MAP
OF
INDIA
Illustrating the Travels of the late
WILLIAM GRIFFITHS
as described in his Journals
and the localities of the
GRIFFITHIAN HERBARIA
REQUESTED TO
THE HONBLE THE COURT OF DIRECTORS OF THE
EAST INDIA COMPANY

Hindoo Koosh
Himalaya Mountains
TIBET
PUNJAB
HINDOOSTAN
BENGAL
BERAR
CANDEISH
AHMEDABAD
BOMBAY
HYDERABAD
MYSORE
Travancore
Laccadive Is.
Maldive Is.
CEYLON
Nicobar Islands
Andaman Islands
Gulf of Bengal
Gulf of Martaban
Gulf of Manar
Cape Comorin
Trivandrum
Calicut
Tellicherry
Cannanore
Mangalore
Seringapatam
Bangalore
Pondicherry
Madras
Vizagapatam
Rajamundry
Nagpoor
Sumbulpoor
Cuttack
Calcutta
Patna
Benares
Allahabad
Agra
Delhi
Meerut
Loodiana
Umballa
Kurnaul
Thibet
Lassa
Bhotan
Nepaul
Assam
Arracan
Ava
Pegu
Martaban
Tenasserim
Ye
Mergui
Tavoy
Amherst
Moulmein
Bhamo
Ummerapoora
Prome
Sangoo R.
Irrawaddy R.
Salween R.
Menam R.
Cambodia
Siam
Malacca
Singapore
Penang
Junk Ceylon
Queda
Ligore
Patani
Pt Pinang
Gillolong
Mahanu
Malacca
Singhalla
Tringano
Pahang
Timoan
Lingin
Linga Is.
Banca
Borneo
Sumatra
Java
Celebes
Timor
Ternate
Gilolo
Amboyna
Banda Is.
Aroo Is.
Timor Laut
Arafura Sea
Torres Straits
Australia
Port Essington
Port Jackson
Van Diemens Land
New Zealand
Sandwich Is.
Friendly Is.
Navigators Is.
Society Is.
Marquesas Is.
Low Archipelago
Pitcairn Is.
Easter Is.
Juan Fernandez
Galapagos Is.
Peru
Chile
Cape Horn
Falkland Is.
Cape of Good Hope
Mauritius
Bourbon
Madagascar
Comoro Is.
Socotra
Muscat
Persian Gulf
Arabian Sea
Red Sea
Mocha
Aden
Abyssinia
Mozambique
Zanzibar
Mombas
Melinda
Quiloa
Mosambique
Sofala
Delagoa Bay
Natal
Port Natal
Algoa Bay
Table Bay
Cape Town
Saldanha Bay
St Helena
Ascension
Fernando Noronha
Cape Verd Is.
Canary Is.
Madeira
Azores
Bermudas
Jamaica
Cuba
Hayti
Trinidad
Barbadoes
Antigua
Guadaloupe
Martinique
St Lucia
St Vincent
Grenada
Tobago
Demerara
Surinam
Cayenne
Rio Janeiro
Buenos Ayres
Monte Video
Rio Negro
Rio de la Plata
Paraguay
Rio Grande
Rio Janeiro
Bahia
Pernambuco
Maranham
Para
Amazon R.
Orinoco R.
Caracas
Carthagena
Panama
Chagres
Porto Bello
Vera Cruz
Mexico
Acapulco
Guatimala
Truxillo
Honduras
Yucatan
Campeachy
Tampico
Rio Grande
Texas
Mississippi R.
New Orleans
Florida
Charleston
Savannah
Georgia
Carolina
Virginia
Chesapeake Bay
Delaware Bay
Philadelphia
New York
Boston
Halifax
Nova Scotia
Newfoundland
Canada
Quebec
Montreal
Lake Superior
Lake Huron
Lake Michigan
Lake Erie
Lake Ontario
Niagara
Hudsons Bay
Labrador
Greenland
Davis Straits
Baffins Bay
Behring Straits
Kamtschatka
Okhotsk
Japan
Corea
Pekin
Canton
Macao
Hong Kong
Formosa
Manilla
Philippine Is.
Moluccas
Celebes
Borneo
Sumatra
Java
Timor
Ternate
Gilolo
Amboyna
Banda Is.
Aroo Is.
Timor Laut
Arafura Sea
Torres Straits
Australia
Port Essington
Port Jackson
Van Diemens Land
New Zealand
Sandwich Is.
Friendly Is.
Navigators Is.
Society Is.
Marquesas Is.
Low Archipelago
Pitcairn Is.
Easter Is.
Juan Fernandez
Galapagos Is.
Peru
Chile
Cape Horn
Falkland Is.
Cape of Good Hope
Mauritius
Bourbon
Madagascar
Comoro Is.
Socotra
Muscat
Persian Gulf
Arabian Sea
Red Sea
Mocha
Aden
Abyssinia
Mozambique
Zanzibar
Mombas
Melinda
Quiloa
Mosambique
Sofala
Delagoa Bay
Natal
Port Natal
Algoa Bay
Table Bay
Cape Town
Saldanha Bay
St Helena
Ascension
Fernando Noronha
Cape Verd Is.
Canary Is.
Madeira
Azores
Bermudas
Jamaica
Cuba
Hayti
Trinidad
Barbadoes
Antigua
Guadaloupe
Martinique
St Lucia
St Vincent
Grenada
Tobago
Demerara
Surinam
Cayenne
Rio Janeiro
Buenos Ayres
Monte Video
Rio Negro
Rio de la Plata
Paraguay
Rio Grande
Rio Janeiro
Bahia
Pernambuco
Maranham
Para
Amazon R.
Orinoco R.
Caracas
Carthagena
Panama
Chagres
Porto Bello
Vera Cruz
Mexico
Acapulco
Guatimala
Truxillo
Honduras
Yucatan
Campeachy
Tampico
Rio Grande
Texas
Mississippi R.
New Orleans
Florida
Charleston
Savannah
Georgia
Carolina
Virginia
Chesapeake Bay
Delaware Bay
Philadelphia
New York
Boston
Halifax
Nova Scotia
Newfoundland
Canada
Quebec
Montreal
Lake Superior
Lake Huron
Lake Michigan
Lake Erie
Lake Ontario
Niagara
Hudsons Bay
Labrador
Greenland
Davis Straits
Baffins Bay
Behring Straits
Kamtschatka
Okhotsk
Japan
Corea
Pekin
Canton
Macao
Hong Kong
Formosa
Manilla
Philippine Is.
Moluccas

Scale about 150 Miles to an Inch

Longitude East from Greenwich

Compiled from Original Plans
with references and additions
made in the Surveyor Genl Office
India, 21st July, 1854.

Capt
Officiating Deputy Surveyor General
In Charge Surveyor Generals Office

POSTHUMOUS PAPERS

BEQUEATHED TO

THE HONOURABLE, THE EAST INDIA COMPANY,

AND

PRINTED BY ORDER OF THE GOVERNMENT OF BENGAL.

VOL. II.

ITINERARY NOTES

OF PLANTS COLLECTED IN THE

KHASYAH AND BOOTAN MOUNTAINS, 1837-38, IN AFFGHANISTHAN AND NEIGHBOURING COUNTRIES. 1839 TO 1841.

BY THE LATE

WILLIAM GRIFFITH, Esq., F.L.S.,

MEMBER OF THE IMPERIAL ACADEMY NATURÆ CURIOSORUM AT BONN: CORRESPONDING MEMBER OF THE ROYAL BOTANICAL SOCIETY OF RATISBON, OF THE ROYAL ACADEMIES OF SCIENCE AT TURIN AND CHRISTIANA: HORTICULTURAL AND ENTOMOLOGICAL SOCIETIES, AND SOCIETY OF ARTS, LONDON: MEMBER AND FOR SOMETIME VICE-PRESIDENT OF THE AGRI-HORTICULTURAL SOCIETY OF INDIA.

Assistant Surgeon on the Madras Establishment; and a short time Officiating Superintendent of the Honourable Company's Botanic Garden, Calcutta, and subsequently Civil Assistant Surgeon, Malacca.

ARRANGED

BY JOHN M'CLELLAND, F.L.S.,

Surgeon, Bengal Service.

Calcutta:

PRINTED BY MR. J. F. BELLAMY.

1848.

*

Contents.

*

DIRECTIONS FOR BINDING, ETC.

Map of the travels of WILLIAM GRIFFITH, and localities of the *GRIFFITHIAN HERBARIUM*, (bequeathed to the *HON'BLE THE COURT OF DIRECTORS*,) to face the title page.

Plate I.—*Marginal sketches connected with* BOOK I. Khasyah Flora, (*with numbers on each figure, corresponding to the number of the species to which it refers*,)

Plate II.—*The same of* Book II, Bootan Flora, (*each figure having a similar reference to the number of the species in the list*,)

Plate III.—*The same of* Book III, Affghan Flora,

INTRODUCTION.

Letters of the late WILLIAM GRIFFITH, F. L. S. *to his Friend* DR. WIGHT, *Madras Medical Service.*

Ling Ling Bootan, alt 5,000 *ft. Feb.* 20*th* 1838.

We have now been in these hills upwards of a month, yet we have, owing to the infamous management of the Booteas, not travelled more than thirteen days; the country is generally very barren, the hills being covered with coarse Andropogoneous grasses, woods are of rather rare occurrence; when they do occur, they are rich in vegetation. My collection only amounts to 800 species, but it must be recollected that it is now the depth of winter. In mosses it is very rich, we have changed our elevations very much, generally we have been at between 4, and 7,000 ft. The other day however we had the pleasure of being in snow all day, and of crossing a chain 12,500 ft. high. All the small European forms that are so marked at these elevations, had unfortunately withered, but from the remnant that remained, I was enabled to locate the altitude of Parnassia, Saxifraga, Gentiana, Polygonum, Spireæ, Umbelliferæ, and small Gramineæ. In that day I gathered 8 species of Rhododendron. Beautiful pines occurred, and one yew. I have been paying much attention to the geographical distribution of the plants of the country, as all our altitudes are beautifully determined by Capt. Pemberton, who travels with two first rate Barometers. We shall ere long be enabled, or obliged to ascend above 10,000 ft. so that my data will be still farther increased. My best plant perhaps, is a new genus of Hamamelideæ, which I have likewise in fruit from the Khasya hills, and which demonstrates the analogy of the order with Cupuliferæ very well. I do not know what name to give it, but if Sedgewickia holds good, I

will give it to some other eminent Geologist. Bucklandia occurs on all these mountains, and no doubt about Nepal, although not yet found there: I work hard inter alia, to shew that one man may form unaided, a large collection in a few years. Of this you have give a conspicuous proof yourself, but one or two more examples are wanting,

Thibaudiacea go on increasing, I really think that it will prove an extensive family, for I can already muster 20 species: all I know as yet are epiphytical. Did I tell you of my having got a Hydropeltis or Hydropeltideous plant, on the Khasya mountains, a new *rice* and an arborescent Loranthus, terestrial of course. I wonder whether it will prove a Nuytsia. I am quite in the dark as to news from home, but I hear my attempts have given satisfaction. Pray remember, (and dont be angry with me for putting you in mind of it,) your promise of a collection of your plants: this will be invaluable as a nucleus to base the arrangement of my own upon, as I really believe I shall have nearly 7,000 species to distribute on my arrival in Calcutta; and recollect, that no information or herbarim is procurable at the Hon'ble Company's Bot. Gardens, or I would not put you to any trouble. Adieu for the present, with all good wishes.

Panukka, Bootan April 9, 1838.

Here we are at the Capital of Bootan, which consists of a huge ill built straggling odd looking Palace, and about twenty mean houses, half of which are ruins. It occupies part of a small valley, only elevated 3,650 feet above the sea, and is surrounded by low excessively barren hills: not a wood to be seen within 2,000 feet of us, and not a plant to be had without ascending that height. So I cannot hope for much here. However, I shall soon send out my collectors on short trips. Since my last, we have again crossed a ridge of 12,500 feet high, and several of between 10, and 11,000 feet, and yet, owing to the nature of the season and the snow, you will be surprised to hear that my collections only amount to 1,000 species, of which 200 are mosses, and Jungermanniæ. Had it been spring I could certainly have doubled the number of plants. The prettiest spots we saw, were three elevated vallies, eight thousand

to 9,400 feet high, surrounded with hills covered entirely with Pines, consisting of three species, all exactly limited as to elevation. Here Cycnia now Prinsepia first appeared, and I was glad to find that my supposition, (founded on the examination of dried specimens,) of its being petaliferous, was correct. Dr. Lindley says it is petalous, and the dry specimens I examined certainly had none, but then the scars of their insertion were visible. I have made about eighty drawings, and add to them daily, as I have in contemplation, (although ten to one it comes to nothing), the publishing of Illustrations of Natural Orders. There is no work more wanted than such a one, giving all information as to structure etc, and not limited as Lindley's Introduction is, so much to mere system. With careful and extensive illustrations, the work would be very useful. I must own however that my drawings have been so badly treated in India, that I am shy of again presenting them to any Indian Journal. I have again found Hydropeltes, and shall despatch my collector back for specimens, as it was only in bud when I found it. And I think I have a new natural order, and what is better, formed of old plants viz. Punica, Sonneratia, and Leptospartion *on* Roxburghs Lagerstræmia grandiflora. Dr. Lindley is certainly (I think) wrong in most part of his remaks on Punica, under Myrtaceæ, and you will at once admit the marked features of resemblance between the three genera given above, and which have no more to do with Myrtaceæ than they have with *Conirostres*. Upon my word, Botanists are most inconsistent. Valvation of calyx is anon a positive, and anon a negative sign. However I have not worked out my problem sufficiently yet, as Sonneratia dries very badly, and I must have fresh specimens from the Sunderbunds. I have got materials for an extensive collection of Genera and Species. If my resolutions stands good, I can give figures of each. I have adopted a plan which ought to be general, that is of preserving specimens of inflorescence etc. to be examined in spirit of wine. My collection in spirits already fills many many bottles. By doing so, I can give all the minute parts the benefit of a careful examination, which cannot be done on a line of march. Vacciniaceæ will claim instant attention on my return, I have a new genus known both from GayLussacia and Thibaudia by the appendages on the back of the anthers. I have now 25 species of the order, and I still find that all the Thibaudiaceous

plants are, without exception epiphytical. My last best plant is Wallich's Gymnobotrys, order according to him unknown, but which I refer sine dubio, to Stilagineæ, which it connects closely with Euphorbiaceæ.

Gowricpore: May, 27th, 1838.

We reached the plains about a week ago, and arrived at this place yesterday, having made a series of long marches to escape the rains. This we have succeeded in doing, and our further progress will be in boats. As you may suppose, at this season we suffered much from heat since we descended to the plains, and the more so, as no arrangements had been made with regard to houses, owing to our letters having been either miscarried, or detained by the suspicious Bootanees. Since reaching the plains, I may say I have done nothing, as the vegetation is precisely the same as that of Lower Assam. Neither did I get many plants during the four last marches in the Hills, for although the elevation of some ridges still amounted to 5,500 ft., yet the vegetation was almost quite tropical.

I regretted leaving the higher ranges, the climate being so exquisite, and the spring vegetation so beautiful. At Chupcha I availed myself of a halt to ascend 10,000 ft., and was well rewarded for my pains. But I saw enough to make me wish to remain there during the rains, at which period the flora of such places can only be said to exist. Anemones, Bistortæ, Morina, Iris, Betula, Saxifraga, Primula exquisitissima, Trillium, Abelia? Cerasus, Salix, Abies, Pinus, Papaveraceæ, Aconitum, Rhododendrons, Aquilegia, etc. were all observed in some stage or other. Of the Rhododendrons, I cannot speak in terms of sufficient ecstasy. I have upwards of 15 species, which number might perhaps be doubled by a longer residence. My collection will amount to between 14, and 1500 species, including Mosses and Hepaticæ. Congratulate me on having found Lyellia, regarding which I was led to suppose that it was a native of high altitudes, whereas I find it no higher than 400 ft. I have only brought away about 3 lbs. of specimens. Bootan from altitudes of 6 to 10,000 ft. is a lovely country; defined open woods, interrupted by large patches of sward, with here and there marshy spots give

one a vast selection of spots to hunt over for plants. Of all woods, give me one with a plentiful sprinkling of Rhododendrons. With gooseberries and currants, I have been quite familiar, and at lower altitudes than I expected. The chief vegetation of the higher spots, at least I mean temporary vegetation, consists of Monocotyledons, especially Liliaceæ. How shall I describe the Aroideæ, especially the Pythoneæ of which I have seven species. The most curious plants I have lately found is a Peloriod Swertia, which Royle I think mentions, and a curious creeping Ranunculus-leaved monopetalous plant, probably a Sphaceleoidea.

I have not heard from you for an age, nor indeed from any one, but I have reason for believing that several posts are missing. We expect to be at Goalpara in six or seven days, and from that place we shall leave direct for Calcutta. I may however be kept in Assam, to undertake another journey into the sub-Himalaya, proceeding up the Subanshiri river. I would however almost prefer visiting Calcutta, and getting rid of my numerous plants. If I do remain, however, for the trip alluded to, nothing will induce me to defer getting through my collections. When the journey is over I really hope to have above 7,000 species, including the Mergue collections.

I want to hear about the 2nd vol. of your Prodromus. Pray dont forget, that is to say if you can spare time, to send me specimens of a nucleary nature, for unless I have a collection named, to go by, I scarcely know what I shall do. I shall certainly commence with ferns.

It is never to be sufficiently regretted, that you were not an officer of the Supreme Government, the most liberal Government of all, to those under its immediate sway. Without flattery, the Government has undergone a serious loss in not having long ago called you to Calcutta. I am very sorry to find that you are again about to be shakled by restrictions as to franking. Your first number reached me yesterday. Your bookseller deserves to have severe inflictions for packing it so carelessly. I congratulate you on it, especially on some of the dissections. Give my best salam to Rungia your native Painter. But I must say I prefer outlines, especially for analyses, and if you want an example, take your own Convolvulaceæ in Coles journal. As your new book is constituted,

it must be a text book to all concerned with the Indian Flora, from its presenting the grand desideratum of representations of all our Indian orders. I had contemplated something of the sort myself, but now it would be a work of supererogation.

We reached this place yesterday, but as Capt. Jenkins has not yet arrived or written, I cannot yet tell you my movements. I have just read.....'s Botany in ..... Cycloyædia it is very interesting but wholly unnecessary: being merely a compilation from DC. and Lindley, without their philosophy. Why dont you give in your work, analyses of the genera, in writing at least of the more difficult orders. I can make but little of Anonaceæ, the genera of which are unsatisfactory. I have one or two new genera. Lindleys explanation of Hyalostemma is wrong, it has a 6 leaved calyx and a three-lobed monopetalous corolla, not as Dr. Lindley observes, a three-lobed calyx surrounded by a leaved involucre. Lindley gives too, as a generic character, the valvular æstivation of the perianth, which seems to me to be general in the order. Of Menispermi, I have some curious plants. It is a very difficult order, and particularly provoking on account of its unisexuality. Do you know Natsiatum? I do not, but I have a monopetalous Menispermea, having the corolla urceolate 5 partite, but I have never seen the female. Can this be Hamiltons plant. I cannot mention the numerous singular plants I have, as I do not know them myself: If I go to Calcutta I shall by favour, publish in the Physical Research of the Asiatic Society, with outline pen sketches. I shall commence on the voyage down with Ericineæ and Vaccineæ, so I will trouble you for a look at some of your arborescent ex-epiphytical species of the latter order. I cannot be too thankful for your promises of plants, and I hope to repay you in such a manner that your herbarium shall be among the richest of all Indian herbaria. Your proposal of working harder than you have hitherto laboured is capital, I always looked on you as a giant in this particular. Methodism I can't bear, nor do I think that it is attainable. I dread commencing my work, for what in the name of heaven am I to do with regard to the strict determination of species in India, where there is no herbarium to consult, and when .....'s drawing are all in England. I have a preface in my minds eye, in which I shall plainly state my difficulties, in this particular, expose the silly vanity of naming plants without giving them

characters, and throw myself on the mercy of the Botanical world. New names I shall certainly give to all not characterised, except in those cases in which such names have been adopted by other Botanists. I shall not omit a passing notice of the neglect of those who undertook monographs, and in presenting the divided sets of my collections to Botanists, I shall be guided by a recollection of those to whom I think Indian Botany has been most indebted. I intend pubblishing on the ovulum etc. before long. The applause that Brongniart has acquired for his work or these organs, which you remember got the prize from the Institute, is encouraging, although with much that is clever and original, it abounds in mistakes of observation, but it is odd, that many of his conclusion are right, although drawn from wrong premises.

Calcutta, June 29, 1838.

Many thanks for your last, which awaited my arrival in Calcutta, where I arrived on the 27th. Of your former Numbers, I have received only two—the first arrived the last, and was quite uninjured—Not so the second, which was simply wrapped in *brown* paper. And now I ask, what has Acrotrema to do with Dilleniaceæ. And I have a very great reason to ask the same of Schumachera. People always talk most boldly and longest on things they know nothing about, so you will excuse me for these two queries, as I have never seen the plants themselves, and know nothing of them. Yet I think other and better affinities will be found.

The plates of this number are better than those in the second, and are most creditable. Some of them are excellent, others a little stiff. The same may be said of the other specimens you sent, of these Lebretonia is the best: that plate indeed is a capital one—and so far as I can judge, quite sufficient for botanical purposes, though not so much so for a drawing room table. I shall send you in a day or two, two or three copies of my report, *corrected.* Among the list of subscribers I observe, I am the only one without an Esquire attached to his name. This is too bad! it reminds me of a complaint made by a member of the Society to the same effect. The complainant feeling himself injured, addressed the *Englishman,*

who made matters worse by observing in reply, that he thought the omission was the only good thing in the whole volume. When you take up the subject of Tea, shew up Cambessedes for separating Thea and Camellia so widely. I allude in my report to a new genus of Ternstrœmiaceæ; the plant has inferior fruit; but what is this now a days! Dr. Lindley has done great service in his Nixus, by forming Alliances. But how strange is it, the more I see, the more I feel the extent of my obligations to Solly, Brown, and Lindley, and it is these obligations that will in future lead me to send every thing, particularly such papers as may be accompanied with drawings, to Mr. Solly. Santalum is now published in the Linn. Soc. Transactions, with three handsome plates.

Calcutta, Oct. 1838.

Going through the collections: I find I have 1,900 species from the Tenasserim coast, that the deputation collections made on the Khàsya hills amount to 1,700 species, and I expect by my own, to add another 1,000 to them. I have besides about 800 from the Mishmee mountains, and 1,500 from Bootan. Yet you have given me too large an amount, when you estimate my collections at between 7,200, and 8,000 species. Of many there are very few duplicates, for you must know that in most of my peregrinations, means of carriage were very difficult to be had. Speak not of 2,400 sp. in one year being great, last year from Sept. 21 to May 21st. I collected upwards of 3,000 species, I find that I have many very interesting plants, and shall certainly claim the privilege of publishing them with names, in which case I shall point out the want of means of determining a single plant here beyond Roxburghs; and some of his, without figures are incomprehensible. Of all such as have five or six specimens, I shall keep one for you, as I consider that you are entitled to as complete a series as possible. When you are to get them I cannot say, for I have not yet got half through the arrangement, and shall afterwards have to throw the whole of the collections together, to ascertain the number of species. Would that you were here. My movement are not as yet very certain: Jenkins has applied for me, but the Govt. think me thrown away in As-

sam!. However I am ready to go any where, as it is all the same to me. The Mishmee collections amount to 1200 sp. including 230 ferns, an imense proportion of the latter, with two new genera among them. I am now going through the Bootan ones.

Calcutta, Nov. 15th 1838.

Yours reached me to day, there must have been great neglect on the part of my agents, otherwise the excessive delay in my letters could not have occurred. Your deeds astonish me, you are an Apis mellifera! My head has not been examined, but I expect it will meet the fate of Yoricks, for the truth is, I become more impatient than ever of any thing like quackery connected with science, which should be pursued with disinterested, and open enthusiasm.

I am getting on with the collections, and making one of Calcutta suburbs, a very interesting flora it is, and not exhausted. The other day I found a new species of Ruppia! which took me the better part of a week to understand, for its ovula are very odd, and the radicle does not point to the foramen! ..... I want to examine farther Ceratophyllum which is certainly a Naiad, and some other genera, and then perhaps I may submit a paper on Aroideæ etc. To tell you the truth, I am diffident of publishing, wishing to keep every thing until my prospectus has been considered in England. Besides I am shy of the Asiatic Society, now that Mr. James Prinsep is gone. He was a check on all, every body respected him. I have got abuudance of Roxburghs' Oryza coarctata, which is not a true Oryza, but these hexandrous grasses are exceedingly difficult, and shew well the unsatisfactoriness of our characters. Ericineæ 40 from the Bootan trip, and about 40 Thibaudiaceæ; if I had time I should take them up in a paper, I find that I have about 1,700 sp. from Moulmain coast, nearly 2,000 from the Khasya hills, 1,200 from the Mishmees, and 1,600 from Bootan. I have to day got as far as no. 650, in the arrangement of the Dicotyledons of Assam, and shall have 1,500 certainly including all, and then comes the Ava collection, which contains say 1,200, I leave you to settle how many of these are the same; then again I have the Calcutta collections, of which I will send you lists of the contents. What I should like would be, to publish on the orders, with illustrations of as many

genera as I can get, I can do six a day with ease. By the way, I should like to see any one explain to me the nature of the spathe of Aroideæ, although it appears very simple if you look at Pothos scandens, but confoundedly puzzling if you look at Spathicarpa. Sonneratia is certainly, I think Lythrariaceous, in which order there is a tendency to no petals?; in all such cases, are they not converted into stamina? Duabanga connects Sonneratia evidently with Lythrarieæ, Sonneratia approaches Myrtaceæ, especially some New Holland forms having stomata on both sides of the leaf. S. apetala may be a sub genus: on this I am not however certain. Fætideæ, is by no means Myrtaceous. DeC. is most welcome to publish Mergue Anonaceæ, or any thing else, for my travellings do not admit of my doing any thing. Lindleys character of Hyalostemma appears to me quite wrong. Imprimis, all Anonaceæ are valvate, secundis, his involucre appears to me to be the calyx, and the corolla to be composed of 6 petals united into three lobes, I have a very curious species from the Irrawaddi, but I cant find it at present, I have another from the Khasyah Mountains, with a verrucose fruit as large as a big egg. I expect my men down from Churra presently with the summer flora of that fine country. This ought to give 3,000 sp. from those hills. I send other collectors towards Nagpore, with my friend Lieut. Kitto; and when I have the means, I shall send some person into Munnipore,.

Beta is almost as much Urticious as Chenopodious: has any one remarked on this affinity; give it stipules, and it is Urticeous. Beta is what I call an *odd genus*, and would amply repay minute study. This letter is not worth sending, except to shew how you are present in my thoughts.

Shikarpore: Feb. 1539.

I take much discredit to myself for having come so far, and been away so long, without having written to you. But the truth is, I have been so unbotanical of late, that I had little to say that could interest you sufficiently at a distance of 2,000 miles. At present I am in the worst country upon earth, that is, so far as botanical pabulum goes, for I never saw such abominable sandy wastes as those to which we have now become accustomed.

India, on this side the Rajmahal Hills is so bare of forest, that few places would afford a flora extending beyond a few hundred species, chiefly of such herbaceous forms as are connected with cultivation. Loodianah being in 31° North, has some European forms, a Linaria, Reseda, Medicago, Alisma, Sparganium, Typha foliis angustis, Farsetia Hamiltonii, Lithospermum etc: but as you correspond with Edgeworth, perhaps he has told you all. Scarcely a tree have I seen any where except a Mango, or Peepul, or such like. The country is generally covered, particularly along the Indus and its streams with Tamarix, of which Tamarix Furas is a beautiful coniferous looking tree: what a name, Furas! when one so applicable as cupressoides might have been given. Around this plain which is in 27° 55' nothing is to be seen but Tamarix, Acacia modesta and another still more interesting Acacea, Ziziphus, Calotropis Hamiltonii etc, yet I have found some (to me) novelties which have afforded me some occupation lately. The best were a Phascum and a Poplar-like tree, which I suppose is Liquidambar, although as usual, it disowns its character. In two or three weeks however, I hope to get into a richer country, as they say, after crossing a ramification of the descent, we shall then come into a cold climate, and within six weeks I hope to be in Affghanistan, where I shall work hard, as I shall get abundance of European orders, Umbelliferæ etc. of which so little is known. I am happy to think I have an independent appointment, and all the authorities, thanks to Lord Aukland, seem inclined to give me every assistance. At present I am with the Envoy, whom I accompanied down the river, and who is, independent of his high rank, unquestionably a man to command our utmost respect. I have just heard from McClelland, for the first time since I have left Calcutta: He tells me you have finished Camelliaceæ; I find that you agree with me about Thea and Camellia: and that you have some capital remarks about the modern way of breaking up genera. I am more persuaded every day of the necessity of a complete reform in Botany. The idea of a subgenus is good, but few are aware of what should constitute a subgenus, or a genus. When I consider the little that is known of affinities I am quite ashamed of Botanists. I verily believe that half of our orders are misplaced, I must remember however, that my opinions are founded on imperfect experience. I wish we had a book on the

value of characters. After all I think Jussieu will turn out truer to nature than Lindley supposes. I think I could knock on the head most of the arguments in favour of approximating Umbelliferæ to Ranunculaceæ. I have written to McClelland to make my people select specimens of Khasyah plants for you, and when the first part is done, which relates to the Summer flora, you shall have the Winter one. I took the precaution to reserve duplicates of all the plants for my own use, and I only wish I had an opportunity of transfering my really immence collections to your care, in order that you might cull whatever you wished. But *in shallah!* as the persians say, I trust we shall at least have many a consultation yet, in a congenial climate. Were I to go home, I would set about getting up Monographs of all our orders, the thing might be done in a few years, but I would expect co-operators, to keep their promises. Edgeworth is a promising botanist: he seems perfectly acquainted with the flora of his station.

I have just made a drawing of a Plantago: I suppose it is P. Ispaghula: it has no more to do with the form of Plantago media etc, than I have, yet people are satisfied with calling it Plantago.

Cabul: Sept. 25, 1839.

I find that I have not written to you since I left Candehar: the truth is, I can no longer fill large sheets, for this country though abounding in novelties to me, scarcely presents any anomalous plants, on which my soul loves to dwell. Of this place itself I am quite tired, and shall be glad when the advance, which is expected to take place in a few days, actually appears in orders. The other side of the Town did present some verdure, but this is as barren at present as any part of Arabia felix. Hills without a particle of vegetation, presenting one unvaried uninteresting brown hue. I have in addition to the long march from Candehar, also made one of 24 days to Bamean, and back, which place is on the other side of the Indian Caucasus, though still farther within the mountains, and is famous for its caves, gigantic idols and ruins. And such scenery; how indescribable! a valley to some extent enclosed by most beautifully *sculptured* mountains, presenting every variety of colour—here rosy, red, yellow; there bluish, purple, brick red, and presenting such

infinite variety of outward form ; here columnar, there having the appearance of richly fretted work : here a huge cliff, there a mountain thrown down, scattering its wreck in every direction.

This trip gave me 200 species, mostly very alpine, thus swelling my list to 1,200 species ; alas ! 1,200 only, when I expected 2,400 at least !. But perhaps next spring will give me more additions. The curious vegetatation still continues : and is to all intents and purposes Mediterranean. One prevailing feature of the mountains, even as high as 13,000 ft. is the abundance of prickly Statices, forming a section to which the term *Hystrix* would be aptly applied. After crossing the highest ridge, Salsoloideæ become very common. We crossed five ridges of the following heights 10,000, 11,320, 12,180, 12,480, 12,900. We had some severe cold : some snow and ice. Ice was found, or rather half frozen snow, in ravines at 10,500 ft. and upwards, and the effect it had on the vegetation was most marked. This was a fortunate circumstonce as it gave me specimens in flower, which elsewhere had long been out of flower, or even passed seeding. Mosses still continue rare, and only one *Orchidea*, and two Ferns, have as yet been found in Affganisthan. Primula, Pedicularis, several Parnassiæ, Gentianea, Onosma, several Graminea, Carices 4 5, Swertia, Euphrasia, Astragali, and Carduaceæ, characterise the higher altitudes, the herbaceous forms being generally limited to marshy or humid spots.

I am just now, doing nothing : the season has passed except at unattainable altitudes, so that I am bringing up arrears of correspondence, and arranging the despatch seeds, etc. I expect to remain in these parts till next spring, but as I do not admire a Cabul winter, and a close blockade for 4 months, I go to Attock, having there, I will return to Peshowur, and from Peshowur, hither in the spring. During the winter I shall make small trips here and there, and survey as much as possible. From Cabul I shall return to India by as circuitous a way as I can select, and if Lord A. allows me to return via Simla, Mussooree, etc. I shall then have seen the Himalayas at more points than any other person. And what a collection shall I not have. Imagine six months in the Himalayas ! I have no news from home, except that Loranthus and Santalum have excited interest, and set some persons to work. They are by no means the only novelties I have ; my collections will furnish many

very interesting genera. I will take care to despatch to you, such seeds as may be acceptable to your Society, of whose tone I beg to approve very much. I wish the Calcutta society would open their eyes to the philosophy of Horticulture, the most interesting part of the study.

Peshowur : December 16*th* 1839.

I have not written to you for some time, I have nothing to tell you beyond this, that I recommence travelling in a day or two, after a halt of a month at this place; at which, owing to the awful heat of the season, Botany is quite at a discount. By way of exercise, I will amuse you with a few remarks on your——No. of Illustrations, the only one that has reached me. Imprimis, from the plate of *Morunga*, you associate it I suppose, with Leguminosæ. I should like to see you defend this association, which I look upon as unnatural. I have written to M. Decaisne my objection to his statement that it is nearer Leguminosæ than any other order. It is so closely allied to Violarieæ, or that group, that it is impossible to separate it, in what does it differ from Zanthophyllum but in its decided perigynism, and very compound leaves; in what point does it agree with Leguminosæ, except in these same. You pass over the unilocular anther, and above all, the fruit, for a mere resemblance in habit. Nay, I will tell you more, that Zanthophyllum may have compound leaves in the Lindleyan sense, and has glands like those of Morunga. Depend upon it, that whenever a pluri-carpellary form of Leguminosæ shall be found, it will be apocarpous, not syncarpous as is Morunga. Look at the disposition of the parts of the flower, look at its stamina, its pollen, its ovarium, its fruit, its seed, and in all, most manifest relations of affinity with Violarieæ are to be found. It is not a whit more papilionaceous in appearance than Zanthophyllum. I am delighted at your location of Connaraceæ. I could show you some Mergue remarks on Cnestis, which genus has a similar tendency. I have got one Cnestis which cannot be distinguished from Oxalideæ at first sight, or otherwise than by the fruit (this from memory). To Connaraceæ belongs the Eurycoma which I know well, and which has something singular in respect to the change of situation of the ovula as it becomes matured. Zygophylleæ are unsatisfactory as

to affinities; Ochnacea the same, neither being as yet properly placed. I doubt the correctness of Lindleys parallel between this and Labiatæ and Borragineæ, because the carpella of Ochnaceæ are simple, while those of the others are double, witness as the most evident proof, Heliotropieæ. However, perhaps this is comparing them too closely. I once tried to argue it out that Labiatæ etc were quadricarpellary, but it would not do, because all the most defined orders, all those to which we ascribe perfection, have bicarpellary fruit whenever the fruit is in reality not perfectly simple. Cruciferæ, Umbelliferæ, Rubiaceæ, Compositæ, Labiatæ, Borragineæ, Gramineæ are all dicarpellary, and so would Leguminosæ be: I know instances when they are, but I do not know one, where they are tricarpellary: so much for DC. ideas of perfection. Synthesis is more perfect than analysis, Monopetalism than Polypetalism.

What are the most perfect plants? We shall never get at the natural system, until every leaven of the old systems is abolished. None of your single characters can ever hold good, not even the most comprehensive ones as Dicotyledones, Monocotyledones, and Acotyledones. How unphilosophical have been our systematists, they apply natural rules to the minor divisions, arbitrary ones to the grand divisions! Look at Mr. Brown's Prodromus, you will not find there any artificial subdivisions, or divisions. The more I learn the more I am convinced that MacLeay and Swanison are the only persons who have got a glimpse of the Natural System. I cannot conceive what people are about when they lose sight of the grand numerical lessons taught us by nature in the great divisions: I look on the idea that Nature has one determinate plan of operations, as highly philosophical; the same measure which she carries thro' most obviously in her primary divisions, will be traced throughout her lower subdivisions. Look at DCs. list of Compositæ, it is a perfect chaos, yet in no order will the natural divisions be found more plainly marked out than in this, the most perfect of her vegetable tribes. But I have lost sight of my critique. Your remarks on Impatiens distribution, are just such remarks as I like to read, they are what I call *anti* ..... for although there may be many ..... in Botany, there is but one who describes plants, leaving off at the ovulum and pollen, and who never makes a remark to greater purpose, than that such a plant "is a

beautiful species, well worthy a place in every border." All your plates are improved, especially the uncoloured ones. How Bengal ought to blush for her Botanists. When I commence getting thro' a catalogue of the species I have collected, I shall hang up in my room a huge placard. Be grateful to Robt. Wight! Every plate of yours is *a* guide to act upon. Dr. Wallich did real service when he placed at your disposal a copy of Roxburghs drawings. You will have the satisfaction of a pleasant retrospect when you turn back to review your career in India: you will then have the just satisfaction of remembering the vast difficulties you have overcome, both for yourself and others. I admire Lord A's minute, which contains much that is clear and comprehensive, but I don't approve of the neglect of India cottons, at least in Bombay. I may be wrong, but it appears to me a much simpler thing to improve an indigenous article, than to substitute a foreign one, unless we have mastered all the details, which in this side of India have been quite overlooked.

I wish I was quit of this country: I have had one narrow escape from a set of robbers, who are always murderers; it is impossible to go a mile in any direction in perfect safety, every one of the hill people is a thief and a rebel, and as it is a hilly country, you may guess the proportion they bear to the peaceble subjects. I came here with a political agent and enjoyed every advantage: he has returned, I stayed behind, as the mountains are within reach, and well wooded, containing a Quercus, and an Olea? below, with pines above. The inhabitants are Kafiris, described as the descendants of Alexander the Great, and said to be the most romantic people in the world. How degenerate they have since become you will understand, when I assure you they now turn out to be nothing more than the usual hill savages: eat raw meat etc. Yet how different these people are from the usual Affghans. I have now before me two rupees worth of Pinus excelsa, some grand chesnut seed, and the kafirs are to bring specimens of other things in a day or two. I might have waited here a year before an Affghan would have brought me a single plant. I hope to get some information or the vegetation of the frontier of Kafristhan, which from being wooded is in great contras with the usual run of Affghan Mountains. After all, the flora is desidedly poor, and I doubt much whether the huge kingdom of Khorasan

produces more than 3,000 sp. of which I have half the number. Is it not curious how entirely European it is, considering the Latitude etc. First it is wonderful that Kutch gundava, one of the Simoom places should have a desidedly European vegetation in the cold weather, and scarcely a decidedly tropical one in the hot, when its latitude is 27° 28', and it is not 500 ft. above the sea. It is one of the instances proving the vast effect of contiguity in determining the vegetation. All the birds are European. Finches, Rooks, red legged Crows, etc. I take great interest now in Ornihology, but of course I only yet possess a slight knowledge of the subject, since one science, such as botany, is quite sufficient occupation.

Many thanks for the offer of assistance in a systematic work. When I begin, I pledge myself to a systematic and comprehensive catalogue: including all information of habit, geographical site etc. I trust to reach 12,000 sp. if I return from Affghanisthan through Cashmeer and along the Himaleah to Simla. Adieu, with best wishes, would that I had an amulet to guard you against sickness.

Kafiristhan, March 6th 1840.

Your double letter reached me yesterday; you judged rightly, that with the racy enclosure has never reached me: very likely it was part of a six weeks despatch which was plundered *en route* to me. I rejoice heartily that you so successfully resisted the attack of that fell monster cholera, who ought to have been content with Cassin, and spared all other true Botanists for years to come. I am sorry to see what you say of your book: it is really too hard that the most deserving works, are always the least patronised, and so always bring loss upon their authors. There is only one way of avoiding this, viz. withholding information which the public are not worthy to have. I have long thought of the hardship which all authors who engage in extensive enterprises are subjected to, not only in the mere loss of time, but from the arbitrariness of the public, who will not allow more time, and more money for the investigation of difficult tribes, than for others comparatively easy.

Of one thing I am quite sure, that owing to these causes all authors who publish largely, must publish unequally, the public are in this respect like greedy children, who must be satisfied. I regret, that you have not chalked out something new in Leguminosæ. As for Terebinthaceæ, I have my ideas that many of the divisions are misplaced, and what business it has near Leguminosæ I cannot imagine. I should be most happy to note the little I know of Compositæ for you, but my *location* is quite fatal to my *vocation*, except in the mere way of collecting materials. If you will give me timely notice on my arrival in Calcutta I will gladly, most gladly undertake to assist you, especially in Cryptogamia. Yet I can scarcely be in Calcutta for another year. Do you know that I think I am on the scent of the male organs of Ferns, I am going to write to Mr. Solly about it, and intend to postpone every thing on my becoming settled to a rigid examination of all Cryptogamia orders, i. e. the more developed ones. Algæ will be out of my power, and most probably Fungæ. Bentham will do wonders in Leguminosæ, as a systematist he is first rate, but he is debarred the use of minute characters, which are often most valuable. I intend taking up all the large orders sometime or other, for it is only from their study that one may expect to obtain sound ideas on the value of characters. Besides my present trip will favor me in doing so, as all the large European orders abound here; your remark about natural orders is quite true. Swainson has excellently shewn up the absurdity of supposing species to be the only definite productions, this opinion cannot be held any longer. The expression may probably be, that the higher the group the more natural is the association it forms; thus, what can be a more natural division than Monocotyledones? Have you ever read Swainsons works, especially his Preliminary Discourse on the Classification of Animals, unpopular as they are, they are most philosophical, and ought to be learnt by heart; when I begin my real work I shall certainly have a table of his rules framed for constant reference.

No man can paint his own portrait, any more than be his own physician, your protrait of botanical self, is unjustly severe. There are many points of philosophical botany, to which so far as I can judge from some of your remarks, you are capitally adapted. The use of microscope, and of keen knives are very good adjuncts, but many of the higher branches of botany do not require them, such

as the destribution of vegetables, the changes induced by cultivation, etc. etc.

Kudjahur, June 14th 1840.

Your letter and its enclosure reached me when I was labouring under severe fever, which lasted about twenty days; since that time I have been convalescent; but somehow or other think I am getting strength slowly. I still hope to be in Cabul by the 10th July, from thence I start for the loftiest pass, that called the Hindoo Koosh, from which the chain has taken its name. I am now at Kudjah, which is a temporary encampment to escape the great heat of Julalabad; it is a pretty and a curious place, within twelve miles of the outer ranges of the great snowy range, bounding to the south the valley of Julalabad, but stretching east and west far beyond the limits of the valley itself. Just imagine a space between two ranges of mountains, from 15 to 20 miles broad, occupied by undulating hills or flat elevated masses of a conglomeration of stones and rocky masses of all sorts and sizes. Then of course, these stoney portions are intersected by torrent flowing from the Suffaid Koh, which have excavated valleys of various sizes and depth,—and which are really, considering the sombre mountainous colouring of the chief tree, the mulberry, very pretty. The vegetation is entirely European, height said to be 4,000 ft. Can you tell me, whether any book or paper has ever been published on the Persian Flora. Talk of an Asiatic Province comprehending Asia from near Asia Minor, why here is an European Flora in the ninty-eth degree east Longitude, and one which extends no doubt to that chain of mountains, so little known, forming the northern boundary of this country, and probably the true continuation of the Himalayas. Fancy existance here of Glycyrrhiza, Silenes, Dianthi and Eryngium. This flora can never be investigated except by taking the materials with me to Europe, which I hope to do in 1842, for I have little to hope for after Lord As' departure. I have come to the conclusion that Stellatæ have nothing to do whatever with Rubia Cinchonaceœ, in as much as they are apetalous. Such monstrous

inconsistency, as calling Galium and Asperula (the only two of the genera I have examined) petalous is absurd. Mere colour is nothing, but in these we have a direct continuation of the so called corolla with the outside of the ovary, or so called limb of the calyx. Lindley's reasoning as to stipulæ is objectionable, because stipulæ whenever *interfoliary*, or between two leaves, are always single organs. If Stipulæ are organs quite misunderstood, what are stipellæ of the pinnate leaves of Leguminosæ? A curious structure exists in Galium, Asperula, and another very odd genus, with five racemose flowers, the four lateral ones with a large cochleate semipetalous bracte; the outer cell of the ovary is invariably abortive! This structure is, that the ovula are reduced to their nuclea, and that the inner layer of the ovarial cell is quite free, and might easily be mistaken for an outer ovulary tegument! I have mentioned this to Mr. Solly. Have you seen Decaisnes notes on the ovula of Thesium, which he says are much like those of Santalum—most strange seeing that a Brongniart has figured their whole developement in a very different manner! Brongniart is by no means a pattern of correctness, but this is inexplicable!

The reform that Macleay first, afterwards Swainson, Vigors, and Horsefield, have extended to Zoology, must visit Botany, in which at present there is very little philosophy. Half the genera will turn out sub-genera, or of less value, and what shall he get who kills the deer? why nothing but obloquey and abuse. I well remember Sir J. Smith expression of anguish at finding two species of Orchidea making three genera. With regard to the names of our divisions, our natural orders appear me to to be families, our orders corresponding with Lindley's alliances.

My next Paper to the Linnean Society, will be on Rhizanthæ, which are no more a subdivision than are Gymnosperms. I have one Rafflesiacea, and a monocotyledonous representative of it, a most curious plant, and several species of Balanophora, that is if the figure in Royle is to be relied on; this genus is a very difficult one, and I have never yet been able to make out the structure of its ovaria, though to be sure I had not the best of means. You have never acknowledged my subscription to your list of subscribers for two copies of both your illustrative works, this you must really

do, as I know one or two persons who collect for me, whom I wish to shew on to study Botany. Will you therefore so manage that they may reach my agents in January, with your bookseller's account. By that time I hope to be in Calcutta. Lindley's group Albuminosœ is as you say, all erroneous; he has in this instance swerved in his own principles, which are never to rely on a solitary character, but many of his Alliances are good. There is a good deal in what he says of Anonaceæ and Myristiceæ, but his view of Hyalostemma is wrong. I know the genus well. The group is a most unnatural one, and inexcusably so far as the separation of Menispermeæ goes, because Wallich's Tentamen would have told him the structure of the seed in Stauntonia. There are many other points in your letters for notice, but I have no room left, except to assure you etc.

Kudjah: June 29th 1840.

The greatest pleasure I have is in writing to Botanists. I now proceed, to answer the other parts of your letter, I am sorry to find you are so overworked: you did quite right with the Leguminosæ, and in addition to your reasons, I will add another, which weighs heavily on Indian Botanists, viz, that nothing satisfactory can be done by an Indian Botanists in any family, the great bulk of which is not Indian, for nothing can be more evident than this, that if all our knowledge is derived from species, that knowledge can be little if confined to 500 out of 3,500 species. Leguminosæ is a fine family for investigation on Macleayan principles, because DC's. grand divisions are prima facie wrong, besides founded on an obscure character, and one not verifiable in the majority of cases; you will see how beautifully the order is divided into and grand divisions, of which true Papilionaceæ are typical, Cæsalpineæ sub Typical, and Mimoseæ aberrant: most would say the last are typical, being most perfect, because they have a regular corolla, but I have little doubt that irregularity is in many cases a test of perfection, not irregularity of suppression, but of form. Of Swartziea I know nothing. The fifth division is yet to be found out. I quite agree with you about Terebinthaceæ being misplaced in DC. Prod. etc. but I do

not agree with you as to Combretaceæ, which will be found to enter Lindley's Tubiferosæ, which are generally a natural assemblage; its being petaloid is nothing, because all groups must pass into each other at various points; if not, there would obviously be no gradations, and we might then took out as many do, for arbitrary characters. As you say, we want much more philosophy in our science: is it not strange that while we knew of the existence grand divisions, and had our minor divisions, i. e. families and genera, that we never thought of intermediate ones until the appearance of Lindley's Nixus, and in this they are not original, I intend studying Fries and Agardh's works; I have seen somewhere that one or the other has entered on that vital point, which is the most perfect plant? and has decided in favour of Compositæ. There can be no doubt but that Monopetalæ are the typical form of plants; this I shall try to prove some day, but writing on abstruse points is thought presumptuous in young botanists; besides such points require an extensive knowledge of structure I am glad you like Swainson, pray also study his Geography and Classification of Animals; it requires no Zoological knowlege to master the main points, you will see the superiority of his Geography over that of the Botanical Geography of Schouw, who has too much frittered his divisions, I don't know however whether Swainson has fairly proved five Kingdoms, for South American must be divided from North. The subject is a most difficult one, and to do it any sort of justice, requires that a competent person should be an universal traveller. Then his 2 vols of Birds are models of what a Familiæ et Genera Plantarum ought to be. Of the Geography and Classification, part III. from p. 224 to 300 ought to be learnt by heart by every botanist. You say in one part, that you think the truly ternary orders should form a group or sub Kingdom, as Gymnoperms, so they ought, provided Gymnosperms do form a natural division, which they do not; for the solitary character of having naked ovula is very insufficient, and this insufficiency is proved by the small affinity existing between the component orders. If you separate ternary orders, you ought to treat similarly the binary, you can't do it, because by placing them all in one group, you have no transition. Dicotyledonous groups must pass into monocotyledenous in an infinity of ways, both in modifications of the

vegetative and sexual organs, And the more natural and larger the groups, the more numerous must be the points of passage.

Jussieu used to form his genera into families by consulting drawings on cards, which he used to shuffle, and then separate and associate according to their degree of resemblance, the best mode I think of studying system is to set aside altogether the works of others, and to form into associations all the families you think allied; you may do this at different periods as your experience extends, without previously referring to your former arrangement. You have had horridly difficult orders lately to deal with. Umbelliferæ I never think of, although they form a large part of the flora of this singular country, nor have I the slightest idea on what character their divisions should be founded. DC's is arbitrary, consequently artificial; and as for vittæ, people must have been daft, who ever employed them. Then Rubiaceæ, Loranthaceæ, and Myrtaceæ. Utrum horum mavis accipa." Botanists publish too much from dried specimens. A dried Loranthus is generally a sealed book. Every thing down to the ovula tends to prove the value of Browns' remarks, that Loranthaceæ are akin to Proteaceæ; Myrtaceæ are very difficult. I have two species of a genus with stercoraceous-smelling flowers, pentadelphous stamina, adelphis petalis oppositis; ovario triloculare, seminibus alatis! Arbusculæ, which I refered to this order, what can they be? They have attracted no notice, although sent home in my Mergue collections. From the smell I thought them Fætideæ, the trilocular ovary is much against their being Myrtaceous. In fact Botany is a most difficult science, and we know little of the rudiments even now. On the metamorphosis of organs, on the stamina, or rather pollen, and the ovula we know a good deal; on other points next to nothing. And yet until we know more of general structure, our systems can't improve; they say petals are nothing but an inner series of the calyx, I believe them to be of a very distinct nature,

You call your Gamboge paper a racy one, it is indeed excellent. Your remark on.....s excitement under the novelty of inventing new names, is as good a thing as I ever met with. Whatever he may profess, he will never forgive you that remark. What do you mean by the unseemly allusion conveyed by Hebradendron? what is its derivation? You won't get many, I think, to agree with you as to

Xanthochymus not being Guttiferous. The other arguments are sound,..... is like all the rest, withholds information if a friend or acquaintance is severely handled; the remark will delight all working Botanists as it does me. If similar remarks were more frequent, the disease would be remedied. Jenkins tired of Indian names of plants, has at last got,.....to *promise*, I have warned him not to be too sanguine, and not to place too much reliance on his names. The mania for naming, appears to me curious: philosophical Zoologists have come to the conclusion that no object ought to be named without its character being given at the same time, and not only this, that its true station in its circle, is to be demonstrated. Now a Botanist will look over his herbary and then name: there will be no cogitation etc. a dash of the pen will do it. Captain Jenkins is a staunch friend, and I owe him much, but he must be quite aware of the impossibility of a young Indian Botanist being sure as to what has been described, or what has not.

P. S.—Cabul, July 24! I arrived here on the 5th, I am nearly as strong as ever, but had no idea I should have been so long regaining my strength. I leave for the Hindoo Koosh in 2 or 3 days. The climate is delightful, I am now in a fine orchard, under the shade of apple trees loaded with fruit. The thermometer in a tent rises from 54° to 84° Fahr., what a contrast with India. Nothing new in the Botanical line, but I was here almost at the same season last year, my illness has thrown me back much, and the neglect of my servants sent to collect, still more.

Meerut: March 30, 1841.

On my arrival here in progress to Calcutta, I found yours of *the* 21*st Dec.* Your printed paper and letter, and my diploma as member of the Imperial Academy Naturæ Curiosorum. I have read the Cucurbitaceæ paper over attentively. I cannot refer to my own notes on the order; but I am quite sure that your idea never occured to me. The laws of carpellary formation are so constant, that I am unwilling to believe any real contradiction: those laws are the most palpable of all botancial laws. My own idea is, that Cucurbitaceous fruits are formed somewhat as Arnott describes. I have been studying

the subject for some time and intend completing my notes as I go down the Ganges.

Punica is an old friend of mine: it belongs to an order with Duabanga and Sonneratia between Myrtaceæ and Lythracea: but it is 6-7 carpellary leaved, this I have known since 1837 from examination at very young periods. Although I have reduced it to the ordinary type, I have not satisfactory explained how the subsequent anomalies come into play.

In your paper on Cucurbitaceæ I am sorry to observe you have not left any loopholes to get out by, which in theoretical arguments, is always advisable. I suppose Arnott has superseded me in all of my genera: it is a good plan in some respects, yet a bad one in others, to postpone publication.

I am heartily glad to hear that you have reduced the genera of Myrtaceæ; depend upon it, that one-third of our present genera are temporary. Botanists don't know that a plurality of marks is required for agenus, a deviation from any one or two of these, will only constitute a subgenus, not a genus. I should like to see how any one could prove a terminal leaf, it is imposible from any existing analogy, nor do I see how your idea of Cucurbitaceæ bears upon it: because their being reversed in situation, does not alter our ordinary ideas of the axis.

As you say, botany is difficult, and increasingly so, but Botanists are to blame for this. No remedy will be so effectual as the publication of Monographs; look at the enormous labour of synonymy. Botanists have no business to subdivide, none to describe a species in a corner without giving its place. Were I to make any thing of Compositæ I would not undertake its synonymy, but endeavour to destroy all that is useless of such tedious documents. Generic characters as they now stand are generic discriptions, instead of being what their name imports; the practice of thus stringing together long descriptions instead brief characters requires no elimination, hence all young hands will keep them up. It is rediculous to see beginners publishing *an order*. A striking instance of this recently fell under my own observation. A. found a plant called Rhamnus ..... by B., with all the perianth divisions and stamina opposite, and two *Carpells*. He called it ..... and established .....tiaceæ, sends it for publication, and sometime

after found that it was *Sabia*. A. was cruelly vexed, yet he was not more to blame than B. and C. who never allude in the ordinal character to the anomalies Sabia presents. This should be a warning in similar cases to persons who although they may be right after all, yet cannot be sure of their not adding needlessly to the synonymy of botany. The striking Mergue Plant appear to me between Myrtaceæ and Hypericineæ: I am quite sure that Myrtaceæ belong to the *Calycose* group. What a heretic you will say! I have *oceans* of materials for publication. Viz. Rhizantheæ, Suplement to Loranthus, including Osyris, in which most curious anomalies occur, and on the *Pistillum:* this last will appear in McClellands journal, the others will go to the Lin. Society.

Malacca, April 15th, 1842.

I take the opportunity of the Clarissa sailing from this deserted place, to write you a few lines, hoping to hear from you *via* Calcutta before long, or I shall think all my botanical friends have deserted me.

I have just returned from a five days, trip twenty miles in the interior of our truly magnificent jungles, which I guess, will afford me employment for two or three years; probably more, as there will be for the future only one Medico, i. e. myself here, and I then of course cannot be absent often, if at all.

The more I see of the Malacca vegetation, the more I am delighted and engrossed; and had not Blume been so long in Java, I could have turned up an infinite number of plants of the highest interest. There is in fact a very great variety in Dicotyledons, especially ligneous plants, more perhaps than any place I remember. The country presents several features, influencing its vegetation, but so far as I know, it wants those dells and black ravines in which ferns abound so much. Neither is it rich in Orchideæ. The surface is gently undulated, and altogether covered with soil. For, rocks with their Orchideæ, water falls, Ferns, and Lycopodiums, I must wait until I can run up to Penang.

I never hear now from any one in England, such is the advantage of having one's plants distributed by others. I have not even

heard for six months from my own family. On the one hand, disappointed at not having my hard work even noticed, on to other despair from the chances of hearing bad news. I intend adopting an entirely new system of tactics, and when I pounce on any thing interesting, to keep it until it is in print.

Pamplin wrote me the other day, saying he had put down one subscribers name to my proposed work. Very flattering is not it not? How people can work on dry plants I cannot imagine. I am daily convinced of the poverty of the study from such materials, unless a man has seen much of living structure.

I have got so many interesting things, that I really do not know on what to commence. I believe I told you of the large Aristolochious genus, my Ascorna; a most conspicuous plant with very large pendulous flowers like balloons, in the bud (in many points according to *books,*) coming near Bragantia, I have since obtained another, a shrubby subscandent plant, with the stem and leaves of a Piper! a tripartite rotate perianth, one series of stamens, and discoid regularly lobed stigma, fruit siliquose not yet seen ripe. The flowers are at first sight not unlike those of some Anonaceæ, with which family, Asarineæ have many points in common. (An original idea I think).

Then I came across a tree with solitary flowers, a two valved involucre, *a valvate* 5 partite calyx, indefinite linear spreading petals, gradually passing into barren stamina, indefinite in number, and, wonder of all! 10 definite stamina forming the innermost series, each anther a peltate body, bearing 4 polliniferous *boxes* without lids, all on the same plane, a trilocular ovarium covered with stalked peltate scales, each cell with two ovula. Do you know it? it has in many respects, the structure of Sterculiaceæ, or Dombeyaceæ. I think a minute examination of it, will give scope for much speculation.

Then an Anonaceous genus with flowers from the stem: the like of which I do not remember to have seen before.

Do you know a Dioscorea, or Smilax, or Vitis, I believe it is the last, with flowers on an irregularly lobed flattened spadiciform body?

In palms I have not been idle, having inclusively of the cultivated species, some 15 or 16, among which I hope one Arecoid may prove an undescribed genus: Arecoid, Calamine, and Licualous palms are the most common in the heavy forests. One Areca has beautiful

vermillion spadices, and dark purple drupes. In Scitaminea I have worked hard, these deserve instant attention, description, and drawing, even more than Orchideæ; they are very common. Oh I forget a very singular one with opposite leaves, a Rhizophoreous stipulation, and habit of Celastrineæ. I have only seen buds and fruit, the calyx inferus 4 part. æstiv. valvat. Pet 4 alternant: fimbriato ciliata. Stam 8. Ovar stylo apice 5-7 radiato, loculis tot quot lobi styli. Fructus baccatus 5-7 locul: inferus. Semina minuta: albuminosa. Embryo axilis radicula prope hilum. Some *artificial* points are those of Rhizophoreæ, but then the ovary and fruit are toto cælo discrepant. You must have this in your Malacca plants, if your collection was a general one. Next, can a plant be Rubiaceous which has a 5 celled ovarium, a 5 radiant stigma, a 5 celled bacca? with innumerable minute seeds.

I have been much amused lately with seeing the way in which amateur botanists determine plants, with books sub oculis. I have your Cambessedea thus figuring under the name of Pierardia sativa! a Tristania under that of Euthemis jack, and ..... says, he thinks Bæckia virgata a Casuarina, only it has not monæceous flowers! Query then, of what use are books? I have just gone through Dr. Cantors Canton China plants, and am going to appear thereon in McClellands' journal. I dont like doing so, as I have not even Endlichers genera. I chiefly notice Hamamelideæ and Cucurbitaceæ, of which I have 3 undescribed Zanonia genera, which I suppose no body will adopt at home without specimens. Actinostemma, Monosoma, Gomphogyne. I remark on Arnott's sub dividing processes; what a shame it is to mutilate Cucurbitaceæ so. If this is the way, what is to be understood as a genus. Give me a large genus and several sub genera, rather than the modern way. This by the bye, is most illogical, for a genus, being a genus, should have a certain amount of character, but we have no certain amount, but a most uncertain one: one genus having several distinctive marks, another only one, another only half a one, and so on. Were botanist to study the Macleayan doctrines, on this subject, which are so philosophical, and so consistent, the error would become obvious.

Whenever you are engaged on the plants of the Southern Peninsulas, remember William Jacks writings, which are generally passed over, although they are of first rate accuracy and importance.

Look at his Chionotria for instance. I am not without hopes of knocking Anneslæa on the head for the purpose of restoring Jacks prior name. Then why does Lindley refer Eurycoma otherwise than Jack did, when he never saw specimens, it is truly Connaraceous; again why is Lecananthus a doubtful Apocynea! Jack does not say so. My idea of William Jack is, that he was a first rate, and wonderfully accurate Botanist. Had he a fine herbarium, and library? I now have of his genera the following, Lecananthus, Adinandra, Ixonanthes, Eurycoma, Hydnophytum, Pierardia, Rhodamnia, (your Monoxera?) Chionotria and Pternandra, but I shall tire you out.

Malacca: July 17, 1842.

I have seen (just seen) Lindley's elements. The wood-cuts are capital. I have my doubt as to his systems, because he has too many, the tendency of all these are however in the right direction; I am convinced the Cotyledonous one is the most practical. Founding one on wood, when we dont know how wood is formed, is beginning at the wrong end.

Your account of Stemonurus fruit agrees with what I have seen. I should say Stemonurus and Gomphandra are the same, but then I judge without having seen authentic specimens.

This place is very rich in Asclepiadeæ, particularly Hoya, and Dischidia: really comparatively speaking there is no end to them. The last genus is variable in habit, that is to say, either with ascidia or without: some have nothing but ascidia; I mean with flat leaves or concave ones. But the genus is endurable, although Blume makes a Leptostemma. I dont like dried specimens of these, but will not fail to send you all I have, either in spirits or not, I shall wait for the Clarissa, which will be here in three months, I promise to astonish you with novelties. Not one plant in ten is the same as at Margue. Rhodamnia certainly is very like Monoxera, but then it has not like the last, an irregular pyrena. The former has osseous seeds in a berry with two parallel placentæ. I have an eye on Terebinthaceæ. Indeed I intend working up my Malacca plants for McClelland's journal, noticing those orders particularly on which I feel strong: such as Ternströmiaceæ Verbenaceæ—Symphorema by the bye, is a true Verbenacea, and if you will give me leave to say,

has nothing in common with Santalaceæ except placentation. Look at it through Sphenodesma, the definite stamened Symphorema and Tectona. My Hemigymnia has nearly the corolla of S. polyandrium. But I must confess that Stemonurus is an oscillating genus, half Olacineous or Aurantiaceous, and half Saulataceous, just the plant that will be required sometime hereafter to fill up a gap. The inferior ovary of Santalaceæ is not of so much consequence I think as to affect *the alliance*. Look at Groutia, how Santalaceous, or rather Santalalis even to the peculiar membranous *tube*. But these are indeed difficult subjects. I am hard at work on Rhizantheæ, I am sanguine of upsetting the class, but then the big botanists only like small ones to describe species; if you can send me any, it will be a boon. One of the most common Singapore plants is a new species of Nectandra.

The Mt. Ophir plants are in many cases very difficult. I shall very soon send men out to collect, but really it is useless going so far, when the forest near this is, so far as I can see, so rich. It would be impossible to go to a place where more curious forms are to be met with, than at Malacca. I have given up determining Orchideæ from books. No order would so repay comprehensive investigation as that, with all its wonderful variety. Practically speaking I dont know which is worse, Vandeæ or Ophredeæ, Lindley's great forte is in explaining structure, and in condensing the views of others. Endlichers characters are tedious, and too indiscriminate, and his arrangement founded on anatomy, is really imperfect. Arnott appears to me the best after Brown in England, but only on *system;* in this his views are partial. He is, what I should call a laborious and learned botanist. What a shame not electing him at Glasgow to succeed Hooker, for he must be infinitely superior to Balfour. Kunth, merely viewed through his Agrostographia is a careless compiler; look at his medley of specific descriptions, he did not even take the trouble of reducing them to one standard. He is if judged by this work, one of a host of men who have not patience to sit down to any thing connected.

Calcutta: Dec. 3, 1842.

Many thanks for your kind congratulations. You will see by this franked latter, that I have taken charge of the Gardens.

Malacca was the place for work, but plenty may also be done at the Gardens provided the subordinates be made responsible for their respective departments. This I intend to do so soon as I can get things into a proper form, I intend having nothing to do with details, but to set to work comprehensively in the formation of a report, catalogues of property, and of plants, and on the formation of a Natural, Medical, and Linnean Garden, and general picturesque improvements.

Many thanks for your kindness in looking out for some plants for me, more particularly the Santalaceous ones, and the Bragantia. I am also glad to hear that you have so much of Pinus longifolia, as it will be an agreeable variety. The reprint on which I have been engaged of Jacks writings in the Calcutta Journal of Natural History will not be finished as I thought it would, in the next number, but positively in the October one. So that it will be in one volume at any rate. I enclose a bit of Asterogyne nomen delendum, blotted out entirely and Siphonodon substituted for it. I am determined to act up to the Zoological Committee rule, and blot out all names not founded on descriptions. The dried state wont be advantageous for its examination.

I have been laid up for the last fortnight, but am well again now. How rapidly you are advancing in regard to cotton. I have not yet drawn up my memorandum for the Deputy Governor on the subject, not being able to find precise scientific information regarding the climates of the cotton districts of America, or those parts of Bengal, which appear to me likely to promise success. We have no data to afford sound comparisons between American Cotton Districts and particular districts of India! Hence *our* views and operations must be more or less uncertain.

Botanical Garden, Calcutta, January 23, 1843.

I dare say you observe a change in my letters, but then remember the different circumstances. Here I have to snatch time, not that there is such a great deal to do in the letter writing line, but an immense deal inthe shape of general improvement. I send you a set of seeds just received from the Cape,from Baron, Ludwig, which

I recommend to you for the Neilgherries: it contains many Australian plants, and many choice English Flower seeds. Please to let me know the success of each, particularly those not *mere* flower seed.

I am sory to hear that you have been so unwell, however the cause is the most pleasing that can be assigned for such an illness, namely zeal in the discharge of important public duties; you have a great stake to play for, I could fight to the death in such a cause, and I would think any amount of exertion in regard to the cotton, well bestowed from patriotic and political feelings alone. If you succeed, never mind whether Government reward you, the object is so great, that posthumous fame is sure to be awarded. Some mundane persons say this is not worth having, I am not of that opinion.

Checks and disappointments are useful to us, and if we did not occasionally meet with them we should be liable to form false notions of our deserts and think ourselves too universally clever.

In return for your plants, I have to-day began arranging my Malacca plants, with a view of putting out a full set for you. They will be placed correctly in families, and I will add the genera of such as I know. It is of primary importance to me to clear off bulk before I leave the Gardens. I have to day got roughly half through my (Malay) collections, among which is a new Barclaya with Nymphæa leaves, a new Dorianne, two remarkable Monocotyledonous plants, an anomalous Sapoteous plant with large very prickly fruit, which until I saw the leaves I took for a Dorianne, there are some other odd looking dubious plants besides. I also expect daily my Khasya Collectors, laden with things, alas! what a short time I have for such a deal to do! The lecturing also interrupts one much, but it is a primary duty and cannot be either abridged or avoided if I were willing to do so.

Government have approved of all my suggestions and plans of improvements of the Gardens. My plans for a Natural Garden, flanked by a Garden of Medicinal Plants, and a Garden illustrating the useful plants of lower Bengal. The first will occupy a large circle or ellipse—with interior circles or ellipses: the central smallest for Acotyledons, the second for Monocotyledons, the two outer for Dicotyledons, whatever this arrangement be, the same

will be that in the flanking gardens. In the centre there is to be a Cenotaph to the memory of William Jack. The situation in front of the conservatory will be convenient for the Natural Garden, every thing being at hand for keeping a constant show of plants up. Trees or very large shrubs will not be admitted, but they are to occupy other parts, and to be in groups of natural orders and classes. I apprehend however that all my labour will be thrown away for want of time to complete these works before the period of my acting appointment expires.*

Ground is preparing for a Linnean garden, an expose of the Jussieuan De Candollean system, passing into the Medical Garden. Lastly on the same line comes the fruit tree nursery.

Instead of having an incongruous mixture of flower and pleasure garden, consisting as at present of borders extending along miles of walks, I intend having a distinct flower garden, and to do away with all the borders, except in particular places. By so doing, and by general concentration, I can bring the whole force of labour, design, and effect, into the centre of the grounds, where all the objects of the Garden will be exhibited in the several departments of systematic botany, medical botany, ornamental and useful gardening, as Nurseries, fruit gardens, flower gardens, and œconomic gardens, all being kept distinct.

Have you read R. Br. on Cyrthandreæ—*grand*, just in time to make people cautious regarding accepting the Schleiderean views of placentation! Then the characters, reduced to their essences! And yet Botanists go on giving generic descriptions, not characters, in spite of R. Br. The above is one of Mr. Brown's most important papers.

I am glad we agree about genera. I used to have long and strong arguments with my friend ..... about it. And I will just tell you what it is, that the hair splitting, and long characters of non-essentials, are popular, in as much they are easy, and require no condensation comparison or ellipsizing. Menispermeæ are very interesting.

* The period did expire before the improvements were completed, but they were again resumed in April 1846, and in a great measure completed in February 1848. A Cenotoph was also raised to the memory of Mr. Griffith by his friends, with the permission of the Government, in the midst of the improvements he projected, similar to that which he himself raised in honor of Dr. Jack.

Did I ever tell you of my having a Lardizabaleus genus with pinnated leaves. I have seen only the male, I am sorry to say. It is quite opposed to your view of Cucurbitaceous structure, and yet quite in accordance with Coccinea Indica in its earliest stages. Depend upon it there is nothing so constant as the direction of leaves: under every form and shape, the margins when rolled up, are always towards the axis. Whenever they are not so apparently, we can trace the reason, as in Alströmeria and Caprifoliaceous ovula. Then again you have an instance of an inferior ovarium, a great obscuring cause, which you must investigate and clear up before you can pass on to the carpel-leaves. The only anomaly I know in Cucurbitacea, is something about the stigmata in the earliest stages of developement.

March, 23, 1843.

The drawing is in hand, and will be accompanied by a specimen of Conv. reticulatus of the gardens, but this does not authenticate it. Of Conv. elegans, no specimens exist, and the species, itself is perhaps very doubtful, Of Mappa and Macaranga I know nothing, but Euphorbiaceæ would repay original enquiry. Without doubt your Podostemon sent appears to me to be *two* species, both very distinct from our three eastern ones, and the caulescent one is very interesting. If you are going to publish them and will give me time, I will make sketches of them, and of our three, so that you can bring the whole genus into notice at once. When you do so, correct Lindley in considering them allied to Piperaceæ. What curious plants they are, they are regular flower-bearing Hepaticæ, and quite destroy the point and meaning of such terms as Exogenous and the like.

I am absorbed in Salvinia and Azolla; these microscopic enquiries are very tedious, and when one has laid hold of the main points, the working the thing up continuously is very laborious. I travel out of my way to Chara and Marsilea, M. Fabre's account of which last is all beside the subject, as I long ago said.

I have now materials for illustrating the development of Isoetes, Psilotum, Marsilea, Salvinia, Azolla, Musci and Hepaticæ, and when I have finished Lycopods, and Filices, I would like to be out with a work on Indian Cryptogamia of higher forms; so much so, that if I

see no chance of my succeeding to the Gardens, I intend sending away all my other collections, and devoting myself to this object, and general developement, which is obviously the keystone of the arch.

I am always in a hurry, and always should be, until settled down in some permanent and suitable appointment. I have so many irons to look after, and now have to edit, Voigts Hortus Suburbanus Calcuttensus, a very valuable catalogue.

Had I time I would endeavour to make it more complete by adding generic and ordinal characters in the form of foot notes This would not perhaps be the best plan, but it would be the easiest, and as in a catalogue, the names of plants are supposed to be known *a priori* to enable one to consult it, the want of the usual *clavis* either by a whole body of generic characters, or by those of the family may be more excusable. I have just received the melancholy news of the death by drowning of a very fine spirited nephew of mine, of the 21st. Regiment N. I. now at Barrackpore. I must therefore break off for the present.

26th March, 1843

It has been found that hybrids may be formed between Orchideæ of any of Lindleys sections! This is fatal to his Orchid. classification! The seeds of these though they appear perfectly formed, have not been made to germinate. Is not this startling? and to what new views of classification it may lead, who knows. But when you write on Orchideæ, eschew Lindley's arrangement, which sacrifices all to one character, of the importance of which we know nothing. Ward is my authority for the hybridising which has been done at Messrs. Rollinsons.

We are under some mistake about the Dryptopetalum. I ought to have said that an objection to its being Rhzophoreous was its having a superior ovary. Now Cunoniaceæ have both ovary inferior and superior, so far so good. But I confess Cunoniaceæ to be a sink for several singular things with opposite leaves and interpetiolar stipulæ.

I see my character of Mackaya, as Modeccopsis has appeared in the Annals of Natural History, *entre nous*. I do not like Arnott's characters, nor do I think he has the tact of extracting and confining himself to essentials. My own plan regarding the names without cha-

racters was precisely yours, but in long points I ask, and generally take McClelland's advice. I am aware that Botanists will not adopt them, and for that reason I only intend passing over Mss. names, making remarks on such as have been printed without being defined. I think a few hundred names, *sine charactere!* and an occasional note would go along way. All my doings are only preparatory; at any rate, I hope to produce an arranged systematic work on Indian Botany. I did not commence passing over mere Mss. names without planning what will follow in case of attacks or non adoption. You see it is quite impossible for me *here* to ascertain what plants are named, except such as are described; it therefore comes to this, am I to remain inactive and postpone my intended publiction until I can return home and consult the Hon'ble Co.'s Harbarium in Soho Square; or, am I to go on with my work, regardless of all names not founded on description? This is my difficulty. Such names as are adopted in the new edition of Steudel, I can only make notes of, pointing prominently to the mischief of the system. We are not to wait for the pointing out and correction of abuses, until the leading men in science, at home, choose to begin. If I do what is right plainly beneficial to science, it is the non-adopters, not I, who will be to blame. But my ground for not passing over printed names would be a tender feeling to science, and a wish to avoid its synonymy being extended. I will remember about Rhamneæ: the habit is certainly in its favour, but the flower much against it. I have two boxes more on their way. If I were here permanent, I might hope to do something, otherwise I fear while in India, under all circumstances I can make none but fugitive attempts.

Zanonia clavigera is Z. indica I fancy.

I have just received yours with the sketch of the Calamus, which I dont recognise, it appears a genuine Calamus with exserted fructification, and no particular development of bracteæ. I scarcely know whether to adopt Dæmonorops, Plectocomia etc; if they are adopted other divisions must follow, and calamus would ultimately be restricted to such forms as yours. I have some very curious ones, quite as good genera as Dæmonorops or the other.

I shall like to see your specimens. I have put aside, Govanea nivea, on the old score, that it is a name only, but nothing besides; not a word of description, not even a drawing.

Wallichia ought to be restored, I have not however access to a complete copy of the Coromandel plants, and the synonymy of that name is already obscure. I have two species, with fragments of three or four more. Orania is not distinct. You will have a fair triumph over me when the decade appears, for after condemning your name, I anagram one which is much worse. Naming, certainly is very unsatisfactory. I will send you soon the tracing you require. I dislike all infinetismal subdivisions, old convolvulus, was a good genus, and subgenera would have done better than genera. Among Botanists, the doctrine of gradation of characters is evidently overlooked.

I dont find Palms bad to preserve. I take stem and all, and tie the whole up in gunny or mats voila tout. Herbarium specimens can be made afterwards. Palms are a difficult family, with intricate affinities, to hit upon which one ought to go to the new world.

Botanical Garden, Sept. 2, 1843.

Just look at this, and tell me, if you know it. It is the Periploceous plant, with many winged or keeled follicles; is it any thing like your Decalepis? I ask this, because I remember you considered Decalepis as indicating a tendency to the production of another series of stamina, which this also does, but they are minute, and you will scarcely see them on the dry specimen. But examine the sinuses of the filaments narrowly, and you may see them.

I call it Myriopteron, I first found the plant in fruit at Mergue, where the divaricate follicles are known by the name of *bumb* joined fruits: not an inappropriate name: only imagine, of one genus Dæmonorops (Palmæ) of which there is one published species, I have seven and probably nine; I get even now occasionally new Palms from Jenkins. Pray send me a bit of Bentinckia. I have another Decade for the next number, consisting of Orchideæ, one or two Euphorbiaceæ etc.

October 22*nd*, 1843.

Just look at this very curious plant, and give me your opinion of it. It is a Malacca thing: the like was never seen before. It

has some odd approximations to Rhizophoreæ and Cunoniaceæ, to which last, I am disposed to refer it. But the habit is totally opposed to the former, and to such of the latter as I know. If Cunoniaceous, it is the third genus of that Family, I have from Mallacca. I see among your specimens Rottlera niveo, Givotia Rottleriformis Gr.

Zanonia clavigera is now before me! In the first place, would you adopt a Mss. name which has been published, but without being defined: it is clearly contrary to law, and not binding And if I thought Botanists would support me, I would commence passing over *all such*.

Then pray let me quickly know what you mean by invertion of carpel leaves, do you mean the mid rib to be next the axis, the margins outward. If so, Zanonia is against you, for here you would require the placentæ to be external, the style etc internal, which manifestly is not the case. There is no difficulty I think in explaining Zanonia. Nevertheless there are some odd things connected with Cucurbitaceæ, on which I intend entering at length, sooner or later.

I can make nothing of the Calamus drawing herewith returned; the species are in sad confusion, and Martius's characters of most, not quite sufficient. I keep the genus entire. If characters of the spathe are relied on, one might make a dozen genera; these I make *sub* genera. I intend beginning with them in the next Journal, giving the whole of the tribe if nothing hinders me, but I have an infinity to do just now. I am putting specimens of the most interesting genera aside for you, with the Cyrthandraceæ and Ericineæ as I meet with them.

I am all absorbed in Menispermeæ, having flown from Palms at a tangent. Can you tell me whether M. heteroclitum of Roxb. has been appropriated by any one, it is a very distinct genus.

What is Lindley's Pereira. M. fenestratum? Can you from memory, refer me to useful Indian authors on this head.

M. fenestratum comes closest on Phytocrene: indeed the habits, and heads of females are precisely alike. If you can rummage me out bits of your Indian Menispermeæ. I will send you a set of our Garden ones etc. It is a very interesting family.

Botanical Garden, October 20th, 1843.

I have received your letters, and the packet of Brachylepis etc, for which best thanks. The Dryptopetalum ? is a singular plant. It can scarcely be any thing connected with Rhizophoreæ, owing to the superior ovarium, neither has it the habit. Can it be Cunoniaceous ? ; but it is unlike any I know. Its habit is rather that of some Guttiferæ, but who shall decide on such an odd fellow, have you never seen the male organs ?

The other which you say is apparently a Thymeleous genus, is an old friend of mine, and one of the most remarkable of known plants. It is Arnott's Mackaya, my Modeccopsis Mss. The flower is entirely Santalaceous. The ovarium and ovula Thymeleous (except indeed the *inferiority* of the former.) *Very* remarkable changes take place during fecundation, of which I have only had an imperfect glimpse. Then the fruit is, I fancy, the only instance of a Drupaceus fructus, in which the epicarp separates into 5 valves, and the putamen drops out, simulating in all respects a seed. I have met with it, or another species, in Assam, Mergue, and Malacca. I only lately ascertained it to be Arnott's Mackaya.

I have selected out your Cyrthandracea, and some Ericineæ, and with them I will send Myriopteron, Plagiopteron, Siphonodon, Givotia, Excæcaria oppositifolia, I know nothing of the names of the Cyrthandraceæ or Ericineæ, but as they are in families, this is not of much consequence. I am getting my Harbarium into order, then I will attack the Malacca plants, of which you will get a full set. What interesting things the collection contains !

I send all home, all the Duplicates of my general collections to my friend Lemann, keeping sufficient with me, to illustrate generally and locally. What a host of Ferns and Grasses !

The Myriopteron specimens are only in fruit, the collectors having neglected to dry flowery specimens. It is essentially Periplæceous, like Cryptostigia and Cryptolepis, in not having the pollen grains cohering into massules. These descriptions are mere sketches and imperfect ones too, as I have no time to make general structure bear on each. The Excæcaria oppositifolia is doubtless a distinct genus, but the whole family wants remodelling. The sectional characters are now very defective, and partake largely of the Linnean leaven, single and arbitrary.

I shall despatch the parcel to Binny and Co. in a few days, as the Monsoon seems to have set in. I am sorry to hear such account of the Cotton.

I cannot find Burmannias's flora Indica, (if I have it) or I would send you the drawing. The catalogues of the library and garden are all nearly printed, they have cost me much of labour, especially the alphabetical one of the Library.

Do you know a Convolvulus with thick stalks to the flower, the same incrassating after fall of flower, and looking with the calyx exactly like a fructus inferus? we have one from Dr. Gibson.

——

Bot. Garden, Nov. 13, 1843.

The superintendent of the Dhoon (Dehrah Dhoon,) having applied here for Cardamom plants, can you oblige me by procuring for us some bulbs, or *learnedly rhizomata*, and seeds, sending them here by post? These will also do for our economical garden. If you are within reach of the black or long pepper, they would be acceptable, cuttings in *moss* (have you any moss?) would reach us, safely.

Our cardamom plant is Amomum dealbatum, it is not yet in the garden.

Per Hindoostan two cases of fine Dorianne seedling go to Ceylon, where I hope they will at length become well diffused.

Have you any Munjeet (Rubia Mungistha), if so, you can recommend extension of its cultivation. I will tell you why, a person was here from Java, who was very anxious to introduce it there, its value is known, and Indian munjeet ought not to be exposed to the rivalry its Indigo has been exposed to. Your dried plants have gone to my agents, you will hear of them through Binny and Co.

Among the grasses, you gave me. I find one from salt, the marshes of Negapatam, which is Festuca natans of Hamilton, a Sunderbund plant: it is a new genus.

——

November 4, 1843.

Imprimis, I have put your name down for a supply of Sissoo seeds, which will not be ripe before January. The tree is getting

popular, it is certainly a handsome and valuable timber. We have supplied several first rate ones to the Arsenal, and this shews that in Bengal it will succeed for practical purposes, always supposing the north west to be out of the way. I have ordered you a set of tree and shrub seeds, which I hope will please you. Our handsomest trees are the Acacia serissa, A. elata, Conocarpus acuminatus, Terminaliæ several, Nageia Putranjiva, Dalbergiæ two or three Pterocarpus dalbergioides, Cassia sumatrana: this last is admirable for groups, Schleichera trijuga, Parkia Brunonis, elegant etc. Now I am acquainted with most, I know how to group them in plantations to produce great effect. There will be plenty of seed of Poinciana regia, it is a beautiful tree. Your name is down for that also. I will send you for experiment before long, cuttings of some very pretty things. Quoad Bentinckia. I think I told you I had a pigmy one from Malacca, this I found out from Martius.

I have no opinion of long generic descriptions, what useless repetition! what absurd sectional characters you often meet with in books, it would require a logician to see the differences. Now I say all differential characters should be *evident*, if drawn from the roots no matter so that they carry conviction. Science is not wanted, but practical characters; this is one reason why I loathe the subdivisions going on. Who did not know a Convolvulus formerly?; it requires now a Botanist to know one. Besides consistency requires that all groups of the same value should be as equally separated as possible, subdivisions do not allow of this, but on the contrary, give us some genera so far as we know, quite distinct, others quite indistinct. Therefore I hope you will set your face against this practice when you come to Convolvulaceæ. I will remember your hint about the dates of genera, and if Wallichia can be restored, I will do it on principle. DCs. system I always thought poorly of as a system. He did a great deal doubtless by it, and his Vegetable Organographie, Theorie Elementaire de la Botanique, and Essai sur les Prop. Medicales; the fact is, Botanists are far behind. Depend upon it, that our three sub-kingdoms, the three divisions of Compositæ, the three of Leguminosæ are not indicated to us by nature for nothing; yet all divide and sub-divide, make tribes, and sub-tribes, without suspecting that nature may have a numerical system. Nothing great will be done until number, the study of deve-

lopement, and physiology are brought into play, the first will follow others. I might venture some novel doctrine, but don't like to do it prematurely. I have studied development more than any one except Schleiden; and am convinced of the extreme importance of it. But how difficult it makes the science?. What do you think of the article on Siphonodon, Roxburghia etc, particularly the remarks on pitchers. Pitchers ought to teach people not to speculate on forms in their mature state.

