. perakensi*, *Gamble*, affinis, foliis membranaceis ellipticis et drupa oblonga.

Arbor parva, ad 6 m. alta et 15 cm. trunci diametro, ramulis gracilibus griseis molliter nigro-puberulis, innovationibus ferrugineo-tomentosis. *Folia* membranacea, alterna, elliptica vel elliptico-ovata, apice obtuse acuminata, basi attenuata vel inaequaliter rotundata, praeter costam et nervos glabra; 10–15 cm. longa, 5–8 cm. lata; costa gracilis, nervis utrinque 9–11 reticulatione irregulari supra et infra prominulo junctis; petioli crassi, 5–10 mm. longi. *Flores* ignoti, ut videtur in cymis brevibus axillaribus. *Drupa* oblonga, laevis, ad 15 mm. longa, 7 mm. diametro, pedicellis vix incrassatis.

MALAY PENINSULA. Perak; in open forest, 600–900 m., *King's Collector*, 10928.

Beilschmiedia pahangensis, *Gamble* [Lauraceae - Apollonieae]; species distincta, foliis lanceolatis chartaceis et drupa ellipsoidea insignis.

Arbor, ramulis gracilibus griseo-fuscis glabris. *Folia* chartacea, alterna, lanceolata vel oblongo-lanceolata, apice obtuse acuta, basi longe attenuata vel cuneata, glabra, prominenter reticulata, supra lucida; 10–15 cm. longa, 3–5 cm. lata; costa gracilis, nervis utrinque 10–12 irregularibus prope marginem anastomosantibus nervulis et reticulatione irregulari prominentibus; petioli graciles, 1–2 cm. longi, rugosi. *Paniculae* axillares, ad 6 cm. longae; flores ignoti. *Drupa* ellipsoidea, obtusa, nigrescens tuberculis pallidis, 2–2.5 cm. longa, 1 cm. lata. *Semina* cotyledonibus carnosis.

MALAY PENINSULA. Pahang; at Kwala Triang and Suboo Lanjoot, *Ridley*, 2273.

Beilschmiedia Foxiana, *Gamble* [Lauraceae-Apollonieae]; species foliis coriaceis lanceolatis et drupa longa insignis.

Arbor?, ramulis crassis laevibus lenticellatis. *Folia* coriacea, subopposita, prominenter reticulata, lanceolata vel oblanceolata, apice obtuse acuminata, basi longe cuneata, glabra, margine parum recurva; 12–16 cm. longa, 5–7 cm. lata; costa crassa, nervis utrinque 7 obliquis, prope marginem seriatim arcuatis, nervulis transversis irregularibus et reticulatione areolata prominente junctis; petioli crassi, 2–2.5 cm. longi. *Paniculae* ramosae, ad 20 cm. longae, glabrae, pedunculis et ramis lenticellis oblongis notatis; flores ignoti. *Drupa* ellipsoidea, pustulata, 3.5 cm. longa, 2–2.5 cm. lata, pedicellis incrassatis ferrugineo-fuscis rugosis.

MALAY PENINSULA. Penang; at Birch's Hill, *Fox*, 10705 (Herb. Singap.).

Dehaasia nigrescens, *Gamble* [Lauraceae-Apollonieae]; species *D. cuneatae*, *Blume*, affinis, sed foliis chartaceis lanceolatis minus reticulatis haud ad apices ramulorum fasciculatis.

Arbor, ad 10–12 m. alta, ramulis gracilibus griseo-albis ultimis siccitate nigris. *Folia* chartacea, lanceolata vel oblanceolata, apice obtuse longe acuminata, basi attenuata, glabra, siccitate nigrescentia; 8–13 cm. longa, 3–4 cm. lata; costa gracilis, nervis utrinque 8–10 curvatis et prope marginem inter se arcuatis; petioli graciles, 1–2 cm. longi. *Paniculae* ex foliorum axillis ultimorum, graciles, glabrae, ad 10 cm. longae, pedunculo longo, ramis dichotomis, pedicellis clavatis, floribus minimis. *Perianthii* tubus cupularis cum pedicello continuus; lobi parvi, 3 exteriores triangulares, 0.75 mm. longi, 3 interiores duplo longiores ovati, omnes subtus aureo-pubescentes, intus villosi. *Stamina* ordinum I et II clavata, 0.75 mm. longa, connectivis obtusis, filamentis villosis; ordinis III paullo longiora, glandulis 2 magnis cordatis glabris; staminodia ordinis IV 0.5 mm. longa, cordata, quam glandulae minora. *Ovarium* globosum, stylo brevi, stigmatate obtuso. *Drupa* nigra, obovato-ellipsoidea, 2 cm. longa, 1 cm. diametro; pedicello incrassato obconico recto vel curvato purpureo (siccitate nigro) insidens, perianthii lobis persistentibus.