I have not an Orchidea named positively; neverthless, I will see what I can do with my own, and the garden sorts. I will send them to you before long. Do not have much to do with dried specimens of such things. I will see that the journal reaches you sooner: with this you will get the last part of Jacks papers except the index, and a brochure of my own.

Bot. Garden, Decr. 2, 1843.

I have received the specimens of Bentinckia, which I hope will help me on. I should like however to see the fruit very much, and spathes. It obviously is closely allied to Areca: some of which also have the oblique fruit so remarkable in Bentinckia. It is analogous to Cissampelos in some measure.

I am getting on with the first section or Calaminæ, but am pressed for time: having Roxburghs Cryptogamia Mss. on hand, and all the Garden work; but in a place like this, so retired, and so furnished with means, a man must not be idle. The Calamine section alone will equal all the Roxburghian Palms together: they stand thus.

Dæmonorops 6. Plectocomia 4. Sagus 4. Eugeissona 1. Zalacca 6. Calamus 24. To see the increase of species is surprising; most of the materials are frequently scanty to be sure. None of the genera except Eugeissona are restricted, but all run one into the other: and I do not separate Dæmonorops from Calamus. This genus I divide according to the inflorescence. I find that characters of vegetation are of no use for practical means of distinction. Martius's characters of Calami are mostly drawn from the leaves, the armature etc. on which sufficient dependence is not to be always placed. I preface the thing with a popular account of Palms, and the discrip-

tions are in English. *Ad Captandum*, for this is the first step towards what I consider is the duty of a Superintendent of this Garden and Professor, namely the publication of a popular, yet Scientific Flora Benghalensis. I reserve a full account with folio drawing for a subsequent occasion. I regret often not having paid particular attention to the family throughout my Indian experience; evidently a full examination of it would abound with results applicable to general system. I have lately got a new Zeuxine, it may be in Lindley's last part, which I have not got. This would enable me to publish two decades of plants, new either to science or Bengal, and some very interesting indeed. This I shall reserve for the Journal to appear hereafter.

The Natural Garden is progressing, and I propose planting the first circle, Acotyledones, to-morrow; but we are very poor in ferns, in which we ought to be rich; for they bear conveyance very well, at least all the epiphytical species, as well as Orchideæ. Ponder over the mutual hybridisal of Orchideæ! How opposed to what science thought! what a destruction to genera! Sir J. Smith may be right when he said, there would be more genera than species.

Botanical Garden, Dec. 26, 1843.

I intended having answered your letter announcing the Podostemons immediately, and to send characters of my *three species* for your comparison. The last species I got was on the Naga Hills I believe, or the Khassyas; and is remarkable for having lobed sinuate fronds. So that you see the first, P. Wallichii has fronds like those of Anthoceros, not entirely humifuse, or *rock-fuse;* the second discoid *petrifuse* ones; the third petrifuse lobate sinuate. Certainly your finding them is very odd?. What is the habit? That of the American ones being widely different, they are caulescent and Naias-like. Your specimens of Givotia are males, but came too late for my paper: they will do for the next.

Roxburgh's Osyris peltata is I believe now referred to Macyranga, DuPet.Thouars, but I can't give the authority, probably it is doubtful.

I am quite overwhelmed with work, the Calamine section of Palms being now going through the press. I am sadly hurried, but that is

inseparable from acting appointments. I see Blume has come out with more Rumphias, and I am anxious to know whether he has given any of my Palms or not: Calamus I divide according to the *spathation*, which varies a good deal, and is prominent.

The many which again are capable of sub sectioning have long tubular spathes which are not decidious; though they may be worn away: then comes the Calamus Draco section, in which all the Spathes but the lowermost are deciduous per anthesin; then comes Platyspathium, in which all the Spathes are persistent per anthesin, and flat; one of Rheed's too is of this section, though misquoted by Dr. Roxburgh for his C. gracilis, then comes (Dæmonorops) Cymbospathia, all the spathes persistent per anthesin, cymbiform, rostreate the two outermost almost complete. To the first section, all those belong in which the spadices are lengthened into whips. One only has the petioles flagelliferous, the others vary with or without flagelli, which character gives no good divisions. I have 26 species, not one scarcely determinable, but that is not my fault. Of the *four* species now in these gardens, (Roxb. had 15,) all are named wrong, and under one, are confounded two very distinct species!

I would much rather have done something else, but these things are bulky, and I want to lighten my baggage; besides nine out of ten Botanists give more credit for descriptions of palms, than for microscopic observations. In the preface, which will be the last part of the paper, I have some original remarks; and if I am here longer than I expect, I will keep it back for maturation. I was sorry I could not confirm Martius name Lepidocarynæ: the genus is evidently not different from Mauritia; and sub families name you know must be taken from the most perfect genus, which is Calamus.

January 12, 1844.

It is a pleasure to have such a correspondent as yourself. I hope your son is quite recovered by this time, from that awful disease Cholera, which makes me shudder when I hear its name. Many thanks also, for the readiness with which you have intended to supply my desiderata. The Cardamom will be an acquisition. Your remarks about Dryptopetalum are quite just; it is a singular plant, and I propose some day examining it minutely. What do you say

to *these* gentlemen just received from Malacca? why the curiosities of the place seem to be increasing instead of diminishing. I have got also three boxes of live plants in good condition from the same quarter, and I hope to shew a good increase of novelties in the Gardens by July next. It is the only way, evidently to send cases, and have the seeds of the localities sown in them, and then shipped. By this means I have some of the grand Mangiferas of Malacca, and several Palms propagated whose seeds are extremely impatient of being kept dry.

Mackaya is quite intermediate between Thymeleæ and Santalaceæ, but has more characters of the latter. Its habit is comparatively peculiar. I can assure you I was often impressed with an opinion that you must have opposed Arnott in the diffusiveness of his Characters, judging from the difference of those entirely your's, and yours in partnership. I am glad to find I was perhaps right: if a man has not an eye to seize at once on the prominent points of genera and families etc. he never can be a helper to the Natural system. I wish I had got your letter earlier, as I would have given much to have known sooner that Steudel had not adopted or been acquainted with Roxburgh's Flora Indica. But one of my faults is to believe that every writer is industrious, assiduous, and up to the requisite mark. So how could I suppose that Steudel had not quoted from Roxburgh. Could I have embodied your hint, it would have sharpened what I have said to an infinite point.

When you come to Orchideæ, why not abide by Brown's Prodromus? Lindley on this head is not so clear as usual. I do not know any thing so poor for him as his Orchideæ, and especially the preface to Bauers illustrations. I have lately seen, that a great character with Lindley is Columnæ pes elongatus: to me it appears that this arises from two totally different causes, in one of which the term seems to be misapplied. This I do not think has escaped Brown in his Prodromus. I have not seen Kunth, but he cannot be much later than Martius on *Calaminæ*. My palms will not appear before April. Ripe seed of Bentinckia will be an aquisition: it is scarcely distinct from Geonoma, to which it is prior. I am now doing a little with the Microscope, and hope to finish something interesting, upon which I have been off and on engaged for two or three years. Do you know a Sterculia with scaphiform scarious car-

pels, *one seeded* at the base, bilobed at the apex, as Emanuel my collector, has sent up fruits of one, which appear to me curious enough. What a number of Alangiaceæ has the Malaccæ flora, as you will see, I believe. I have got an idea of most of the enclosed, having looked over them yesterday.

March 12, 1844.

I did not send the Malacca wonders, but will do so in a day or two by post. I think I understand them all. My folks have just been to mount Ophir, whence I expect great novelties. You should have received the Cyrthandraceæ and Ericineæ before this. Your caulescent Podostemon is very interesting indeed ; it is the first Asiatic one of the kind that has been found, unless Bongard got some in the North of China, all ours are frondiform. Have not you got specimens of Podostemon. Wallichii?. So Kuth has forestalled me in Calaminæ, only his 1st vol. is in this library. My paper is nearly through the press : it is long, but as it relates almost entirely to new, or supposed new species, it is right to give minute descriptions, so that the plants cannot well be mistaken. . Most of Roxburghs, and four or five of Hamiltons are out of my power of determination, and Martius gives no help ; although his figures are as usual excellent. I meant that Roxburgh introduced 15 species, and catalogued them ; but that now only four remain, or rather *two*, for two of our present four were not known to Roxburgh. I found one new one here! which I suppose was always mistaken for Calamus hostilis ; a name which I do not adopt. What a host of species of Calamus ! really I believe upwards of 50 will be found in our settlements alone.

I am now hard at work, lecturing, printing, planning, and above all, occupied with a most interesting microscopical investigation of Azolla, Salvinea and Chara. I trust the results will prove interesting, for they go to make out these three to be the naked seeded orders of Acotyledons. Azolla is most remarkable. Botanists seem quite to have overlooked the real nature of Chara.

I see my way through this subject, and shall bring it out in the July number. I have been much amused with authors on Azolla and Salvinea, and give a history of both genera. Brown is as usual far in advance.

Hooker's genera Filicum is invaluable for the drawings, which are very superior. It is singular he should like to publish without arrangement. To me the only interest in science is generalisation. But is not it strange, that so little should be known of the nature of the organs, upon which the arrangement of Ferns should depend. I should like to ask any Cryptogamist what he means by an Indusium, and what its nature is?. What is a frond? and why do you call it a frond? Few could answer these questions. Now my idea is, first of all, study growth and structure; then make use of terms, or names of the structures. But it is curious that you rarely see this practice or principle adopted.

Munro has sent me some Agra plants, among which is an Erodium, much like an Affghan one: so on looking over Endlicher I found, that Erodium only differs from Geranium in one character, yet that there is a dozen lines to each genus, otherwise identical. This repetition of characters is the fault of the book, and it may be said of books in general. Munro is on the hills, and I expect he will make fine collections there.

The pepper cardamoms and Bentinckia will be highly acceptable. McClelland has a remarkable paper in this next No. on Apodal fishes. The Hon'ble Court now take 50 copies of the journal! so that its influence is increasing.

Botanical Garden, April 17, 1844.

I have received your letter, with the long Podostemon, which is not P. Wallichii, but a sixth species! at least so it appears to me from a mere glance. I shall be very glad to get the Calami. I have, since the Calaminæ went through the press, got three or four more, and I have no doubt many still remain. I am in anxiety to see the other palm you mention with enormously long leaves. You may wonder why the leaves of palms are called fronds by many, and what similarity there can be between their frouds, and those of Ferns. Must we endure all this! aye, and more than this; depend upon it, the fronds of palms are true leaves, and the fronds of ferns not leaves at all, except in function. Is not the variety of names and the false ideas they convey, a reproach to botany.

You ask? what is an Indusium? ah! who shall answer this: no one knows what it is, and botanists who publish of ferns, ought to be

ashamed of characterising genera from organs, of whose structure they know nothing. They all confound indusium, and involucrum. Now in ferns I would call involucrum those marginal ones, which are nothing but a continuation of the margins themselves; and Indusium I would limit to the coverings of the sori, formed by a *supposed* (mind that) separation, or forcing up of the cutis. Neither exists in Salvinia. but Azolla has an involucrum derived from the membranous lobe of the leaf. A propos of Calami; specimens to be perfect, ought to consist of a sheath, and its corresponding part of the stem, the naked lower part of the petiole, a bit of the leaf about the middle and the apex: then come entire spadices, male and female, etc., they can be tied up in bundles, and wrapt in gunny. Jenkins in this way sends me magnificent specimens. I am putting out an assortment of some for you, of such as I have duplicates of, I see the leaves are of little use.

Jenkins has just sent me a Vanillaceous plant, a Cyrtosia or Erythrorchis from Assam, a genuine straits form: leafless, and apparently parasitical! The Assam Cycas, of which he has repeatedly sent specimens, is an undescribed species. What difficult things they are? the only characters I as yet see, are derivable from the shape of the carpel leaves. I have now five species, C. circinalis, C.sphærica, C.revoluta C.assamica, and the Pakoo Galowe of Malacca, which appears to be a fine species. I am now at work on them.

I come out soon with a paper on underscribed plants from the neighbourhood of the Botanic Garden. Lately from the Sunderbunds, I have a Spiranthes, a Cynanchum, a new Sterculiaceous genus, also obtained at Malacca, an Euphorbia etc. Then I have some six Eriocaulons, four or five Naiades. Lemnaceæ, *one new genus*. I will say hereafter what I think about the Amaranthus you sent, but I know nothing of the family. I shall have to go through it when I come to the Affghan Amaranthaceæ. The plants you sent will then be most valuable: there is nothing I am in such want of as authentic specimens, as I detest depending upon books.

Bot. Garden April 20, 1844.

Not having yet received the Cardamoms, perhaps you will ask Mr. Conmolly, to pack some roots in dry sand or mould, or moss,

place them in a small box, and send by post. Several small packages are much better than one large one, fine (pepper) cuttings would I am sure, reach us safely in the rains, packed in sand, sawdust or moss.

Can you send me some Senna seeds, as I have had several applications for some. I was not a little astonished last Thursday, to hear from the Deputy Governor, that the Hon'ble Court have in the most flattering way, ordered that while in Affghanisthan, I shall receive my old allowances of 1,000 a month; whereas at the utmost, I only received 470, including expense of collecting etc. This for thirty-two months, amounts to a round sum! to which has to be added, 3,200 Rs. retrenched during the last year to make up for the sum I was supposed to have over drawn beyond Assistant Surgeons pay. I hope therefore to receive 13,000 Rs. at the minimum. Out of evil comes good! You may fancy the importance of this boon, as it not only makes me independent, but enables me to go home if necessary. Otherwise on being relived from this, I should only have received 256 Rs., out of which, 200 would have been retrenched; and at Malacca I should have 400 Rs. minus 200; nor would this have been over for three years!. I intend by the Affghan. Catalogue Report, Drawings, Charts, etc. to make the best return in my power for the liberality of the Court.

I have just received a long letter from my kind friend Professor Von Martius, but it contains no news. I hope my next paper on Azolla, will excite great attention among Philosophical botanists.

When I obtain the arrears sanctioned by the Court of Directors, I will order a first rate microscope, with all the most recent apparatus; a science that has got me on so well, deserves all efforts from me. I am now quite pleased at the thought of going to Malacca: The Agri-Hort. Socy. propose to print my Catalogue of the plants in the Garden; though the names are incorrect, yet the plants are known by them here; before, not one knew whether there were, 1, or 100,000 plants in the garden.

I have added numbers of new plants since I have been here.

Your Hydrobrium is a new genus of Podostemeæ!. I thought it looked different from Podostemon. It is a most marked one, having three sepals! three free alternant stamina!! and a trivalved fruit.

The habit is also peculiar, particularly as regards the spathe, but this is difficult to make out from dried specimens. The seeds are as in Podostemon.

Botanical Garden, April 29, 1844.

I write to tell you that your Orchideæ etc. have arrived, barely in resuscitable order.

Both palms appear to be quite new: The Calamus certainly is new to me: it belongs to Coleospathæ, spadicibus flagelliferis, judging at least from the specimen.

The other appears to be a *Wallichia* or Harina, and I should say quite distinct, but leaves of both are required.

Of palms entire specimens should be gathered if possible, and tied up in bundles, it is difficult to make out the habit of the parts without such!

The Orobanche is as you say, a genuine Orobanche, Mr. Thomas's despatches of Bentinckia seed, are I am sorry to say quite unripe. Pray let me know what the habit and foliage of the second palm is: it ought to have pinnated leaves, more or less jagged in some parts of the margin, and white underneath. Is it the one you mention as having such magnificent leaves. I have nothing more to say just now.

Botanical Garden, May 31, 1844.

Yours has just arrived. I am very anxious for a bit of the Palm with the big leaf, as without some of the leaf I cannot determine its genus: so I hope you will be able to despatch a messenger for it: a single pinna or pinnula will give me some idea of what it is likely to turn out. I am just now finishing the section *Arengeæ*, to which I imagine it will belong. Not that I wish you to put yourself to inconvenience after what you say, but probably any one you may send will be able to bring away a leaf. Whenever you may see it yourself, oblige by merely noting its habit, height, thickness, direction of the leaves, and Inflorescence. You will be astonished, I dare say, when I tell you that there are two species of Wallichia in these Gardens, exceedingly distinct ones too, yet they have always been confounded as one. I have now three species, with bits of three others: so you see what advances our Palms are making.

I have ordered for my microscope, a one-eighth object glass, and one-twelvth, with other eye pieces: which will set me up until I am settled. My instrument is first rate, equal to Mr. Grants, except in magnificence, and the high powers. I recommend you Ross's dissecting microscope, price £5; it is very portable, very firm, and the stage is large, so as to give support to the hands; it has four simple lenses, and a triplet: if you order one, insist on a sixth lens one-eighth. Slack's microscope appeared to me very good, but I never could get one made. Makers always will have their own way.

There is every thing to be done in Ferns, but it ought to be in unison with all the other Cryptogams. I have good materials, and hope to add more to them, as I intend studying Ferns exclusively at Malacca. Did you ever meet with an odd looking spurious Brownlowia in Mangroves: I did at Malacca, and again in the Sunderbunds, it has the habit of Heritiera, but is a Brownlowian Subgenus, with three carpella: Grewia floribunda is a Grewia, with winged fruit, is this enough to separate it.? I should say yes! Then I have a Mergue one with many winged fruit, and pentadelphous stamens, with the habit of that I sent you from Malacca. Give me your opinion of G. floribunda from the accompanying sketch, as if different, I will call it after Buxoo. I willingly accept your offer about Podostemons, so pray send me the dedication, and I will endeavour to turn out something worthy of the occasion, I mentioned the other one as remarkable for its ecostal capsules. Do you know ....? He is like all other young hands, too fond of making new families. I well recollect the wholesome check, I got from you long ago on the absurdity of supposing all one finds to be new ..... says his Garden is anxious to correspond with me, but why does not he, or it begin? I did not even know he had arrived, such is the system of communication between Eastern Western Botanic Gardens.

M. is not singular in losing his English Correspondents. I have suffered the same loss. I fancy from being a radical, or what is thought one. But curious to say, my remarkable Plants in the Botanical Gardens have roused Lindley to resume his writings on Orchideæ. According to what Lemann says, nothing is thought of but descriptions of species. I like Prof. Martius much from his letters, and shall try to send him a paper on some important subject.

To-morrow I go through Arenga, of which I have two, and then to Arecina, of which I have fifteen or sixteen. Bentinckia is misplaced by Prof. Martius, I think ; it is evidently Arecina.
But one loses so much by not printing oneself.

I have just got a magnificient female head of a Cycas from Jenkins, Cycas pectinata of Hamilton, but not well described by him, this will be part of the Century of New Plants I am preparing for publishing in the Journal.

Bot. Garden, June 11, 1844.

I have two letters of yours to answer, one incloses a Salvinia? but I take it to be rather an Utricularia out of flower. There is a very curious Aroideous plant something like it, but sundry appendages makes me suspect it to be Utricularia.

The Calamus is new, and I intend naming it in allusion to the brown fruit. Thanks for the drawing. The little Eria must be a beautiful plant. The Sarcanthus I have not examined, nor the Acanthacea, in fact I am constantly occupied on a report, and making plans of the improvements. I see in looking over your letters, that you say, the large leaved palm has pinnate leaves, but of what shape are they, and how incised, as Wallichia, Caryota, Arenga, to which it comes close, are all distinguishable by the shape of the pinnæ. I have not got the 2nd vol. of the Icones, so cannot look at Weinmannia, but judging from books, the Cunoniaceo-Rhamnea, is a new genus, and a funny one too. However, genera are often so loosely defined, that we should never rely on any thing but self knowledge derived from nature. Check every thing by it. If ever you come across dwarf Phœnices look at the inflorescence etc. there is one besides P. acanlis which has the fruit spadix exserted, whereas in acaulis vera it is immersed among the bases of the leaves. Thanks for the returned list, you will laugh when you see the Journal, I have told McCleland of your not having got the last number.

I have some great things in embyo regarding Cycadeæ, but Wallich's return will knock my observations on the head, I am just now impregnating them, Roxburghs C. sphærica is a true species. My Assam one is I suspect Hamiltons C. pectinata.

We are both cast off by our English correspondents: I attribute it

to publishing on our own account, that is heresy you know. The impudence of colonials pretending to publish! I will not send a line home, except perhaps to continental publications, who certainly do one more justice regarding delay, than the slow English coaches. A..... is a good Botanist: one of the best perhaps, but he has not the knack of writing generic characters: neither does he express himself clearly; he is learned, but not original. B..... is greatly inferior. How curious it is to hear the names of C.... and D.... in every ones mouth, Brown in no ones.

I am glad to find the Garden specimens will be acceptable: they ought to be on their way ere this. I have a box on its way from Malacca, but I don't expect much, until I go there again. You shall have a coloured drawing of Aldrovanda. Voigt could never get it, nor I, though I have offered high rewards for it.

So you write on theological points. I don't understand the Free... Church principle, nor why any separation took place from the C. of England as established by the reformation. I see sufficient ground for her breaking with Rome. By which you will see, that I am a high Churchman. It is a pity people can't agree on these points, but my reading has made me astonished to see really learned men write about incomprehensible things, such as Transubstantiation, immaculate conception, etc. really such discussions seems to me profane! and yet done by Churchmen. After all, give me Nature, where study does not lead to irreconcileable differences, but the unity of opinion.

Bot. Garden, May 8, 1844.

Have you any Phœnixes down about you, or have you ever observed them? My own materials are indifferent, and made worse by the impossibility of relying here on a single name of a single plant. I suspect there are at least two species under P. acaulis. Could you recommend me to any obliging person who would send me specimens of P. farinifera.

I have just finished off the second section: containing Coryphæ 3, Livistona 2, Licuala 8, Chamærops 3, Phœnix 4, and now I go on to Arecinæ, in which I am very rich. You ought to have many down in your wet Southern jungles.

What is Roxburghs Capparis heteroclita?; really it is a curious

thing, judging from his drawing, a sort of cross between Michelia and Capparis .

Would you like to have a set of garden plants, with the garden names: made with the view of ascertaining the real names, and thence making an accurate catalogue; if so, as I have had five sets made up, you shall be most welcome to one.

Did you ever come across Aldrovanda, that you make out Roxburgh's plant to be the European one?. I never have been able to get it yet, tho' I pay pretty handsomely for such things.

I have just got yours with the Podostemon, which is evidently quite new, and very curious from having the capsule ecostate, or nearly so. Now this character, though so apparently trifling, is universal, with one exception. Thanks for the hint about plants, I hope to give you a quantity of most interesting things, for I believe Malacca unrivalled in producing these. The Tiliacea is not I think a Berrya, or at any rate it is a subgenus, the fruit has many longitudinal wings, and the habit is different. I will send you specimens of Grewia floribunda along with the garden set I mentioned, without waiting your answer; as what you don't want you can throw away.

I enclose the 1st part of the Palms, as I am engaged on Arenginæ now, please to send me a leaf etc. of the second one you spoke of. I do not mean *the Calamus*, although I want specimens of this too. I think the sections of Calamus are good working ones, and the best my materials would admit of. But the seeds etc. want particular examination. If you find the characters not practical, please to let me know, being artificial in almost all instances, they ought to be diagnostic at least. At the end of the paper I shall give a synopsis, with short essential characters, and then rest on my oars, until I can study more forms.

Nothing would give me greater pleasure than being with you, but I have still the Affghan report to do.

Who would have thought of so many Podostemeæ turning up in India?

Bot Garden, June 20, 1844.

Your plants have arrived; the Calamus was all the worse for its contiguity with the Orchideæ etc. which all, except the Cymbidium?

or Sarcanthus? arrived in excellent order. The little Eria has not at all the usual habit of the genus: what beautiful bulbs it has with their delicate net work. I imagine it is a congener of a Khasya plant, called Conchidium, which technically comes close to Eria. This same Conchidium has since been defined by Lindley, but I forget the name and place, thanks to the thousand and one periodicals throughout which botanical papers are now published. This white fruited Calamus appears new, and evidently is of the same section.

I have just got a new Phœnix from Jenkins, which confirms my suspicion of there being at least two species lurking under P. acaulis, this one differs in its very narrow leaves, and long exserted fruit peduncles, so that it will be easy to give it a proper name. The stems are like scaly bulbs, as are those of the P. acaulis, but these are much larger.

After looking over my Calaminæ, again I find, little room for doubt of most of the species being firm ones. C. floribundus comes close to C. viminalis (Reinwardtii) Martius, C. Roylea looks much like C. tenuis, but I believe it is different. I intend studying these plants at Malacca intimately. I have just got a new box of plants from Emanuel, my Malacca servant: many appear to be new. There is one remarkable Euphorbiacea, with the peduncles dilated at the end into a cup. I enclose some of the flowers. I have only glanced at the contents of the case.

I am excessively busy in getting up my final report, in which as usual I speak plain, although I get little credit for being disinterested; but my aim is not so much to expose what is wrong, as to get the Gardens placed on a really proper footing. They might be made to do so much good, and once get them well set up, public opinion would do the rest.

I have just heard from Munro, who seems a very enthusiastic person: and up to his work; I should like to have him here for three months to inoculate him with the desire of visiting the Khasya hills, to which all others that I have seen, are unequal

If ever you go to the place of Podostemon, endeavour to get some germinating, or at least very young plants. I can fancy how an Acotyledonous plant gets a stem, but how a Dicotyledonous plant loses it, and becomes as some of these do, mere discs spread over rocks, is another thing.

Then again where are their roots? How opposed to late ideas of the absolute distinction of the three great divisions. Also, please to take a bottle of spirits and deposit specimens in it. I shall not be very sorry to get back to Malacca, this is a delightful place truly, but one is interrupted, and the lectures at the Medical College consume much time. For Botany, no place can exceed Malacca.

I have this moment received the palm seed, with your letters: the palm is evidently undescribed; and will if not a new genus, turn out I think, an Arenga. I shall be in the fidgits until I get specimens: please take care and *do not direct* them here, as I shall have left before they arrive; but to me, care of Willis and Earle: Did I ever mention a circumstance connected with some unique specimens, Thismia Brownonis, the monocotyledonous Rafflesiacea?.

Bot. Garden, July 12, 1844.

Thanks for the drawing of the Palm; all now depends upon the leaves. If bipinnate, it is a Caryota; if pinnate, a new genus, or sub genus. It appears to be a fine species; is it dioicous or monoicous? is the juice especially of the fruit acrid? I must write to Wallich for them, if they go to him; after I leave the Garden.

I hope to make you up a magnificent Herbarium of Garden plants; and you will of course get Grewia floribunda and Brownlowia. I have a third genus from Mergue, with pentadelphous stamina, and many winged fruits. I hope when I clear off the collections, to be able to publish characters of the new genera. I am now at the Malacca plants.

I will keep your notice of L.... for the Journal: please remember the specimens in spirits. I must get you to undertake some parts of the Malacca plants, as we have not been able to boast of a paper from you yet. My plan for the genera would be this; first of all, a particular table of the species, (numbers) of each family of each flora, with a concise description of features, climates and situation; then a general table; then the new genera. The tables would be very useful, although the identity of species might be only approximate.

Just look at the enclosed fragment. I suppose it to be *Neesia* from the fruit, it balances between Sapoteæ and Bombaceæ, *Durionecæ*, it is a new species with Sapoteous seed, and much of Albumen!!

otherwise it is *Durionoid.* Just tell me what you think of it. The genus is published in the Nova Acta.

Lower Circular Road, Calcutta, July 21, 1844.

Wallichia has cuneate pinnæ generally panduriform, Arenga linearis, Caryota *pinnulæ* cuneate. The seeds differ from the others partaking of the characters of all three. I find on looking into one, that the albumen is ruminate. This plant, as it has pinnate leaves, settles the question of its being a new genus. I will not believe that in Palms, where so much depends upon habit, that one genus has both pinnate and bipinnate leaves. The seeds are perfectly fresh and will be planted to-morrow.

I will, when relieved from the cares of office here, make out a list of the families, and send it to you: the whole thing will have to be re-done; but I wanted to show that I was not inattentive to what zoologies were doing. What a business it will be to settle the types of the families from which the names must eventually be taken; this will never be done by dried-plant botanists; but by examination of development, which I am convinced will alone give the key. I never could get any one to agree with me, in Parnassia being a near neighbour of Villarsia, yet I am positive I am right.

All the Orchideæ want revision; subdivision having been carried to an injurious excess. The Lindleyan characters will not stand many years longer, and probably botanists will revert to Brown's Prodromus; such arbitrary characters as waxy, and pollen masses, are totally opposed to science. I send home every sketch of mine in and out of spirits to Lindley.

I cannot guess what your sketch means; yet I have a floating idea that I have seen the plant. The ovary appears to be stalked. I would put it down as Euphorbiaceæ. The five-celled ovary and two stigmata must be, as you opine an oversight.

I am made a corresponding member of the Hort. Society of London; and I intend whether here or at Malacca, to pay great attention to their circular.

I have received the palm leaves, which are precisely those of

Arenga. Many thanks for your information regarding the two seeds, and that those belonging to the leaf-giving specimen, have solid albumen. So the plant is an Arenga, and I propose calling it after you: it is interesting, as Arengæ have up to this time been archipelagine. Pray now tell me whether it is monœcious or dicœcious: it ought to be monœcious. Your answer will arrive in time for the continuation of the Palms. I shall keep the rest of the Arecas etc. for the last, or third part. I suppose the ruminate seeded one will be a Caryota of a new species, as C. urens has much rounder seeds, and different albumen. Did I tell you that I have already got a second stemless Phœnix, much like P. acaulis, but with narrower leaves, and exserted fruit spathes. I mentioned Parnassia and Villarsia years ago to Mr. Brown and Dr. Lindley, but never got an answer; in all the collections sent home, I have put them together, the chief objection is the albumen. The polypetalism is nothing.

Never mind what I said about the Sarcanthus; the fact is, the Vandeous genera are so difficult, that unless I got a very marked one I would eschew the subject until I could go over them all together: this appears to me one of the secrets of success: work up a whole family, and then publish any part of it. But most botanists work up solitary species and genera, looking to published characters for their ideas of the congeners. Now it is quite impossible for a man to be guided by books if he wishes to be prominent; and so I never look at a book until all my own work is out of hand. I would like much taking up Indian Orchideæ, and would do so, were I at the gardens. The little Eria is a beauty; the genus has been published; but I forget the name; the bulbs are beautiful, without doubt; I send some overland.

By all means, keep your eye on the Utricularioid plant, there is an old Aroideous plant I believe like it. It is among such singular minute things that we are to look for a host of wonders. But regarding Utriculariæ, what a state of confusion the species seem to be in: I doubt much whether the family would not advantageously merge into Scrophularinæ, so also of Orobancheæ.

I am now at work on Cantors Chusan plants, I have a few genera of the Zanonia section of Cucurbitaceæ, some remarks on the Tea of Assam, and a new Ternstrœmiaceæ genus, and some remarks on Hamamelidææ. My Bootan Corylopsis is a fourth species, being

quite distinct from Siebolds Japan ones. There will be some drawings, as the paper is to appear in the Physical Researches of the Asiatic Society.

Lower Circular Road, August 16, 1844.

Have you yet been able to ascertain the palm that gives the seeds you sent me with ruminate albumen, as I think it will probably be a new species of Caryota. I have a copy of Jussieus Euphorbiaceæ. The order requires revision like all others. I have many of the genera, and Malacca is especially rich in them. With you, I like tables: how deficient Endlichers genera is in this respect: a book on genera or species should always give analysis of characters, so that the eye can at once lay hold of the plant you want, or its nearest allies. To wade over page after page of characters without a resting point, is most tedious and unsatisfactory.

I have not yet looked at Neesia, the genus has something to say analogously to Sapoteæ, having the leaves of a Mimosops in some measure.

By the bye, the black dye of the Shan country, turns out to be a Diospyros, whether new or not, I dont yet know. I am going to draw up a paper on it, and the Gutta Percha, which is from a Chrysophyllum. Just now I have in hand some Chusan plants. I give several new genera of *Zanoninæ*, Corylopsis, Ixonanthes, Tristania and Mastersia. With regard to Epithinia, I find that Jack, in a copy of the Malayan Miscellany had corrected the oversight of its stipulæ; this autograph corrected copy was quite passed over, and I found it by chance among some loose papers, in the Garden library.

I shall go on now with the Palms, I have done nothing to the third and last part, I begin to day the Malacca Terebinthales distribution: the collection is rich, especially in Mangifera, of which however I have perhaps not more than half.

My subsequent straits plans are comprehensive. I intend studying hard, one or two, of the grand points to be solved, and in the interim, publishing the new genera of my herbarium, prefaced by tables of each, and short analyses of the climates of each country or district to conclude with generic sketches in tables. This will take me to

the end of my period of service in India, or until I can safely go home. Few people believe it; but I return to Malacca with pleasure. After the Gardens, it is the best place to be at. What family will you next take up? I will send you all my materials; work them up in English by all means. All works on Indian Botany should at least have the descriptions in English, that being now the classic language of the land. Why not Euphorbiaceæ, it is a most instructive family, and one of which we have no well investigated materials. Or you might go over Myrtaceæ etc. and give characters of all the species.

Lower Circular Road, Sept. 17, 1844.

Your boxes of plants have safely arrived, and in excellent condition: many thanks for the same. Judging from casual inspection, all the Calami and the Caryotæ are new, but of this more anon. The Phœnices I intend attacking forthwith.

I have since got from Assam a dwarf Phœnix, differing especially from Roxburgh's P. acaulis in the long peduncles of the fruit spadices, a capital practical mark. I have no means however, of ascertaining how this differs from P. farinifera, Roxburghs character etc. not alluding to this, which I believe to be essential. My species are P. acaulis P. Ousleyana, P. sylvestris, P. paludosa.

The sketches of the Podostemeæ will be very useful. I have got a box full of plants ready for you, in natural families, written outside the bundles; they chiefly consist of Malacca plants, but you will find some others. There are few if any names, but the familiar disposition will relieve you from some trouble. I find the mount Ophir Leucopogon, distinct from Jacks; so is the second Asiatic Epacridea. I have five Tristaniæ from the Eastern coast, more Australian affinities, which are noticed in my account of collections now in press.

Of Zænoninæ I have three new genera, all neatly characterisable. Wallich's *Z.* cessoides will come under my Enkylia: Arnott appears to me to be in error in his characters of this sub family.

Please to let me know as soon as possible the habit of the Phœnix, which appears very distinct from any I have met with. Your name P. pedunculata it apt, and I suppose has been retained by Prof.

Martius. *Is it Stemless?* and where does it grow? any other information will be thankfully received.

I have sent you, or rather am putting up for you, as extensive a set of Malacca plants as possible; so that you will probably get more than 1,000 from that quarter. You will do an invaluable service to Gardener by giving him named plants. I am putting him out a set of Malacca plants also, but without names. I know none beyond those of genera. And I have not time or assistance for ticketing if I did.

1, *Lower Circular Road, Sept.* 29, 1844.

Can you give me any information regarding the Phœnix lately received? to what do the small male specimens of inflorescence belong?; scarcely to those in fruit, as the female spadix does not exceed the spathes, whereas in the fruit specimens, the peduncle is very long indeed.

What is the size and habit? is it dwarf, *or stemless*, or arboreous.? Is the trunk rough or smooth? What are the uses of the plant etc?

Is it not Roxburgh's P. farinifera? are you acquainted with that species?

What is the native name? is it gregarious or solitary? a native of woods or open places? in the mean time I can only allude to it under your name, P. pedunculata, it has the longest peduncles I know.

On October the first, I recommence work, I was married on the 21st., but as honey moons must cease sooner or later, I have no time to protract mine, nor would it be sensible to do so.

Calcutta, Nov. 24, 1844.

Your letter has just reached me in time to insure your getting the palms back in one of the two cases, now ready for you. Thanks for Kunth, but he will arrive too late, as I have now in press the Arecinæ, on which I should like to have seen him. Lately I received from you leaves of the Caryota, which is a fourth species like in leaf to A. sobolifera, but larger. Is it to this that the seeds belonged, which you first sent with the Arenga? Now that Gardener is with you, tell him I have received his second letter; and have in the mean time packed up about 8, to 900 Dicotyledons for him, from Mal-

acca, not named, but in families. I know no names, except those of the few things I have worked up, and even if I did, I could not give up time just now to numbering, I have been so hard pressed. Nevertheless, the plants being in families, will I hope be useful to him. There are many of great interest among them. Your own set contains nearly 1,500 species on a rough guess; and Monocots as well as Dicots. Hereafter I will send you many more, and at different times; the receipt of a large batch at once is sometimes inconvenient; and I know that by sending small collections I shall be more inclined to send names with them. Regarding Azolla, I had nothing plain to write, nothing being known regarding them, and every one being abroad concerning them; but I have often heard of my fault of plunging into medias res; but in writing dissertation on abstruse things there is no author I know, who descends to explanations. After constant study, I find it difficult to understand some parts of Brown's writings; but in Azolla I think all plain sailing enough. If correct, the thing is as of as much importance as the discovery of naked ovuled Phænogams. And if I could only get settled where I could steadily follow up my ideas regarding the higher Acots, I feel convinced I could make something of them. But this constant moving about; (I have never been a year in a place, until I came to the Gardens), knocks all long sighted plans on the head. I leave in a few days for Malacca; I could do more Botanical work there with my materials than at the Gardens, and if I am to remain at Malacca until promoted, I expect to be loaded with dissections, drawings and Mss.

I leave all my collections here: and intend until I see myself settled, occupying myself entirely with living structures. I may take one or two families down, but no more. Such a herbarium as I have! if I could only get it arranged. Thanks for the hints about the specimen paper. I will look out for some suitable. You shall see if I won't work hard at Malacca.

Calcutta, December 5th, 1844.

I have received Kunth, the Herbariun paper, and the sketch of the Caryota, which is I take it, C.urens. Kunth, which I will return immediately; is as I suspected, a mere compilation with nothing

whatever original, at least in the palm part; and so all my originality for good or for bad remains untouched. Prof. Martius I see considers many genera, as Euterpe, Oreodoxa, etc as artificial: then why not reduce them? A genus in my opinion is a thing of dignity, not to be made and reduced ad libitum. I see that none of the great European Botanists have read Zoological works on arrangements, in which are more advanced views than in mere Botany. One box for you is shipped in the Wellesley; another large one follows immediately: I might have packed them closer, but unless tickets are attached to the specimens, I dislike more than one to each sheet.

I wish I had time to take you out a set of the Affghan plants, which however, have no reference at all to Indian Botany. I will constantly communicate to you nice packets from Malacca, with names, also to Gardener. A hard working true Botanist like him, is a lucky chance to meet with in India. and not to be neglected.

I leave all my collections behind. Indeed if I knew how to do it, I would send all home to be worked out. For unless I get to the Gardens, I shall never have time to analyse them. They must be rich in forms, as without many duplicates they fill 6-7 large chests.

I go in the Victoria, which sails in a day or two: heartily glad shall I be to get to a quiet place, my head actually swims, and types are dancing before my eyes. Not a moments rest; Vogits work nearly done, 700 pages struck off. Then all goes for nothing, that is so far as my interest goes.

I hope Gardener will work hard, and publish well; with three hand workers in India, respect for real science must be inspired.

BOOK, I.—*Khasyah Flora.* (*p.* 1, *to* 98.)

This Catalogue corresponds with the set of Khasya Plants reserved for my own use, and made in the months of October and November 1837.

It also contains the plants (to 232), collected between Calcutta and Trrya Ghat, at the foot of the Khasyah Hills.

From 1372 to 1443 occur plants from the base, if the Jyntea Hills to Gowahatti and from Gowahatti to the base of the Dewangiri (Bootan) range.

From 1444 to the end, plants between the foot of the Hills and Dewangiri itself.

BOOK, II.—*Bootan Flora,* (*p.* 99 *to* 204.)

The numbers in this Book, correspond with the original numbers attached to the specimens collected during Captain Pembertons mission to Bootan, 1837-1838.

In Captain Pembertons Report will be found a table of marches, and the elevations, etc of all the localities noted in this mss.

BOOK, III.—*Affghan Flora,* (*p.* 205 to 367.)

In this Book will be found information respecting the collections made 1839-1840, between Shikarpore and Peshowur, via Quettah, Candahar, and Cabul, extending to number 1273. The numbers correspond with numbers to be found on one specimen *at least,* of every species. The additional tickets give additional information.

The collection of the second year (Book, III. *Chapter,* II. p. 324 to p. 363) extends to number 201, together with a small supplementary list, number 1 to 15 (p. 364 to p. 367) the localities of which are given.

The numbers relate to the species as they were gathered, and from memory, not from comparison. They do not correspond with 350 (about) of the distribution numbers, but many plants from Kujja procured during my illness, were not ticketed, and many others were confounded with nearly allied species.

W. G.

ITINERARY NOTES

BY

WM GRIFFITH, F.L.S.

BOOK, I.—*Khasyah Flora.*

On the Plants collected, when Procceeding from Calcutta to the Khasyah Mountains, thence into Assam and towards Bootan.

Friday, September 2d, 1837, *Chinsurah, etc.*

Limonia (Glycosmis.)
Tragia involucrata.
Nyctanthes Arbor tristis, N. pentaphylla, Boerhaavia, (the common one) Celtis orientalis.

1. Anona squamosa.—(Custard apple) at Chinsurah etc, Lippia, Guilandina Bonducella, flores odorata. Nyctanthes Arbor tristis, analogous in habit and scabrousness and calyx, to certain Verbenanceœ.
2. Cleome viscosa.—Ubique.
3. Leonurus tartaricus.—Ubique.
4. Dolichos Lablab vel lignosus, Junglee Sheem.—
5. Ardisia, Solonacea.
6. Trichosanthes cucumerina.

7. Cucumis Madraspatanus.
8. Comelina Benghalensis.
9. ———Communis.—Flos axi proximus, longe pedunculatus, solitarius. Racemus pluriflorus, externus! hic nunquam exseritur, ille erectus exseritur, flos in apice hujus articulatus: folio superne tectu scabra, spathæ fluido mucilaginoso repletæ.
10. Acanthacea.
11. Kyllinga.
12. Dactyloctenium.
13. Panicum brizoides.
14. Panici sp.—Palmyra, Phœnix, Cassia, Fici, Mangusta, Artocarpus, Convolvulus, Bombax, Ardisia, Polygala, Mimosa, Cissus, Celtis, Phyllanthus, Panici.
    Martynia diandria.
    Jatropha curcus.
    Mimosa arabica.
    Limonia pentaphylla.
    Pergularia minor.
    Tetrantheræ sp.
15. Polygala arvensis.
16. Tetranthera monopetala?
17. Lettsomia argentea.
18. Cassia Sophora.
19. Mimosa rubicaulis.
20. Acacia Catechu.
21. Schmidelia Cobbe.
22. Phyllanthus Rhamnoides.
23. Oplismenus.
24. Indigoferæ sp.
25. Vitis pedata, stipulis linearibus.
26. Sida microphylla.
27. Zizyphus Œnoplia.
28. Acalypha indica.
29. Panici sp.
30. Celtis orientalis.
31. Euphorbia hirta.
32. Urtica interrupta.
33. Oxalis sensitiva.

34. Phlomis cephalotis.
35. Gelonium fasciculatum.
36. Pergularia Minor,
37. Gardenia dumetorum.
38. Coccinia indica.—Fructus oblongus basi rotundatus apici ovatus, viridis striis albis obsoletis numero, variis notat. 3 locularis, loculis spuria locellatis, fluida gelatinosa (arillo) repletis. Sem. horizontalia panduriforma, arillo coccineo gelatinosa cineta in locellis, solitaria, marginata.
39. Momordica Charantia ; Karilla.—Bengalee.
40. Graminea.—In Oryzetis vulgat.
41. Panicum.—Ibidem.
42. Mimosa arabica.—Common.
43. Phaseolus trilobus. In Oryzetis. A tendency to involution in vexillum marks this genus. Stipulis basi subcordatis.
44. Cucurbita citrullus.—Cal. conicus, laciniis basi duplo superantibus lineari subulatis. Pet 3, 5 venia, 3 exteriora majora. Stam. 3, incertio singulo axi proximo ; anth. sinuatœ. Œstivat, imbricat. Cirrhi simplicis vel binata, monoica.
45. Hemarthria Compressa.—Rice fields.
46. Anatherum muricatum.
47. Corchorus olitorius.
48. Panici sp.—Fol. undulatis, Mirabilis jalapa, Cannabis sativa.
49. Tradescantia.—Corollæ situs axillaris. Carpell 3tio antico (Commelina postica. ?)
50. Croton sp.—Arborea Racemis compositis axillaribus pendulis alternante. Vix Roxburghio cognit.
51. Cyperacea,
52. Phyllanthus.
53. Digera arvensis.—Flores laterales abortiva in floribus superioribus.
54. Phlomis esculenta Roxb ?—Sed invol. lanceolat. an P. cepha lotis.
55. Commelinæ sp.—Procumbens, Pedunculis binis, postico subulato, nudo ! Antico bifloro, flora exteriora sæpe ! vel semper abortivo.
56. Tradescantia

The explanation of the different sites of carpella in the two

genera to be sought for; that of Tradescantia normal; the relation of sepals is in both the same, the third being posticous. In florescence fascicled, interior flowers 1st developed.

This is the same as no. 49: Roxburgh only mentions 4 species, this varies much.

Procumbens, fol. lineari-ensiforma, concavo.-carinata, acuta, ciliata; floribus pluribus fasciculatis, axillaribus uno unica florescenti, calyce tripartito; filamentis apicem tropœei nodosis. Stylo, flexouso stigmata fusifoma clavato.

57. Abutilon Indicum.—genus not sufficiently distinct from Sida, the only difference being in the number of seeds. Frutex 5—6 pedalis, valde ramosus.

Matabangah,—Plants observed Phœnix sylvestris, Borassus flabelliformis, Andropogun acicularis common, Cassia Tora, common, Saccharum spontaneum.

Tamarix commences but small, Anatherum muricatum very common, Cactus, Euphorbia antiquorum.

*Monday, September 4th.**

Plants observed Tamarindus, Cocos, Borassus, Phœnix sylvestris, Calad. nymphæfol. abundant, Bamboos common, Jatropha Curcas universally used for hedges, Dæmia extensa, Diospyros Ebenum, Calotropis.

Plants collected.—Datura Metel, Trophis aspera, common Cassia Fistula.

58. Chenopodiacea.—Odor fortiusculus, sub-gratus menthoideo-Pulegiodeus, flores viridis. Ad margines Matabangah.

59. Alternanthera sessilis

60. Spermacoce articularis.

61. Commelina Communis.—Sepal tertium posticea, inter hæc et lateralia antica petala duo maxima evoluta, unguiculata. Pet. tertium anticum abortiv.

Stam. biserialia, dissimilia, serie externa sterili, postico minimo, anticis majoribus sub evolutis, internæ 2 superiora petalis opposit cruciformia hinc sepalo postico opposit, similia, antico pet antico opposit fertila. Carpello tertio postico.

* Private Journal, p. 152.

1 Sepals
2 Petals
3 Stamins
4 Stamin
5 Carpells

A better instance of the law of equallization could not be given, opposite the large petals are two small abortive stamina, opposite the small abortive petal, a large fertile stamen. Still more to counterbalance the great developement of the posticous parts of the flower, we have the two anticous lateral stamina a good deal developed. Pedunculus unus (vel duo) hoc casu, postico sterila, antico bi-tri florœ, floribus duobus tantum evolutis. Calyx trisepalus. Pet. tria dissimilia evoluta unguiculata, Stam polymorpha pluribus sterilibus.

Spathœ in capitulis terminalibus foliosis congestæ.

62. Aneilema.—Sepalo tertio postico.

Pet. sessilia œstivatione imbricata. Stam. bi-serialia, seriei externæ sepalis opposit. subevoluta nempe 2 fertilia, tertio sepal uni lalerali opposit filamento stuposo castrato, interna sterila, filam. sub glabris. Stigma sub capitata. Alternatio normalis. Commelina nudiflora of Roxburgh.

Inflorescentia recemosa bracteis membranaceis deciduis.

63. Clitoria Ternatea, floribus albis.—Cor. resupinata ex pedicelli torsiona.

64. Dæmia extensa.—In sepibus.

65. Dioscorea pulchella Roxb. ?—Caule tereta volubili, petiolis alternis supra bi-alato-marginatis, foliis profunde, cordatis subito longeque acuminatis, basi 9 veniis, utrinque glabris. Spicis masculis axillaribus paniculatis: perianth angusto. seriei interna lineari. Not used by the natives, flowers of bad smell.

66. Panici sp.

67. Phlomis zeylanica.

68. Tragia.—Differt a Tragia involucrata caule erecto. In ruderalis.

69. Menispermea.—Volubilis.

70. Callicarpa incana Roxb.—In fruticetis, flores rosea frutex 6 pedalis. Folia contusa odorem lavendulaceum non fortem effundunt.

71. Polygonum rivulare Roxb. ?—Secus ripas Matabangha, rarius.

72. Polygonum pilosum.—Ibidem sed vulgatum occurrit. The situation of the two inner stamina (or outer with regard to the series to which they belong) appears constant.
73. Desmochæta lappacea.
74. Flacourtia sapida —Vernatio maturo convoluta.
75. Dioscorea Dœmonum ?—In Sylvis.

September, 5, along Matabangah.

Plants observed.—Naravelia zeylanica. Mimosa rubicaulis common, arabica rare. Anatherum muricatum common. Œgle Marmelos. Saccharum spontaneum often in large beds. Eclipta floribus albis. Basella, Setaria, Achyranthes aspera.

76. Panicum.—Ripæ Matabangha.
77. Poacea.—Spiculæ viridescentes.
78. Abrus precatorius.
79. Apluda geniculata.—Matabangah.
80. Heliotropii sp.—H. tenua Wall ? Legi etiam secus Irrawaddi Avam supra.
81. Anisomeles ovata ?
82. Ophioxylon serpentinum —What is Ixora curviflora. Transition to Rubiaceæ in this genus, indicated by the seeds.
83. Composita.
94. Ocymi sp.—Floribus albis ordor Verbenæ tripylla.
85. Hedysarum gangeticum.—The analogy of stipules difficult, I think they are to be considered as scales of buds; do stipella exist in any but *really compound* leaves. In this species can the petiole be a branch producing from its apex a leaf with two bud scales. The whole business requires thorough revision.
86. Guatteria suberosa Arbuscula.—Carpella badio, miniata cortex suberosa.
87. Phyllanthus simplex, Roxb.—Monoicus. Caule ancipita; fol. lineari oblongis, angustis. Cauli parallelis, floribus axillaribus fœmineis longius. pedicellatis, pedicellis deflexis, capsula scabra.
88. Alstonia scholaris ?—Arbor mediocris, folia fere ut in Guttiferis, flores albi, petiol basi processu dentifomi (usu gemmaceo) instructa. Gemma materia cerea fusca involuta. Germatio fere Rhododendii et certe singularis. Racemi capituliformes in thyrsum congesti. Annulus pilorum brevis faucem cingit.

89. The waxy matter appears persistent forming a ring round the branches.
90. Digitaria.
91. Momordica dioica.—Fructus ovatus, cuspidatus acute muricatus. Stylus elongatus cylindraceus lineas 2 metiens. Stigmata tria, oblonga biloba. Calycis laciniis setaceis. Fr. stylo apiculat, Junior bilocularis, loculis pulpa alba replet. Odor fortis ingratus.
92. The male of the preceding.—Cal. conico—campanulat. 5 petala. Stam. triadelpha. Anth. sinuatæ.

The leaves vary much occasionally they are cordate nearly entire.

93. Ocymium sanctum.—Odor caryophyllaceus, in tribu peculiaris. Cor. alba fusco tincta. Filam. purpur.
94. Aristolochia—Iconog. t. 1. Florem basi cinereo albo, tubo fusco tincto, lamina intus atro-fusco. I think I have found this elsewhere, it is not in the flora indica. Folia subtus glaucescentia sub reticulata. Petioli supra plani, lamina conduplicata recta, aperta, cuculatim incurvata. Fol: saturtate viridia.

September 6, *Nullah Hoosunpore ka karee.*

95. Œginetia indica.
96. Adhatoda Cymosa.—Flores albi. lab. inferioris basi carnea ibidem transversa rugosa basi minute, 3 bracteolata, Flores angulum rectum cum racemo formantes, ita ut fere resupinato evadunt bilabiata, lab. superiora, emarginata, leviter fornicato, inf. deflexo, tri lobo, lobis lateralibus linearibus, medio oblongo. Inflorescentia axillaris alternans, Cymosa, cymis dichotomis ramo terminali defuenti! Glandulis viscosis leviter interstinctis, Divisiones dichotomi, sœpius florem solitarium (abortivo) vel duos gerent. Caulis striatus, fol, membranacia tenera glabra.

Certe Adhatodæ sp. quoad corolla, Anth. locula dislocata sed contigui. loculo inferiora calcarato. Prope tecta.

97. Rungœi sp.—Decumbens, scabra saltem folii tactu superne. Bracticæ tetrastichæ subœqualis læte viridis venosa, margina pulchre membranaceo, anticis tantu floriferis, Præterea bracteola? membranaceæ, Cuique flori, flos ringens pulchre cæruleus lab super subreflexo, bidentato cæruleo venoso. Palato

valde prominulo transverse rugoso, rugarum interstitus cæruleis, rugis ipsis albis.

Species quoad genus grandiflora, pulchra vix congnita Roxburghio. In Oryzetis.

Sept. 7, Tortula indica common every where on banks.

98. Convolvulus paniculatus Roxb. ?—Fol. subtus glauciscenti-albide. Cymis subumbellatis petiolos æquant vel excedent. *Flores magni* pulchre, carneo purpurei, plicaturis tuboque roseo purpur, Pollen album.
99. Gossypii sp.—Petiol, involucella fusco-purpureo tinct. Cor. sanguinis venosi. Caps non visa.
100. Grewia sepiaria Roxb.—Sepala lineari spathulata elongata. Pet. minima per demidium, glandulosa; parte glandulosa torum pedunculat æquans.
101. Graminea.—In arenosis lœte cœspitosa, repens.
102. Graminea.—Ubique, cœspitosa.
103. Andropogonea.—In graminosis ripis hinc illinc.
103*a*. Polygalæ sp.—Forsan varietas P. arvensis.
104. Euphorbiœ sp.—Involucra rubro tincta folio subtus glaucescent decumbens.
105. Amaranthus globosus.
106. Stillingia sebifera.—Cult.
107. Justicia procumbens ?—An varietas. In Oryzetis.
108. Cleome pentaphylla.
109. Phyllanthi sp.—Dioicus folia ramis adpressa flor fœmin. breviter pediceltat, solilaria secunda sepala marginibus albo, membranaceis, capsul glabram subæquantia.
110. Bradleia corchorifolia.
111. Æschynomena indica.—Stipellæ nullæ! this corroborates my idea, that pinnated stipellated leaves are branches?
112. Physalis sp.—Florib. semi-cernuis, campanulatis lutescentibus fructibus pendulis.
213. Achyranthes lanata Roxb.
114. Vandellia.
115. Vandellia pedunculata ?

116. Milii sp.—

117. Impatiens —Petiolis glandulossis. Pet 2 inferior basi macula lutea. Fol. anguste lanceolatis serratis utrinque attenuatis subtus albescent. Floribus axillaribus ternatum fasciculat. Centrale sericis evoluto! coccineis, coma longissimo florem $\frac{1}{3}$ superante apice capitato rectiusculè pubescente, alabastro sursum curvato, fere parallelo.

The third less developed flower, obviously represents the terminal one of a raceme, otherwise it would be the most developed.

118. Coix Lacryma.

119. Andropogon laxus.—Glandulæ magnæ valde carnosæ integerrimæ. Stigmata purpureis sanguinea.

Glumarum structura Saccharo accedit. Ripas Hooghly.

120. Convolvulus —Flores pallida rosei, affinis C. Pes Tigridis.

September 9, 1847.

Pistia stratiolis. Salvinia, Areca Catechu, Solanum Melongena, Convol. Batatas.

121. Urena lobata.

122. Phyllanthus.—Frutex, foliis subtus glaucescent. patentibus, floribus axillaribus fœmineis sæpe solilariis in axillis foliorum inferiorum. Masculis aggregatis in axillis superiorum, adeo ut in parta superiora axeos omnia sunt mascula. Baccæ atro-purpureæ.

123. Morinda, an M. tinctoria Roxb.—Cor. vix infundibulif, potius hypocraterif. laciniis carnosis sub 3 veniis. Anther. inclus. tubi apicem versus. Stigmata 2, lineari-lanceolata. Calyx ore edentato tubulosus, florem dispositionem spirali, spira dextrosum versa. Ov. bi locul. placentæ pariet. 4 locellat, loculis bi ovulat: Capituli nudi! ob approxim.! Peduncula opposi-tifolia, folio futerent abortivo!!

124. Piperis sp.

125. Vitis indica.

126. Composita.—Capitul. florem purp.

127. Nauclea sp.—Forsan Culta, Arborea

128. Amoora Rohituka.

129. Bradleia multilocularis.—Analogia stigmatum Nympheaceis, etc. etc.

130. Hedyotis racemosa.—Inflor. potius paniculat. Cor. vix. rotata.
131. Justicia lobatum.—Cor. fere ut in J. calcarata, lab. superioris æstivation. internum.
132, Bælmerioidea.
133. Aurantiacea.—frutex scandens.
134. Polygonum.—Directio stam. 2 interior. ut in P. piloso primo intuitus distinguitur foliis albo, lanatis, lana inferna densa, spicis gracilibus. P. piloso multo rarius videtur. An P. lantum.
135. Polygonun rivulare.—Perianth basi herbaceum. P. lanatum glandulis pellucidis punctat. Staminibus 8 fertilibus, 8 sterrilibus dentiformibus.
136. Panicum.
137. Gramin miliaceum.—Spiculis fuscescentibus.
138. Paspalum.—Glumis membranaceis pallidis.
139. Vitis sp.—(Cissus) Foliis teneris: stylo stigmataque conico sanguineo bruneo. Pet. alba.
140. Sesbania aculeata.—Aschynomena spinulosa, Roxb. Annua arboriformis, vexillo atro-maculat.
141. Tamarix dioica?—Analogous certainly to Polygonea in habit leaves and flowers.
142. Cyperus.—Spicul. glumis carina virida, marginibus castaneis.
143. Trichosanthes dioica.

Sept. 10 *From about Fereedpore* Cardiospermum Halicacabum*

Zizyphus jujuba.

144. Adiantum.—Stipita lucido glaberrimo atrata. Jungle, common about Calcutta on walls.
145. Aspidium.—Venulæ tertiariæ simplices harum medio sori uniseriata imposita sunt.
146. Apludæ sp.
147. Poa.
148. Phyllanthi sp.—Ramuli sub trigoni postice plani, fol parallela ascendentia subtus in axillis subsessilibus. Dioicus. In Oryzetis.
149. Hedyotis Burmanniana (Oldenlandia biflora, Roxb.)
150. Cyperacea.
151. Bonnaya, Gratiola veronicifolia, Roxb.

* Private Journal, p. 154 to 156.

152. Buchnera asiatica, Roxb.—Flos flori Verbenæ analogus. In Oryzetis.

153. Crotalaria Juncea.—Cultivated in various sized patches in low ground, which is inundated during some parts of the rains. Smell of the flowers much like that of Rubarb. Calyx valvatus! Anth. dissimilis, an suigeneris.

154. Ixora Bandhuca, Roxb vel coccinea.—In sylvis.

155. Leea hirta.—Analogia habitu Sambuco.

Monday, Sepnewber 11.

Verbena, the comonon one; Cannabis sativa, Caparis trifolia Citrus medica, Villarsia cristata.

156. Tetranthera.—Pedicelli proprii incrassato clavata, cum calyci cupuliforme (exactly trumpet shaped) Pericarp oblongo ovatum, atro purpureum magnitudine Pruni, Lauro Cerasi, testa pericarpii endocarpio fragili duro, adnata. Plumula valde inclusa. Fol. supra lucida.

157. Hibicus vitifolius Roxb.

158. Lomaria scandens.

159. Asplenuim.—Common evey where, throughout Bengal and Asam, always in low places. Diplazium to which this would belong, is an arbitrary genus.

160. Polypodium.—Still more common than the preceding, with which it is generally associated. This proves among other species that Meniscum is an arbitrary genus, as the lower sori are generally confluent.

161. Nymphœa Lotus —The stigmata occupy the faces of the carpel la, the stigma of others? is not a stigma but a prolongation of the carpellum, it has a decided tendency to become anthereform. Sepalis albo, distincti et pluries venosis. Staminibus interioribus minoribus. Stigmatibus infexis luteis. odor suavis. Pet. alba, extima viridi vel carneo tincta, odor suavis.—N. lutea.

162. Nymphœa.—Sepalis 4 5 viridibus eveniis saltem, conspicua Petalis pallida cæruleo coloratis. Stamina connectivo indentata obtusum album product. Stigmatibus processibus brevissimis sub eretis, circiter 16. Fol. orbicularib, sinu acuto ad petiolum product. lobis apicem secedentibus, integerrimis, utrinque glabris subtus purpureo rubis, Pedunculo furctifere spinalia. Flores parva. N. cyanea.

163. Utricularia stellaris.
164. Damasonium indicum.
165. Trichelostylis.
166. Glumarum acumina carinaque viridi, cœterum. albiscentia.
167. Cyperus.—Glumœ virides.
168. Setaria sp.
169. Cocculi sp.—Frutex scanders floribus capitulatis, capitulis trifloris, racemosis; racema petiolas duplo excedentibus. Corollis basi globosis sub urceolatis valvatis, flavidis, glandulis filamentis multoties brevior. Antheris introrsis apicibus petalorum subpatentibus.
170. Cocculus.—Alabastris turbinatis, sepalis 3, majoribus rotundatis patentibus ita ut flores fere rotat. Pet. vel glandul. evoluta, filamentis duplo vix brevioribus. Antheris extrorsis Racemus hinc illinc tuberculatis, tuberculis flores inœqualiter pedicellatos gerentibus, summis quoad axim primo evolutis. Pedicellis basi articulatis: flores in horum apicibus articulat.
171. Clypeæ sp.—Fructus coccinea, folia subtus glauca.
172. Phyllanthus.—Foliis oblique patentibus, floribus masculis in axillis aggregatis; fœmineis in axillis infimis solilariis stigmatibus tuberculatis Fruticosus.
173. Vitis.—Foliis carnosis.
174. Ammannia multiflora.—Folia inferiora approximati basi simplica Inflorese. varia inferne racemosa vel sub paniculata superne pedicelli vel bi vel triflora, flora centrale distincto, pedicelli omnes bracteata. Calyx ruber venis 8, viridibus 4, sinus *nudis* opositis. Pet. miniata obovata. Stam. medio tubi inserta fil. coccinea. anth. biloculares connectivo minimo. Ovarium globosum uniloculare. Stylus filiformis ipsuis longitudine. Stigma capitata papillosa. Capsula calyce longiora.

Pet. staminaque per æstivat inflexa. Stylus tunc incurvus. Confer cum Sectione Arnottiana, sinubus punctigeris, ovario biloculari.

September 12, 1837, *To Dacca through the Jheels.*

175. Graminea.—Spiculis adpressis axi lividis.
176. Cryptolepis.
177. Atriplex sp.
178. Smilax.—Baccis miniatis.

179. Legumenosæ.—Floribus albidis.
180. Jatropha Curcas.
181. Anisomeles.—Lab super subo, lobo medio inferious roseo.
182. Scrophularinea Iconogr 3.—Floribus cæruleis, infundibul. sub regularibus. In aquis, Jheels dictis vulgo.
183. Trichosanthes palmata Roxb. ?
184. Utricularia fasciculata Roxb.—Jheels abundant.
185. Apocynea.

Plants observed, Costus speciosus, Jussœua repens.

186. Trophis aspera.—Common every where between 12 and 24 N.
187. Aponogeton sp.—Radix? tuberosa folia lineari spathulata, omnino ut in fluvialibus. Pedunculus elongatus, parta florifera alba. Bractea 2, cuique flor. potius sepala postico dificient, Filam. carnea. Anth. cærulescent. Carpella carnea, tria filamentis persistentibus cincta. In Jheels. An vere Dicotyledoneus, aspectus omnino Monocolyledoneus.

September 14, 1837. *To Neerangunje.*

Alpinia Allughas, Briedleia multi locularis common, Tamarindus among the villages of Jheels, Mangifera common, Areca catechu scarce Phœnix sylvestris, Stravadium common, Saccharum fuscum, Panicum Brunonis, Sphenoclea.

188. Leguminosa Desmodium.—Floribus pupureris.
189. Indigofera.—Floribus læte rosaceo purpureis, species pulchella
190. Vandellæ—Toreniœ sp.—Corolla Toreniæ, cœruleo purpurea. lobo medio labii inferiorus macula reniformi alba. Herba spithamœa pedalisve, caule tetragono, foliis ovato cordatis in petiolo alternantis serratis sublineraris superioribus subsessilibus Peduncula axillares vel etia terminales uniflori, folia excedentia Calyx 5 gono, alatus. Cor. deorsum arcuata infundibuliformiss vix bilabiata, lab. super. bidentato, inferiora 3 lobo. Stamina inclusa, fil. paris longioris inferioris basi bidentata, arcuata. Anth. approx. per paria, loculis divaricatis. Stigma bilamellats Ovar biloculare.

Interm. inter Vandelliam et Torenia.

191. Cyperacea in Oryzetis capitulis fuscis.
192. Eriocaulon graminifolia. In Oryzetis.
193. Arum flagelliforma.—In Oryzetis. Spatha intus livido purpurea, spadicis apex sterilis longitudine Spathæ longissi-

mæ, lutescents. Squamæ flori sterilum patentiss, albæ infimæ dilatatæ, apicibus purpureis. Spathæ basis angulata.

194. Hedyotis sp.—Flores albi. Oryzet.

195. Hedyotis sp.—Flores Campanulati albi, fauci imberbus Anth. subexsertæ cærulescent. Stigmata hæc æquantia. In Oryzet.

196. Cyperaceæ.—Oryzet.

197. Cyperaceæ.—Oryzet, dioica, culmo phragmoso. analogy to Typhacea in long exserted stamins, Glumæ aret adpressæ viride-margine lutescentes.

198. Cyperus.—In Oryzets. Spiculis viridescent demi fuscis.

199. Cyperus —Ibidem Spiculis viridiscenti fuscis.

200. Trichelostylis.—Ibidem. Glumis carina virdi cœterum brunneis.

201. Trichelostylis,—Ibidem. Folia more Iridis disposita. Spicnlis saturate bruneis.

202. Panici sp. Ibidem. Glumis albidis apicibus viridibus.

203. Trichelostylis—Ibidem. Spiculis fuscis. Culmis angulatis.

204. Trichelostylis —Idid. Fol. patentia curvata, culmo compreso snblœvi spiculæ brunneæ : carina virida.

205. Dioscoreæ sp.—Spicsis fœmeneis in axillis aggregatis, pendulis. Periant. lutescens angusta. Caule angulato : purpureo rubro crebra maculata, *also* axillares verrucosæ.

206. Pothos scandens —Spadices secundæ, spatha ebractea terminali, spadices apice geniculata. In arboribus, scandens.

207. Loranthus.—In arborib, præsestim mango et Bogool, baccæ lutescent.

208. Wedelia biflora.—In humidis præsertim ad margines aquaram.

209. Menispermea Cocculus trifloribus. Nob.—Volubilis, fol. supra atroviridia. Paniculis axill foliorum circiter longitud pubescent. ramis apice trifloris, alabast ovatis, sub 3 gonis, œstivat. valvatis. Stam. introssis. Petalis multo breviorib. In sylvis humidis.

210. Tylophorœ sp.—Corol : rotat lutescent. Coronæ foliolis apice in process subulat ; anthera attingent product. In sylvis humidis.

211. Ammannia nova species : In Oryzetis.—Herbacea spithamœa caulis 4 gonus lineatus ; fol. lineari oblonga, reflexa summa

patentia, 1 venia. Floribus miniatis solitariis et sessilibus in axillis-calyce 4 fido, sinubus setegeris; setis longit calycio dentum. Pet albis minutissimis. Ov. capsulaque rotunda, calyce dupli longior 3. locularis.

September 15, *Through Jheel.*

Panicum stagninum in vast quantities. Sacch. spontaneum on higher spots arundo sp. Anatherum muricatum or higher spots. Panicum uliginosum, Polygonum tomentosum, *Azolla*, which has tortulose ampullaceous fistulous stems to enable it to float.

212. Jussœua repens.—The stigmata are opposite the petals, hence they do not alternate with the inner series of stamins.

213. Eriochloœ sp.—Pedicellis villoso barbatis, annulus pedis glumæ sanguineus, glumis dorso minuti pubescent. In Jheels basi decumbens culmis 3. 5. pedalis, fol. acend. vaginis nudis.

214. Valisneroidea.—fol. superior subtus lœte rosacea in aquis leniter fluentibus.

September 17, *Sunday Jheels.*

Achyranthis aspera. Pontederia dilatata.

215. Panici sp.—Paniculis diffusis *Capillaribus*; low inundated spots.

216. Paspalum flagellatum Nobis.—ditto.

217. Eulesine.—ditto.

218. Cyperus.—Spiculis fuscis. Ibidem.

219. Potamochloa Retziæ.—*Icones* 4 Jheels abundant.

220. Panicum Brunoniana.—2 *Icones* Lukhya et Hubbegunge. Communa.

221. Panicum interruptum.—Ibibdem.

222. Valisneria verticellata.—Stigmata opposita petalis! Ovula pauce, placentis 3 parietalibus affixa, antitropa, foramen ad apicem inflorescentiæ sub inconspicuim. In aquis len. fluentibus.

223. Sagittaria cordifolia.

September 19, 3a *In Oryzetes.*

224. Pontedereæ sp.—In the flowers it corresponds to Roxburghs. description of P. hastata, in the leaves, to P. plantaginea.

225. Villarsia eglandulosa, Nob.—Aquatica fluitans sed radicibus Caulis punctulata, folia maxima pro genere, orbienlaria basi profunde cordata, margine repanda, carnoso coriacea. Supra luteo viridia, venis depressuisculis, inconspicuis, subtus

prominulis. Pagina inferior papulosa, plus minus in adultis fuscescens, supra glaberrima subnitida. Pedicelli plurimi 3 4 unciales, fasciculati in apice canlis, exteriores pruis evoluti: post florescentia deflexa.

Flores pulcherrime mugni pro generi, diametro unciali, Sepala 6 8, lanceolato oblonga. Corollæ rotatæ laciniæ albæ totidem numerissima ciliata et fimbriata. tubo luteo. Stam. exserta cum laciniis alternantis. Antheræ linearis brunnescentis, filam vasculosa. Ov. globos virida. Stylus subo. vel elongat et fere exsertus. Stigmata 4 glandulæ petalis oppositæ nullæ, hypogynæ minimæ. laciniis oppositis, apice ciliata. Cor. marcesc. cito laciniis inflexis.

Caulis apex more generis prolifer. Bracteæ membranacea majusculæ.

Capsula calycem subæquans, globoso, turbinata, uni locularis. Semina immaturi oo. placentis 4 parietalibus affixa.

This beautiful species was found before by Akkul Mohummad at Jumalpore, it was named without examinatiou by Wallich, V. pulcherrima, Wall et Griff. I now change the name to Villarsia eglandulosa. Iconog 5.

Villarsia eglandulosa, foliis orbicularibus, basi profunde cordatis, margine repandis. Corollis 5. 8. partit. laciniis barbatis: Staminibus excertis, glandulis epipetalis nullis; venation of the corola as in V. cristata.

After all I believe it is nothing more than V. indica, œstivation of the genus—inflexo valvata. In V. cristata, the marginal ciliæ being inflected.

September 20, *Jheels.*

226. Myriophyllum.—fol. M. indica. Stamina M. tetrandra, common especially to the East.
227. Ceratophyllum.—Common.
228. Hepatica.—Riccioidea fronde fluitanti libera plureis dichotoma, lœte viridescens: una, hinc illinc, squamosa, squamis frondis structura. Swimming in genttle currents between Jheels.
229. Naias ternata Roxb.—Jheels common.
230. Hibiscus Rosa Sinensis.—Soorma banks but near villages.

231. Vittis sp.—In humidis sylvis præsertim ad margines aquarum, fol. carnosa.

*September 23, from Tenya Ghat to Churra.**

232. Polypodii sp.—fronde coriacea. In arbor. above Mahadeb.
233. Lygodii sp.—Foot of the Hills.
234. Toreniæ sp.—Floribus luteis. Foot of the Hills.
235. Panici sp.—towards foot of hills.
236. Panicoideum—ditto common.
237. Rottboellia.—Gramin exaltat 10. 12 pedale.
238. Poa—Common up to a considerable height.
239. Impatiens.—Flores rosei subramosus! bipadalis very common throughout lower ranges.
240. Desmodium.—Flores albidi. Foot of the hills.
241 Gomphostemma—Frutex erectus subsimplex, bipedal flores lutei. Foot of the Hills.
242. Psychotria curviflora.—Aspectus Ophioxyli. Flores albi, or cream coloured towards foot.
243. Hypelytrum.—Towards foot of hills.
244 Desmodium.—Frutex subdecumbens. Floribus pulchere roseis. Lower ranges.
245. Luffa sp.—Flores hppocraterif. albi. Foot of the Hills, between Pundoa and Terrya Ghat.
246. Urticea.—Frutex parvus. Lower ranges.
247. Aspidium.—On rocks, devils bridge. Elevat. about 1400 ft.
248. Impatiens bracteata.—Common from towards foot tp to Mahadeb, about 3800 ft.
249. Polypodium.—On Jack trees, lower ranges.
250. Compositæ.—Frutex humilis sub simplex flosce albidis, Devils bridge among wet rocks.
251. Triumfitta.—Becomes common about ½ way to Mahadeb.
252. Stilaginea.—Frutex vel arbuscula parva, baccæ in spicis nutantibus vel erectis, initio coccinneis, demum atropurpur. Devils bridge. Sapor subgratus, subsuavis.
253. Torenia edentula?—Flores albi calycem vix duplo excedent, lobis lateral labii inferioris azureis.
254. Elephantopus scaber.—Commences about ½ up to Mahadeb, ceases somewhat above this.

* Private Journal, p. 157.

255. Æschynomena vix. Cassiæ affinis.—Floribus luteis. calyce fusco viridescens. Bractiolæ 2 foliaciæ. Stam. subsessilio. lower ranges.
256. Cheilanthes.—Common among rocks about ½ way to Mahadeb.
257. Euryæ sp.—Arbuscula commences ½ to Mahadeb, continues nearly to Churra Ponjee.
258. Desmochæta.—Very common towards foot and on the lower ranges.
259. Spermacocea.—Flores albi. lower ranges.
260. Tradescantia.—Flores albi: rather cmmon towards the foot of the Hills.
261. Agrostidea.—About ½ way up to Mahadeb, not common.
262. Tradescantia, var. of that which is so common.—Flores cæruleo purpur, stup. cyaneæ, gibberes filament albidæ on rocks, ½ to Mahadeb.
263. Gramin.—Common towards Mahadeb 6-8 pedale.
264. Loxotis obliqua.—1st at Devils' Bridge does not continue much beyond Mahadeb.
265. Holmskioldia sanguinea.—Confined to lower ranges, subscandens.
266. Malavcea Hibiscus.—Flores companulat sub ochraceo-aurantia, fundo sanguineo.
Very common about ½ way to Mahadeb with Riedleia.
267. Asparagus.—Lower ranges not common.
268. Gramin.—Common from about ½ way up to Churra.
269. Manisuris.—Here and there from ½ way up to beyond Mahadeb.
270. Hedyotis subscandens.—Flores ochroleuca. Lower ranges up to Mahadeb.
271. Ficus —Humilis. Lower ranges up to Churra.
272. Spermacocea.—Flos albi. laciniis intus livida cæruleis, about ½ way up, limited in extent.
273. Anthistiria arundinacea.—Continues from Churra to the foot.
274. Caricinea.—Glumis masculis fuscis, fæm. albis. Commenees 2-3 way up to Mahadeb thence to Churra.
275. Poa.—Spiculis sublividis. Panicul ampla Gramin 2 pedale. Ad vias ½ way up.
276. Blechum.—Commences ⅓ to Mahadeb limited.

277. Pueraria —Decumbens, 1 1½ pedalis. vexillo roseo purpur. alis et calbido cœruleis,
278. Euonymoidea.—Arbuscula, Mahadeb, odor fructus viridis, terebinthaceus.
279. Panici sp.—Towards Mahadeb and about that place.
280. Centothecoideum. Icon. 16.—Towards Mahadeb spicul. viridescen.
281. Sidæ sp.—Flores ochrolcuci. Frutex 2-3 pedalis half way to Mahadeb.
282. Grammin.—5-6 pedale spic. fusco purpurascent. Panic. ampla. From Mahadeb upwards, very common.
283. Araliacea.—Arbor parva, Mahadeb; contus. aromatico pipeaceus.
284. Convolvulus.—Marine Beach* flores parvi albi.
285. Poa.—Panicula contracta. Speculis rubro tinctis, common all up to Churra on road sides.
286. Crotalaria —Suffurtex 2 pedalis florib livide Cæruelis. Towards Mahadeb.
287. Aristolochia piperifolia. Fol. oblongis spithamæis acuminatocuspidatis, basi profunde reniformi cordata, floribus pubescent, 3 uncialibus tubo fusco ut bulbus, ovarium viride, lamina basi purpureo sanguinea sordida, cæterum sordida fusca. Species magna.
288. Vitis Foliis subcarnosis floribus albis, odore subingrato. Half way up and above Mahadeb.
289. Polygonum sp.—Floribus rosaceo purpureis. Commences towards Mahadeb.
290. Hedyotis.—Floribus albido cærulescentibus. Commences ½ way and continues beyond Mahadeb.
291. Croton.—suffrutex 3-4 pedalis dioicus in hnmidis ½ way up and to Moosmai.
292. Tradiscantia aspera.—Mahadeb in humidis ambrosis.
293. Didymocarpus.—On rorks at Mahadeb.
294. Paspalum.—Inter graminem, also between Mahadeb and Churra.
295. Jasminum.—Scandens flores albi fol. coriacea lucida. Near Mahadeb in umbrosis.
296. Solanum sp.—Suffrutex ramosus magnus, flores rosaceo purpurei. In humidis umbras near Mahadeb.

* Private Journal, p. 171.

297. Lycopodium.—Inter rupes in umbrosis. paullo infra Mahadeb.
298. Panicum Burmanni.—½ way up ambrosis.
299. Anatherum.—Continues up beyond Mahadeb, spicim from Mahadeb.
300. Aspidium.—In umbrosis just below Mahadeb.
301. Aneilema.—Towards Moosmai in humidis.
302. Achyranthes.—Near Mahadeb in umbrosis.
303. Osbeckia. Icong 24.—Fol. glabris subcarnosis, florib. amplis pulchre rosaceo-purpureis. Stam. 8 similbus longissima rostratis rugoso undulatis, calyce demum tubiformi medio constricto, sinubus etc. nudis. Mahadeb in umbrosis caule 4 alato: Stam. 4 ascend. 4 decend.
304. Gramin.—On moist rocks and places at Mahadeb, and above. Spiculis Viridescent.
305. Phyllanthus suffrutex, fol. subsecundis, florib. Masculis fasciculat. in axillis inferior. fœmeneis solitariis in superiorib. just below Mahadeb in umbrosis.
306. Cacalioidea.—floscul rosacea. Commences towards Mahadeb and continues all up inter graminea.
307. Cyperacea.—Spicul. fuscescent pallida in wet places on rocks Mahadeb to Churra.
308. Urticea.—1-2 way up, uncommon, spicis pendulis.
309. Goldfussia.—Commences above Mahadeb, very common about Churra; floribus amplis cœruleis.
310. Dioscorea.—1-2 way up, uncommon.
311. Holcus.—Commences above Mahadeb, very common thence to Churra, where it is abundant. Gram. perelegans spicule, purpurea, sanguineis, interdum albis; panicul amplis. diffuses 4-6
312. pedalis. Rubus.—Towards Moosmai, et minutis lincaribus, albis, antheris brunneo carneis, sepalis per anthesin reflexis, demum erectis connivento clausis.
313. Gramin.—From above Mahadeb to Churra, common in wet spots, fasciculated, spiculis vindib.
314. Andropagonea.—From Mahadeb upwards; common, inter gramineis. aliis.
315. Composita.—Disco lutescenta, ambitu albo, erectum ramosum annuum.

Commences at Mahadeb, continues to Churra.

316. Hedyotidea.—1-2 way up.
317. Gramin.—Towards Mahadeb in umbrosis.
318. Linum trigynum. Commences at Mahadeb, thence more common to Churra.
319. Osbeckia.—Floribus mediocribus, lœte rosaceis calyce sanguineo tincto, frutex humilis ramosus. Moosmai, Churra common.
320. Croton.—Arbuscula, above Mahadeb 1-2 way between it and Moosmari.
321. Crotalaria Slacyana.—Commences 1-2 way between Moosmai and Mahadeb.
322. Pogostemon.—Floribus stupaque carneis, antheris fusco tinctis. From Mahadeb upwards common.
323. Andropagonea.—Towards Moosmai inter alia Graminea.
324. Cyperacea.—2. 3 Pedalis, spiculis fusscis.
From Mahadeb upwards, in wet places.
325. Atheilema.—Towards and about Mahadeb in umbrosis.
326. Acanthacea.—Floribus albis, herbae $1\frac{1}{2}$ pedalis in umbrosis, near Mahadeb.
327. Legumenosa.—Floribus. ochraleucis.
328. Bonnaya.—Annua ramosa, floribus tubo albo, lamina purpurea loborum apicibus albis, 1-2 way up, common on the path on stones.
329. Salomonia.—Floribus purpureis commences on road sides 1-2 way to Mahadeb. continues to Churra, where it is stunted, its head quarters is below Mahadeb.
330. Lycopodium.—Pusillum tenerrimum, lower ranges up near to Mahadeb, in crevices of rocks, forming the stony path.
331. Vandellia sp.—Coroll, cœrulea, annua, ramosis decumbens, 1-2 way up, on rocky path.
332. Cheilanthes.—Lower ranges, among crevices of path.
333. Sonerila. Foliis subtus discoloribus, corollis carneo rosaceis. Stylus filamentis carneis. Anth. basi luteis, rostro purpurascent. Calyx albus. Below Mahadeb in shaded recesses of banks.
334. Begonia.—Foliis carnosis (minima) subtus discolor, sepalis exterioribus rubro venosis, interioribus evenosis albis. Stam. luteis. Rocks at Mahadeb, 1st of genus that appears
335. Stemodia. Cor. luteis. Calyce magni. Towards Mahadeb not found below.

336. Cheilanthes dealbata.—Towards Mahadeb, crevices of rocks.
337. Dimeria sp.—Rocks at Mahadeb.
338. Gramin.—Gluma exterior patentis; rocks from Mahadeb up old walls, etc.
339. Curculigo.—Near Mahadeb, in crevices of rocky path.
340. Floribus albido cærulies. Road ½ way up to Mahadeb.
341. Sonerila.—Hispidissima, foliis pilaque decoloratis. Coloratisve subtus saturato-purpureis calyce ciliato petalisque dorso carinato, ciliatis. petal lœte roseis. Stylus ditto.
Above Mahadeb in ripis humidis umbrosis.
342. Æginetia Iconogr. no. 13.—Certainly distinct from the plains one. On rocks about Mahadeb, and as far as Moosmai. Flores extus purpur, intus sordide sanguineis caulis stramineus, rubro lineneatus. Bractea purpureo tincta. Corolla compressa.
343. Scutellaria.—Foliis subtus purpureis. Calyce purpureo sanguineo. Cor. azurea prœsertim lab. super et lateral inferior quæ ascendentes, medio lab. inferioris albido.
Mahadeb thence to Churra: Terya Ghat.
344. Leguminosa Nova Species.—Commences above Mahadeb among grasses continues to Churra where it is common.
345. Plectranthus.—Flor cæruleis filam. cyaneis, Anth. bruneæ.
From Mahadeb upwards.
346. Gramin. On rocks about Mahadeb.
347. Polypodium.—Rocks Mahadeb towards Moosmai.
348. Vitis sp.— Fol, vix carnos. flores albi.
½ way up.
349. Rhinanthoideus.—Commences above Mahadeb thence to to Churra, commonest about Moosmai. Cor. ochroleuca.
350. Hymenophyllum?—Towards Mahadeb or rocks.
351. Davallia. Above, but near Mahadeb or rocks.
352. Eriocaulon.—Continues from Mahadeb whence it is very common its wet places.
353 Impatiens.—Floribus lœte carmin. Calyce rosaceo caule fuscescent. pedicellii juniores crocescentis.
Being common commences with the grassy places just above Mahadeb.
354. Frutex scandens, Cor. 5 petal reflexa. Stam. 10 styli 3 flores parvi albi. An Hiræa? above Mahadeb.

355. Phyllanthus.—Frutex etiam arbuscula, fol. subtus glaucus, ramis saltem post tectum adpressis, cæterum sub patentibus, ramis brunneis, floribus masculis in axillis aggregatis, viridi vel rubro tinctis; fœm. pauci solilaria? Fructus depresso-globosus brunneo ruber.

Towards Moosmai.

356. Phyllanthoideus.—Arbuscula dioica, fol.subtus glaucus floribus fœmineis axillarib. aggregat. sœpius pendulis vel potuis deflexis, fructus bilobus medio cono prominulo; with no 355.

357. Cotolaria.—Annua ramosa 2-3 pedalis, carina viridescens alœ luteæ, vexill. fusco lutescens sanguineo venosus. Moosmai ad vais.

358. Cyclocodon.—Near Mahadeb.

359. Ischæmum.—Gramin 4-6 pedalis spicis fuscis, towards Moosmai inter aliæ gramineæ.

360. Pogostemon.—Flores stupoque lœte rosacœ. purpurea commences above Mahadeb continues to this. Common in open wettish places.

361. Tradescantia paniculata?

Mahadeb Moosmai in humidis umbrosis.

362. Arundinaria.—Commences with the grassy tracts above Mahadeb.

363. Thibaudia Iconag no. 12.—Frutex humilis ramosissimus elegans, Corolla viridescenti rubescens; laciniis reflexis badiis, anguli corolla badius. Anth. aurantiacea, flores cernui Alabast fusco brunneo conico subulata, ostivat. valvata.

Commences 1-2 way between Mahadeb and Moosmai continues to Churra, where it is common along water cources.

364. Cyperacea.—Spiculis fuscis cernio pendulis, above Mahadeb thence to Churra.

365. Bryonia?—Flores albi, mas. subcampanulat. urceolat œstivat. valvat. laciniis dentiformibus. dioic. Half way to Mahadeb.

366. Viburnum.—Arbuscula flores albi, Anth. brunnea. It commences half way from Mahadeb. to Moosmai and continues to churra not uncommon.

367. Laurinea.—Arbuscula stunted valde ramosa, petiolis rubris.

Commences a little above Mahadeb.

368. Ixora. Flores albi, tubi carneo.

Frutex, To Moosmai.

369. Ischœmoid.—Towards Moosmai, inter alia graminea.

370. Passiflora.—Fol-succulentis teneris, subtus gluncescentibus, 2-3 glandulosis, floribus albis Perianth laciniis oblongis Corona breva prœsertim interna. Stylis deflexis.

Baccis globosis Moosmai in sylvis.

*Churra, September, 24.**

371. Rubus, acinis miniatis.

372. Centranthera grandiflora. Cor-infundibulif. lamina aurea fauce et tubo superne rubro brunneo. Inter graminea.

373. Erythrinœ sp.—petiolis aculeatis basi glandulosis. floribus pendulis coccineis. Stamina phalangem planam efformantia Probably culivated.

374. Hedychii sp.—Caulis complanatus folia deorsum sub condupli cata disticha repanda tubus longissimus ochroleucus, laciniis perianthii convolutis ochroleucis, interioribus 2 superioribus amedio infra involutis sursum planis: ibidem albidis cœterum rubris. Stamen rubrum. Odor suavissimus sub Myristicaceus, fol. subtus interdum purpurea.

375. Clerodendrum nutans.—Flos volkameria nempe obliquais albus calyx inflatius. Si ad axam spectes flos non inverus, fissura nempe supera si ad terram inversus est. This is curious since in volkameria the *racemes* are not pendulous, neither is the flower reversed.

376. Polygala:—Sepalo supremo gibbo cassidæformi: Pet. fusco lutescentis aurantiaceo tinctis cœterum aurea.

377. Begonia.—Foliæ aspetu velutino, venæ subtus rubræ, caulis pedunculati rubescentes. Pet. carnea, ovar. pallide coccinea Fructus vivide coccineus.

In humidis.

378. Anthericoid:—Racemi subsimplices vel paniculata, floribus subcernius albis. Antheris luteis.

In campis graminos Churra et usque ad Mahadeb.

379. Impatiens.—Carnosa ramosa ciliis stipuliform setaceis flores cœruleo pupurascentes. Calcare incurvo, apicem medium subiter angustato, obtuso breviusculo.

* Private Journals, p. 158.

380. Luculia gratissima.—Calyce subturbinat laciniis foliaceis. Spathulatis. Cor. tubo longo hypocraterif antheris inclusis semper stigmata 2 exserta æstivat. imbricat.

Along water courses and in woods, common, 1st occurs ½ way between Mahadeb and Moosmai.

381. Impatiens.—Caule flexuoso sub 4 alato, alis ad basim foliorum utrinque in *stipulis* productis; foliis, alternis vel oppositis, serratures setaceis.

Racemis bifloris rubris. Floribus magnis saturati rosaceo purpureis. Calcara subtus albido supra venoso, subito constricto apice clavato incurvo. Cristis conspicuis luteis.

382. Pogostemon.—Plectranthus flores albi, lab. super. rubro punctato.

In campis graminosis Churra, 3 pedalis.

383 Sonerila squarrosa.—Flos solitarius terminalis rationa plantæ maximus, in apice pedunculi articulat. Pet. rosacea filam basi carnea. Stylus rosaceus in rupibus secus torrentis.

384. Begonia.—Folia tenera diaphana. Pedicelli basi bibracteata. Pet. carnea basi rosea. alœ ovarium magnæ inacqualis carneæ vel rosaceæ, flos mas. extus saturato coloratus. flores fæminei nutantes. In humidis umbrosissimis ; variat colore que interdum sanguineus. Folia subtus nunc discoloria nunc sanguina.

Colour no distinguishing mark as in Sonerila.

385. Sauraujæ sp.—Calyx albidus. Cor. magna sub campanulato, rosaceai folia subtus initio nivem demum pallida ferruginea.

386. Serratula.—Flores lœte purpurei. Anthodium purpur. tinctum.

387. Hoya.—Corrolla rotata reflexa, fuscescens. Corona venoso-sanguinea foliola supra concavo œstivat. valvata.

388. Cyrtandracea.—Flores in cymos ternifloros disposita suffulta foliis floralibus 2 magnis, plus minus sanguineis; flos terminalis nudus lateralib pedicelli basim prope bracteus 2 cymbiformes.

Accuminata vivida coceinei gerentis. Pedicelli coceinei Calyx amplus persistens, fulgenti-coceinea. Cor tubus calyce ⅓ longior. subgenicnlat deorsum, sanguinea. Lamina bilabiata lab. super. bifido inferior 3 lobo fusco atro picto, lateral patentes, medio subincurvo. Folliculi subulata utrinque attenuata

genitel exserta. In arbor. in sylvis. Moosmai, Churra ; erect vel pendul.

389. Desmodium.—Frutex 7-8 pedalis racemis fructuum nutantibus. Margines sylvarum Moosmai etc.

390. Polypodii sp.—On rocks.

391. Styrax sp.—Towards Mahadeb. This grows at Sudiya, also Lomaria from foot on stones in water courses extends up to the devils bridge.

392. Desmodium.—Frutex 6-8 pedalis elegans.

Bracteæ maximæ rubro fusco tinctæ ; flores lœte carmina calyce sanguineo purpur. Pedunculi triflori, flore terminali abortivo in ravines etc Churra.

293. Smithia, Folia non sensitiva, flores majuscula lœte aureii bibracteolata vexillo basim versus linea crescentiforma aurantiaceo.

In graminosis campis, Churra.

394. Urena lobata.—In ravines among shrubs Churra.

395. Impatiens.—Caulis subteres folii opposit. floribus axillaribus fasciculatis, pedicellis rubris, calcara valde incurvato subulato longissimo. Flores pink, labellum carmina, calcare fauce venoso In campis gramminosis, Churra common.

396. Crotalaria noveoides.—Fol ascendent subtus albido-glaucia flores lutescent, vexillo castaneo venoso et tincto. Basi bulbosa, caulis plerumque simplex. In campis graminosis.

397. Polygonum (Bistorta).—Folia radicalia subtus glauca, bracteæ fuscescentes, corollis carneis. Anth. lilac cræuleæ.

In campis graminosis, Churra.

398. Umbellifera.—Odor fœniculaceus herbaceus, 1-3 pedalis ramosissima, Radix fusiformes.

On walls Churra, Odor radicis pastinaceus.

399. Polygonum.—Flores rosacei herba pusilla decumbens in humidis proveniens.

400. Cyperacea.—Spiculis compressis, atrobrunneis,

In arenosis humidis, Churra.

401. Scirpus—4 pedalis, paniculae divisconibus cernuis spiculis ferrugineis. In aquosis Churra.

402. Leucas.—Calycis dentes stellatim radiantes. floris lab. superior fornicato, densissime brunneo villoso, barbato, genitalia inclusa flos ceterum albus, in graminosis inter rupes Churra.

403. Composita.—flosculis aureis.
In ericetis et graminosis Churra.
404. Gramin.—Spica nutanda, spiculis viridi fuscis, on walls and rocks Churra.
405. Isachne sp.—Spiculis purpureis, paniculi pyramedalis, inaquosis, Churra.
406. Setariæ sp.—Lœtis fuscis, spiculis livido tinctis in campis ericetis, ad vias Churra.
407 Sporobalus.—In campis, graminosis Paniculi flagelliforni nutans.
408. Eriocaulon.—Spithamea, capit niveis.
In campis, advias ubique Churra.
409. Ischœmum.—Spiculis nitentibus rubro tinctis.
In campis Churra.
410. Pteris —Frons 5 pedalis stipiti brunneo, deorsum glabra, among rocks in grassy plains.
411. Pteris.—In crevices among wet rocks Churra.
412. Cheilanthes davallioides.—Fronde 3 5 pedali pinnis infimis subopppositis, stipita supra canaliculat villoso, cum prœcedentia.
413. Davallia.—On rocks under shrubs.
414. Vandellia rotundifolia. Herba pygmæa. Cor. albida labio superiora cœruleo. On walls, on stony paths.
415. Goodyera sp.—Sepalis viridibus. Labello luteo citrino. Anthera aurantiacea.
In sylvis humidis umbrosis, Churra.
416. Potentilla.—Prostrata; floribus luteis.
Churra Punjee 4500 fl.
417. Xyris.—Floribus lœte luteis.
In humidis, vulgatim.
418. Polygonum.—Flores albi, Moosmai Churra Punjee.
419. Daphne cannabina?—Floribus subodoris.
In sylvis, Churra, cortice tenace.
420. Crawfurdia fasciculata.
421. Graminea.—Churra in aquosis, vel in humidis.
422. Cyperus.—In aquosis.
423. Urticea —Frutex.—In ericetis.
124. Phaseolus.—Flores lutei, cultivat.
425. Composita.—Floscul. albi vel carnei.

426. Caricea.—Fructibus rubro aurantiaceis.

427. Æschynanthus Iconogr 6.—Parasitic et pendula in arboribus Fol. carnosa 1 venia, vena subtus prominula raro plana sæpius concavo canaliculata subtus pallida. Flores terminales et e peduncula capituliforma vel 2-3 ex axilla cujusque folii terminalis ascendentis.

Pedecelli obtuse 5 goni, angulis sepalis oppositis. Caly: lutescent viridis. Cor. pulchre coccinia aurantiaceo tincta. linea atrosanguinea lacinæ cuique respondente. Stylus albus stigma carnea. Filam purpurascent, uti Anthera connect. In Artocarpo, at foot of the Hills.

428. Æschynanthoid Icong 7.—Parasit in arbor. erect vel pendul frutce fol. carnosa venosa venis secondariis arcuatis subconspicuis. Supra saturat viridia subtus pallida, univenia, vena pominula. fol, exemplis grandioribus venis magis inconspicuis. Cymis terminalibus et axillaribus, bracteis primarius maximis sanguineis, patentibus: Pedecelli ut in priores 5 goni calyces et bracteæ secondariæ quæ pedicellis basi adslant eodem colore, Cor. coccinea fusco atro plus minus tincta. Stam. purpurasc. Stylus purpureus stigma albidum. In arboribus e Mahadeb supra *ad* Mahadeb major est. Variat magno fere statura, flores interdum 2 $\frac{1}{2}$ unciales.

429. Spathoglottis Iconog 9. Calyx intus lutea extus lutea. rubro plus minus tincta. Pet. omnino lutea. Labelli lobi laterales purpureo tinct et venosa, cœterum luteum, cristæ basi purpur punctulat. Columna luteo. Connectivo viridescent.

Hab frequenter in campis collinis graminosis Churra presertim inter rupes. fol. triplicata.

430. Vitis.—pedunculisque miniatis. Churra.

431. Lobelia sp.—Prostrata Baccis purpureis. Churra graminosis.

432. Callicarpa sp.—Frutex, Baccæ cæruleo purpureæ. In ravenes

433. Dracalpis?—In sylvis Churra appears first here.

434. Pyrus?—Frutex vel arbuscula stunted.

In ravines inter alias frutices.

435. Polypodium.—In rupib, Churra.

436. Polygoni sp.—Flores rubri axis apicem versus nutans. Caulis ruber.

Vulgatim occurrut in humidis.

437. Polypodium.—Venulis tertiarius omnino inconspicuis.
In arboribus et rupibus. Churra.
In sylvis humidis, Churra.
438. Convallaria oppositifolium.
439. Rubra cordifolia.—Ad margines ravinularii in campis Churra.
440. Hydrocotyle sp.—Churra in humidis.
441. Gnaphalium,—Totum niveo-album.
In campis graminosis Churra Moosmai.
442. Bidens.—Herba 3 pedalis floribus albis.
In humidis Churra.
443. Spilanthes Churra in humidis et aprice.
444. Cyperacea :—Cæspitosa folius rigidis.
445. Olea.—Frutex Stunted ramosus.
In sylvis Churra.
446. Rubus.—Acinis amplis coccineis.
In sylvis Churra.
447. Composita.—Elata 6-7 pedalis. Anth purpurio cæruleæ.
In campis graminosis Churra.
448. Polypodium.—In arboribus et rupib, in sylvis.
449. Melastomacea.—Frutex, scraggy, fol. carnosa acida glaberrima, 3 venia, marginibus, et costa purpurea, fructus juniores carneo vel purpurea. In sylvis humidis, ad torrentis.
450. Acrostichium.—In rupib. vel arbor, in humidis, umbrosis Churra.
451. Umbellifera.—Flores albi, antheræ sanguino-brunneo.
452. Impatiens —Pussillus tener Pedicelli solitarium in axillis. Sepal lateral. herbacea, ut carina sepali postica flos cœterum ochroleucus, cristæ labelli luteæ. Calcar. longissim. subulatus apice imo conicus, incurvus.
Churra in humidis variat floribus aurantiaceis, Decumbens.
453. Davalliæ.—Among rocks in shady places.
454. Lycopodii sp —In umbrosis inter rupes.
455. Chrysobaphus—Roxburghii in umbrosissimis.
456. Ophiorhizæ sp.—Cymo terminali nutante. floribus infundibulif tubo longo, æstivat valvatis.
In umbrosis humidis, Churra.
457. Davalliæ sp.—In rupibus in umbrosis, Churra.
458. Lomariæ sp.—Frons sterilis non visa.

459. Castsnea?—Arbor humilis. common in woods towards the village.

460. Knoxia.—Flores purpurei. In collibus graminosis versus Punjee.

461. Ixoræ sp.—Flores albi vel carnei, frutex 6-8 pedalis. In woods in Churra.

462. Hemiphragma.—Churra, in ripis umbrosis humidis.

463. Polypodii sp.—Churra. in sylvis in arborib.

464. In sylvls umbrosis, Churra, spicis nutant.

465. Panicum.—Spiculis purpureis. In sylvis Churra.

466. Nephrodii sp.—In graminosis sub rupes.

467. Polypodii sp.—In umbrosis, humidis, sub rupes.

468. Aspidii sp.—Inter rupes in umbrosis.

469. Labiata.—Flores pallide cœrulescent. Anth. cœruleæ. In umbrosis.

470. Impatiens.—Caule flexuoso, fol. subcarnosis ad venas processi bus planis setaceis. Floribus racemosis, racemis patentissimis pauci floris, flore purpureo, calcare longo, apice clavato, cœterum subulato, os albidum. In humidis umbrosis, ad margines sylvat.

471. Allantodia.—Inter rupes versus Pungee fronde 3 pedali.

472. Galuim.—Subscandens, floribus ochroleucis, no. 15 ad margines ravinarum versus Punjee.

473. Zornia?—Pedalis erecta floribus albis, vel pallidissimi cœruleo tinctis. In ripis umbrosis humidis inter gramina.

474. Polypodium.—In the crevices of rocks.

475. Aspidii sp.—Among rocks.

476. Rubiacea.—Floribus infundib albis, herba prostrat radicans. In humidis umbrosis.

477. Polygonum.—Floribus roseis, basi. decumbens, in locis paludosis. Asperulum.

478. Thibaudia.—Iconog no. 28 Between Moosmai and Mahadeb, vix Ceratos variegat of Roxburgh. Cor rubra apicem versus venosa, laciniis fusco viridi tinctis. Os corolla obliquum.

479. Scirpus?—Culmo acuti trigons: In paludæ prope Punjee communis.

480. Pipera.—In arboribus in sylvis, spicis subpendulis.

481. Conaraceus.—Frutex scandens. In sylvis Churra.

482. Choripetalum acidum.—Scandens in sylvis. Legi etiam prope sudiya-

483. Quercus.—Arbor parva. In sylvis. Churra.

484. Wendlandiæ sp.—Arbuscula vel frutex. Floribus albis. In sylvis.

485. Gleichenia.—In humidis, ad margines sylvarum.

486. Polypodium Meniscoides.—An generis proprii. Polypodium forsan dividendum. ob. venationem different. Menisc. certe genus arbitrarium.

487. Gleichenia rigida.—Filix 5-7 pedalis, interdum scandens. Thecis 3-4. In slope of a hill near water, towards Churra.

488. Rubiacea randividea.—Frutex scraggy, 8 pedalis. In sylvis. Churra.

489. Panicum curvatum.—In Paludæ et in humidis Churra.

490. Ischœmum.—In humidis, et in Campis graminos communa.

491. Apocynea.—Frutex scandens, follia. divaricatis.

492. Davallia—Merely a small variety of No. 457. On rocks and in the crevices of stone walls.

493. Orchidea No. 9.—Temestris cœspitosa, fol. plicat. Perianth. albidum carneo tinct. Labell purpurasc: uti columna, Columnæ cavitat luteum. maculis sanguineis in lineis dispost. Anthera alba. Glandula cordata apice emarginata. Pollenia 8 clavata: longe pedicellata. Materia viscosa lutea, ope. hujus quaternata cohærent. Churra.

494. Habenaria Icon No. 16.—2 pedalis foliis glaucis. Calcare medio geniculato, geniculum infra viridi. Sepalis albis apice viridibus. Labellum album. Churra.

495. Xyris No. 14.—Uncialis, raro spithamœa fol. interdum semel torta. flores lutei uto barba.

In ripis umbrosis. Churra Punjee.

496. Ischœmoid.—In humidis. Churra.

497. Torenia asiatica flores. cærulia.

In campis graminas. ad vias.

498. Impatiens Icons 17.—Herbacea, 2-3 pedalis floribus pendulis maximis labello albo sepalis exterior coccinescent uti calcaris parta angustata. Sepal. postic carneum. marginib. albis ut basim calcaris. Petala alba medio basi versus, citrinis uti labella cristæ. Petioli rubescent, fol. subtus

advenas purpuracsc et purpureo tincta. Venæ supra prominulæ.

In umbrosis humidis. Churra.

499. Lobelia. Caulis simplex. Flores pupurei erect.

In graminosis humidis. Churra.

500. Lycopodii sp.—Inter rupes in umbrosis.

501. Viola serpens.—Flores albi vel carnei. Labello, purpur venoso. In umbrosis graminos.

502. Andropagon.—In umbrosis. Coal Mines.

503. Compositæ.—Frutex 6-8 pedalis flose. initio purpur demum albi.—In sylvis collinis. Coal Mines.

504. Nephrodii sp.—In umbrosias rupium. Coal Mines.

505. Gramin.—In humidis rupes, tubus spicul viridib.

506. Cyperacea.—In humidis spicul virid castaneo pallida tinctis.

507. Plectranthus.—Herba erecta ramosa 2-4 pedalis flores alba lab super rubro guttat. In campis.

508. Aneileme.—Flores majusculi curulea. In campis.

509. Juncus.—Capitules castaneo fuscis. In humidis.

510. Poa.—Spiculis fusco viridib. cœspitos. very common in grassy plains, especially roadsides.

511. Cyperacea.—Spiculis fuscis. In grassy plains here and there common.

512. Osbeckia.—Frutex humilis ramosis. Cor. cum calycis lamina decidua.!

512*a*. Plantago.—Waste places road sides.

513. Diplazium.—Rocky shady places, Coal mines. Upper Assam also.

514. Gramin.—Spicial purpureis: along water courses.

515. Desmodium.—Frutex decumbens: flores lute lilac. In humidis inter gramina.

516. Nephrodium sp:—Inter rupes in umbrosis.

517. Burmanniæ sp.—Floribus vived azureis.

In humidis inter gramina.

518. Sarcopyramis no. 19.—Cor rotata carnea. Stam. subexsert declinat floris spuria pellucido punctatis. Moosmai in rupibus secus torrentis in umbrosiss.

519. Urticea.—Herba prostrata ramis ascendentibus. Mooimai ad vias et ad margines sylvarum.

520. Cyperacea.—Spiculis fuscis. In aquosis Moosmai.
521. Clematis smilacifolia.—In sylvis Moosmai, fol. carnosa corrosea.
522. Gramin.—Inter alia gramina.
523. Asplenium.—Felix 4-5 pedali in humidis et aquosis proveniens. Moosmai.
524. Briddlea.—Frutex 8 pedalis flores purpurascentes. ram 4 alata. In sylvis Moosmai.
525. Davalliæ sp.—In umbrosis rupium. Moosmai.
526. Davallia sp.—In iisdem locis.
527. Sarcococea prunefolia.—In sylvis Moosmai.
528. Scleriæ sp.—In humidis et aquosis.
529. Urticca.—Frutex 6-8 pedalis ad vias Moosmai.
530. Smilacinea. In rupibus in umbrosis 2-3 pedalis Baccæ viridis ascendentis; Moosmai.
531. Euonymi sp.—Arbuscula. In sylvis humidis Moosmai.
532. Uvulariæ sp.—Baccæ terram spectantes, In sylvis humidis Moosmai.
533. Aspidium.—Inter rupes in umbrosis. Moosmai.
534. Strobilanthi sp.—Flores subcernui pallide cœrulea frutex humilis, 2 pedalis in rupibus in aquosis proveniens.
535. Lycopodii sp.—In arboribus umbrosis. Moosmai.
536. Grammitis.—In arboribus in umbrosis. ditto.
537. Davallia.—In umbrosis rupestibus. Moosmai.
538. Acrostictum.—In rupibus in umbrosis. Moosmai.
539. Nephrodium.—In rupibus secus torrentes. Moosmai.
540. Aspidium.—frond 4-5 pedali. In umbrosis rupest Moosmai.
541. Davalliæ.—Fronde 3-4 pedali in iisdem locis.
542. Asplenii sp.—In arboribus.
543. Acrostichum flagellif. In umbrosis rupium. Moosmai.
544. Orthopogon.—In umbrosis. Moosmai.
545. Labiata.—Herba erecta. 2-3 pedalis, tubo florum albo limbo saturate rubro purpureo. In ruderatis Moosmai.
546. Grammitis.—In arboribus, umbrosis Moosmai.
547. Acrostichi sp.—Cum præcedente, *uterg* pendulus.
548. Piper.—In arborib Moosmai capitulis globosis atris.
549. Aspidii sp.—In umbrosis rupest, Moosmai.
550. Phyllanthus stylosus.—Frutex humilis ramosiss. fol. semipatent

flores utrinque sexus in axillis aggregat, axillis summis tantum masculigeris. Perianth masculi arct reflexo glandulis, his alternantib conspicuiis, columni apice trifida, laciniis uni antheriferis, perianth fœm semi reflexo. Styli longi ad basim fere tripartita. Ad marginea torrentis Moosmai.

551. Acanthacea.—Herba tenera ramosa basi decumbens flores bilabiato tubi longo gracili, lab. super. bidentato, ascendenti, inferior. trilobo, porrecto. Lobo medio, medio sulcato, utrinque convexo, roseo guttato, stam 4. In umbrosissimis, sylvis Moosmai.

552. Hedyotis. Suffrutex flores erecti pallidi cœrulei, lacinii reflexo revolutis. Stigmat longe exsertis alabast carnea. In rupibus madidis secus torrentes, odor sub Pœderioideus.

553. Polypodii sp.—In arboribus in umbrosis, spicus pulchra, *inter-areolata.*

554. Asplenii sp.—Habitus omnino Adianti vel Lindscæ In umbrosis rupium Moosmai apice radicans.

555. Polypodii sp.—In arboribus in sylvis.

556. Labiata.—Flores cærulea uti genitalia.
In campis graminosis Churra Moosmai.

557. Celastrinea.—Arbuscula humilis. In sylvis humidis.

558. Bambusacea.—Gramin. 10 15 pedal culmis nutant secus torrentis. Moosmai Churra.

559. Dipsacus ?—In campis graminosis præsertim circa Moosmai floribus ochroluceo albidis. Planta herbacea 4 6 pedalis.

560. Betuloidea.—Arbuscula, frutex. Ad margines sylvæ secus torrentem Churra.

561. Myrsinea.—Frutex 8 10 pedalis foliis subtus venis reticulatis. In sylvis torrentum. Common.

562. Polygonum.—Flores albi. In campis, ad margines ravines. Laxum subscandens.

563. Clerodendrum.—Suffrutex 4-6 pedalis fætidus floribus albis. Ad margo ravine Churra.

564. Dendrobium.—Flores ascendentis (caule pendulo) aurei Labellum intus croceo aurantiaca. In arboribus Churra.

565. Gramin.—Cæspitosum dense. spicis viridibus. In ruderatis, et ad vias Churra.

566. Ophiopogon.—In umbrosis humidis præsertim ad margines torrentum.

567. Eriocaulon —In muscosis humidis, common large patches—torrentibus.

568. Liparis luteola.—Cœspitosa in muscosis madidis. Sepal fusco lutescenti viridia uti labellum demum pallid aurantive, columna alba secus torrentes.

569. Scitamineæ Hedychuim.—3. 4 pedale fol distichis apicibus subpendulis subrepandis, bracteis magnis foliaceis, floribus posticis sepalis linear oblongis, uncialibus erectis paulo longior angustioribus labellum obcordata. biloba flores aurei basi croceo tinct, columna, aureo crocea ut anthera odor suavissimus, Jonguillinus. Moosmai.

570. Hymenophyllum.—In rupibus in umbrosissimis lati repens Moosmai.

571. Hymenophyllum fucoideum—In rupibus in umbrosissimis. Moosmai.

572. Scirpoideus. —In arenosis humidis Churra.

573. Podostemon Wallichii.—frondes immersæ lacineatæ.
In torrentibus. Churra Moosmai.

574. Utricularia sp.—Aplylla, flores lutei. lab superius basi brunneo-venoso. In humidis et aquosis. Churra Common.

575. Drosera sp.—Floribus albis. In humidis arenosis. Churra.

576. Utricularie sp.—Habit no 574 flores purpurei palato albo purp tri lineato. Calcar subulat. lab. inferius duplo superans. In iisdem locis.

577. Rubiacea.—Minima, fol radical rosacei patentum flores albi. In iisdem locis.

578. Pothos.—Spatha envoluto-convoluta, carnoso coriac. intus aurantiaceo, spadix albus.
In arboribus in sylvis Churra.

579. Cynanchi sp. —Calyx fusco viridis, corolla viridescens patenti reflexa corona alba. In sylvis Moosmai. Huic valde affinis est species Suddya.

580. Corisanthera.—Frutex erectus. Inflorescentia patentissima carnea et purpureo tincta. Corolla pallid rosei lab superius bimaculati basi antheræ brunneæ. In sylvis umbrosis Moosmai.

581. Clypeæ.—Iconog : 23 Scandens dioicus, folia subtus glauca utrinque reticulata venis diaphanis, floribus. minutis albidis fructibus pendulis globosis rubro tinctis pedicellis clavatis rubris.

In sylvis coal mines versus.

582. Stauntonia latifolia—In sylvis Churra and Moosmai. Baccæ molleo glabræ, oblongæ albæ purpur tinct.

583. Gomphostemmoid.—Basi suffrutex pedalis floribus binis in axillis magnis albis, fauce inflat. genital. inclusa. Moosmai sylvis.

584. Naias.—In aquis stagnantibus Churra, viridis.

585. Viscum.—Planta pussila articulis complanatis ellipticis tota viridis, sœpe fusco tincta.

In Symploco et Cleyera, secus torrentes Churra.

586. Lysimachia.—Flores nutantes lutei towards limestone caves.

587. Thalictri sp.—Floribus albis pet caducis.

On a cliff towards the cave ladders.

588. Umbellifera.—Herba 3 pedalis foliis pallide viridis odor subnullus cum præcedent.

589. Acanthacei.—Decumbens radicans bracteæ 4 stichæ, Spicæ compressæ flos ringnes, carneus. Towards the ladders in rupis umbrosis.

590. Goodyera.—Sepali postico fusco viridi, lateral viridibus. pet, fusco albid. Labellum lœte citrinum. Anth. aurantiacea. In umbrosissimis Moosmai spica secunda.

591. Goodyera No. 29.—Spica secunda bracteo albidæ membranaceæ, ovarium fuscum. Sepalis badio tinctis, flos clausus. In umbrosis humidis Moosmai.

592. Didymocarpus.—Inflorescent. et fructus purpur sanguin, odor dulcis moschatus. In rupibus. towards ladders.

593. Pogonathatherum crinitum.—occurit ad vias rupibus usque ad 4000 ped.

594. Ajugoid.—Basi repens, flores pulchre azurei, tubo pallidiora, genitalia alba. In umbrosis towards ladders.

595. Polypodii sp.—In umbrosis humidis towards ladders frons pallidi lutesc. viridis, membranac.

596. Peristrophe.—Flores magni lœte rosei, uti stamina stylus ete albus. Towards the ladders.

597. Jasmini sp.—Scandens floris supra lucidis undulat Coroli multipartitis albis badoris. Towards ladders in woods.

598. Labiatæ.—In umbrosis towards ladders.

599. Pladera justicioides.—Towards ladders 3800ft.

600. Polypodii sp.—Inter rupes in graminosis.
601. Gnaphalium.—Flosculis etc albis. In campis graminosis Churra.
602. Umbellifera.—Herbacea 2-3 pedalis floribus albis. In campis graminosis humidis et secus torrentes intergramina.
603. Nephrodii sp.—In fissuris rupium Calcarium Mamloo versus.
604. Gaylussacia serrata:—In rupibus præsertim calcareis in umbrosis, humidissimis, sœpe epiphytica uto alia Ericinea indica, Fructibus pendulis. Calyce ampliato fructus rotato, fructum aspetus Asclepiadeus.
605. Celastrinea.—Frutex scandens fructibus globosis viridibus stylo stigmatibusque apiculatis. In umbrosis subcolliculas. Mamloo versus.
606. Pteris sp.—In rupibus calcareis in siccis. Mamloo versus. Legi etiam in collibus Mishmeensibus in iisdem locis.
607. Solanum 10 dentat—Baccæ miniatæ in umbrosis in humidis subrupes calcar. Mamloo versus.
608. Fici sp.—Repens in rupibus calcareis in umbrosis Mamloo versus.
609. Daphne involucrata:—In umbrosis sylvis. Frutex ramis paucis 4-6 pedalis.
610. Thunbergia coccinea.—Racemi penduli flores resupinati labio superiore nempe antico, nullam torsionem pedicelli video, quoad terram floris situs normalis. In Thumbergia grandiflora, pedicellus si racemus pendulus torquetur, si racemus flosve erectus, pedicellis strictus. Torsio corrollæ Peristrophe investiganda.
611. Marsdenia.—Floribus albis Scandens in sylvis basis rupium calcarium. Mamloo versus.
612. Cyperacea. Capitulis albo velutinis fusco basi tinctis. In aquosis-inter gramina. Mamloo versus.
613. Virgiliæ sp.—Frutex 6-8 pedalis. In sylvis rupium Calcarium. Mamloo versus fructus Edwardsiæ.
614. Nephrodii sp.—In rupibus calcareis. Mamloo versis.
615. Gnaphalii sp.—2-3 pedalis capitulis niveis. In campis graminosis inter rupes. Mamloo versus.
616. Ardisiæ sp.—Inflorescentia sanguinea corolla lilacina frutex 6 pedalis. In sylvis rupium calcar Mamloo versus.

617. Lysimachia sp. —Calyce fructus reflexa. In umbrosis, humidis rupium calcar. Mamloo versus.

618. Kadsura (Spœrostemma).—Frutex scandens subaromat flores masculi parvi lutescentes fructus acervuli globosi cernium. In sylvis rupium calcar. Mamloo versus.

619. Asparagi sp.—Scandens in iisdem locis.

620. Ficus.—Frutex erectus. Petioli fusco sanguinea uti costa venæ purpurascent. In sylvis secus torrentes. Mamloo verus.

621. Myrtacea.—Frutex humilis ramosissimus. Pet caducis floribus minutis albis. In sylvis torrentum.

622. Scleriæ.—Inter gramina in humidis.

623. Anisideniæ sp. No. 27.—Herba simplex pedalis erectus folia subcarinosa subtus albiscentia. Racemus terminalis 3 unciatis, floribus *saltea* fructus nutantibus calice viridi uto glandular capit. In rupibus calcareis secus torrentes parce. Mamloo versus.

624. Uvariæ sp.—Fructibus cernuis, frutex in sylvis rupium calcar Mamloo versus.

625. Aspidii sp.—In rupibus Calcareis in locis humidis. Mamloo versus.

626. Illicium.—Arbuscula habitu Laurinea fructibus terminalibus subcernius baccatis albidis vel pallide viridescent, cornubus rubro tinctis. Carpellis plurimis.

In sylvis rupium Calcar. in umbrosis humidis Mamloo versus.

627. Begoniæ orchidiflora —Subacaculis Panicula *radicale* subsecunda erecta floribus pluribus masculis sepalis anticis et posticis hispidis: interior subdeclinatis spathulatis. Columna stam ascendent, fœm ala postica tantum evoluta.

In rupibus calcareis inter muscas Mamloo versus.

628. Saxifraga ligularis.—In rupibus calcaries in humidis secus torrentem. Mamloo versus.

629. Monotropa no. 25.—Caule spithamæo foliaque basim versus exceptus albis, flos albus cernuus folia basilaria plus minus sphacelata. Folia *Alabastrino* aspectu. In sylvis Churra. I have never seen it, it has always been brought in by Khasyas.

630. Viburni sp.—Arbuscula Baccis miniatis demum atro purpureis. In sylvis rupium calcar Mamloo versus (Lettsomia argentea, ascends the vallies 4000 ft.)

631. Fagræa obovata Incong 28.—Frutex subscandens foliis carnosis cymis terminalibus paucifloris floribus majusculis infundibuliformib. odora saponis Castile ochroleucis. In sylvis rupium calcar. Mamloo versus.

632. Grammitis sp. Inter rupes in umbrosis humidis.

632. Compositæ.—In sylvis umbrosis humidis. Mamloo versus.

634. In rupibus calcareis siccis umbrosis, verisimiliter Composita.

635. Anonacea (Warty fruited)—Frutex subscandes foliis lanceotato oblongis, penniveniisi; fructibus pendulis, Carpellis stipitatis, obovatis maximis rubro viridibus, extus quam maxima verrucosa. subobliquis sutura ventral cariniforma, apice conico. transverse multi locularia, loculo quoque bina continente: Edocarp. spongiosum. Carpella plurima. Semina transverse hilo parvo, arillo gelatinosa obtecta, oblonga compressa margine medio sulcato, crasso rugoso, brunnea glabra lucida. Testa dura coriacea. Albumen profonde ruminatum. Embroyo minimus in cavitata basilarum albumenis locatus, radicula hilum spectans. Colytedones applicitæ lanceolatæ.

In sylvis Churra nomen vernacul.—— ?

Vix non generis nov. Arillus spurius nempe apicem clausus Arillo Cucurbitaæ forsan analogus.

636. Fici sp.—Fructibus globosis hispidis uto totus frutex Churra

637. Laurinea.—Fructibus amplis pomi parvi magnitud. Calyce cyathiformi margine integro. Pericarp. subglobosum depressiusculum, brunneo sanguinea, medio stylo apiculat, coriaceo-carnosum. Testa cinerea glabra venis latis albis.

Churra seed with the Anonaceous warty fruit.

638. Passiflora.—Sepalis extus viridibus intus albis. Pet alba Corona basi purpurea filamentis crispatis, disco viridi rubro guttato filam (stamin) virides atro sanguineo punctata. Cult in Major Listers garden.

639. Hyperici sp.—Frutex 4 pedalis ramosiss. vey bushy foliis (Myrti) distinctis floribus mediocribus subcernius luteis. Stylis 5 sepalis oppositis. Major Listers garden.

640. Sarcocordalis sp.—Dioica tuber lobata lobis verrucosis spadigeris. Squamis adpressis tota plus minus sanguineo purpurei tuber excepto quod ochroleucum. radicum fici ? *saltea* fruticis succo lacteo parasitica tuber radicem omnino investing

In umbrosissim. humidis subtus rupes præsertim calcareus Bracteæ mascule initio ferrugineæ. Bracteæ mutua applicatione perianthium spurium sub 4 gonii effo.; flos masculus demum deflexum, longiuscule exsertum, albus. Genus singularissimum ob flores masculos valde evolutos, fœmineos vix Musci comparandos! certe non in eodem ordine vel divisione cum Rafflesia conjungenda est hœc planta.

641. Nephrodii sp.—Scandens longe, frondes subverticillatæ caule apice prolifero.

Secus torrentes in rupibus, Churra.

642. Setariæ sp.—Decumbens in arenis profundiuscula, radicans spicis spiculis paucis viridibus. Churra advias.

643. Zygophyllea?—Arbuscula humilis folia novella fuscescentia, opposita stipulis inter foliac. secus torrentum in sylvis Churra.

644. Lycopodii sp.—Pendula ex arborib in sylvis.

645. Gramin.—In rupibus secus cursus torrentum, communum.

656. Styrax sp.—Frutex vel arbuscula in sylvis torrentum.

647. ———— — Baccæ globosæ rubræ. arbusculoid frutex in sylvis torrentum.

648. Lindsœa. sp.—In humidis sub rupibus, evenosa! demum siccatione Anthoxanti more fragrans. In rupib madid.

649. Symplocos....Fol atroviridia floribus albis.

In sylvis torrentum.

650. Panax sp —Arbuscula odor sub umbellifer petioli rubri. In sylvis torrent, adsunt etiam species tres aliæ Araliaceæ, una foliis supra decompositis, una foliis peltato digitatis integris, altera foliis digitatis lateralibus unis integris, reliquis lobato pinnitifidis.

651. Camellia caudata.—Arbuscula vel frutex ramis laxis florib terminalibus solitariis albis, folia undulata, supralucida. Stamin, filam alba, anth brunnesc. luteæ. In sylvis Churra.

652. Camellia symplocifolia, Icon. no. 31,—Frutex virgatus scraggy foliis coriaceis, deorsum curvatulis floribus axill et terminal solilariis vel 7-3 aggregat albis, filiamentis antherisque luteis, odor flor Pruni Lauro Cerasi. In sylvis torrent. Churra.

653. Senecionides.—Suffruticosa basi, flosculis luteis.

In rupibus madidis torrentum, Churra.

654. Guttifera.—Arbuscula, partis novellæ purpur rubræ succus

pallide luteus, fructus viridis ovi mediocris magnitudine, ovatus, basi calyce 4 sepalo, foliaceo, apice stigma orbiculare depressum demum baccat 1 2 sperm. Semina, si 2, plano convexissima, testa brunnea longitudinaliter lineis undulatis, succi inspissate notat, et transversa crebra fasciata lineis interioribus vasculosis ? membrana chartacea cotyledonea arcte conferruminat. succo luteo effœte, viridescent. Radicula punctiform.

In sylvis torrentum Churra.

655. Iteæ sp.—Frutex humiliuscule scraggy. Stipulis minutis setaceis, fructibus sub secundis.

In sylvis torrentum Churra.

656. Orchidea.—In arboribus in sylvis Churra.

657. Symplocos.—Frutex arbusculoid, fol subcoriaceis, floribus albis parvis sub odoratis, In sylvis torrentum, Churra.

658. Psychotriæ sp.—Frutex humilis foliis valde coriaceis venis secundariis conspicuis, arcuatum nexis fructibus globosis apice nudiusculis.

Secus torrentes in sylvis Churra.

659. ——— Frutex humilis foliis Nerii ramis sulcatis fol. supra lucida, gemmæ squamis imbricatis terminal. An Thibaudiæ cum habitu et gemmatione accedit.

660. Polypodii sp.—In rupibus umbrosissim. humidis in ravines along water courses venis soriferis etc, secundariis exceptis, inconspicuis frons coriacea.

661. Davalliæ sp.—In arboribus repens frons coriacea Churra.

662. Symplocinea.—Frutex arbusculoideus fol. integerrima supra artoviridia, lucida, pellucido punctata præsertim secus marginem, maculis nigris sparsis. Contus folia odore Pomorum

In sylvis torrentum.

663. Mussænda.—In sylvis, admargines. Churra, flores lutei.

664. Bolbophyllum, Iconog no. 32.—Rhizome repens Pseudobulbi globoso ovata, unifoliosa spica clavata pendula, flores densi in massam ovatam, postice viride purpur sanguinea et eodem colore prunctato, spica apice primo florente. Pet alba sanguineo purp tinct maculat. Lalbell. album bassi sanguin purpur, barba albi.

In arboribus in sylvis torrentum. Churra.

665. *Thibaudiacea.*—Frutex arbusculoideus ramosiss foliis cor-

iaceis. Racemis axillaribus, foliis breviorib. bracteis foliaceis; baccis globosis grate acidis, maturis atro cœruleis flores; quos longe post anthesin tantum vidi oblonge, apice sub ur ceolata. Stam 10, filam basi viridea carnosa, villosa. Stylo $\frac{1}{3}$ breviora enclusa, stylus corollam subœquans. Flores decumb. albi. In sylvis torrentum Churra.

Placentatio Ceratostematis.

666. Conchidium pussillum Griff.—In arboribus secus torrent. Churra commune.

667. Ternstrœmiacea Icong no. 30.—Arbuscula mediocris ramosa. fol coriacea marginata supra atroviridia venis inconspcuis floribus abortu dioicis axillaribus nutantibus masculis suava odoratis, ochroleucis. Fœm. non vida.

Flos masc. basim prope bibracteol. Calycis irregularis sepala 3 exteriora breve ciliata, 2 interiora petaloidea. Pet. imbricata rotundata concava, demum reflexa sepalis opposit. Stam oo ima basi monadelph. petalis annuli ope. in coralla quasi gamopetal cohœrent. Ovarii rudiment. conicum, odor suavissimus.

In sylvis secus torrentes, sæpius frutex raro arbuscula, flores masculi—Oct. Fœm. matutinis nunc temporis seminibus maturis.

668. Fragariæ sp.—Fructibus insipidis coccineis Duchesmæ proxima. Churra in campis.

669. Quercus.—Churra in sylvis, *nonvidi*, fructus lœti viridis.

670. Dendrobium no. 633-Icon.—Flores nutantes solitarii vel geminata e pedunculo bractiato. Sepalis acuto carinatis. Calcar longo subulato obtuso, decurvo. Perianth album, carnosi. longitud obsolet sulcatum, Petala univenia ecarinata. Labellum lobi lateralibus obsoleto denticulata, medio fimbriato, album, venis aurantiaceis papulosis, 3 central approximat cristam mentient. Pollinea 4 per paria collateral magna. Anth. alba, maxima, columna facies antica aurantiacea. In arboribus Churra.

671. Bletoidea.—Flores penduli et cernui citrina, folia plicata. In umbrosis humidis.

672. Orchidea Bolbophylloid.—Floribus luteis, longe post flores centiam tantum vidi. In arborib. in umbrosis Churra.

673. Sonerilæ sp.—Caulis ramosis fol. supra nigro viridia, subtus et petioli sanguinei, venis saturatius coloratis, calyx albus, Pet rosea.

In umbrosis humidis Churra.

674. Begoniæ sp.—Caulescens, folia valde carnosa, floribus albis bracteis membranaceis.

In humidis umbrosis Churra.

675. Jambosæ sp.—Floribus albis nutantibus.

Churra non vidi in situm.

676. Bleioidea sp.—2 Pedalis scapus caule longior. Perianth luteo-viride, sepalis reflexis. Petal. patent. reflexis, labellum luteum aureo tincto, lobo medio repandum dentatum fusco tinct.

Anth. membranacea locul. obsolet. 4 locellat. Pollinea 8. obovato-pyriform quaternaria, caudiculæ pulvereæ brevius-culæ. Glandula cordata carnosa, Rostella emarginata. In umbrosis humidis, secus torrentes Churra. slightest notch on the rostellum sufficient to divelope the gland, which is most fleshy and viscid, in fact more soluble when the rostellum is near entire. Fig. 2.

677. Cyrthandracea picta, nobis —Cortex cinerea, rami crassi, fol opposita œqualia lanceolato oblonga acuta carnosa, integra, venis indistinctis subtus pallida, costa prominula.

Cymi axillares et terminales, dichotoma divisione primaria quaque bracteis magnis, concavis ovato lanceolatis carnosis, vivide cocineis suffulta, flores in divisione quaque subumbellata 5-8. Pedicelli coceinea bracteis primariis breviores obscure 5 goni, divisiones, secundariæ bracteis minoribus suffultæ, si flores solitariam bracteis primariis desunt. Calycis sepala maxima oblongo linearia concaviuscula, vivide coceineo, flores maximi 3 uncialis, tubo lutescenti coccineo indistinct. venoso, glabro limbo bilabiata, sanguineo et atro purpureo maculato et lineato, pubescent, lateribus labii superioris reflexis, uti labium infer. filam. lutescent. Anth atratæ. Stylus brevis pubescens anth. per paria apicem cohærentes demum deflexæ. Connectiv fuscum, In arboribus, Mahadeb Churra species insignis ob magnitudine florum et pictior.

678. Loniceræ sp.—In sylvis Churra flores non visi.

679. Lycopodii sp.—In sylvis umbrosis humidis. Churra.

680. Choripetali sp.—In sylvis Churra baccis fusi magnib coccineæ.

681. Nephrodii sp.—Subrupibus Churra.

682. Hedychii sp.—Flores tetrastichis, bracteæ spicaque suturati

viridis sepalis angustissimis convolutis. Petalis lineari spathulatis, labellum longe unguiculatum, lamina ad basi biloba, flores miniata vix odora, folia non vidi.

683. Osbeckioidea.—Iconog no 35. Suffrutex basi decumbens, pedalis floribus amplis pulchre lilacinis azurea tinctis. Pet cuneato obcordatis basim versis venosis. Stylus purpurius declinatus. Stamina ascendentia, filam. purpurasc. antheræ luteæ.
In campis graminosis Churra.

684. Cœlogyne.—Foliis binatis, oblongo linearibus, subcoriaceis subplicatis acuminatis flos perelegans albus. Labellum extus album, intus violaceo et sanguineo maculat. et lineat. cristis (e fimbrus 7. 9-luteis. Pseudobulbi, oblongi medio constricto, virides purpureo maculat.
In umbrosis rupestibus Churra.

685. Desmodii sp.—Churra etc in graminosis ad margines sylvarum.

686. Piper. Foliis carnoso coriaceis spicis deflexis vel cerneis. In arboribus Churra.

687. Clerodendrum.—In sylvis, Churra bracteis rubris.

688. Stilaginea.—Spicis floribus que coccineo rubris staminib concoloribus 3-4. Churra in sylvis arbuscula.

689. Aspidium.—In umbrosis Churra.

690. Davallia asplenioides.—In sylvis.

691. Polypodium.—Sect. soris uniseriatis, venis tertiariis etc indistinctis. Churra frons coriaceæ.

692. Nephrodium.—In arboribus in umbrosis.

693. Polypodii sp.—Fronde tripinata 5-6 pedalia foliacea consistent rachi glabra.
In umbrosis Churra.

694. Oberoniæ sp.—In arboribus. Churra.

695. Myrtacea. Arborea Pet caducis floribus albis. In sylvis Churra.

696. Celastrinea. Frutex. Cymis fasciculatis abbreviatis floribus parvis albis. In sylvis.

697. Asplenium Nidus?—Frons coriaceæ conspicue marginata. In arboribus in umbrosis.

698. Curculigo.—Fructus capitulo cernuo albo.
In umbrosis Churra.

699. Croton sp.?—Frutex fructibus trilobis stylis 3, folia Camelliæ Theæ.

700. Orchidea :—Foliis plicatis fructibus erectis bracteis reflexis. Hujus generis capsulæ alis rugoso-dentatis species altera e Mergue.

701. Hyalostemma Icon 37.—Foliis distichis undulatis floribus solitariis in axillis, pendulis. Calyce reflexo. Corolla magna, 3 partita laciniis reflexis connatis, sanguineis, basis corollæ hyalinæ sanguineo venosa. Dioica. Arbuscula Churra. Huic proximam speciem legi versus Serpentines Mines, regni Burmanni.*

702. Orchidia.—Foliis carnosis albido viridibus saturate viridi coloratis, subtus purpurasc fructus penduli angulis majoribus acutis.

In umbrosis. Churra Terrestris.

703. Aroideum foliis carnosis ternatis ; fructibus lucide viridibus apicem planiusculis. In sylvis umbrosis.

704. ————Volubilis, Icon no. 38.—Foliis stipulatis oppositis stipul inter petiol reticulatione subtus Artocarpearum. Capitulis fructu subumbellatis terminalibus, pluri carpellatis Churra. An Corno affinis. Carpella calyce adnata apice discum gerentia, 4 locularis ; loculis 1 spermis, semina erectiuscul. appendata albuminosa embryo basi versus locat.

705. Pleopeltis.—In arboribus cæspitosa repens.

706. Rhamnea.—Venatio in ordine singulari. An Kurrimia. In sylvis scandens.

707. Myrsineoidea.—Arbuscula, Alabastris umbellatis erectis. Churra.

708. Virgilioidea macrophylla.—Leguminibus torulosissimis magnis pendulis velutino albidis. Seminibus in divisionib solitarius, ovali-globosis, hilo parvo, testa virida venosa extus membranac, intus cellulosum. Cotyledoneæ carnosæ, plano convexissimæ extus venosæ ob pressionem. Radicula rectiuscula, hilum ad latus. Plumula conspicua. In sylvis Churra.

709. Porana.—Scandens lœti, floribus campanulatis albis. In sylvis Churra.

710. Peperomiæ.—Carnosa 4 uncialis foliis indistinct triveniis spicis erectis, foveolatis pubescent seminibus brunneis. In arboribus rupibusque in humidis.

Private Journal, p. 87.

711. Apocyneæ.—Frutex robustus, scandens, medulla fructusque succo lacteo, fructus (immature) globosi, semina immatura materia cellulosa emersa. In sylvis. Churra.

712. Pholidota.—Scapis pendulis. In arboribus. Churra.

713. Saccolabium Iconag no. 36.—Fol secundis falcatis marginæ revolutis carnosis, lutesc. viridibus apice oblique emarg. division: setaceis. Racemis brevibus oppositifol clavatis, minute bracteatis, floribus subumbellat. posticis, perianthio patento lutiscentes, sanguineo maculat. sepalo postico petalisque intus arcuatis. Columna nana, propurascens, Labell. calcar. lutescens margine purpur. lamina alba, disco sanguineo notat. In arboribus in umbrosis Churra.

Pollinea 2 postice foveolata subrotundo quadrata. Caudicula longa, glandula oblonga concava, postice emarginat. Capsula oblonga subclavato, alis rotundatis, alternis minoribus.

714. Saccolabium.—Foliis distichis, patentibus rectis oblongo linearibus carnosis apice oblique emarginatis, laciniis setigeris. Pedunculis clavatis elongatis bracteatis, floribus subumbellat. alabast. posticum. Perianth virdi extus, intus sanguineo notat. Sepalis petalisque carnosis spatulatis columna brevis purpurasc. Labellum album (calcare basi lutescent) purpur punctulatum fimbria alba. Pollinia globosa 2, postice foveolata. Fig. 2.

Præcedenti propinqua species.

In arboribus Churra.

715. Agrimonia.—In campis Churra ad moflong frequentius altitudine 5000. ped.

716. Epilobii sp.—Floribus saturat. lilacinis mediocribus.

In campis et ad vias vix infra altit 5000. ped.

717. Indigoferæ sp.—Prostrata, ad torrentem Bogapanee alt, 5000 ped.

718. Osbeckiæ sp.—Frutex 4 pedalis fol 7 veniis floribus mediocribus lilacinis. Stam ascendentibus ad torrentum Bogapanee.

719. Potentilloid.—Prostrata, floribus inconspicuis luteis advias inter rupes, vix infra alt 5000 ped.

720. Goniocarpus.—Alt 5000 ad 5500 ped.

Prostrata repens.

721. Gnaphalium.—Capitulis aureis, Bogapanee.

722. Hyperici sp.—Foliis venoso stria to plicatis calycibus fimbriatis

In campis vix infra 5300. Between Kala, and Boga panee.

723. Labiata.—Herba basi suffruticosa 1-2 pedalis, bracteis foliaceis superioribus purpureo pallide tinctis, inferioribus omnino viridibus. Calyx purpurasc. Corolla carnea, between Kala and Boga Panee, alt 5500 ped. and towards Moflong at the same elevations, Pulchella.

724. Hymenodictyon?—In arboribus Kala Panee vidi tantum post inflorescent, Sepalis linearib reflexis, dicio bilobo magno, calycis tubo clavato.

725. Indigoferæ sp.—Erecta 3 pedalis Boga Panee.

726. Desmodii sp —Frutex humilis floribus læte rosaceis, calyce fuscescent racemis erectis Kala Panee in umbros on ascent to Muflong and between the Kala and Boga Panee vix infra 5000 ped.

727. Desmodii sp.—Racemis erectis subcorymbosis calyce fuscescent. Corolla lilacina. Boga Panee frutex ramosus 3-5 pedalis.

728. Desmodii sp.—Frutex pussillus: prostrat repens, alis cœruleis vexillo pallido. In graminosis towards Boga Panee alt 5000 feet.

729. Begoniæ sp.—Foliis peltatis lobatis carnosis uni coloribus floribus albis, glabris, ovarii ala postica majora rubro venosula cœterum omnibus viridescent. In rupibus in umbrosissimis near Sururem and Kala Panee alt 4500 to 5000 feet.

730. Crepidea.—flosculis luteis folia glaucescent in plains above Sururem, alt 5300 ft.

731. Clitoria sp.—Repens, floribus carneis vel pallide cœrulescent, magnis. Roads in crevices of stones towards Bogapanee alt 5000 to 5300. feet.

732. Rhododendrum.—Arbor vel arbuscula. Secus Kala Panee 30. 40 pedalis scraggy. Surrureem et Kalla Panee et inter hac loca alt 5000 ped. vix infra, flores rubri evolute.

733. Swertia.—Caule 4 alato fol. patente deflexo florib albis cœruleo venosis glandula lutescent. Herba pedalis vel bipedal. Anth cœrulescent. Towards Kala Panee about Moflong vix infra alt 5000 ped.

734. Swertia sp.—Pedalis vel bipedalis, ramosior. Fol. subplicat 5 venia, floribus parvis albis glandulæ binæ cerulescent pilis glandulif paucis stipat. Sururem et Boga Panee versus. Moflong alt 4500 to 5500 feet.

735. Camellia-Arbuscula.—Fructibus viridibus. Kala Panee. An C. Kissi-folia coriacea.

736. Andropogonea:—In campis graminosis. Kala Panee versus alt 5000 ped. Spicul viridib.

737. Andropogonea.—Spiculis purpurascent. Cum Præcedent 3-4 pedalis.

738. Salix.—Frutex, fol. subtus albo tomentosis stipulis foliaceis. Towards sururem. In humidis et alibi. Moflong versus vix infra 5000 ped.

739. Poygoni sp.—Captitulis globosis roseis. In rupibus Moosmai et Sururem versus.

740. Copositæ.—Basi suffrutic 3-5 pedalis, folia asperula, flosculis radii albis, discum lutealis. In collibus graminos versus Boga Panee alt 5300 ped.

741. Daucus.—Floribus albis 2-3 pedalis fol. carnoso-coriaceis. In collibus gaminosis sururem versus. et Kala Panee versus vix infra 4800 ped.

742. Pedicularis sp.—Herba pedalis, ramosa, foliorum lobis revoluto involutis: floribus pulchre rosaceis subodoris galea semitorta. In collibus graminosis inter Kala Panee et Boga. etiam circa Moflong alt. 5500 ped et vix infra.

742*a*. Hedyotes.—Pusilla decumbens, floribus cærulescent. In rupis et ad vias Moflong versus alt 5000, to 5500 ped.

743. Hypericum japonicum.—Hic illic occurrut, a Mahadeb ad Moflong.

744. Rosa.—Scandens, Sururem versus alt 4800 ped.

745. Labiata.—Colquhounea ——fl. minuto lutei aurantiaceo tincto Suffruticose, basi 4 pedalis in sylvis ad margines et in collibus graminos, Kala Panee versus et ad Moflong 5000, 5500 ped.

746. Urticea.—Carnosa hispida, inflorescenti ambitu pyramidalis, ramis bracheatis, in umbrosis Kala Panee.

747. Polygonum.—Fagopyrum flos albi Boga Panee.

748. Spiræacea—3-4 pedalis panicula subspiciforma folia decomposit. Versus Kala Panee vix infra 5000 inter gramina.

749. Dolichos.—Floribus cernuis saturati cœruleis calyce livido, Descent to Bogapanee alt, 4600 ped.

750. Composita.—Scandens, flosculis pallide roseis genitalibus albis, Churra Punjee 4500.

751. Solidago sp.—Basi suffrutic. simplex 1½ 2 pedalis floribus læte aureis. In collibus graminosis inter Kala et Boga Panee alt 5500 ped valley of Kala Panee.

752. Composita.—Basi decumbens herbacea ramosa foliis subtus glaucis capitulis nutantibus flosculis pulchre cœruleo azureis, valley of Kala Panee, and towards Boga Panee in humidis 5000 ped. Planta pulchra.

753. Impatiens.—Caule flexuoso subsimplic. floribus axillarib. solitariis pendulis purpurascent cristis luteis calcare lutescent, gyrato, apice disciformi Kala Panee in humidis ripis, sp distincti ob calcar.

754. Viburni sp.—Frutex arbusculoid 8-10 pedal, floribus albis in sylvis humidis ad margines versus Kala Panee alt, 5000. ped.

755. Loranthi sp.—In arboribus, versus Kala Panee, alt 5000 ped. pedicelli rubri calyces virides. vidi specia altera, alt 5300, in cacumina vallis Boga Panee.

756. Conyzoidea.—Suffutex 3 pedalis ramosis fol subtus tomentoso candidis flosculis luteis.

Descent to Boga Panee 5500 to 5000.

757. Buddlæa.—Frutex 8-10 pedalis racemis composibus apice nutantibus densifloris floribus albis fauce sanguinei, odore engrato, rami 4 goni, foliis basi ima connatis subdecurrentibus. Near Churra Punjee, and towards Kala Panee, alt 4500 to 5000 ft.

758. Scirpoid.—Culmo ancipiti spiculis brunneis, in arenosis humidis, towards Kala Panee, 5000 ft.

759. Impatiens.—Herba carnosiuscula, ramosissima, foliis dentato, crenatis, racemis hœc excedenta paulifloris, floribus minutis luteis, calcare longo subulato, incurvo, apice clavato; Capsulis subcylindraceis, apice semenifer e basi ad apice revolutis. In humidis towards Kala Panee et in vallea ejus.

760. Hieracium.—5 pedalis ramosissimum, urento hispidiss. anthodio livido atrato flosculis citrinis. Descent to Boga Panee alt, 5300.

761. Plectranthoid.—floribus albis ramos 3 pedalis molliter hisped In umbrosis towards Kala Panee.

762. Zanthoxylum.—Frutex 4-6 pedalis floribus rubris uti antheræ, Surrureem et Moflong calycibus viridescent.

763. Hypericum.—Frutex 3 pedalis ramis paucis laxis foliis subtus

glaucescent, inflorescent terminalis vel ob proliferat axillaris floribus amplis aureis petalis concavis. Stam. 5 adelphis stylis 5, Boga Panee versus et Moflong vix infra 5300. ped.

764. Composita.—Erecta 2 pedalis ramosa anthodus flosculisque purpurascent Vally of Kala Panee, in humidiuscul.

765. Leguminœsa.—Prostrate vel scandens, floribus citrinis. Valley of the Boga Panee along its bed.

766. Pomacea.—Albor parva, foliis Ericineorum, baceæ pisi magni magnitud, atropurpureæ. Valley of Kala Panee secus aquas.

767. Convallarioid.—Inter Kala et Boga Panee, alt 4300 ped. baceæ pendulæ, atro cæruleæ foiis plicato venosis.

768. Galii sp.—Foliis patentibus vel reflexis, floribus albidis petalis reflexis, tota aspera. Towards Boga Panee alt 5300 ft. Moflong alt 5500.

769. Polypodii sp.—In arborib in sylvis umbrosis Kala Panee versus.

770. Rhododendri sp.—Cum altera species, frutex arbusculoid flores albi, Decembre evoluti.

771. Ruta albiflora.—Inter Kala et Boga Panee alt 5300 ped.

772. Prunellæ sp.—Calycibus atro purpurascent medium supra, florib saturat purpureis, common towards the Boga Panee, particularly at elevations of 5000 ft. Lab superius galeato fornicat. inf. deflex, 3 lobum lobo medio majora genitalia inclusa.

773. Spiræacea.—Frutex laxus subscandens, ramis sæpius pendulis floribus albis.

Towards Moflong especially above 5000 ft.

774. Rhus?—Frutex vel arbuscule fructibus acidis, compressis, Inter Kala et Boga Panee alt 5500 ft.

775. Andropogon.—Descent to Boga Panee alt 5400 ft. spiculis viridib vel purpur tinctis.

776. Clematis sp.—Scandens inflorescent pendul floribus magnis ochroleucis, sepalis reflexis towards Kala Panee alt 5300, Moosmai etc.

777. Dolichoidea.—Floribus cœruleis descent to Boga Panee 4800ft.

778. Plectranthoid.—Vix pedem ultra, floribus albis cymis sæpe subsecundis. Ascents to Moflonge 5000 ped.

779. Tussilaginoid. Common about Churra, found in flower

beyond and towards Sururem an extensive range from 4 to 5500 ft. Grassy plains. Capitulis cernuis flosculi purpureo-tinctis, genetalia albida.

780. Composita.—Erecta 2-5 pedalis subsimplex Capitulis cernuis stylis stigmat cœrulescent flos pulchre cœrulescent. Towards Kala Panee alt 5300.

781. Composita —Caule ramoso 4 peduli folia subtus candida flosculis albis capitul erect. Towards Sururem 4500. ft.

782. Euphorbia.—Foliis subtus glaucescent. Suffruticosa basi 2 pedalis. Descent to Boga Panee ad viam 5000.

783. Ophiopogon :—Foliis secundis profunde canaliculatis marginibus recurvis. Scapo apice nutant. Capsula triloba fuscescent. In umbrosis Kala Panee versus.

784. Photinea.—Arbuscula corona densa, fol. coriacea fructib pisa magnitus. Prope Sururem sylvis.

785. Impatiens. Proxim 759. sed flores purpurei, calcare recto breviora, folia serrato dentata, Labellum quadrilobum. flos intus purpur maculat Kala Panee secus torrent.

786. Pyrus —Arbor parva fructibus Cerasi magnitud. brunnescent acertissimi racemosi. Towards Kala Panee altitud 5000.

787. Cuscuta.—Floribus magnis albis.

Volubilis common on margins of woods from 5 to 5500 feet not on the north of Boga Panee.

788. Elœagnus sp. —arbuscula. Towards Kala Panee 5000 ft. in sylvis.

789. Lycopod.—Longe repens spicis elongatis apicem cernuis, foliatio L. cernua. Towards Kala Panee et ad margin sylvarum alt 5000 ped in humidis intergramina.

790. Euryæ sp.—Arbuscula fol. Ericineorum floribus. pendulis albis, cereis. Towards Kala Panee, in sylvis.

791. Impatiens.—Ramosa bipedalis carnosiuscula serraturis setigeris. Racemis axillaribus, bracteis concavis erectis : floribus citrinus ; labelli divissiones dimidiato-lanceolato obtusi. Calcar longissimum rectiusculum apice clavatum. Kala Panee secus.

792. Querci sp.—Ascent to Moflong. 5300 ft. frutex humilis.

793. Querci sp.—Arbusculo : Boga Panee secus. 4500.

794. Querci sp.—Arbuscula densa foliis subtus glaucis cupulo velutino-Versus Kala Panee sylvis 5000 ft.

795. Lomariæ sp.—Caudice brevessimo: cœspitosa occurrit in humidis Sururem et Churra alt 4200 ped.

796. Aspidii sp.—Subrupibus Kala Panee versus.

797. Digitariæ sp.—Spiculis viridibus advias Boga Panee, spicis apice nutant.

798. Holci sp.—Towards Kala Panee 5000 here and there. Spicul purpureis. Panicula ovata erecta.

799. Digitariæ sp.—Spicis erectis purpureis, cum no. 797.

800. Poa sp.—Panicula sub nutant amplssima. Gramin 3 pedale spiculis lividis advias inter Sururem et Bopa Panee.

801. Bromoid:—Panicula secunda nutant divisionib inferioribus pendulis spiculis viridescent. Gram 4 pedale. Inter gramina versus Boga Panee, prœsertim inter sururem et Kala Panee alt 5200.

802. Andropogon.—Gram 4-6 pedale Panicul nutant spiculis viridescent fusco tinctis. Descent to Boga Panee and along this torrent.

803. Andropogon.—Schænanthoid, aromatic culmis rubris panicula nutante uti divisiones, spiculis basi viridibus cœterum purpureo brunneis vel purpur brunneis omnino. Descent to Boga Panee and ascent to moflong ad 5500.

804. Sacharum.—Gramen 5-6 pedale, panicula erecta coarctata fulgenti rosea. In convallibus graminosis versus Kala Panee, ramis panicula subascendent.

805. Anthestiria sp.—Gramin axaltat 6 8 pedali paniculis nutant, ramis inferior pendulis.

Habit. A. arundinariæ sed spicula villosissimæ. Valley of Boga Panee, near the Kala Panee it is small.

806. Gramin.—Panicula nutanti grisea, aristis rubescent. Culmo decumbent ramoso. In umbrosis inter gramina.

807. Ericineæ Arbutus?—Frutex 3-5 pedalis, ramosus fructibus ascendentibus secundis.—In bumidis collin graminosor. Versus Kala Panee, e 5 usque ad 5500. ped.

808. Spiræa.—5 pedale. Panicula erecta decomposit floribus meants viridibus.

In umbrosis et a collibus graminosis. Kala Panee versus. 5200 ft in valley of the Kala Panee.

809.—Frutex arbusculoideus foliis coriaccis semi-recurvis. In sylvis prope Sururem.

810. Carduacea.—5-6 pedale flosculis albis, Staminibus atro-purpureis. In collibus graminosis inter Kala et Boga Panee alt 5500. ped.

811. Nephrodii sp.—Caudix brevis crassa, vix spithamæa. frondes nidi more disposite atroviridis supra 4 pedalis. In sylvis versus Kala Panee.

812. Aspedii sp.—In sylvis versus Kala Panee.

813. Thibaudiacee. Frutex humilis fructibus subglobosis subsecundis basi magnetud. versus Kala Panee. In humidis.

814. Ericinea—Frutex humilis foliis lanceolatis acuminatis floribus ante folia evolutis (racemis terminalibus brevibus) fl. pendulis. Corrolla alba, cylindraceo urceolata, obscure 5 gone, ore 5 dentato dentibus erectis.

In humidis collin. graminosor versus Kala Panee 5200.ped.

815. Ericinea no. 807.—Frutex ramosus verisimiliter idem cum Racemis secundis, floribus pendulis albis corollis ovato urceolatis basi majoribus dentibus oris reflexis.

In iisdem locis.

816. Andropogonea.—In rupibus Boga Panee.

817. Viola Patrinii.—Descent to Boga Panee, 5000.

818. Gerardia delphinifolia Supra. Churra, versus Surureem et Kala Panee 5000 ft. floribus luteis.

819. Æschynomene petalis luteis. Boga Panee on rocks, ascends to Moflong.

820. Panici sp.—Gramin 3 pedale spicis subnutantibus spiculis purpureo tinctis.

821. Nephrodii sp.—Repens in rupibus umbrosis Boga Panee frondes fragiles.

822. Coryli sp.—Arbuscula. Descent to Boga Panee and along it.

823. Campanulæ sp.—Floribus 5 petalis læti azureis 3-4 pedale ramosa. Secus torrent. Boga Panee.

824. Polygoni sp.—Repens capitulis globosis albis Boga Panee. fol. singularia. Fig. 4.

825. Serissæ sp.—Frutex seraggy 2 3 pedalis ramis erectis florib iufundibulif ochroleucis Boga Panee ascent to Moflong up to 5300 ft.

826. Bidens.—Flores albi Herba 2 3 pedalis ramosa ascent to Moflong 5000 ft.

827. Delphinii sp.—Flos saturat cœruleo purpur. petalis atratis, calcare incurvo apicem versis purpur fusco, odor teterrimus Sterculiæ fœtidæ.

In collibus graminosis under bushes, ascent to Moflong vix infra 5000 ped

828. Oxalis corniculata ascent to Moflong 5300 ft.

829. Bupleurum.—Floribus luteis ascent to Moflong in collib graminosis, 5000.

830. Crotalariæ sp.—Floribus luteis, Boga Panee on rocks.

831. Campanulæ sp.—Floribus læti lilacinis, variat statura. On rocks Boga Panee and on ascent to Moflong vix ultra 5000.

832. Cysticapnos ?—Luteo viridescens, flosculis pallide citrinis, scandens, valde fragilis Moflong under a hedge.

833. Anisadenia pubescens. nobis, Iconog 40.—Habitus alteræ speciei sed folia utriuque et subtus adpressa pubescente hirsuta subtusque albi: In florescent pubescens. Calyx ruber, Cor. campanulat laciniis reflexis genitalibus inclusis, demum decidua (petalis solutis).

Planta elegans, in rupibus Boga Panee et ad moflong.

834. Betula corylifolia —Arbuscula fructibus pendulis inter alias fructices in ravines Moflong.

835. Circæa —Flores minuti albi. Herba parva sæpius simpliciuscule in locis idoneis ramosa secus, Boga Panee inter rupis in Pinetis moflong.

836. Geranii sp.—Annua laxa, interdum scandens floribus carneis, Moflong, præsertim in agris.

837. Asteroideus.—Folia radical terræ adpresse flos pulchrus, radio læti cœruleo lilacino, disco lutiscenti Moflong downs, et in. ripis.

838. Colquhounia.—Frutex robustus 6. 8 pedalis ramis sub simplicibus. Floribus coccineis tubo basi angustat labio utroque reflexo. In sepibus Moflong.

839. Uvularia ?—Foliis plicato venosis. Baccis nutantibus atro-purpureis, Moflong inter fruticeta.

840. Artemisia.—Capitulis secundis cernuis. In sepibus et apricis ruderatis Moflong.

841. Campanulæ sp.—Flores cœrulei basi decumbens, straggling weak stems. In agrorum marginibus Moflong. Aff. C. dehiscenti.

842. Leguminosa.—Prostrata radicans, flos solitarius horizontalis læti cyaneus. In collibus graminos in humidiusculis Moflong vix infra 5000 ped.

843. Polypodii sp.—In sepibus Moflong.

844. Ranuncuii sp.—Humilis repens petalis luteis, in humidis viarum Moflong village adest altera species in collibus sed non floruit.

845. Andropogon.—Spiculis erectis purpureis. In agris Moflong.

846. Agrostidea.—Gramin laxum gracillimum spiculis purpurascent. In fructicetis Moflong.

847. Aroideum. Foliis pedatis subcarnosis vena intro-marginal conspicua fructibus coccineis in sepibus in umbrosis Moflong village.

848. Spiræa. In fruticetis, ravines Moflong frutex 4-6 pedalis. An S. Bella.

849. Thymoideus.—Decumbens, floribus carneis Churra Moflong, in graminos.

850. Umbellifera.—3 pedalis floribus albis, foliis pallidis in fruticetis, et in graminosis Moflong.

851. Umbellifera.—Flores flugelliformes flores albi, fol. carnoisucula, Moflong in gramin humid.

852. Gnaphalium.—Foliis plicato venosis. In sepibus about the village.

853. Bœhmeria.—In sepibus, crevices of banks made of stones Moflong.

854. Verbesina. Moflong village in ruderates et sepibus inflorescentia viscosa.

855. Lysimachiæ sp.—Moflong brought to me.

856. Uvularioidea.—Panicula terminale, fructus pendula. Baccæ miniatæ diaphanæ, fol. subsecunda ascendent. In umbrosis inter fruticetam Moflong.

857. Urticea Sub. tenera carnosuis cula fol. basi ima peltata trivenea, venulis transversis crebris omnino ut in Melastomaceis quibusdam. In aquosus. Moflong.

858. Berberis asiatica.—Frutex 4-5 pedalis. Baccæ cerneæ oblongo ovatæ miniatæ. Inter frutica ravines Moflong.

859. Viscum.—In arboribus, Moflong, brought to me.

860. Panici sp.—Panicula nutante-rubescent foliis plicatis 3-5 pedale. In fruticetis Moflong.

861. Astragali sp —Racemis folia excedent flores læti lutei cernu Leguminib junior inflatiusculis infra profude canaliculatis Moflong brought to me.

862. Aphanochilus.—Frutex robustus ramis ascendentibus, floribusi albis. Moflong village about hedges.

863. Tricyrtis :—In ravines among shrubs. Moflong common in Pinetis fol. coriacea.

864. Lobelia pryramidalis.—Moflong and on other high spots towards Kala Panee vix infra 5000 ft. cœruleo purpur.

865. Glycine tuberosa. floribus pulchris, coccineo-sangueneis. Herba prostrate radicibus tuberosis, edulibus Cult. circa Moflong.

866. Codonopsis sp. Icon 48.—Scandens volubilsique in sepibus. Moflong village, foliis utrinque canescentibus pendulis, magnis, campanulatis, viridibus, laciniis reflexo patentibus margine sangueneis. Calycis sepalis semitortis reflexis. Stigmat. maximis sub connatis. Planta subfœtida elegans.

867. Codonopsis sp —Fol. cordatis vel cordato-ovatis calyce reflexo patentissimo subbasilar. Corollæ alte inserta. fructus apice plano medio, stylum exserto. In fruticetis Moflong.

868. Thibaudiacea—Vaccinium ?—Frutex 6-8 pedalis Baccis pisi magnitudine, atro purpureis subacidis, gratis secundis subcernuis. In Pinets Moflong, in humidis vallibus, floribus virridescent, ovato. urceolatis dentibus reflexis.

869. Hyperici sp.—In agris versus et circa Pineta Moflong.

870. Airoideum.—Gramen 5-6 pedale. Panicula diffusa divisionib. infimis deflexis vel nutantibus apiculis purpureo tinctis : Circa Pineta et in vallibus humidis Moflong.

871. Menthoidea verticillata :—Caulibus elongatis inferne denudatis spicis(post infloresc.) purpureis.

In aquis fluentibus in vallibus Pineta versus.

872 Coix. Paniculis nutante pendulis foliis vix undulatis. Culta versus Pineta.

873. Nephrodium.—Soris maximis. In crevices of square stone erections, common.

874. Junci sp —Spiculis castaneis. In aquosis vallum Pineta versus.

875. Umbellifera.—Foliis Sagittatis basi reniformibus floribus pallide lutescent. Herba 5-6 pedalis. Inter gramina on the slope of a hill near Pincta specimen unicum.

876. Rubus.—Petalis albis rotundatis, sepali non excedentia, Moflong Downs.

877. Nephrodii sp.—In rupestibus Pinetorum.

878. Othonnoidea.—In collibus rupestibus, steriltibus Moflong, flos aureus.

879. Habenaria sp.—In humidis, Moflong Downs, vidi longe post inflorescent.

880. Hyperici sp.—Frutex 2-4 pedalis, ramosus. Stylis 5. In aquosis vallium etiam in Pinetis.

881. Euphorbia sp.—Sæpius simplex: 1-2 pedalis fructibus verrucosulis. Moflong downs.

882. Polypodii sp.—Repens in terra. In Pinetis, communa.

882*a*. Hedera sp.—Repens in terra, et in super arbores, in Pinetis.

883. Andropogon.—Spicis rubus. In graminosis vallium versus Pineta. Not common.

884. Polygoni sp:—Flores albi: Prostrata. In Pinetis Moflong.

885. Legumenosa.—Culta circa Pineta Moflong.

886. Thalictriri sp.—Laxum 4-6 pedale. Post floresc vidi. In Pinctis Moflong.

887. Phaseoli sp.—Herba ramosa erecta pedalis flores lutei vexillo extus atro fusco.

Culta circa Pineta. Moflong.

888. Companulæ sp.—Statura $1\frac{1}{2}$-4 pedali floribus pendulis mediocribus, cyaneis.

Circa Pineta Moflong sides of hills, among grass, ramosa vel subsimpex.

889. Orthopogon.—Basi prostrata in Pinetis Moflong.

890. Digitaria —Cult. near near Pineta 3 pedale.

891. Sanguisorba —5-6 pedalis ramosa spicis purpur sanguineis, apice primo florent.

In humidis vallium towards Pineta.

892. Junci.—Secus aquas fluentis in vallibus versus Pineta.

793. Junci sp.—Floribus castaneis. Cum præcedenti.

894. Tofieldioid.—In collibus graminosis a Churra usque ad Moflong vix infra 4000 ft. vidi post florescent.

895. Umbellifera.—Fistulosa, laxa basi decumbens odor sub pastinaceus: In paludibus vallium versus Pineta. Used for smoking-*pipes* by the Khasyas, as reeds are elsewhere.

896. Fumariacea.—Flores luteo aurei, superne calcarati, fructibus spathulato cuneatis elasticum basi ad apicem dissilient.

In agris Moflong village hortisque

897. Ericinea, Icon. 42.—Repens ramis pendulo nutantibus, foliis ascendento secundis floribus cerneis albis urceolatis, Calyce fructus connivens: atro cœruleus. In muscosis humidis rupes tibus secus Boga Panee.

898. Herminioideum.—Bipedale foliis linearibus canaliculato acuminatis, spica densiflora floribus secundis minutis lutiscentibus.

Ascent to Moflong alt 5500 ft.

899. Goodyera, Icon. 43.—Spithamæa fol patentibus carnosis ovatis albido pictis, spica bracteæque membranceæ pubescentis, floribus majusculis, albis, subodoris galeæ apice reflexo viridi fusco.

In Pinetis, in humidis umbrossissimis rupes in super.

900. Herminioid, Icon. 44.—Bidisticulosa.—Foliis ascendentibus patulisve carinatis, triveniis, venis lateralibus. indistincto, oblongo lanceolatis, acutis.

Bracteis lanceolatis viridibus carinatulis flores secundi viridicentis. Labello fuscescent, lobo medio linguiformi, lateral setaceis hoe longiore. In Pinetis et locis elevatis.

901. Pinus Icon. 46, 47.—Circa Moflong. Arbuscula, juniores tantum formosi, seniores always scraggy. Circa Nunklow præcipue in descensum. Arbor 50-60 pedalis trunco stricto, ramulis asperis foliorum cicatricibus, basi novellorum squamatis, squamis reflexis foliis ternatis, vaginis membranceis. Acerosis supra planis, infra convexis, spithamæis; infimis sub pendulis, summis subascendentibus intermedius nutante cernuis. Conis sessilibus, ovatis curvatis. Amentis masculis brevibus vix uncialibus. Ascendenti curvatis fœmineis pedunculos bractiato squamatos terminantibus.

Intermedia inter P. longifol. et P. sylvestris cum habitu accedis.

902 Epipactis.—Foliis distiches pulcherrime et creberrime venoso striatis interstitus angustissimis, floribus sessilibus axillaribus. In Pinetis Moflong specimen unicum; vidi fructifera tantum

903. Parnassia nana.—3 uncialis floribus albis Pet. subintegra, longe unguiculata: Stam. developed, one by one. In collibus gramminosis. Moflong inter Kala et Boga Pauee, vix infra 5300 ft.

Pet. emerginata denticulata, venosa, trivenia, decidua. Glandulæ tripartitæ. Stam: subito elongata, stigmata incumbens functionis peracta reflexa, filamentis persistentibus. Stigmata tria medio sulcata. Pedunculus 5 gonus angulis decurrentibus sepalis, 2 exterioribus margine uno sepali intermedii. Petioti basi dilatati foliorum venatio palmat. venis primariis oblique ope intermediis junct.

904. Parnassiæ sp.—Spithamæa pedalisve. Flores ampli albi. Petali medium infra ciliata fimbriata. Stam. developed at different times demum deflexi. Glandulis lutescent 5 partitis.

Secus Boga Panee in Muscosis madidis.

905. Elœodendroid.—Arbuscula fructibus carneis pendulis 4 valvis. In umbrosis humidis Moflong.

906. Leguminos.—Herba basi suffrutic: 3 pedalis. In sylvis humidis Moflong.

907. Salix.—Arbuscula. In humidis sylvis Moflong.

908. Gramin.—Panicula erecta spiculis rubris. Moflong Downs.

909. Potentilloid.—Repens floribus mediocribus luteis ad vias prope Myrung.

910. Labiatæ.—Floribus minutis, carneis, odor fortis Camphoræ Myrung.

911. Ficus.—Arbuscula; ramis novellis stipulis gemmis petiolis costis que sanguineis venatio pulcherrim luttescens, pagina supra puctis luteis. Prope Myrung.

912. Swertia sp.—Flores pallidissima cœrulescent, azurea venosi, glandulis glabis lutescentibus. An distinct.

Bottom of vallies among sward-below Syung alt 5000 ft.

913. Epilobii sp. Caulis erectus strictus simplex foliis adpresso ascendent, flores nutantes magne saturato et læti rosei, tota herba aspectu sericeo velutina. In paluda infra collis Nungbree alt 5200 ft.

914. Gnaphalii.—Herba 2 pedalis erecta ramosa tota candido tomentosa florib albis prop. In Collibus graminosis advias. Myrung verus.

915. Composita.—Herba basi suffruticosa decumbens valde ramosa pubescento hirsuta. Anthodium purpureo brunneo tinct. Radius albus, discus lutescent. Advias inter Myrung et Nungbree alt 5200 ft.

916. Carduacea:—Planta erecta 5-6 pedalis caule apice tantum ramosa.—Anthodium squamis apicem rubro brunneis, floseculis purpureo roseis. In Paludibus et locis humidis vallium inter Moflong et Myrung non infra 5000 ft.

917. Conyzoidea.—Basi decumbens. Capitulis albis. Road sides between Myrung and Nungbree uncommon.

318. Composita.—Erecta ramosa, anthodio viridescent radio aureo, disco lutiscens.

Road side between Myrung and Nungbree specimen unicum.

919. Artemisiæ sp.—Paniculis secundis ramis cernuis, erecta 2-4 pedalis ramosa.

In vallibus inter Moflong et Myrung alt. 5000 ft.

920. Senicionidis.—2 pedalis, floris ascendentibus subtus albidis. Capitulis aureis. Squamarum anthodiarum apicibus membranaceo sphacelatis.

In palludibus. Vallium Syung infra et inter Syung et Myrung.

921. Anthericoideum.—Pedale, vel $1\frac{1}{2}$ pedale, floribus albis ascendentibus. Stylo ascendenti deorsum curvato. Stamini sub declinatis.

In collibus graminosis. inflorescenti simpliciuscula. Capsulis erectis. Myrung versus.

922. Composita.—Foliis rosaceis patentibus terræ adpressis, caule $1\frac{1}{2}$ 3 pedalis —— Scapo potius. Capitulis secundis, deflexis vel horizontalibus. Anthodium cylindraceo viridi fusco rubrotinct. Flosculis carneis. Antheris sanguineo rubris. In sylvis etiam ad vias, Churra, Moflong intra et Myrung. Anthod. una infloresc. contraria secunda. ! !

923. Anemone sp.—Caule Sursum ramoso. 1-2 pedalis, foleis *radicalibus* numerosissimis rauncularis interdum albido tinctis, flores subnutantibus. albi, petalis dorso cœruleo, purpureo-pallide tinctis, genitalibus albis. Very common on road sides between Moflong and Myrung, about Moflong. floret Novembre, quo mensa legi Pinetum versus. 1835.

924. Cynoglossi sp.—Planta valde robusta. 2-3 pedalis, caule ramosissimo racemis, floribus secundis mediocribus, lœte cyaneis, fructibus *depressim*, advias prope Myrung. Alt. 5500 ped.

Proximum C. canescenti sed flores triplo majores habitu huic simillimum-An vere distinct.

The only Boraginea of these Hills!

925. Valeriana sp.—Floribus albis, axis inflorescent $1\frac{1}{2}$ pedalis fol. radicula reniformi cordata. Towards Siung. Sub rupe. Specimen one, inflorescecce lost.

926. Impatiens.—Racemis apice sub umbelliferis floribus nutanti pendulis purpuria rosaceis, calcaris brevis arcte incurvata apice clavato albido. Advias in vallibus inter Syung et Myrung. Propinq specie e Churra.