MALAY PENINSULA. Penang; on Government Hill, 300–600 m., *Curtis*, 1183. Singapore; in garden jungle, *Ridley*, 13017.

Dehaasia Curtisii, *Gamble* [Lauraceae-Apollonieae]; species *D. cuneatae*, Blume, affinis, paniculis glabris staminodiis minoribus et foliorum nervis vix impressis distincta.

Arbor parva, ramulis crassis asperis griseo-albis. *Folia* coriacea, ad apices ramulorum fasciculata, glabra, minute areolato-reticulata, supra lucida, infra glauca, marginibus recurvis; 6–12 cm. longa, 3–5 cm. lata; nervis utrinque 10–12 curvatis et prope marginem inter se arcuatis, reticulatione prominenter areolata; petioli 1–2 cm. longi, nigri, canaliculati. *Paniculae* ex foliorum ultimorum axillis graciles, dichotomae, corymbosae, glabrae, 6 cm. longae, pedunculis 4–5 cm. longis parum complanatis, ramulis gracilibus, cymulis 3-floris, pedicellis clavatis cum tubo perianthii continuis, floribus minutis. *Perianthii* tubus cupularis; lobi ovati, obtusi, 3 exteriores 1–1.5 mm. longi, 3 interiores 1.5–2 mm. longi, omnes parum pubescentes. *Stamina* minima, ordinum I et II 0.75 mm. longa, clavata, villosa, connectivo emarginato; ordinis III paullo longiora, obtusa, glandulis 2 magnis glabris prope basin; staminodia ordinis IV minima, cordata, stipitata, postice villosa. *Ovarium* ovoideum, stylo gracili, stigmatate obtuso. *Drupa* ellipsoidea, siccitate nigra, laevis, 1 cm. longa, 0.75 cm. diametro, pedicello incrassato clavato 5 mm. longo insidens.

MALAY PENINSULA. Penang: Government Hill; at the Rifle Range, 750 m., *Curtis*, 1193. Selangor; top of Batu caves, *Kelsall*, 1986; *Ridley* (forma foliis et drupa minoribus).

Endiandra Kingiana, *Gamble* [Lauraceae-Acroclidiaceae]; species *E. Maingayi*, Hook. f., affinis sed foliis majoribus infra pubescentibus latis et nervis paucioribus, etiam paniculis dense fulvo-pubescentibus differt.

Arbor 15–20 m. alta, ramis patulis, ramulis crassis lenticellatis ultimis glandulose ferrugineo-pubescentibus. *Folia* coriacea, elliptica, apice obtuse brevi-acuminata, basi acuta vel cuneata, supra lucida, minute areolata, glabra, infra etiam areolata, molliter

pubescentia; 10–13 cm. longa, 6–7 cm. lata; nervis utrinque 5–6 supra impressis pubescentibus, marginem versus curvatis et ibi arcuatim junctis, secundariis paucis, reticulatione areolata; petioli crassi, fulvo-pubescentes, rugosi, 1.5–2 cm. longi. *Paniculae* breves, axillares vel terminales, fulvo-pubescentes, cymulis paucifloris, pedicellis nullis vel brevissimis, bracteis parvis caducis; floribus lutescentibus. *Perianthii* tubus brevissimus, ferrugineo-pubescentis; lobi ad 3 mm. longi, ovato-oblongi, 3 exteriores longiores, omnes intus ad basin granuloso-glandulosi. *Stamina* ordinum I et II nulla; ordinis III 3, crassa, conoidea, 1.5–2 mm. longa, supra ovarium conniventia, antheris sessilibus, thecis 2 elongatis; staminodia nulla. *Ovarium* globosum, glabrum, 0.5 mm. diametro; stylo crasso, stigmate capitato. *Drupa* non visa.

MALAY PENINSULA. Perak; in dense jungle, 150–250 m., *King's Collector*, 6487 (descriptio praecipue ex Kingii notulis).

Endiandra praeclara, *Gamble* [Lauraceae-Acrodielidieae]; species insignis, ab *E. Maingayi*, Hook. f., et *E. Kingiana*, Gamble, foliis magnis glabris, paniculis elongatis, floribus majoribus et drupa maxima distincta.