927. Equiseti sp.—Moflong secus Boga Panee, brought to me.

928. Thibaudiaca No.49.—Frutex arbuscaloideus foliis assendentibus (inferioribus ramulorum minoribus patentibus reflexisve) lanceolatis seriatulis coriaceis juniorib. margine purpurasent. Racemus terminalis bracteis foliaceis floribus pendulis urceolatis albis Stigmat exsertiuscuto. In sylvis humidis Moflong—An idem cum 868.

929. Caryophyllea.—Planta tenera prostrata in sylvis humidis proveniens. Myrung.

930 Hedychii sp.—In arboribns. Rhizomat fasciculat in massas magnas. Sem. coccinea.

Myrung in sylvis.

931. Voilæ sp.—Stolonifera. foliis lurido viridibus pallido tinctis. In sylvis umbrosissimis Myrung.

932. Labiata.—Erecta 2-3 pedalis floribus carneis. In umbrosis sylvarum Myrung.

933. Compositæ.—Herba robusta: 4 pedalis erecta fol. carnosius cula, anthodio viridi, floscule læti aurei. In sylvis Myrung, in umbrosis.

934. Jasminum.—Scandens, fol undulatis, supra tactu lævissimis, venis plus minus purpurasc in sylvis Myrung.

935. Pœderia.—In sylvis Myrung, etiam in asamica superiora.

936. Asclepiadea.—Volubilis, folia venatione Guttiferarun. Corollis rotatis. Cymis nutantibus. Pet. efusco viridibus. Corona pallida odor fortuisculus subingratus, In sylvis Myrung.

937. Bœhmeriod.—Frutex erectus 2 3 pedalis, caulibus subsimplicibus, caudis ascendenti patentibus. In sylvis Myrung.

938. Callicarpæ sp. —Frutex, in sylvis Myrung.

939. Labiatæ —Ramosa erectiuscule, floribus albidi vel pallide cœruleo tinctis. In sylvis Myrung.

940. Ophiopogon.—Fructium racemis nutante pendulis in sylvis Myrung.

941. Panicoid.—In sylvis in umbrosis, Myrung panicula diffusissima, spiculis viridibus.

942. Gaultheria.—Arbuscula 15-20 pedalis racemis fructium pendulis vel cernuis, fructibus ascendent In sylvis *siccatulis* Myrung, cum Myrica, Querco. Pino.

943. Xanthoxylon.—Scandens, floribus lutescentibus. Myrung wood.

944. Orchidea —Capitulo terminali nutante.
Myrung wood on rocks.

945. Polypodii sp —In arboribus. Myrung wood.

946. Polypodii sp.—In arboribus et rupibus Myrung.

947. Labiata.—Very fragrant, *spicis* secundifloris, wood. In Myrung sylva, in umbrosis.

948. Myrtacea.—Arbuscula foliis undulatis fructibus dentibus calycinis erectiusculis coronat. Perfragrans Cajuputi. In sylva Myrung.

949. Asclepiadea.—Foliis magnis carnosis, volubilis in sylva Myrung, flores nonvidi.

950. Smilax sp.—Flores albi, inodor : scandens foliis coriaceis lucidis Myrung wood.

951. Compositæ —Annua, radio albo, disco lutescenti hirsuta, erecta ramosa ! 2 pedalis, Myrung wood, in umbrosis.

952. Verbesina. Erecta ramosiuscul. gracilis, 1-2 pedalis. Anthod. viscossisimis. In sylvis Myrung. An varietas e situ in umbra fol tenera tactu hirta.

953. Ardisia—Foliis undulatis crenatis frutex humilis.

954. Arbuscula.—Fructibus ovatis stylo apiculat. Seminib. coccineis. Myrung wood dry ishspots.

955. Ophiopogon liptophyllus.—In sylva Myrung. In rupib, Scapis fruct. erectis.

956. Dioscoreæ sp.—Spicis fœmineis pendulis foliis trifolioliatis. In sylva Myrung. Scandens, volubilis.

957. Myrica integrifolia—Arbor mediocris elegans, inflorescent subpendula, Myrung wood, dry ridges.

958. Panici sp.—Gramin 4-5 pedale panicule nutanti, foliis plicatis. Myruug wood.
959. Vittariæ sp.—Fronde medii supra nutanti in arborib. et rupibus Myrung wood.
960. Gramin.—Erectum filiforme, spiculis ascendentibus in sylva Myrung.
961. Elæagnus.—Arbor mediocris fol supra læti virridia lucida subtus ferrugineo albida Potius Loranthi sp.! In sylva Myrung dry ridge.
962. Loranthus.—Lutescenti virridescens, Petiolis inflorescenti que (junior) lutescentibus atboribus. Myrung wood.
963. Cœlogyne—Fol equitant secundis nutantibus coriaceis. Racemo foliis breviore, densiflora, floribus pendulis vel cernuis, ochroleucis. In rupibus. Myrung wood.
964. Chloranthi sp.—Basi suffrutica crecta 2 pedalis fol. argute dentato serratis Myrung wood.
965. Myrsinia.—Arbuscula, dioica ramis laxiculis, corollis minutissimis, Antheris magnis coccineo rubris. Myrung wood in humidis.
966. Leguminosa deltigera, flores ochroleuci, legum pendule, subfalcata eonvexa.
In myrung wood, drv ridge.
967. Gerardiæ sp.—Towards Kulling on grassy hills. Common, Certæ Celsiis corollæ affinis.
968. Labiatæ.—Floribus albidis, labio superi. rubro punctat. Myrung, common towards Nunklow suddya.
969. Hedyotidea.—Rice fields near Monei, flores albi minutis.
970. Pogostemon?—Flores purpureo rubri uti calyx. Road towards Nunklow.
971. Didymocarpus.—Siliquis sursum curvatis distinctum obfolium. Kullung rock base of.
972. Crotataria.—Floribus luteis Kulling rock midde of, Suffrutex 3 ped.
973. Porana sp.—Kullung rock middle of, in woods.
974. Davallia.—Kulling rock in umbrosis.
975. Arbuscula.—Kulling rock base of, in woods, fructibus 4 lobis Xanthoxylum.
976. Dolichos sp.—Flor albi apice cæruleo, Kullung rock in sylvis.

977. Hibiscoid.—Rugoso, pungens, flor maximi luteum. Erecta 4 pedalis, Kullung rock et Nunklow versus.
978. Rhododendri sp.—Frutex humilis arbusculoid. Cacumene rupis Kullung.
979. Arundo sp.—Gramen 6-7 pedalis paniculæ ramis pendulis spiculis lividis. In aquosis prope Monei.
980. Labiata.—Flores pallide purpurei. Erecta ramosa 1 uncialis. 2 pedalis odor fortis gratus.
981. Urticea.—In umbrosissimis rupestibis Kullung rock.
982. Andropogonea.—Spicis rubro tinctis. In collibus graminosis prope Monei.
983. Sacchari sp.—An S. spontaneum.—In collibus graminosis prope aquas, Monei.
984. Allii sp.—Scapo acuti trigono, foliis trigonis corollis rotatis, Petalis carneis medio purpureis. Anth rubro. Commune in cacumine rupis Kullung.
985. Panax sp.—Arbuscula ad mediam rupis Kullung.
986. Liparis sp.—In rupe Kullung, alabast. lutesc. Pseudobulbis clavatis. scapo teretiusculo.
987. Didymocarpoid.—Fol terræ ad presse. rugoso hispida,, Cymis nudis ! Cor. fere ut in Vandelliæ ; tubo cylindraceo cœruleo purpuraseent. lab super. bilobo, honzontali, inferior 3 lobo porrecto, Stam. arcuata. In rupe Kullung common.
988. Botrychum.—In cacumine rupis Kullung inter Musco.
989. Polygalæ sp —Erecta annua, alis roseis uti carine in agris. Monei prope.
990. Panici sp.—In agris Monei versus.
991. Cucurbitacoa.—Nov. genus. Actinostemmæ affine Baccis pisiformibus, apicem infra annulat. In Myrung wood, in umbrosis humidis.
992. Caprifoliacea.—Baccis cerasi parvi magnitud. Calyce connivent qausi apiculat atro cœruleæ. Myruug wood.
993. Pteris sp.—In umbrosis humidis Myrung wood.
994. Aspidioid.—Ad aquas in umbrosis. Myrung wood.
995. Grammitis.—In umbros. humid. Myrung wood.
996. Hyperici sp.—Caule 4 gono, flores lutei. Marshes Myrung.
997. Allii sp —Bulbosa, scapo tereti. fol. subtrigona perianth. urceolatum, staminibusque roseis. Marshes sides of, Myrung, probably escaped.

998. Justicioid —Corollis roseis, Basi repens Paludibus, Myrung labia inferiora obliqua purpur venoso.
999. Panici sp. —In paludibus Myrung.
1000. Hydrocotyle sp.—Repens in humidis umbrosis Myrung.
1001. Umbellifera.—Repens aquosis lat cœspitos, fl. albis. Myrung wood.
1002. Polygoni sp.—Floribus albis basi repens cum prœeidenti.
1003. Bambusæ sp.—Myrung wood in humidis in umbrosis Nana 8 pedalis,articulis junioribus spinis verticillatis.
1004. Cerasi sp.—Arbuscula. Baccis atropurpureis. Myrung wood lower wet parts
1005. Eriocaulon *fluitans*.—Fl. albi in paludibus Myrung.
1006. Tetrantheræ sp.—In sylvis Myrung Arbuscula.
1007. Smilax.—Ramulis angulatis, floribus viridibus, perianth. laciniis revolutes. Scandens In Myrung wood moist shady places.
1008. Cyperaceæ.—Myrung wood, very shady moist places.
In Myrung wood mostly shady places.
1009. Choripetali sp.—Scandens Myrung wood.
1010. Curculigo sp.—Myrung wood in umbrosis foliis plicatis. capitulo carnuo.
1011. Globbæ sp.—Myrung wood, in umbrosis humidis scapo apiece gemmifero.
1012. Orchidia.—An Eriæ sp. Myrung wood or rocks.
1013. Dendrobii sp —Myrung wood rocks, and trees.
1014. Visci sp.—Pendula ex arboribus. Baccis albis. Myrung wood.
1015. Bolbophylloid.—Repens in arborb. foliis solitariis coriaceo carnosis. Myrung wood on rocks.
1016. Dendrobioid.—Foliis distichis, fructibus pendulis maguis, Myrung wood on rocks.
1017. Cœlogyne Wallichiana.—Foliis carnosis plicato, venosis. Myrung wood on rocks.
1018. Bolbophylloid.—repens in arborib Bracteis membranaceis alabastrus æquantibus. Sylvis Myrung.
1019. Dendrobium Bolbophylli —flos magnus. perianth carnos. albidium maculis crebriis, rosaceo purpureis. Labellum albidum eodem more maculat. tremulum. Columna alba. Pollinia per paria, collateralia, Dense cœspitos in arboribus. Myrung wood. Pes columnæ viridescens fusco pallide punctulat.

1020 Dendrobium eriiflorum Icon. 50—Myrung wood on trees dryish places very common, flos Eriæ. Pollinia Dendrobii.

1021. Bolbophyllum Iconag 52.—Repens et pendulum, folia carnos sissima subtus evenia, scapi breves apice capitulum densum, florum gerentes, flores minute atro purpurei, aspectu velutina. Labellum concolor, atro tinctum. In arborib sylvæ Myrung.

1022. Cœlogyne.—Pseudobulbis ovatis basi bracteati, squamatis luteo viridibus, lucidis, foliis binis ovato-oblongis, acutis vel breviter acuminatis, mucronulatis. Racemo terminali folia paulo excedens, parte florifera basi bractea convoluta, fusca decidua, membranacea cincta. Pedicellis albis, ovaria duplo. duplo longioribus, flores ampli postice vel antice albi. Petalis sepalis duplo angustioribus. Labelli trilobi albi, lobis lateralibus antice luteis, postice castaneo venosis, partis luteæ marginibus castaneis. Cristis denticulatis binis utrinque divergente connivent lobo medio macula concolore (uti margines) subreniformi. Columna alba, Pollinia 4 incumbent per paria obovate in rupe vastissima Kullung dicta.

Flos interdum solilarius *plus quam tribus non* Capsula clavata, costis inconspicuis.

1023. Magnoliæ sp.—Arbor magna, umbrosa, formosa, fructibus oblongis, concineo rubris. Myrung wood common.

1024 Bolbophyllum Icon. 51.—Densa cœspitosum, erectum fol carnosissima subtus coccinia supra 1 venea. Scapis folia excedentibus, clavatis, floribus densis, posticis, aspectu velutinis, sanguineo purpureis. Labello virridi atrato, spica basi bractea spathacea suffult. In rupes Kullung cacumine. Prop. B. cylindraca.

1025. Verbena.—Myrung etc in rudiratis.

1026. Acer.—An A, oblongum Nungbree wood vidi tantum fructus.

1027. Uiticea.—Nungbree wood. Herba tenera.

1028. Menispermea.—Scandens, fructibus globosis, miniato coccineo, pisi magnitudina, fol. supra lucida.

1029. Composita.—Herba erecta annua, ramosa.

Capitulis cernuis, lutescentibus Moleem in apricis.

1030. Lactucoidea.—Floribus luteis, annua erecti. Road sides between Nungbree and Syung.

1031. Labiata.—Culta in agris cum Glycina tuberosa. Nomen Khasy *onay*, Seeds eaten roasted, fl. albi.

1032. Asplenii sp.—Frons carnosa, in umbrosis rupis Nungbree.

1033. Aspidioid.—Nungbree wood. Umbrosis.

1034. Polypodii —Repens in rupibus in umbrosissimis Myrung wood.

1035. Plectranthus.—Herbacea ramosa 2-4 pedalis, laxiuscule, floribus azureis, Nungbree sides of paths. Shade.

1036. Elœagni sp.—Fl. albi, frutex scandens, fructibus edulibus acidis, Nungbree wood.

1037. Loranthi sp. In arbor, Nungbree wood,

1038. Woodwardiæ sp.—In humidis umbrosissimis. Nungbree wood. Frons apice radicans, 5-6 pedalis.

1039. Grammitis sp.—In humidis umbrosis. Nungbree wood, caudice brevi 2 3 pollicari.

1040. Pteris sp.—Nungbree wood, umbrosis.

1041. Araliacea.—Arbor parviuscula, corona densa Nunbree wood.

1042. Panicoid—Panicula diffusiss. subnutanta. Gramin 3-4 pedalis. Nungbree wood.

1043. Indigofera.—Frutex ramis simplicibus, apicem versus foliosis. foliis Acaciæ. In collibus graminos, Myrung, Nungbree, Morung.

1044. Pomacea?—Arbor majuscula. Nungbree wood. fructibus Cerasi magnitud. globosi apice nudi.

1045. Willughbeia.—Frutex scandeis. fructibus globosis. citu magnitudine, pulpe rubescent edul. Nungbree wood.

1046. Aroid.—foliis plurimis: verticillatis potius uno peltato radiati pinnatis. fructus cernuo pendulus oblongus- Towards Moleem.

1047. Kurrimia?—Frutex scandens. fol. aspectu Delimaceo, venatio Rhamneæ cujusdam. Nungbree wood.

1048. Composita.—Minima, flosculis initio albis, cito purpureo rubris. In collibus graminosis inter, Nungbree et Syrung.

1049. Cynoglossum.—An C. Canescens. Ramosæ erecta, Squamis faucis prominatis. Corolla pallide cyanea. Moleem ad vias.

1050. Andropogonea.—Pusisillum pedale, spicis maturis purpurio tinctis. Moleem in ripis et in collibus.

1051. Quercus.—Arbor humilis corona lata. umbrosa, foliis subtus albidis. Moleem prope ad margines sylvarum in aquosis.

1052. Lilium giganteum.—6-8 pedale fol. radicalibus maximis carnosis. Racemo fruct. erecto. fructibus albis maximis. Moleem in shady wet ravines

1053. Urticea.—Planta pussilla. vix. 4 uncialis capitulis ambitu sphærieis involucro cupulato integro. Moleem in ripis.

1054. Chenopodea.—Erecto 4-6 pedalis, apice cernua. Culta. ut Mishmeensibus Moleem 5000 ft.

1055. Arbuscula, foliis coriaceis atroviridibus: gemmato rhododendro. Chillong wood 5800 ft.

1056. Composita Scandens.—Floribus albis, pendentibus. Antheris fuscis. Stigmat. lutescent. Chillong wood, alt. 5800 ft.

1057. Andropogonea.—Gramin robustum. ramosum foliation Tripsaci. spicis rubris. Chillong wood towards base 5000 ft.

1058. Bambusacea.—Gramin. 8-12 pedale, culmis inermibus, gracilibus, foliis angustissimis. Chillong wood alt. 5800 ft.

1059. Davalliæ sp. ?—Omnia Davalliæ sed involucr. Fragrans siccatione more Lindsææ. Chillong wood in Rhodadendris, alt. 6000 ft.

1060. Clematis sp.—Moleem alt. 5000 ft. Planta tenera scandens.

1061. Panax.—Arbuscula humilis ramis crassis simplicibus. Paniculis nutantibus, floribus lutescentibus. Ravine between Boga and Kala Panee

1062. Panax.—Arbuscula, Corymbis terminalibus: erectis fructibus pisiformibus, atro sanguineis.
Ascent from Boga Panee from Moleem.

1063. Hydrangea altissima.—Cum præcedenti

1064. Lawrinea.—Frutex 5-6 pedalis, Alabastris cernuis cum No. 1061.

1065. ———— Moleem.

1066. Scirpus fluitans.—In aquis lene fluentibus. Between Boga and Kala Panee from Moleem.

1067. Peliosanthes sp.—Churra Punjee.
Alabast. viridibus imbricatis sepal marginibus membranaceis, venis utrinque prominales.

1068. Laurinea.—Arbuscula Churra.

1069. Laurinea.—Churra venatio præcidentis peculiaris.

1070. Jasmini sp.—Scandens foliis carnosis. Margine revolutis subtus pallidis venis supra interdum purpureo tincta, Pedicillis fusco viridib. vel sanguineis. Calycibus sanguineis. Corolla

extus hujus coloris, intus alba, anth faucem œquantis. Odoris fragrantissimus, fol. dislocat sæpe inœqualia. Churra.

1071. Pyrus.—Arbor mediocris elegantiuscula, foliis subcoriaceis. Pomis globosis apice depressis mediocribus viridibus aurantеo tinctis, nutantibus vel pendulis 5 locularibus. loculis 2-3 spermis, seminib ascendentibus testa brunnescent.

Moleem, circa communis.

1072. Asclepiadea.—Fol linearis, venis rubescent marginibus recur vis. Churra.

1073. Cœlogyne.—Fol. distichis equitant. secundis nutantibus. *Scapo* axillari bracseis maximis foliaceis spathiformibus, florum minutis membranaceis apice nutante, floribus posticis vel anticis $1\frac{1}{2}$ uncialibus albis odoratis. Perianth. connivente clausi. Labeili cristis luteis columna apice viridescens. Est specis Cymbidii separatio hujus longe a Cælongyne naturæ non conformis.

Pollinia obovato globosa postica fissa Caudiculæ pulvereæ bisreplicatæ! Glandula facile solubilis, triangularis ambitu Churra.

The candicula is short high elestic, its base being prolonged outwards into an auricula.

Fig. 5 *a*, Portion of gland : *b*. auricle, *c*. parts in situ, *d* under surface.

1074. Otochilus ?—Epiphytica in arboribus——Rhizomat articulat sæpe conspicue moniliformis (articulorum abbieviatione.) articulis radicant. fol. articuli terminales bina, secunda, sub repanda, plicato venosa. Scapo basi conico subulat ob bractias fuscis, arcte imbricatis pendulo cernuo, flexuoso bracteis florum deciduis, membranaceis, fuscis, ascendentibus, vel quoad terram deflexis, ovario fusco. Perianth album, sepalo supremo antico fornicato. Petal angustis incurvata leniter. Sepala lateral labello quod deflexum vel ascendens. collateralie coneavo carinata uto anticum. Labell. lobis lateralibus dentiformibus columnæ basim arcto circumambient, medio sepali formaalbo—Columna teres clavata flexuosa fusca apecem versus marginata. Anth. mambranacea bilocularis. Polinia 4 obovata per paria incombentia, materia pulveria copiosa. Rostella deflexum integerrima acuta linguiforma. Fig. 6.

In Rhododendris Pinis que. Chillong alt 5800 or 6200 ft.

1075. Cardamine.—Churra.

1076. Stemodia ruderalis.—In rupib et muris Churra.

1077. Cerasi sp.—Racemis erectis floribus albis. Churra.

1078. Sanicula sp.—fl. albis. In umbrosis Churra.

1079. Polpodii sp.—In sylvis Churra.

1080. Psychotriæ sp.—Baccis ovato oblongis coccineis Churra.

1081. Bidens sp.—Churra flosc lutescent. Stigmat luteis, antheris brunneis.

1082. Volkameriæ sp.—Fol. carnosiusculis, cymis brachiatis paniculа piramidalem fomantib, pedicellis secundis, ascendentibus, floribus unilabiat lobis 4 superior patentibus, concavius culis viridescent, medio (quinto) cymbiformi, albido basi cœrulescent. Stam. sursum. arcuata viridesc, anth. brunnies longe exsertis, stylus directione eadem.

Churra, species distincti affinis V. serratæ.

1083. Oxysporæ sp.—Panicula nutant. ramis secundis. Calyce oblongo, 4 gono, dentibus, brevibus dorso carinatis. Pet totidem alternant. oblonge acuta concava. Stam. 8 4 minora, antheris fertilibus luteis, apice 1 porosis subdeclinat. 4. purpurascent, majorib arcuatis, apice 1 porosis ascendentibus, stylus ascendens, apice deorsum curvat. rubescens, (stigma simplex) stamina breviora subæquans. æstivat. imbricata.

Calyx fructus immulat. Churra.

1084. Peliosanthes.—Foliis venis elevatis utrinque coriaceis, racemus elongatus foliis duplo brevior, floribus pendulo cernuis luteis. Mamloo.

1085. Phrynium capilatum.—Towards jasper rock, alt 2500 ft.

1086. Centotheca lappacea.—Towards jasper rock alt 2500.

1087. Panicum uncinatum.—Cum piæcedenti.

1088. Andropogonea.—Cum piæcedenti.

1089. Ruellia persicifolia —Towards jasper rock alt 2000.

1090. Adenosma.—Floribus cœruleis. In ripis, ibidem 2800 ft.

1091. Adenosmoid.—Floribus albis corollis minutis albis subbilalabiatis. Cum præcedenti.

1092. Caryophyllea.—Base of Mahadeb, towards the jasper mines.

1093. Hedysaroid.—Erect 3-5 pedalis ramosis floribus purpureis, vexillum basi coccinescens. Cum præcedento.

1094. Quid.—Towards jaspermines cum 1090.

1095. Rungiæ sp.—Floribus azureis, in rupibus advias towards jasper rock 2000 to 2500 ft.

1096. Compositæ.—Towards jasper rock, alt 2500 ft. advias, ramosa 2-4 pedalis.

1097. Rubi sp.—Scandens, floribus albis. Near the Marine fussil beach 2500. ft.

1098. Exaci sp.—Caule terete ramoso floribus pulchre cyaneis Mamloo.

1099. Deerungiæ sp.—Scandens, floribus carneis, Mahadeb rock alt 2200 fl.

1100. Convolvulus pileatis. Mamloo: flor rosacei.

1101. Naucleæ sp.—Arbor parva, globis ochroleucis towards jasper rock alt 2200 ft.

1102. Cepalanthoid.—Frutex ramis longis erectis, axillis biglobiferis. Capit lutescent. Flor odorati Marine fussil beach.

1103. Urticea.—Arbuscula, vel frutex.
Towards Mahadeb, alt. 2300 ft.

1104. Echites sp.—Flores albidi foliis carnosis, volubilis Mamloo.

1105. Cyrthandracea.—Calycibus, siliquisque albis, Mamloo.

1106. Pteris sp.—Subrupe cataracta inter Mamloo et Churra.

1107. Adianti sp.—Cum piæcedenti.

1108. Flemingeæ sp.—Towards Mamloo alt 3000 fl.

1109. Myrsinia.—Penanth albido reflexo. Antheræ lividæ. In sylvis torrentum, intio Mamloo et Churra. arbuscula.

1100. Jasminium.—Foliis 3 foliatis, caudatis, floribus amplis albis.

1112. Araliacea.—Arbor parva Mamloo.

1113. Oxysporæ sp.—Frutex 8 10 pedalis paniculis nutantibus ramis ascendent subsecundis floribus rosaceis Mahadeb rock. Towards jasper Mines 2500 ft.

1114. Saurauja micrantha.—Arbuscula parva vel frutex foliis subcoriaceis racemis pancifloris fasciculat. ex axillis foliorum dien lapsorum. Corolla breve campanulata, laciniis reflexis rosea. Calyce carneo. Mahadeb rock, alt 2200.

1115. Euphorbiacea.—Frutex, fructibus rotundatis depressis.
An Getoni sp. Pendulis solitariis in axillis, sordida viridibus subtrilobus. Stylis 3, profunde bipartitis terminat. basi calyce rotata suffulta. Foot of Mahadeb rock alt 2200.

1116. Frutex follis oppositis vel alternis spuria pellucide punctatis, fructibus axillaribus, vel abortione terminalibus, pedicelli crassum lignosum. basi calycis reliquiis suffult. oblongis informibus, apice obliquis rugosis, viridibus.
Mamloo. Brought to me.

1117. Gneto sp.—Mamloo I have never seen this, but G. lepidotum, it has on the under surface of the leaves nidi ? of insects.

1118. Leguminosa.—Arbuscula humilis, corona densa, foliis albi viridibus, impari pinnatis, racemis fructum plerumque denudatis terminalibus. Leguminibus pendulis. oblongo linear. compressis foliaceis, sutura quaque alata uni di spermis. Leguminib. fragilibus. Marine Beach below Mamloo. Semina anatropa, funiculo fungoso, raphe conspicua ordinaria, tegument exter cellulosum, interius tenuisissimum membranaceum. Cotyl oblongæ carnosæ parum crassæ basi bi auriculatæ. Radicula mediocris obtusa hilum spectans.

1119. Cælogyne trisaccata :—Pseudobulbis obovato clavatis ampullaceis, foliis plicatis, repandis. Racemis basilaribus e mediopendulis, parte sterile bracteis foliaceis, carnosis adpressis. Bracteis florescenta concavissimis sub membranaceis. Pedicell. ovarium excedentibus, flores ampla logitudine connivento clausa, basi trisaccata albi, labella lobo medio cristasque lutescentibus.
Mamloo in sylvis.

1120. Cœlogyne barbata.—Pseudobulbis ovato oblongis, subampullaceis foliis binis subundulatis coriaceis valde, eplicatis. Racemo folia excedent partem floriferam versus bracteis arcti adpressis distinchis superioribus majoribus, rachi flexuosa: nuda, *bractei caducis*, floribus cernuis, albis, amplis, anticis vel posticis, labelli cintus basi et secus centrum barbaque. Cristisque præsertim lobi medii brunneis, odor vix gratus. Mamloo in sylvis in super arboris.

1121. Bletia sp.—Foliis plicatis scapo duplo triplove longioribus. Bracteis reflexis membranacis sphacelatis, floribus fere in capitula glomeratis luteis. Calcare perianth. œquans pallidum obtusum. Ovariis albidis. Churra. Mamloo in sylvis.

1122. Dendrobium amplum Icong. 55.—Rhizomat repent in rupibus. Pseudobulbis lucidis angulatis oblongis apice bifoliosis.

foliis deorsum curvatis coriaceis, apice obtuse et oblique emarginatis, florem terminali e bractea membranacea erumpenta. Amplo formosa, generis formosiss: diametro $2\frac{1}{2}$ unciali. Periant. patentissimo reflexo fuscescent. Maculis sanguineis infra medium supra punctulis. Petalis margine revolutis linearibus, labella trilobis purpur. sanguinea, pulchre venosi. Columna viridis facia antica et pede punctis sanguineis.

In rupibus secus torrentis, haud raro.

1123. Dendrobium fuscescens. In Pandaio inter. Mamloo et Churra.

1124. Sterculiacea Arbor 50 pedalis.—Petioli utrinque sed apice præsertim incrassata, in ramulis articulata, foliis alternis, bistipulatis, stipulis deciduis fere Sterculiaceis, subtus glaucis. Pubescentia stellaris. Cymis in corymbis densis. Congestis ex axillis. Foliorum lapsorum. Pedicellis medii articulatis. Alabastra pyriformia. Sepalis arcto concretis vistigio nullo separationsis, demum ad anthisin ruptis, sæpius in laciniis 3 irrigularib. Pet 5 œstivat exacte imbricata longiuscule unguiculata, unguenem longe attenuata patento reflexa, alba, basi lutescentia. Columna longissima, florem duplo 3 plove excedens, alba apice genitalia gerentia, ad anthesin elongata, alabastro flexuosa, vel inflexa. Anthera plures (15,) alternat. et verticaliter triseriata irregulariter dispositæ in capitulum globosum. Ovarium etc. occultantem. Carpella 5 medio (dorso) pubescentia utrinque marginata. Stylus sub o Stigmata inconspicua viridia.

Fructus pendulis longe stipilatus sub ob ovatus 5 lobus, loborum lateralibus utrinque in carinas productis, 5 locularis, endocarpio sub osseo. Semen pendulum ex apice loculi deorsum apice geometrico productum in alam amplam, (altero abortienta) immatura tantum visa.

Mamloo, ad marginem sylvæ. certe Sterculiaceum genus an novum, calyx intergerimus ad, anthesin ruptus (nomen e calyce integerimo demum rupto.) Pet unguiculata, genitalia longe stipilata. Anth. 15 in capulum terminalt. ovar occultantem disposit. Ovar sessile.

Fructus 5 locularis, loculis utrinque carinatis, di-spermis, semen apice alatum, pendulum.

The subsequent rupture of the calyx may be taken as a proof that it is essentially valvate in its œstivation, for we have abundant proof that union in all such instances take place by the margins.

1125. Cypripedium venustum.—Mamloo, Churra. Fol. distichis equitantibus. Scapo pubescent alabastro cernuis.

Churra. common. I have never found it myself.

1126. Smilacineea.—Mamloo.

1127. Lactucoid.—Exaltat. herbacea flosculis foliis summis trifoliatis, inferioribus impari pinnatis. Churra.

1128. Pittosporia.—Frutex foliis undulatis reticulatis coriaceis, fructibus pisi majoris magnitud stylo apiculatis. Churra. Cymis sub umbellatis.

1129. Cypripedium insigna, Icon. 53.—In rupibus foliis carnoso Coriaceis, distichis basi equilantib. lincari oblongis. carinatis et canaliculatis.

Scapo uniflora purpureo sanguineo, ute ejus pubescentia dense. Bractea, foliacea albide viridi venosa, basi purpureo, sanguineo tincta. Ovarium apice attenuat. colore scapi. Flos solitarius maximus formosus, initio ob curvatura deorsum ovarii anticus, demum, ovario reflexo posticus fit. Diametro 3 uncialis. Sepal. antico majore, medio carinato repando (dorso pubescent ciliata) apicem versus albo, cæterum viridi lutescens, viridi venoso, maculis amplis brunneo purpurascent, antico duplo minor viridescens viridi venosa. Pet. glabra ciliata oblongo lineari, undula viridi fuscescent. saturatione colore venosa, basi pilis rigidis purpur sanguineis barbata.

Labella ampullifoma, bi-auriculat, lutescente fuscum extus nitidum glaberimum intus, auriculis exceptis et apice hirtum. Columna brevis teres, pilis iisdem sed brevioribus hirta lutescens. Stylus brevis. Stigma orbiculare planiusculu m non convexum, album.

Anth. medio sterilis obcordate maxima pilis concoloribus brevibus hirt, dorso processum dentiformei gerens. Filam lateral breviss. rotundat. Anth deorsum spectantis biloculares carnosæ cellulosæ, marginibus aurantiaceis. Pollen viscosum oblongum bi plicatum. Materia viscida granulis expers. Ovar. costæ sepalis opposit, tantum distinct.

Mamloo Chuaa. ut videtur in rupibus calcareis Planta vero insignis, sepalis initio fornicatis minore demum reflexa marginibus revolutis.

1130. Otochilus Icong 54.—Epiphytic in arboribus et rupibus articulis, rhizomata elongatis obtuse 4 gones saltem novellis. Fol. binis fere oppositis, coriaceis, plicato venosis, plerumque secundis. Scapus oblique ex apice rhizomat basi arcto cinctus, bracteis carnosis imbricatis pendulus, apice valde attenuatus in parte florifere flexuosa. bracteæ caduceæ floribus omnibus ascendentibus recurvis quoad axim plante quod hanc, posticis, quor terram anticis, pedicellis ovariisque fuscescent albis. Sepalis conformibus, œqualibus carinatis. Pet. angustissisis reflexis. Labelli basi badio-fuscum, lobis lateralib circa columnæ basi non convolutis linea fusco lutescent oblique lineatis, lobo medio cum his angulum rectum efform. lingueforme integerri alba. Columna recte demum curvata fusca. Pollinea 4 per paria cohœrentia inccumbentia Caudiculæ strictæ longissimæ ob rostelli apice integerrimo glandula nulla.

Species distincti ab altera, articulis non monliform, labelli auriculis circa, column non volutis.

1131. Pandanus.—Trunco di-trichotomo 10-15 pedalis, fol. longissimis fructibus cernuis.

Circa Churra, prœsertim in rupibus calcareis qua vulgatum.

1132. Sarcocordalis Parasitic in radice Cissi 5 foliato cortice suberosa. Tota planta ferruginea. Tuber maximum radiccem investiens, fragile.

1133. Chloranthe sp.—C. longifoliis. Anth. alba. Brought from below.

1134. Tacca lœvis—Brought from below.

1135. Anonacea.—Carpellis pluribus torulosis moniliformibus, orbiculis oblongis (sausage shaped) pedunculis clavatis, fructibus pendulis fol. subtus glaucis.

Churra.

1136. Dracœnæ sp.—Floribus fructibus globosis racemis pendulis, fol. undulatis. Churra brought from below.

1137. Orchidea.—Cymbidioid, fol. coriaceis 5 veniis eplicitis. Fructibus oblongo ovatis alis. Sepalis opposit, angustioribus, Columna terminatis. Churra.

1138. Sabia sp.—Scandens floribus viridescenti albidis. Churra in sylvis.

1139. Oberoniœ sp. Icong 56.—Folia fuscescens pallida, folia generis longissim. pedalia. Racimus folia paule excedens, infra teretiuscule, supra lineatus lena clevata e pedicelli cujusque basi decurrent, floribus prœsertim centri racemi verticillat. in pedicellis articulat, summis primo evolutis, posticis. Periant reflo. Labello porrecto 4 lobo. color florii fuscescens, punctis glandulosis clavatis, sepalis pallidioribus. Pollinia aurea ob ovata incumbentia oblique.

Under Churra in arboribus.

1140. Nepenthes.—Planta erecta 3-4 pedalis caule inferne foliorum basibus vel partibus inferioribus stipat; vere dicotyledonea. Angulatus ob folia basi decurrenta. Folia magna oblongo lanceolata basi attenuata decurrenti apicem acuto, nervo medio prolongato tortili apice ampullifero conacei supra sublente punctis rubescent, et pagina hanc insuper tantum stomatosa. Ampulla maximæ sursum plus minus rubescent. Operculo bivenoso et late emarginato, sinu basilari inter venas process. uncinato, margo ampullæ viridio transversa lineato striatus. Maximæ spithamæce sunt diumatro, bi unciali.

The pitchers contained a great quantity of fluid full of debris of insects. and swarming with cell-like lavæ. Contents of the semi-putrid insects found in them of large size, and of every description. No animalcules in the fluid.

The secondary etc. veins are indistinct, but the venation on the whole approaches to that of monocotyl. there being many parallel veins connected by transverse branches. The parallel veins are most conspicuous towards the margins. Sooner or later however they all join the Costa. Stomata present nothing remarkable, glands spring from a confluence of several cells. Vernation doubly involute, the folds inwards being subsequently obliterated by the growth of the young leaves, which they protect. The whole plant abounds in spiral vessels, which are found in the pith and bark! in addition to the usual parts.

The pitcher is an entirely late formation, no trace of it being visible even when the leaves are fully formed. This is

gainst the usual idea, because the lamina of the leaf is always first formed, the petiole, as in the stamens etc. being formed at a later period. There can be no doubt but that the pitcher is merely due to a hollowing of the apex of the petiole, or rather tendril. The lamina is of difficult explanation : (if it is the lamina of the leaf) from its venation, its emargination and the prolongated apex of the tendril, it is a compound one, analagous to the leaf of Bauhinia. All the parts are glandular, the glands being pitted in the center and highly secretory. The inside of the pitcher from about the middle downwards abounds with secretary glands, this part is of a firm structure the upper becomes reddish subsequently, it has no glands, and soon becomes flaccid, it has no stomata the cuticle is prelonged into a sort of lid, but short, over the glands. The outer surface has likewise no stomata ? but has a few glands.

Brought to me from below, said to be common towards Jyntea. Amwee in collibus graminosis.

1141. Acanthacea sub.—Frutex 3-6 pedali foliis atro viridibus venatione præsertim subtus transversa reticulat. spicis axillaribus terminalib crassa subulatis, bracteis herbaceis colore et consistentia, lateralibus mediam paullo excedentibus. Calyce occulto. Corolla magna deorsum curvata, tubo albo cœterum viride purp. cyaneâ lucida.

In umbrosissimis secus torrent. Devils well, Churra.

1142. Aspidium.—Lime-stone dripping rocks Devil hole.

1143. Polypodii sp.—In sylvis in umbrosissimis secus torrent. Devils hole.

1144. Pœderioid. —Churra capitulis fructus nutant cernuis fruct oblongis, calycis dentibus conniventibus.

1145. Fici sp. Arbor mediocris. Churra. fructibus globosis viridibus.

1146. Tetrantheræ sp.—Arbuscula floribus lutescent Churra in sylvis.

1147. Arum sp.—Petiole obscure maculat, fol. carnosis integerrimis venatione omnino dicotyledonea, peduncule Cæsio glauco ute pars convoluti spathæ.

Spath, medium usque aperta, lamina virridi per lucida fornicata basi, auriculis rotundis reflexis.

Spadicis apice terete obtusa virida, Ovaria? Churra sylvis.

1148. Justicia.—Frutex mediocris fol. carnosiuscul racemi terminalis, pallidi straminei sanguineo punctulat: lab. super bilobo initio fornicato demum reflexo, margine revoluto. lab. superius initio rect. deflexo patenti, demum revoluto in sylvis.

1149. Scandens robustus fruct racemis nutantibus. Legumen linearispathulatis ambit, superficia leviter undulata adpresse pubescenti, apicem apiculat, in locellis tot quot sem. divisis. Semina 3 6, orbiculari reniforma, tegumento pertenui, funiculo simplice. Radicula curvato replicata in commissur superior colyled. carnos. Colyled. margine super. hilo approx. subauriculat. Churra in sylvis.

1150. Lysimachiæ sp.—Potuis Lini sp. L. pentagynum Churra in sylvis.

1151. Cyrthandraceæ —Epiphytica, sub scandens, fol carnosis subtus albidis, venis second arcuatis progenera conspicuis, pedunculis sordida purpureis, ex axillis folior 2 summorum 4. vel abortion. bifloris, tunc rudimentis minimis. Flores umbelat. umbellis basi bibracteatis. Pedicellis nudis, viridibus purpureo sordida tinctis. Calyce intus viridi, extus sanguineo purpureo radiata, patenta, basi imo annulum formant. Cor. bilabiata, tubo brevi. lab superius admedium bilobo erecto, inferiora reflexo, lobis margine revolutis sæpe semitortis. Genital mascul atro purpurea superiora paulo breviora. Anth, transverse per paria cohærent, Ovar. Siliquifor. stylus fili formis brevis. Stigma viridi. infundibuliform margine antice et postice centro emarginat. Churra in rupibus et arborib.

1152. Orchidea —Churra.

1153. Orchidea Xiphosium acuminatum.—Epiphytica, Rhizomat repent. Pseudobulbi ovata, juniora compressa plus minus angulata, apice unifolium. fol. in petiol longum, attenuat oblongo lanceolat canalicul (præsertim petiolus) apice oblique emarginat quam maxima coriacea univenia, atrovirid. Scapus apice excepto omnino obtecta bracteis sursum ampliatis compressis distichis equitant summa(folium demum) maxima, arcte conduplia teretiuscula. Bracteis flor. reflexis raro patentibus lineari lanceolatis biuncialibun, 2 summis, sub-

oppositis sterilibus. Ovar tri alata, flores pauci, sæpius 3 penduli. Perianth ringens. Sepal lanceolat, dorsi carinat, ala ovarii in utroque product. canaliculata, laterali mojora paulo oblique basi inter se et cum pede columnæ elongato corrit, color carinæ viridescens, cæterum pallide lutescens, venis sanguineo rubris. Pet. albida lanceolat labellum tremulum lobis lateral. brevibus rotundatis, terminal linguifor. reflexo. Cristæ 3, quarum lateral longitudine sunt lobo. lateratum medium hic incipit, et in mucron. producitur. color sepalorum sed magis fuscescens, flores aspectus cereus Rosteli centro apiculat integrum. Pollinea 8 obovato. rotunda materies pulver. copisa. Glandulo subtrigone ambita obsoleta, facillima solubilis, Ovar virida. Carinæ sepalorum non raro denticulat. Genus distinct flore quodammodo Cymbidii sed distinctissimum, This is exactly between Epidendriæ and Vandea.

1154. Churra. Cœlogyne.?—Epiphitica, Rhizomat longe repent, novellis, squamis obtect. Pseudobulbi compressi. ; fol 2 sub opposita, oblongo linearia apice integra, acuta, racemus uni biflorus terminatis, basi bracteis membranaceis involutus, flos posticus Sepalis viriflib lutescenti, viridib apicem versus reflexis. Pet angustissimis pallidis. Labell. 3 lobum, lobis lateralibus acutiusculis, terminat. oblongo subquadrato, brunneo-venosa et ciliata. Cristis 4, atro brunneis undatis, lateralibus obsoletis columna clavata, apice lutea. Anth. termino opercularis bilocul. Pollinia 4 sub obovata oblique incumbentia, materia pulverea copiosa. Churra.

1155. Aspidii sp.—Churra.

1156. Fici sp.—Arbor mediocris, Churra.

1157. Cucurbitacea.—Foliis palmatim trilobis, lobis oblongis, lateralibus basi auriculatis, peporibus oblongis utrinque sed apice præsertim attenuatis glabris lævibus, lucidis unilocularibus. Seminibus subtransversis, arilla fusco virida carnoso obtectis, oblongis, glabris *emarginatis*, apice solido attenuato obtusis, basi latioribus marginibus subtruncatis pallidiuscule brunneis. Tegumento unico subosseo fragili. Radicula, conica hilum spectans colyledones plano convexæ. Churra.

1158. Willugheiæ sp.—Fol repans sub oppositis, Bacca auran-

tia magnitud, breviter pedunculatim regulariter globosa, aurantiacea locularis parietibus, semilineam metientibus, semin cuique loculo plura, pulpa gelatinoso obtecta pulpa semini arcte adhærent.

Testa brunnea, raphe semi completa ad chalazam ramosam. Embryoni adhærens.

Embryo solidus magnus partum distinctione nulla ? carnosa alba.

Illicium, Carpella plura vel plurime-radiata, disposito complanata carnosa, apice stylo incurvato indurato apiculata, interni bivalvia, sutura cornea. Semen. solitarium basi affixum. hilo simplicem extrorso deorsum spectans ; funiculo brevissimo compressum oblongum brunneum, aspectu vitreum. Raphe simplex angustissima, Micropyle hili ad latus inferius gibbosum, album, Testa ossea fragilis membrana cellulosa tenua vestita, Micropylea ad testa opercularis est !

Albumen carnosum amplum tegumento interno arcte vestitum. Embryo non visus.

1159. Oleina —Arbuscula corona densa, floribus fasciculatis nutantibus albis, odore nectarinæ incisæ. Churra in sylvis.

1160. Gordonia.—Arbor parva vel mediocris, in sylvis cira Surureem.

1161. Compositæ—Fol radical terræ adpressa. In sylvis umbrosissimis Surureem. Churra.

1162. Davallia sp —Shady woods, Surureem prope.

1163. Thibaudiacea —Frutex ramosus 3 5 pedalis foliis coriaceis racemis axillaribus baccis globosis, atro purpureis pisi magnitudin.

1164. Scrophularia.—3 4 pedalis ramosa, Nonkreem.

1165. Dysophila ?—Calycibus bracteisque rubro fuscescentibus corollis genitalibus que rosaceis carneisve. Suneassa valley, in paludosis.

1166. Arundo.—6 8 pedalis Suniassa valley.

1167. Centrantheræ sp.—Suneassa valley.

1168. Poæ sp.—Spiculis lœti rosaceis. Bunds of rice fields, Suneassa valley.

1169. Rubiacea.—Frutex 4 pedalis foliis coriaceis supra lucidis fructibus oblonga ovatis, rubro castaneo tinctis, dentibus

calycinis amplis coloratis coronatis baccatis oligospermis.
In sylvis Amwee prope.

1170. Mephitidia ?—Corollis infundibulif hypocraterif. tubo elongato basi ampliato, genitalibus inclusis. Baccis subrotundis, azureis.
In sylvis Amwee prope.

1171. Poa brizoides.—Spiculis late ovatis compressis rubro tinctis Sunissee valley in agris.

1172. Crotalaria sp.—Annua erecto ramosa 3 pedalis, floribus pendulo cernius aureis. Calycis lab superior bipartito reflexo leguminibus ventricosis. Suniassee valley in agris. Proxim. C. junceæ.

1173. Indigoferæ sy.—Frutex ramosis Mimosoidius ramis horizontal: foliis distichis uti foliola. Racemis ascendentibus, floribus parvis læti roseis. Suniassee valley secus torrentem.

1174. Salix sp.—Arbuscula parva foliis supra luscidiusculis cumprædcedenti.

1175. Lignstrum sp.—Frutex humilis ramosus, fructibus oblongis atro cœruleis. Cum præcidenti.

1176. Ficus.—Frutex humilis ramosus foliis coriaceis globus fructibus solitariis in axillis, clavato pyriformibus purpurio rubris. Cum præcehentibus.

1177. Justicia sp.—Suffrutex decumbens. Floribus ringentibus albis. Patalo parva rubro venoso. Suniassee valley ad torrentem.

1178. Osbeckiæ sp.—Floribus capitatis. Petalis pallide roseis Staminibus ascendentibus. Stylo arcte deflexo, fol. oblongo linearibus. Descent so Suniasee valley, alt. 3000 ft.

1179. Ranunculi sp.—R. hirsuto similis, floribus parvis aureis. Sepalis reflexis. Decumbenti erectus. Suniassee valley in humidis.

1180. Cupulifera.—Arbuscula parva. Nonkreem valley.

1181. Elytrophori sp.—In oryzetis. Suniassee valley, copiosa.

1182. Rhus sp.—In sylvis towards Suniassee, et ad descensum hujus vallis.

1183. Polypodii sp —In ripis. prope Nonkreem.

1184. Quercus sp.—Arbor parva elegans, foliis coriaceis supra nitidis. Cupulis annulis fimbriato dentatis, nucibus ob-

longis, apice depressis, depressione conum apice 4 lobum exseriali.

In sylvis torrentum versus Suneasee.

1185. Solani sp.—Floribus cernuis albis. Suniassee in sepibus et ruderatis.

1186. Buddleæ sp.—Arbuscula spicis foliisque subtus caudicentibus, bracteis caduceis apicc dentatis. Suniassee in sepibus.

1187. Gordoniæ sp.—Arbor mediocris elegans. Descent to Suniassee valley.

1188. Coccoloba.—Baccis cyaneis. Suniassee in ruderatis.

1189. Gramin.—6-8pedali panicula nutant spicis viridibus. An andropogoneum. Suniassee valley.

1190. Anthistiriæ sp.—Spicis pendulis bracteæ fuscæ spicis rubro purpur. arista atropurperea. Descent to and in the valley of Suniassee. Common.

1191. Quercus Castaneoides foliiss. Castaneæ Arbus. mediocris, fructibus sessilibus, cupulis muricato echinatis, glandibus oblongis apicem depressiuscula conum simplicem exserentibus. Descents to Suneassee valley, alt 3000, 2000 ft. not found on the Amwee side.

1192. Labiatæ sp.—Suniassee valley descents to.

1193. Scitamineæ sp.—Fol. angusti lanecolato linearib. Bracteis fructium coccinescent. 1½ pedalis. Suneassee valley.

1194. Hedychii sp.—Suniassee valley bracteis viridib. fol. oblongo, lanceolatis subtus sericeo. albidis.

1195. Volkameriæ sp.—Suffrutex 3-5 pedalis floribus cœruleo purpurio tinctis, lobo medio lab inf cucullato saturatius colorato. Descent to the Suniassee valley. Baccis atris.

1197. Bolbophylli sp.—In arboribus. Amwee versus

1198. Panax sp.—Arbuscula foliis quinatis supra lucidis. Amwee versus in sylvis.

1199. Rhus sp.—Arbuscula fol pinnatis fructium. Corymbis densisissimis terminalibus; fruct 4 lobis, carpellis calycis sepalis alternantib glandulosis biseminosis. Arillis amplis rubro coccineis, semin. atris lucidis. Suniasee in sepibus.

1200. Rottboellia.—Gramin exaltat 25 pedale spicis patentibus rachi flexuose atropurpurea Suniassee valley, base and towards the lower parts.

1201. Apludæ sp.—Laxa. Suneassee valley bottom of.

1202. Andropogonea.—Suneassee valley.

1203. Sacchoroid.—Gramin 8-15 pedale. Panicula sub coarctata sanguineo purpuria. Suniassee valley.

1204. Alismacea —Fol reniformibus paniculis amplis. Jheel Nonkreem.

1205. Potamogeton.—Cum præcedent.

1206. Nymphæacea. Fol exacte ellipticis, nutantibus, exacte peltatis partibus novillis immersis mucilagine obtectis, fructibus immersis carpellis pluribus! Nonkreem Jheel.

1207. Otochiloideus.—Articulis subcylindraceis elongatis fol linearibus coriaceis planis, spica juniori bractəis arcte imbricatis. Amwee in arboribus sylvarum densarum.

1808. Castaneæ sp.—Arbor mediocris corona lata, cupulis viridibus. Amwee in sylvis.

1209. Castaneæ sp.—Arbor parva, Amwee in sylvis.

1210. Loranthi sp.—In arboribus pedunculis glaucis uti flores tubibasi exceptaqui aurantiaceo. Amwee.

1211. Elæocarpus.—Arbor majuscula. Sepalis viribus. Petalis albis. Floribus devisum. Secundis Amwee in sylvis.

1212. Bucklandia.—Arbor mediocris. Amwee sylvis. Common.

1213. Polypodium Wallichianum. Amwee in sylvis secus torrentis

1214. Panax sp. Amwee in sylvis.

1215. Zizyphoid Arbuscula.—In sylvis Amwee.

1216. Erioidea Iconog 62.—Epiphytica in arbor Gordonia. Rhyzomat. repent subrotundis angulatis; foliis binis. oblongo lanecolatis plicato venosis coriacis. Scapus folia duplo excedens 3 pedalis, pubescens, panicula patenti bracteis pedicillis brevioribus, persist. concavis: pedicellis, ramentacies. Rament pedicelli e cellulis fusiformibus initio demum turgidis sphacelatis camplanatis. Ovariis pubescentibus, floribus posticis, sepalis oblongo linearibus, tertio fornicato arcuato. lateral. patentissimis cum pede columnæ connato, Genus distinctiss. lutescentibus, sanguineo venosis et tesselatis. Pet. reflexo patentissimis linearibus angustiss. in purpureo sanguineis: apice margineque albidis. Labellum tremulum integer rimum revolutum. Colore sepalorum, anth. antice margine albo, membranaceo lato bilocularis 4 loculis locel-

latis, Pollinia 8 quaternatia cohœrentia ope materie pulveria copiosa: annexa mutuo by a tsansverse viscid subindurated bar.

Descent of Suniassee valley.

1217. Gaylussacia. Icongr no. 59.—Foliis coriaceis margine revolutis apice incurvatis venis secondarius arcuatim nexus superne distinctioribus, floribus pendulis racemosis, calyce, colorato rubro 5 angulato. Cor cylindracea, profunde 5 angulato, dentibus erectis; albida venis rubris *transversis oblique* dentibus viridibus demum lake coloured.

Calyce demum saturate viridia.

Amwee in sylvis Epiphytica, a Thibaudea diffret calyce fructus ampliato carnoso.

1218. Thibaudia affinis Iconog. 60.—Epiphitica in arboribus secus. torrentis. fol. coriaceis, subtus subaveniis, venis sursum indistincta reticulatis, racemis nutantibus vel cernuis floribus pendulis, pedicellis et calycibus sordida purpureis, Corollis 5 gonis, oblongo-urceolatis, interdum albidis, interdum coccineis, laciniis patentibus viridibus, evenia in stigmata 5 lobo, corollam œquante, lobis lacineis corollæ oppositis. Staminibus inclus. Amwee.

Prox T. variegat, a qua differt absentia pubescentiæ, et stigmata tuberibus fusiformibus.

1219. Dipodium.—Iconog 60. In arboribus Nungbree, Churra, Myrung, Amwee.

1220. Arbuscula foliis carnosis oppositis exstipulatis fructibus subdrupaceis oblongis obscura costatis subobliquis 1 locularibus 1 spermis, semen erectum albumen corneum. Embryo in cavitat in ejus apice loculus, radicula supra, an Chloranthus aff. Amwee.

1221. Arbuscula.—Foliis alternis, fructibus globosis pisi majoris magnitudina, apice annulata. Calycis adhærentis limbo deciduo, semen unicum. Amwee.

1222. Polypodii sp.—In arboribus Amwee.

1223. Oberoniæ sp.—Caulescens foliis distinctis spica terminal deflorata tantum vida.

1224. Garsiniæ sp.—Arbor mediocris fructibus oblongo ovatis apice attenuatis, basi depressis, apice stigmata radiato 5

lobo coronat, Epicarpio crasso. effœto gambogia. Endocarpio solubila cum seminib baccato, albido. Seminibus 5. Extus convexis intus trigonis. Tegument subcoriacea huic pulpa adhærent, crassum interius huic etiam adnat brunneum, embryo homogenius. Semina conforma. Sapor Mangostinæ demum peracidus. Amwee.

1225. Orchidea.—Aphylla ripis umbrosis Joowyee.

1226. Celastrinea.—Frutex subscandens Joowyee.

1227. Tetranthera.—Arbuscula sylvis.

1228. Peristrophe.—Borders of thicket Joowyee.

1229. Marlea begonifolia Joowyee.

1230. Lycopodium cernuoides.—Joowyee margins of wood.

1231. Amaranthacea.—Inflorescenti viridi albida. lucida. Planta canescens diffusa Joowyee in apricis.

1232. Cupulifera.—Arbor parva, fructibus pendulis. Amwee in sylvis.

1233. Psychotria sp.—Frutex 6 8 pedalis fructibus baccatis subrotundis aurantiaceis. Calyce minimo coronata 2 spermis. Johwyee in sylvis.

1234. Memecylea —Sufrutex—Fructibus oblongis calyce cyathiformi coronat. Secus torrent Joowee propinqui.

1235. Betula.—Arbor magna elegans, stipulis albis reflexis, amentis pendulis, Joowee in sylvis not uncommon.

1236. Lygodii sp —Elegans microphylla Joowe e in sylvis.

1237. Panax sp.—Aculeata fuscosa 8 pedalis simpliciuscula fol. supra decomposit umbellis lato paniculat, baccis globosis atris Joowee in sylvis.

1238. Panax sp.— Subscandens, fol trifoliatis Joowee in sylvis.

1239. Composita —Foliis subtus nive Joowee in sylvis.

1240. Acanthacea.—Grassy sward Joowee.

1241. Engeldhaardtia.—Arbuscule vel arbor mediocris amentis retrusque saxus pendulis. Joowee wood.

1242. Davalliæ sp.—In arboribus Nurtung.

2243. Ehretia.—Arbuscula parva fructibus lutescent Nurtung.

1244. Tetrantheræ sp.—Arbuscula, floribus lutescentibus Nurtung in sylvis.

1245. Labiatæ.—Floribus purpureis Nurtung in ripis umbrosis.

1246. Butea.—Suffrutex 4 5 pedalis. in apricis campis Nurtung.

1247. Ligustrum.—Arbuscula banks of sacred lake Nurtung.

1248. Elœagnus.—Arbuscula, scandens. floribus lutescentibus odora Tonquillino, Nurtung in sylvis.

1249. Aroideum.—In ripis torrentum Nurtung.

1250. Potamogeton.—Foliis nutantibus immersis linaribus In aquis stagnant Nurtung.

1251. Euryæ sp.—Frutex arbusculoid, floribus deorsum spectant subcylindraceis albis, in woods Nurtung.

1252. Pomacea.—Arbuscula pomis globosis calycis laciniis depressis, Nurtung in sylvis humidis.

1253. Loranthi sp.—Fructibus turbinatis, corollis hiæ fissis, tubo extus viridi fusces. intus purpur. sanguin. laciniis fuscescent In arbor Nurtung.

1254. Calamus.—Aromat. rhizomat. repentibus, foliis senioribus transversa undulatis, Nurtung in paludib copiosa Sylhet etc.

1245. Sambucus.—2-3 pedalis herbaceus fœtidus in apricis umbrosis humidis, Nurtung.

1256. Carex sp.—Spicis fæmineis suberectis pedalis lœti cœspitos. secus torrentem Mokoee kuntock, Nurtung.

1257. Calanchoe sp.—Basi decumbens, planta albida carnosa, floribus luteis hypocraterif, tubo sursum angustato, genitalibus inclusis in collibus Nurtung.

1258. Orchidea.—In arboribus Amwee.

1259. Orchidea.—Rhizomat repent pseudobulbis parvis rotundis, cerasi magnitud, folio 1 petiolato (petiola canaliculato) ovati elliptica carnoso, coriaceo. Racemus e scapo basilari, unico viso bifloro, flores lutescent rubro venosi, Pollinia dendrobium, sed semi solutos tantum vida.

Capsulis clavatis.

In arboribus secus torrentis in sylvis Amwee.

1260. Leguminosa.—Suffrutic bipedalis ramis sæpe ex apice cauli, Grassy sward Nurtung

1261. Andropogon.—Gramin altum 4-5 pedale. Culmo ramoso, foliis planis. Panicula tremula, ovato oblonga, spiculis saturate brunneis. Nurtung prope et Borpanee versus hic. illic accedit, a Bengaliæ inferiorus.

1262. Rottboellioid.—Culmis purpurascent cæsius uti tota plante spicis purpurio sanguneis erectiusculis. In collibus graminosis in locis sterilioribus prope Nonkreem.

1263. Andropogon.—2-3 pedale culmis simplicibus, spicis binis patentissimis vel sola forte deflexis purpureis, arista longissima bracteis spathaceis pedunculo hispidissimo. Inter graminainter Nonkreem et Bogapanee alt 3200 ft.

1264. Andropogon.—Præced. propinq. culmis fusculatis cæspitosis 3 pedalibus spicis binis erectis plurifloribus. In collibus graminosis versus. Nonkreem, vulgatiss.

1265. Loranthi sp.—In arbore. Boga Panee.

1266, Poa sp.—Paniculis livido glaucis sub coarctatis. Culmis basi decumbent. In oryzetis inter Nurtung et Boga Panee.

1267. Ocymoid.—Pusilla decumbens radicans bracteis subcoloratis reflexis floribus genitalibus, cœruleo purpur. Madan in oryzetis.

1268. Quercus.—Callicarpifolius arbor parva vel arbuscule, foliis subtus albidis cupulis finestralis. Forms large woods towards Boga panee.

1269. Andropogon.—Tenerum spithamœum pedaleve totum plus minus rubrum advias. Oak and fir wood towards Boga Panee.

1270. Kydia.—Arbor mediocris Nonkreem and towards Boga Panee.

1271. Bauhinia.—Arbor parva vel medrocris Calyce spathaceo. Corollis carneis roseo venosis. Nonkreem.

1272. Aurantiacea.—Frutex erectus 3 pedalis Boga Panee.

1273. Castanea.—Arbor medrocris formosa foliis lucidis supra et atroviridib spicis ingrat odoris. Towards Boga Panee.

1274. Liriodendron —Fructu deflexe cernuo. Cum præcedent.

1275. Symplocos.—Arbuscula ramosa ; like a stanted tree; floribus albis suave odoratis. Oak and fir woods, commences at Nonkreem.

1276. Euphorbiacea.—Arbuscula ramosa. Towards Boga Panee margins of Oak wood.

1277. Leguminosa ?—Frutex. Boga Panee.

1278. Acanthacea —Bor Panee sub fruticibus et inter rupes basi decumbens.

1279. Composita.—Capit. purpureis. Between Bor Panee and Madan.

1280. Acanthacea.—Ramosa decumbens foliis carnosis floribus

infundibulif. tubo basi angustata (cæruleo purpureis) sursum ventricoso, lamina subregularis laciniis reflexis transverse venoso rugosis uti tubus. Boga Panee.

1281. Viscum.—Viride ramosum floribus sesilibus ramis teretibus. In Lorantho no. 1265.

1282. Polygalæ sp.—Foliis linearib ascendenti adpressis floribus cernius spica densa interdum capitulif. Between Nonkree and Bor Panee.

1283. Piper sp.—Bor Panee.

1284. Vanda.—Epiphytica in arboribus in Gordonia in Pinetis et Quercetis versus Bor Panee. Caule altiusculo interdum 2 pedal, foliis distichis loriformibus, canaliculatis. Apice profunde et inœqualiter emarginatis quam maxima coriaceis. Racemis axillaribus folia longe excedent, flexuosis supra bracteis adpressis, livido maculat. Bract flori membranaceis reflexis fuscescent, flores resupenato maxima, diametro $2\frac{1}{2}$ uncial, pulcherima, cœrulescentis saturatione colore tesselatis. Labelli lobis lateral, albis. Columnaque alba Perianth patentiss lacin. obovat; sepalis undulatis uti petala. Petalis sepaloque postico paulo minoribus. Labelli trilobi lobis lateral dentifomibus, medio emarginato, apice bicallosa tricarinato, calcare brevi recto. Color cœruleo purp. Columna albida nana basi ad junctione laoell. macula lutei. Anth symplex. Pollinia 2 complanat. postica fissa; caudicula lata. Glandula maxima trigona.

1285. Podostemon.—Planta fucoidis saxis innundatis vel semi inundatis arcte adpressa frondibus lobatis, lobis linearibus simplicibus vel apice uni bis lobatis floribus distichis marginalibus subascendent.

In saxis Bor Panee copiosa.

1286. Æschynomena.—Floribus lutescent Nungtung versus in sylvis, alt. 2,3500 ft.

1287. Isachne sp.—Gramin 4 pedales. Panicula patentissima spiculis fuscescent towards Nongtong alt 3,509 ft.

1288. Panici sp.—Culmo ramoso, spiculis viridibus Nongtong prope in sylvis alt. 3,200 ft.

1289 Labiata.—Erecta canescens, corollis roseis genitalibus carneis, in sylvis Quercinis Nongtong prop. alt 3,500.

1290. Polygalæ sp.—Calycis alis viridibus. Ramosa 1½ pedalis Oakwood near Nongtong.
1291. Adianti sp.—Near Nongtong in rocky ground alt 2800 ft.
1292. Symplocos.—Arbuscula floribus albis fragrantibus towards Nongtong, tropcial woods alt 2800 ft.
1293. Pœderioid.—Cum præcedentibus, baccis rubris.
1294. Celastrinea —Arbuscula cum prœcedentbus.
1295. Phlogacanthus.—Cum præcedenti.
1296. Piper sp —Cum præcedenti.
1297. Polypodii.—Shady tropical woods cum præcedent
1298. Achyranthes sp.—Cum præcedent planto 4 pedale ramosa.
1299. Cum paæcedentib.
1300. Labiata.—Floribus purpureis raro albis. Stamin. varia, vix pedalis shadywoods towards Nongtong alt 2000 ft.
1301. Serratuloid :—Towards Nungtong alt 3000 ft.
1302. Careya? Towards Nungtong alt 3000 ft.
1303. Urticea.—Spicis pendulis, towards Nongtong alt 2500 ft.
1304. Castaneæ sp.—Arbuscula towards Nongtung woods, alt 2500 ft.
1305. Leguminosa.—Arbor parva umbrosa. Woods, towards Nongtong alt 2500 ft.
1306. Labiata.—Grassy plains in low places, towards Nongtong.
1307. Convolvulacea —Low vallies near Madan among grasses.
1308. Alpinia.—Fructibus coccineis, shady woods towards Nongtong alt 2500 ft.
1309. Polypod.—Arborescens caudici 5-8 pedali. In humidis sylvis towards Nongtung alt 2500 ft.
1310. Senecionid.—Flor lutei ramosa hispida 2 pedalis. In paludibus prope madan alt 2800 ft.
1312. Cyperacea.—Near Madan in rice fields.
1313. Cyperacea.—Cum præcedent.
1314. Jussiœia.—Flores lutei ramosa 1½ pedalis rice field near Madan alt 2800 ft.
1315. Herpestes sp.—Decumbens. floribus purpurio cœruleis. Madam prop etc in oryzetes.
1316. Butomus lanceolatus floribus mediocribus albis. Rice fields near Madan.
1317. Polygoni sp.—Cum præcedent floribus albis.

1318. Junci sp —Cum præcedent.
1319. Xyris sp.—Flor. lutei. Ibidem.
1320. Trizania ciliaris. Ibidem.
1321. Andropogon.—Castratus. In oryzetis infra Madan alt 2600 ft.
1322. Lycopodii sp.—In oryzetis infra Madan
1323. Herpestes sp.—Cum 1315.
1324. Oryza.—Gramin 6-9 pedale laxe decumbens inter plantas alias. fol. longissima semipendula. Panicula diffussa maxima ramis inferioribus nutantibus superior erectis vel patentibus. In paluda margin oryzet.
1325. Quercus vestita.—Arbor vel arbuscula foliis subtus glaucis glandibus cupula lamellosa obtectis. Towards Onswye.
1326. Semecarpus.—Arbor parva scraggy fructibus viridibus. Grassy Hills between Onkreem and Onswye.
1327. Cyperacca.—Spiculis compressis fuscescent. In oryzetis Onswye.
1328. Verbenacea.—Arbuscula grassy ridges towards Onswye.
1329. Spermacocea.—Towards Onswye ad vias.
1330. Hedyotidea.—Flores albi planta erecta ramosissima. Near Nuntung, in old clearing.
1331. Chloranthus inconspicuis.—Baccis albis. Towards Onswye alt.
1332. Labiata.—Erecta 2 pedalis spicis densis tubo corollæ albæ purpur fusco tinct sursum geniculat. In oryzetes Onswye.
1333. Andropogon.—Near Nungtung in oryzetis.
1334. Prenanthes.—Fl. ochro leuco lutea. In agris prope Nungtung.
1335. Gnaphalioid.—In agris Nungtung copiosa aureo nitens.
1336. Composita —Laxa decumbens floribus salt. radii albis minutis. Nungtung in sylvis.
1337. Thunbergia.—Grandiflora floribus albis. Between Onswye and Nungtung.
1338. Sida Corylifolii.—Suffutex erectus 2-3 pedalis flos aurantiaceis. Towards Onswye in collibus graminosis.
1339. Chirita.—Flore pallide cœruleo. The same as the Deeling Plant. Nungtung in woods.
1340. Hygrophyla.—In oryzetis near madan et ad Onswye.

1341. Andropogon.—Gramin pedale, spiculis fusco brunneis advias in oryzeto Onswye.

1342. Uvulariæ sp.—Baccis pendulis vel potius deorsum directis globosis atris. Towards Onswye.

1343. Rubiacea.—Frutex in sylvis versus Onswye.

1344. Labiata.—Planta formosa, 4 pedalis erecta ramosa, spicis densissimis bractearum apicibus cornutis quasi echinat. Corolla tubo gracil. sursum geniculato purpureo. Nungtong in old clearing.

1345. Arbuscula.—Foliis pinnatis subtus glaucis, petiolo basi et ad foliolos tumido. Cymis fructum pendulis pedunculo elongat fructibus pyriformibus, viridi, rubro tinctis.
Versus Onswye alt 2500 ft.

1346. Hibisci sp.—Corolla magna lutea fundo sanguinea, planta ramosa erecto spinulosa.
Near Nungtung in old clearing.

1347. Strobilanthus.—Planta erecto ramosa, spicis canescent. Corollis in fundibulif subregularibus resupinatis ob tubi torsione purpureo cœruleis. Stam inclusis Onkreem, ad marginem sylviæ.

1348. Digitaria sp.—Spiculis albidis old clearingiss Nungtong abundant.

1349. Ischæmoid.—Gramin 4 5 pedale foliis longissim erectis, spicis ternatis terminali erecto, lateral patentibus vel deflexis infra viridibus, supra castaneis.
In oryzetis Onswye.

1350. Rottboellioid.—Gramin 4 5 pedal, paniculis erectis spicis filiformibus nutantibus purpureo lividis In oryzetis Onswye.

1351. Panicum!—Panicula viridi lutescens Onswye.

1352. Pruni sp.—Arbuscula floribus albis Onswye in sylvis.

1353. Congeæ sp.—Scandens, Onswye in sylvis.

1354. Garcinia Cowa.—In sylvis Onswye.

1355. Myrtacea.—Arbor magna floribus albis. Onswye in sylvis.

1356. Labiatæ.—Floribus purpureis lower ranges in wet places.

1357. Bignonia.—Arbor mediocris, toward Dullagong, 1st appears, alt 1500 ft.

1358. Impatiens.—Erect ramos, floribus parviusculis purpureis calcare incurvis apice capitulif. Onswye ad margin sylvarum.

1359. Lecæ —Arbor parva, fol supra atroviridib. Onswye.
1360. Hedychii sp.—Floribus albis, anth. coronar. Onswye, paludib odor suaviss.
1361. Leguminosa.—Arbuscula, lower ranges in wood.
1362. Mimosa.—Frutex arbusculoid 8 pedalis lower ranges.
1363. Panax.—Arbuscula foliis qinatis lower ranges.
1364. Rubiacea,—Baccis albis, calyce virid. coronate lower ranges in deep shade.
1365. Bogonia.—Malabarica. Lower ranges, in umbrosis fol. subtus purpuracea flores carneo rosaceis.
1366. Crotalaria sp.—Dullagong in apricis, alis apice cœruleis cœterum albis, vexillo cœruleo pallide venoso.
1367. Andropogon.—Foliis transvera undulatis, aspectu verricoso lower ranges deep woods.
1368. Zingiber.—Capitulis fruct rubris, lower ranges in shady woods among grass.
1369. Mesua.—Fructibus globosus apice conico stylo apiculat basi calyce, et stamin rudiment vestit. dirty on account of its viscidity. Pericarp crassum 3 lineato carnoso fibroso uniloculare oligospermum.
1370. Arbuscula.—Foliis impari pinnatis racemis fructuum pendulis, baccis sub rotundis, basi annulo inconspicuo cinctis obliquis 4 locularib abortu 2, pyrenis osseis. Semina solitaria exalbuminosa. Cotyledon foliaceis conduplicatis, radicula longa. infera, tegument pericarpio adnat. Lower ranges but before you come to heavy jungle.
1371. Leguminosa.—Arbor magna, towards Dibaroo at the base of the hills.
1372. Phaseolus —Floribus magnis, ochroleucis alis apice versus purpureo tinctis. Towards Dibaroo.
1373. Triumfettæ sp.—Scandens, towards Dibaroo foot of hills.
1374. Andropogon sp.—Grassy places foot of hills between Dullapore and Dibaroo.
1375. Indigoferæ sp.—Flor roseis, towards Dhumria.
1376. Cordeæ sp.—Flor albi arbuscule towards Dhumria at the jungly base of hills.
1377. Glycinoid.—Scandens viscosa towards Goba,
1378. Ischæmi sp.—Rice fields, towards Dhumria. Spicis rubris erectis.

1279. Smitheæ sp.—Decumbens flores lutei. In paludibus versus Goba et Dhumria.

1380. Mucunæ sp.—Dolichoid late scandens racemis pendulis. Calyx viridescens pube fuscescent vexillum livide purpureis alis atro purpureis venoso lineatis. Carina albida. Towards Goba.

1381. Aerides.—Fol. distinct loriformib canaliculat apice quasi retusis subœquatibus, coriaceo carnosis. Racemis sub umbellatis oppositi foliis floribus parvis, perinth spathulato ochroleuciss. maculis fuscis. Labellum albidum. Foot of Hills towards Dullapore.

1382. Legumenosa.—Frutex 4-6 pedalis erectus, open plains about Gowahatti

1383. Crotonis sp.—Arbuscula about Gowahatti woods.

1384. Buteæ sp.—Frutex robustus scandens. Towards Gowahatti.

1385. Legumenosa.—Arbor magna formosa. Towards Gowahatti.

1386. Cardiopteris.—Succus lacteus. Chenopodeis aff?—Potius quam Sapindaceis? Foot of the range between Dullapore and Gowahatte Common.

1387. Arbor.—Spinis axillaribus, fol alternis exstipulatis subrepandis subtus pubescent. Fructibus lapsis tantum visis ovi Columbis magnitud. lutescentis basi calyce radiato suffult subobliqua endocarpii lœvissim. Styli basi rudimento. Baccato mesocarpio carnosa, 1 locularis abortione 1 sperm. hilo lineari, areola ovata ad extremitat supernam utrinque attenuato; micropyle inconspicua. Semin osseum atro brunneum lucidum læva, Testa durissima, tegumento interno adnato brunnescens tenua, venis elevatis valde conspicuis ramosis notata. Albumen copiosum dense carnosum. superfic obvenas maximas rugos. Cotyledones oblonga foliaceæ raphi alternæ, applicito. Radicula teres obtusiuscula infera. Gowahatti in sylvis. Semina interdum? ideoque fructus bilocularis.

1388. Crotalariæ sp.—Herba prostrata in graminosis proveniens. Petalis calycem æquantibus luteis, nutantibus, leguminibus inflatis calyce paulo excedent, Tezpore.

1389. Celastrinea.—Baccis pisiformibus rubro sanguineis. Tezpore Frutex laxus.

1390. Callicarpa salviæ folia.
Frutex humilis ramosus baccis albis. Hazoo

1391. Natsiatum ?—Menispermea gamopetala fœmin nunquam vida.

1392. Leguminosæ.—Flores cærulea, erecta basi ramosa, in oryzetis siccis, Hazoo versus.

1393. Phlogacanthus thyrsiflorus Hazoo flores ferrugineo aurantiacea. In sylvis.

1394. Dicerma sp.—Frutex ramosus, towards Hazoo. Sylvarum margines.

1395. Melilotoid.—Suffrutex erectus, flores cœrulescentis, petalis apiee saturati cœruleis, Ameen gown.

1396. Leucas.—Hazoo etc.

1397. Ammania.—Muriatica in oryzetis siccis. Hazoo versus.

1398. Ocymoid.—Erect ramosa vix aromatic. Cal. bilabiat. Cor. lab super fonicato cucullat. lab infer trilobo. Flores cœrullea, lobo medio lab infer, saturato punct. Ameengong prope in oryzetis.

1399. Palma.—Wallichia nana. Erecta 3 5 pedalis Gowahatti in sylvis.

1400. Leucas.—Captulis orbicularibus nutantibus in oryzetis siccis. Hazoo versus. Statura variat.

1401. Etheilema.—Basi decumbens, pedalis floribus ochrioleucis, grassy margins of wood.

1402. Æschynomena.—Suffruticosa basi, sursum ramosa 2 3 pedalis, floribus luteis in oryzetis siccis.

1403. Phaseolus.—Flos magnus alæ cœruleo tinct. Carina vexillum ochroluc. Hazoo.

1404. Hingsha repens.—In paludibus oryzetis que humidis flos florem hellebori simulans Hazoo.

1405. Justicioid.—Repens ubique in humidiusculis.

1406. Poæ sp.—Grassy swards common towards Hobbareem.

1407. Cephalanthus spinosus.—Frutex seandens vel subscandens capitulis binis in axillis. Gowahatti. Towards Dumdummia et a libi.

1408. Sidæ sp.—Suffrutex erectus ramosus flores ochroleuca. Towards Dumdumia.

1409. Pterocarpus Marsupium. arbuscula corona densa vel arbor

parva about Dumdumia Leguminibus racemosis subacinaci formibus, coriaceis sessilibus endocarpio spongioso. 1 oligospermis. Semen. solitari reniforme, testa transverse venosa cellulosa composita. Cotyledones carnosis plano convexiusculæ basi hinc auriculatæ. Radicula curvata.

1410. Urtica Gigantia?—Fructibus albis, vix urens in Assam.

1411. Ficus elasticum.—Huzoo culta.

1412. Ficus sp.—Arbor mediocris. trunco lævi cortice alba. Gemmæ axillares plures, foliaceæ squamis deciduis. Fol longe petiolata. ovato oblonga, cuspidato acuminata, integra sub chartacea utrinque glabra, basi sub trivenia, vena intromarginali subnulla, areolis subtus minutissimis. Petioli 2 uncialis teretis, apice versus canaliculato.

Fructus racemosi, racemis vel sparsis vel aggrigatis e trunco ortis, simplicibus divisis in 2 aggregatis, abortu tantum simplicibus breve pendunculatis (pedunculo craso bilineat, apice tribracteato.) turbinato depressis, velutinis, umbilico clauso, viridibus. Squamis interior arcto depressis ampliatis floribus fæmineor perianthiæ sanguineo. Hazoo in humidis.

1414. Loranthi sp. Icong 5.—Parasitica in arbor Hazoo, fol. carnoso, coriacea venis secondareis rubra conspicuis.

Ramuli compressi penduli, fol. subsessilia ovata vel oblongo ovata obtusa plus minus repanda vel plana ; margina cartilaginea, carnoso coriacea. costa venis que secondareis tantum conspicuis.

Racemis axilaribus, angulatis foliis brevioribus $2\frac{1}{2}$ uncialis pedicellis linealibus. Flores secundi magni rosei limboluteo 5 partito reflexo. Anth, filam sanguineo rubro Stylus et stigma capitat viride ; tubo clavato sub 5 gono angulis saturatius coloratis, faux fusco viridis.

1415. Composita.—Flosculis citrinis dorso fusco tinctis foliis glaucis patentibus radicalibus. In campis siccis Dumdumia.

1416. Desmodium —Prostrata, alis purpureis vexillo extus carneo, intus purpurascens. Cum præcedenti.

1417. Ophrydea.—Flos. albus labello intus lutescent cum præcedenti.

1418. Croton Tiglium.—Hazaragong.

1419. Averohoa.—Hazaragong.

1420. Greviæ sp.—Suffrutex humilis ramis arcuato nutantibus Sepalis initio luteis demum rubris. High Plains towards Hazaragong.

1421. Leguminosa.—Frutex erectus ramosus 5-6 pedalis Grassy plains towards Hazaragong.

1422. Premna herbacea.—Pusilla fol. adpressa flores bilabiati, lab. superiore fornicato, albida Cum No. 1420.

1423. Crotalaria sp.—Flores lutei. Suffruticosa basi erectus cum no. 1421.

1424. Bonnayæ sp.—Floribus cæruleo purpureis. Stam. abortivis. Towards Hazara gong in low places.

1425. Æschynomenoides.—Suffrutex erectus 6-8 pedalis, floribus magnis, luteis. Grassy plains towards Hazaragong in low places.

1426. Centrostachys aquatica —Marshes, towards H. gong.

1427. Elytrophori sp.—Rice fields towards H. gong.

1428. Compositæ.—Capitulis luteis, corymbis aggregatis. Grassy plains towards Hazara gong.

1429. Bergera Kœnigii.—Flores albi Hazara gong.

1429*a*. Cymbopogon hispidus.—Gramen. exaltat, habitu C. arundinacei, Grassy plains Kamroop.

1430. Composita.—Suffrutex exaltat 6 pedalis anthodio purpureo tincto, grassy plains towards Hazaree gong.

1431. Knoxia exaltata.—Erecta simplex 3 5 pedalis foliis subcoriaceis, flores non visi. Floret Januario, grassy plains Kamroop.

1432. Bergeræ sp.—Hazaree gong.

1433. Tabernæmontana.—Hazaree gong.

1434. Wedeliæ sp.—Planta decumbens humilis interdum subscandens, floribus leuteis disci 4-5 fidis, low places, Hazaree gong.

1435. Composita.—Herba pedalis Capitulo erecto roseo. Hazaree gong.

1436. Herpestes sp.—Herba pusila spithamæa erecta. Flos purpureis. In low shady places towards H. gong, bilabiatis lab inferior saturate purpureo venosum·

1437. Eranthemum.—Suffrutex ramosus 3 5 pedalis bracteis albis

venis viridibus tetrastichis, corolla infundibulifor, tubo angusto, limbo subregulariter 5 fido, laciniis reflexim genetalibus exsertis, extus carnea, intus rosacea. ad marginem sylvæ Ghoorgong.

1438. Byttneriæ sp.—Arbor mediocris, racemis abbreviatis fructibus junioribus deflexis echinatis stylo apiculatis basi toro annuliformi cinctis. Cum præcedenti in sylvarum.

1439. Guffrithia.—In collibus Ghoorgung.

1440. Senecionides.—Planta 1-2 pedalis folius inferioribus depressis floribus læti luteis disco aureo, Ghoorgung, base of Grassy Hills and in the plains of Kamroop.

1441. Uvariæ sp.—Pedalis Grassy plains towards Goorgong

1442. Ætheilema sp.—Decumbens viscosa graveolens. flores secundi albi. Hizaragong, Gowhatti about old ruins.

1443. Lactucoidea—Erecta glauca capit luteis. Goorgong. banks of Stream

1444. Myrsinea Arbuscula.—Durunga banks of alt 800 ft.

1445. Oxyspora.—Frutex corona densa, paniculis pendulis Durunga rivulet alt 600 ft.

1446. Rubiacea.—Arbuscula, Durunga river, in idem.

1447. Tetrantheræ sp.—Arbuscula ramis laxis capitulis lutes centibus. Durunga banks of river alt 600 ft.

1448. Zanthoxylea.—Aculeata scandensa. In collibus prope Dewangari alt 1800 ft.

1449. Davalliæ sp.—Fronde 10 pedali pendenti e Scopulis Durunga rivulet, on rocks with Polypod. arboreum. Blechnum P. Wallichiana, stipito glabro 5 pedali.

1450. Grirffithia.—Frutex ramosus spinosus. Baccis globosis cerasi parvi magnitudine Dewangiri prope alt 2000 ft.

1451. Compositæ—Herba erecta subsimplex flosculis purpurascent erectis. Choky alt 965 ft.

1452. Adianti sp.—Stipito atrato. Frons glaucescens, in rupibus umbrosis. Durunga nudde alt 1200 ft.

1453. Cordia sp.—Arbuscula, Durunga nudde alt 1200.

1454. Adiantum flagelliferum.—Durunga nudde on rocks.

1455. Ficus.—Arbor mediocris trunco brevi, corona densa, foliis oboblongis basi obliquissimis lateralis inferiore auriculato lobatis tactu scabris, venis subtus purpurascent venatio ordinaria. Every where in rocky mountain torrents.

1456. Panax sp.—Arbor mediocris foliis supra decompositis maximis paniculis terminalibus erectis compositis thyrsoideis, capitulis densis floribus, ochroleucis, subodoris. Durunga nudde alt 1200 ft.

1457. Myrtacea.—Arbor mediocris floribus albis. Foot of the Hills and from Ghoorgong.

1458. Rhamnea —Frutex laxus subscandens fructus pisiformes rubri, foot of Hills.

1459. Cœsalpinea·—Frutex longe scandens aculeata flores paniculata lutea, vexillo carneo cucullato. Foot of the Hills.

1460. Liparis.—Icon. 11-9 Rupestris Pseudobulbi unifoliosa. Juni ores squamis foliaceis distichis tincti, folium lineari oblongum acutum plicato venosum, luteo viridis. Scapus apicalis, parte eflorifere anceps, supra sulcatus angulatis. Bracteæ pedicellis breviores lineares anguste, Pedicelli filiformes gracilis. Flores postice. Perianthium patentissimum angustum lineari revolutum, petala sepalis multo angustiora, fuscescentia. Labellum integrum, planum sub 4 lobum, fuscescento aurantiaceum. Columna alba, teres. Polinia 4, per paria collateralia plano convexa, processus setiformis. Antheræ! Rostelli sub emarginat, columna circa stigma dilalat, et inflexum. In rupibus secus Durunga alt 500 ft.

BOOK II.

Bootan Flora.

1. Solani sp.—Dewangiri totam cano farinaceum.
2. Composita.—Herbacea, 3 5 pedalis ramosa corymbis densis capitulis albis.
   Dewangiri, in collibus apricis.
3. Amaranthacea.—Inflorescentia cano viridis nutans herbacea, straggling, circa tecta Dewangiri. Dependens.
4. Cyrthandracea.—Epiphytica in arborib, foliis undulatis carnosis.
5. Urtica.—Erecta simplex spicis nutantibus in ruderatis. Dewangiri.
6. Composita —Arbor mediocris paniculis erectis amplis, albis. In sylvis.
7. Pogostemon sp.—Very common on all the hills.
8. Ajuga sp.—Caule repenta ramis floriferis erectis abbreviatis, flores saturate cœrulei, lab superior planiusculo bidentat, inferior. trilobo, lobis patentibus. Wet places on hills.
9. Davalliæ sp.—Repens in arborib frondibus pendulis. Woods.
10. Gordoniæ sp.—Arbor mediocris formosa. Dewangiri in woods.
11. Rubia. Mungista.—Dewangiri in woods.
12. Panax sp.—Arbor parva. petiolis longis deflexis basi crassis, foliis quinatis, foliolis.duplicato serratis, capitulis paniculatis. rotundis. Paniculis terminalibus floribns ochroleucis.
    Woods Dewangiri.
13. Naravalia zeylanica Dewangiri in woods.
14. Davalliæ sp.—Repens in arborib frondib erectis.
15. Labiata.—In umbrosis.
16. Pteris sp.—In umbrosis.
17. Araliacea.—Scandens, ramulis crassis viridibus, foliis quinatis, sub coriaceis. Paniculis terminalibus e racemis pluribus quorum infimi sub cernium. Inflorescenti purpureo sanguineo, umbellis plurifloris quaque bractia colorata membranacea concava decidua initio suffulta, flores albidi. Dewangiri in woods. Odor terabinth.

18. Panax sp.—Arbor parva, habitu quodammodi Palmarum, aculeis creberrimis, trunco simplici 20 pedali annulato foliis supra decompositis in pinnatis 4 pedalibus. ambitu foliolis oppositis caudato acuminatis petiolis horridis aculeis rectis basi ampliatis excavatis, petiolulis sub lævibus.

Panicula supra decomposita, ramis compositis cernuis, floribus viridibus.

Dewangiri. In sylvis collinis.

19. Arbor mediocris.—Foliis repandis coriaceis. Succo acerrimo initio albido demum aterrimo lucido. An Terebinthacea vidi etiam in monitibus Mishmeensibus.

20. Fici sp.—Arbuscula ramulis ferrugineis stipulis subferrugineis subulatis uncialibus petiolis teretibus 1-2 uncial. Fol oblonga vel obovato oblonga breve acuminat. distanter serrata, chartacea, venatio ordinaria, reticulis infra minimis. In colibus sylvosis. Succus paullo viscosus.

21. Ficus —Arbuscula trunco simplici cortice albo. ramulis fistulosis, hirsuto scabra. Pube ferruginea. Petiolis teretibus 1-3 uncial, fol. magna, cordato ovata, cuspidata, serrata, tactu scabrida, basi trivinea cæterum ordinaria opposita vel sœpius simplicia. Stipulis membranaceis dien persistentibus.

22. Ficus.—Arbuscula habitu præcedentis hirsuto scabra ; fol. altern. supra asperima subtus hispida, oblonga oblique longe accuminato cuspidata, distanter serrata, basi oblique cordata, gemmæ virides, semunicalis. Fructus axillares solitarii vel. bini vel plures longiuscula pedunculat, basi tribracteat subglobosi cerasi mediocris magnitudini, apica depressa umbilico lato, squamis clauso.

Dewangiri in woods.

23. Hypni sp.—In arboribus. Dewangiri.

24. Hypni sp.—In arboribus.

25. Mnium —In umbrosis aquosis.

26. Zanthoxyli sp.—Arbuscula parva. This yields the spice called jubrung by the Kacharees, *Ghee* by the Bootrus.

27. Juniperi sp. Ic. It. Boot t. 36 vide no. 529—Arbor parva elegantissima cortici lœvi. Ramulis pendulis foliis senioribus ferrugineo brunneis junioribus glaucis. Dewangiri near the Faqueers house.

28. Ulmi sp. —Arbor excelsa formosa floribus fasciculatis in axillis. Dewangari in woods alt. 2300 ft.
29. Engeldhaardtia.—Arbor magna racemis pendulis. Dewangiri alt. 2300 ft sylvis.
30. Panax.—Arbor mediocris inermis fol. supra decompositis ambitu triangularibus pinnatis, inferioribus binis et terminali trifoliatis, intermediis simplicibus. Panicula cum racemis plurimis, terminalia recta, ramis basi ferrugineis. Capitulis densifloris. Dewangiri alt. 2300 ft. in sylvis.
31. Pothos.—Scandens in arboribus rhizoma crassum annulatum cylindricum. Petiola teretiuscula supra striati canaliculata, basi canaliculato, fol. pinnata. Spadix sesqui pedalis basi incrassat. parte florifera cylindracia. Ovariis apice planis medio apiculatis. Dewangiri alt. 2300.
32. Ficus papyrifera —Arbor majuscula formosa elegans, (sometimes with supports encirling the proper trunk) Ramis laxis sub pendulis, foliis sub pellucido punctatis, venatio ut in F. elastica. Fructibus, subsessilibus subrotundis vel obovato globosis, umbilico clauso, squamis 3 externis. Dewangiri circa tecta.
33. Ficus terminalioides.—Icon. It Boot t. 12.-Arbor magna formosa, corona lata umbrosa ramulis sub angulatis. Petiolis 2-3 unicalibus sub complanatis, supra, striatis, foliis oblongis chartaceo coriaceis, obtuse cuspidato acuminatis, integris basi sub triveniis; venatio ordinaria reticulis infra minutissimis. Fructibus binatis sessilibus, pisi majoris magnitudine et forma rubris, basi trisquamatis, umbilico clauso. Gemmis conicis ferrugineis semuncialibus. Dewangiri in collibus. alt. 2,300 ft.
34. Acanthacea.—Herba ramosa, erecta 2-3 pedalis hirsuta. fol. inœqualia duplicato crenato serrata, sub undulata, oblique, spicis terminalibus, paucifloris, bracteis centralibus magnis foliaceis flores magni. ob directorionem et curvationem supra quasi resupinat. infundibulifomis. tubo basin versus angustato et semitorto. limbus subregularis, venosa faux transverse rugusus. Anth. inclusa, stylus sub simplex, stigma acutum sub exsertum. In ruderatis Dewangiri.
35. Peristrophe.—Scrophularineæ Herba annua erecta ramosa straggling, 3 4 pedalis flos bilabiatus lab inferiora ob re supinatis integro superior 3 fido rosaceus maculis, carmina.

Dewangiri ubique in apricis.

36. Pteris.—Habitus P. aquilinæ, allitudo 4 5 pedalis. In collibus Dewangiri ubique.
37. Jasminum Scandens.—Dewangiri.
38. Composita.—Scandens capitulis aureis, Dewangiri in fruticetis.
39. Justicia.—Adhatoda, Dewangiri.
40. Ficus.—Arbuscula mediocris, corona lata densa, ramulis fistulosis fructibus petiolis pilis ferrugineis strigosis, petiolis teretibus, fol cordato rotundatis sinu frofundo dentato serratis basi 7 venius supra scabris et parum hispidis, subtus molliter pubescent, fructibus aurantiaceis sessilibus, binis hispidissimis, basi squamatis membranaceis, sublobosis, sub mammillatis, umbilico depresso mammillæ centrum occupant, clauso. Inflorescentia junior quamis obtecto.

Dewangiri circa tectu.

41. Ficus. Icon It. Boot t. 11.—Arbuscula cortice lœvi, trunco simplici. In partibus novellis ferrugineo pubescentibus, ramulis teretiusculis. Petiole teretis 2-3 unciales, fol cordata ovata vel oblongo ovata, basi cordata, distanter dentato serrata, subacuta supra glabriuscula, subtus pubescentia. Fructibus e trunco ramisque majoribus aggregatis in racemum, brevem et sub umbellatis, binatim sitis, pedunculo crasso perennante.

Pediceillis sursum incrassatis latere externo 1 breteatis, gemmam mediam occupant, apice tribracteatis. Fructus uti pedicelli pubescent, turbinata, vertice depresso concavo lœvis vel costata, costis interdum incompletis bracteam exserenta Umbilico squamis plurimis clauso.

Dewangiri in sylvis collinis forsan culta. Juice with little viscid matter, less so than any I have seen except Ficus elastica.

42. Polypodii sp.—In arboribus. Dewangiri.
43. Dalbergioid.—Arbor parva coronem densa Leguminibus sub pendulis Dewangiri circa tecta.
44. Sedgwickia cerasifolium. Arbor alta 80 pedalis. Dewangiri in sylvis collinis.
45. Castaneæ sp.—Arbor mediocris, corona densa umbrosa spicis albidis. Dwangiri wood.
46. Rhamnea.—Frutex laxus. Dwangiri wood.
47. Melastoma malabathrica. Dwangiri in apricis.

48. Clematis sp.—Pubescenti cana pedunculis pedicellis et floribus extus dense et pallide ferruginio pubescentib. floribus 4 partitis. campanulatis sepalis apicem versus reflexo patentibus genitalibus inclusis Dewangiri woods.
49. Piper.—Erectum ramosum spicis deorsum curvatis Dewangiri woods.
50. Piper sp.—Dewangiri in wood. Spicis subnutant vel pendulis baccis ovatis nigris discretis.
51. Dioscereæ sp.—Dewangiri in woods.
52. Andropogon.—Gramin exaltat 10 pedal, culmo ramoso, paniculata fuscescent nutanta In Hills Dewangiri alt 2400 ft.
53. Lycopod. cernuim.—On Hills Dewangiri in humidis.
54. Gramin.—Culmis cœspitosis basi nudis ramosis spicis erectis fuscescent. moist rocks Dewangiri.
55. Exacum teres.—Moist rocks cum præcedent.
56. Osbeckiæ sp.—Frutex humilis sesquipedalis vel 2 pedalis fructibus junioribus cernuis Cum præced.
57. Fici sp.—Frutex humilis ramulis flexuosis. Petiolis brevibus supra Canaliculatis transversa rugosis. Fol. oblongo lineara, longissima acuminatissima, basi obliqua cordata, integra glabra, venatio ordinoria, juniora sanguinea. Gemmæ concoloris uncialis.

    Cum præcedent.
58. Clematis sp.—Scandens caudis plumosis brevibus, foliis bi ternatis. Dewangiri woods alt. 2400 ft.
59. Bœhmeriæ sp.—Frutex 4-6 pedalis spicis pendulis. Dewangiri woods alt. 2300 ft.
60. Poranæ sp.—Griseo-cana volubilis. Dewangiri alt 2300 ft woods.
61. Vitis sp —Fol. subcarnosis. Trifoliatis. Baccis pisiformibus atro purpureis. Dewangiri woods alt eadem.
62. Composita —Herba erecta valde ramosa, viscosa, odore aromatico hispido cana, anthodiis inconspicuis erectis in Dewangiri in apricis sylvarum.
63. Apocynea.—Frutex erectus an scandens. fol. sub coriaceis repandis venoso rugosis. Paniculis nutantibus, terminalibus ferrugineis ob pube brevi basi foliis parvis vestita, bracteæ magnæ foliaceæ, subtus advenas purpur. succus demum viscosissimus albus, sepalis amplissimis subfoliaceis, corolla contorta, gemmas tanti vidi sed ampla erit. Cum præcedentibus. An Beaumontia.

Otochibus sp. Caulibus elongatis pendentibus 3 pedalibus dichotomis.

64. Ex arboribus.—Sub 4 gonis, corrugatis, 3 uncialibus, apice bifoliis, fol, lineari lanceolatis utrinque attenuatis acutis coriaceis 1 venus, spica nutant fuscescent bracteis distichis fuscis membranaceis convolutis.

65. Bolbophylli sp. Icon. It. Boot. no 10.—Rhizomat. repent. interdum dichotomis. Pseudobulbis obovatis, 1 foliosis, foliis lineari, oblongis, coriaceis univeniis, apice bifidis scapis binis raroternis, e rhizomatis utrinque lateralis infra virid. supra lutescent; bracteis fuscis squamiformibus, floribus posticis nec ne albidis, petalis fimbriato dentatis. Labellum integerrimum luteum tremulum. Pollinia 4 per paria collateral interior minora.

Dewangiri in mangifera alt 2200 ft.

66. Clerodendrum nutans.—Calycibus fructus rotatis carnosis coccineis, carpellis atro cœruleis. Dewangiri alt 2150 ft.

67. Arbor majuscula formosa, fol. impari pinnatis, floribus paniculatis albis, paniculis compositis Dewangiri.

68. Pteris sp.—Hills Dewangiri.

69. Pentapteræ sp.—Arborea paniculis nutanti cernuis, floribus albis, ovariis alisque roseis. Dewangiri alt 2250 ft.

70. Polypodii sp.—Pendula a mangifera. Dewangiri.

71. Hoyæ sp.—Fol. carnosis subtus albis in Mangifera, Dewangiri Mosses 10, lichens 5. species here collected.

72. Cadaba trifoliata fructus longo stipilatus, globosus, maculis erosis circularibus crebris sparsus, baccatus, epicarpio crasso, bi linealis. Semina plura, pulpa nidulantem, pulpa arcte adhœrente reniformi orbicularia. Tegumento, interno brunnea sub coriaceo.

Embryo seminis cavitato conforma. Radicula hilum spectans, conica. Cotyledones ramosæ conduplicatæ, exteriori multo majori. Dewangiri; up to which place it occurs.

73. Labiata.—In apricis et ruderatis.

74. Urtica heterophylla.—In ruderatis vulgatus.

75. Bidens.—Fl. radii albi, disci lutea, antheris brunneis. In ruderatis.

76. Tetrantheræ sp.—Arbuscula odor ligni, citrina odoratissimo folior citrino odoratissimo cinnamomeo, flores albi In sylvis alt 2200.

77. Kalanchoa.—Flores lutei, folia carnosa glauco alba, In collibus in siccis 1200 ft.

78. Composita.—Foliis decurrentibus (decurrent pinnatifidis) planta erecta ramosa viscosissima, graveolens, Anthod squamis patenti reflexis. In apricis Dewangiri.

Ut Ligulatæ amaræ sunt et lactiferœ, sicuta, Intermediæ nempe Conyzæ etc. graveolentis aromatiferæ. Dividenda etiam sunt et ob structura.

79. Arundo sp.—In collibus sylvis Dewangiri.

80. Caryophillea Icon. Bootan 1-13.—Herbacea scandens intricato. Caulis brunnescentis lucidi fragilis articulis tumidis angulato, cortice facillima secedent. fol. aspectu scabrella sub carnosa, Petiolis longitudine variis basi sub connatis. Paniculis ramos axillaribus e terminantibus pluries dichotomis angulatis. Floribus lateralibus bibracteatis, bracteis omnibus reflexis, iufimis foliosis superioribus angustis. Sepal lanceolata scariosa concava rotato Petali conformia angustiora et breviora emarginata vel bidentata. Stam 10, his petali opposita sterilia brevia, basi leviter, connata. Sepalis opposita reflexa basi gibbosa, styli 2, recurvat stigmata facieo interior omnino fere occupant. In fructicetis Dewangiri, 1838.

Ovula 4 an semper basi ovarii affixæ, massa cellulosa impregnator. interjecta, foramina apicata, sed ob curvaturam hilo approximata.

80*a*. Cyrthandracia.—Frutex ramosus, scraggyish 6 8 pedalis cortice alba. Petiolis albidis. Flos brunneo aurantiaceus brunneo venosus tubo sursum curvato et sursum inflato, bilabiat lab. super erect sub porrecto majore bilobo, lobis apice reflexis: infer. trilobo, lobis lateral reflexis, medio patent. Stam 2 filamentis ad anthesin longe exertis, antheris apice conniventibus (rudim o.) demum distinctis curvatis filam. lutescent. Anth. brunneæ loculis subparallelis stylus dircetione stamin rubro sanguineo. Stigma subsimplex, ovar biloculare, loculis pauci ovulatis (5-6) Ovula reniformia subtrans. In collibus Dewangiri verse sita.

Distinct ab omnibus mihi notis, staminibus binis, et habitu. Corolla accedit generi uni epiphytico, ovarioque ovulisque paucis accedit igitur Pedalineis.

81. Phlebochiton extensus Wall.

Dewangiri alt. 2000 ft. in sylvis.

82. Mæsæ sp.—Frutex 8-10 pedalis ramis laxis pendentibus Dewangiri alt. 2000 ft.

83. Clematis sp.—Scandens caudis longissimis plumosis. Dewangiri alt 2000 ft.

84. Naucleæ sp.—Uncaria, Scandens. Capitulis racemosis albidis racemis pendulis Dewangiri alt 2000 ft.

85. Chaulmoogra.—Arbor mediocris coronâ latâ Dewangiri alt. 2000 ft.

86. Composita.—Herba erecta cana bipedalis. Panicula e corymbis plurimis axillariter et terminat. anthodiis nutantibus subcylindraceis medium supra rubris flosculis luteis. Dewangiri alt 2000 ft.

87. Bignonia sp.—Arbor mediocris foliis supradecompositis tripinnatis. Capsulis siliqueformibus longissimis tortis.

Dewangiri alt. 2 300 ft.

88. Artocarpus Chaplashe. Arbor mediocris habitu et foliatione Dipterocarpi, foliis coriaceis subscabris reticulatione infra minutissima, inflorescentia oblonga axillaris solitaria abortu? sessilis.

Dewangiria forsan culta.

89. Panici sp.—Panicula ovato virida, Dewangiri.

90. Triumfetta sp.—Dewangiri.

91. Barleriæ sp.—Dewangiri.

92. Acanthacce. Icon. It Bootan t. 15.—Frutex erectus ramosus 3-4 pedalis foliis lanccolatis linearis racemis terminalibus floribus secundis amplis, bilabiatis infundibulif, tubo part inclusa angustata albis, labio superiora pulchra, sanguneo venoso, antheris inclusis. Stigmata subexserto.

In sylvis Dewangiri alt. 2400 ft.

93. Sapotaceæ.—Arbor mediocris, ramulis robustis, fol ad apicem horum approximatis stellatum patentibus, subtus tomentoso pubescent. floribus axillaribus fasciculat, pedicellis subilabiatis, petiolis $\frac{1}{3}$ longioribus. Calycibusque ferrugineo pubescent, floribus nutantibus vel patentibus albis. Corolla 10 partita tubo cylindraceo, limbo patenti. Stam oo epipetale, antheris apiculatis. Stylo viridi robusto subulato exerta. Dwangiri, sub umbra F. elastica, prope village. Habitus Bassiæ. Stipulis deciduis: gemmes conicis, ferrugineis. Succus lacteus.

94. Ovarium liberum toro magna insidens 7-8 loculare, loculis uni ovulatis, ovulis pendulis, foramen infra spectant.

94*a*. Verbenaceæ· Icon. Ft. Bootan t. 16.—Arbuscula ramulis compressis petiolis foliis subtus, calycibusque albo tomentosis, foliis semi pendentibus, spica terminali cylindracea, floribus densissima, aggregatis, albis roseo tinctis, staminibus galis albis roseo tinctis, staminibus longissima exsertis.

Dewangiri in sylvis alt 2300 ft.

95. Peperomiæ sp.—Spithmæa vel infra foliis carnosis quaternis verticilatis, spicis terminali erecta. In arboribus Dewangiri.

96. Aspidii sp.—Drywoods Dewangiri.

97. Compositæ.—Floribus luteis Dewangiri.

98. Combretaceæ Arbuscula.—Foliis subcoriaceis venis tertiariis transversis Dewangiri, alt 2500 ft.

99. Thibaudia.—In arboribus alt 2800 ft. vena intromarginali distincta, folliis carnosis, distanter crenatis, venis tertiariis indistinctis, ramis, angulatis angulis acutis. Pedicellis clavatis basi minuto bracteatis. Corollis cylindraceis apice constrictis angulatis, laciniis suberectis. Proxim. T. loranthifioræ sed differt floribus has vetustas tantum vida antheris in tubum connatis.

100. Cyrthandracea.—Frutex humilis ramosus foliis teneris subtus albidis, cymis axillaribus gracilibus, uni (abortu) vel trifloris. Siliquis $1\frac{1}{2}$ uncialibus, subulatis. Dewangiri Hills alt. 2,500 ft.

101. Polypodii sp.—Pinis carnosiusculis repandis venis indistinctis. Soris uniseriatis. Dewangiri hills alt. 2800 ft.

102. Aceris sp.—Arbor mediocris elegans foliis subtus glaucissimis. Dewangiri hills alt 2400, or 3000 ft.

103. Bæhmerioid.—Frutex 8-10 pedalis, floribus in fasciculis sessilibus foliis sub carnosis rugosis, alt. 2400 ft.

104. Euryæ sp —Arbor parva elegans, alt 2000, or 3000 ft.

105. Sauraujæ sp —Arbuscula, foliis subtus cinnamomeo ferrugineis, alt 2303, to 2100 ft.

106. Asplenii sp.—In rupibus in madidis. Dewangiri.

107. Leparis longipes.—In Leptospartio alt 2000 ft.

108. Violæ sp.—Stolonifera cano pubescens inconspicua, alt 2500 ft. in ripis.

109. Tetrantheræ sp.—Arbor mediocris alt 2000, to 3000 ft.

110. Polypodii sp.—In rupibus in umbrosis alt 2000, to 3000 ft.
111. Combretum sp.—Subscandens, fructibus 4 alatis, alt 2500 ft.
112. Rubi sp.—Alt. 2800 to 6000 ft. in sylvis.
113. Pteris sp —In ripis umbrosis alt. 2800, to 3000 ft.
114. Nephrodii sp.—Cum præcedenti.
115. Itea machrophilla.—Arbuscula in sylvis alt 2500 ft.
116. Rubia cordifolia.—Alt 2800 ft. in sylvis.
117. Camelliæ sp.—Arbuscula floribus albis. In sylvis alt. 2500ft.
118. Carex sp —In ripis umbrosis alt 2800, to 3000 ft.
119. Polypodii sp.—In arboribus alt 3000 ft.
120. Kydiæ zizyphifolia. Icon. It. Boot. t 18.—Arbor mediocris, folii fere ut in Zizyphis, involucris 5 phyllis. In sylvis alt 3000 ft. variat foliis *rectis* æquilateral, raro lobatis.
121. Aspidii sp.—In umbrosis sylvarum alt 2800 ft.
122. Grammitis sp.—In arboribus alt 3000 ft.
123. Pyri sp.—Arbuscula trunco armato foliis subtus torrentis In sylvis 3000 ft.
124. Nephrodii sp —In arboribus alt 2800 ft.
125. Davalliæ sp.—In sylvis siccis. umbrosis alt 2800 ft.
126. Aquilariæ.
127. Elæocarpi sp.—Arbuscula. In sylvis alt 2800 ft.
128. Mæsæ sp.—In sylvis alt 3000 ft.
129. Oberoniæ sp.—In arboribus sp Fici alt 3000 ft.
130. Rhus sp.—Arbor magna, floribus albis Dewangiri.
131. Incerta Dewangiri.
132. Fici sp.—Frutex erectis ramosus, ramulis angulatis, gracilibus, foliis undulatis coriaceis longe caudatis tactu, subasperulis reticulis infra minutissimis. Dewangiri alt. 2500 ft.
133. Fici sp.—Arbor parva trunco lœvis ferrugineo pubescens, ramulis tertibus, stipulis membranaceis, vernatio circinat. fol. supra tactu asperis oblongis basi obliquis, caudato acuminatis grosse, duplicato dentatis, Dewaigiri alt. 2000 ft. cum Stylidio.
134. Ericinia ?—Arbor mediocris foliis alternis, exstipulatis lancœolatis acuminatis carnosis, obdistinct serrati crenatis, gemmis axillaribus, squamis imbricatis. Capsulis ex axillis foliorum lapsorum, in pedicellis brevibus annulatis. loculicidum 6 valvis valvis demum labentibus, axi centrale libera, persistent, valvis

erectiusculis. Seminibus binis in loculo quoque appensis Compresiusculis sursum in alam amplam productis, testa duriuscula fragilis.

135. Polypodii sp.—In no 134.

136. Rhopalæ sp.—Arbuscula Foliis alternis exstipulatis subcoriaceis ad apicis ramulorum angulatum aproximatis. Fructibus racemosis (racemis nutantibus stylo apiculatis. Stigmata capilatis subglobosis apice conico, basique attenuatis hinc axin prope lineatis endocarpio subfungoso. Semin unicum erectum, altero abortivo, ovuliforma persistenti hilo parva tegumentum unicum secus dimidium inferum ad hilum exceptum, tenue membranac. Cœterum cellulosum aspsctu gelatinoso. Cotyledones plano convexissimæ carnosæ, extus lilacinæ rugosæ, acri expositæ cæruleo purpurascent basi lobato auriculatæ. Radicula omnino inclusa subconica brevis concolor. Plumule inconspicua.

Dewangiri in Sylvis alt. 2800 ft.

Fructus affinis fruct. laurinearum præsertim. Semini structura et colore ! !

The seed is marked transversely by an indented line, above this the tegument is thick fleshy cellular with somewhat of a gelatenous appearance, marked with numerous vessels proceeding from above the hilum, where the tegument is thickest and yellowish, all terminate at the line. Below this, accepting above the hilum it is very thin and membranous. Corresponding to this line the upper half of the cotyledons is lilac blue the under reddish lilac.

137. Incerta.—Passiflorea.

Frutex scandens. Habitu Modeccæ, cirrhis peduncularibus foliatio Passiflorearam. Inflorescentia dichotoma. Fructus oblongo ovalis in pedicellam clavatum basi attenuata, apice calyce 5 dentato coronata, cicatrices 5 parvæ in sinubus calycinis, demum 3 5 valvis, valvis rotatis, initio 3, sed demum finduntur, intus coccineis subfungosis. Seminis tegumentum subchartaceam album inter hanc et capsula materies dense carnosa extus cœrulescens.

Fig. 8. *a* Upper ½, *b* seed, *d* hilum, *e* seed, *c* seed base of, *d* one cotyledon.

Albumen copiosum amplum.

Embryon hujus apice locatus cylindraceum indivisum.

Dewangiri in sylvis, alt 2500 ft.

138. Bobophyllum. Icon. It. Bootan 19.

Rhizomatib longe repentibus radicantibusque. Pseudobulbis oblongis, subteretibus demum compressis, basi vaginatis folium unicum coriaceo-carnos, linear oblongum apice emarginatum 1 venium floribus *radicalibus* solitariis longe pedunculatis, pendulis, majusculis sepalo oblonga, venosa, postico majore, erecto patenti lateralia oblique, apicem versus reflexa. Petal. lineari spathulata, revoluta columna pede valde elongato sursum arcuato. Labellum hujus apice articulat, tremula linguiforma, carnosum, obsoleti trilobum ad articulationem utrinque auriculatum !

Anthera termiualis bilocularis longitud. dehiscens. Pollinia non visa, clinandrum subintegrum. In mangifera, Dewangiri.

Omnia Bolbophyili. Clinandrio integriusculo et labelli auri culis exceptis.

139. Sapindacea.—Frutex 4 6 pedalis foliis impari pinnatis, pinnulis oppositis. Racemis fructum pendulis vel cernuis. Fruct. solitar. vel binat ovalis, aurantiaceis vel rubri longitudine semuncialis uniloculares 1 sperma sub baccato, endocarpio, *an testa adnata* semen pendulum sub osseo fragili, tegumentum membranaceum tenui album, albumen nullum. Cotyledones plano convexæ. Radicula brevissima supera, hilo approximata. Dewangiri in sylvis.

Fig. 7, *a* Hilum, *b* epicarp ; *c* mesocarp ; *d* endocarp ; *e* tegument.

140. Kydia.—Arbor magna foliis orbicularibus, basi subcordatis sub 3 5 lobatis, paniculis axillaribus et terminalibus, foliis brevioribus, floribus aggregatis sub umbellatis involucro 4-5 portito, calyce fructus aperto. Dewangiri alt. 2200, to 2500 ft. in sylvis differt a Kydia zyzipholia foliis floribus paniculatis, calyce que fructus aperto.

141. Pinus longifolia.

142. Veronicæ sp.—Floribus inconspicuis albis, road sides etc. Dewangiri.

143. Bambusæ sp.—Dewangiri. B. monogyna.

144. Arum viviparum. In arborib. Dewangiri.

145. Ficus sp.—Arbor magna trunco simplici cortice alba, petiolis elongatis compressiusculis superne sulcatis. Fol. oblongo ovatis acuminatis repandis, basi subcordatis textura chartaceis, venis secondariis arcuata distincte nexis pallidis, reticulis ultimis minutissimis. Fructibus binis sessilibus in axillaris subturbinatis, lœvibus viridibus, basi 2-3 squamatis, umbilico prominulo omnino clauso, squamis bilobis. Gemmis conico ovatis, brunneis brevibus, Dewangiri in sylvis, alt. 2100 ft.

Proxima Fico terminalioidi, quandem diversæ sectiones. Species hæc certe cum *Peepulis* consociando et *joorea* propinqua. F. terminalioides differt foliis saturat viridibus planuis culis coriaceis chartaceum tactu lœvissimis, venis secondarius, indistinct arcuati nexis fructibus rubris globosis pisiformibus, umbilico plano basi tri squamatis. An instance among many others of species being evidently distinct, but not furnishing neat marks of distinction.

146. Lagerstrœmice sp.—Dewangiri.

147. Legumenosa.—An Tephrosia fl. albi. In collibus Dewangiri Copiosa extus ferruginio pubescent. vexilli nutantes.

148. Solanum farinaceum.—Arbuscula trunco thick as a man's thigh, vel fructicosa densissima tomentosa pube stellata et cana, cymis terminalibus floribus albis cernuis. Dewangiri common i apricis.

149. Rubiacea.—Frutex ramosissimus 4-6 pedalis armatus fructibus axillaribus beviter pedicellatis, globosis apice annullato cicatrice, calyce nempe lapso baccatis bilocularibus loculis oligospermis sub tetraspermis, nigris.

Dewangiri alt. 2500 ft.

150. Jasminum.—Frutex subscandens floribus 7-8 partitis albis subodoris Dewangiri alt. 1500 ft.

151. Cheilanthes dealbata. Banks Dewangiri alt 1500.

152. Peristrophe nodosa. Herba erecta 6-8 pedalis lab superiori (inferior) basi alba macula Duronga alt. 1200 ft.

153. Polypodii sp.—Frons pallescens. Carnosiuscula. Durunga in rupibus et arbr.

154. Acrostichi sp.—In rupibus umbrosis. Cum præcedenti.

155. Acrostichi sp.—In rupibus Cum præced sp. Polypod. Menis cum et Acrostich confungend.

156. Asplenii sp ?—In umbrosis Cum præed.
157. Rubiacea.
158. Meniscum.—Fronde ampla speciosa. In rupis umbrosis ascent to Dewangiri.
159. Urticea.—Carnosa herba. Paniculæ fructus compositæ sursum secundifloræ, floribus deflexo pendulis pedunculis spathulato alatis, calycibus tri sepalis. Capsula obliqua boat-shaped compressa, stylo obliquo subcarnosa, sepalis quasi alis ½ obtecta. Semen 1, funiculo gracile longiusculo basi capsulæ affix. inversum. Tegumenta simplex : albumen scanty, deficient, along the edges of the seed and about the radicle. Embryo inversus. Radicula coniciuscule. Cotyledones carnosæ orbiculares basi cordatœ. Plumula subconspicua DurungaNuddee in umbrosiss.
160. Rubiacea.—Cortex albida frutex humilis vix 4 pedalis fructibus albis, urceolato globois. Calyci 5 fido rotato coronata sub baccatis bilocularibus Seminibus 00. minutis atris punctato reticulatis.

In humidis montosis ubique. Durunga alt. 1200 ft.

161. Acanthacce.—Herbacce 2-3 pedalis Durunga nuddee alt. 1300 ft. an Justicia orchidiflora
162. Davalliæ sp.—Fronde ampla 4-5 pedalis. Hab. In sylvis collinis alt. 1500 ft.—Mosses 27.
163. Sapindacce. Ic. It. Boot. t. 22 *A*.—Frutex erectus 6-8 pedalis foliis pari pinnatis : quasi Terebinth. Paniculis axillaribus patentibus vel subnutant. fol. excedent. floribus parvis dull sanguineis : Calyce inœqualiter 5 sepalo. Corolla 5 petala alternans, petals basi bisquamatis. Stam 8. Ovari dicarpellos stylus breves. Stigmata sub papellosa. Ovulum 1 pendulum : foramen deorsum spectans in sylvis Dewangiri alt 1500 ft.
164. Verbenacea Ic. It. Bootan t. 21.—An Vitex. Frutex laxus ramis longis subvirgatis, fol. simplicibus serratis subtus albidis. Paniculis axillaribus abbreviatis, ramulis dichotomis : purpuries, floribus postice fissis, fere unilabiatis laciniis roseo tinctes. Filamentis deorsum curvatis etiam in alabastris. Antheris 1 locularib reniformib. Pollen album 1 sulcatum ? lineare oblong. stylus filiformis. Stigmata 2 simplicia, ovar. 1 loculare sed ob placentarum appioximat et format, videtur quadrilocular. Ovula sub appensa, parte ascendento majori.

Dewangiri in sylvis collinis densis alt. 1200 ft.
Cal. 5 dentat. Cor. postice fissa sub bilabiata. Anth. 1. locularis exserta. stylus bifidus Stigmata simplicia.

165. Acanthacea.—Dewangiri alt. 1500, to 800 ft. Flores albi nutantes subcampanulati vix bilabiata.
166. Lomaria aurea ascent from Deo nuddee alt. 1800 ft.
167. Osbeckie angustifolio. Frutex humilis vel 6 pedalis. Ascent from Deo nuddee. al. 1800 ft.
168. Millingtonia simplicifolia. Dewangiri in sylvis alt. 1500 ft.
169. Asplenii sp.—Frons carnosiuscula stipito atro. Ascent from Deo Pance. alt. 1400 ft.
170. Asplenii sp.—Cum præcedent in umbrosis.
171. Pteris sp.—Fronde fertilo ternatum pinnato 2-4 pedalis Cum. præcedenti.
172. Polypodii sp —Varietas alteræ sp. fronde ampla 172 a.
173. Frutex.—Elegans lœti viridis, stipib. ramentaceo et spinosiusculo cum præcedent.
174. Hoveniæ sp.—Arbor magna. In sylvis ascent from Deo panee alt 1500 ft.
175. Abroma augusta, Dewangiri et Deopanee secus alt 1200 ft.
176. Bæhmeria torrentia, secus torrentis per totam assamicam alt. vix ultra 2000 ft.
177. Polypodii sp.—Fronde 6 pedali, stipub. atrato, inermi. In sylvis alt 1500 ft.
178. Polypodii sp.—In ripis umbrosis sylvar alt 1600 ft.
179. Polypodii sp.—In rupibus sylvarum alt 1600 ft
180. Davallia sp.—Fronde ampla 5-6 pedalis.
181. Tacca lœvis.—Deo panee banks 1200 ft.
182. Desmodium vestitum.—Deo panee banks.
183. Polypodii sp.—Fronde 3 4 pedali submutant Deopanee banks.
184. Myrtacea —Arbor mediocris, near Deo panee in woods.
185 Tetranthera.—Deo Panee in woods.
186. Cephalanthus.—Scandens, folia Dipterocarpearum, cum præcedent.
187. Uncaria sp.—Frutex scandens. calycibus fusiformibus Dewangiri towards and near Deo panee.
188. Anonacea —Arbuscula.—Cum præcedent carpellis plurimis

pedicellatis torulosis, moniliformibus (monilis 1 spermis), luteis Cum præcedent.

189. Arbuscula.—Stilaginea Foliis alternis ex stipulatis fructibus fasciculatis in axillis breve pedicellatis basi calyce 5 fido petalosque totidem reliquis rotato, cinctis, oblongo ellipticis stylo apiculatis et stigmati 4 fido, ov. abortu unilocularibus drupaceis, interdum bilocularibus 1 spermis.

Albumen copiosum carnosum album. embryo viridis curvatis.

Verisimiliter Antidesmea vel Stilaginea. Iterum examiaandum.

190. Menispermea Icon. It. Bootan t 23.—Frutex seandens dioicus, fol reniformia vel reniformi-cordata subtus advenas pubescentia et glauca reticulationes minutissimæ. Flores mascula paniculato. Paniculis exillaribus (foliis lapsis) aggregatis raro solitariis. Flores mascula suberectis, floribus minutis, luteo viridibus. Perianth urceolato cupuliformi ore subintegro. Columni cylindracea apice peltata. Antheræ transversæ albæ, 4, columnam terminalis. Pollenem album. Clypeæ etc. affinis, ab omnibus Natsiatum excepto differt. Periant gamosepalo petalusque nullis. In sylvis prope Deo Panee alt. 1200 ft.

191. Euphorbiacea.—Frutex 10-12 pedalis fructibus globosis verrucosis ascent from Deo Panee alt. 1500 ft.*

192. Urtica.—Herba erecti carnosa 2-3 pedalis. Deo Panee.

193. Leptospartion grandiflorus.—Icon. It. Bootan t. 24. Pedicelli basi versus acticulat.

Cal. maximus carnosus astivatione exact valvatus, persistens, Cor perigyna petalis tot quot sepale et cum his alternantibus. Stam oo perigyne astivatione introflexa. Ovarium facillima sesedentia $\frac{2}{3}$ superum mediante toro carnosa purpurio calyci adnata 6-8 locularis, axi nulla loculis e maxima parte placenta, carnosa introeunto repletis.

Ovulis innumeris.

Capsula subsupera, basi concava et calyce cincta loculacidio multivalvis, placentis deciduis.

A curius genus certainly connecting Myrtaccæ with Lythrarieæ and forming with Soneratia a new sub order. It differs from Lagerstræmia in its fleshy semi adherent Calyx, sessile

* Private Journal, p. 206.

petals, composition of the fruit, the wingless seeds. and the subulate prolongation of the funicle.

Its habit is quito that of Soneratia with which genus it is more closely allied that to any other.

194. Cucurbitacea. Cissifolia.

Icon It. Bootan no. 25. Planta scandens cirrhifera foliis Cissi, pedatim quinatis, fructibus paniculat globosis, apicem versus annulatis, Apice tristylosis pisiformibus baccatis nigris, loculi 3, Semen 1, curvis loculo. Dewangiri alt. 1500 ft.

This is the female of the genus allied to my Actinostemma with male column, like that of Cissampelos. Towards Dairang *Notul. Nov.* 1-24-37.

195. Composita.—Flosculis luteis. Rocks Towards Dairang.

196. Eriophorum.—Arcto adhærens at Dewangiri.

197. Ophiorhiza.—In humidis rupestibus.

198. Adianti sp.—Rocks shady.

199. In sylvis.

200. Rubi sp.—Petalis albis ad ripas torrentis.

201. Polygonum glomeruliferum.—Rocks Deo nuddee.

202. Æruæ sp.—Ditto.

203. Begoniæ sp.—Planta caulescens ramosa apice nutanti folia subtus carnoso sub viscosa sanguinea, floribus albis lœti roseo tinctis. Rock, Deo Nuddee.

204. Polygonum Rheoides.—Deo nudde alt 1600 ft.

205. Polypodii sp.—Fronde elegantissima ampla lœte viridis aspectu Pteridis.

Deo Nudee alt. 1600 ft.

206. Stemodiæ sp.—Planta herbacea ramosa laxa, foliis carnosiusculis sub viscosus floribus oppositis ex axillis bractearum foliacearum secundis, calyce foliaceo. Corolla maxima ringenta, strict personata lutea, odora Primulæ veræ, tubi deorsum curvato gracili, longo, lab, super erecta bilobum, lobis emarginat. infer trilobum ambitu cordatum patens, lobis etiam emarginatis palata simplix genitalia subexserta.

On a perpendicular rock with 203.

207. Composita.—Near the halting place.

208. Lonicera.—Scandens baccis atro cœruleis descent to halt.

209. Spiræa bella.—In Woods, flowers white 6500 to 5000 ft.

210. Leucas sp.—Descent to halt, alt. 6000 ft.
211, Thymoid.—Decumbens Cum præced ad viam.
212. Daphne sp.—Frutex florib albis adviatissimis towards halt 6000 ft.
213. Acanthacea.—Herba erecta ramosa floribus infundibulif sursum curvatis cœrulescent common on margins of woods towards halt vix infra 4000 ft.
214. Labiatæ.—Descent to halt advias verticilastris echinatis.
215. Grammitis.—Towards alt 6000 ft.
216. Buddlæa sp.—Woods alt 6200 to 6000 ft.
217. Mæsa sp.—Arbusculoid floribus albis descent to halt, 6000 ft.
218. Gaylussacia.—Epiphytica in arbor, floribus albis, angulis viri dibus, secundis cernuis alt 6500 to 6000 ft.
219. Hyperici sp.—On rocks, alt 6500 ft.
220. Andropogona.—Cum præcedent.
221. Myrsinea.—Arbuscula. In sylvis alt 6500. ft.
222. Schænanthus.—Cum no. 220.
223. ———— Arbuscula, fructibus rubris.
In sylvis alt. 6500 ft.
224. ———— Arbor mediocris, fructibus pendulis. In sylvis alt. eadem
225. Convallaria.—Fructibus pendulis rubris on rocks and banks, alt. eadem.
226. Hydrangeoid.—In sylvis alt 6500 ft.
227. Adamiæ sp.—Fruticos, fructibus lœte azureis, woods, at the same allitude.
228. Filice fronde elegant, ampliuscula, banks in woods alt. 6000 to 7000 ft.
229. In woods alt 4000 to 6000 ft.
230. Gnaphalii sp.—On banks alt 6000 to 6500 ft.
231. Potentilla rubioidis. In woods alt 65-5500 ft F. albi common.
232. Hemiphragma —Banks towards the halt, not previous to it.
233. Cerastioid.—Laxa scandens, in sylvis alt vix infra 6000 ft.
234. Rhododend arboreum —In sylvis alt 7000 ft.
235. Asplenii sp.—Caudice brevi fronde atro viridi alt. 6500 ft.
236. Violæ sp.—In ripis alt eadem.
237. Spiræacea.—Foliis decompositis alt 6500 to 5500 ft.
238. Lomariæ sp.—Common on shady banks, alt 7000 to 6000 ft.

239. Urticea.—Foliis rugosis. In umbrosis. alt. 6500 ft.
240. Querci sp —Arbor magna. In sylvis alt 6000 to 7000 ft.
241. Hyperici sp.—Rocks alt. 6000 ft.
242. Rhododendri sp. —Arbuscula mediocris alt 6000 to 7000 ft.
243. Euonymi sp.—Arbuscula in sylvis alt. eadem.
244. Lycopodii sp —Repens in sylvis, alt 6500 ft.
245. Smilax sp.—Ramosissima baccis globosis miniatis. In sylvis, alt vix infra 5000 ft.
246. Caricinea.—On rocks, very common alt 5000 to 6000 ft.
247. Adamiæ sp.—In sylvis in alt eadem.
248. Filice arborescens.—Frondib amplis stipitibus inermibus. In woods alt.
249. Caricinea.—Spicis pendulis, woods among rocks, alt 5000 ft.
250. Gleichenia major.—In woods vix infra 5000 ft.
251. Composita.—In woods alt eadem.
252. Davalliæ sp.—In woods alt 4000, to 6000 ft.
253. Orchidea.—In arborib alt 5500, to 6000 ft.
254. Polypodii sp —In arbor alt 5000, 6000 ft.
255. Gleirchenii—minor.—In sylvis alt 5000 ft. not previously met with.
256. Ophiopogon sp.—In sylvis alt 5000, 6000 ft.
257. Composita.—Capit secundis carneis. In Mossy banks, vix infra 4500. ft.
258. Torenia.—In rupis alt 4500 ft.
259. Spirea.—In sylvis alt 4500, to 6000 ft.
260. Pyrus indicus.—In sylvis alt, eadem occurs before the Pyrus malus.
261. Guttifera.—Arbor mediocris fructibus junioribus oblongis: stigmati orbeulari peltato. In sylvis alt 5000 ft.
262. Acanthacea.—In sylvis alt 6000 ft.
263. Mœsæ sp.—Frutex arbusculoid floribus albis alt 5000 ft. in woods.
264. Ardisiæ sp.—Towards alt 4000, 6000 ft.
265. Eugeniæ sp.—In sylvis alt 2500 ft.
266. Briedleiæ sp.—Arbuscula alt 3000 ft. in woods.
267. Andropogon.—Rockey Hills, alt 4000 ft.
268. Gnaphalii sp.—Cum præcedent.
269. Serisse sp.—Frutex ramosus Cum præcedent.

270. Indigoferæ sp.—In woods, alt 3500, to 4500 ft.
271. Briedleiæ.—Arbor mediocris. In woods alt 3000.
272. Conyzoid.—In grassy margins of woods, alt eadem usque ad 4500 ft.
273. Querci sp.—arbus parva. In woods alt 3500 ft.
274. Lobelia pyramidalis.—Floribus albis alt 4000 ft.
275. Gaultheriæ sp.—Arbuscula flores albi near halting place.
276. Gentianea.—Herba erecta ramosa 2-3 pedalis Grassy. margins of woods descent to Halt.
277. Viburni sp.—Arbuscula baccis cœrulescent Descent to Halt.
278. Quercus vel Castaneæ sp.—Arbuscula formosa 1st ascent from Rydang alt 2200 ft.
279. Linum trigynum.—Alt 2500 ft.
280. Pteris sp.—Towards halt shady banks.
281. Aspidium.—Rocks, with the primula alt 5500 ft.
282. Aspidi sp.—Rocky banks, alt 6000 ft.
283. Urticea.—Erecta 3 pedalis in umbrosis. Towards halt. 5500, ft.
284. Thalictrum sp —Caule simplici sub pedalum, foliis apice lobatis. Cliffs, alt 6500 ft.
285. Rhododendri sp.—Arbuscular vel arbor always scraggy covered with moss, capitulis terminalibus, floribus companulatis vivide coccineis genitalibus sub exsertis. Hills, alt 6000 ft. disappears towards 7000 ft.
286. Polypodii sp.—Repens in rocky banks alt 6500 ft.
287. Polypodii sp.—Repens cum præcedenti.
288. Thibaudia sp.—Epiphytica in arborib foliis distichis floribus solitariis pendulis coccineis venis transversis saturatius coloratis alt 5000,6500.
289. Polygalæ sp.—Frutex humilis, floribus cernuis purpureis, alt. 6000 ft.
300. Polypodii sp.—In arboribus alt 6000, to 7000 ft.
301. Swertiæ sp.—Herba erecta bipedalis ramosa towards descent on rocky places.
302. Aspidii sp.—Rocky places, alt 6500 ft. with umbelliferæ.
303. Macrocapnos —In shady banks, alt 5500, to 6500 ft. fructibus pendulis.
304. Aspidii sp.—On temples at halting place.

305. Otochilæ sp.—Shady rocky places and trees alt 6500 ft.
306. Celtis sp.—Arbor mediocris. In collibus towards Sasee, alt. 3800 ft.
307. Labiata.—In collibus graminosis inter Pinos alt 2000, to 3000 ft.
308. Acanthaceæ.—Herba 2 3 pedalis in collibus graminosis cum Pinos alt 3000 ft. descent to Chulleree nuddee.
309. Acacia sp.—Frutex erectus 10 pedalis. descent to Chulleree among Pines, alt 2300 ft.
310. Aspidi macrosorum:—Among Pines or grassy hills, alt. 2000, to 3000 ft.
311. Mœsæ sp.—Frutex 8-10 pedalis flores albi. Descent to Chulleree alt 2600 ft. in sylvis.
312. Compositæ.—Annua erecta 2 pedalis capitulis aureis. Grassy Hills among Pines, alt 2800 ft.
313. Composita.—Annua erecta 3-4 pedalis ramosa Cum præcedenta.
314. Artemisia minor.—Compræcedent inter gramine vix occurrit infra 2500 ft.
315. Cirsium.—Cum præcedent.
316. Pteris sp.—In collibus ascent from Chulleree and I believe this and the other nullah called Dimeree.
317. Uvariæ sp.—Same ascent among grasses and Pines 3000 ft.
318. Hedyotis.—Ereeta ramosa 2 pedalis same aseent in sylvis alt 4200 ft.
319. Menispermea.—Ascent to Sassee alt 2800 ft.
320. Bradleia?—Arbuscula same ascent alt 3500 ft.
321. Composita scandens.—In sylvis desceut to Chulleree alt. 3600 ft.
322. Quercus.—Arbor mediocris vel parva, with Pines descent to Chulleree nuddee, alt 2500 ft.
323. Rubiaceæ Pœderioidea.—Frutex arbusculoid, floribus in fundibulif regularibus cæruleis fere Plumbaginis zeylanica odor suavis. Descent to Chulleree with Rhododend, Oaks, and ascent to Sasee with Pines alt inter 25, 3000 ft.
324. Bœhmerioid.—Arbuscula spicis pendulis Cum præcedenti.
325. Schœnanthus.—Spiculis viridibus Cum præcedent odor citraceis.

326. Davalliæ sp.—In sylvis humilis descent to Chulleree alt. 4300 ft.

Frons ample 6-8 pedalis.

327. Valerianna sp.—Herbacce floribus albis purpureo tinctis foliis radicalibus reniformibus. In thick woods, Cum præcedent.

328. Cyrthandraceo.—Frutex humilis subsimplex Descent to Chulleree in thick damp woods alt 4200 ft.

329. Hyperici sp —Cum præcedent frutex 8 pedalis ramis laxis pendulis.

330. Cœnopteris sp.—In ripis umbrosis Cum præcedent.

331. Glycenoid volubilis.—Cum præcedentibus.

332. Polypodia?—Frons carnosa. Cum præcedent.

333. Asplenii.—Frons atro viridi, carnosuiscula. Com præcedentibus.

334. Grammitis decurrens.—Cum præcedent.

335. Lycopodii sp.—Cum præced. Planta luride viridis.

336. Ophiorhizoid.—Cum præcedentibus in ripis umbrobis, omnia Rubiacia sed stipulis nullis.

337. Aspidi sp.—Dry places, alt. 4100 ft. descent to Chulleree.

338. Aspidii sp.—Cum. 335 et etia cum. 337 inter saxam frons nutans.

339. Aspidii sp.—Cum præcedentibus in ripis umbrosis. No. 337 videtur proxim.

340. Urticea.—Frutex, 8 pedalis Cum præcendentibus fol. carnosiuscul.

341. Acanthacea—Herba basi suffruticosa robusta. Cum præcedentibus.

342. Aspidii.—Frons ampla ambitu deltoid 3 pedalis. Cum præcedent.

343. Saurauja ferruginea.—Cum pæcedentibus.

344. Arbutoideus —Frutex arbusculoid in spicis geniculat deflexis alabastris albis. Descent to Chulleree. alt. 4500 ft.

345. Quid.—Frutex terebinthino aromatic bractea? membranacea pulchre venosa fructu applicita. Cum præcedente.

346. Aspidium Pteris.—Flons atro viridis 3-4 pedalis. Cum præcedent 3445.

347. Amaranthacea.—In sylvis humidis descent to Chuleree alt. 4300 ft.

348. Buchanania.—Arbor magna, foliis coriaceis. Descent to Chulleree. Alt. 4500 ft. In sylvis humidis.
349. Crawfurdia speciosa.—Descent from Chulleree inter alt. 5500, et 4500 ft.
350. Alnus sp.—Arbor mediocris. Alt. 4800 descent to Chulleree.
351. Polypodii sp.—In umbrosis Cum No. 344.
352. Betulæ sp.—Arbor mediocris. Cortice *propria* ramis virgatis. longe pendulis. Cum No. 351 etc.
353. Andropogon.—In sylvis, descent to chulleree alt 5000 ft., on this is a Codonopsis.
354. Rubi sp.—Descent to Chulleree 4900 ft. Fl. albi.
355. Vitis sp —Cissi sect.—Foliis quinatis pedalis subcarnosis baccis, brunneo rubris descent to Chulleree, Oak woods alt 5500 ft.
356. Hedychii sp.—Cum no. 354.
357. Nerioides.—Frutex 6-8 pedalis erectus folliculis pendulis, Cum no 355, in Oak woods.
358. Labiata.—Cum præcedent.
359. Cardaminæ sp.—Banks of a spring descent on leaving Oak woods alt 5500 ft.
360. Urticea.—Herba carnosa tenera foliis obliquis lucidis 3 veniis Cum præcedent.
361. Urtica urentior.—Khegumpa? ruderalis.
362. Woodwardiæ. sp.—Khegumpa in woods.
363. Asplenii sp.—Just below Khegumpa, in woods.
364. Euryæ sp.—Arbor parviuscula cum 363.
365. Composita.—Open Oak woods and among Rhododendra about Khegumpa vix infra 5000 ft. Capitulis deflexis florib carneis.
366. Panax sp.—Frutex robustus spinos sub simplex, foliis palmat divisis, panicula ampla terminali floribus lutescent: woods near Khegumpa.
367. Rubia cordifolia.—Khegumpa yields munjista. (Madder.)
368. Valeriana.—Hardwickia just below Khegumpa, and about that place.
369. Plectranthus Roylei.—Khegumpa, vix infra 4000 ft.
370. Composita.—Khegumpa herba erecta robusta ramosa.
371. Hyperici sp.—Khegumpa, banks.

372. Panax sp.—Arbor mediocris foliis digitata pinnatis foliolis lucidis carnosiusculis, panicula terminali brevi ramis simplicibus floribus viridibus Khegumpa in woods.
373. Geranii sp.—Khegumpa in ripis apricis floribus minutis carneis.
374. Salix.—Ramis longe pendulis Khegumpa.
375. Tetranthera.—Arbor parva Khegumpe foliis coriaceis.
376. Labiati.—Khegumpa with Gnaphalium aureum foliis ligulatis of Burrampootur.
377. Phlomoides.—Herba 1-2 pedalis erecti ramosiuscule, floribus albis calycis dentibus in uncis subulatis longis product. Khegumpa et alibi. Margins of woods et in apricis vix infra 5000ft.
378. Rumex.—Erecta 2-3 pedalis, foliis radicalibus indivisis Khegumpa.
379. Pogonatheri sp.—Sheltered Banks Khegumpa.
380. Ruta albi flora.—In thickets Khegumpa.
381. Berberis asiatica.—Frutex humilis ramosus alabastris deflexo pendulis Khegumpa.
382. Umbellifera.—Just below Khegumpa with Swertia.
383. Gentianæ sp Icon It. Boot t. 39..—Planta 3 uncialis vix unguam spithamœa, foliis ad apice caulis aggregatis sub, carnosis floribus aggregatis pallide cœruleis 10 partitis laciniis alternis minoribus. Oak woods half buried among the fallen leaves alt 6000 ft.
384. Hedychii sp.—In woods alt. 6500 ft.
385. Gramen.—On precipices towards Khegumpa alt 6500 ft. Cæspitos arcti adhœr.
386. Scirpi sp.—Cum præcedent.
387. Gomposita.—Cum præcedent.
388. Lobeliæ sp.—In sylvis towards Khegumpa Baccis purp cœrulea alt. 6500 ft.
389. Habenaria.—Towards Khegumpa dry places alt 4000 ft. Cum Serissoid Fl. alba.
390. Composite.—Cum 386 radio albo.
391. Lycopodii sp.—Towards Khygumpa, in woods alt. 6500 ft.
392. Urtica on rocks Cum 386 and elsewhere alt. 6000,to 6500 ft.
393. Repens in arboribus arct. Foliis oppositis carnosiusculis deutziis affinis towards Khegumpa alt 6500 ft.

394. Cirrhopetalæ sp.—On Rhododendrons, alt 6000 ft. near Khejumpa.
395. Aspidii sp.—On rocks to Khegumpa alt 6000 ft.
396. Primulæ sp. Icon It. Bootan 41.—Planta minima prvoeniem inter muscos in rivos clinorum, fol. depressa canescentia. Corolla carnea majuscula, lobis obcordatis, stigmata capitato subexserto, on bluff rocks to Khegumpa, alt 6500 ft.
397. Fici sp.—Arbor mediocris foliis basi obliqua cordatis asperis, pedunculis radiciformibus, longissimis pendulis, in humo repentibus fructibus binatis, pedicellatis ferrugineis sub globosis, umbilico apertiusculo, on hills between 2000, and 4500 ft. high.
398. Pini sp. Icon. It. Boot. t. 34.—Arbuscula elegantissima, fol. quinatis planiusculis longissimis pendulis subtus argenteo glaucis. cano brunneo oblongo pendulo squamis latis, obovato deltoideis.

Khegumpa cultivatid one solitary specimen.

399. Hedyotis. linearis.—Descent to chulleree alt. 2300 ft. inter muscos·
400. Hedyotis sp.—In pagodas Khegumpa.
401. Hedyotis sp.—In pagodus Sasee.
402. Malva.—Herbacea ramis prostratis floribus minutis albis. Sasee in ruderatis.
403. Thlaspi Bursa Pastoris.—In agris, Sasee.
404. Tetranthera sp.—Arbor magna. Sasee in woods Pedunculis trifloris.
405. Aspidii.—Fronde pallida in grassy hills. Sasee.
406. Hedychii sp.—In locis humidis. Sasee.
407. Compositæ.—Cum præcedent.
408. Ligustrum sp ?—Arbuscula parva, Sasee in thickets.
409. Thibaudia buxifolia.—7000 ft. in arbor.
410. Solanum 10 dentata descent to Geeree nuddee in sylvis humidis alt. 2600 ft.
411. Lycopod. cernium.—In umbrosis collinum secus Geeree nuddea alt 3500 ft.
412. Polypodii sp.—In sylvis umbrosis in ripis secus Geeree nuddee alt 3400 ft.
413. Lycopodii sp.—Cum pracedent.
414. Polypodii sp.—Repens inter rupes collinum aridorum, ascent to Bailfa alt 4000 ft.

415. Polypodii sp.—In rupibus Cum præcedent.
416. Choripetalæ sp.—Fol. sub repandis. Scandens. In sylvis prope Geeree nuddee alt 3400 ft.
417. Bambusa andropogonifolia. Foliis teneris culmo gracili secus Geeree nuddee in collibus sylvosis alt 3500.
418. Lysimacheæ sp.—Cum præcedent in rupibus.
419. Composita,—In collibus towards Bailfa alt 3800.
420. Gnaphalium aureonitens.—In agris. Sasec.
421. Polypodii sp.—In rupibus collinum versis Bailfa alt. 5000 ft.
422. Incerta.—Fol.—subquadratis apice dentato lobatis. In sylvis demissioribus humidis 3, to 4000 ft.
423. Myrsinea.—Arbuscula habitu Hyppocrateaceæ floribus subumbellatis. Stigmata fimbriata divisio fol. sub coriacea. Prope Geeree nuddee in sylvis humidis alt 3400 ft.
424. Stemodii.—Suffruticosa laxa subscandens. Ramis elongati, sub pendulis racemis erectis, floribus secundis ringentibus, lab superior porrecto subfornicato, inferiori reflexi palato prominiato. Flores lutei punctis sanguineo bunncis.
Descent to Geeree nuddee in sylvis alt 3700 ft.
425. Peliosanthes sp.—Flores purpureo livida near Geeree nuddee in sylvis umbrosis alt 3200 ft.
426. Corisanthera vestita. Baccis albis tota hispidissima. In umbrosis humidis Geeree nuddee alt 3300 ft.
427. Incerta. Icon It. 1 Boot. t 29.—An Santalacea. Frutex humilis ramosus 2-3 pedalis, fructibus sub deflexis globosis rubes centibus inferis. In collibus graminosis saxosis. inter Pina et Quercus alt 3800, to 5000ft. Towards Bailfe. Fol. marginat aspectu Australasica Flores minute terni in pedicellis lutescentis, demum fusci, œstavat valvat. Stam 0
428. Coriaria nepalensis. Frutex ramosus ramis elongatis laxius culis, Antheris sanguineis uti stigmata aspectus quodammodo Xanthoxyli Geeree nuddee, secus alt. 3400 et usque ad 6000 ft. Towards Bailfa.
429. Thibaudiæ sp. Icon It. Boot. t 27.—Epiphytica frutex proxim. Habitu Loranthifloræ et variagatæ. Pedicelli clavata sanguineo rubri uti calyx. Cor. $\frac{2}{3}$ unciatis urceolati, angulis inconspicuis basi coloris calyce fauce laminaque viridi. Laciniis ovatibus erecte patentibus Stigmat. capitato subexserto.

In collibus towards Bailfa et ad Geeree nuddee alt 3400 to 4000 ft Folia coriacea.

430. Gaultheriæ sp Icon. It. Boot t. 28.—Frutex erectus ramosus foliis deflexis coriaceis denticulatis Paniculis amplis terminalibus floribus secundis pendulis vel cernium albis corollis areolatis calyce albide dentibus apice rubris.

Bailfa summit of ridge alt 7000 ft.

431. Lactucoideum.—Planta glauca carnosa anthodio hispidio flosculis lutescentibus, fol subtus glauca. Bailfa 7000 ft.

432. Lobeliæ sp.—In walls, Sasee. Cum stemodio ruderat.

433. Crotalariæ sp.—Ascent to Bailfa on rocky banks alt 5500 ft.

434. Panici sp.—Cult. Below Sasee on descent to Geeree nuddee alt 3800 ft.

Thibaudia myrtifolia. Icon. It. Boot. t. 26 Corollis hispidis angulis acutis inter angulos oblique venosis lamina patens genitalibus exsertis.

435. Hedera sp.—In sylvis umbrosis. Bailfa.

436. Aspidii sp.—Cum præcedent..

437. Asplenii sp.—Cum præcedent.

438. Asplenii sp.—Cum præcedent

438*a*. Polipodii sp.—Repens arboribus ibidem.

439. Inserti.—Cum præcedentibus cernius arbuscula.

440. Aspidii.—Cum præcedentibus.

441. Commelinea.—Herb humilis. Baccis globosis Aurantiaceis Cum præcedent.

442. Composita volkamerifolia Cum præcedenti. Herba bipedalis.

443. Dendrobii sp.—In Rhododendri. Bailfa flores sicci fusci.

444. Loranthi sp.—In Rhododendrum Planta ramosissima foliis densis obovati rotundis.

445. Gaylussacia serrata in sylvis Cum 482 etc.

446. Thibaudiæ sp.—Epiphytica in arboribus fol carnosis caudato acuminatis racemis fructuis axillaribus, fructibus globosis atris acidissimis. Cum præcedentibus.

447. Incerta.—Frutex foliis oppositis cano furfuracea fructibus solitariis axillis bilocular luculicidis. An Oleina Cum præcedentibus.

448. Incerti.—An Myrsinia arbuscula fol lucidis Cum præcedentibus.

449. Querci sp.—Arbor mediocris foliis valde coriaceis intorveniis elevatis glandibus dense aggregatis e cupulis minuto squamatis ½ exsertis.

In sylvis umbrosis Cum præcedent on the opposit exposed side only. Q. lanata.

450. Clematis sp.—Scandens. fol. trifoliatis Cymis dichotomis in paniculam dispositis floribus albis.

Cum præcedentibus.

451. Polypodii sp.—Pend ex arboribus Cum præcedentibus.

452. Nephrodii sp.—In sylvis iisdem.

453. Caricinea.—Cum præceded spiculis pendulis vel cernuis.

454. Cymbidium viridiflorum.—Terrest vel epiphhytic, fol. linearbus canaliculatis. Plicatis secundis scapo his brevior floribus amplis odoris. Perianth viride. Labell fusco lutei sanguineo macalat. Cum præcedent, in sylvis umbrosis.

455. Carduacea.—Bailfa exposed ridge.

456. Gaultheria.—Arborea Ibidem.

457. Polypodi sp.—Repens in arbor fronde carnosa glaucescenti.

458. Crucifera, Icon. It. Boot. t. 3.—Herba glaucescens carnosa floribus albis. In agris Bailfa.

459. Lamii sp. Icon. It. Boot. t. 30.—Herba minima. Floribus rubescent· Cum præcedent. Flores per pulchra vivide, *lake coloured*, hirsuta, tubi elongate angusto fauce subito inflata lab superior galeiforma fornicato inferiore trilobo, lobis lateralibus obsolitis, intermedio obcordato bilobo genital inclusa in galea Anthræ hispidæ per paria adhærentis atratæ. polleni aurantiaco.

460. Fumariæ sp.—Glauca pusilla flores rubescentis, apicibus purpurea sanguinea Cum præcedenti.

461. Querci sp.—Arbor mediocris formosa, loaded with lichens spicis flore pendulis, fol. juniora uti Ilecis. Ascent from Bailfa. alt. 8000 ft. vix descendit infra 7000 ft.

462. Smilax sp.—Subscandens. alt. 8000 ad margines sylvæ.

463. Smilax gaultherifol.—In sylvis ibidem fol. lucid atro viridi coriacea humilis.

464. Frutex vel arbuscula contusa aromatica laurinafoliis carnoso coriaceis, fructibus atrus paniculis terminalibus corymbosi. Cum præcedentibus.

465. Aspidii sp.—In sylvis Cum præcedentibus frons atroviridis coriacea.

466. Gaultherioid.—Frutex ramis laxis, admargines sylvæ. Cum præced alt. 8000 ft. inter 7000, et 8000 ft. The most elevational of all.

467. Tetrantheræ.—Arbuscula foliis subtus glaci albis cumpræced et intra 7000, et 8000 ft.

468. Frutex arbusculoideus habitu Euryæ fructibus nigris.
Gemmis imbricatis.
Cum præcedent.

469. Rubus cordifoliis.—Scandens foliis subtus niveis. Cum præcedent alt 8000 ft. in shady woods.

470. Crawfurdia fasciculati.—Cum præcedentibus. Shady side of ridge.

471. Loranthi sp.—Cum præcedent.

472. Sphæropteris.—Cum præcedent in ripis in humidis fronde declinal.

473. Aspidii sp.—Cumpræcedent in terra.

474. Polypodii sp.—In arboribus frons pendula.

475. Pteris sp.—Frons tenera pallida viridis in ripis humidis. Cum præc. alt. 8000 ft.

476. Aspidii sp.—Caudici brevissimo subo frond coriaceis spinulosis cum præcedent.

480. Elœagni sp.—Arbuscula foliis lanceolatis repandis floribus pendulis in sylvis supra Bailfa 7900 ft. Cum Rhodod formos.

481. Asplenium osmundioides.—Fronde ampla Osmandi. In humidis, alt 7000, to 7900 ft.

482. Hyperici sp.—Cumpræcedent.

483. Laurinea.—Arbor mediocris in sylvis cum 480 et Rhodod. formosa.

484. Vaccinioid.—Ridge above Bailfa in open exposed places alt. 7500, to 8000ft. frutex stunted ramosus baccis cyaneis.

485. Vaccinioid an idem.—In sylvis sheltered ravinarum, versus Roondong, alt. 7500 ft. frutex elatior foliis angustioribus.

486. Zanthoxyli sp.—In ripis cumpræcedent 482 et cum Berb. asiatica.

487. Panax rhodendrifol.—Arbuscula, foliis coriaceis 7 digitatis integris fructibus atris cœruleis. Paniculis terminalibus com-

positis. In top of ridge, above Bailfa sp. distinctiss alt 8800, to 8300 ft. and in woody ravines 7500 ft.

488. Ilex sp.—Arbuscula baccis oblongis coccineis foliis plantæ senioris sub inermibus, junioris spinosis.

In sylvis top of ridge alt 8000 ft. descent to Roongdong alt 7000, to 6500 ft.

Bailfa in shady woods.

489. Magnoliacea.—Arbor mediocris formosa. Descent to Roondong in sylvis alt 7000 ft.

490. Querci sp.—Descent to Roondong. Commences where Quercus ilecifolius terminates alt. 6500 ft.

491. Mœsa salicifolia.—Frutex ramis laxis Roondong ad aquas.

492. Cnicus.—Capitul purpurio rubus. Bailfa in ruderatis.

493. Scabiosæ sp.—In ridge above Bailfa. On banks alt 7800-to 8000 ft.

494, Andropogonea.—On exposed face of ridge above Bailfa alt 8000 ft.

495. Urticee.—In sylvis humidis top of ridge above Bailfa alt. 8000 ft.

496. Tetranthera sp —Top of ridge ibidem 8300ft. foliis lapsis arbuscula parva.

497. Allii sp.—On rocks exposed face of ridge above Bailfa alt 8000 ft.

498. Filix minim pectinata an Lyndsæa. In Q. ilicefolia, above Bailfa alt 8100 ft.

499. Elœagni sp.—Frutex armatus ramis spinifor; foliis ovatis parvis Roondong prope aquas.

500. Flemingiæ sp.—Habitus speciei alteræ sed plant humilior magis cana flores albi.

Descent to nuddee Dimree alt 5000, to 4500 ft.

501. Davalliæ.—Descent to Dimree nuddee alt 5400.

502. Luculiæ sp. (Rubiacea)—Descent te Dimree nuddee alt. 6400 ft. Frutex humils.

503. Rotleræ sp —Arbuscula fructibus rubris farinaceis, ad Dimree nuddee et versus Benka alt 4500 ft.

504. Volkameriæ sp.—Frutex erectus ramis elongatis laxiusculis fol. sub conduplicata paniculis axillaribus racemosis abbreviatis floribus amplis albidis lobo medio lobi inferioris cucullato cœruleo, genitalibus deorsum curvatis odor suavis.

Above Dimree nuddee towards Benka alt. 4500.

505. Linariæ sp —Annua laxa ramosissima. Fol. lanceolata acuminata basi cordata glaucescentia, pedicellis axillaribus gracilibus, folia excedent, sepalis angustissimis sub setaceis florib luteis, Cor. lab superior erecto bilobo fuscescent inferiora trilobo, lobo medio minimo. Palata bi gibboso sanguineo punctulat, calcare subulato brevi, sepalis ½ brevioribus capsula pisiforma loculo utrinque lacero aperient.

In cliffs near Benka alt. 4500 ft.

506. Leguminosa.—Desmodioid. Frutex mediocris, floribus racemosis elegantissimis læti rosaceis unguibus albidis. Benka prope alt 4500 ft.

507. Cirsii sp.—On rocks towards alt. 4500 ft.

508. Grisleæ sp.—Lythraria, Floribus miniatis. Frutex ramis laxis. Above Dimree nuddee on grassy hills very common alt. 4500 ft.

509. Fici sp.—Arbor mediocris trunco albo fere lœvi, corona irregularis densa. Ramulis angulatis. Gemmis subulatis ½ uncialibus petiolis sub complanatis, fol. coriaceis lanceolato oblongis, obtuse cuspidato acuminatis, repandis, venatio ordinarii. Anthodiis pedunculatis, binatis globosis viridibus, umbilico clauso. Dimree or Bamree nuddee alt. 4500 ft.

510. Rhus sp.—Frutex vel arbuscula corona densa formosa foliis trifoliatis panicula fructus nutant pendulis.

Descent to Dimree nuddee alt. 5400 ft. and towards Benka alt 4500 ft.

511. Jasmini sp.—Scandens intricate, foliis parvus impari-pinnatis, fructibus baccatis binatis atris lucidis. Benka prope, among rocks.

512. Umbellifera.—On rocks towards Benka alt. 4500.

513. Loranthi sp.—Scurrula, alabastris tomento albis floribus extus albis per tota longitudine fissis intus fuscus, stylo atrato near Dimree nuddee alt 4600 ft. fol carnosa.

514. Loranthus.—An. L. Scurrula, near Dimree nuddee alt. 4500 ft.

515. Adoxoidea, Icon. ft. Boot. t. 32.—Planta luridescens in aquosis proviniens decumbens, fol carnosa longe petiolat oblonga, vel cordato oblonga vel etiam reniformia. Flores minutiuscul, axillares, solitariis, virides inconspicua, 4 fida, Stam. 8 stig-

mat 2 In aquosis, near top of ridge above Bailfa alt. 8000 ft. triflores dichotoma, flores axillares solitarii.

516. Acanthacea.—Suffruticos, corolla tubo deorsum curvato, limbo subregularis. Stylo acuto. Stigmat exserto. Towards Benka alt. 4500 ft. in sylvis.

517. Arbor mediocris.—Foliis alternis exstipulatis pari-pinnatis gemmis nudis. An Meliacea. Descent to Dimree alt. 50000 ft. On this lac is produced.

518. Mespilus microphyllus.—In woods of ravines towards Roongdong alt 8000 ft. virida coccinia.

Verbenacea (Rubiacea) plumbaginiflora, flores exquisit odor lœti azurea in capitulis paniculatum dispositis. Tubus elongatus. Cor infundib. hypocrateriform omnino regularis, laciniis oblongis, quasi marginatis, œstivatione valvat introflexis, fere plicatis. Stam fauci inserti. anthera sessilia, sub exserta introrso, longitud dehiscent, bilocularis, stylus filiformis, stigmata 5 papulosa ! inclusa odor contusæ plantæ teterrimæ Pæderioideus.

519. Acorus calamus Benka, alt. 3182 ft.

520. Buddlea neemda. Benka.

521. Prenanthes sp.—In agris, Benka.

522. Lactucoid.—Herba $1\frac{1}{2}$ pedalis foliis subtus glaucis, anth. atro tincto flosculis luteis Benka in collibus.

523. Violæ sp.—Stoloniferi, fol. cordatis, exaete crenatis floribus solitariis axillaribus, majusculis pallida cærulea vix odorat in unguibus calcareque albis, Benka.

524. Aspidioid. Benka.

525. Salix lanata.—Arbuscula corona rotunda ramis pendulsis spicis masculis lanato seriecis, subcylindraceis, erecto patentibus, (quoad ramos) foliis subtus lana alba mollissimis. Benka in humidis.

526. Asparagi sp.—Aculeatus, Benka.

527. Apocynea.—Volubilis, Benka. fol. divaricatissima.

528. Fici sp.—Arbuscula vel arbor parva corona rotunda ramulis crassius. Gemmis subulatis decoloratis semuncialibus. Petiolis bi tri uncialibus teretibus subsulcatis utrinque incrassatis. Fol. cordato vel cordato-elliptica, apice rotundata supra glabra subtus velutina mollia coriaciuscula, basi trivenia venatio

cæterum ordinarium, venis tertiariis plerumque transversis, fructibus e ramulis, vel præcipua e ramis nutanti cernius, aggregatis, binatis ! turbinatis pedunculatis stipelatis pedunculo basi bracteato umbilico depresso clauso extus velutinis, pedunculis perennantibus versus Benka secus. Bamree nuddee alt. 3200 ft.

529. Abies Brunoniana, arbor magna solitaria taxiformis, trunco demissa ramoso. Ramis longis ramulis pendulis foliis distichis patentissimis, sub falcatis linearibus, subtus glaucis, gemmis masculis axillarib pisiformibus.

Above the pagoda above Bailfa alt 8300 ft.

— Cupressus pendula, vide num 27 arbor magna formossima, trunco lœvi. Rami et præsertim ramuli penduli, apices versus tantum foliosi, foliis arct imbricatis squamiformibus quadrifariis ob approximatione ramulis ultimis obtusis apice cupuliformibus, obsolete 4 gonis.

Strobulis sub globosis sub sessilibus in partibus ramulorum denudatis, squamis basilaribus subreniformibus, apicalibus quadratis, reliquis lato sub pentagonis seminibus castaneis oblongis ambitu irregularibus vix alatis.

Prope pagodam supra Roongdong alt. 6400 ft. It is a sacred tree.

530. Vitex negundo.—Tassyassy, Benka, alt. 2500, to 3100 ft. Monass river 1800 ft.

531. Pteris sp.—Nulka, alt 2800 ft.

532. Desmodii sp.—Nulka alt. 28000 ft. in collibus graminosis.

533. Desmodii sp.—Frutex arbusculoideus, foliis parvis floribus numerosissimis, in racemis compositis lœti purpureis. Hills about Nulka alt. 2100 ft.

534. Buddleæ sp.—Arbuscula, foliis fere Salviæ, paniculis thyrsoideis nutantibus floribus parvis albis, tubo intus aureo, odora mellis forte, towards Nulka alt. 2100 ft.

535. Ceanothus.—Planta scandens foliis Kurrimiæ, floribus densa agregatis in paniculis cymosis unilateralibus flores minuto luteo virides, Monass river Banks alt. 1800 ft.

536. Leguminosa.—Arbuscula leguminibus foliaceis pendulis Monass river alt. 1800 ft.

537. Indigofera sp.—Frutex 4-6 pedalis floribus elegantibus lœti

roseacea vexillo roseoque venoso Barren hills between Tassgong and Nulka alt. 1800, to 2100 ft.

538. Fici sp.—Arbor parva trunco sculpto, (supports none) corona formosa, densa, ramulis gracilibus subulatis, brunnescentibus. Petiolis complanatis supra sulcatis, Fol. obovatis, vel ovalis, vel ovato oblongo, breviter cuspidato, acuminatis, lœvissimis lucidis, vena intromarginata conspicua basii sutrivenib. Anthodiis brevi stipitatis, globosis depressis, basi laxa tri bracteatis, bracteis deciduis scariosis umbilico clausis, vel binis in axillis foliorum, abortis unis, vel in ramis nudis, quaternatis per paria. Benka in religiosis, inflorescentia ramorum percurrens ut in aliis ramulorum binata, bractea cudunt ut in F. elastica.

539. Cirsium decurrens.—Khumna Goomkaura, in Rice fields alt. 2500 ft. viscosis graveolens floribus purpureis.

540. Composita.—Cum præcedent capitulis albidis.

541. Rubiacea.—Frutex ramosus. Banks of Kollong alt 2500 ft. floribus albis odoratis.

542. Composita.—Flosculis luteis Ghoomkhura borders of Rice fields cum 540, to 539.

543. Lycopodii sp —On rocks Goomkhura.

544. Fici sp.—Fruticose. Ramis angulatis stipulis subulatis rubro tinctis Petioleis complanatis supra sulcato canaliculat foliis lanceolat, oblongis acuminatis concavis coriaceis glaberrimis, vene intro marginata conspicua reticulatione inferne minima, Monass river in sylvis alt. 2200 ft.

545. Pterospermi sp.—Arbor parva fructibus 10 valvibus valvis facillime labentibus, seminibus alatis near Bhamree nuddee alt 4300 ft. et secus Monass River in collibus alt 2000, to 2500 ft.

546. Vandæ sp. Icon It. Boot. t. 37.—Caulescens fol. arcti distichis foliis strap shaped medium versus semitortis, apice valde obliquis, sub tridentatis, coriaceis, racemis axillaribus vere per vaginam rumpent, paucifloris, folia excedentibus, angulatis, ovariis pedicellis que albis, uto flos externe. Sepalis petalisque obovatis repandis vel undulatis; petalis sepaloque postice subœqual inferior. duplo latior., intus yellowish brown, livido obscure tessellat. Labell trilobum lobis lateral cum columna sub connatis secus latus, superius albis lilacino

punetulatis apice aureis medio lingueforme emarginato, porrecto lilacino basi minute bicalloso. Calcar breve conicum obtusm album.

Columna teres alba. Antheri terminalis planiuscul alba utrinque maculo brunneo. Pollinia 2 sub globosa postice fissa, caudicula lata, glandula triangular.

Monass river banks of on trees alt 2300 ft. capsula maxima fere spithamœi clavata 6 alata.

547. Saccolabium—Epiyhtica in arboribus secus ripus fluminis Monass.

Caulescens foliis distinctis strap shaped, coriaceis apice oblique bifidis, patent erectiusculis Radicibus longus pervaginis erumpent, uto Paniculæ amplæ quæ ideo oppositifoliæ folia excedentis, flores postico subsecunde basi minute brac, teata. Perianth partis spathulatæ, lutescentis fusco pictæ, petalis paulo minoribus, sepaloque antico majora. Calcar elongatum rectum album. Labellum album maculis roseis, rugosum lingui forma hinc ad basi linguæ utrinqe processum concolorem dentiformi exserens, calcaris fauce pilis clausa Columnum nana antice fuscescens, clinandrio utrinque dentato. Pollinia bina sub globosa, postica fissiuscula, caudicula tota longaque glandula oblonga.

548. Viburna sp.—Frutex erectus ramosus baccis rubris foliis ovatis parvis near Phoollong in sylvis alt. 6300 ft.

649. Desmodii sp.—Floribus lœti lilacinis alabastris cœruleo, purpureis, calycibus fuscescent near Phoollong alt. 6300 ft.

550. Nephrodii sp.—Under rocks in oak woods, near Phoollong alt 6020 ft.

551. Nephrodii sp.—In oak woods,

Towards Pholloong alt eadem.

552. Myrsinea.—Arbuscula parva, fol. carnoso coriaceis floribus rubris.

Cum præcedentibus.

553. Jasmini sp.—Scandens veniis subtus purpurascens. Near Phoollong in woods alt 6000.

554. Rubus molucanus?—In woods Cum præcedent.

555. Primulæ sp.—Planta per pulchra pedalis vel bipedalis, foliis exterioribus patentibus numi adpressis interior erectis

pallida viridibus teneris scapo folia excedent apice farinaceo. Umbella globosa densiflora calycibus farinaceo albis, tubo præsertim intus aurantiaceo, lamina lilacinea fauce aurantiaceo, odor primulæ vulgaris. In humidis turfosis versus Phiollong, alt 6000 fi.

556. Sempervivi sp.—Radicem repens, foliis in globum aggregatis obovatis breviter cuspidatis carnosis rubro tinctis floribus in panicum corymbiflora lutescentibus post anthesin tantum visi.
Phoollong on rocks, alt. 6000 ft.

557. Cerastium canum.—Herba prostrata cana ramosa. In agris et advias Phoollong.

558. Ervi sp.—Procumbens, flores albi legumen pendulis, Phullong, in agris.

559. Anchusoidea.—Planta prostrata rosacea, patenti strigosa, floribus pallida cœruleis minutis.
In agris phullong.

560. Chimaphilæ sp.—In sylvis Quercus et Rhodod. phullong alt. 6800 ft. inter nivem. Petiolis sanguineo tinctis capsulis pendulis.

561. Querci sp.—Phullung woods arbor mediocris.

562. Fici sp.—Arbuscula ramulis fistulosis foliis subtus pubescentibus supra glabris lucidis, chartaceis. Phullong wood.

563. Hedyotis.—Phullung oak wood.

564. Asplenii sp.—On rocks towards Tassyassy.

565. Gaultherii nummularifol. near Tassyasy on wet banks fructibus secundis cernuis atro cœruleis.

566. Polpodii sp.—Creeping on rocks towards Tassyassy fronde carnosa.

567. Querci sp.—Arbor mediocris corona densa. Phullung wood in *ravines*.

568. Myrsinea.—Arbuscula foliis spinulosa dentatis floribus minutis, baccis fusiformibus sanguineo brunneis towards Tassyassy.

569, Polypodii sp.—On rocks towards Tassyassy.

570. Polypodii sp.—On rocks towards Tassyassy.

571. Buddlea sp —Frutex 6 8 pedalis foliis subtus niveis. racemis axillaribus vel terminalibus et paniculatis nutantibus floribus albis inodoris.
Towards Tassyassy among Pines. proping Bud. neemda.

572. Polypodii sp.—Repens in rupibus fronde coriaceo apicenutant.

573. Davalliæ sp.—Sub rupes umbrosis towards Tassyassy.

574. Lycopodii sp.—Pendula Querco inter Pineta versus Tassyassy.

574*a*. Rhodod. arboreum.—Floribus rosaceo coccineis non vivida coloratis, foliis subtus argenteis.

575. Dicerma sp.—Fruticosa humilis, towards Tassyassy in Pine woods.

576. Lycopodii sp.—On rocks towards Tassyassy.

577. Campanulæ sp.—Cum præcedent flores verisimiliter cærulescent, fol. canis.

578. Campanula.—Foliis linearibus basi fructicosa humilis Phullung in oak wood.

579. Anthistinæ sp.—In pine woods towards Tassyassy.

580. Ajugæ sp.—Planta pusilla procumbens floribus pallida cœruleis tubo albo in agris phullong.

581. Sedum.—Rupestre pedalis foliis inferioribus obovatis acutis carnosiss. pallida glaucescent. Icon. It Bootan t. 42, viridibus, rubro reticulatis in globum sub conniventibus caule pallescent, foliis lincari oblongis acutis concavis medium supra marcescent summis floralibus rubris, lincari canaliculato corymbo terminat. sepalis viridibus petalis canaliculato concava lutescent rubro punctat genitatibus inclusis. In rupibus in umbrosis Phullung.

582. Primulæ sp. Icon. fl. Bootan t. 43.—Acaulis, foliis exterioribus rosaceis, patentibus, saturate viridibus, costa venisque secondariis albis, interioribus luteo viridib. farina alba. sparsis erectis omnibus spathulato obovatis repandis argute et inœqualiter dentatis. Pedicellis 2 uncialibus, pallidis. Calyce glauco farinaceo. Cor. tubo cyliudraceo, farinaceo ex albo lutescent, fauce aurea. Lamina 4 partito laciniis subobcordatis argute dentatis et inæqualiter extus carneis, intus pulcherrima rosaceis aspectu velutino celluloso, genitalibus inclusis.

In ripis umbrosis secus Koollong Tassyassy Feby. 12-38.

583. Elœagnus sp.—Arbuscula ramis laxis sœpe in spinas abeuntibus. Perianthi cernuis extus fegrruineis.

Koollong banks Tassyassy.

584. Fici sp.—Repens in arboribus Koollong banks Tassyassy, fol.

lanceolato accuminatis basi inœqaliter cordatis venis secondariis conspicua nexis.

585. Loranthi sp.—Alabastris extus ferrugineis tubis subminiatis extus præcipue basi laciniis intus lutescent, profundis aqualibus genitalibus nigris Koollung banks.