Arbor ad 15–20 m. alta et 45–60 cm. diametro, ramis patulis, ramulis laevibus glabris striatis. *Folia* chartaceo-coriacea, elliptico-obovata vel oblonga, apice breviter obtuse acuta vel acuminata, basi cuneata vel interdum rotundata, glabra, conspicue areolato-reticulata; 15–40 cm. longa, 5–17 cm. lata; costa crassa supra depressa, nervis utrinque 8–10 irregularibus, pare infimo submarginali, reliquis primo rectis deinde curvatis et prope marginem arcuatim junctis, nervulis transversis haud prominulis sed reticulatione areolata junctis; petioli crassi, rugosi, 10–15 cm. longi. *Paniculae* axillares vel subterminales, ramosae, ad 20 cm. longae et 10 cm. latae, subglabrae, pedunculis nullis vel brevibus, rhachi complanata; cymulis puberulis paucifloris, pedicellis gracilibus 1–2 mm. longis, floribus luteis. *Perianthii* tubus cupularis, puberulus; lobi ovati, 3 exteriores 2.5 mm. longi, 3 interioribus paullo longiores; omnes extus glabri, intus basin versus granulato-glandulosi. *Stamina* ordinum I et II nulla, ordinis III crassa, conoidea, supra ovarium conniventia, 2 mm. longa, connectivo granuloso-glanduloso, antheris sessilibus, thecis distantibus oblongis; staminodia ordinis IV nulla. *Ovarium* globosum, stylo brevi, stigmate capitato. *Drupa* oblongo-ellipsoidea, purpurea, laevis, 8–10 cm. longa, 4 cm. diametro, pericarpio tenuiori, cotyledonibus magnis carnosus.

MALAY PENINSULA. Perak; at Tupai, *Wray*, 3097; near Larut up to 300 m., *King's Collector*, 4074, 6714.

Endiandra Wrayi, *Gamble* [Lauraceae-Acrodielidieae]; species haud bene nota; foliis glabris plus minusve lanceolatis coriaceis, nervis utrinque 5–7, drupa oblonga 2.5 cm. longa 1 cm. lata distincta.

Arbor parva, ramulis gracilibus lenticellatis, ultimis angulatis, rugosis. *Folia* coriacea, elliptico-oblonga vel oblanceolata, apice obtusissime acuminata, basi cuneata, glabra, areolato-reticulata, lucida, 7–14 cm. longa, 2–5 cm. lata, costa gracilis utrinque prominens, nervis utrinque 5–7 supra parum impressis obliquis primo rectis deinde curvatis et prope marginem arcuato-junctis,

reticulatione areolata; petioli graciles, 5–10 mm. longi. *Flores* ignoti, in racemos vel paniculas axillares dispositi. *Drupa* oblonga, nigra, laevis, 2.5 cm. longa, 1 cm. diametro, pedunculo paulo incrassato.

MALAY PENINSULA. Upper Perak, 300 m., *Wray*, 3785.

Endiandra Forbesii, *Gamble* [Lauraceae-Acrodiclidieae]; species *E. hypotephræ*, F. Muell., accedit, sed foliis majoribus minus pubescentibus et inflorescentia longiore differt.

Arbor, ramuli crassi, rugosi, minute puberuli. *Folia* coriacea, elliptico-oblonga vel lanceolata, apice longe cuspidato-acuminata, basi attenuata, supra glabra, infra minutissime puberula tandem glauca; 18–23 cm. longa, 6–9 cm. lata; costa crassa supra profunde impressa, infra prominens, nervis lateralibus utrinque 12–14 parallelis supra insigniter impressis, infra prominentibus, marginem versus leviter curvatis; reticulatione supra et infra insigniter et minutissime areolata; petiolus crassus, 15–20 mm. longus. *Paniculae* axillares, foliis longiores, fulvo-tomentosae, a medio ramosae, sparsiflorae; rami pauci 2–3 cm. longi, cymulas paucifloras ferentes; bractae ovatae; pedicelli graciles; flores 3–4 mm. diametro. *Perianthii* tubus brevis; lobi 6, subaequales, ovati. *Stamina* ordinum I et II in annulum crassum rotundatum margine serratum mutata; ordinis III 3, paulo exserta, 2-locularia, extrorsa, ovarium obtegentia, clavata, apice rotundata, 1.25 mm. longa; staminodia ordinis IV nulla. *Ovarium* glabrum, in stylum brevem productum, stigmate obtuso. *Fructus* non visus.

NEW GUINEA. *H. O. Forbes*, 543.

XXII.—A HISTORY OF THE GARDENS OF THE MALAY PENINSULA.

The following account of the Gardens of the Malay Peninsula has been extracted from an article entitled "The Abolition of the Botanic Gardens of Penang," by the Editor of the Agricultural Bulletin of the Straits and Federated Malay States, published in that journal for March, 1910, pp. 100–105.

"As has been mentioned in the first part of this article the Gardens doomed to disappear are the third gardens made and destroyed in Penang since its founding, and though reference has been made in a previous paper to the history of the Gardens of the Peninsula it will be interesting no doubt to many to read the story of the previous Gardens as fully as I have been at present able to trace their history. The first settlement at Penang was made in 1786, by Captain Light, and shortly after this the Honourable East India Company decided to start spice-gardens with a view of breaking down the Dutch monopoly of the spice cultivation and trade. So in 1794 Christopher Smith was appointed their Botanist, and in 1796 was sent to the Moluccas to collect living plants of nutmegs and cloves with which to start the cultivation. In 1798