586. Myrsinea.—Arbuscula formosa foliis coriaceis Koollong banks.

587. Cerastium.—Procumbens flores albi. Koollong banks.

588. Potentillæ sp.—Acaulis foliis radicalibus apice trifoliatis floribus luteis. Moist banks Koollong Tassyassy.

589. Pomacea.—Frutex vel arbuscula ramis vel di spinosis Scraggy straggling. Foliis spathulatis oblongis coriaceis.
Along Koollong banks Common.

590. Thibaudiacea Icon lt. Boot. t. 46.—Frutex 8 pedalis ramulis compressis foliis coriaceis venatio supra distinctissima subtus glauco albis, fructibus racemosis, cernius globosus. Cerasi nigri magnitudina et forma, colore cœsuis, pedicellos clavato: apice concolor dentibus calycinus depressis parvis coronat. acidis Koollong banks Tassyassy.

591. Festucoides.—In oryzetis secus Koollong Tassyassy copiosa spiculis viridibus.

592. Fragariæ sp.—Flos amplus albus Tassyassy.

593. Hamamelidea.

Frutex arbusculoideus, trunco crassitu digiti humani. Cortice brunneo cinerea lenticillis parvis. Ramuli flexuosi brunneo rubri ad epoque inflorescentia foliis orbatus Gemmæ floriferæ alternæ ex axillis foliorum lapsorum. Squamis ovatis concavis sericeo pubescentibus laxiusculis pluribus, extimis brunneo tinctis reliquis membranaceis luteis, intimis bracteas abeuntibus initio erectæ sunt gemmœ sed cito nutant, demumque pendula fiunt. Bracteæ sericeo hirsuta concavœ.

Spica pendula $1\frac{1}{2}$ uncialis multiflore sericeo, hirsuta, pilis laxis, simplicibus albis flores directione, spiræ majusculæ luteis suaviter odori.

Calyx sub conicus brevis, adhærens 4-5 fidus laciniis te nuibus fere membranaceis ovatis. Petali 5 perigyno dentibus calycinis alternat: initio dien unguicalatims luteis irregularibus ———— majoribus patentibus subrepandis marginibus

sœpius revolutis, œstivatione apertis, conduplicatis medio marginibus sub involutis, obovatis, vel spathulato obovatis. Stam: fertilia sepalis opposita, ideoque eadem numero, seriea exerna formantia perigyna. fauci calycis inserta. Filam subfiliformi, subulato robusta, breviuscula. Anth adnata bilocularis, subquadrata, longitudinaliter dehiscens; valvis extrors uflexis, parallel to the middle portion of each locellus, the valves of different loculi dorso applicitis persistentibus, coriaceis. Pollen globosum, triplicat plicis medio 1 porosis.

Sterilia plura irregularia, intermedia sœpius dentiformia unguim basibus oppositæ viridescent interdum subullatæ interiora sepissima 10, per paria disposita interiora et petalis opposita majora, atroviridia apicibus subglanduliformia.

The intermediate ones occasionally simulate these. Ovarium adhærens, sericeo pilosa, biloculare, loculis 1 ovulatis. Ovulis pendulis, foramini lato. externe et superne spectant, tegumentis binis distinctis Styli 2 subulat. Stigmata horum facici interna, apicem versus. Canaliculata apice recurva papillosa.

Spica fructus pendula bracteis orbata indurat, fructibus spiraliter dispositis, et in seriebus 4 dimidio inferiora calyce indurato sub annulato, dentibus nempe inconspicius, vestito dimid. super ecortica, bilocularis, semibivalvibus, loculicidis et septicidis, valvul quaque styla ½ partito, recurvo apiculat subrecurva. Semina nondum visa.

Tassangsi.

Provenit etiam in collibus Khasyensibus circa Muflong alt. 6000 ft. et alibi vix infra 4000 ft. Flores hermaphrodit.

Cal. 4-5 fidus. Pet. totidem. spathulati plicati æstivatione erecta. Stam 4-5 sepalis opposit. Anth valvis duabus reflexis dehiscent persistentibus. Glandulæ dentiformis et glandi formes, tris majoribus. per paria ante petalio. Ovula solitiria. Capsula ecorticat bilocularis.

594. Fisi sp Icon. It. Bootan t. 45.—Arbor mediocris.

Rami flexuosuli ramuli gemmæ petiolique brunneo hirto Petiol. teretiuscul. fol. oblongo lanceolat cuspidato acuminat, coriaceo integrum basi subcordata et trivenium, venis subtus prominulis reticulationibus minutis; fructibus breviter pedicellatis, basi tribracteatis, sub globosis ferrugineo hirtis, um-

bilico sub prominulo, clauso, perianthus fructus carnosis rubris succus viscosissimus.

Tassyassy or Tassangsee.

595. Gramina vel potius. Cyperacea. Secus Koollong. Spicis. fuscescentibus.

596. Lycopodii sp.—Koollong secus in ripis.

597. Alopecuri sp.

598. Arbuscula foliis nullis, floribus paucis ad apices ramorum nutantibus lutescentibus. Koollong banks.

599. Arabides floribus albis fol. inferior rosacei depressis. In segetis Tassangsee alt. 500 ft.

600. Goodyera sp.—Flores albi foliis viridib. In arbor secus Koollong Tassausee.

601. Prenanthes.—2 pedalis floribus luteis. Larch woods Tassagsee.

602. Cerastii sp.—Fol. subglaucescent floribus albis in oryzetis Tassangsee.

603. Viola Patrina.—Floribus pallide cæruleo tinctis. In segetis Tassangsee 5000 ft.

604. Andropogon.—Larch woods Tassangsee.

605. Polypodii sp.—In arbor towards Sanah alt. 6500 ft. frons carnoso coriæcea.

606. Gaultheriæ sp.—Flexuosa ramis laxis pendentibus fruticos foliis atrovirid. Towards Sanah in snow alt. 6800 ft.

607. Oxalis sp.—In umbrosis towards Sanah alt. 6500 foliis carnosis.

608. Villariæ sp.—Pendula fragilis carnosa. In rupibus umbrosis towards Sanah alt. 6500 ft.

609. Lycopodii sp.—Scandens in sylvis towards Sanah 6500 ft.

610. Polypodii sp.—frons nutans in sylvis Quercus alt. 6500 to 7000 ft. pinnis undulatis.

611. Composita.—Subscandens foliis rugosis. In sylvis umbrosis Sanah versus alt. 6500 ft.

612. Gramin.—In grassy places alt. 6800 ft.

613. Rhodod.—Macrocarpos. Frutex 4 pedalis fol. coriaceis capsulis maximis 5 valvibus. Stylo longissimo. Towards Sanah in mines alt. 6800 ft.

614. Quercus glauca.—Arbor formosa mediocris. In sylvis alt. 6800 ft.

615. Polypodii sp.—Repens arbor. et rupibus frons atroviridis repanda. Towards Sanah alt. 6500 ft.
616. Antrophyi sp.—In rupibus towards Sanah alt. 6800 ft.
617. Trichomanes sp.—Repens in rupibus towards Sanah alt. 6800 ft.
618. Rhododend.—Arbor mediocris scraggy, intermed. inter, R. formosum minus et majus, folia posteriores; flores anteriores. Towards Sanah alt. 7000 ft. in sylvis humidis.
619. Viscum.—Articulis spathulatis lineatis. In arboribus secus Koollong Tassangse.
620. Desmodii sp.—In collibus graminosis infra Tassangse alt. 5000 ft.
621. Arbor formosa corona densa An Laurinea Descent from Sanah alt. 7500 to 8000 ft.
622. Dalibardæ sp,—Repens in ripis humidis above Sanah intra alt 7000 et 9000 ft.
623. Bambusæ sp.—Forming large patches in wet places above Sanah 7000 ft. culmis 2-4 pedalibus.
624. Thibaudiacea.—Rotundifolia Epiphytica in arbor vel in rupibus radice incrassat, ramulis strigosissimis. Gemmis rubris, floribus seniores tantis visi cernuis. In humidis above Sanah alt. 7800 to 9000 ft.
625. Leguminosa.—Aspectu Baptisiæ. Fruticosa 4-5 pedalis sericeo argentea. Leguminibus longe pedicellatis racemosis compressis pendulis above Sanah, generally on sward alt. 7800 to 9500 ft.
626. Gnaphalii sp.—Above Sanah on bare rocky ground alt. 9000 to 11000 ft.
627. Junci sp.—On similar ground, at similar elevations.
628. Epilobii sp.
629. Cerastioid.—Calyce hirsuto inflato procumbens.
630. Monocotyled.—Herba erecta pedalis, wet rocky places above Sanah 7800 ft.
631. Pedicularis.—Herba erecta 2-4 pedalis ramosa. Inter nivem vix infra 9000 ft.; ad alt. 1,1000 pygmæa.
632. Gentianea.—Cum præcedent.
633. Aspidii sp.—In rocky ground alt. 9000 to 11000 ft.
634. Composita.—Rocky summit above Sanah 11800 to 8000ft.

635. Composita.—Cumprædcedent.
636. Polygoni sp.—Panicula, above Sanah alt. 9000 to 9500 ft. vix infra.
637. Polygoni sp.—On rocks above Sanah vix infra 9500 et usque ad 10,000. ft.
638. Polygoni sy.—On rocky ground. Summit 11800 ft. vix infra 10500.
639. Saxifragæ sp.
640. Composita.—Versus cacumen alt. 11000 ft.
641. Orchidia.—Cum præcedent.
642. Umbellifera.—Planta 2-3 pedalis caule fistuloso valde robusto, foliis ad apicem deflexis, umbella valde Composita ; ad cacumen 11800 ft. vix infra 11000 ft. It is figured in Royle.
643. Vaccinacea.—Frutex pusilus repens, ramis erectis 3-4 uncialibus, tota nigro rubescens, alabastrus axillaribus cernuis solitariis. Ventos cacumen. alt. 11000 ft.
644. Gramin.—On rocky ground above Sanah alt. 9500 to 11000 ft.
645. Friticoides. Cum præcedent inter 9500 et 11800 ft.
646. Avena vel Bromas.—Above Sanah 9000, to 11000 ft.
647. Gramen—Above Sanah descent chiefly among sward 10000, to 9000ft.
648. Gentiana.—Versus et ad cacumen vix infra 10500 ft.
649. Geranii sp.—Sub scandens, ad alt, 9000 ft. et vix infra.
650. Rhododendri sp.—Frutex 1.1½ pedalis valde ramosus toto ferruginea lepidot. Floribus terminalibus solitariis longe pedicellatis versus cacumen vix infra 10000 ft.
651. Berberus sp.—Frutex 4-5 pedalis spinis ternis. Above Sanah 9000 ft.
652. Rhododendri sp.—Frutex 8-10 pedalis, ramosa foliis coriaceis subtus ferrugineo lipidotis, flor. racemis terminalibus, fructibus 1½ uncialibus, valvis, angustis, axi cylindracea, versus et prope cacumen, 10, to 11500 ft.
653. Rhododendri sp.—Frutex 6 pedalis foliis ellipticis, versus cacumen intra 10, et 11000 ft.
554. Rhododendri sp.—Arbor majuscula, magnit Rhod. arboreum, fol. apicalibus deflexis, obovatis, coriaceis, supra venoso rugosis subtus saturati ferrugineis, gemmis globosis in sylvis descent from ridge alt 8800 ft.

655. Rhododendri sp.—Frutex 6-8 pedalis foliis lanceolato oblongis sub obovatis subtus punctatis. Ascent from Sanah 9,000 ft. gemmis conicis.

656. Rhododendri sp.—Frutex 6-8 pedali foliis elongato lanceolatis, sœpius undulatis subtus minute reticulatis. Racemis subumbelliformibus, terminalibus, fructibus uncialibus, valvis per angustis, gemmis conicis.

Supra Sanah. in humid woods, vix ultra 9500 ft. commences at 7800.

657. Polypodii sp.—Repens frons coriacea undulata subtus glauca, sorus 1 seriatis Costæ approximatis sub confluent, above Sanah alt 9000 ft.

658. Berberis sp.—Frutex 4-6 pedalis foliis fere Ilecis, fructibus aggregatis cernuis, pedicellis rubris, fructibus ovatis, atro cœruleis. Halting place in woods alt 8800 ft.

659. Rhododendri sp.—Frutex humilis, foliis ellipticis basi cordatis subtus glaucis reticulatis gemmis globosis squamis exterioribus linearibus laxis. Ascent from Sanah 9, to10000 ft. 653 propinq.

660. Laurinea?—Arbor parva foliis coriaceis supra lucidis, descent from ridge alt 8700 ft.

661. Betulæ sp.—Arbor parva, amentis, pendulis, aggregatis, fol. lanceolatis argute serratis. Descent from halt in humid woods 8800 ft.

662. Abies sp. Icon. It. t. Boot t· 56.—Arbor formosa varians statura Palmulis crassis, foliis densis sparsis, ramorum distichis, ramulorum patentibus, lineari spathulatis apice retusis, emarginatis coriaceis, subtus argenteo glaucis, margina revolutis. costaque exceptis, ramulis ferrugineis, ramis brunneis.

Spicus proveniens, in montibus altioribus a Sanah, et vix infra 9500 ft. Ad 12500 ft. arbor mediocris. ad 12000 ft. arbor 60-70 pedalis.

663. Abies sp.—Arbor alta formosa, aspectu et habitu Cedris, ramulis brunnescent, foliis sub distichis distantibus, utrinque attenuatis obtusis, breviter petiolu subtus vena primaria marginibusque exceptis argenteo glaucis, petiolis ½ tortis.

Strobilis terminalibus ovatis. ovi Pigeonis magnit, apiem versus attenuatis, squamis latis, brunneis lœvibus.

In sylvis supra Sanah vix infra 8000 pedalis.

664. Pomacea.—Arbor parva ramulis robustis gemmis terminalibus ovalis squamis rotundis rubris, corymbis paniculatis umbellatis, baccis pisiformibus sanguineis, pulpa alba.

Ascent from Sasee 10000 ft. and descent at 8800 ft. in woods, leaves not seen.

665. Euonymus cornutus.—Frutex 4 pedalis, ramulis viridibus foliis oppositis auguste lanceolatis serrulatis fructibus axillaribus abortiv solitariis, e pedicellis gracilibus, filiformibus pendulis, carpellis basi longi cornutis, loculicidis. Seminibus exsertis pendulis coccineis.

Moist woods near halting places alt 8800 ft.

666. Pomacea.—Arbor parva corona densa, foliis alternis coriaceis reticulatis stipulatis, fructibus racemosis ovatis lutescentibus Calycis limbo inconspicua coronatis abortiv uniloculaaibus 1 spermis semen ascendens testa membranaceo cellulosa albumen o, Cotyledones plano convexæ, extus viridis-Radicula infera brevissima hilum prope.

Ovula bina? curvis loculo, in loculo steril septo medium versus affixa ascendentia. In sylvis secus torentem alt. 4000 ft. Fig. 10.

666*a*. Gramin.—Phleoideo agrostidem in oryzetis secus Kooree alt. 3950 ft. spiculæ viridis aristis rubescentibus.

667. Lactuca purpuriflora.—Herba annua, foliis irregulariter ruminatone pinnatifidis, glauco purpurascent radicalibus rosacea patulis anthodiis e basi ovata, subulatis flosculis purpuriascent Cum præcedent.

668. Conyzoidis.—Erecta ramosa subviscosa capitulis nutantibus cylindraceo rubro tinctis. Cum præcedent, Aromatica.

669. Leucas sp.—In sylvis aridis supra Kooree nuddee alt. 4200 ft.

670. Composita.—Erecta 2-3 pedalis ramosa inflorescentia purpurascens, anthodio squamis ciliatis: cano perpureis flosculis lutescent aromatic. Cumpræcedent in situ humidior.

671. Chenopodii sp.—In oryzetis cum 667 ete fol. deltoidio hastatis.

672. Ardisiod.—Myrsinea. Frutex 6-8 pedalis, foliis coriaceo carnesiuosculis, penduculis persistens. Towards Ling ling ad margines torrentis alt. 4950 ft.

673. Mazus rugosus. In rice fields cum 673.

674. Lysimachiæ sp.—Annua vix pedalis, corollis albis calycem vix excedent. Cum præcedent.

675. Ammaniæ sp.—Cum præcedent.

676. Composita.—Tomentoso albi, floribus solitariis albis et disci et radii. Secus Koree in solo lapidoso.

677. Sedi sp.—On rocks over Kooree alt 4000 to 4500 ft. foliis lanceolatis carnosis.

678. Composita.—Descent from ridge alt. 8500 in ripis humidis capitulis lutescentibus.

679. Goodyera.—Moniliformis.

Epiphytia Icon It Boot. t 49. Rhizomat articulato repento, foliis cordato rotundatis, carnosiusculis. Spica terminal pauciflora inferne pubescens parce bracteata floribus majusculis.

Sepalo postico fornicato, lateralibusque apicem versus subrefloxis fusco viridibus, petala albida sepalo postico supposita. Labell bilobum cochleariforma album margin dentato lobatum basi maculis binis lenticularibus. Columna nana. Stigma omino occulta lamina labelli columnæ facceі interiora opplicita et supra in dentis 2 rostelliformis product. Anth rubra. Stigma oculiforma ad latus utrinque columnæ. Labell basi gibb. in gibbere processus cellulosus unus, ad ripas Kooree nuddi alt. 3500 ft.

679*a*. Cupressus pendula. Arbor sœpe 80 pedalis elegantissima dioica? Strobilis fœmineis e squamis (bracteis) oppositis, paria, quaternata, sub verticilliatis approximatione in sinu foventibus ovula plura biseriata. Tegument unicum apice forato. nucleus parvus. conis sub rotundis squamis induratis simiplura alat marginata pars ossea e testæ parti interiora ossefacto. Nucleus liber cellulosus apice sphacelatus. Albumen continius Embryo nucusque nullus.

680. Glycinoides.—Scandens. Leguminibus rubro tinctis. In sylvis versus Tumashoo alt. 6000 ft.

681. Elœagnus.—Foliis subtus albis, floribus albidis suave odoratis subscandens Ling ling.

682. Quercus tomentosa.—Arbor mediocris colore rotundiuscula parva densa, above Lingling vix infra alt. 6000 ft.

683. Viburni sp.—Frutex ramosus 5-10 pedalis foliis densis as-

pectu canis subtus albidis. Above Ling ling vix infra 5500 ft. inter Bailafa et Roonlong vix alt. 7600 to 5500 ft.

684. Composita.—Lingling. Frutex erectus ramosus.

685. Myrsine. Frutex arbusculoideus erectus, floribus ob antheris rubris, above Ling ling alt 6000 ft.

686. Oxysporæ sp.—Frutex humilis erectis Paniculis fructus erectis ascendentibus, venis secondariis valdi conspicuis. Ling ling.

687. Bucklandia.—Arbor mediocris sœpiusve parva foliis deltoideo ovatis acuminatis undulatis basi 5 veniis, capitulis longe pedunculatis, pedunculis basi paullo supra articulatis, versus Tumashoo in sylvis alt 6,200 ft.

An distincto a planta Khasyensis. The Mismee one has polycarpous capituli, whereas the Khasya one has always 8.

688. Acanthus carduaceus Icon. It. Boot. t. 57.—Frutex scandens, caule robusto, foliis pinnatifidis, laciniis lobatis et dentatis, spinosissimis atro viridib. spicis axillaribus et terminalibus, illis longe pedunculatis, pedalibus, tetrastichis erectis. The species occurs all about the same level. Bracteis ovatis sub reflexis spinoso dentatis, marg. lunato ciliatis. floribus albis, bracteis subœquantibus unilabiatis, bracteis lanceolatis etiam lanatis.

Planta præ conspicua, in rupibus scandens. At Oongar used to feed black cattle.

689. Bambusæ.—Culmo, 15-20 pedalis, inermi gracili apice nutanto. Rodoola, inter 9 et 10500 ft. common.

690. Rhododendron macranth.—Frutex 6-8 pedalis foliis ut in omnibus deflexis elongato lanceolatis, subtus punctatis, ramulis apice ferrugineo lepidotis terminalibus capsulis minimis trilinealibus racemis umbelliformibus, oblongis. Rodoola 1 mountain 1000 to 11500 ft.

691. Rhododendri sp.—Frutex humilis 4-6 pedalis ramulis lepidoto. scabris foliis subovatis coriaceis subtus candidis punctatis, capsulis parvis. valvis patentibus, racemis umbelliforma terminal. Rodoolia mountain alt. 10000, to 11500 ft. valvis capsulæ calycem subæquantibus, fructibus nutantibus.

692. Laurinea Icon. It Boot. 53.—Arbor mediocris, ad epocua florum foliis fere orbato. Capitulis binnatis cernuis majusculis bracteis fuscescent reflexis floribus subumbellatis viridi lutescent, folia aggregata ad apicis ramulorum patent de-

flexa supra lucida, lanceolata vel lanceolato obovata. Gemmis ovato. Conicis terminalibus.

Towards Oongar bridge alt. 6000 ft.

693. Rhododendri sp.—Frutex altiusculus vel arbuscula. Cortium ramorum lævi albido. Ramulis hispidissimis ramentis ferrugineis uti petiolis costæque basi fol. oblongo ovatis, basi cordatis subtus ferrugineo pubescent acutis coriaceis, venis supra valde depressis. Gemmis ovatis, squamis exterior laxiusculis interioribus viscosissimis.

Speccis distincta. Rodoola mountain 10000 to 11500.

694. Abeis spinulosa Icon. It. Boot. t. 69.—Arbor sœpius mediocris interdum axaltata 80 pedalis habitu e longinquo Lariceis. Ramis inferiores deflexi, superior ascendentis, ramulis fere omnibus deflexis, verrucis equibus folia viruntur exasperatis, fol. undique patentia, linearia, mucrone spinulosa terminali, pungentia, pagina inferiora glauca, superiora obresupinata. Conis terminalibus non raro ex apice proliferis, pendentibus, oblongis fere cylindricis. Castaneo brunneis, squamis latissimis obtusissimis lœvibus.

Rodooli mountain, on the west face, where it begins at 10-500 ft. and continues to the bottom of the valley 8000 ft.

695. Juniperi sp.—Frutex procumbens vix 2 pedalis, ramis decumbentibus crassis foliis squamiformibus lanceolatis adpressis, margine albis, galbulis nutantibus vel cernuis, oblongis apice depressis Rodool mountain ridge alt. 12000—12300 ft.

696. Juniperi sp. Icon. It. Boot. t. 62 mas. 63 fem.—Arbuscula (cortici uti solet in cupressimis lœvissima.) with a scraggy appearance 20 ft. high ramulis sœpius pendentibus foliis linear-lanceolatis acutis, Galbulis ovatis.

Temple near Oongar with C. pendula alt. 6000 ft.

697. Panax curcifolia.—Arbor vel arbuscula cortex aculeat, foliis fere ut in Jatropha curcas. Paniculis terminalibus cernuis initio erectis ferrugineo tomentosis ramis simplicibus floribusi albidis. Towards Oongar bridge in sylvis 6000 to 5000 ft.

698. Cymbidii sp.—Epiphytica in arboribus foliis distinctis equitantibus a medii supra cernuis. Strap shaped acutis. Canalicu latis coriaeeis basi prope (3 inches above) articulatis venis præsertim petioli albis, fol, exteriori in sqamis coriaceis abi euntia.

Flos maximus diametro 2½ unciali. Sepalis oblongis acutis æqualibus extus lucidis, summo sub fornicato. Petal. linearia eadem longitudenem extus non lucida, ambobus viridi lutescent, petalis basi rubro obscure punctatis.

Labellum tremula sub cucullat, margina tota ciliatum, lobis lateralibus triangularibus medio sub cordato undulato crispato, Color albidus maculis Castancis, his lobi medii majoribus, cristis binis elevatis discretis, ad basi lobi medii terminant, dense ciliatis. Columna clavata, semiteres, postica e lutea vividis, antica lutea maculis sanguineis ovatis crebris. Rostella cruris distantis. Pollinea 2, ovato deltoidea postica fissa. Glandula lata viscosa quadrata materies pulverea, flores postica nutantis, extrorsum reflexa copisoa in arboribus Ascent to Peemee alt, 7500 ft.

699. Bletiæ sp.—Terrestris sub acaulis foliis plicatis oblongo ovatis repandis scapus radiculis per demidiam longitudina bracteis foliaceis laxis involutus, pedalis, a medio supra purpurascent. Sepalis oblongo ovatis breviter acuminatis, margina involutis. Petalisque lanceolato spathulatis purpureo carneis. Labellum cum columna albi connat. Calcare, unciali, carnea, apice curvato, acuto, lobis lateralibus deltoideo acinaciformis medio lingulato obcordato, undulato, cristis tribus parum elevatis, *lilacinis* fusca, Inferna lutescent. Anthera albida.

Towards Oongar bridge alt 5800 ft. in sylvis humidis.

700. Gnaphalii sp.—Towards Bhoomlungtung 8500, to 9500.

701. Hippophae sp.—Frutex 4 6 pedalls spinosus foliis angustis canis fructibus pendulis luteis globoso turbinatis.

Bhoomlungtung along Tungchien. Common.

702. Sarcococea—Frutex humilis 2 pedalis spicis brevibus, albis in woods towards Byogar alt 2300 ft.

703, Filix ferrigineo pubescens: Rocks above Bhoomlungtung, 9500 ft.

704. Hemiphragma.—Prostrat repens floribus lœti rosaceis fere regularibus rotatis tubo mediocris, laciniis 2 posticis, paullo angustioribus. Anth. inclusæ.

In segetis Bhoomlungtung. 9000, to 9500 ft.

705. Orchidea.— Icon. It. Boot. t. 60 Rhizomata filiform repento

pseudobulbi obturbinat, fol. unica lineari oblongum apice acuta et equaliter bifidum, coriaceum. Racemis radicalis, folia subæquantis, nutantis, pauciflori, rachis filifomis, bracteæ membranaceæ, florem ovario paullo longioris. Flos ratione plantæ magnus, posticus lutescent fuscus, basi purpureo tinctus maculatis. Sepal subœquali acuminato, Pet. multo minora concoloria, labellum linguiform. integerrimum carnosum atro purpur, basi extus lutescens. Columna nana, cornubus subulatis, pes medio gibbosum curvat a dimidio superne e sepalis lateralibus discret. Anthera ecristato, obloculiaris, loculis obsolet, bilocellatis. Pollinea interiora minima.

In rupibus inter Tumashoo et Oongar. Flos vasibus spirali bus abunde donat.

Abies pendula variat foliis erectis. This variety is found all about Byagar and Bhoomlungtung.

706. Hamamelidea.—Frutex erectus ad epocha inflorescentia foliis exspers ramulis glabris flexuosis. Gemmis foliiferis conico cylindricis, squamis castaneis floriferis subglobosis, squamis membranaceis pilis simplicibus adpressis vestit, floribus pluribus subumbellatis, solitariis.

Pedicelli breves pilis dense vestitis. Perianth simplex 5 sepalum, sepalis oblongis œstivation imbricatis exterioribus secus medii dorsi pilis vestitis.

Stamina plura, sub 15, sub biserialia seriei exterior 5-6, fertilia glandulis vel paucis vel nullis interspersis. interior 3-4, fertilia, glandulis capitatis totidem vel pluribus interspersis. Ant. mento brevia fiiliforma, complanata. Anth. adnatæ obtuse mucronatæ, bilocularis, valva, longitudinal reflexa dehiscent, Pollen globosum lœva, uni porosum ?

Situs stamin irregularis.

Ovarium superum liberum *abortiv*, rudimentis stylor 2, inœqualibus.

[All wrong.]—Perianth seria duplia, 6 sepalum. Stam 9 triplica seria, seria externa et interna sepalis exterior, opposit. intermedii internis, interna staminodiis binis stamina, cuique. Flores dioica.

Hamamelideis certe affinis.

707. Gentiana.—Gent. minima. Planta vix uncialis, bracteis margi-

na membranaceis corollis cyaneis, segmentis omnibus rotundatis, on grassy sward, towards Jaisa and between Jaise and Tongsa vix infra 9000 ft. from 9, to 10,000 ft.

708. Lycopodii sp.—Wet mossy banks towards Tongsa, alt 10,000 ft.

709. Andropogon.—Culmis 3-4 pedalis spicis fuscescentibus. Sward descent to Tongsa 9500 ft.

710. Ericinea.—Arbuscula scraggy gemmis conicis fructibus racemosis. Pisi magnitudini. Ascent towards Tongsa, alt 95000, to 10,000 ft.

711. Potentillæ sp.—On banks, ravine above Tongsa.

712. Thibaudia obovata.—Frutex 3 pedalis, ramosa foliis supra reticulatis coriaceis obovatis, gemmis terminalibus oblongis squamis rubris. Descent to Tongsa, 9000, to 8000 ft.

713. Euphorbiæ sp.—Above Juggur with Melianthus 9500 ft.

714. Milianth sp.—Erect 4-6 pedalis foliis supra decompositis capsulis ascendent. secundis above Juggur; grassy thickets, 9500 ft.

715. Aspidii sp.—Above Juggur, grassy places in woods alt 9000 ft. to 9800 ft.

716. Primula globifera.—Capitulis densis sphœricis. About Jaisa, on banks, alt. 9000 ft. Descent from Dhonglaila 10,000 to 9500 ft.

717. Rhodoracce.—Deflexa. Frutex vel. arbuscula foliis axpers, fructibus sub umbellatis, pedicelis deflexis, capsulis ascendent. Between Jaisa and Tongsa alt. 9000, 9500 ft.

718. Acer Sterculiacea.—Arbuscula foliis palmati lobatis, fructibus pendulis. Towards Tongsa and descent from Rodoola vix infra 9500 ft.

719. Hydrangeæ sp.—Frutex vel itiam arbuscula 20 pedalis: foliis non visis. Descent from Rodoola above Juggur and Jaisa alt. vix infra 8500 to 10,000 ft.

720. Salix sp,—Arbuscula parva foliis subtus glauco argenteis gemmis oblongis, brunneis glabris; ament. fœmin. penduli above Juggur and Jaisa alt. 9500, to 10,000 ft.

721. Gramin.—Panicula nutans, above Juggur, in sward 9800 ft.

722. Bupleurum.—Herba 4-6 pedalis foliis caulinis breve petiolatis oblongis, radicalibus spathulatis venis parallelo obliquis grassy thickets above Jaisa, descent to Tongsa alt. 8000 ft.

723. Rosa.—Frutex 4 pedalis ramis hispidissimis ramentis deflexis, spinis latissimis oppositis. Above Juggur and Jaisa alt. 8500, to 10,000 ft.

724. Magnolia Icon. It. Boot. t. 11 f. 8.—Foliis oblongis subundulatis coriaceis subtus ferrugenio pubescent, glaucis, bracteæ binæ? coriaceæ, dense ferrugineo tomentoæ, hinc spathac fissæ, floribus fimplis albis suavissimis odoratis: odore cinnamomeo, petalis spathulatis biuncialibus.
Tongsa.

725. Carpinoid Icon. It. Bootan t. 61 no. 761.—Arbor mediocris trunco demissa ramosa, ramis patentibus, corona lata, cortice glaberriumo tenui e stratis pluribus 5-8 solubilibus fol. argute serrati, cordato ovato basi subtus punctato.
Ament fœmni foliis opposit cernuis oblongis sub cylindraceis, masculis spiciatis terminalibus, spica nutantis.
In vertic montis inter Jaisa et Tongsa vix infra alta 9500 ft.

726. Hordei sp.—Erectum 3 pedali spiculis 6 stichis. Aristis longissimis
Cult circa Tongsa alt. 6500 ft.

727. Salix sp.—Frutex ramis robustis 4-6 pedalis gemmis masculis folio floriferis, squamis saturato brunneis, amentis tomentoso, sericeis, fæmineis elongatis.
In erecetis humidis Tongsa.

728. Pomacea.—Arbuscula vel frutex. Paniculus præ junioribus rubris foliis coriaceis obovatis.
Tongsa in ericetis.

729. Hyperici sp.—H. japonicum, Tongsa, banks of rice fields.

731. Oxalis sp.—Icon. It. Boot. t. 65.—Foliis lato deltoideo obcordatis subtus distinct et lato reticulatis, floribus axillaribus solitariis, (pedicellis medium versus bracteat) magnis, albis. Petalis basi macula lutea, genitalibus albis. Tongsa in ripis humidis.

732. Ranunculus.—Foliis ternat pinnatifid, petalis sepala paullo excedent, planta hirsuta pedalis.
In oryzetis Tongsa.

733. Juniperi sp.—Frutex humilis raro arbuscula ramulis pendulis, foliis lineari lanceol. acuminato spinulosis.
Descent to Tongsa, alt 10,000 to 9000 ft. in sylvis Rhodod.

734. Laurinea sp.—Arbor mediocris alabastris lutescent above Tongsa in sylvis.

735. Querci sp.—Arbor magna in sylvis supra Tongsa.

736. Chrysobaphus sp.—Above Tongsa in sylvis foliis aspectu velutinis atroviridib. venis metallicis albis.

737. Polypod.—Marginat frondibus consistent foliaceis, margine lato membranaceo stipito brunneseent in sylvis, in super arbores. Tongsa supra.

738. Allantodiæ sp ?—Involucrato fornicato. Habitus polypodium, in sylvis supra Tongsa.

739. Simplocinea.—Arbuscula gemmis foliaceis terminalib. ovato conicis, floriferis ovatis axillaribus, bracteis 3, ferrugineo pubescent, 2 interior spathulatis. Calyce 5 partito. Petal œstiv imbricat perigyna. Sepalis alternantia. Stam. oo æst erecta perigyna. Stylus clavatus stigma sub trilobum, ovarium triloculare, loculis pauci ovulatis, ovulis pendulis, foramen hilum prope, fructus racemosi ovato oblongis apecem calyce connivent immulat. Coronat, racemis erectis. Seminia abortiv above Tongsa in woods.

740. Arbuscula.—Foliis repandis alternis raro sub oppositis exstipulatis gemmis terminalibus conicis. squamis paucis imbricatis, racemis terminalibus alabastris erectis demum cernuis bracteatis. Sepalis rotundatis ciliatis. Pet. imbricatis glandulis sparsa, sepalis alternant, hypogyna. Stam 5. sepalis opposita, hypogyna. Anth. magnæ biloculares. Styla 5 incurvat ovari conicum ovula non visa ob exignitat alabastri.

Fructus sub globosi basi calyce immulato radiant stipato, Petalis viridibus carnosis ampliatis imbricatis arcte (Fig. 16) oblecto, Due to monstrosity, which has caused the petals and stamina to be carried up, especially these latter, the sepals remaini natural.

741. Frutex scandens.—Foliis oppositis exstipulatis, lanceolatis, gemmarum squamis interd persist, reticul Cryptolepoid. Stipulas inter petiolares mentient, fructibus axillaribus solitariis globosis, pedicellis uncialibus clavatis. (Fig. 17.)

Calyce radiato basilarib 5 sepalo.

Fructus baccat sub 4 locularis. Semina 4 peltat affixa

sepalis alternant oblongo ellipticum, complanata. Concava intus, extus convexa, marginato brunneo. Hilum angust central. Testa coriaceo tenuis, albumen copiosum, carnoso corneum. Embryo periphericus. Radicula conica longissima extus spectans. Cotyledones minimæ. Plumula inconspicuis.

Above Tongsa.—Cortex fibris rectis abundant donat. An Gardneria? certe *Stychnea*.

742. Pomacea.—Arborer habitus Millingtonii simplicifolia, fol. supra saturat virida. Stipulis deciduis. Panicula ferruginia alabast. tant visa.

Tongsa.

743. Zanthoxylia.—Scandens aculeata, foliis supra lucidis impari pinnatis. Paniculis rubro tinctis. Alabast tant visa, sepalis 4. Pet. totid. Stam 4, sepalis opposit. Stylus, Stigma simplex ovar integrum.

Tongsa.

744. Aurantiacia.—Spinosa. Petiolis obovato, deltoideis, lamina angusta lanceolata, ordor aromat Zanthoxylaceus.

Tongsa.

745. Fici sp.—Arbor magna.

Partes novellæ ferrugineo hispidæ fol. oblongo lanceolat acuminatissime, basi subcordata, coriaceis, gemmis sub conicis, reticulis infra minimis, venulis fere oblectis; resembling holes surrounded by a callous margin. Anthodiis rotundato ovatis, apice attenuatis, ferugmeo hirtis, binatis. Pedicellis brevibus, apice tri squamatis.

746. Lathyrus vel. Vicia vexill purpurascent alis saturat lilacinis. Procumbens In segetis. Tongsa.

747. Carex.—Pusilla erect. In paludibus Tongsa.

748. Cruciferi.—Flores lilacini. Pedalis In segetis Tongsa.

749. Gentiani.—Planta pusilla foliis inferior rosascea palatis subtus sanguineis. Caule sanguineo, flores cærulia. Grassy swards Tongsa.

750. Gentiana.—With the preceding but on drier places ramosissima humiliss. Corolla cœrulea. The the same as G. minima of the elevated ridges.

751. Arbor maga.—Gemmarum squamis viscosis caducis, apice plus minus sphacelatis, foliis vernatione involutiva, utrinqe viscosa

lucida, valde acuminata oblongo basi cordata, dentato crenata very aromatic. Gemmis floriferis distinctis, squamis viscosis, etiam caducus, amentis masculis spithamæis pendulis (stipulis lanceolato oblongis submembraceis viscosis—Rachis angulato flexuosa. Squamis margina denticulatis peltatum affixis, pedicello breviusculo medium versus bracteaque floribus apecalibus prima evolutes.

Stamina 35 ad 40 squama centra vel. centrum versus affixa Filamenta breviuscula capillarum. Anth basin versus affixæ bilocularis, longitud dehiscentis. Pollen angulatum lœve immers, globosum extus aspectu celluloso, reticulat; plicis nullis?

Tongsa secus nuddee.

Bractea sub orbicularis margina fimbriata lacero caduco, racheos nulla?

752. Thibaudiacea.—Fruticosa ramulis angulatis. Fol. sub distichis breve petiolatis, lanceolatis caudato, accuminatissimis, margine revolutis, cartilagineis coriaceis, venis obliquis, gemmis axillaribus ovatis, squamis rubro tinctis, fructibus racemosis, racemis angulatis pedicellis clavatis, atro purpureis fructib globosis. calyce inflexo discoque coronatis spure 10 locularis, semina minuta sœpius abortiva. Tongsa.

753. Symplocinea.—Fol. Euryæ, racemis (spicis) abbreviatis capituliform axillaribus, floribus albis, Tongsa.

754. Satyrii sp.—Past flowering 1½ 2 pedalis, fol. oblonga lanceolat, spica densiflor. Above Tongsa.

755. Magnolia.—Icon. It. Bootan t 7.—Arbor magna ad epochæ inflorescentiæ foliis orbati ramulis viridibus obliqua annulatis, partibus novellis pubescent, lenticelli que demum globosis Pedicellis crassis semuncialis, glabratus, annulis hinc propinquis abbreviatis, hinc gemmiferis, gemmis deorsum minoribus.

Flos. maximus diametro spithamœus, bracteis binis connatis spathacea fissis subcoriaceis, reticulatis extus hispidissimis pallida brunneis deciduis suffult.

Sepalis oblongo obovatis pallaide viridescentibus carnosis, apetalis ægre distinguendis patenta reflexis, petalis albis biseriatis, externa seria, sepalorum directione interna in genitalia

fornicat, globum efformant odor fragrans sub aromat. Stam indefinit pluriserial, lilacino rosea. Pollen album. Spica carpellorum elongat, viridescens. Stylis recurvis roseis. Stigmata carnea.

Tongsa supra in sylvis vix infra 8000 ft.

756. Vacciniacea. Icon. It. Boot.t. 9.—Frutex humils 2-3 pedalis ramosus ramula teretiusculi hirta. Fol. spathulato obovata emarginata, mucrona interjecto, margina cartilagineo integerrima, recurva, coriacea, subtus pallida, venis inconspicuis, venis secondariis obliquis subtus conspicuis reticularibus indistinctis. Racemis axillaribus et terminalibus *his prius evolutis*, cernuis nutantibusve, folia excedentibus. Bracteis conspicuis rubris carneisve rotundatis, vel ovato rotundatis. Pedicellorum sub oppositis, albis amplis navicularibus.

Pedicellis clavatis flos in horum apici articulat. Corolla urceolata lilacina. Calyx laciniis carneis, angulis rotundatis, intus pilis albis, longis deflexis, laciniis intus quasi albo purpuraceis.

Stam. epigyna, sanguinea, antheræ leviter adhærentes membrana terminale, dorso medium versus bi cornigeræ, membrana bipartita, longitudinaliter dehiscens. Stylus cylindraceus asperlus. Stigma capitula discoideum, medio foveolatum, 5 loculare, loculis productio ovarii parietum, intus bilocellatis, ovulis oo sub uni seriatis. Discus epigynus 10 crenatus.

Above Tongsa in sylvis densis, vix infra 8000 ft. novi generis typus, ob antheraram structuram.

756*a*. Aroidea.

Caulescens, tota maculata, repent mentiens. Fol. bina alterna, petiolis vaginant, ad partes liberæ basin ochreata, quinato digitata, foliolis æstivatione bi-involutis (Fig 19) foliolo centrale erecto, lateralibus arcte deflexis ! superne lucidissima venatio dicotyledonea. Folia inferne, advaginam redacta. Spadix terminalis. Pedunculo elongato maculato, cylindraceo. Spatha ad medium usquam convoluto tobulosa, lamina subtriloba, lobis lateralibus horrizontalibus, rotundatis, terminalibus ovato lanccolato fornicato, nutantibus, apice reflexo, vernatione in voluto convoluta, (Fig 20.) Pollen globosum immersum, aspectum asperulum eplicatum.

Glandulæ nulla, spadix maculas, antheræ basilares breviter pedicellatæ vel binæ didymæ, vel quatuor uniloculares, rima transversa interna dehiscent. Spadicis apex incrassatus, basi dilatatus apice sub clavatus. Tongsa.

Although the number of the stamina can be cleared up by examination of sufficiently young specimens, yet I conceive that they are twin and didymous. This is sufficiently visible on examining anthers after dehiscence. Fig. 13.

757. Pyrus.—Arbor mediocris, ad epochæ inflorescentiæ foliis junioribus, vel foliis expers. Calyx pedicelli, petiola foliaque subtus albo tomentosa. Stipulæ angustæ tomentosæ, deciduæ: fol. ovata acuta serrata, flores magna diametro $1\frac{1}{2}$ unciato. Petal. cordato ovata unguiculata alba. Stamina definita basi ima in torum glandulosum album. Calyce adnat coalita. Anth versatilis ochroleucæ. Stylis 5 clavatis. Stigmata transversa, approximata, vel stigma transversa medio sulcata.

Vernatio conduplicata, stipulis folior. exterior. petiolo plus minus adnatis. Tongsa.

758. Amygdalus.—Arbuscula ad epocha inflorescentia foliis expers, floribus solitariis vel binis initio lœte rosaceis demum lœte carneis, pedicellos breves pluri bracteatos terminant. Calycis laciniæ dorso breviter tomentosæ. Petalis orbicularibus, breviter unguiculatis.

Stam. indefinita e glanduliformi toro lutescent calycem interne vestient e virentia, pallida, carnea. Anth basi affixæ sub versatiles. Ovar. liberum stylusque basi dense pubescens. Stylus hinc sulcatus stigma terminalibus, orbiculari reniforme. Stylo vasc. fas. 2. Ovulum solitar pendulum, foramina supero. Vernatio conduplicata.

759. Luzula sp.—In ripis versus, March 24, alt. 7500 ft. Chindipjee.

760. Saxifragea.—In locis aquosis tota luteo virescens decumbens.

761. Cinnamomum.—Arbuscula parva, secus equam versus. March 24, alt. 7800 ft.

762. Thibaudia.—Frutex ramis angulatis foliis obovatis supra reticulatis subtus albis baccis atro cyaneis globosis, secundis ascend.

Secus aquas. March 24 alt. 7500 ft.

Prox Thib. gaultherifol.

763. Quercus.—Arbor sœpe magna formosa, foliis supra atroviridibus, subtus albidis.

March 24, very common in moist woods at altitutes of 7300,7500 ft.

764. Aster.—Imperfect specimens, caule 1½ pedali, radio purpureo cœruleo, disco aurantia. In grassy hills and shady banks, March 24, alt. 7500 ft.

765. Scirpus Kysooroideis. Paniculæ ramis nutantib spiculis brunneis, 3 pedalis, in paludibus versus Niddapek, alt 7800 ft.

766. Daphne.—Frutex 4 6 pedalis ramosus, corona lata. Capitulis florum globosis cernuis, florib initio aureis, demum albifactis odore ingrato. Taseeling and about it on bare hilis alt. 7300, to 7800 ft. very common.

767. Rhododendri sp.—Frutex foliis oblongo obovatis, subtus mi nute reticulatis, sub ferrugineis, gemmis viscosis. Above Taseeling, 7800 ft.

768. Frutex.—Rocks above Taseeling 7800 ft.

769. Aspidii sp.—Scandens fronde lanceolato cum præcedent.

770. Ericinea.—Fruticosa foliis subtus dense ferrugineo tomentosis. Above Taseeling 7800 ft.

771. Pomacea.—Arbuscula spinosa, ramis interlaced, fol. lineari oblongis, teneris, floribus umbellatis magnis rosaceo albis, ovariis discretis. Taseeling.

772. Acerinea.—Arbor mediocris formosa. Gemmarum squamis oppositis, spathulatis albidis fol. oppositis spicis nutant, floribus parvis lutescent. Towards Taseeling, alt. 6500 ft.

773. Pomacea Sauraujafolia, arbuscula vel arbor parva, fol. deflexa in mode Sauraujæ, racemis farct terminalibus corymbosis. Tongsa. Hills toward Taseeling 6000, to 6500 ft.

774. Incerta.—Frutex floribus fasciculat in axillis below Tongsa 6000 ft.

775. Quercus *Robus*.—Arbor formosa sœpe in locis exposed, stunted, amentis filiformibus pendulis, fol. ad epoch inflores. nascentia, in hyberne labentia per tota regionem intra 6, et 7000 ft. vix ultra 7000 cum Q. ilecifol.

776. Azalea.—Frutex 4 5 pedalis foliis oblongis subtus ferugineo punctat, floribus solitariis in axillis, pedicello breve, brac-

teis scariosis omnino eblect infundibul campanulat pallida rosaceis. Stam vix declinat. Stylus hac excedens, declinat.

Near Taseeling barren rocks 7000 ft. towards Chindupjee 7300 ft.

777. Saxifraga ligularis. Flores carnei. Towards Taseeling on rocks.

778. Ranunculus.—Repens in aquosis. Fol. ternatis palmatis floribus solitariis sub oppositifoliis. Parvis petalis nitidis. In aquosis versus Taseeling et Chindupgee alt, 7000 to 7500 ft.

779. Clematis sp.—Fol. ternatis floribus albis. Scandens. Towards Taseeling 7000 ft.

780. Arbuscule.—Fol. alternis ex stipulatis vernat binivolutis, floribus unisexualibus, ambobus paniculatis, paniculis cernuis. Perianth Sanguinolent.

Towards Taseeling alt. 7000 ft.

781. Ficus.—Frutex repens arcte radicans. fol ovatis basi cordatis, caudato acuminis valdi coriaceis glabris. reticulatis infra minimis, gemmis subulatis.

To Chindupgee or rocks woods alt 7300 ft.

782. Acerinea—Arbor parva, valde ramosa, gemmarum squamis lingulatis lutescentis, dorso castaneis deciduis, foliis oppositis, ovato oblongis acuminatis, vernationa plicatis, fimbriato serratis, omnibus bifoliosis, spica nutant terminale, floribus parvis viridibus, antheris lutescens. Versus Chindupgee, in sylvis alt. 7000 ft.

783. Limonia laureola, baccis subato rotundis atris, frutex humilis. Inter 10000, et. 8000 ft. Towards Rydang.

784. Carex sp. Towards Rydang. In wet spots above the nullah of Chindupgee, 7500 ft.

785. Olea.—Arbuscula, Corona densa foliis subcoriaceis serrulatis floribus axillaribus et terminalibus majusculis albis sub adoratis. Staminibus fauce œquantibus.

Descent to Rydang. Alt. 8500 ft.

786. Laurinea.—Arbuscula ramis laixusculis gemmis conico subulatis, terminalibus foliis lanceolat, obovatis floribus solitariis in axillis, breviter pedicellatis, viridescentis odoratis, pedicellis bracteis circumdatis. Descent to Rydang 8500 ft. Oak woods.

787. Berberis sp. frutex dense ramosus interdum arbusculi, foliis spathulato obovatis parce spinuloso dentatis, margine vix recurvis, coriaceis. Rydang and above it. Common at 7800 to 8000 ft. Differs from B. Asiatica in the shape of theleaves, and time of flowering.

788. Laurinea—Arbuscua, foliis triveniis, subtus glaucis gemmis ovatis axillaribus et terminalibus, floribus aggregatis lutescent subodoratis. Descent to Rydang 8000 ft.

789. Composita floribus aureis, barren hills towards Panukka alt. 5500 ft.

790. Ligustri sp. Arbuscula floribus albis, ingrata odoratis. Towards Panukka on barren hills, 5500 ft.

791. Ribes Frutex scandens.—habitus Cissi folia cana stipulati, fructibus subobovatis panculatis. Towards Panukka, barren hills in thickets 5000, to 5500 ft.

792. Cœsalpiniæ sp. Frutex erectus ramis subscandens aculeatis, floribus racemosis amplis. Calyce reflexo lutescent. Cor patent, lutea, vexillo obcordato, rubro venoso. Stamina declinat. Anth. aurantiaccæ.

Leg: 1 valvis coriaceum, epicarpio demum solubili, endocarpio ereta vasorum secus medium carpelli anastomosant. Vas primar: secus suturam quamque current. Banks of nullah towards Panukka 5000 ft.

793. Frutex.—Scandens aculeat. fol. coriaceis. Towards Panukka alt. 5000 ft.

794. Desmodium.—Frutex erectus, floribus albis. Towards Punukka barren hills 5300 ft.

795. Morus ribesioides!—Frutex humulis: habit Ribes racemis viridibus floribus minutis. Towards Punkka alt. 5300 ft.

796. Mimulus sp.—Herba aquosa carnosiuscula repens in aquosis. Calyce 5 angulato. Cor. personato palato vix clauso, labio supero reflexo, infer patento-subæqualibus. Palato pubescent, genitalia inclusa. In aquosis versus Rydang et Punukka, alt. 5, to 5500 ft.

797. Rosa sp.—Frutex 5-6 pedalis ramis subvirgatis subscandent. Petalis majusculis albis quaternatis vix odoratis.

Barren hills towards Punnukka alt 5000, to 5500. ft.

798. Betulæ sp.—Arbor alt formosa ramis sub pendulis. Below

Rydang, especially along the river. Alt 5500 ft.

799. Cupulifera.—Habitus præcedentis. Arbor minor, dioica. Cum præcedent.

800. Pomacce.—Arbuscula foliis teneris floribus majusculis roseo vel carneo albis. Calycis tubus angustat. Stam pauc. Rydang alt. 7000 ft.

801. Alopecuræ sp.—Gramin annuum, ramis culmis pluribus radiant, basi decumbent, sub. pedalibus. Glaucescens. Anth aurantia Rydang in paludibus.

802. Rosa.—Frutex subscandens ramis elongatis fructibus rotundatis e coronatis Rydang.

803. Fumariacea.—Calcare unico postico longo clavato, floribus ex albis purpurascent, foliis glaucis tuber nullum. In sepibus, Rydang.

804. Cerasi sp.—Arbuscula floribus nutanti cernuis magnis. Calyce sanguineo tubo elongato demum basi supra circumscisso, fol novellis rubescent.

805. Querci sp.—Arbor mediocris corona densa, fol. coriaceis supra lucidis capsulis minimis. Rydang, and down to 6000 ft.

806. Clematis sp.—Scandens petiolis demum basi connatis induratis *perfoliatis*, foliis teneris. Below Rydang, in alt. 6500 ft.

807. Viburna.—Arbor parva corona late, floribus albidis. Below Rydang secus ripas fluminis 6000 ft.

808. Berberis racemosa.—Frutex densus vel arbuscula, fol. spathulato obovato, coriacis, floribus racemis.
Below and about Rydang 7000, to 6000 ft.

809. Oleina.—Arbuscula ascent from Rydang river, in oakwoods. 8000 ft.

810. Berberis.—Frutex 3 5 pedalis, foliis coriaceis sœpius obovatis subintegris floribus fasciculatis nutantibus, luteis. Below Rydang and towards Panukka on barren hills very common.

811. Cnicus.—Erectus capitulis purpureis towards Santagong, alt. 6300. advias.

812. Symplocos.—Arbuscula foliis supra lucidis racemis axillaribus paucifloris, flor. albis. Towards Santagong in woods 8000 ft.

813. Arbor mediocris.—Gemmis ovatis imbricatis foliis ad apicis ramulorum supra lucidis subtus glaucis. Oak woods above Santagong 8000 ft.

813*a*. Rhodod. hispidum —Arbuscula, foliis more generis deflexis, floribus subumbellatis. viride coccineis 5 partitis. Antheris brunneo atris. Descent to Rydang alt. 9000, to 8500 ft.

814. Acer sp.—Arbor mediocris in sylvis versus Rydang, alt 8500 ft. Racemis fruct pendulis.

815. Saxifragæ sp.—On banks, above Santagong, 8000 ft. in oak woods.

816. Juglans sp.—Arbor magna, foliis novellis brunnescens, Amentis pendulis crassis. Below Rydang secus Gnee.

817. Gymnobotryis.—Arbuscula ramulis robustis foliis orbat ad epocha inflorescent spicis terminalibus digiti formibus, crassis elongatis, floribus masculis fasciculatis.

Towards Thaen, on barren hills, alt. 5500 ft. lacteus copiosis. Certe Familiæ Stilaginearum.

818. Cœlogyna sp.—Pseudo bulbis ob clavatus, teres, e basi hinc florem exserens. Scapus per dimidium inferum, bracteis laxis oblect. braetea terminal fuscescent lineari oblongo fere uncial Fos. solitariis magnus. Perianth album. Sepalis lineari oblongis, postico paullo angustiora, lateralibus basi subobliquis, Petala lineari spathulata, angustiora. Labellum cucullatum, emarginatum, profundiuscula sub cochleata, margina repando, fimbriato. Color extus albus, intus aurantiaceo brunneo maculatis, lineis 6, concoloribus cum lineis totidem fimbriarium alternant, maculis, columna versus crebrioribus, basi ima lutescens, in calcar obtusum breve product. Columna longe clavato, semiteres, apice valde dilatat, truncata; infra purpureis lineatus, in parte dilatata purpureo punctat. Rostell integrum, sub trilobum, pendula, dente apicali postia affixa, ovata cornosa emarginata (lake dotted,) bilocularis loculis longitud bilocellatis. Pollinia pallida per paria accumbentia obovato, hinc convexa, hinc plana ope materia pulverea affixa, materia copiosa replicata in processum loriforma.

In arboribus inter muscos in sylvis densis versus Santagong, alt. 8000 ft.

Fig. 14, *a* vertical, *b* outer, *c* inner.

819. Juniperi sp.—Arbuscula, 30 pedalis formosa, ramulis sub pendulis, foliis patentibus pagina supera glaucis, strobilis ovato

oblongis apice depressis. Summit of ridge towards Rydang 10,000 ft. proxima Junipero Oongarense, a qua diffent præsertim foliis patentibus nec adpressis.

820. Thibaudia orbicularis ejusdem generis est cum T. obovata, dis crepans specifica foliis orbicularibus, floribus unibracteatis, calyce ciliato antheris hirsutis.

820*a*. Hydropeltis.—Planta natans partibus immersis fluido gelatinoso viscossimis: fol. nutant exacte elliptia, subtus venis radiantibus, peripheria versus reticulatis purpurasc notat, exacte peltata, venatione bis involuto (Fig 18) convoluta.

Flores solitarii axillares, alabastra nutantia globosa, sepalis imbricatis, Petalis sub 4, imbricatis sanguinolent. Stamina plura, antheris adnatis. Carpellis sub 4 discretis. Flos expans non visus hirsutis. Ovulum solitarium pendulum, ex versus apicem carpelli.

In a Jheel, below Santagong alt. 6000 ft. cum Scirpo triquetro. Very abundant adest etiam in paludibus collin Khasyens ad Nonkreem.

821. Cratœgus.—Frutex humilis spinosus, intricatus, Ramulis abbreviatis central vel terminal in spinar sœpissima aberenta annulat. Folia ramulos terminant patent. reflex, spathulata, vel spathulato obovato, exteriora sœpius minora, aliquando orbicular obtusissim quasi retusa, concava, crenata, supra lucida, subtus pallida, venis secondariis approximatis, inter viniis œqualiter venosis, ideoque distinctio nulla inter venas tertiarias et quaternas etc, pagina infera tanto stomatosa. Stipulæ petiolares settiformes minimæ. Gemmar squamæ orbiculares decidua. Cymis axillaribus et terminalibus, brevibus folii vix excedent, plerumque c ramifciat binis axillaribus trifloris. Centrale majori 3-5 flora. Inflores, centrifuga. Bracteæ angustæ deciduæ bracteolæ pedicellor 1-2 interdum nullæ setaceæ. Flores parvi alba.

Calycis tubus obconicus, limbus dentibus 5 rotundis. Pet 5 orbicularia, venatio ordinaria globosiuscula intus, æstivatione quincuncialia Stam. pauce sub 20. uuiseriatim fauci calycis inserta et basibus cohesione mutua annul formant introrsa. Filam subulata complanat. Anth biloculares ad loculorum sinus filamento anexa. Pollen lanceolat rupticant glabrum.

Carpella 5 a medio infra calycis parieto adnata, sed solubilia: sursum pilosa, trigono convexa. Stylus filiformis glaber lœvis. Stigma subcapitata; intus semisulcata. Ovula bina ascendentia, erecta faceis raphalis placenta proxima. Tegumenta bina. Nucleus oblongus.

Secus flumen.—Punukka.

822. Junci sp.—In humidis Panukka.

823. Potamogeton sp.—In aquis lene fluent. Panukka folia immersa linearum undulata. Spica sub excerta.

824. Composita.—Herba spithamaæ pedalisve erecta radio pallida lilacino disco luteo. Punukka in campis.

825. Cotulæ sp.—Panukka.

826. Elæagnus sp. Icon. It. Boot. t. 13.—Frutex humilis ramulis centralibus terminalibus in spinarum abeuntibus, fol. vernatione mutuo conduplicata oblonga vel ovato supra aspectus asperus, subtus purpuraceo argentia supra pilis stellatis obsita subtus lepidis, flores nutantis aggregat in axillis mediocris, tubo elongato sub 4 gona, clavato albi exquisita odorata, odore Helio tropii. Stam subexserti. Stigma excert. Secus Patchien, Panukka.

827. Lycii sp. Icon. It Booten t. 12.—Frutex humilis ramis elong. atis sub flagelliformibus habitu omnino Ehretiæ. Arenarum viæ Tenassering, buæ ideo forsan Lycium. Cortex albida ramulis crebris abreviiatis, centralibus sæpius in spinis abeuntibus, his e spinosis, tuberculiformibus, foliis lineari spathulatis, fusciculatis in apice tuberculorem, vel in ramulis elongatis in spinis alternantibus, sæpe obovato orbicula subcarnes. flos terminalis solitarius sub erectus purpurens. Calix irregulariter 5 dentat vel. 5 fissus, laciniis nempe varia cohærent. Corolla infundibulif lacunis oblongis obtusis patentissi. fusciculo margin reflexis faux subclausem pilis e filamentis medii paullo infra infuscicualo ortis simpleribus.

Stam epipetale his alternant exserta, filam more supra exposito villosa. Anth. basi affixæ bilocul. longit .dehiscent Pollen læve ? globosum in aqua.

Ovar. globos. pedicello apice dilatato insideis biloculare placentis planuisculis multi ovulat ovula subreniformia distinction nulla tegminum foraminis situs inferne ad hili latus. Stylus stamina excedens filiformis. Stigma capitatum discoid.

*

Capsula globosa stylo terminal, baccati pedicella nutanto cernui apice valde clavato, insideis pisiformis rubra. Placentæ simplicis. Semina pauca, reniformia albida, aspectus extus celluloso sinuosus. Tegmen 1 crassiuscul coriaccum, ecellulis quam maxima sinuosus. Albumen fere corneum. Embyo axilis curvat Radicul hilum versus. Cotyled lineares faciebus latioribus. Seminis alternæ. Raphe nulla. Plumula inconspicua.

Secus flumen Patchien Panukka, April, 1839 fl.

828. Stillingia sebifera ?—Punukka, circa tecta.

829. Pogonatheri sp.—Dense cæspitos. In arenis, rupes tubusque Patchien Panukka.

830. Chenopodiii sp.—In agris Panukka variat statura.

831. Thymus.—Frutex pusill decumbens floribus carneis labio inf. purp, maculato. Panukka in ripis aridis.

832. Plantago Secus Panukka et alibi per montes inter alt· 3000, et 6000 ft.

833. Myrtacea sp.—Prope Panukka, fol. coriacies.

834. Quercus st.—Fol seniora coriacea, supra atro viridia subtus argentea, novell e luteo albido spicis patentibus; floribus albus ingrato odoratis. Panukka prope Arbor magna.

835. Alnus sp.—Prope Panukka Arbor magna.

836. Myrtacea.—Arbor magna, fol coriaceis fructibus oblongis, purpureis, apice annulatis et, foveolatis. calyce limbo nempe persistent, dentibus obsoletis pulp carnei. Semen 1, pulpa leviter adnat, viridia. Tegument chartaceis sub spongios.

Cotyledones virides, hemispherici quoad axis fructus *incumbentes*. Radicula brevis conica. Plumula conspicua. Prope Panukka.

837. Myrtacea.—Habitus Millingtonia folia novell. fuscescentia. Paniculæ junieres ramis, deflexo cernuis Fol. oppos. exstipul. Fere Barringtoniacea; alabast globosa. Calyce hirto 3 partito ? an spathac. fisso. Pet 5 hypogyn. Stam. totid. corollæ altern. bistigmatos. ovar : Ovula bina pendula curvis loculo : Contusa infloresc. graveolens. Panukka prope.

838. Celastrinea —Arbuscula, pedicellis filiform fere capillaribus floribus albis. Panukka prop. In sylvis.

839 Symplocos.

*

839. Arbor magna ramulis hirsutiusculis, fol. alternis exstipulat ovatis breve cuspidato acuminat. Paniculis tnyrsordeis, ramis axillaribus et terminalibus floribus albis, suave odoratis Panukka. Secus Malchece.

840. Cologyne sp. Icon. It. Boot. t. 20.—*Epiphyt* in rupibus. Rhizomat non visa. Pseudobulbis compressis angulato alatis, apex bifoliis. Petioli breves. Fol. oblongo lanceolatis apice nutanta plus minus repanda coriacea acuminata.

Scapus terminalis clavatus vel. sursum incrassatus, flores subtus bracteis parvis, arcte imbricatis vacuis, infimo distante, superioribus in bracteis floralibus obcoriaceis oblongis fuscescent deciduis gradata obeuntibus. Flores mediocres, subsecundis albis inodori. Rachis flexuosa bractear lat. basibus (cicatricibus) quasi annulat. Ovar pedicele albus. Flos anticus. Sepala oblonga acuta subæqualia. Pet. angustiora linearia. apice subreflexa. Labell cum basi columnæ articulat, trilobum, lobis lateralibus rotundatis, apice subreflexis, terminat cordato ovato subporrecta lobis omnibus denticulatis.

Cristis binis fimbriato, dentatis post. albis, antice medio aurantiaceo. Color labell albus basi ima subaurantiaceo, lobo medio ampla transversa. Columna semiteres, clavata, alba. Pollinia aurantiacea, materea pulverla ampla.

Panukka prope.

841. Cyperacea.—Propo Panukka.

842. Ficus sp.—Foliis coriaceis supra lucidis gemmis conico ovatis Anthodiis binis ternis vel aggregatis pisi magnitudina, mammillatis viridibus. Panukka.

843. Composita. Herba spithamæa foliis humi adpressis rosaceis. Scapo terminal. axillari dense et sub ferrugineo tomentosa. Anthodii eodem more vestito, flosculis carneis. Panukka

844. Euphorbiacea.—Frutex, 4-5 pedalis floribus masc. et fæm in axillis fascicul. Panukka in fruticetis.

845. Plectranthus.—Herba 1, ½ pedalis. Petiolis hispidis præsertin basi foliis imparipinnatis, foliolis lanceolatis acuminatis plus minus dentatis. Bracteis ternatis verticillat trifloris, floribus magnis carneis. Calyce glanduloso bilabiat. Infruticetis secus Matchien.

Pedicellis apice articulatis vel potius flos in apice pedi-

celli articulat. Cal. lab. super 3 venio, minut 3 dentat, infimo bilobo. Cor. tubo elongat. lab. super. fonicat bilobo later reflexis parvis. medio obcordato concavo bilobo, extus pilosa.

Stam 2 superior sterilia minut. inf, fertilia. Anth. fertil. in filamento apice articulat; connectivo bicrus, crus supera. anther 1 locular gerens: infern anth sterilia. Ante longitud dehiscens, steriles cohærentis. Pollen magn glabrum, triplicat. Stylus longus filiformis. Stigmita bina inæqualia. Styli lacinearum faciem internam occupantia, purpuria. Torus magnus albus suborbicalaris. Carpella lœvia. Stylo basis excentricæ.

846. Rubiacæ.—Foliis subcoriaceis ramulis brunneo ferrugineis. Compressis gemmis conicis compressis. Corymbis axillaribus foliis brevioribus fructibus ob turbinatis: cerasi magnitudina apice annulat. Calycis limbo nempe deciduo et disco coronata bilocular loculis oligospermis.

Semina suborbicularia. Concavo convexa pendula demumin pulpa nidulant. Albumen corneum. Embryo apicalis: radicula supera hilum prope.

Panukka.

847. Eulophia.—Subacaulis bipedalis foliis linearia 1½ pedalia plicata. Scapus apice racemosis bracteis vaginant laxis membranaceis, striatis; floribus subsecundis purpurascent saturatione colora vanos. Pedicellis bracteis concavis, linearibus membranaceis ½ breviorib. Perianth apert unilateral. Sepalis lineari oblongis acutis. Pet. angustiora. Labellum calcarat 3 lobum, lobis lateral obsoletis, terminal ovate integro.

Cristis 3, postic dentatis, antic fimbriatis. Lamina in lobi medii fere omnino nuncupanto divisionibus difformibus, continuem cum columnam. Columna nana. Clinand. parum profound. Anth dento terminali affixa operc mobilis. Pollinia 2 postea foveolata vel fissa.

Caudicula linearis latiuscula. Glandula trigona viscosa facile solubilis:

Rostell ad basi bipartit.

Panukka in collib aridis.

848. Phyllanth sp.—Frutex erect 4 pedalis. Panukka in fruc ticetis.

850. Lycopodii sp.—Pendul, fol. lineari aceratis patentissimis, basi ½ tortis.

Spicis terminatibus, bracteis foliis caulens subsimilibus. Panukka.

851. Jasmini sp.—Scandens, fol. oppositis ovatis acuminatis basi subcordatis venis secondariis distinctis distantib. Calyce fructus lacerat in fisso. Bacca singula vel bina, oblonga livida Panukka.

852. Andrachne trifoliata. Panicatis, axillarib. thyrsoideis floribus, minutis, 5 sepalis, staminibus his oppositis.
Panukka.

853. Rubiaceæ Randia.—Frutex humilis valde ramos. fol. rotundato obovata parva, floribus lutesc viridibus, terminalibus subodoratis, campanulatis, laciniis reflexis, æstiv. contortis. Stam. sessilibus. Stigma clavat. exsert. Panukka secus. Patchein.

854. Menispermea Icon. It. Boot. tom. 11 t. 22.—Frutex volubilis ramis petiolis foliis que subtus pubescent. Fol. cordata acuminata supra glabra, basi sub 9 venia, coriacea venis secundariis vix conspicuis, reticulat. (Petiolis utrinque incrassat) juniora sœpe basi vix cordat.

Paniculis fasciculatis in axillis vetustis ramosis pubescent, floribus sœpius ternatis : interdum solitariis et racemosis bracteis minutis.

Pedicellis clavatis brevibus glabratis. Periant in hujus apice articulat, e foliolis 2 galeiformibus, basi subsaccatis integris plerumque dextrors, et sinistrors sitis color lutescens.

Ovar subreniforme compressum sutura placentif sœpissime axi proxima. Stylus subnull. Stigmata bina vel. terna Ovulum unicum, ascendens. Periant caducissim. ovaria fecundata denudata fiunt his non fecundatis caducissime sunt.

Panukka. An generis ejusdem cum plant mascula perianthio urcæolato gaudent, e Dewangiri.

Habitus et inflorescent omnino eadem. The embryonary sac is long in making its appearance, the ovula consists of one tegument which adheres to the nucleus ; at least there is no distinction of coats, at an early period, when the excavation is formed in the nucleus, and the ovulum has become

curved, up to the commencement of the drupe, nothing is to be found but a fleshy curved hollow body, apiculate at its apex. The ovulum before changing its situation has one tegument, this in all probability subsequently adheres firmly with the inside of the loculus, and becomes I conceive the drupaceous part. This is curious. I have only seen imperfect ovula, all the perfect ones were examined after the changes alluded to had taken place.

Nomen aptum e galeis duabus floris.

855. Cirrhopetalo sp. Icon It. Boot. tom. 11 t. 23.—Rhizomat crassitia pennæ ancerinæ, squamis vestitis. Pseudobulbis i obovatis angulatis, basi reticulo vestit. Fol unicum lineari lorat. coriac 1 ven. apice emarginata. Scapus solitarius vel bina uno utrinque. Pseudabulbi purpur maculat basi squamatis, apice bracteas subquaternas membranaceas albidas gerens, pseudobulbos sub æquant. Pedicellis his æquant clavate lutescent sanguineo, crebra punct uti ovarum. Flores erecto bini vel quaterna compressa ex ochroleuco purpurascent.

Sepal postic, fornicat purpuras lateralibus basi tortis longe acuminatis, basi obliquis inter se et cum pede columnæ, connat lutescent extus, duplo fere brevius

Pet sepalo postico breviora, latiora ovata cordata. Labellum cum pede columnæ incurvo valde elongato articulat, tremul, integerrimum carnosum ob directione pedis quasi infloresc incumbens colore lutescent, purpur. subtus carinat.

Columna nana robusta, antea bidentata supra sub alata purpur punct. pes intus purpureus. Anth bilocularis, loculis inæqualit. bilocellat. Pollinia 4, *cornea*, interiora minora lamelliformia, omnia *antea ?* connata Rostell subo.

Panukka Epiphytica. An Cirrhopet Wallichii veri similiter Bolboptyllis ad jungend, mediant B. radiato et *specie superne*.

856. Polygonum.—Fagopyrium. Cult throughout Bootan.

857. Ficus sp. Icon It. Boot t. 24.—Subscandens ramulis complanatis sub hirtis gemmisque conicis petiolisque ferrugineis. Petiol teretes. Supra sulcat. Foliis ovatis, breviter acuminatis obtusiusculis vel subacutis, coriaceis utrinque tactu asperulis, interveneis sæpe convexis subtus minute reticulatis ramis

sub exasperatis. Anthodiis axillaribus breviter pedunculatis binatis tribtracteatis, bracteis lateralibus anth. fere ut medio vacuo hirtis. Pedunculis sursum incrassatis apice tribractatis. Anth juniora oblongo apice lato plano.

Fructus anthod. pedicellum clavat petiolum subæquant terminans, globos, cerasi nigri magnit subexasperat papillis minutis conicis, umbilici mineme depresso, annulo obsoleto cincto, squammis imbricatis clauso, extimis ternis, bracteo pedicelli nunc obsoletis alternant.

Capsulæ subsessiles vel pedicellat (masculis nullis) basi pedicelli, perianto ternath membranaceo, carneo stipata. Capsula ossea, sœpe pressione angulata. Stylo brevi obliquo stigmatique sphacelato inæqualiter bifido subterminat. Semen per junius tant vidi, ascendens. Panukka.

Periant lacin 1 sœpe hanc, dentat, etiam in stata per juniora colorat. *Bractœ propriæ nullæ*! certe dioica ?

858. Rhus?—Arbor, foliis alternis ex stipulatis, imparipinnatis. Paniculis axillaribus (axibus compressis) alabastris minutis tantum visis, viridibus. Sepala 5 rotundato imbricat. Pet. tot altern imbricato. Stam 5 sepalis opposita bilocul, ovar inferum ? vel pedicellis sursum incrassata ? Panukka.

859. Pothos scandens.—Panukka, I cannot conceive why this plant is ranked among Aroideæ, Acoraceæ being considered distinct. If this latter be really distinct, pothos belongs to it, and is the transition to genuina Aroideæ. The chief distinction between the orders is the absence of scales in the one, and their presence in the other. But if we look at their irregularity in number and disposition, and the obvious fact, that they pass so gradually into the stamina, that they may be considered as these organs in an abortive state, there is no necessity at all for the separation. Mr. Brown classes with his usual judgement Pothus and Acoraceæ, as they now stand, among his last section of Aroideæ, Orontiaceæ.

It is a curious fact that though the ovula differ in situation, in Acorus they are pendulus, in the present plant erect, that in both the foramena point to the base of the fruit, or rather ovarium. The reduction of the ovula to one coat appears constant in Aroideæ. The ovarium is 3 celled and as in

Acorus the cells are filled with mucilage. The ovula are solitary.

The nucleus? has so much the appearanee of an inner coat, that I hesitate in deciding whether it is really nucleus or not, at least at this period of its development. Analogy tells us it is nucleus, both when Arordeæ generally are considered as well as the ordinary mode of development of ovulum, the nucleus being the preexisting part. No process of distinction shews that it is a tegument, on the contrary, the opaque line that so much resembles the canal of an ordinary coat, disappears. Thus *a* second fig 20 is not the nucleus, but is owing to some condensation of tissue. A truncated apex is unusual in nuclei, their form in this directio being almost always apiculate and even mamimlate.

860. Bœhmeria.—Frutex Panukka prope.

861. Myrsinea.—Foliis obovatis punctioram Samydearam, fructibus pisiformibus in ramis acervulatis viridibus. Panukka.

862. Choripetalæ sp.—Scandens, foliis penniveniis, fructibus pisiformibus racemosis. Panukka.

863. Polypod.—Aspidioides fronda 1 pinnat, pinis sub coriaceis pallide viridib Panukka.

864. Composita.—Flossulis inito luteis demum aurantiaceis. Herba erecta.

865. Meliacia.—Arbor, foliis imparipinatis. Cymis racemiformibus, axillaribus alabastus nutant. Sepalis 3 4 lepidotis 2 interioribus minoribus. Petalis 3 imbricatis. Stam 6 filamentis in urceola connatis: ovar. non visum.—Eaten up by incects. Panukka. Andersonia of Roxburgh?

866. Elæocarpea.—Arbor. Ramis hirtis brunneis, ramulis partibusque novellis velutinis, his basi sqamis brunneis gemmaceis parvis vestit. terminatibus. Folia œstivatione conduplicata oblonga, plus minus dentato, basi subintegra supra glabra subtus pubescent petiolis $1\frac{1}{2}$ unicalibus brunneo hirtis utrinque incrassatis subacuminata obtuse. Stipulis deciduis angustis subsetaceis.

Flores potius alabastra, nutanta vel cernua, partem inferior. ramuloram nuncupantis, basi tribracteat, bracteis pedicellis

brevioribus, ferrugineo pubescent lateralibus angustis setaceis. Stipulas mentientibus.

Pedicella clavata velutina uti calyx. Sepala 4 oblonga raro 5 œstivatione aperta origine ut in marginibus judicare licet inflexis, valvata.

Pet numero varia sepalorum longitudine, sæpius biserialia seria quaque 4. na interior minor, sepalis opposit exterior alterna, dentibus hinc illinc profundis. Torus carnosus superfice pubescens maximus.

Stam: oo conformia huic inserta pubecenti subintrorsa filam filiform. Anth bilocularis basi affixa loculis sursum in apicula subæquant subulat glabriusculus product.

Ovar: central pubescens sœpius 4 loculare ovulis oo, biseriatis.

Stylus 4 sulcatis, sulcis apice versus subtortis stigma e 4 coalitis format minutiss papilos.

Habitus omnino Sterculiæ, distinct a congeneribus œstivatione aperta, numeropartum,toro maximo et petalor irregularit.

Alteram speciem, habeo ex Asamia Supera. To the irregularity of the petals much importance is to be added, because although it is just what might be expected, it does not occur in the other genera, although in these the petals are more incised, their origin from the torus is very distinct, and from the consideration of this and all other plants it is evident that both are glandular, and both analogous. Apetalism is in all polypetalous orders to be expected, and when it does occur is to be attributed to their development into stamina. The nature of the incisions in Monocera and Elæocarpus required to be considered. In this instance the complete separation of some of the portions might perhaps be considered as a tendency to their assuming their proper form, that is of stamina, if so, apelatous species may be expected.

The origin of the ovary is in this very evidently the same as the calyx, both being viridised, both representing in a primary degree, leaves. Hence the correspondence of the cells with the sepals, and hence too, the law first notified by Brown, of their alternation with these organs, for the series of organs of the same denomination in variably alternate.

The law adverted to is to be found, p 414 of the immortal Prodromus.

Calyx, 4 rarò 5 sepal, œstivat apertus. Pet numerovaria, dentata. Stam oo, in torum. Ampliat insert, anthera apice processu subulato. Ovarium multi ovulatum. Capsula globosa, lignosa superficia strata densa, processum rigidorum 4 raris 5 valvis, medio septiferis, endocarpio sanguinolento demum irregular secedent. Semina non visa.

In one instance with 5 sepalis the only œstivation observed between two of the sepals was decidedy imbricate. Even this is not a singular exception, for the calyx of Kydia calycina, is certainly not truly valvate.

Nomen aptum e sepalis apertis, vel e toro maximo. nomen specific *Sterculiaceum* alabastrum valde amarum.

867. Polygala sp. Icon. It. Boot. tom 11 t. 26.—Herba pussila erectiuscula, foliis ascendentibus racemosis oppositifol pluri floris, floribus purpur rubris, carina viridescent cristo lilacina Panukka.

868. Sabiæ sp. Icon. It. Boot. t. 27.—Panukka foliis omnia speceis subtus glaucis venatio peculiaris.

869. Saccolabii sp. Icon. It. Boot. tom 11. t. 29.—Caule brevi vix digitali foliis bifariis secundis nutantibus spithamæis pedalibusvc linearibus acuminatis gradat basin versus canalicul apicem versus hinc dentat. vero obliquessima emarginatis carnosis 1 veniis.

Recemus subumbellatus axillaris sub uncialis media infra bracteatus. Bracteis flor squamiformib. pedicellis ½ uncialib coloreflori, floribus posticis lutescemtibus saturat sanguineo fere atro sanguineo maculat. Labelli lamina alba, disco lutescento maculis pallidioribus uti calcar.

Sepalis petalisque conformibus, spathulatis his minoribus calcar labell, intus simplic. Lamina deltoidea trigona fimbriata et fimbriis discoideis appendiculat. Columna nana. Anth membranacea, posteriora rostrata sub bilocularis, locellorum septes minutissimis incompletis, apice setiferis. Pollinia 2 postea foveolata. Caudicula tenua longa. Glandula oblonga.

Panukka.

Probaby Saccolab calceolare of Lindly, at least his character answers tolerably well.

870. Jasmini sp.—Scandens foliis carnosiuscul pinnatis venis secondariis distinctis, subtus sub purpurascens. Cymis paniculatis terminalibus ramulis trifloris, calyce dentato, floribus hypocraterif. tubo purpureo tincto, lamina alba. Stam inclusa. Stigma exserta. Odora generis.
Panukka.

871. Filix.—Near Panukka frons coriaca.

872. Querci sp.—Foliis coriaceis grosse dentatis supra lucidis subtus glaucis. Panukka supra.

873. Cinnamom.—Arbor. Panukka prope.

874. Tetrantheroid.—Arbor magna.

875. Arundina bambusifolia Icon. It. Boot. t. 50.—Panukka prope forsan plures species sub hac amplectuntur.

876. Schœpfia. Icon. It. Boot. t. 30.—Panukks supra.

877. Agyreia —Euryofolia, fructibus primo rubris demum pulchra azureis — baccatis.
Panukka prope.
Calantha plantaginia, foliis late lanceolatis acuminatis. Scapo media infra vaginis laxis foliaceis obsito, rachi florifer angulata. Bracteis lineari lanceolatis membranaceis, ovario duplo breviorib, ovar pubescente calcare curvato filiforme puberula apice inæqualiter dentato. Periant acuminat sepalis lanceolatis, petalis lineari lanceolatis. Labelli albis subobovatis, medio bidentato basi trisulcato intus pubescens.
Anth albi carnosum fere immersa. Pollina 8, glandula parva.

878. Urtica.—Arbuscul. Dioica masculis albidis. Panukka supra fœmineis nudis.

879. Rhamnea.—An Kurrimia.
Ramulis abbreviatis foliis alternis stipulatis ovatis basi cordatis venis secondariis distinctis, interveniis obliqua transversa et pulcherrima venosis. Paniculis terminalibus fructibus immaturis purpurascent Panukka supra.

880. Swertia plantaginifolia nob..—Herba pedalis, fol inferiora longissime petiolata, petiolis profunde canaliculatis, ovato oblonga, interdum rotundato, ovato in petiol decurrent, glabra tenera trivenia, venis lateral media infra bifurcatis acutis superioribus oblongo ovatis sub sessilibus.

Panicula terminal et axillari fastigiat sub corymbosa ramis sub angulatis. Bracteis foliaceis.

Floribus solitariis in axillis, vel terminal. Pedicellis subclavatis sursum 5 gonis. Calyce foliaceo, sepalis lanceolat spathulatis reflexis. Petalis obovatis viridibus intus maculis sanguineis.

Panukka contusa fetida.

881. Liquidambar? Icon. It. Boot no. 28 tom 11.?—Populi sp.

Arbor parva ramulis tante foliosis compresiusculis apice gemmiferis, gemmis ovatis parvis, squamis imbricatis.

Stipulis caducis non visis.

Petiolis compressissimis basi concava gemma foventis apicem versus dilatata, folia basi cordato orbicularia vel quadrata orbicularia (diametro tansverso majore) irregulariter dentato, dentibus rotundatis breviter lateque cuspidatis venis supra prominatis, flexuosis, rubris, subtus glaucis, venis ecoloratis. Amentis fœmin tanto visis, ex axillis foliorum lapsorum ideoque in ramis non ramulatis, basi squamis imbricatis castaneis obsit (rachis angulat pubescens) pendulis sœpe spithameis pedicellis brevibus subclavatis.

882. Diospyros.—Arbuscula floribus ochroleucis urceolatis, laciniis reflexis masculis minoribus.

Fœm pedicella apex valde dilatatis calyce ampliato.

In the Rajah's Garden Panukka.

882*a*. Photinia.—Arbuscula folia lanceolatis vel obovato lanceolatis coriaceis integerimis glabris, margine sub cartilagineis, stipulis non visis Paniculis terminalibus et axillaribus, bracteis minutissimis floribus parvis albis, styli stigmato sœpius bina interd terua vasc fascic dorsalibus 2, 3, ramosis. Coculi tot quot styli, septis medio solubilibus, axis nempe liberis, parieto externo in loc ovula sub product. Ovar inferum. Panukka prop.

883. Lactua.—Flosculis luteo aureis, tota plante glaucescens 1, 2 pedalis in agris secus Patchien.

884. Mori sp.—Frutex 4, 6 pedalis, fructibus parvis, rubescentibus. Secus Patchien.

885. Lactucæ sp.—In horto cum Geranio, Ajuga, Thlaspi, etc.

886. Avena.—Spiculis pendulis. In horto Panukka.

887. Rhamnea.—Zizyphi sp.

Arbor mediocris corona orbiculari formosa, foliis supra lucidis subtus glaucis ramulis ferrugineis. Cum præcedent.

887*a*. Fragariæ sp.—Stolenifera fructibus sub gratis, rubris. Panukka supra.

888. Symplocos.—Foliis coriaceis attroviridib flores pallida lutescent. Arbor.

Panukka supra.

889. Pomacea.—Arbor magna floribus albis foliis subtus tomentosis, above Panukka.

889*a*. Apocynea neriufolia.—Frutex cortica tenacea, fol. elongatis lanceolata subtus molliter pubescent, venis secondariis parallelis, angula, fere rectum cum costa effor, vena intromarginea distinct. Cymis terminalibus pubescent. Cor. infundibulif intra fauci ampliato, fauce constricta, pilis subclausa œstivat contorta Secus Patchien circa tecta.

Corolla tubus infra parta ampliat rubro tincto, cœtera flos virida lutescens folliculis pendulis subulatis.

Vide supra 889. foliis teneris. Cymis axillaribus et terminal corymbum densum terminal efformant. Cano tomentoso. Calycis tubus tomentos obconicus petala alba, stamina pauce basi in annula coalita.

Ovar omnino infera, disco glandulosa evoluta! Styli 2, 3 filiformes, biloculare.

Stigma capitato papilosa.

Ovula bina curvis loculo.

Styli vasc. fasc. aucto ut in Photinia cum proxima genus differt tant habitu et ovario toto infero distaque glandulosi evolution.

890. Hydrangeacea Nov. genus Icon. It. Boot. tom. 111 t. 3.—Frutex repens in arbor. Ramis teretiuscul brunneis, cortic velusta fissa, robustis ramulis tant foliosis. Fol. opposito exstipulat. Petiolis uncialibus sub pubescent, basi dilatatis, fol. teneris oblongo ovatis acuminatis basi cordatis, serratis supra lucidissim, subtus minuto reticulat.

Paniculis terminalibus e cymis plurimis dichotomis corymbosa dispositis puberulis. Bracteis membranaceis brunneis caducissima, floribus parvis ex albidis viridescent. sub odoratis.

Calyces tnbo sub hœmisphœrico glabro ovariis omnino adnato 5 dentato.

Pet totidem alternant lanceolat, œstiv. valvato arcte adhærent, cupulate pushed off, venis in axi *lacinear* apice mammillat ob adhesion. Stam 10 disco epigyno inserta œstivat inflexa alternis, petalis oppositis brevioribus internis. Filam filiformia, 1 vascular fasc. glabra, Anth terminalis bilocular, longitud dehiscens. Pollen glabrum album. Styli 2, intus sulcat, glabra, subclavat, *vasculis* 2-4 *dorsal* Stigmata linearia decurrent vel longitudinalia sulcata.

Ovar. biloculare placentis carnosis intra ovula minuto, oo, nucleo tegment adhœrent foraminis situs hilum prope.

Panukka supra.

This plant I found in old fruit, near Khegumpa it appears to be a new genus, allied to Hydrangea. It is well marked by the cohesion of the petals, it likewise is akin to Viburnum, and Cornus.

891. Orchidea.—Calanthea.

Terrestris, axis vestito inferne squamis laxis foliaceis, foliis evolutis plicatis scapo $\frac{1}{2}$ brevioribus ovatis acutis, scapo erecto pedal, teres puberulis. Bracteis albidis membranaceis, pedicellis brevior paullo flores antica, perianth e viridi fuscescent Labell ochroleucis vel straminea.

Sepalis lanceolata obovatis acuminat subæqual. Pet. conformia sed minora.

Labelli calcar ovario pubescente duplo brevior, emarginatum, clavatum. Lamina 3 loba, 1 lobis lateralibus, obovato cuneatis patentibus marginis crenulatis, terminali, subobrenifoma emarginato, repando, medio processum elevatum carinæforma gerens, calcaris fauce tuberculat.

Columna lutescens marginibus rubris, clinandra margo integer. Anth bilocularis.

Pollinia 8, obovato complanata, caudiculis totidem pulvereis cohœrentibus, glandula solubilis mediocris.

Panukka supra.—Nova species esse videtur. Scapo axillari foliis ovalis acutis, calcare subclavato virido ovario pubescent duplo brevior labella trilobi, lobis lateralibus, obovato cuneatis, medio, obcordato, undulato, sub bilobo medio unilamellosa.

Inter no. 15 et 16, Calanthea brevicornea.

892. Curcuma sp.—Scapo spithamœa bracteis inferioribus albis superior pulchre rosaceis flos. albis labello luteo.

Panukka supra,

893. Cornus Icon. It. Boot. tom 111 t. 4.—Foliis ovalibus breviter acuminatis subtus glauco albidis, venulis tertiariis transveris, novellis oppositis, senioribns alternis. Cymis corymbosis terminalibus dichotomis puberulis, alabastris oblongis viridescent. Panukka supra.

895. Saxifragea Icon. It Boot. tom 111 t. 5.—Suffruticosa erecta puberul, foliatior Acanthacearum. fol. sub oppositis oblongo lanceolatis carnosiusculis serratis vena primaria secondariis que arcuatis utrinque prominulis. Cymis dichotomis axillaribus terminalibus densi flores, cano puberulis.

Calyce 5-6 dentato omnino adhærens sub hœmisph vel conico hœmisphœria, pilis albis incurvis paucis interspersus.

Pet. totidem alternantia carnosa alba, œstivat valvata, apicibus acuminatissimis introflexis.

Stam numero varia 10 14. sœpius ut videtur 12, epigyna, cum disco epigyno tenui distinct continuum uti etiam petal, œstivat intro flexa si petalis œqualia numero exteriora, que longiora, alterna, interiora opposita.

Anth. terminatis biloculares polla 3, 5 natum ex immaturilat.

Ovarium omnino inferum, placentis parietalibus tot quot styli et cum his alternautia, placentæ carnosæ, ovula oo foramin hilu propve. Styli 4 5 sub elavata, intus sulcata stigma inœqualiter bilobum.

Panukka supra.

Videt proxim Adamiæ, an generis ejusdem. Styli fasciculus vasa 1, apice versus biforcatus, fllamento unicus indivisus,

The ovar is somewhat open at top, the styles are barely closed up, these are opposed to the petals.

896. Convallaria. Icon. It. Boot tom 3 t. 6.—Erecta 1½ pedalis. Caule angulato purpureo lineato maculatc. Fol. oblongo lanceolato acuminata obtusa utrinque lucida carnosa in caule articulato, articulo margine crenulato, inferiora alterna sub, 5 venia, venis secondarius inconspicua, superiora sub verticillata, flores secundi axiliares cernua, pedunculis sœpius bi trifloris, caulis maculat, alabast. oblongo, apice conica, flor. urceolat, tubo obtusa hexagono laciniis 6 reflexis, tribus in œstiva-

vation exterioribus, color albus rubro maculata, laciniis viridicentibus marcescens totus ruber! laciniis connivent.

Venatio simplex vena 1 in axis lacineæ cujusque. Stam in clusa, anth biloculares intus dehiscent. Ovar. rubro tinct trisulcat 1 loculare placentis 3 parietalibus, ovula plura *ordinari* foramine hilum prope, stylus subulaties trisulcatus, stigma papilos trilobum.

Panukka supra.

897. Aroidea Icon. It. Boot. tom. 3 t. 7.—1½ pedalis foliis infimis in vaginis laxis cellulosis abeuntia. Tuber depress. mediocr. apice radiculos fol. unicum longe petiolat petioio infra vaginanto supra teret, palmato partit, foliolis circiter 8, a centro radiantia, basi versus conduplicat, oblongo lanceolat, valde acuminato undulato, tenera venis secondariis in vena intromarginat conspia anastomasant, interveniis reticulatis. Spatha pedunculata folia vix œquans teres ophidiforma, galeatum longissima acuminat acumine torto in subulam, extus viridescens albo lineat intus albo lineat ant saturato brunneis, acumine pendulo, Pedunculi apex obconea, Spadix in part infera antherif superne clavato nude imo apice incrassata, rugulosa.

Per nulla. Stam varia composita monadelpha filamentis crassis sœpius, bi tri antheriferis. aliquando pluri antherif vascul fascic indistinct, antheris didymis, loculis rotundatis intus rima longitudinal demum poriforma dehiscent. Pollen globum album.

Panukka supra. An Pythonii sp.

898. *Burseracea.*—Anacardiacea Frutex ramis robustis ramulis foliiferis, fol. imparipinnatis, subtus glaucis, alternis petiolis basi incrassatis, paniculis axillaribus foliis brevioribus, ramulis racemosis paucifloris.

Flores minuto viridescentis.

Cal. fere 5 sepalus, sepalis rotundatis.

Pet. totidem alternant revoluto pennivenia! œstivatione imbricata.

Stam totidem alternantia introrsa, filam subulatis persist anth. bilocul. terminal longit dehiscens, pollen decidua oblongum globum.

Annulus glandulosus repanda 5 lobus, ovarima ingit, lobis

petalis oppositis, sinubus staminibus. Petala huic extus inserta, uti stamina quamvis hec paullo superne.

Stylus crassus brevis, vasc fasc, obsolet. Stigma bilobum (trilobum ?) rugulos. Ovar 1 loculare liberum, ovul, unica ascendens e latere loculi efuniculo longo pendulo, foramina hilum prope funiculo appresso Tegmina 2.

Secus Patchein in fruticetis.

This plant appears to belong to Anacardiaceæ, at least it has most characters in common with this order. It would be referable perhaps to Amyridea, but it has no sensible properties. With Anacardiaceæ it agrees in the somewhat *singular* insertion of the petals and stamens. In Mangifera the former are inserted into a fleshy ring formed by the union of the filaments. In this they are inserted into a fleshy ring which is developed interiorly into a 5 lobed cup shaped gland. The stamina are inserted into this same, but a little above.

With Aurantiaceæ it has an obvious affinity in habit, differing principally in the want of glandular dots and the structure of the ovary. It is perhaps the transit between Anacardiaceæ and Aurantiaceæ through Amyrideæ.

899 Cerasi sp.—Floribus albis, Arbor. Towards Tassisudon.

900. Symplocos.—Floribus albis. Arbor. Towards Tassisudon.

901. Rubi sp.—Scandens, above Telagong.

902.——Frutex scandens alabast rotundat virid. Ibidem.

903. Styrax.—Arbuscula. Flores albi. Ibidem.

904.——Arbor magna. Alabast virid. Ibidem. Stipulis longissim.

905. Smilax —Scandens. Ibidem.

906. Myrsina.—Arbuscula Ibidem.

907. Arbor magna, florib parvis viridescent. Ibidem.

908. Umbellifera.—In hortis Ibidem.

909. Pomacea.—Arbuscula, fol. subtus ferruginea, floribus albis, calyce limbo cum petalis etc labentib. Above Telagong. *Runga putta,* used by Booteas.

910. Stauntonia.—Scandens floribus odoratis. Ididem.

911. Elœocarpi sp.—Arbor magna, Ibidem.

912. Laurinea.—Arbor, Ibidem.

913. Laurinea.—Arbuscula. Ibidem.

914. Celastraceæ.—Frutex scand. florib viridib. Telagong. (922)

915. Paris polyphylla.—Ibidem.

916. Zanthoxylia.—Flores basi viridis cœter, livid purpur. Ibidem

917. ————Arbor mediocris floribus albis odoratis infundibulif. Ibidem.

918. Querci sp.—Arbor magna. Ibidem.

919*a*. Laurinea.—Arbor. Ibidem.

919. Aurantiacea.—Frutex habitu quodamodo Crotonis, racemis terminatibus puberulis floribus viridescent. astivat imbricat. Sepala 4. Pet totid alternant hypogyn revolut. Stam totidem sepalis opposita exserta above Telagong.

920. Similacina Icon. It. Boot. tom. III. t. 9.—Rhizomat repentia submamliformia. Caulis pedalis vel 1½ dedalis basi vaginis stipati, foliis alternis, petiolis uncial canaliculat oblongo ovatis acuminatis basi profunde cordatis 5-7 veniis, carnosis, subtus albis lucidis summis lanceolatis basi cordatis. Panicula terminata, erecta, ramis paucis, subdivaricatis. Floribus viridiscent bracteis minutis, membranaceis. Sepalis 3 rotundatis concavis. Pet 3 oblonga cum illis continua! basi œstivat imbricat. Stam 6 hypogyna filamentis robustis brevibus 1 vasculos. Anth termin bilocular longit dehiscen. Pollen angulat. Ovar globos. Stylus trisulcatis obsolet brevis. Stigmata simplicia. Loculis tres, ovula bina curvis, infra pendul, foramina fundu spectante super ascendens, foramin apice spectant, tegmina 2. Telagong.

921. Pomacea Icon. It. Boot. tom III t.10.—Arbor magna ramulis, subtus paniculisque cano pubescent foliis pendulis. Stipulis obsoletis oblongis plus minus repandis, acuminatis serrulatis vel sub integrus, venis secondariis arcuatis nexis, interveniis irregulariter et sœpissima oblique reticulat, gemmis imbricatis inconspicuis terminal. Paniculis in axillis folior summor etiam terminal thyrsoidis bracteis caducis, floribus parvis, brevi pedicellatis albis ingrat odoratis.

Cal. 5-6 dentatis tubo conico. Pet totidem, imbricat arcte reflexa e margina disci orta.

Stam plura uniseriato discum terminantia alterna sœpeis longiora reflexa; filam subulat vasculo obsoleto. Anth terminalis, bilocular, longit dehisc. Pollen glabrum, 1 sulcat discus perigynus glaber calycem intus vestit.

Ovar infer bi triloculare, ovulis binis ascendent curvis loculo foram. hilum prope extrorsum, tegmina bina. Styli basibus coalit conica hispidi, 2-3 cœter glabri, stigmata subcapitat, vasc. fasc. 3-4.

Telagong.

Impregnat constant. Stigmatic canal filled with boyaux.

922. Celsstrinea.—Frutex scandens racemis axillaribus subumbelliformib. calyce fuscescent. Petalis viridibus. Fol. carnosa.

Towards Tassisudon.

923. Hippocratiacea.—Subscandens, ramis angulatis, floribus complanatis, e viridi albidis. Towards Tassisudon.

924. Polygalæ sp.—Herbacea, perpulchre, foliis angustis, alis pallida purpur, Cristo magna saturat cœrulco purpureo. Cum præcedent.

925. Rubi sp?—Repens, floribus albis, calyce hispido Cum præcedent.

926. Rosæ sp. Icon. It. Boot. tom 111 t. 11.—Scandens ramulis glaucescentibus sub foliia quodque summis exceptis bi aculeatis, aculeis uncinatis, raro solitariis.

Planta in partes novellos et in flores glandulosa pubescens, inflorescentia viscosa, contusa per odora, more so than the moss rose.

Stipulæ, certe par infima foliolora abortio Qiuate distinct from gemmaceous stipulæ. Bracteæ lineari lanceolata, summæ integræ flores longe pedicellat, majusculæ aibi corymbum terminal latiusculum formant, odore generis, ramulis inflorescent, subdichot, flore terminali prius evoluto.

Sepalis reflexis, 2 extimis medio appendiculat apice tortis.

Pet rotundato obovato.

Stam plurim, filament viridescent.

Stigmat longo exsertis, stylis capillaceis sursum incrassatis, et hirtis ima basi uti ovar latus, externis gibbum, pilis rectis hispidissimi. Ovul solitarium pendula, raphe placentæ proxim, tegmen unicum.

Towards Tassisudon.

The ovary has 3 vascular fascicles, that running up the convex hairy side which is the outermost consequently corresponds to the dorsal sature, is evanescent. The inner edge or placenta[1]

suture has two fascicles distinct from the stalk of the ovary! these supply the ovulum which is pendulous from the upper end of the cell, and thence pass into the style, on opposite side of which they take their course, towards the stigma they become ramified as in all other Rosaceæ. This is the only instance I yet know in which the styloid vessels are two in a simple carpellum, and it is the only instance I know of, in which they have a similar origin. It invalidatis to acertain extent all my ideas about the importance of the number of the vascular fascicles of the style. The petals are convolute in œstivat. The sepals imbricate.

The stamens are a good deal like those of Punica, but here the connective is flat, not sphœroidal as in that genus.

The origin of the stamina is only from the outer border of the conical disk, rendering the origin of these organs in Punica still more curious and singular. The stipulæ are, it appears to me, nothing more than the lowermost foliolis much reduced in developement; if this be true, all Pomacea have pinnate leaves, at least they may be expected to have such, see Cerasus etc in which the stipulis are adnate to the petiole, if it be true too the stipellæ represent abortive leaves, so that a simply pinnate stipellate leaf is realy douubtly pinnate. This is worth consideration.

The tube of Rosa is not calycine, for this reason, that no instance is known of carpella arising from the tube of the calyx. Hence it is torus; this example quite subverts, the usual ideas of the nature of inferior ovaria etc. If all inferiority arises from a development of a torus into a cup, which cup coheres with the ovarium, it follows that many supposed gamosepalous calyces are really and truly polysepalous. And it follows that in such cases, no calyx is gamosepalous in which the union of the sepals is not carried above the exsertion of petals or stamina, *a*, and *b*. Fig. 21 are instances the latter, being truly gamossepalous. The carrying up of the apparent calyx beyond the ovaria, is of no account in settling whether a calyx be gamo or polysepalous: of this Punica is a striking instance.

The idea of such instances arising from modificalions of

the torus are greatly strengthened by the fact that distinct layers are rarely, if ever, observable.

927. Castanea sp.—Cupulis spinis ramosissimis armatis. Telagong.

928. Verbasci sp.—Planta annua 2-4 pedalis tota densissima, cano tomentosa, fol. radicalibus oblongo obovatis in petiol atten natis. caulineis lanceolatis ovatis valde acuminatis laciniis decurrentibus maximis.

Spica terminatis, *in*florescenta vaga flores lutea in tomento fere immersu. Antheræ aureæ.

Secus Patchein et Panukka.

929. Bignonia.—Arbuscula foliis supra decompositis. Paniculis racemi formibus terminalibus pluri floris.

Calyx basi conicus irregulariter 3-5 fido corolla infundib laciniis sub rotundis crispato undulatis reflexis.

Stam didynama, anth locul divaricat, stam. 5 tum steril.

Capsula siliquiformis, torta.

Panukka.

930. Leguminosa. —Scandens corollis extus albis intus purpurascent secus Patchein.

931. Uvulariæ sp.—Dichotoma ramosa foliis lanceolato acuminatis, venis tribus conspicuis interdum quinis, carnosiusculis.

Floribus sub umbellatis, umbellis axillaribus, pedunculo pedicellisque, minuto alatis, alis serrulatis viridescent.

Perianth foliis lineari oblongis, subcarinatis basi saccatis apice tantum reflexis. Stam extrorsa inclusa.

Stylus trifidis in ovaria apice arbiculat, deciduis, stigmata linearia.

Ovar triloculare, septis ex axi solubilibus above Panukka.

932. Cælogyne.—Rhizomat repent. Pseudobulbis aggregatis quasi incumbentibus alato angulatis *nuperibus* squamis quarum interiores bulbum subæquant. hinc vestitis, foliis binis, breviter petiolatis, lineari lanceolatis acuminatis coriaceis margine cartilagineis apice sœpius $\frac{1}{2}$ tortis. Petiolis complanatis.

Scapo radicali, e medio infra, squamis arctiusculis vestits, teres, folia subæquans 2-4 floro, bracteis deciduis, pedicellis $\frac{1}{2}$ uncial, floribus resupinatis amplis summo abortivo. Perianth album sepalis oblongo ovatis acuminatis, carinatis. Præsert lateral cum columna fere parallelis. Petalis reflexis lineari spathulatis.

Labelli cucullat, trilob, lobis lateralibus rotundatis, intermedio cordato ovato, cum columnæ basi continuæ, basi gibbu cristis 3, media minus cito evanida, lateral undulata basim lobi intermedia paullo intra evanida dent cellulosa huic utrinque ad basi lobi intermedia, color albus, lobi lateratis fusco venosa, apice, ocello uno transverso luteo, cristas versus læte fuscescens.

Intermedio lobo basi ocellis, 2 reniformibus, uti ocella, altera fusco marginata.

Columna, sursum alata, antea fuscescns, apice sub triloba, lobo medio emarginato.

Rostell planiuscula integerrima ante carnosa margin membranac, bilocularis.

Pollinia 4 obovato, materea pulveria mediocra. Panukka supra, flores inodor.

Med. videtur inter C. nitida et ocellata. Pseudobulbis ovatis cæspitosis, angulatis, squamis vestitis, fol. lanceolat linearib acuminatis in petiolo angustatis, racemis erectis œqualibus, sepalis oblongo lanceolatis, petalis lineari spathulatis reflexis. Labelli basi gibbi, lobo intermedio cordato ovato, cristis 3 media cito evanida, lateralibus basi in lobi medio attingent, dento utrinque auctis.

An C. nitida, Lindl. Orchid 40.

933. Serratuloid. Icon. It. Boot.tom. III. t. 12.—Planta minima vix digitatis in arenis profunda radicans flosculis purpureis in arenis littorum fluminis. Patchien.

934. Aerides? Icon. It. Boot.tom. III. t. 14.—Repens in arboribus ope radicum ratione plantæ maximarum, tœnioidarum undulatarum, complanat.

Axis foliifera minima vix uncialis ad epochu inflorescent nulla.

Foliis coriaceo carnosis oblongis, vel sub ob ovatis, acutis.

Racemis basilari pseudo oppositifol, 2 3 flora, subuncialis, livida, bracteis ovatis, sub carinatis membranac inconspicua, squamis medium infra, vix vaginant. Pedicelli teretis ovarii superant. fuscescent uti ovaria, flos. resupinatus, mediocris inodorus. Perianth ex planat carneum. Sepal postico petalisque subœqualibus, lineari spathulatis, concaviusculis, obtusis

sepal lateralibus, majoribus obovatis, basi cum columnæ pede accret.

Labellum cum columna pede mediocr connat, cum ovario angulum fere rectum efformos, calcarat, profunde trilobum carnos, lobis lateralibus erectis, lilacinis medio sub aurantiaceis.

Intermedio apice reflexo, linguiforma integerrimo basi process bifid gerent. Color lilacino purpureis.

Calcar breve subincurv, conicum viridi fuscum. Labello intus postico convex, parte convexa in dentes binos abeunte. Columna nana lilacina, pede parum breviora. Clinand superficial, sub integ. Rostella profunda bipartit, laciniis setaceis. Stigma magna transvers, sub orbicular.

Anth carnosa purpur bilocularis. Pollinia 4 incumbentia plano convexa, subhœmisphær, postica minora. Caudicula longa. Glandula facil solubilis oblonga.

Panukka videtur prox a Aerida teniata Lindl. 239.

935. Rhus.—Arbor magna foliis serratis, paniculis axillaribus, foliis junioribus stipulisque, pulchre miniato pubescent. Petiolis maturatis rubro ferruginia. Stipulis linearibus membranaceis, deciduis foliis imparipinnatis, foliolis oppositis, serratis serraturis sub incurvis. Paniculis corymbosis axillaribus, quam maxima divaricatis, rubro ferrugineo pubescent. Sepalis minutis. Pet. totid lanceolatis alternant patentissimis.

Stam. 5 sepalis opposit e basi externum, disco magni carnosa sub 5 lobi, (lobis petalis oppos) exserta, filam hirsuta. Anth biloculares longit dehiscentum ovarium nullum. Quid? An Bruceæ affinis.

936. Edwardsia.—Panukka prope.

137. Heynea trijugum.—Arbor magna foliis impari pinnatis subtus glaucis petiolis rubro tinct cymis paniculat axillaribus petiolis subæquant floribus minutis albidis.

Calyx basi latus 5 partitus. Petala 5.

Stam 10 filamentis usque admedium coalitis, apice antheriferis. Antheræ utrinque dentato subulatum gerentibus. Stylus clavatis crassus 5 *vasculosis*. Stigma discoid ovar, bilocular. loculis, apice obsolit dentatum revulutis sub emarginat. Panukka supra. Ovulis collater ascendent. Placenta scarcely united in the axis hence parietal speicies may be expected.

Ovarium globosum disco annuliform sublobat vel subangulat connat cinct. This is curious and worthy of more examination.

938. Ulmacea.—Arbor magna amentis fœmineis pendulis, squamis foliaceis demidio ovatis, germa basi cingentibus, ramis laxis. Panukka supra.

939. Hydrangioid Icon. It. Boot. tom. III. t. 15.—Ramulis puberulis subangulatis, subtus perberulis, foliis pendulis subsecundis ovatis integerrimis.

Floribus subumbellatis minutis, umbellus petiolis brevioribus, plurifloris, axillaribus. Pedunculis compressiusculis pube minuta. Calyx 4-5 fidus minutus. Cor. rotata lacinus 4-5 ovatis subciliatis, æstivat, imbricatis arcte reflexis. Stam 4-5 his alternant, sinubus affixa. Filamentis filiform robustis. Anth terminal bilocular, longit. hehiscens. Pollen ovato oblong. ovarium subrotundo conicum, sursum in sylvis tot quot petala et his opposita, connata peoduct. Stigmata totidem simplicia concava. Ovar solid.

Panukka supra.

940. Dendrobium sp.

Epiphytic caule flexuosa, articulis profunde sulcatis, vaginis $\frac{2}{3}$ tectis, fol. distinct oblongo lanceolat, apicem oblique bifidum-conacea, evenia primarium tantum distinct. Racemis oppositifol. per basi vaginarum erumpent, bi trifloris. flexuosis bracteis albis membranaceis, infimis vaginant floralibus subtruncatis 3 veniis!

Flores antica torsione penicelli vel ovarium indistincti! pedicello ovarioque albo. Sepala lineari oblonga, longitudinaliter venosa, obtusiuscul lateral paullo longiora et angustiora, patentia.

Petala, oblongo ovata obtusa, reflexa. Color albus, apicebus lilacinis.

Labell cucullatum cochleariforma ore oblique integerrimo pubescens, intus coccineo purpureo, margina apiceque lato albo basi venosa et simplex. Columna viridescens nana pede recto brevior tri dentato dentibus setiformibus magnis lateraliter recurvato uncinatis.

Anthera purpurio livida. Pollina 4 collateral subœqualia Rostellum Pedilorum nempe integerrimum truncatum, inferne in volut. materii viscosæ albæ. (in massam).

Columnæ margo purpur lineat.

Panukka flores sub odorum.

This species is intermediate between D. Pierardia and D. moschatum. These species are evidently separated by Lindley, apparently owing to the racemose flowers of the latter; but it will be at once evident, that this is a consideration of very small importance, for the flowers are, in all racemose, and a raceme can scarcely be expected to be constantly 2 flowered· All the species with cochleate labella are closely akin, they run into each other so much, that distinguishing marks are very difficult.

Proximum. D. transparenta et Pieriardia.

941. Pythonii sp.—Bulbosa 1-2 pedalis, sœpius, folios: serpentis in more, pallida fusco maculat, cœterum livid: folia carnosa ternat margine undulato, lœte fusco. Spatha omnino cucullata, intus alt. plicata, interplicis albis, plicis atro purpurio, limbus cellularum, elevatis, basi atropurpur, marginum versus, majis rubescens. Spadicis apice in filo longissima attenuat.

Above Woolookka, under shrubs 9000, to 10000 ft.

941*a*. Pythonium ecaudatum. Altius, pubescens, lividum longit maculat, bifolia. Spatha triant, rubescento fusca, fusco varii maculat, spadice simplicium. Towards Woolookka in woods 7000, to 9000 ft.

942. Labiata verisimiliter Salvia. Ibidem, in sward alt. 9, to 10000 ft parum viscosa.

943. Ribes.—Frutex erectus 6-8 pedalis foliis subtus lucidis floribus omnino atro sanguineo, racemis erectis. Ibidem, alt. 10000 ft. vix infra 9500 ft.

944. Pruni sp.—Arbuscula tubo calycis elongato. Petalis carneis, floribus pendulis. Ibidem, 9500, to 10000 ft. In thickets.

945. Aceris sp.—Arbuscula racimis pendulis, floribus lutescent summit of ridge on sward.

946. Laurinea, Arbuscula, umbellis paucifloris, nutantibus; floribus pallida lutescent. To Woolookka margins of woods, alt. 98, to 10000 ft.

947. Rhodod.—Arbor mediocris foliis subtus argenteo tomentosis, deflexis, ramulis eodem more, albis, racemo terminal umbelliformi, bracteis membranaceis fuscis, floribus nutant. Very

beautiful lilac, amplis, limbo 8 partito, laciniis rotund, genitatibus inclusis; calyce campanulat. Ibidem, vix infra 9500 ft. omnia pulcherrima.

948. Viburni sp.—Arbuscula, stunted, Corona densa, folia saltem juniora fuscescent, floribus amplis, albis.
Ibidem, on sward in margins of woods.

949. Cerasi sp.—Arbusculi ramis laxis. Calyce purpureo fusco. Petalis nullis! Stam albis Common at the summit, forming thickets. Vix infra 9500 ft.

950. Asteroideis suffrutex ramis apice versus foliosis, radio pulchre cyaneo, disco luteo. Near Woolookka in thickets.

951. Salix sp.—Arbuscula. Amentis subpendulis. Towards Woolookka, borders of rivulets, inter 9600 et 8000 ft.

952. Stauntoniæ sp.—Floribus magnis albis, foliis angustis. Towards Woolookka 7800 ft. Margins of streams odorata grata.

953. Jasmini sp.—Frutex humilis ramosa, floribus nutant, dulcis parum odoris. Near Woolookka in thickets.

954. Bradleia.—Frutex capsulis oblongis, foliis pulchre venosis; Cum præcedent.

955. Spiræa.—Frutex humilis ramulis gracilibus floribus pulchre rosaceis. To Woolookka, vix infra 7800 ft.

956. Pomacea.—Foliis subtus glaucis, floribus albis. Woolookka, vix supra 7800 ft. Common along the river.

957. Populi sp,—Arbor mediocris cortex suberosa, foliis varnished, amentis pendulis. Along the torrent, common with P. rotundifol.

958. Rosa sp.—Frutex ramulis flexuosis, floribus albis. Petalis 4. To Woolookka; vix infra 8000 ft.; inter 8 et 10000 ft.

959. Viburnum canum.—Tomentosa cana, frutex, floribus amplis, albis, about Woolookka in thickets.

960. Primulœ sp.—Scape exaltato, flores aurea, calyce purpuraceo. In paludibus. Versus Woolookka inter 9 et 7500 ft.

961. Papaveracea.—Herba foliis radicalibus pluribus, ferrugineo hispido; succo aquoso. Moist shady places 9800.

962. Berberus integrifolia, ramulis sanguineis, racemis deflexis. To Woolookka alt. 10,9000 ft. in thicket.

963. Euphorbia.—Herba $1\frac{1}{2}$ 3 pedalis, involucris vel. coccineis vel aurantiaceis.
To Woolookka, wet grassy places inter 8500 et 7000 ft.

964. Rhododendri sp.—Arbor mediocris floribus beautifully rose coloured, intus albidis et punctatis.

To Woolookka in woods, vix infra 9000 ft. et usque ad 10000 ft.

965. Trillii sp.—Pedalis, triphylla, flos purpureo livid, periantheo reflexo. To Woolookka, in shade 9900 ft.

966. Celastrinea.—Frutex ramis laxis. Thickets Woolookka 10000 ft.

967. Frutex. Ramis laxis, floribus lividis. Cum præcedent.

968. Trillii sp.—Petalis albis, cum præced. In grassy sward.

969. Rhodora deflexa.—Arbuscula, floribus pendulis ovatis sub clausis, viridibus, rubro tinctis. Cum præcedent.

970. Spiræce sp.—To Woolookka alt. 9500 ft. suffrutex erectus.

971. Aceris sp.—Arbuscula, ramis gracilibus, racemis pendulis. Near the summit, forming woods, flowers yellow.

972. Ribes sp.—Frutex. Ramis robustis, laxis, racemis pendulis. Floribus ochroleucis. Near summit. Woods, alt. 9500 ft.

973. Smilacineæ sp.—Flowers dense, white 2-3 pedalis. Cum præcedent, grassy thickets.

974. Rubiacea.—Frutex foliis transverse venulosis, floribus hypocraterif. albis. Ascent in woods 8500 ft.

975. Viburni sp.—Frutex, ascent to Woolookka, alt. 8500, 8800 ft. woods.

976. Acer sp.—Arbor parva, racemis pendulis, floribus ochroleucis. Ascent to Woolookka, in woods, 8800 ft.

977. Slackia insignis.—Frutex caulibus simplicibus, robustis. foliis pinnatis subtus glaucis. *carnosis.* racemis pendulis, floribus e viridi luteis, perianth acuminatiss. Cum præcedentibus in woods.

978. Cerasi sp.—Arbor mediocris, floribus albis. To Woolookka, in woods, 8000 ft,

979. Querci.—To Woolookka 7000 ft.

980. Stillingia sebifera.—Common about Panukka.

981. Viburna sp.—To Telagong alt. 4500 ft. in thickets.

982. Aconiti sp.—Cum papaveraca in humidis 10000 ft.

983. Tellinæ sp.—Floribus albis calyce carneo ascent to Woolookka inter 9 and 10,000 ft. on Mossy banks.

984. Mercurialis.—Herba pedalis vel spithamæa, floribus albis, on banks 9000 ft.

985. Plectranthi sp.—Frutex humilis, dumosis, foliis canis, floribus albus.

About Woolookka and throughout to Lamnoo.

986. Celastri sp.—Arbuscula pedunculis trifoliis. Banks of rivers, to, and about Woolookka. 6, to 8500 ft.

987. Bromi sp.—Panicula nutante, in agris near Woolookka.

988. Potentilla sp.—Foliis radical depressis, ramis decumbent *cana*, floribus aureis in agris et advias inter Woolookka et Lamnoo.

989. Symphoriæ sp.—Frutex humilis, foliis inferne canis, floribus ochroleucis erectis bilabiatis, inodoris.

Towards Woolookka, and along the river, forming with Rosa extensive thickets.

990. Hordeum hexastichom.—Spica nutante; cultivated between Woolookka and Lamnoo.

991. Arabidea.—Annua cana—pedalis floribus albis, advias towards Lamnoo.

992. Cratægus.—Frutex humilis habitu Mespilæ microphyllæ, floribus albis, grate odoris. Towards Lamnoo.

993. Poæ sp.—Annua culmis $1\frac{1}{2}$ pedalibus. Paniculis erectis, spiculis viridibus, compressis. Towards Lamnoo.

994. Taraxaci sp.—Foliis depressis runcinatis, carnosis. scapo sub gossypino unifloro, flora lutescente, erecto in ripis towards Lamnoo. Common.

995. Composita.—Pusilla, radio rosaceo, disco lutescento, in ripis Towards Lamnoo.

996. Cardamina sp.—Foliis inferior depressis, caule angulato sulcato, pedali floribus majusculis, lœte lilacinis. In aquosis, towards Lamnoo.

997. Philadelphi sp.—Frutex humilis ramosis; in thickets towards Lamnoo.

998. Colquhounia.—Frutex, ramis robustis, erectis sub simplicibus, towards Lamnoo.

999. Cratœgi sp.—Frutex inermis, ramis elongatis, inflorescentia superne secunda, floribus albis, odore C. oxyacanthus, towards Lamnoo in thickets.

1000. Astragali sp.—Caulibus pluribus decumbent pedalibus, floribus purpureis.

Creeping on grassy banks and sward Lamnoo.

1001. Zanthoxyli sp.—Frutex, spinosus, serratur sinubus glandulosis, odor acerimus sub aurantiaceis Lamnoo.

1002. Herminioid —Spithamæa vel pedalis glauca, spica densa, floribus sub secundis, minutis viridescente albidis. Moist banks towards Lamnoo.

1003. Rhamnoid ?—Frutex sub inermis, ramis straggling, floribus minutis viridescento. Lamnoo.

1004. Lantonica.—Frutex alba, odorata. Bushy, very common on rocky ground between, and especially towards Woollookka.

1005. Stachys sp.—Herba erecta, sub simplex vel ramosa, pedalis $1\frac{1}{2}$, floribus pallida rosaceis, antheris brunneis, in fields and road side, between Woolookka, and Lamnoo.

1006. Gentianea.—Planta spithamœa valde ramosa. Grassy sward. Lamnoo with Astragalus, Ranunculus, and Carex.

1007. Plumbago ?—Frutex dumosus humilis ramosiss, foliis obovatis, ciliatis, margina rubris, calycibus bracteisque fuscescent ciliatis, floribus lœte cyaneis (staminib petalis oppositis) capitulatis. On walls and rocky ground, between Woolookka and Lamnoo. Very common.

1008. Cotuloid.—Lamnoo disco albo, centro virida.

1009. Buddleæ sp.—Frutex humilis, scraggy, foliis parvis cano albis, floribus sub capitulatis lilacinis. About Woolookka inter 9000, et 7500 ft.

1010. Larix sp.—Arbor parva, ramulis elongatis pendulis, foliis plurimis complanatis, conis ascendentibus, squamis rubro fuscis, longe apiculatis, apiculo viridi deflexo. Above Woolookka alt. 9600 ft.

1011. Liliacea.—Foliis radicalibus, sub 4 ternis, oblongo ovatis carnosis, scapo pedata vel ultra pubescens, floribus racemosis in capilulam coarctatis, albis erectis inodorus.

Above Woolookka in grassy spots, alt. 9600, to 10000 ft.

Thibaudia caudata floribus globosis, vix urceolatis, ore nempe lato, laciniis reflexis, initeo viridibus demum rubro, stigmata exserto. To Woolookka. Alt. 8000 ft. on the Telagong side. No Thibaudias are to be seen on the other side.

1012. Spiranthis.—Spithamœa floribus albis. Below Telagong, in wet places. Alt. 5300 ft.

1013. Dendrobium sp.—Epiphyt. foliis subnullis, lineari lanceolatis,

floribus sub binis vel 3 racemosis, bracteisque membranaceis, albis, calcare obtusissimo.

To Woolookka alt. 8000, to 9000 ft.

1014. Pomacea.—Arbor, pomis globosis rubro tinctis, dentibus calycinis compressis conduplicatis, erectus. On the road to Telagong.

1015. Aristolochiæ sp.—Scandens, longe pubescens, foliis cordatis, basi reniformibus. Floribus solitariis extra axillaribus, vel terminalibus bi foliosis, foliis parvis, ovariis clavatis ferrugineo pubescentibus, 6 costatis semitortis. Floribus maximis odore pessimo, tubo costato, geniculato, curvato, fauci angustat, limbusque extus ferrugineo tomentosis, venosis.

Limbus circulariis æqualis concavus subhæmisphœricus, venosis, venus extus conspicuis, verrucis clavatis processibus sanguineis, quasi radiantibus ex apice verrucim, ochroleucus, fauce transversa sanguinea, bilabiat. Labio elevato superne præsertim elevato, tubus intus lutescens, maculis rubris, secus venasquæ depressas disposit, basi dense pubescens, rubescens. Columna triloba, lobis obtusis, lobo utroque. Antheras 4, lineares medio longit sulcatas, quasi in columnæ substantium, depressus gerent.

Towards Woolookka, above Telagong alt. 8000 ft.

An novum genus ob columnum lobat, et antheras fasciculat, et ovarii torsione, odor pessimus. attracting flies, which are always found in the tube.

1016. Rhodoracea Icon. It. Boot. tom. III. t. 19.—Frutex 8-10 pedalis ramulis apice foliaceis, foliisque lineari oblongis, vennatione involutis, subtus punctato, lepidotis brunneo et ferrngineo, gemmis axillaribus et terminalibus ovatis, squamis rubro tinctis albo, breviter ciliatis, racemis axillaribus abbreviatis, paucifloris, Foribus nutantibus. Calyce minuto 5 dentato. Cor. tubuloso cylindraceaæ, lœte cocinea, laciniis erectus lutescentibus. Antheris brunneis, genitalibus sub exsertis. The flowers have always a waxy look.

Above Chupcha. In Sylvis alt. 8500 ft.

1017. Vitis sp.—Secus Timboo flumen.

1018. Indigofera.—Suffrutex ramosus. Along the Timboo river, flowers pink.

1019. Convallaria cirrhosa, pedalis, vel. 3 pedalis simplex, foliis sub verticillat, inferior simplicibus, reliquis apice incurvo, cirrhosis, linearibus.

Racemis brevibus axillaribus, ex axillis foliorum inferiorum, quæ sœpe alternans, floribus cernuis, pallide purpurascent, laceniis subreflexis, tubo basi inflato. Along the Timboo in thickets 65, 7500 ft.

1020. Syringæ sp?—Arbuscula formosa: secus flumen Timboo non raro.

1021. Rubiæ sp.—Scandens, hirsuta, certe distinct e R. cordifolia. Towards Panga; in woods 6500, to 7500 ft.

1022. Symphoriæ sp.—Frutex arbusculoid, foliis lanceolato ovatis acuminatis pubescent, pedunculis axillaribus nutantibus vel cerniis, bifloris, floribus basi infera gibbis, initio albis demum purpureo rubris. Along the Timboo river alt. 6500 ft.

1023. Spiræœ sp.—Frutex cum Ribes etc near Panga alt. 7500 ft.

1024. Asparagi sp.—2-3 pedalis, foliis falcatis, pedicellis gracilibus deflexis, floribus lutescent. Cum præcedent.

1025. Houttuyniæ sp.—Pedalis foliis subtus purpureo tinctis cum præcedent.

1026. Uvulariæ sp.—Floribus pendulis ochroleucis cum præcedentibus.

1027. Aralia cissifolia, Scandens aculeata, foliis quinatis cum præcedent.

1028. Smilax.—Scandens, ramulis per flexuosis, floribus minutis lividis, near Panga 7500 ft.

1029. Rubi sp.—Foliis subtus albis, calycibus purpureo tinctis, near Panga alt. 7500 ft.

1030. Galii sp.—Decumbens, sub glabrum, floribus albis. Minzapeeza, in humidis.

1031. Aspedioid.—Minzapeeza in rorantibus locis.

1032. Adiant.—Cum præcedent.

1033. Rubi sp.—Floribus purpurascent, near Panga advias 7600 ft.

1034. Lithospermi sp.—Herba erecta dense foliacea, simplex, 1½-2 pedalis, floribus albis. Towards Panga alt. 9500 ft. advias.

1035. Umbellifera.—Cano albida floribus albis. About Panga alt. 7600, to 7000 ft.

1036. Carex sp.—From Panga in wet places, with Ribes etc 7500 ft.

1037. Thymi sp.—Frutex humilis parvus, floribus purpureis ad vias inter 3 et 8500 ft. Towards Chupcha.

1038. Carex.—Culmis nutantib, borders of fields, Lamnoo.

1039. Smilax sp.—Scandens, floribus pendulis sanguineo purpureis, inter Gaultherias et Rhododendron above Chupcha, 8000 ft.

1040. Pythonium.—Vix pedalis, pallide livido lineati, non maculata, foliis involutis. Spatha basi inflata lamine fornicato ore lato acuminata subacuta, media supra lutescens, basi purpuria, spadicis apex alba.
Chupcha collected by Lieut. Blake.

1041. Tussilago sp.—Minzapeeza in locis humidis rorantibus.

1042. Berberis integrifolia.—Frutex ramosus ramis brunneis angulatis foliis integris obtusis spathulatis, racemis pendulis, floribus parvis luteis. Near Panga; open hills 7500 ft.

1043. Spirathes.—Spithamæa foliis lanceolatis acuminatis, floribus secundis perianthio rubro pallida, labello albo.
Near Panga inter muscos in aquosis.

1044. Epipactis $1\frac{1}{2}$ 2 pedalis, foliis lanceolatis accuminatis spica terminalib erect, floribus mediocribus albis. Labellum parvi apex lutescens. Near Panga in oak and firwood 7500 ft.

1045. Rhododendron Icon. It. Boot. tom. III. t. 17.—Arbor, parva, cortici uti solet lœvi, ramulis glaucis, uteo racemis, foliis pendulis, oblongis, repando crenatis, coriaceis, subtus reticulatis utrinque glabris. Juniorib vernation involutis, squamis interior rosaceis, membranaceis spathulatis. Racemis terminalibus paucifloris, bracteis caducis, pedicellis sub pubescent, calyce, discoideo, margino crenulato, demum reflexo. Corolla maxima canpanulata, alba venosa, 5. partita, laciniis 4, superiorib reflexis, quinto sub porrecto, odor fragrans. omnino Gaultheriæ, fruticosum. Staminibus sub 13, declinatis inclusis, antheris lutescento brunneis, Stigma sub exserta capitata, medio foveolata. Ascent to Chupcha in oak woods (Q. ilicifolis.) 8000, to8500 ft.

1046. Rhodoracea Icon. It. Boot. tom. III. t. 18.—Frutex 6-8 pedalis foliis oblongo lanceolat subtus argenteis reticulat et ferrugineo punctat, racemis subumbelliform terminalibus pau-

cifloris, floribus erectis, subbilabiatis, campanulatis, tubo brevi. Lab super 3 lobo erecto, inferum bilobo reflexo ochroleucus, lob. medio labia superiora fusco maculato.

Stam 5 superior sub ascendentum breviora inferiorum 5 declinata, anth brunneo luteœg. Alabastra viridescent angulat.

To Chupcha: inter 7800 et 8500 ft. ad cacuma vulgatum.

1047. Asclepiadea.—Herbacea verisimiliter volubilis. corolla rotata. viridis, along Timboo.

1048. Arenaria.—Pussilla tenera repens inter muscos; flowers white Chupcha descent to 8300 ft.

1049. Trillii sp.—Spithamœa, foliis venoso rugosis flore terminat livido sanguineo periantheo reflexo. Above Chupcha in Beech woods 10,000 ft.

1050. Euphorbia sp.—Depressa profunde radicans: buried among sward and grass, ramis pedunculisque radiantibus involucro floribusquee livido fuscis. Above Chupcha 10000 ft.

1051. Spiræœ sp.—Frutex foliis teneris. Above Chupcha in Beech woods or thickets 10000 ft.

1052. Rhodoracea.—Frutex ramis erectis, fol. quasi verticillatis. Near Gylong village, Chupcha in thickets 8700 ft.

1053. Kadsuræ sp.—Scandens ramulis brevibus foliisque erectis, floribus ex axillis foliorum infimve *Gemmacearum squamarum*. Pedunculis basi bibracteatis, alabastris compressiusculis. Above Chupcha in fir woods 8600 ft.

1054. Anemone sp.—Fol. sericeo hirsutis depressis trilobatis, pedunculis vix spithamæis, unifloris axillaribus hirsutis, involucro remoto 3 plylli, flos mediocris aureum. Stamina aurea. Grassy sward above Chupcha 9200, to 10000 ft.

1055. Rhododendri sp.—Frutex 6-8 pedalis, gemmis elongatis fol. ellipticis basi cordatis, subtus ferrugineo hirtis, coriaceis, umbellis terminatibus, corollis nutant. Campanulati subregularibus, 5 partitis laciniis erectis rotundatis. Genitalibus subinclusis. Stigmat subexserto. Above Chupcha in thickets 10000 ft.

1056. Abeliæ sp?—Frutex valde dumosus, foliis parvis, spathulato oblongis, floribus solitariis nutantibus bi bracteatis alabast viridibus, tantum visis. Above Chupcha in thickets.

1057. Celastri sp.—Arbor parva pedunculis erectis, trifloris. Gylong village. Above Chupcha 9000 ft.

1058. Saxifragea.—Herba pussilla tenera lutescens, foliis reniformibus profunde crenatis, floribus minutis viridibus. Creeping in shady spots, above Chupcha 9500 ft.

1059. Primulæ sp.—Caule inferne valde crasso, buried in mould, sub farinosa, foliis planis serratis, scapo spithamæo, paucifloro, floribus erectis. Calyce pedunc cæsio farinac Corolla magna, Pulcherra purpurea fauce lutescente.

Cum præcedentibus.

1060. Pyrus arioidis.—Arbor vel arbuscula: foliis junioribus subferrugineis. Above Chupcha in woods 10000 ft.

1061. Iris sp.—Longe repens: foliis erectis angustis. In wet spots above Chupcha 9, to 10000 ft. Cauli fructif. seniori 2 pedali.

1062.——Folium palmatum. Aconitoideum, axiflorifera mortua 3-3½ pedali inflorescenta corymbosa. Cum præcedent. Common.

1063. Morina Wallichiana.—Grassy sheltered sward above Chupcha 9500 ft.

1064. Violæ sp.—Parvula, floribus parvis, albis, on grassy spots above Chupcha 8800 ft.

1065. Violæ sp.—Foliis reniformibus caulescens spithamæa floribus luteis, labio atro. Delicately streaked, flower behind, especially 2 upper petals, tinged with red brown. Fir wood above Chupcha 8500 ft.

1066. Bistortæ sp.—Vix spithamœa: foliis margine minuto crenulatis, capitulo oblongo erecto, floribus densis roseis, above Chupcha, on grassy sward, common 9000 to 10000 ft.

1067.—Curicis sp.—Spicis erectis marhes Chupcha.

1068. Deutziæ sp.—Frutex 6 8 pedalis, ramis sparsis. Chupcha in thicket.

1069. Hordeum —6 stichon. Cult at Chupcha.

1070. Quid ?—Arbuscula ramis purpurascent. Chupcha in thickets.

1071. Viburna sp.—Frutex, ramis scattered, alabastris rubris.

1072. Rhododendri sp.—Frutex robustus 6 8 pedalis, partibus novellis ferrugineo punctatis, et quasi lepidotis, foliis ovalibus sub ellipticis basi cordatis, racemis umbelliform, terminalibus paucifloris, pedicellis punctis, elevatis, floribus cernuis, vel pendulis campanulatis cereis, sub regularibus, 5 partitis laciniis erectis oblongo rotundatis vel sub reflexis initio lutescens, demum rubro aurantiaceis. Staminibus omnibus de-

clinatis antheris luteo brunneis sub inclusis. Stigmata exserto. Flowers with bloom externally; above Chupcha 9800,10000 ft.

1073. Umbellifera.—Decumbens basi, floribus carneis. Wet grassy spots Chupcha.

1074. Crucifera.—Tota cana, depressa annua, floribus albis. On walls, and rocky road sides Chupcha.

1075. Mazus sarmentosis.—Depressa stolonifera pubescenta hirta, floribus purpureis palato lutescent, Cum præcedent.

1076. Scabiosæ sp.—Capit nutanta above Chupcha; in sward 9200 ft.

1077. Querci sp.—Arbor mediocris habitu Q. ferrugineæ, versus Chuka 5000 ft.

1078. Urticea.—Pedalis carnosa, fol. teneris terveniis, inflorescentia rubescentia. Descent to Chuka 4000, to 3700 ft.

1079. Hutchinsiæ sp.—Tenella, floribus albis carnoso, in rupibus madidis versus Chuka 6500 ft.

1680. Thibaudiæ sp.—Ephytica subscandens, foliis carnosis integris margina revolutis, floribus nutantibus vel cernuis, tubulosis, 5 angulatis, more solito tessellatis laciniis reflexis. Descent to Chuka 4000 ft.

1081. Ajugoideo.—Stolonifera vix spithamæa, floribus amplis purpureis, purpureo lineatis, lab super subo reflexo, inferior porrecto, lobis lateral subreflexis. Grassy banks towards Chuka 6000 ft.

1082. Menispermacea.—Scandens volubilis, cymis e ramis erectis, floribus viridibus versus Chuka 4000 ft.

1083. Arenariæ sp.—Repens inter muscos, foliis majuscul flore amplo albo versus Chuka, in rupis madidis 6500 ft.

1084. Caryophyllea.—Diffusa tenera fragilis, versus Chuka in rupibus madidis 6500 ft.

1085. Umbellifera.—Flowers white, in woods towards Chuka 6000, to 6500 ft.

1086. Panax sp.—2½ pedalis, foliis subverticillat digitatis, inflorescenti terminate nutant, junior tant visa. Bellow Chupcha 7000 ft.

1087. Phytolaceoides.—Herba carnosa robusta 3-4 pedalis, spicis erectis, floribus albidis. Towards Chuka inter 7000 et 4000 ft.

1088. Celastrinea —Arbuscula leviter armat, floribus minutis albis. Towards Chuka 5, to 4500 ft.

1089. Pipris ?—Below Chupcha at the nullah Arbor mediocris ? in statura junior arbuscula ramis robustis apice foliosa.

1090. Anemone sp.—Hatitu omnino. Ranuncul, floribus albis. Towards Chuka, on banks or sward 6, to 6500 ft.

1091. Panax sp.—Herba erect 2-2½ pedalis fol. subverticali supra decompositi, racemo umbelliforma, terminat ?
below Chupcha. Wet mossy banks 6000 ft.

1092. Zyziphi sp.—Arbuscula corona densa, armat, foliis conspicuæ triveniis, floribus lutescent. Near Chuka 4500 to 4000 ft.

1093. Scirpi sp.—Rupibus firm adhærent, below Chupcha 7000 ft.

1094. Fraxini sp.—Arbor magna floribus dense paniculatis, albis, paniculis cernuis nutantibusve, above Chuka 6, 6500 ft.

1095. Mimosa.—Aculeato scandens globis albidis. Above Chuka 4500 ft.

1096. Umbellifera.—Robusta 5-6 pedalis odora sub moschato, floribus albis. Towards Chuka 6000, to 5000 ft. Common on clearings.

1097. Marleæ sp.—Arbuscula vel frutex ; few spreading branches pedunculis bi triflorus nutantibus. Towards Chuka. Damp woods 6000 ft.

1098. Rhamnoides.—Arbuscula, corona densa, foliis supra lucidis floribus parvis albidis. Towards Chuka, in woods 6000, to 5000 ft.

1099. Impatiens sp.—Herba tenera ramosa infra pedalis, floribus luteis calcar incurvo. To Chuka shady spots 5000, to 4000 ft.

1100. Pomacea.—Arbuscula ramis patentibus parvus, foliis sub ascendent secundis, floribus albis, grat, odoratis uti C. oxyacanthus. To Chuka, margins of wet places 6500 ft.

1101. Zanthoxyli sp.—Scandens floribus sanguineo purpureis. To Chuka in woods 6600 ft.

1102. Carex sp.—Stricta 2½ pedalis spiculis erectis, in paludibus, To Chuka 6500 ft.

1103. Pythonii sp.—Rubescens brunneo lineato maculato, foliis quinatis.
To Chuka in damp banks 6000, to 6500 ft.

1104. Sedi sp.—3-4 uncialis carnosa fasciculat, floribus lœte luteis. On rocks to Chuka 6000, to 5500 ft.

1105. Cissi sp.—Repens in rupibus fol. atro virida, aspectu velutini, albo venosa, to Chuka 6000, to 6500 ft.

1106. Pythonii sp.—Caule erecto parum maculato, 2 3 pedali foliis binis pedalis, spath cucullat viridi, spadices apice longe producto, ascendente vel recurvo. Hermaphrodita.

To Chuka, on wet banks, 6000, to 5000 ft.

1107. Swertia peloria.—Bipedalis erect simplic, floribus albidis cœruleo purpureo tinctis. Petalis erectis. Calcare purpurea, alabast patente deflexo, ad anthesi erecto.

In paludibus cum 1102. Common.

1108. Arietinum ranunculifol. repens in madidis vel humidis, floribus solitariis longe pedicellatis, hypocraterif. albis. Stamibus exsertis. Calyce fuscescent. To Chuka, common in moist banks 6000, to 5000 ft.

1108*a*. Osmunda very common, to Chuka on banks in sward 6000, to 6500 ft.

1109. Corydalis.—Fibrosa, tenera glaucescens, ramis diffusis, floribus magnis purpureis, common to Chukka on wet mossy banks 6000, to 5000 ft.

1110. Impatiens.—Caule ramoso pedale, floribus minutis, pallide lutescent, below Chupcha. Wet places 6000 ft.

1111. Querci sp.—Arbor mediocris, foliis coriaceis, near Chuka 4090 ft.

1112. Ardisiæ sp.—Frutex vel arbuscula baccis globosis pallidis, to Murichom wood 3400 ft.

1113. Briedleiæ sp.—Arbuscula floribus lutescent to Murichom in woods 3000, 4000 ft.

1114. Celastri sp.—Sub scandens floribus albis to Murichom, alt. 3500, to 4000 ft.

1115. Dalrympleæ sp.—Arbuscula floribus lutescent to Murichom in wood 3500 ft.

1116. Rhus sp.—Arbor magna, floribus lutescens. Anth lividis. near Chuka 4000 ft. in woods.

1117. Tetrantheræ sp.—Arbor majuscula, floribus viridescent canis. Near Chuka in woods 4000 ft.

1118. Verbenacea.—Arbuscula to Murichom 3500 ft..

1119. Rubiacea.—Frutex erectus 2 3 pedalis, floribus luteis; to Murichom 3500, to 4000 ft.

1120. Piper sp.—Ramosa spicis erectis albis to Murichom, 2800 to 3000 ft.

1121. Piper sp.—Ramosa. Spicis longissimis albis cernuis, cum præcedent.

1122. Euphorbia sp.—In sylvis, to Murichom 3000, to 4000 ft.

1123. Rhus sp.—Banks of Timboo 3500 ft. Arbuscula.

1124. Vitis sp.—Foliis carnosis pedatis, floribus lutescent to Murichom 3000, to 4000 ft.

1125. Sauraujœ sterculifolia.—Arbor parva, racemis pendulis aggregatis. floribus majusculis albis calyce carneo, to Murichom Common in woods 3000, to 4000 ft.

1126. Arbuscula, vel. arbor. Near Chuka 3500, to 3000 ft.

1127. Celastri sp.—Sub scandens, foliis supra atro viridib. floribus, albis.

1128. Impatiens.—Flora amplo purpureo, calcare rosaceo uncinato obtuso parte angustata albida. Wet shady spots on the road to Murichom.

1129. Composita.—Sub scandens, suffruticos capitulis aurantiaceis to Murichom, on rocks 4000 ft.

1130. Cucurbitacea.—Scandens hirsuta, floribus campanulatis luteis near Chuka 4000 ft. in woods.

1131. Fumariacea.—Scandens carnosa fragilis, floribus complanatis bicalcaratis, ochroleucis; on precipices descent to Timboo 4000 ft.

1132. Mimosa.—Arbor magna, floribus albis. About Chuka. Common 4000, to 4500 ft.

1133. Arbuscula floribus viridibus near Chuka 3500, to 4000 ft.

1134. Rhododendron.—Frutex, foliis oblongis vel oblongo obovatis, floribus subumbellatis terminatibus erectis, maximis campanulatis, tubo angustato angulato genitalibus subex sertis 5 partit, alabastris roseis, on rocky precipices near Timboo 4000 ft.

1135. Dendrobium sp.—Foliis angustis lanceolata oblongis caule florifero, foliis nullis cernuo, bracteis cinereis atro tinctis; floribus geminatis carneis apice rosaceis. Labello cochleato imbricato, albo, apice basique lilacino, medio luteo, species pulchere. On rocks towards Chuka, and to Murichom 3500, to 4000 ft.

1136. Dendrobium aurea. To Murichom 3600, to 4000 ft.

1137. Ophiorrhizæ sp.—Herba basi suffruticosa, sub simplex 1 pedalis floribus albis. In wet shady jungle to Murichom 3500 ft.

1138. Quid? An Labiata. Arbuscula ramis elongatis subscandent, floribus minutis albis. To Murichom in rocky ground 3500, to 4000 ft.

1139. Ardisiæ sp.—Frutex 3 pedalis, foliis crenato undulatis, floribus carneis. To Murichom 3000, to 4000 ft.

1140. Lysimachiæ sp.—Spithamæa simplex, floribus sessilibus magnis aureis. To Murichom shady banks 3500 ft.

1141. Lysimachiæ sp.—Floribus luteis to Murichom 3000, to 3500 ft.

1142. Begoniæ.—Rubescens hispida foliis subtus purpureo rubrus, supra viridibus, seria punctorum magnorum sub confluenta alborum intro marginem, floribus albis.

To and from Murichom, inter 3500 ft. On moist banks. Common alt. 9500 ft.

1143. Begonia.—Statura prioris, foliis supra viridibus subtus rubris, floribus albis. Calyce ut in priori rubro tinct.

To Buxa; towards summit of ridge 5000 ft.

1144. Hoyæ sp.—Carnosa, foliis orbicularibus, floribus umbellatis albis villosis, repens in scopulis vel clivis prope, Gygoogoo.

1145. Mæsæ sp.—Frutex 6-8 pedalis ramis erectis. Buxa Doar in sylvis.

1146. Mussændæ sp.—Frutex ramis scandentibus. Ibidem in sylvis.

1147. Bergeræ sp.—Frutex erectus, floribus viridibus. Ibidem.

1148. Crotalariæ sp.—Suffrutex erectus ramosus, floribus lutescentibus, Ibidem ruderatis.

1149. Capparis sp.—Frutex erectus spinulosis, floribus albis, Buxa doar in ericetis.

1150. Bruceæ sp.—Frutex humilis, ramis simplicibus, ibid. flowers green.

1151. Atriplex sp.—Annua spinosa. Buxa.

1152. Solani sp.—Buxa.

1153. Tournefortia.—Buxa in ruderatis.

1154. Volkameria serrata, Buxa in sylvis.

1155. Ixora sp.—Frutex humilis ramosus, floribus albis odoratis fol. coriaceis in sylvis Buxa.

1156. Modeccæ sp.—Scandens, cirrhis floriferis, alabastris albidis, foliis basi eglandulosis. Buxa in sylvis.

1157. Hoyæ sp.—Epiphytia pendula, foliis carnosis lanceolatis, revolutis infra media, floribus umbellatis albis, umbellis axillaribus. Murichom in muris et arboribus.

1158. Polygoni sp.—Foliis pinnatifidis. To Gygoogoo in sylvis· alt. 4500, to 5000 ft.

1158*a*. Lysimachiæ sp.—Erecta ramosa 1½ pedalis, corolla calycem vix excedens, genitalibus exsertis; to Gygoogoo in umbrosis 45,5000 ft.

1159. Sterculiacea.—Novum genus. Arbor mediocris flores albi. Near Murichom in sylvis, alt. 4000 ft. Lege ad Moosmai.

1160. Celastrinea.—Scandens, floribus lutescent. Buxa in sylvis.

1161. Echites? Longe scandens, flores albis odoratis. Murichom. Scandens in Fico.

1162. Sauraujæ sp.—Dillenifol. Arbuscula, foliis dilleniæ carnoso coriaceis, floribus sessilibus in ramis (qui nudi) solitariis vel aggregatis, calyce lepidoto? Corolla rotata *cerea* alba, basi sanguinea, species pulchra. In sylvis, below Murichom 3500 ft.

1163. Sterculia Balanghas.—Folliculis mollibus rubro tinctis, seminibus albis, cum præcedent.

1164. Quid. An Delphinii sp.—Herba robusta, foliis palmata partitis, petiolis basi dilatatis, hic partes novellus fovent; odor Umbellaceis. Certe Umbellifera.

1165. Ophiorhizæ sp.—Basi suffruticosa repens. floribus albis. Below Murichom 3000, to 4000 ft.

1166. Croton malvefolia.—Frutex ramis sub scandentibus, floribus albidis Murichom. Buxa doar, common inter 2000, et 4000 ft.

1167. Acer platanifolia.—Arbor magna formosa. Samaris maximis brunneis.

To Gygoogoo in sylvis 4500, to 5000 ft.

1168. Pavettæ sp.—Frutex, floribus albis to Gygoogoo 4000 ft.

1169. Bergeræ sp.—Frutex fructibus oblongis, obtusis lutescentibus, to, and at Buxa,-at Murichom 2000, to 4000 ft.

1170. Choulmoogra.—Floribus odoratis viridescentibus, to Gygoogoo and Buxa, vix supra 4000 ft.

1171. Urticeæ sp.—Foliis teneris, paniculis brachiatis, ramulis secundifloris, to Gygoogoo in shady places 3000, to 4500 ft.

1172. Trichosanthes.—Bracteis incisis: floribus magnis, albis, odoratis; to Buxa, near Gygoogoo, alt. 4,4500 ft.

1173. Laurinea.—Arbor mediocris: baccis oblongis, purpureis, calyce reflexo. Below Murichom 3600 ft.

1174. Meliacea.—Arbor magna: paniculis erectis terminalibus, floribus albis, quasi tubulosis. Murichom.

1175. Psychotriæ sp.—Frutex erectus 6,10 pedalis: floribus ex albid sanguineis, curvatis tubuloso hypocraterif. Descent to Buxa 2800 ft.

1176. Leguminosa.—Frutex scandens: floribus rubescentibus, vexillo sanguineo. Near Buxa, 2300 ft.

1177. Laurinea.—Arbor: floribus cano viridescent. Near Gygoogoo 4500 ft.

1178. Araliacea.—Scandens robusta; umbellis paniculatis terminalibus paniculis magnis, floribus luteo albidis. Ascent to ridge above Buxa 5000 ft.

1179. Pythonii sp.—Tuber mediocris, axis I½ 3 pedalis caule, purpureo vel brunneo annulato maculato, foliis. unico vel ternatis, foliolis maximis pedalibus vel ultra oblongis, carnosiusculis, aspecto lucido velutinis. Margina undulato rubro, lateralibus obliquis, externa vena intro marginata conspicua.

Spatha breviter pedunculat folio alequoties brevior, obscure punctat. Cucullata maxima acuminatiss in parte tubulosa, sanguineo brunnea, albo venoso. Cœterum saturatius atro sanguineo. spadicis apice in filam bipedalem atro sanguineo abeunto.

In ripis humidis inter Chuka at Murichom, et inter Murrichom, et Buxa. Copiosiss vix infra 3000 ft. Site proper 4000 to 4500 ft. species perpulchre, persingularis. Spadix cœtera alba fusco tinct. Anth albæ.

1180. Pythonioid.—Maxima, tuber capitis infantis magnitud. Caule spathic 2 pedal, glaucescens, fusco viridi maculat. Spatha ampla lutescens cymbiformis obtusiuscul venosissim, spadix inclusa, sub clavata. maxima dodrantala, inferne ovarigero medio, Antheras sessilis pluriloculares, apice clavata sterila verrucosa.

Odor teterrimus putrescens, (Scarabæos attracting). Prope Murichom 4000 ft. in locis apertis humidis, et versus Buxa, alt. 5000 ft.

1181. Aroidea caulescens.—Caule retibus foliorum reliquis vestit : pedunculo spadicis spithamœo viridi emaculato. Spatha cymbiformis, inferne viridis et circa ovaria arcte convoluto, lamina petaloidea albida, obtusa. Antheræ mediœ densissimæ sessilis, plure loculares. Spadices apice crasso conico subulato *reticulato* interstitis elevatis, vix verrucosis.

Ejusdem generis ac præcedens, *Caladium*.

1182. Papaveracea.—Ferrugineo hispidissima succo aurantiaceo, foliis pinnatifidis, inflorescente terminalis per junior tantum vise above Chupcha non infra 9500 ft. on sheltered sward. Rodoola 12500 ft.

1183. Cœlogyne sp.—Pseudobulbis aggregatis (rhizomat nempe creberrime bulbifero) oblongo ovatis cylindracea bifoliis, folis longe petiolat, oblongo lanceolatis acutiusculis, plus minus undulatis. Racemo (scapo) medium usquam bracteis envolutis arcte vestito, foliis fere duplo breviora. Bracteis florum deciduis cymbiformibus, alabastris involvent, floribus anticis vel posticis suava odoratis, albis. Labellum album, intus rubro brunneo venos, lobis lateralibus e part maxima macula ampla, postea aurantiaceo croceo, antea luteo, medio reflexo, macula transversa ampla basi versus lutea margina aurantiaceo (for shape of spot, see fig. 23 a.) cristis obsoletis, in lobo medio divaricato, etsubito geniculato retrorsa. Fig. 23.

In arboribus descent to Buxa, 5000, to 4000 ft. Species Panukka in odor proxima, capsula clavata vix costata.

1184. Acrostichi sp,—Fronde oblongo lanceolat, undulato grisea, supra punctat, cauda filiforma, fructifera.

To Gygoogoo on rocks 4500, to 5000 ft.

1185. Eria teretifolia.—Repens intricat in arboribus, foliis distichis cylindraceo subulatis carnosissimis, hinc postea linea albida notat, non sulcat, flore solitario, ex axilla, pedicello clavato unciali, apice bractea cucullat. flosque extus densa canotomentos.

Flos ringens, intus lutescens ochroleucum labellum sanguineum apicem luteum.

In Gordonia infra Murichom 3600 ft. species distinct.

1186. Aerides.—Foliis arcte distichis patente recurvis. canaliculatis loratis apice oblique bifidis. (fig. 24.)

Racemis axillaribus solitariis bracteis parvis membrenaceis expansi. Sepalis spathulato obovatis, obtusis, viridibus. Petalis lineari spathulatis, marginis lutescent, labellum cum columnæ continua cymbiforma, lobis lateralibus rotundatis, basi approximatis, medio linguiforma, infra carinata et viridis, supra sanguinea ochroleuco lineat, lobis lateralibus, macula irregulari lutea.

Columna alba, ovarium acuto angulat, flos marces sanguineus.

In arboribus, to Chuka, and to Buxa 4500 to 5000 ft.

Pollinia globosa bina postea fissa, caudicula lata. Glandula transversa oblonga magna. Perianth sub refiexum.

1187. Orchidea.—Caulibus fasciculatis, pendulis, exarboribus rhizomatis, squamis vaginantib, brunneis; fol. carnosis, linear lanceolat.

Floribus minutis aggregatis, periantheo reflexo revoluto alba. Petalis margina rubris, labellum lutescens.

In arborib to Gygoogoo 4500 ft.

1188. Aeridesides.—Epiphyta caulescens, foliis arct distichis, coriaceis patent recurvis, loratis canaliculatis. apice inœqualiter tridentatis retusis racemis axillaribus 1 2 floris, bracteis carinatis sub membranaceis parvis, ovario acuta angulato torto, floribus sub anticis magnis odore forte Blattiorum.

Perianth subringens, vel potius directione ovarii, virides. Sepalis oblongis obtusis lateralibus, paullo majoribus.

Pet. multo angustioribus lineari spathulatis. Labellum calcarat, calcar brevi conico cum ovar angulum recta formans.

Carnosissima, linguiforma, verrucoso rugulosa, apicem versus processubus duobus recurvis patentibus conniformibus.

Calcar extus et basis linguæ viridescens, cœtera, intus atro purpurea, albido lineato cornubus albidis, lobis lateralibus rotundis basi approximatis medio linguiform. Columna nana albida. Anth albida. Pollen postea fissa caudicula late subtrigona, glandula magna, transversa oblonga. Ovar 3 uncial. clavat, 6 alato angulat. In arboribus Chuka. Species singularis, to be called on account of its Cockroachy smell.

1189. Æschynanthus sp.—Epiphyta caule ramoso pendulo, foliis oblongo lanceolatis acutis carnosissimis, ramis teretibus, flori-

bus terminalibus, sub capitat, coccineis, tubo curvato genitalibus exsertis. Calyce albo, minuto, dentato ascent to Gygoogoom 4000 ft.

1190. Aerides.—Pendula e Mangifera. Buxa. Foliisdistichis coriaceis semipendulis loratis, apice oblique emarginatis. Racemo axillar axim florifere angulat Ovaria acuta trigonum fere tri alata, flores densi in apica cylindracea disposita, postica quoad plan tam, anticam quoad terram. Sepalis oblongo rotundatis lateralibus paullo obliquis. Petalis spathulato obovatis. Labellum calcar quasi geniculat conicum brevem, lobis lateralibus nanis, quasi decurrentibus e columna terminat subdeltoid breviter unguiculat. trilobo lobis rotundatis. Color flavis carneus maculis rosaceis. Labellum roseo tinctum, columna semiteres ob margines involutas cucullat, clinand planissim. Rostell crures setacea longa. Anthera alba longe rostrata. Pollinia 2 rotundat. postea fissa. Caudicula longe linearis Glandula oblonga. odor florum ingratus, but faint; fol. secundis.

1191. Aerides.—Pendul ex arbore eadem. Buxa. Caulescens; foliis secundis distinctis oblonga loratis, apice valde oblique bifidis carnosissimo coriaceis, spicis axillaribus subulatis pendulis teretibus, bracteis minus, floribus inter minutos, consocior, posticis quoad axam pallide roseis, labello lilacino. Sepalis rotundatis. Pet lineari oblongis labelli lobis lateralibus profundiusculis oblongis terminali oblongo rotundato. Calcare brevi obtusissimo. Anthera vix rostrata, centrum versus sanguin. Pollina bina obovat, complanat. Caudicul supra lata inferne attenuata, Glandula trigona.

BOOK, III.

Chapter 1, *Affghan Flora.*

1. Cyperacea.—Along the nullah at Loodianah.
2. Hydrocharis (Alismatis sp.—Edgw.) in aquis dulcibus. Loodianah.
3. Villarsia.—Foliis nutantibus late crenatis sanguineo pictis. Cum præcedent.
4. Ruppioides.—An Potamogeton, immersis cum præcedent.
5. Naias.—Immersa, livido rubra, foilis linearibus alternat dentatis (Potamoget cum præcedent.
6. Valisneria.—Immersa. foliis ad epocha inflorescent immersis, brevibus, rubescent, integris linearibus. Scapis fæmineis longissimis spiralibus, unifloris, cum præcedentibus.
7. Boraginea.—Radix tinctoria sanguineo rubra. Herba spithamæa scaberrima, ramis infimis decumbentibus, fol. lineari lanceolatis. Spica gyratea bifaria, bracteis magnis foliaceis. Corolla parviuscul sub infundibuliforma, limbo 5 partito vix regularum, stigmata bina capitata longe exerta. Flos citrinus.
   In arenosis, Loodianah.
8. Crucifera.—Farsetia Hamiltonii, Herba ramosa annua tota glaucescent cana, foliis inconspicuis linearibus, silliquis linearibus compressis cuspidatis, placentis phragmata persistent, floribus parvis carneis. Seminibus alatis oo, planiusculis, tegument tenuiss. cotyl. accumb. radiculis replicata. In arenosis. Loodianah.
9. Reseda.—Planta basi ramosa bipedalis, ramis exterioribus basi decumbent, foliis linearibus ramulorum aggregatis, racemo spiciformi terminali, alabastris viridibus quasi echinatis cum præcedent.
10. Heliotropii sp.—Planta statura varians, spithamæa vel $1\frac{1}{2}$ pedalis, canescens, foliis ovatis longe petiolatis penniveniis molluisculis, spicis terminalibus vel oppositifoliis simplicibus vel bi furcatis, floribus arcte bifariis, majusculis albis inodorus fauce nuda, genitalibus inclusis.
   Cum præcedent communa.

11. Antirrhinum.—Planta annua pubescenta hirsuta erecta 1-1½ pedalis, ramosa, foliis linearibus deflexis, floribus axillaribus fere sessilibus inconspicuis, tubo basi gibbosiusculo, lab superior pallida carneo bifida ascendento, reflexo palato simplici, lab infer trilobo, deflexo, lobis lateralibus latis medio augustissimo, Sepalis lineari setaceis, 5 to longiora.
12. Lepidii sp.—Erecto ramosa, floribus albis in agris.
13. Ligulata composita.—In arenis, Prostrata, foliis inferior runcinatis, ramor pinnatifidis, anthodiis fasciculatis longissimis flosculis luteis. In campis arenosis Loodianah.
14. Amaranthacea.—Herba anua ramosa, bushy, tota cano-albida spiculis albo villosis.
    In ruderatis Loodianah.
15. Heliotropii sp.—Herba scabra, ramosa, decumbens, floribus albis, Loodianah in duderatis.
16. Leguminosa sp.—Herba pedalis 1½ pedalis. Loodianah in arenosis. Indigofera sp. ?
17. Poæ sp.—Gramen 1 8 pedale paneculis e racemis dense aggregatis flosculis plumbeo viridibus. Loodianah agris.
18. Melilotoid vide 59 a.—Herba prostrata, floribus minutis luteis In agris Loodianah.
19. Pomereullea sp.—In arenosis campis Loodianah.
20. Euphorbiæ sp.—Annua erecti ramosa, floribus viridibus. In campis et agris. Loodianah Delhi, etc.
21. Compositæ.—Æthulia axillaris ? Annua variabilis habitu. Commelinaceo, floribus cæruleo pallide tinctis.
    Rajmahal Hills.—to Benares. In wet places.
22. Poæ sp —Gramen elegans spiculis pendulis vibrantibus. flosculis rubro tinctis ; pedalæ, varians.
    Rajmahal Hills usque ad. Loodianah in arenosis. Forsan duæ species.
23. Cenchrus sp.—Common, about Loodianah, Delhi, etc.
24. Andropogonea ?—Gramen, in fruticetis occurrens laxum bi pedale spiculis rubescent. Common, in shady plains throughout.
25. Composita.—Cultivated for its oily seeds. In the Rajmahal Hills and towards Hazaribaugh,
26. Heliotropii sp.—Towards Umballa, Loodianah etc. Prostrati decumbens, floribus albis.

*

27. Anthistiriæ sp.—Sub simplex erect, bipedal spiculis fuscescent. Rajmahal Hills, very common.
28. Stemodiæ sp.—floribus purpur viscosa erecta pedalis ramosa, near the Soane River.
29. Polygoni sp.—Erect, 3 pedali floribus rubris. In the Nullah Loodianah.
30. Burmanniæ ap.—Swardy damp places, Rajmahal hills, cum Eriocaulone, Xyridea etc, florib. azureo.
31. Eleocharis sp.—In Loodianah nullah.
32. Cyperacea.—In Loodiana culmis sub terraneis repentibus.
33. Chara sp —In pools and nullah Loodianah. Very common.
34. Leguminosa.—Radicula profunde in arenis radicans, planta prostrata canescens, floribus rubris minutis, Mynpooree. Loodianah.
35. Loranthi sp.—Floribus sanguineo aurantiacea, common in Rajmahal jungles.
36. Composita.—Pulicarioides, Variat statura, in sylvis Rajmahal 3 pedalis. Circa Loodianah vix pedalis, floribus luteis.
37. Composita.—Suffruticosa robusta, fol. scabris, flosculis purpureis Rajmahal woods.
38. Salvadoræ persicæ var? Edgw? Planta scandens, magna. Caule crassitie femoris humani, foliis glaucescentibus, Fiara prope.
39. Olacinea?—Frutex parvus pedalis ramosus, florib sub. oo. First appears towards Sheergotti, continues to Loodianah, glaucescent.
40. Chenopodia sp.—Valde ramosum, Loodianah in ruderatis.
41. Acacia modesta.—Phulahi vera, Arbor mediocris. Umballa, Loodianah, generally planted round tombs.
42. Volkameriæ sp.—Frutex scandens, floribus ochroleucis. Fiara.
43. Scilloid.—Vel Asphodelus, variat structura paniculis ramosus *radicalibus* fistulosis. Umballa, Loodianah very common.
44. Fagoniæ sp.—Decumbens spinosa pedicellis deflexis Loodianah Hurreeka.
45. Anatherum Muricatum.—Loodiana Hurreeka.
46. Andropogonea.—Cœspitosa, 8 pedali, foliis very cutting. Towards Hurreeka in Campis.
47. Calatropis Hamiltonii.—Very common throughout the sandy

planis of India on the N. side of the Rajmahal hills, to the complete exclusion of C. gigantea. In appearance there is scarcely any difference, and as far as foliage goes perhaps none, the flowers are smaller, and invariably the leaflets much smaller, and bilobed at the apex. I am not aware whether the plant has medicinal virtues, or whether it is used by the natives as a medicine.

48. Anagallis.—Planta annua ramosa tenera sæpius decumbens caule ramisque acuto 4 angulat, foliis cordato ovatis sessilibus subtus livido maculatis, floribus solitariis axillaribus pedicellis foliis sub æquant, sepalis lanceolatis acuminatis carinatis. Corolla rotata reflexa. cyanea, petalis erosis et glanduloso ciliatis, basi vel unguiobus sanguineis filamentis stuposis, a medio supra purpurascent. Antheris erectis, stylo hinc declinato filamentorum longitudine. Stigmato capitato.

In agris Mendot et ubique grad lat 30—31. Sept.

49. Jasminum.—Frutex foliis pinnatis, inflorescentia dichotoma, triflora, pedicellis lateralibus apicem versus bi bracteatis, calycis dentibus longibus subulatis. Corolla alba, 5 partita, partibus externes ochroleuco et rubro tinctis. Stigma sub exsertum.

50. Tamarix.—Common along the Sutlege.

51. Compositæ.—Frutex 2 3 pedalis ramosus, ramis inferne sæpius denudatis, cortice alba, foliis carnosis lanceolato-spathulatis, sessilibus canis, (utrinque stomatos) adpress sericeo pubescent. Corymbis e cymis axillaribus et terminal pauci capitulat. Anthodiis ovatis squamis brunneis, albo villoso ciliatis, flosculis inconspicuis, anthod paullo superant.

In solo salino Sutlege Ramoohee prope.

52. Chenopodiacea.—Planta, erecta $1\frac{1}{2}$, 3 pedalis, ramosa cortice lœvi, stramineo, foliis distant sæpius reflexis, fere cylindraceis floribus axillaribus aggregatis, minutis. Calyce fructus clauso carnoso utriculo membranaceo celluloso, Semen nigrum, nitidum lœve, reniforma. Sapor salinus sub acid. Sutlege Ramookee, etc.

53. Polygonum.—Prostratum repens ramis flexuosis foliis linearispathulatis ochreis brevibus lacerato fimbriatis. floribus, ascendentibus aggregatis axillaribus paucis rotatis. Bright pink. Pedicellis foliis brevioribus. Antheris 8, sanguinea demum atratis.

Stylis 3 stigmatibus totidem carneis, odor nullus variat statura. Ramookee etc.

54. Chenopodium.—Erectum pallidum, foliis carnosis spathulato ob longis dentatis integris interdum sub hastatis. Thyrsis axillaribus densifloris, floribus viridibus. Native name, Pank Puttum

55. Crucifera.—Sinapis Floribus ochroleucis, fusco venosis. A stout well leaved plant, cultivated throughout the Punjab, chiefly for its oily seeds. The plant has a rather disagreeable taste and smell, and but little pungency.

56. Lathyrus.—Muttur. The pea of the natives. Prostratus caulis foliaceo alato, fol. lineari angusta, in cirham tripartit sæpius abeunt. Floribus solitariis in axillis longe pedicellat, pedicellis apicem prope articulatis, flos. intus pulchre cyaneus, vexillo extus et carina lilacino. Used also as Turkaree. Pank Puttan cultiv.

57. Melilotus.—Sinjee nat. Planta annua erecte 1-2 pedalis, siccatione odore Anthoxantho racemis axillaribus, folia ex cedent, demum elongatis, floribus parvis nutant luteis; used as folder cattle. Pank Puttum, in agris.

58. Leguminosæ.—Maihta vera. Erect ramos: pubescens. Stipulis membranaceis, petiolo basin prop distinctissime articulato, floribus axillaribus, solitariis vel binis, in pedunculo commune brevi. Calyx tubo subcylindraceo sursum ampliato: laciniis 5, subæqualibus setaceis. vexillo amplo arcte conduplicato, (ideoque flos subclausus) apice bifido, cæterum integerrima. Alæ oblongæ longe unguiculat ad apicim unguis latere superior 1 dentat, cum carina cohærent: Carina (battledore shaped), e petalis 2 cohærent, inferne secus unguibus discretis. Stam diadelp. 9. 1-filamentis, apice glanduloso cellulosis. Stylus brevis. Stigmate capitato. Legumen ovulis pluribus.

Trifoliod.

Pak Puttum Cult. Distinctly perigynous.

59. Melilotoidea Junglee Sinjie. Prostrata ramosa diffussa, pubesbens. Stipulis foliaceis, petiolo basin versus articulato, foliolis 3, cuneiformi orbicularib, apicem versus denticulatis. Racemis axillaribus demum folia excedent. Capituli formibus minutis. Corolla calycem vix excedent. Legumen post anthesin cito incurvat, demum obliquissim subreniforme rugosum. Semen unicum.

Pak puttum inter agros in solo tenaci humido.

59*a*. Melilotus vide 18.—Planta prostrata ramosa. Caule angulato. Stipulis subfoliaceis inciso fimbriatis, petiolo ad basin distinctis articulato, foliolis 3 cuniato deltoideis emarginatis, mucrone interjecto, a medio supra denticulatis, venis secondariis, subsimplicibus, æquidistant, etc. ut in Cupuliferis. Racemis axillaribus breviusculis. Capitulato 3-4 floris, floribus luteis. Calycis tubus $\frac{1}{2}$ ovatus laciniis subæqualibus lanceolato linearibus longitudine. Vexillo paulo longiore leviter clauso. Legumine spiraliter $2\frac{1}{2}$ torto (spiris approximatis) plano lateribus venosis, sutura dorsali seriebus binis, spinarum bifaria armata, seminibus paucis.

Loodianah. Pack Puttum etc.

60. Cucumis sp?—Repens in terram. Pepo subglobosus pomi mediocris magnitudine, apice calycis reliquus coronatus. glaber et lævis luteus ochroleuco variegatus. Placentæ 3 in axi tingentes tunc reflexo, donec fructus parieta tingant demum involutæ. Inter placentas *folii unius carpellaris* septa tria protruduntur e parietibus fructus, quorum interstitia pulpa repletur, in his semina continentur, septis perforatis nempe funicilis seminum exteriorum. Semina alia existunt inter septum exterius, et placentam quamque. Semina numerosa horizontale in pulpa nidulant et forsan etiam in statu juniora in cellulas proprias ex arellata sunt, superficie nempe cellulæ cujusque propriæ non solubili. Semina ovato-oblonga, brunea lœvia, raphe indistincte uti foraminis situs, tegumenta bina, externis crassuiscula, cartilagineum, intus albo cellulosum, interius album membranaceum tenuissim. Embyo orthotropus. Pake Putter. Succus acerbus.

Fig. 25. *a* corpellary leaf, *b*. Septa, *c*. placenta, *d* placentæ, *e*. septum of placenta, *f*. funiculis piercing the outer septum.

All the septa and the placentæ between Which they interverse belong to one leaf.

61. Umbellifera.—Annua erecta ramosa, foliis capillacem decoumpositis, umbellis bis compositis, floribus minutis petalis albis demum recurvato conduplicatis, antheris sanguineis, ovariis papilloso scabrellis.

In arenosis tenaciusculis. Sutleje, prope Mobarckpore. Vulgat. Sonff, vernac.

62 Ervum.—Repens et scandens, floribus binatis sæpius quaternis pallide cærulescent; in agris ubique.

63. Lathyrus Aphaca.—Decumbens et repens, Caules acuto 4 gon. Folia ad parem infimum foliolorum reducta, (stipulæ auctor) petiolo producto in cirrhum sæpius simplicem. Pedicelli axillares solitarium uniflori apicem versus bracteolat ibidemque articulat. Corolla straminea vexillo reflexo alis incurvus. In agris ubique.

64. Cotulæ sp.—Prostrata radiata flosculis inconspicuis lutescentibus. Sutleje banks, 1 days journey below Bahawalpore.

65. Pottentillæ sp.—Prostrata stellata radians hirsuta. Calyce duplici. Petalis 5, minutis. Staminibus paucis. Ovariis numerosiss. Cum præcedente.

66. Cotulæ sp.—Prostrata decumbens, canescens, flosculis luteis Cum præcedent.

67. Lactucoidea.—Planta robusta 1-2 pedalis, caule angulato rubro, foliis pinnatifido, spinosis, involucro primo sub cylindraceo cito ob turbinato echinatulo, floscul lutescent, pappus sessilis sericeus. Akenia complanata marginato alat.

68. Fumaria officinalis. In agris ubique.

69. Chenopodii sp.—In agris cum no. 67, foliis deltoideis dentatis carnosis, planta glaucescens.

70. Gnaphalii sp.—Annua radiata ramosa, ramis circumferentiæ lanatis, lividiusculis flosculis cinereis, Cumpræcedent.

71. Viciæ sp.—Laxa, scandens; floribus cœruleis. In agris ubique.

72. Ranunculus sceleratus.—Variabilis, ubique proveniens in arenosis humidiusculis.

73. Balsamiflua? Icon. It. Affghan t. 3.—Arbuscula parva dioica decidua cortice furfura solubila albâ e partibus cellıuliformibus difformibus, sæpius oblongis, partum novellarum plus minus castanea. Resina gummosa parce, præcipue e gemmis effusa, gumma insipida. Gemmæ axillares, foliiferæ et folio-floriferæ, ovalo oblongo (ex axillis folior lapsor). Squamæ imbricatæ, sub 4 ternæ brunneo custaneæ, cymbiformib basilaribus 2 exceptis, caducis. Inflorescentia racemosa, amentiformis, œstivatione aperta inversa, bractea, cuique flora, Spathulato-lingulata, scariosa, fimbriato incisa caduca. Folia novella, 1-2 ad sunt ramulo cuique florifero; rubro tincta, Vernatione conduplicato involutiva

stipulis veris membranaceis, lineari acuminatis, deciduis, albidis.

Racemi masculi omnino amentiformes, bi uncialis, nutant. pendula, anthesi peractê curvat, axis crassiuscula alba, parce pubescente pilosa, flores initio dense congeste, demum segregat, pedicellis pubescent, $1\frac{1}{2}$ linealibus, patentissimis. Calyce incompleto e discostaminiferæ, sepalisque reflexis parvis, albis, irregularibus integris vel. sub bilobis, vel dentatis, numero variis 8-10.

Stamina indefinita 28-35-40 e disco solo ortum duceat extrorsa. Filament filiformia, gracilia, brevia. Anth oblongo, basin versus affixæ, biloculares, longit dehiscentes repescentra peracta tremula brunnescent, lutea, florum superiorum rubro tincta. Pollene difforme ; sæpius rotundat glabrum ; plica (at least) unâ. Racemi fœminei rubro tinct, erectiusculi vel nutantis masculis longiores. Pedicelli his longiores. Calyx idem, sed deciduis. Ovarium oblongo ovatum, superne product. Stylus brevis partitus basin prope a ramos 3-4. Stigmata 3 4, maxima biloba, crescente cordiformia varia revuluta. Ovar. 1. loculare, extus lineâ stigmata quoque opposita rotata, intus placentis 3 parietalibus, lineiformi bus elevatis, infra medium ovuliferis. Ovulis oo, foramina hilum prope *et supero*, loculi cavitata nempe propinquius.

Folia matura deltoideo rotundata acuto et grosse dentata, coriacea, supra basi bi glandulosa et plurivenea, venis secondariis reliquis e costa ortis, 1-2 dichotomis, intervenis minuto reticulatis, alia ad sunt in ramulis quibus, lineari spathulatis integris vel dentatis vel cuneiformibus et dentatis. vel cuneiformi lanceolatis. Petiola compressi. Fructus non visus.

Occurs in large tracts from about half way to Bahawulpore as far as Chuck. Sofaidar, is the Loodianah name; Bhan, the Punjabee or Scindian name. It is commonly infested with excrescences like Galls, which are often 3-4 valved. Of this genus whatever it is, I have another species from Bootan, which, from its currant-like habit may be called, Ribesioides. I can find no character in Lindley with which it agrees, but its affimities are obviously with Amentacea, generally, and above all with Populaccæ and Betulaceæ. It may be perhaps a Balsamiflua. In habit it is most like a Poplar, with which it agrees in the very curious petiole, which seems to be confined to deltoideous leaves ? witness the Peepul. Poplars etc. The large celluliform vessels abound

with coniferous dots. It has some points in common with Juglandeæ. The nature of the calyx is worthy of enquiry. Is it not an undeveloped portion of the staminal series? If so, those orders which have no calyx at all, can easily be explained. The placentæ alternate with each stigma in a very obvious manner, they are therefore compound, and they correspond to the margines of the leaves, and are distinctly continuous with the stigmatic surface.

1. Ramulus foliifer, taken from a withered branch. 2 male branch, 3 female do, 4 male flower posteriorly, 5 ditto section through middle, disk erroneously concava, 6 view of disc. and filaments attached, 7 back or inner view of anther, 8 outer or front do, 9 lateral do. 12, do. after dehiscence, 10 pollen, 11 do. in water $\frac{1}{20}$, 13 young female flower, 14 same of a raceme $\frac{2}{3}$ developed, 15 after apparent impregnation, or at least application to stigmata, 15*a* two ovula of a placenta, 16 same age as 14, laid open to shew the stigmatic and placental correspondences, 16 an ovule of do, 17 section illustrating vernation.*

74. Crucifera.—Radix fusiformis, glabra glaucescens, fol. carnosiusculis inferioribus pinnatipartitis, varia dentatis summis spathulatis; floribus majusculis pulchris, petalis obovato cuneatis, medio infra albidis, cœterum lilacinis, venis cœrulescentibus, odor sub ingratis. Shikapore in agris.

75. Coriandrum.—2-3 pedalis, petalis initio canis, demum albi factis, graveolens herba foliis inferioribus numerosis, pinnatis factis, superioribus fere capillacea divisis.

In agris Shikapore.

76. Euphorbia.—Prostrata, discoidea sæpius humi fusaque, foliis rotundatis, floribus rubro tinctis.

Ad vias Shikapore.

77. Malvacea.—Frutex cano albidus, foliis cordatis, dentatis. floribus axillaribus, solitariis, alabastris nutantibus, corrolla aurea, calyce vix longior *minima apertâ* carpellis uniseriatis *innumeris*, potius indefinitis.

Shikapore in sepibus, an cult.

78. Crucifera.—Vix Non Sinapis, ubique, culta in agris Shikarpore.

79. Cheiranthus.—In hortis Shikapore

* The plate to which this description refers will appear with the Icones. Plant. asiat.

80. Matthiola sp.—Herba ramosa $2\frac{1}{2}$ pedalis cana; floribus albis fauce viridescent; ad via solito in hortis Shikapore.

81. Pomacea.—Frutex arbusculoideus 8 10 pedalis, habitu et folia tione Psidii pomiferi (Guava) ramulis hirto pubescent fol. oblongo ovatis obtusis serratis, in ramulorum apicibus confertis, stipulis minimis petiolaribus, floribus cymosis, verisimiliter solitariis in axillis et terminalibus majusculis, albis, subodorus. Petalis oblongis, albis patentissim. Staminibus sub 20. 25 evolutione variis. Stylis 5 declinato ascendentibus sub clavatis cult in hortis Shikapore Loodianah e valle Cashmereano.

82. Hyperanthera Moringa.—Probably more than one species confonnded under this name, as it varies a good deal in size and pubescence. The flowers of this are very sweet scented: *Great tendency in sepals to become petaloid.* Has it any analogy with Gærtnera: its greatest affinity is with Zanthophyllum, Roxb. from which it differs especially in being perigynous, with Leguminosæ it only has relations of analogy. Great tendency to glandulation. Can this be the reason of its being perigynous?

83. Solanacca An Lycii sp.—Suflrutex densus albo canus, tota dense tectus pube densissima stellata; fol. vel obovata vel lanceolato-obovata ascendentia, coriacea, floribus in axillis 2 3 4 carnuis alabastis albo canis, corolla extus cana, intus luteo viridis, infundibulif. Venatio perfecta.

Vernat revolutis, æstiv leviter imbricatione.

Stam 5 alternantia introsa filaments brevib. 1 veuia. Anth inclusis oblougis basi affixis bilocular vacuis (in examplo).

Ovar oblong bilocular placenta central carnosa, ovula oo reniformia, tegument distinct, o. Stylus bivasculif, sursum incrassat. Stigma magnum. Capitato subbilob.

a. Plantæ ramulus.

b. Alabast *c.* flos: *d.* flos apertus, villi adsunt densi et mollis, inter filamenta, *e.* æstivatio.

f. Stamin externe, *g.* do interne, *h.* do lateral.

i. Pistillum, *k.* ejusdem, sectio transvers, *l.* Stigma junuis, *m.* ovulum.

84. Plantago.—Planta basi decumbens, valde ramosa; foliis linearibus basin versus hispido ciliatis, spicis longe pedunculatis

axillaribus folii æquantibus vel excedentibus bracteis linearibus patentibus, floribus dense congetis. Sepalis? 4 ovatiusculis, 2 supernis vena excepta membranaceis, advenas pubescent, fructus demum unilateralibus. Corolla? membranaceia, 4 partita, laciniis cordatis acuminatis, sub carinatis, tubo cylindraceo rugosa, ad faucem angustat, vix venosa! lineis.

Stam 4 tubo medium versus insert, evenia. Filam capillacea, ante anthesin inflexa in dorso antberæ. Anth bilocul longit dehiscent, membranaceis versatilibus. Pollene lanceolat 3? plicat glabrum. Ovaria biloculare. Stylo longo filiforme, *marginibus* densa pubescent. Stigma obsoleto bifidem. Ovulum cuique loculo unico peltato, distinct; tegumina null. Capsula indehiscens membranacea, calyce et bractea viridibus, corollaque scariosa, ex insertion ruptâ tect. Stylo terminatum parites tenuissimi quamvis bi-lamel lat. Placenta libera centralis. Semina dua, oblongo ovalia, cochlearif extus convexa, intus concava, medio ffixa; teguminis et albuminis? distinctio nulla crassum coriaceum, in aqua immers mucilaginos superficio solubili in cellulus discretas. Embryo centralis orthotropis, potius ad basi fructus direct, radicula longa cotyledones lineares plano convexa, plumula nullum micropyle a notch at the lower end of seed. Iconograph.

1 Planta, 2 flower anticously, 3 do. posticouly, 4 do. do. sepalis? partly expanded, 5 Corolla laid open, evascular, faint lines however correspond to the axes of the lacineæ, and stronger ones to the filaments 6 anther front, 7 Do lateral, shews the packing of the filaments, before expansion, 8 dry, 9 wet pollen.

10. Ovarum, dorsal face of one side, 11 do. the opposite face, or that of the inflection of the carpellary leaves, with this the hairs of the style correspond, 12 ovary laid open.

13. Ovary laid open one of the ovula rather displaced, 14 placenta and ovula in a young stage, 15 fruit, a line of separation by base of corolla; 16 same, corolla removed; 17 fruit, one cell laid open, 18 both cells laid open seeds in situ, a portion of micropyle.

19. Outer face of seed, micropyle distinct.

20. Inner of do. 21 Section of seed, 22 Embyo 23 do. coty-

ledons separated. Affinities obscure Jussieus view of calyx perhaps the correct one. Corolla no analogies with usual structure. If the sepals are bractes, if a species should occur with single envelopes, the inflorscence ought to be dichotomous.

85. Betæ sp.—Herba carnosa, pedalis vel bipedalis radix extus rubra, fol. inferior pinnatisectis, lobis varia lobatis, etiam irregulariter pinnatifidis, caulinis, superior deltoido hastatis, varia lobatis axillis. Dioica est Inflorescent mascula paniculata, floribus sessilibus concervatis, sepala 4, herbacea 1. venia. Stam 4 his opposita. Anth maximæ viridescentis, bilocularis, longit dehis cent, demum corrugata, saturato viridis. Pollen globosa, sublenteo $\frac{1}{20}$ quasi in locellis obscure divis. Rud cert o. Flores fœminei axillares, dense congesto in conspicua, basi inter se sub cohærent. periant carnosum, tubo ovarium arcte includent, limbo bi partito. Stam oo, stigmata 4 6 filiformia. *Stylo ?* Ovar 1 locular *evenium !* ovulum reniforme curvatum erecta. Planta fœminea robustior.

86. Urticea Bælmeria.—Herbacea. Caulibus procumbentibus succulentis, foliis oblongo spathulatis vel spathulato obovatis, floribus monoicis, axillaribus, bracteis irregulariter ? interspersis, inflorescentiæ ramis subternis, lateralibus majoribus, in his flores ascendentis dense, fœminei numerosiores. Sepalis 3 masculor. marginibus membranaceis. Stam tria opposito rudi. Ovar centrale vacuum. Fœmin stam oo, sepali magis foliacea. Ovar bi, sœpius tri carpellum, foliolis cum sepalis alternant ! styli subo, stigmata papillosa tria longiuscula, utriculus laxus membranaceus. Calyce immulato duplo fere longior, apice rubescent. Semen orbiculare reniform lucid, castaneum erectum. Testa *Chartacea* ? membrana interna peripherum embyonem curvato centrum albuminis massum majusculum cornosam involvens.

Ovulum unicum ascendens reniforme, hilum prope foramen. In agris Shikarpore.

86*a*. Chenopodii sp.—Sub erect ramoso. $1\frac{1}{2}$ pedale caule angulato purpureo rubrove tinct, folia carnosa deltoideo ovata, lobato dentata, flor. panniculis terminalibus vel in axillis foliorum; flores dense congest inconspicui viridis hermaphrodito.

Extus cellulis rotundat. Calyx 5 sepalus, sepalis herbaceis

persistentibus et sub ampliatis. Stam totidem opposita *evolutione, varia* filamentis *persistent* evascul. Anth magnæ biloculares, longit, dehiscent. Pollen globosum glabrum. Ovarium late ovatum evasculas! Stylus brevis, stigmata bina, filiformia vel setiformia, Ovulum ascendens curvat. funiculo longo *vasculif!* utriculus depressus e pericarpio tenue sub solubila, semeni sub adhærenti, semen unicum, exacte horizontale, testa indurato coriacea, atra tegument interiis chartacea brunnescens.

Albumen corneum.—Embryo *periphericus*, curvatis, albumen inter embryonem et tegmen interius nullo interposito. Calyx fructus sub 5 cornutus, æstivatio imbricata.

In agris ubique. Bhatoo, nomen vernacul. Cellulæ superficiei ut in Beta.

87. Evolvuli sp.—Planta hirsuta pusilla prostrata vel decumbens. Corollis carneis plicis extus fuscescentibus. In campis Meerpore etc. Habitus omnino Acanthaceus.

88. Centaureæ sp.—Cano hirsuta, foliis rosasceis, spicis involucri fuscescent, flosculis purpureis. In campis siccis. Meerpore, Joke etc.

89. Euphorbiæ sp.—Prostrata humifusa, glaucescens involucris. pallide carneis. Joke in marginibus agrorum.

90. Gramen Panicum.—Gramen cæspitosum, paniculis densis, flosculis viridibus. In agris. Joke.

91. Gramen Planta, humifusa, radici insiformi, floribus leuteis Joke.

92. Tribuli sp.—Cana humifusa, floribus luteis. Joke, Meerpore.

93. Telephioid.—Ramosa humifusa, foliis subcylindraceis, floribus luteis. Joke, Meerpore.

94. Corchoroid.—In agris. Joke: a cropped plant.

95. Calligorum.—Frutex arbusculoid ramis fragilibus albis, ramulis viridibus foliaceis, foliis vagini formibus? squamiformib; floribus minutis rubris. Jagon. In sylvis, very local not seen since it occurred with Rairoo, Kureel etc.

96. Anthistiriod.—Gramin dense cæspitos; flosculis viridides centibus. Jane-Daisa, in campis.

97. Salsoloid.—Frutex dense ramosus 1-3 pedalis, foliis persistentibus ramisque brunnescent, ramulis foliis junioribus glaucis, foliis squamiformib calyce fructus ampliato? In campis Jane

Daisa. very abundant, between Jagon and Jane-Daisa, but especially near the last place.

98. Salsoloid :—Suffrutex glaucus dense ramosus 1-1½ pedalis ramis sub 4 gonis, foliis carnosis, subcylindraceis, fructibus solitariis axillaribus sessilibus, sepalis extus carina aliforma transversa cæter non visa. Towards Rojan and about it, generally not mixed with the former, which belongs to the same genus, and occurs sparingly on the N. W. side of it.

99. Crucifera.—Annua strigosa; sapor Raphanoideus, foliis præcipue radicalibus Petalis angustis longis pallide purpuricis demum erectis! siliquis elongatis.

In agris Oostad abundans variat statura.

100. Crucifera Lepidiod.—Prostrat, foliis carnosiusculis pinnatifido lobatis. Corymbis capituliformibus, floribus albis. In agris Oostad.

101. Raphanoid.—Planta robusta, foliis pinatifido lobatis, pedicellis calycibusque hispidis, floribus amplis lœto lilacinis. In agris Oostad.

102. Gramen.—Chlorovideum cæspitosum, vix pedale flosculis distiche secundis, rubro tinctis. In agris: Oostad Verisimiliter Cynodon, flosculis pluribus.

103. Gramen agrostideum.—Cæspitosum. Nullah banks, Oostad.

104. Gramen.—Pomereulleæ facie. Spiculis purpureis spithamæa. In agris versus Bagh.

105 Cruiferæ.—Mathioloid. 1-2 pedale diffuse ramosa, floribus purpureis. In agris versus Bagh.

106. Apocynea.—Facie Nerii. Suffrutex 2 pedalis cæspitosus, foliis alternis carnosis glaucis, floribus cymosis (cymis axillaribus et terminalibus) parvis, albis, tubo viridescent, hypocrateriform fauce pilis semi clausa. Antheris ad medium tubi. Mysoor secus fluvium et in arenis frequens. Bagh.

107. Plantago sp.—Cano sericea, depressa, floribus albidis Mysoor in Arenis.

108. Cyperacea. Juncoides.—In fluvium. Mysoor panicula, erectius cula.

109. Potamogeton.—Submersus, foliis distichis recurvis undulatis. membranaceis brunneis.

In fluvium Mysoor.

110. Potamogeton.—Submersus, foliis subulatis, fuscescentibus In fluvius Mysoor.

111. Charæ sp.—Fœtida asperula, cum præced.

112. Charæ sp.—Pedalis, glaberula, nuculis auranteacea. Cum præced. Communiss.

113. Orobanche sp.—Herba formosa, robusta, pedalis caule simplicia in Cappariden, aphyllam, squamæ brunneæ densiusculi imbricatæ, summæ in bracteas obeuntis, bracteæ livido plumbeæ carnosæ. Flores ampli lutea, numeroso, racemum in spici densifloram 1-1½ pedalea congesto. Pedicelli breves crassi bibracteata. Calyx tubo ovato, limbo 5 partito, laciniis oblongis. Corolla infundibulif sub bilabiata, tubo curvato leviter deorsum, fauce ampliata, lamina reflexa, labio superioris minores, odor melloideus. Stam didynama tubo infra medium inserta, basi lanata. Filamenta sulcata. Anth biloculares facie interna dense lanata, subexserta. Stylus harum longitud, sursum curvat. et ampliat, Stigma magnum transversum, subbilob. Ovar oblong : discum luteum *terminans*, foliis carpellar right and left, (apparently) unilocular. placentis 4 parietalibus, sepalis 4 in ferior oppositis. 5 to abortivo. Ovula innumera.

Mysoor, etiam Loodianah qua crescit in Kureel et Calotropis Hamiltonia. Œstivat imbricatis, lab super extimo loboque medio, labii inferioris intimo, flores superiores sessilis, bibracteat. Planta formosa, aspectu primo Scitamineam plantam œmulans.

114. Crucifera.—Pedalis, foliis runcinato pinnatifidis, floribus luteis minutis. Siliqua elongato. Nowshera, and Halioon; odor et sapor. mustard. In agris.

115. Melilotus.—Cum præcedent floribus luteis.

116. Potamogeton sp.—Submersa, foliis distichis brunnescens membranaceis. Mysoor in aquam lene fluent.

117. Crucifera.—Planta suffructicosum robusta : ramosa 2-3 pedalis, curtum, album. Fol. glaucis carnosis senioribus obovatis. Cuspidatis superioribus lanceolatis et linearib. Racemis elongatis. Calyx lateraliter sub bisaccat. Petalis patulis purpureis venosis. Siliqua ovata globosa, cuspidato, rostrata, stipitata. parietibus crassis immaturis etiam sub osseis ! seminibus parvis, tegument membranac. Cotyledon conduplicat. In Ravines. Mysoor, odor saporque Cabbage.

118. Rutæ sp.—Basi suffruticos 1½-2 pedalis, fol. oblongo lanceolatis repandis glaucis carnosis. Cymis dichotomis, floribus parvis luteis. Staminibus 10, filam basin versus pilis deflexis barbat: anisomeris ovario rotundato pilis armato.

In agris. Nowshera.

119. Malvæ sp.—In agris Nowshera vulgatissima dentatis. Calycis longitud albis, tipped with purple.

120. Silenacea.—Digitalis vel spithamœa, pubescens, foliis linearibus. Calice cylindracea petalis roseis squamis binis dentatis his oppositis. Staminibus 5 exsertis fructus calyce multicostato ovato rostrato inflato. In agris Nowshera.

121. Sperguloides.—Laxa decumbens glanduloso pubescens, foliis teretibus. Stipulis intrafoliaceis membranaceis; floribus viridibus inconspicuis. Petalis albidis pedicellis demum deflexis.

In agris Nowshera.

122. Astragaloides.—Herba basi ima suffruticos, spithamæa vel etiam uncialis, cano hispida sæpius basi decumbens. Calycibus vestitis corollam albidam vel pallide cæruliam æquant. Legumin in capitulum congregatis, hirsutis, sursum arcuatis vel falcatis; floribus racemosi capitulatis.

In agris Nowshera. Lat 29° 22' N. Elevat 4500 ft.

123. Trigonelloidis.—Planta gracilis humifusc., stipulis foliaceis sub semi sagittatis, fol. 3 nalis argute dentatis, pedunculis sub 4 floris, floribus luteis. Legumin immature compressis elongatis linearibus. In agris Nowshera.

124. Andropogoneum gramen.—Culmis 1½ pedalibus geniculis dense barbatis, spicis racemosis purpureo lividis secundi floris. Cum præcedent.

125. Gramen Phalarideum.—1-1½ pedalis sub glaucescens, spicis ovatis spiculis viridescent, nervis viridibus.

Cum præcedent communa.

126. Malavacea.—Spithamæa, ramis decumbentib, foliis Geraniaceis calyce dupli. Petalis albis, floribus minutis. In triticetis Nowshera, rara.

127. Trigonelloides.—Diffusa ramosa prostrata, foliis sub glaucescent dentato crenatis racemls sub capituliform, floribus nutantibus subsecundis luteis. Leguminibus teretibus sursum falcatis fragrans, Cum præcedent. Common, Medicagini omnino similis habitu.

128. Gramen polypogonoides.—Spithamæum, panicula coarctata sub spiciformis, aristis quasi sericeis, albis cum præcedent.

129. Plantago sp.—Varians e statura unciali ad pedalea, si pedalis ramis decumbentibus, foliis lineari cuneatis vel lanceolatis, carnosis fragilibus hispidis, venis secondariis paucis arcuatis, spicis axillaribus longe pedunculatis, ovato cylindraceis, bracteis rotundatis, cymbiformibus carina viridi cæterum membranaceis, floribus albis laciniis reflexis, staminibus exsertis filamentis capillaceis. In agris. Nowshera very common. Foliis amplexicaulibus.

130. Illecebracea.—Cano hirsuta, ramosa pygmæa, decumbens, floribus minutissimis, apetalis? calyce hispidissimo.
In agris Nowshera.

131. Triticum sp.—In agris Nowshera.

132. Silenacea.—Spergaloides, glabra, fol. subcylindraceis. Petalis ovatis concavis integris albis. Stam 10, styli 3. In agris Dadur.

133. Gramineum.—Panicula elongata nutans, spicis patentibus brevibus, spiculis secundis brunneo purpureis. In agris Dadur.

134. Gramineum.—Pedale. Culmis purpurascens, spica compressa, spiculis vestitis viridescent purpureo tinctis, singularis planta. In agris Dadur.

135. Avena.—2 pedalis, spicis nutanti pendulis. In agris Dadur, Nowshera. The Jumduor of Punjabees.

136. Gramen.—Spithamæum. fol. linear vaginis, barbatis paniculis laxa spiciform, spiculis viridib. In agris Dadur.

137. Gnaphalium.—Planti inconspicua carno pilosa. Capitulis capitulatis, habitu Silenaceo? In agris, Nowshera. Dadur. Oostad etc.

138. Imperata sp.—Spica purpurascens.
Dadur ad margines agrorum.

139. Composita.—Pedalis, floribus inconspicuis, foliis glaucescent. Ad ripas Dadur.

140. Ecliptæ sp.—Prostrato decumbens floribus albis. In ripis Dadur.

141. Saccharoid—Gramen exaltat 8 pedal, cæspit, asperum. Panicula subsecunda. Post matur. tantum vidi. Dardur secus fluvum.

142. Fagoniæ sp.—Foliis infra dense tufted. Caulines trifoliatis. Carnosis, lineari lanceolat, spinis robustis, subulatis apice excepto viridibus; floribus dichotomus majusculis. Petalis roseo carneis, patentibus, pedicellis erectis, demum deflexis planta aspera omnino spinosa decumbens. In bed of Bolan river. Dadur.

143. Erodii sp —Prostrata varians magn. Caule basi rubescent hispida; foliis pinnatis, pinnulis pinnatifidis, floribus axillaribus umbellatis, umbellis longe pedunculatis, plurifloribus, involucro cyathiforme dentato, subreflexo. Petalis oblongo obovatis, purpureis, fructibus longe rostratis pedicellis tunc geniculato deflexis secundis. In agris Dadur.

144. Crucifera.—Annua erecte $2\frac{1}{2}$ pedalis, foliis dentato lobatis, caulinis basi sagittatis oblongo linear dentat. Siliquis (sausage shaped) botuliformis ventricosulis, nutantibus; non visis In agris Dadur.

145. Crotalariæ sp.—Frutex canus dense ramosus. 2 pedalis foliis minutis, floribus subnutant luteis. Bed of Bolan river Dadur.

146. Pæderioid —Frutex dense ramosus tota cana fætida more solito, cortice albo, foliis minutis carnosis spathulato cuneatis, floribus ternis, terminalibus bracteis lineari setaceis plumosa sericeis, cinctis. Corollis infundibulif, albis; bracteis partialibus et generalibus subinvolucrat. Plante singularis ob bracteis. Stony and sandy bed of Bolan river Dadur.

147. Boraginea.—Annua decumbens scabra carnosa, fol. radical longe spathulatis, superior caulinis lineari oblongis: novellis repandis, pilis scabris hirtis, floribus inconspicuis axillaribus solitariis: cito nutantibus. Calyce hispidissimo. Corolla tubo calyce breviore, limbo hypocraterif. primo cæruleo demum carneo, fauce fornicibus concavo convexis semiclausa genitalibus inclusis. Calyx fructus immulatus apertus, nuce[s] cochleariformis suboblique osseæ, punctulato scabrellæ rugulosæ, linea carinaformis a medio lateris externa ad apicem currens, umbilicus maximus, ore dentato annuliformi. Radicula supra.

In agris Datut.

148. Boraginea.—Herba aspera pedalis vel $1\frac{1}{2}$ pedalis, ramosa fol. radical oblongo spathulat in petiolum attenuat, caulinii lineari oblonga omnia repanda plus minus hispido ciliata, floralia disticha, e basi lanceolata attenuata, flores axillares, vel extra axillares. Calyx subcylindraceus. Cor hac $\frac{1}{3}$ longior infundibuliformis, tubo medium versus angustato, tunc ampliato lacinus oblongo rotundatis, subintegris vel dentatis sanguineis fauce nuda. Squamis 5 pilosis petalis opposit, ad angustationem tubo.

Calyx fructus nutantis inflatus ampliatisque, sepalis angulatus. laciniis reflexis. Nuces atræ pilosiusculæ cochleariformes umbilico magno ore dentato dentibus subcarinatis, carinis in lateribus fructus evanesentib summo ad apicem nucis producto. Radicula supera.

In agris, Dadur. Præcedent fructu analog. notu dignum ob calyce inflato, squamis ad medium tubi, nucibusque, in his omnibus umbilicus partim oritur e canali fecundationis. Continues here and there throughout Khorasan, as far as Dadur.

149. Viola sp.—Minima caulescens, foliis obovatis, floribus petalis pallida purpur basim versus lutescent, Bed of river near Dadur.

150. Linariæ sp.—L. Telephioides, cano albida, foliis carnosis floribus ringentibus, albidis brunneo venosis petalo lutea. Calyce singulari, folio postico maximo, fructus globosus, scandens; hills near Dadur.

151. Salix.—Arbor, foliis subtus argenteo glaucis. Near Dadur Dhoby.

152. Composita.—Foliis quodammodo Papaveris. Involuc squamis exter reflexis, flosculis aureis internis ad faucem sanguineis, In agris Dadur, subacaulis, glauco albidam.

153. Solani sp.—Calyce fructis rotatus albidus carnosus, floribus albis suffrutex Dadur.

154. Oxalis.—Corniculata Dadur.

155. Valisneriæ sp.—Foliis linearibus brunneis stolonif. In agris Dadur.

156. Poæ sp.—Spiculis purpureis, In agris Dadur.

157. Chenopodium.—Viridescens. In agris Dadur.

158. Lycioides?—Frutex fol. lineari clavatis fasciculat; floribus.

fructus proprius purpureis. Collected by Major Sanders Frutex ramosus 2-3 pedalis.

759. Phleoid.—Pedalis basi decumbens spica virida in fruticetis Dadur.

160. Potamogeton.—Foliis summis nutant. In agris lene fluent Dadur.

161. Convolvulus sp.—Frutex canus erectus ramosus, ramis ramulis que in spinis desinent, foliis parvis sub spathulatis. Corolla alba plicata extus sericea. In rupibus sterilibus. Drubba.

162. Goodyeroides.—Vix pedalis, foliis fuscescent, bracteis membraceis albis, vena fusca longe excurrent, spica spiralis. Perianth nutant, ringent alba, labello carnoso sub viridescens, lobis intus ascendentibus. In paluda Drubba. Major Sanders.

163. Aristidæ sp.—Pussillum decumbens spiculis fuscescent. In Bolan river bed.

164. Desmodioid.—Prostrato repens, foliis canis carnosis Legumina torulosis, floribus purpureis.

Towards the Pass, in stony ground.

165. Nerii sp.—Frutex erectus dense foliosus, floribus carneis extus rubris. Along cuts; towards the pass it is common.

166. Gnaphalii sp.—Vix spithamœa dense foliosa, foliis subrecurvis linearibus, anthodiis squamis apice setaceis, flosculis inconspicuis.

In agris towards the Pass.

167. Andropogon sp.—Glauca, dense cœspitosa, aristis basin versus brunneis. Rocky ground near Pass.

168. Curcifera.—Hirsuta. canescens, foliis pinnatifidis. petalis pulchre, carneis, spithamæa pedalisve. In rocky ground, mouth of pass.

169. Crucifera.—Basi suffruticosa, carnus pilis adpressis, foliis linearibus. Petalis fusco carneis, fusco venosis. Near mouth of Pass.

170. Polygonum rheiflorum. Spithamæum, foliis carnosis cordat, hastatis floribus nutant luteo rubris. Calyce fructus magnus læte coccineus, pulcherrimeque coccineo venosus. Stony ground, mouth of Pass.

171. Phyllanthus.—Minimus glaucescens, floribus minutis viridi luteis. Cum præcedente.

172. Naiades.—Immersa gracilis habitu Potamogetonis, foliis linearibus, fructibus aggregatis stipulis compressis obliquis rugosis. Stylo filiformi, stigmat atro simplice terminat.
In wet ditches. Dadur Ruppiæ affinis.

173. Capparis aphyllis. Kureel.—Frutex densus armatus, foliis cito caducis subspathulatis, ramulis subulatis, stipulis binis patentibus armatis quorum summi subabortivi racemis axillaribus, abbreviatis, alabastrus transverse oblongis, obliquis, albopubescent. Calyx aurantiaceus sepalis inæqualibus, 2 lateral minoribus postico (alabastru) maximo cucullato. Petalis inæqualibus (cream coloured) ciliatis 2, sepalo cucullato semiamplexis majoribus. Stamina pauce filamentis fuscoviridib. Antheris erectis sub 12. Ovarii stipti filamentorum longitudinum, ovarium ovatum. Stylus brevis. Stigma subsimplex. Placentis ternis. Ubique in solo arenoso sterile.

174. Gramen.—Andropog. Culmo ramoso decumbens, panicula effusa, spiculis purpureis villosis. Calcareous cliffs. Bolan river.

175. Cassiæ sp.—Prostrat glauca. Calcareous cliffs Bolan river.

176. Gramen.—Cæspitosum adhærere fimei, spicis albo villosis glumis 8 patentibus. Calcarious rocks. Bolan river.

177. Graminem.—1-3 pedalis uti omnia hujus loca cæpitosa arcte adhærent, spice viridi purpurasc. Cum præcedent.

178. Scirpoideus.—Dense caspitosus pallens, spicis nutantibus internis erectis, albidis in aquosis. Bolan river.

179. Gramen.—Saccharoid 4-5 pedali. Coarse dense cæspitos, spiniculis, dense villoso hirsutis in aquosis. Bolan river.

180. Plantago sp.—Villoso canescens pseudo acaulis, spicis elongatis. Calcareous rocks Bolan river, March 12.

181. Labiatæ.—Frutex pygmæus vix ultra pedem, foliis rugossisimis, quasi undulato crenatis. Calyce villosissimo. Cor bilabiata lab super minor, subreflexo, lobo medio labii inferioris emarginato. Color purpureus maculis albis. Antheræ saturat purpureæ. Salviæ affinis. Cum præcedent.

182. Gramen Stipoideum.—Dense cæpitos 1½ pedal. Panicula tenuis elegans, plumosa alba, purpurio tincta. Cum præcedent.

183. Cappariideum.—Suffrutic basi scabrella papillis, foliis carnosis ovatis vel deltoideo, ovatis. Inflorescent viscosa. Petal 4 ascendente secunda, fusco lutea, sanguineo pulchre venosa

Stam declinata 6 glanda, anisochronous stamina magna inter stamina et petala superiora, ovar minutum. Fructus leguminifor nutante pendul. Cum præcedent.

184. Gramen.—Cæspitosum adherens pedal spica 4 slackya villis albis interpositis purpurea vel albis. Calcareous rocks Bolan, Pass.

185. Andropogon.—Holcoides cæspitos 1 pedal spiculis inferior pendulo nutant panicula semi-ovata. Cum præcedent.

186. Gramen.—Anthistirioid dense cœspitos, 2 pedali, spiculis binatis ex involucro nutantibus. Cum præcedent.

187. Composita.—Frutex humilis valde ramos, foliis carnosus subclavatis profunde canaliculatis, flosculis luteis. Rocks Bolan Pass.

188. Pomercullioid.—Cœspitos pedali spicæ erectæ purpureis. Cum præced. in rupib calcar.

189. Andropog.—Erecta gracila, vaginis barbatis, spica didyma, spiculis purpurascent; calcareous rocks ibidem

190. Andropogon.—Cæspitos pedale, spicis ternis e viridi purpureis, erectis; an idem cum præcedent.

191. Gymnocarpus.—Frutex prostrato decumbens, cortice albâ; foliis oppositis clavatis vel sub cylindracis, stipulis interpeti olarib membranaceo, floribus terminalibus, parvis, e viridi lutescent, genitalibus semi exsertis. Cum præcedent. Inodor.

192. Planta pussilla carnosa, vestita; foliis clavato cylindraceo. In shingle Bolan Pass.

193. Pœderioid.—Frutex, foliis lineari clavatis. Calyce limbo demum ampliato colorato venoso. In calcareous rocks Bolan Pass.

194. Œruoides.—Frutex laxa ramosus, canus, Panicula ramis obflores densissimos cylindracis. Per. intus rubro. Cum præcedent.

195. Composita ligulata.—Minima, fol. *radical* rosaceis. Capitulo uno, erecto, flosculis luteis, In shingle; mouth of Bolan Pass. 3, 11.

196. Chenopodioid. An Reseda?!!—Lalpore Sinapis; fol. undulatis spica simplici terminali. Petalis laciniatis? Antheris pluribus, shingle Bolan Pass.

Planta singularis!

197. Juncus, 3 pedalis.—Panicula effusa erecta in paludib March 12, 1839.

198. Cyperacea.—Culmis subulatis spiculis atro-brunneis, compressis ascendente falcatis; in agriis towards, Gurmab.

199. Compositæ.—Herba pussilla dichotoma ramosa, foliis subtus purpureis. Corollis luteis; limestone rocks. Gurmab.

200. Apocynea.—Frutex erectus ramosus, ramis subulatis viridibus; foliis sqamiformibus minutis. Cymis axillaribus dichotomis paucifloris, alabast tantum visa œstivatione imbricata. Corolla rotato? extus viridescens, intus purpureo-sanguinea, laciniis a medio supra dense albo-villosis. Corona e squamis 5, bilobis, coloris corollæ, lobis rotundatis dentiformibus, sinu processum subulatum, longum exserente, squamis 2, cujusque paris foliolorum, laciniis corrollæ opponuntur, subuloideo alternante cum his. Connectivum albo villosum! Pollinia granulosa. Caudiculæ his non affixa, spoonshaped? Not ascerained, specimen immature. Gurmab in ravines of calcareous rocks.—Compylehis.

Of the same section with Hemidesmus. *Periploca* etc.

201. Naiades.—Submersa, caulis apice excepto, qui sub emersus, dichotoma fragilis carnosa, foliis linearibus fuscens dentatis, subtus ad centrum papilloso processigeris. Dioica? Ovariis sessilibus, stylo filiformi stigmatibus 2. 3, In agris semi stagnantibus. Gurmab.

202. Bignoniacea.—Bignonia punicoides, Nob. Arbor stunted scraggy, junior foliosior habitu Punicæ Granatæ, fol. novellis lineari lingulatis, subplanis, vel maturis, lineari oblongis, undulatis subcoriaceis, iuterveniis minuto reticulatis. Racemis ex axillis fol. lapsor. ramorum, vel si ramulorum terminalibus. Compositis plurifloris, subviscosis. Pedicellis trichotomis vel indivisis semper basi versus bibracteat. Calycis tubo conico, limbo 5 dentato dentibus rotundatis, sinubus latis venis 5 prominulis in axibus foliolorum. Cor maxima $2\frac{1}{2}$ unciali diametro bilabiato formoso, aurantiac punctis crebris minutis, lab superior ascendente bilobo, inferiore reflexo, 3 lobo lobis omnibus rotundatis, his lobii inferior profundior, tubo infundibulifor. Stam 4 cum rudimento quinto: Filam fissuram lab superioris attingentia, filiforma albida. Anth leo divaricatis.

Stylus subclavatis, filamentis paulo brevior. Stigmat bilamellat, lamella supera paullo major. Glandula cupuliformis, ore 10 crenato, inter stamina bases et ovaria, crenis inæqualibus, majoribus, staminib fertilibus oppositis! reliquis minoribus, filam sterili opposito cætera cum prioribus alternant œquali. Ovar biloculare ovulis pluribus oo pseudobiloc.

Limestone rocks towards Abigoom. Bignonia with 15 stamina may be expected, and what is singular, if such is found, the additional stamina opposite the existing 5, will be more developed in compensation perhaps for the great development of the corolla???

203. Composita.—Prenanthoid. Tenera, sæpius spithamæum; foliis glancescent, carnosiusculis, anthodiis e basi ovata rostratis, flosculis albis! Limestone rocks on to the way to Abigoom.

204. Compositæ.—Pusilla viscosiuscula floscul luteis, Cum præcedent.

205. Menispermea.—Scandens, cano pubescens, floribus minutis lutescent dioicis? fructibus curvato galei-formibus sanguineis.

Limestone rocks to Abigoom.

206. Grewiæ sp.—Frutex scraggy; foliis obovato cuneatis, dentato serratis, floribus solitariis, sepalis viridescent, petalis albis duplo majoribus. Limestone rocks, Beebeenanee. Abigoom.

207. Composita.—Echinopsis spinosissima, foliis subtus et supra ad venas albo lanatis, anthodio spinosissimo.

Limestone rocks to Abigoom.

208. Incerto.—Frutex densus ramosus primo aspectu Cappario: appyllam simulans, ramulis viridibus, foliis lineari spathulatis, vel linearibus carnosiusculis racemis terminalibus bracteolatis, floribus minutis. Sepalis 5-6 oblongis reflexis, disco maximo depresso, margine crenulato. Stamin 11-16, e disci medio inferiore virentia, declinato lutea. Anth bilocular longit dehiscent. Rud ovarii 3 naria in centro. Planta singularis præsertum ob discum in part superiora vel postice effœta!

To Abigoom.

209. Celastrinea.—Frutex spinosus 6 pedalis ramulis flexuossis, foliis spathulato lanceolatis, lanceolatisve coriaceis, crenulatis cymis dichotomis, fructibus oblongo ovatis, piso magnitudine,

sanguencis basi calyce suffultis, bivalvibus loculicidis, septis lateris uno appressis, si semen unicum.

210. Urticea.—Planta digitatis vel spithamæa strigosa adhærens carnosuiscule epungeis, floribus capilato aggregatis.

Limestone rocks. Beebeenanee, Abigoom.

211. Capparis.—Frutex cano pubescens saltem in statu junior, foliis cordato ovatis, spinis binis uncinato recurvis, floribus axillaribus magnis

Alabastro viridi gibbo. Sepalis 4, 2 exterioribus, tantum vis o. Pet 4 subæquali. Antheræ oo, purpurascent.

Limestone rocks. Beebeenanee Abigoom.

212. Labiata—Humifusa Cano villosa, floribus cœruleis, cæruleo saturatione maculatis; in shady ravines in Limestone cliffs. Beebeenanee.

213. Bromus—Pygmæus. Panicula subsecunda, spiculis sub pendulis. In clefts of Limestone rocks, Beebeenanee.

214. Trichodesma Subsimplex, spithamæus strigosa pungeis; floribus nutantibus, corollis reflexis cæruleis pullide. Cum præcedente.

215. Linariæ sp.—Humifusa repens,cano pubescens, foliis angulatis; floribus luteis calcar curvatulo, subulato. Cum præcedenti et ad Drubbee.

216. Hyoscyamus?—Vestila carnosa $\frac{1}{2}$ pedalis. Calyce tubiforme, racemis paucifloris: floribus (non visis nutant) habitu Gesneriæ. In Limestone rocks. Beebeenanee.

217. Composita.—Minima anthodeo foliaceo, flosculis luteis. Limestone rocks Beebeenanee.

218. Composita?—Erecta, vestita, setis rubescentibus, floribus interspersis. Habitu Dpsacio In wheat fields Abigoom.

219. Phylanthus.—Subprostratus glaucescens, foliis reflexa patulis; floribus monoicis, axillaribus. In wheat fields Abigoom.

220. Plantago sp.—Subacaulis, densely tufted, vestitus spicis erectis oblongis, sepalis reflexis. Wheat fields Abigoom, very much like the caulescent one also found here, and so common at Dadur.

221. Saponariæ sp.—$2\frac{1}{2}$ pedalis, glaucescens, foliis plus minus undulatis. Out of flower

Wheat fields Abigoom.

222. Composita.—Spithamæa subsimplex caule crassiuscula parce lanata; foliis longis linearibus. Anthod subovatum, squamis exterioribus foliosa, similibus, flosculos excedent, interior duplo brevioribus, imbricatis sublanceolatis, flosculis lingulatis apice 5 dentatis exterior carneo purpur, interior lilacino purpureis. Antheris colore saturatione. In wheat fields Abigoom.
Capit. unico terminat.

223. Composita.—Digitatis, subacaulis: sublanato pubescens, foliis longis, ratione plantæ linearibus, canaliculatis. Capitulis solitariis, terminalibus, pedunculis clavatis, involuero ovato-cylindraceo imbricato, squamis exterior flosculos æquant, flosculis ligulatis luteis, involucro demum ovato.
Wheat fields Abigoom.

224. Compositæ.—Habitu præcedentis, sed 3-4 plo major; foliis pedunculis brevioribus, pedunculis fere pedalibus, striatis, involucris ovatis, ob squamis carinatis angulatis, squamæ exteriores breviores. Akeniis compressiusculis, brevi stipilat, carinis albis 5, quorum 3 magnæ sursum dentatæ, 2 extimis minimis linealibus inter carinæ brunneæ processibus uncinatis hirtæ. Pappus apice dentatus a medio infra lanato plumosus. In cornfields. Abigoom commonish.

225. Crucifera.—Prostrata ramis demum sub ascendentibus adpressa hirsutula. Foliis spathulatis obtusiuscul racemis terminali bus; floribus breve pedicellatis minutis. Petalis ochroleucis. Seliquis (immaturis) ascendent sub 4 gonis, apice breve bicornutis, seminibus paucis. In wheat fields Abigoom, not common.

226. Compositæ.—Spithamœa ramosa habitu Seneciones, pilis moniliformibus, foliis pinnatifidis. Involuer subcylindraceo, pluri carinato capitulis mediocribus, discoid ligulat, flosculis luteis. Radii revolutis fœmineis disci tubulos hermaphrod. In wheat fields Abigoom, rare.

227. Umbellifera.—Herba glaucescens succculent tenera foliis; pinnatiscetis, velutino pubescent, petiolis dilatatis alabastris ovatis, involcuri foliolis in setis rubris exeuntibus, lanceolatis paucis; floribus (per juniorib tantum visis) petalis medio carinato alatis. Wheat fields Abigoom aromat.

228. Boraginea.—Caulescens, pedalis hirsuta, foliis elongato spathulatis, margine revolutis. radical undulatis, caulinis superior sub dentatis. Radix fusiformis extus rubra.

Floribus e basi, sub cordato linearibus, floribus secundis. Calyce ad basia fere 5 partito cylindraceo.

Corolla extus pilosa tubo calyce $\frac{1}{3}$ longior, fauce inflato, limbo hypocraterif, infundibulif, coloris luteus macula rotundata purpureo sanguinea ad sinus corollæ. Stamina ad partem inflata, faucis irregulariter sita! fauce nudi. Stylus stamina œquans filiformis, apice bipartibus! lacinia quaque stigmata 2 rotundata gerente! ovaria rugulose. Calyx fructus clausus, angulatus basibus sepalorum nempe in precessisbus corniforme dentiformibus product. Nucibus extus convexis, intus 3 gonis, ternato rugulosis, umbilico simplici. Radicula supera, umbilico perforato funiculo parve seminis, more solito.

229. Boraginea —Præcedente habitu foliatione similis sed robustior; foliis radicalibus spathulato lingulatis, foliis floralibus longe hirsuto ciliatis. Calix ad basin fere 5 partito. Cor. tubo elongato calyce 1-3 longior, deorsum gracilis, ad faucem subinflat, infundibulif. laciniis 5, brevibus rotundatis, angulatis, sinubus rugoso elevatis. Stamina situ præcedentis. Stylus filiformis bipartitus apice, laciniis bilobulatis. Stigmata 4, globosa, ramulum quemque stylo terminant. Ovaria glabriuscula. Nuces immaturæ. Præcedentis similimis. In wheat fields, Abigoom, probably a variety of the preceding. Flowers yellow, twice as large.

Curious from the irregular site of the stamina, and the divisions of the style, which are still quite compatible with a bicarpellary structure.

230. Boraginea. Icones It. Affg..—Cynoglosso affine et forsan Cynoglossi species. Ovariis nempe junioribus omni modo hujus generis. Planta habitu Myosotidis, varians uncialis etiam pedalis. Fol. lineari oblongis, radicalibus sub spathulatis, racemis elongatis nudis. Foribus sub secundis azureis minutis. Cal. fere 5 sepalus. Cor. hypocraterif. laciniis sub cordatis basi albidis, fauce squamis bilobulatis carnosis sub clausa, Stamina ordinis æqualiter inserta. Stylus cylindricus, stigma capit. Ovar annulo obliquo notat. Nuces singulares echinatæ, *annulo* producto in cupulam sub echinat. striatam margine introflexo sub lacero. Semen immaturum pendulum. Embyo ordinis.

In agris Abigoom, in rupibus ubique sed non vulgatum, in locis siccis minima est.

I know of no instance of similar fruit, the abortive ones are entirely those of Cynoglossum i. e. flattish and oblique and echinate, but the sides of the perfect ones are pulled out, as it were, and then turned in *equally*.

1 Plant, an over grown specimen, 2 flower, corolla laid open, 4 pistillum, 5 do. one lobe of ovary cut through shewing the pendulous ovuli, 6 oblique view of fruit, 7 do. long section. The attachment of the nut is, as in Cynoglossum, *to a cone* by a broad base.

231. Composita.—Planta minima singularis, subacaulis. Radix fusiformis. Fol. rosacei, patent, basi lata, lineare lanceolata; intima involucra simulanta plus minus unita, basi sæpe multo minora. Aspectus plantæ hujus ut unius altero mihi cognito Composito monocotyledonus. Centru plantæ floribus vel capitulis in massam unam aggragatis nuncupat. Involucri squamis, exterioris foliosis, interior brevibus oblongis. Flores monoici, disci pauce masculi; circumferentiæ pluriores fæminei. Receptaculum setaceum. Flos masculus, stipitatus 4 partitus, valvatus, venatione Browniana: basi (apice stipitis) cinct calyce scarioso, 5-8 partito in laciniis inaqualibus setaceis plumosis. Corolla tubulosa libera, rubræ-brunnea. Stam. ordinis leviter adhærent. Pollen glabrum; 3 plicat. 3 gonum Rud. fæmin central: Stigma clavat subexsert.

Flos fæmineus sessilis palea bracteiformi foliaceo, marginibus superinvolutis amplexus. Calyx dense vestitus marginem pappulosum setaceum dentatum copiosum product. Corolla abortiva, tubulosa, ore irregulariter et obsolit dentato, ad medium tantum venosa. Stam oo. Stylus elongatus basi incrassatus. Stigmata ordinis. Ovulum unicum ordinis. Akenia immatura bractea amplexa vestita, solubilis e tegument membranaceo seminis. Pappus copiosus, setaceus, dentatus. Corrolla persistens basi inflata! et pappo omnino hidden. Stylus persistens, basi ampliata. Embryo ordinis. In wheat fields Abigoom.

Examined in a hurry, it is a remarkable plant, but I imagine the stalk of the male flowers is the abortive ovary and calyx, or else we shall have one sex adhærent, the other free. The calyx limb of the male evidently represents the pappus.

Curious habit, curious from the *amplexal* bractea of the female flowers, the persistent and inflated corolla, ditto style. Curious that the vessels of the stamina in Compositæ *always* cease at the *peculiar* part of the filament.

The above is all unsatisfactory and fidgetty.

1 Plant, 2. Portion of same shewing the united bases of some of the leaves and the involucrre 3. Raceptacle bit of with male flowers, 4 male flower in bud, 5 single male flower, 6 same laid open, style removed; 7 back or outer of anther, 7 *a* front or inner. 8 pollen, 9 Female flower and bract, 10 ditto bract removed, Pappus somewhat spread out, 11 apex of corolla, 12 long section of base of female, 13 Half ripe female, 14 Style of do. 15. Do long section.

232. Palma.—Caudex subnullus decumbens grows in dense patches; foliis coriaceis, palmata divisis, petiolor basibus ferruginio tomentosis. Sir e Khujoor 4500 ft.

233. Incerta.—Arbuscula; foliis coriaceis subtus albis furfuraceis. Habitu Myrtaceo vel Olieneo, flores non visis. Sir e Khujoor, and to within a short distance of the top of the Pass, not common.

234. Euphorbia.—Frutex densis glaucescens, involucris luteis, amplis, foliis floralibus viridibus. Sir e Khujoor and to the top of the Pass, here and there.

235. Labiatæ.—Frutex decumbens, ramis interdum pendulis floribus amplis, cæruleis valde aromatica. Sir e Khujoor, and Pass above on the Shikarpore side, not very common.

236. Composita.—Suffrutex dense ramosus in rocks, Bolan Pass Sir e Khujoor, and above.

237. Leguminosa.—Frutex albus, elegans 3-4 pedalis, foliis argenteo sericeis, racemis nutantibus floribus amplis aureis suaveodoratis. Sir e Khujoor, and 300 ft. beyond, commonish.

238. Leguminosa.—Frutex humilis, ramosus 2-3 pedalis, armatus racemis paucifloris, erectis, floribus luteis. Cnm præcedent, very common.

339. Euphorbiacea.—Inconspicua prostrata, hirta, floribus e viridi rubris. Sir e Khujoor, under rocks.

240. Ficus.—Arbuscula trunco simplici, corona rotunda, fructibus solitariis, involuero 3 sepalo, distincto. Sir e Khujoor one tree.

241. Compositæ.—Herba pussilla, flore albo, under rocks. Sir e Khujoor, and througout the Pass.

242. Composita.—Subacaulis, foliis len æadpressis capitulo unico, solitario central, anthodium apices squamarum rubescent. Sir e Khujoon.

243. Incerta.—Minima habitu Telephioid, floribus involucro 4 sepalis, corollino albido, cuique foliolu, flos. unicus minutus, notu dignissim, Sir e Khujoor and Abigoom. Common in wheat fields with Galium.

244. Gnaphalioid.—Dense ramosus I½ pedalis, basi suffruticosa, matura non vidi, wheat fields. Abigoom.

245. Euphorbiacea—Rutacea ?—Prostrato glauco cœrulescens, foliis ternatis carnosis, floribus rotatis apetalis, sepalis viridibus, glandula albida lanceolato acerita, sepalo infra medium. Stam alternant. stigmata radiata partita. A curious plant.

Wheat fields Abigoom, fructib 5 lobis, inter loborum spatior alba, quasi denudata.

246. Reseda.—Basi suffruticos, papillosa scabra, foliis indivisis undulatis canescent, spicis densifloris; floribus deorsum spectant, petalis albis, antheris ochroleucis cumpræcedent.

247. Silenacea.—1-2 pedalis, gracilis, fol. linearibus, floribus o. Cum præcedent, gravelly margins.

248. Hyoscyamus.—Herba sub acaulis viscoso pilosa, foliis pinnatifidis calyce amplo, folioso, corolla unilabiata! lutea, fauce atro purpurea. Stam 5 stigma capitato. Road to Sir e Khujoor 4000 ft. In agris et ruderatis.

249. Gramen.—Culmo basi decumbent, pedali, panicula densa spiciformis. Abigoom wheat fields.

250. Leguminosa.—Prostrato decumbens pilosum canescens, floribus albis, Legumin (immaturis) falcatis. Cum præcedente.

251. Composita Hieraciod.—Spithamœa, anthod nutant, floribus lutescent.

252. Labiata.—Erecta spithamæa, habitu Ajugoideo; floribus cœruleis. Abigoom wheat fields.

253. Rutacea:—Planta perennis dense ramoso pedalis, habitu Resedæ, Oligandra graveolens, carnosa, petalis amplis albis, sir e Khujoor, and from thence throughout the pass it is common in many places.

254. Galium asterum, decumbens. In wheat fields among rocks, sir e Khujoor.

255. Composita.—Subtus canescens, immatura Fields, sir e Khujoor.

256. Composita.—Prenanthoid immatura. Wet banks, sir e Khujoor.

257. Zanthoxyle sp.—Arbor parva, corona rotunda aromatica paniculis densis erectiusculis. Stam junior rubra sir e Khujoor and throughout. but not in leaf or bud much above sir e Khujoor.

258. Veronicæ sp.—Minima erecta fructibus bilobis, floribus nutantibus cæruleis, basi alba. Munzil. March 20th.

259. Isopyroideum.—Hypecoum.—Herba parvula, foliis capillacea pinnatisectis, scapo pauciflora; floribus sub umbellatis bilabiatis luteis. Sepalis 2, exterior parvis, interior luteo cordatis. Petalis? 4, his oppositis, luteis punctis atro cœruleis. Stamin 2, lateral compositis binatis antico postico que *singulis*?
Munzil a remarkable plant.

260. Gramen.—Dense cæspitosum, festucoides, rocky ground Munzil.

261. Alyssoides.—Minima erecta subsimplex; floribus minutis luteis albis, cano papillosum. Rocky ground Munzil.

262. Crucifera.—Canescens minima inter erect; floribus capitalis luteis common in rocky ground Munzil.

263. Crucifera.—Minima inter ramosa, foliis pinnatifidis; floribus rubro carneis. Common about Munzil both on the plain and on rocky ground.

264. Crucifera.—Glaucescens, foliis oblongis denticulatis, floribus carneis. Munzil in valley.

265. Crucifera.—Inter parvulos; foliis umbellifera, floribus luteis. Munzil both on mountains and in valley.

266. Gramen Bromoides.—Munzil or rocky ground.

267. Myosotides.—Minima erecta, floribus cæruleis. Munzil on rocky ground.

268. Thalictri sp.—Foliis pinnatiscetis apice Panicula cernuo nutant, floribus fusco viridib antheris fuscis. Rocky ground summit of Pass.

269. Leontice.—Petiolis dilatatis, foliis ternatis pinnatifid racemo ternati denso subrotundo, bracteis foliaceis, floribus amplius

culis luteis trinariis regularibus. Stam. antheris valvatis reflexis albis. Stigmat transverso, Munzil rocky ground. A remarkable plant. Radix deep down, large, tuberous. Caulis $1\frac{1}{2}$ pedalis. Chiltera Sinab.

270. Anemoides.—Planta minima; foliis ternatum pinnatifidis ambitu cuneatis, floribus luteis, fructibus massam echinata ovatum formant, carpellis breve caudatis. Common in moist rocky ground varies excessively, but never reaches higher than 4 inches.

271. Crucifera.—Parva, foliis runcinatis; floribus lilacinis pallide, rocky ground. Munzil.

272. Crucifera.—Parva floribus luteis. Pass near summit in moist ground.

273. Crucifera.—Erecta, pedalis fere gracilis; floribus albis. Munzil.

274. Erodii sp.—Parva subinodora; floribus lilacinis, summit of Pass, rocky ground.

275. Arenarioid.—Erect, floribus erectis albis, pedicellis cito deflexis, rocky ground. Munzil.

276. Composita.—Frutex 2-3 pedalis cortice alba cætera glucescens: foliis carnosis. Capitulis axillaribus et terminalibus majusculis discoideo ligulatis aureis. Common towards the termination of Bolan Pass.

277. Cerasi sp.—Frutex densus ramosiss, armatus. Calyce cylindraceo fuscescente rubra. Petalis carneis; floribus numerosis. Summit of Bolan Pass, rocky ground.

278. Astragaloides.—Frutex humilis dense ramosus armatus. Towards summit of Bolan Pass.

279. Boraginea.—Herba humilis hispida calycibus subinflatis floribus hypocraterif ochroleucis, near summit of Bolan Pass.

280. Boraginea.—Glauca, spinoso pungens, immatur tantum visa. Summit of Bolan Pass, on rocks, or in their crevices, vide 386.

281. Boraginea.—Herba parva subdepressa floribus sanguineis In Summit of Bolan pass 5500.

282. Sedoides.—Foliis rosaceis patentibus cuneato spathulatis carnosis. Cliffs, recesses of Bolan Pass 5000 ft.

283. Crucifera.—Canescens pygmæa, floribus pallidis. Summit of Bolan Pass.

284. Curculiginoides.—Parvula, foliis linearibus, floribus luteis sepalis extus medio fuscis, summis of Bolan Pass.

285. Smilacinea?—3 uncialis, foliis carnosis, sub distichis flore involucrato, cernuo amplo rotato. Perianth laciniis sub obovatis, basi præcipue exterior saccatis, colorus carneus obscure punctat, basibus laciniar, dense brunneo maculatis, maculis confluentibus. Antheris anisomeris, stylo brunneo, stigmat simplicia. Fritillariis affinis. Summit of Bolan Pass.

286. Berberidea.—Planta singularis, foliis carnosis, pinnatis, foliolis, glaucis ascendento secundis, oblongis apice bi indentatis, sœpe transversa brunneo fasciatis, panicula terminali cymbiformi. Calyce caducissima, 3 sepalo, fuscescento-carnea. Corolla e petalis luteis 6, apice denticulatis regularibus. Stam tot oppositis, antheris valvatis, ovario sulcato, stigmatibus 3 bus. Rocky ground summit of pass 5500 ft.

An genus novum, non Leontice sp. ob squamulus o, ob capsulam demum policis pluribus semi aperientis.

287. Anthylloides.—Basi fruticosa, depressa cano alba, foliis impari pinnatis, racemis pauciflores prostratis, floribus sub secundis, magnis calyce cylindraceo, vexillo roseo, albis carina carnea apice.

Summit of Pass, rocky ground.

288. Erythræa sp.—Minima glauca, floribus roseis, old khets Abigoom.

Verbaseum common at sir e Khugoor out of flower.

289. Iris.—Pedalis, radix bulbosa, foliis distichis non equitant, canaliculatis margine membranaceo albo, flores axillares solitarium ex albo pallide cœruleo varigat. Summit of rocky ground. Stigmatis apicibus purpureis, carina lutea. Antheræ cæruleo albido, sepalorum apice purpureis.

290. Tulipa.—Spithamæa, glauca; foliis undulatis, flore amplo, coccineo. Rocky ground Bolan Pass.

291. Senecionides.—Spithamœus, discoideo ligulat; floribus aureis radio reflexo. Rocky ground summit of Bolan Pass.

292. Cerasi sp.—Frutex 8 pedalis, floribus majusculis albidis summit of Bolan Pass.

293. Incerta.—Frutex canus equisetoideus siliceus. Rocky ground summit of Bolan Pass.

294. Anemone.—2 3, uncialis radice tuberosum, foliis circularibus 3 natis, involucro distanti pinnatisecto, flore erecto, amplius

culo luteo, sepalis exterior croceis. Summit of Pass in rocky ground.

295. Arenarioides.—Ramis decumbentibus, floribus majusculis albis, pedicellis cito deflexis, Sinab. The same as former small one.

296. Borragineæ.—Cynoglossoid ramis decumbent basi caule angulato oblineas utrinque petiolorum decurrent; floribus minutis sanguineis; corollis hypocraterif, sandy moist banks, Sinab.

297. Tulipæ sp.—Vix pedalis, Bulbi cutic atrata; foliis glaucis undulatis, Pedunculo rubescent. Corolla ampla lutea; odor of mortar. Laciniis patentibus exterioribus acuminatis, basi rubescent, Common in wheat fields, Sinab.

298. Cruciferæ.—Parva ramosa cana, floribus albis gravelly and sandy plains near Sinab.

299. Crucifera Alyssoides.—Ramis decumbent, papilloso hirta, floribus luteis, the same as the former? but larger specimen. Wheat field Sinab.

300. Crucifera Cheiranthoid.—Vix spithamæa subglaucescens floribus luteis. Sandy plains Sinab common.

301. Valeriana habitu.—Crucifer glaucescens; floribus carneis Sinab. Major Sanders.

302. Graminea.—Spithamæa Spica disticha: spiculis subsecundis. Sinab.

303. Composita.—Spithamæa glauca, foliis canaliculat. Involucro subcylindraceo, flosculis ligulat luteis exterior dorso fuscis. Sinab.

304. Ornithogaloides.—Spithamæa bulbo rotundo radiculis tecto, fol. unicum longum canaliculatum carinat umbella 5 styllo foliis inæqual, floribus paucis erectis, sepalis viridibus, petalis luteis. Plains: wheat fields. Sinab.

305. Crucifera.—Erecta sub simplex pedalis foliis radical numeronis, rosacea patent, lineari spathulatis dentatis glaucis, caulinis linearib, integris racemo, polyantho, calyce viridi, sepalis rectis et sinistris basi saccatis, petalis luteis, odora Cheirant, Gravelly plains, Sinab.

306. Adonis.—Caulescens floribus viride coccineis. Wheat fields Sinab.

307. Astragali sp.—Basi suffruticos pilosa, floribus amplis luteis. With Santonica sandy plains Munzil.

308. Astragaloid.—Ononoides Calyce carneo. Sinab. Base of Chiltera. Frutex humilis pedalis, canescens, spinis longissimis; flores non vida. Towards Sinab gravelly plains. floribus carneo rubris.
309. Hordei sp —Prostratum spicis viridibus. Wheat fields Sinab. Not common.
310. Carex.—Wet spots, water side Sinab, common.
311. Carex sp.—Sandy spot Sinab.
312. Drabæ sp.—Pumila erecta ramosa, floribus albis. Gravelly spot near rivulet Sinab.
313. Pulmonariæ sp.—Cæspitosa, axeos apex nutans, floribus infundibuliform purpureo cœruleis vel albis. margins of wheat fields, Sinab. Common in tufts.
314. Taraxacum.—Foliis depressis, floribus luteis exterior dorso fuscis. Rivulet banks of, Sinab.
315. Arenariæ sp.—Pussilla 2 4 uncialis, foliis lineari lanceolat semitortis. Calyce longo amplo. Corolla minuto petalis albis. Gravelly spots sloping Plains Sinab.
316. Boraginea.—Erecto parce ramosa gracilis, floribus hypocrateriform azureis. Rocky mountains Sinab.
317. Prenanthoides sesiliflora rosacei patens humifusa. Capitulis sessilibus suboccultis, flosculis citrinis. Gravely banks. Sinab
318. Boraginia.—Erecte piloso hirsuta subramosa. Corollis infundibul ochroleuco albidis. Calyce fructus inflato in statu juniore clauso. Rocky ground at the base of snowy Mountain. Sinab 6000 ft.
819. Leguminosa.—Astragalina. Depressa subrepens, floribus parvis. Gravely plains. Sinab.
320. Astragalus leptophyllus. Depressa sæpiuscarneo tincta; floribus racemosis amplis, Citrinis, eretis. Gravely plains. Sinab.
321. Geranii sp.—Growing in thick tufts under bushes, rubro tinctum, pygmæa, foliis orbiculari reniformibus; towards base of snowy mountains Sinab, gravelly ground.
322. Monocotyledodea.—An Crocina? Bulb deep, not seen foliis linearibus concavo canaliculatis. Carpellis tribus in stylis longissimis exeuntibus. In umbrosis vallium Sinab, towards base of snowy mountains.
323. Crucifera.—Erect 1½ 2 pedalis sub simplex, foliis infer. spathu

latis, superior lanceo lato-ovatis omnibus basi hastato amplex caulibus. Racemo terminali erecto pauci flora. Calyce patentiusculo, viridi. Corolla citrina brunneo venosa.

Under thickets in stony ground cum, 421 etc.

324. Labiata.—Habitu Lamii rubro. Corolla cœrulescent. Calyce demum basi inflato, deorsum gibbo sursum arcuato cum præcedent 321.

325. Gentianea.—Sub acaulis, foliis densis spathulato lingulatis, apice rotundatis, sub 3 veniis, inflorescent, dichotoma bracteis foliaceis, horum subflorem quemque. Calycis tubus obconicus. Corolla ampla saturato cyanea, laciniis acutis minoribus interjectis, under rocks, cum Isopyridea etc. towards base of Chiltera, snowy mountains Sinab.

326. Labiata.—Ramosa, ramis decumbent pubescens carnosa, floribus minutis non observatis. Cum præcedent.

327. Cupressus.—Arbuscula densa, sempervirens, floribus capitulis masculis terminalibus, fuscis sub rotundis, snowy mountain Sinab, descends as low as 6500 ft.

328. Thymelæa.—Australisico habitu. Frutex 5 pedalis ramosus, foliis coriaceis.

329. Labiata.—Pulegii odora.—Sub simplex vix spithamæus floribus lilacinis, shingly ground, Sinab.

330. Crucifera.—3 4, uncialis, ramosiuscula, siliculis marginatis secundis, apice axeos nutante, floribus minutis luteis. Rocky ground. Sinab. Cum præcedent, very common.

331. Papaver, Tenerum, vix pedali ob immaturit, alabastro pendulo. Shingly ground towards Chiltera, on snowy mountains Sinab.

332. Arenarioides.—2 uncialis et simplex vix spithamæa, et sæpe ramoso, dense pubescens, sub viscosa; floribus erectis albis, calyce amplo, petalis bilobis. Cum præcedent, common.

333. Sperguloides.—Erecta 3 uncialis, dichotoma, foliis acerosis, floribus albis. Shingly ground towards base of chiltera near Sinab, very common.

334. Arenariæ sp.—Ramosa 2-3 uncialis dichotoma, foliis inferior. subrecurvis: floribus albis, Rocky ground base of Chiltera, Sinab.

335. Crucifera Iberoides.—Minimas inter glauca, foliis e basi cordato lanceolatis floribus albis. Shingly ground and among rocks, base of Chiltera, Sinab.

336. Crucifera. —Cardamine, foliis rosaceis subtus purpureo sanguineis, racemo robusto, floribus albis, siliquis erectis, variabilis: a small specimen. Cum præcedent, generally on rocks.

337. Carex.—Forming verdant carpets among valleys, base of Chiltra, Sinab. Pygmæa.

338. Ranunculus.—Immersus, foliis omnibus capillaceis, floribus albis. River, and running waters Sinab.

339. Sperguloid?—Ramosa gracillima, foliis verticillatis alabastris fuscescent. Cum præced; under, and in crevices of Rocks.

340. Crucifera.—Erecta (simplex raro) ramosa, 1-2 pedalis hirsuto; floribus albis, silicula globosa, longe rostrato.

341. Boraginea.—Erecta pedalis strigosa; floribus pulchris, viride azureo lilacinis, demum azureis, sinubus lacinearum intus carinis decurrent. Rocky ground base of Chiltera, also on mountains near Munzil (collected by Captn. Durand).

342. Crucifera.—3 uncialis vix unguam spithamæa, foliis rosaceis papilloso hirtis, floribus luteis siliquis sub teretibus uncialibus. Common or shingly ground towards base of Chiltera, Sinab.

343. Gnaphalii sp.—Cano lanatum, decumbens. Shingly ground towards the base of Chiltera.

344. Sedum sp.—Minimum vix uncial. Pallidum rubro punctulatum; foliis subcylindraceis, cymis terminalibus paucifloris, corollis albidis. Rocky ground, base of Chiltera; not common.

345. Leguminosa.—Planta depressa, parva elegans, carneo carniscens, foliis rubro venosis, reticulatis, racemis paucifloris vexillo carneo castaneo venoso, medio viridi macula, carina alæque rubescent. Shingly ground base of Chiltera; not common.

346. Plumbaginia.—An Statice. Planta fruticose pygmæa dense, spinis longis, foliis subteretibus, spinulosis, alabast immat tantum vidi. Gravelly plains towards the base of Chiltera, Not common, the prevailing shrubs being Ononides 308, Astragaloides, Santonica and Cytisus.

347. Onosma.—Basi suffruticosa, pilis longis subpungentibus albis strigosissima, racemis cernuis foliaceis, sepalis lineari lanceolatis: Cor longa tubo infundib ad laminem unceolatum laciniis parvis reflexis anthera acuminibus exsertis on rocks, base of Chiltera mountain.

348. Salsola ?—Frutex parvus ramosus, foliis subteretibus. This plant is common in the depressed portions of the plains about Munzil, to the exclusion of Santonica. Beyond that place, it only occurs *casualy*.

349. Crocus.—Tanquam e foliis et bulbis judicare licet, in orchards towards Quettah.

350. Crucifera.—Vix pedalis glauco albida. Cymis densis terminalibus; floribus albis. In sandy cultivated plains, towards Quettah.

351. Euphorbiæ sp.—Herbacea basi decumbens spithamæa, foliis obovatis denticulatis, tota læte viridis. Sides of canal towards Quettah.

352. Euphorbiæ sp.—E. ilicifolia. Glauca pedalis vel spithamæa, foliis spinulosi dentalis superioribus undulatis, capitulis e viridi luteis. Sandy fields near Quettah.

353. Veronica —V. agresto affinus. Laxa decumbens, floribus albidis. Moist spot about fields towards Quettah.

354. Plantago sp.—Sub acaulis, foliis oblongo lanceolatis, plura veniis, erectis. Pedunculis sulcato angulatis spithamæa vel pedalibus, spica ovata juniora atrata. Margins of cuts, towards Quettah, not uncommon.

355. Carex sp.—Pumila dense cæspitosa, fol. linearibus carinato 1 venus. Marshy spots near Quettah.

356. Trifolii sp.—Humifusa cœspitosa canescens, floribus luteis, not rare, on banks of irrigating cuts, Quettah versus.

357. Muscari sp. Icones It. Affgh.—Spithamœa bulbo ovato, basi radiculos. fol. pluribus, laxe patentibus, concavo canaliculatis, spicam subæquant. Pedunculo erecto, sursum paullo incrassat, Floribus vix numerosis ad apicem, alabastris patentibus, vel transversis cylindraceis, azureo lilacinis, floribus cernuis, urceolatis oblongis, atro cœruleis, suave odoris, laciniis minimis erectiusculis albis. In grassy spots near Quettah.

358. Hyacinthi sp.—Pedalis. Bulbo rotundo, basi infra depressa, secus hanc partem radiciger; foliis planiusculis undulatis, ciliatis, carnosis in terram patentibus, subtus venoso striatis, Bromeliarum in more. Spica robusta, foliis breviore, floribus cernuis vel nutantibus albidis, tubo, cylindraceusculo laminam imbricatam, subæquant, inconspicuis, inodoris, pedicellis demum

erectis. Antheris inclusis, lividis. In sandy fields, common about Quettah, Sinab, Munzil etc.

359. Sedum.—Pumellum, caule rubescent, foliis lanceolatis carnoso, crystallinis, fructibus 4 carpellaribus, rubris. Petalis albis calyce cujus sepala, foliis omnino similia breviora; rocky ground base of Chiltera mountains near Sinab.

360. Arenarioides parvula ramosa, fol. cordatis reflexo patulis, floribus albis. An Stellariæ. Cum præcedento.

361. Boraginea —Cynoglosum fascie, vide icones It. Aff.—Planta pedalis, basi decumbens, laxa. Caule angulato, pilis deflexis hirsuto; foliis spathulatis teneris, racemis terminalibus sub foliaceis. Floribus sæpius axillaribus, parvis cyaneis. Corollis hypocrateriformibus. fauce squamis 5, fornicatis, parvis, albis, clause. Stamina situ regulari et structura. Ad sunt squamæ ad basi corollæ tubi in annulum concretæ? Ovaria complanata Stylus cylindricus. Stigma sub capit inclusum. Calyx fructus venosus asperus, mutatissimus ampliatus bilabiatus; labiis arcte clausis, sub 5 lobis, lobis inæqualibus, varie reflexis vel rectis. Carpella (immatura) valde complanata in massam, fere planam auriculiformi rugosa venosa, foramina apice approximato! Semen pendulum Rocky Shingly ground base of Chiltera mountains near Quettah.

362. Crucifera.—Dense tomentoso cana, floribus albidis. Crevices of rocks. Mountains near Quettah 6080, to 6500 ft.

363. Crucifera.—Planta aspera perennis robusta 3 4 pedalis, foliis præsertim radicalibus reniformi cordatis dentato-lobatis, rugosis. Paniculis amplis terminalibus; floribus majusculis albis vel carneis, in Rocky ground, and on rocks, Mountains near Quettah, Sinab etc. 5500, to 6500 ft.

364. Drabæ sp.—Foliis radicalib rosaceis, late cuneato obovatis, floribus racemosis minutis albis. Calyce hispido siliculis longe pedicellatis, obovato oblongis, complanato tumidis, seminibus oblongo reniformibus celluloso rugosis. Rocky ground near Quettah, at the foot of mountains.

365. Berberidea. Icones It. Aff.—Planta perennis vivax; pedalis, radice bulbosa areolis 5 gonis notata, folia glaucescent pinnata, pinnulis semi verticellatis. Panicula cymiformis, ampla, flores luteo inodori, Ranunculi aspectu. In agris Quettah; satis copiosa.

366. Fraxini sp.—Arbuscula robusta, corona rotunda, cortice albâ, punctis induratis, sub spinosa ; floribus inconspicuis aggregatis, apices ramulorum versus, fructibus pendulis, lineari oblongis, pedicellis sub induratis persistentibus. Mountains Quettah. Sinab; commences about 6500 ft.

367. Arbor parva trunco crasso corona rotunda ; floribus masculis dense paniculatis, in statu juniore tantum vidi. Bases of mountains Chiltera the only common tree that occurs indigenously. There is another that occurs on mountains about Quetta, but what it is I know not as it is now out of flower and leaf.

368. Umbelliferæ. Decumbens prostrata ; floribus albis vix aromatica. In fields Quettah, very common.

369. Leguminosæ.—Decumbente prostrata, stipulis. Semi hastatis. Pedunculis foliis brevioribus bifloris, floribus saturate coccineo purpureis, demum purpur cæruleis. In agris Quettah, Sinab, Leguminibus pendulis plainis latiusculis.

370. Crucifera.—Ramosa spithamæa pedulisve, ramis basi decumbentibus, floribus minutissimis inconspicuis. Sapor Sinapideus vel Brassicaceus. In fields Quettah.

371. Lathyrus.—Herbaceus, spithamæus, stipulis semi sagittat Pinulis binis lineari lanceolatis ascendentibus ; floribus solitariis, vexillo purpureo carneis, venoso, albis etc albidis. In agris Quettah.

372. Hyoscyami sp.—Herba biennis vel perennis laxa pilosa, pedalis, habitu præsertim quoad folia radicalia Centaurei ; foliis inferioribus pinnatifidis, summis oblongis medium infra varia lobatis. Racemo foliaceo gyrato ! Calycis tubus conicus, limbo 5 lobo, lobis acutis. Corolla tubo calyces longitudine *leviter deorsum arcuato*, lamina urceolata vel cyantheformis, subregularis, lobis 5 rotundatis. Colorus stramineus, fusco minuta reticulato venosa. Stamina inclusa subdeclinata, superiora breviora.

Stylus filiformis purpureus. Stigma subcapitat oblongum transverse. Anth biloculares basi affixæ introrsæ. Racemis fructus elongati, recte, fructus distiche secundi. Calyx induratus, venosus. dentibus in spinis desinent. Capsula inclusa tubo calycis, circumscissa. Placenta in situ primitivo. Semina reticulata.

In agris Quettah, common enough.

373. Salix sp.—Arbor magna elegans, generally much injured by cropping. Ramis laxiusculis, fl. masculi odorat. In orchards Quettah, common enough

374. Crucifera.—Crambina ; ramosa decumbens glauce carnosis ; floribus purpureis, petalis erectis, siliculis junior. sausage shaped, erectis pedicellis geniculatu flexis. Madder fields Quettah

375. Trifolii sp.—Repens cæspitosa ; floribus albis, sides of streamlets. Major Sanders. Quettah.

376. Astragaloideo Vicioides.—Postrata radiata ramosa, floribus purpureis. In madder fields, Quettah.

377. Centaurea.—Erecta ramosa, ramis basi decumbent, canescente sublanat squamis involucr fimbriat ; flosculis exterior saturat azureis fertilibus ordinariis, sanguineis. Antheris atro brunneis in cornfields Quettah commonish.

378. Phleoides.—Gramen glaucum, 2 pedali, panicule spiciforme viridescens. Along cuts of Kabreezes or canal. Quettah.

379. Amaryllidea—Icon. It. Cabul.—In campis, Quettah. Capt. Wheeler.

380. Trifolii sp.—Repens Cæspitosum, foliis medium versus macula alba, semicircularis. Pedunculis erectis, foliis paullo longioribus angulato sulcatis. Capitulo hæmisphærico vel depresso, densiflora, floribus albis, odore generis, initio carneis. Quetah, in campis.

381. Fumaria officinalis.—Quettah in agris.

382. Pomacce.—Arbor floribus ante folii subumbellata, Calyceis tubo, obconico limbo oblongo patent, pubescente. Petalis oblongo rotundatis patentibus concavis. Staminibus sub biserialis, pluribus. Stylo unico. Stigma subcapitat. Ovarium liberum, 1 loculum, ovulis binis, pendula. Quetta in orchards. Cerasoid, Pyroid Affghan name, Jurut aloo.

383. Naides.—Quettah in agris stagnant vel lene fluent vide Icones It. Affgh.

384. Iridis sp.—From Mt. Sinab, Col. Stacy, foliis brevibus, lamina equitante, bulbosa tuberosa, commonish on gravelly slopes. flos. livido purpureus.

385. Papaver sp.—From Mount. Sinab, Col. Stacy, flowers red. Plant eaten raw by the natives.

386. Quid.—Frutex pulvinatus dense cæspitosus, glaucecens, common in good sized patches about Sinab.

386*a*. Boraginea vide 280.—Radix ad basi biloba, maxima, deorsum incrassata. Caulis spithamœus, echinatus setis sursum uncinatis carneus. Folia alba glaucescent, lineari-lanceolata, vel supreme e basi sub lanceolata attenuata, crassa carnosa, subtus ad venam centralium unicum papilloso uncinato, supra per superficiem totam, papilloso-uncinat, superiorum marginibus sæpius recurvis. Racemis terminalibus paucifloris, floribus secundis vix distichis æstivat liviter gyrante. Bracteæ quando ad sunt, vel potius; folia inter flores, (for these are not generally axillary) foliis aliis similibus. Calycis tubus conicum ; 5 gonus oo veniis, laciniis 5, lanceolatis, dense ciliato villocis. Corollæ tubus calycis longitudine, cylindraceus, laciniis 5, lineari acuminatis, ad basin cujusque processus obsolete, bilobus carnosius. Stamina ad faucem inserta, filamentis brevibus. Antheræ lineares longissimæ, pro ordine, 2-3 exserta, loculis basi bifidis, locellis nempe in mucrone productis.

Stylus longissimus, longe exsertus, subulatus, stigma simplex. Ovaria lobis depressis, a medio infra quasi annulo albo celluloso cinct ; supra tantum lucida. Ovula ordinis, oblique, erecta.

Singularis ob lacinias corollæ vere similitis, hypocraterif, ob antherarum structurum et exsertionem, floribus et *distinctionem* ob stylum longissima denique ob carpella.

Bolan Pass found by Capt. Hutton, specimen imperfect, antheræ anisochroniceæ et mericæ.

387. Asclepiadea.—Planta spithamæa, habitu Stapeliæ, Radix sub fibrosa. Caulis ramosus. Ramis ascendent tetragonis, glauco albidis, apice versus lividescent plus minus, angulis dentatis, dentibus mamillæformibus, papilla circumscissa: (e lapsu folii) sub centrale notat, folia ad apicis versus existentia cum mammilla continua, sub ovata carnosa, minima.

Flores sub axillares, nempe e mammillæ parte superior virentes, aggregato vere umbellato, umbella abbreviato, bracteæ minimæ ad basin pedicella cujusque, brunneo sanguinea sunt et aspectu luride, inodore forsan ob immaturitatem.

Sepala 5, carnosa oblonga parva, laciniis patento erectiusculis, sub rotata.

Cor. cupshaped æst aperta non visa, tubo cyathiformi breve carnosa est, et æstivatione maturiore valvata, apecibus imis incurvatis, laciniis triangulari ovatis. Corolla intus verricuso papilloso maculiformibus, irregularibus, his laciuearis fere confluentibus on a straw coloured ground.

Cor. limbo staminea unceolatæ, tubo brevissimo, foliolis tripartitus, lobis inæqualibus centrale majorem, anthera incumbent, lineari carnosa, colore fere corollæ, lateralibus parvis, sesetaceis, sinubus etiam processum setifome minorem gerentibus, inter quodque foliolum cavitat saculforme clausam ad est. Antheræ ordinis sed connectiva part carnosiusculo terminat. Pollinia basi affixa fere transversa ovalia; secus latus internis suturata.

Stigmatis apex muticum, albo-cellulosum, depressum. ovaria ordinis, stylis sub nullis, ovula bi seriata, placenta utrinque inter parietem loculi et ovule in laminem tenuem, ovula semirecondentem product.

Bolan Pass Capt. Hutton.

388. Veronica.—Anagalloides, Caule robusto fistuloso, glanduloso pubescens; racemis elongatis axillaribus oppositis. Corolla rotatissima pallide lilacina sanguinea, pulchre venoso-striata. Filament demum divaricata, declinat clavatissima apice imo attenuata stylus, declinatus demum deflexus. In aquis currentibus Quettah; cæspitosa.

389. Scirpi sp.—Cæspitosa in aquis currentibus Quettah.

390. Cruciferæ Tauscheria.—Planta variabiles, uncialis pedulsive, fol. infimis pinnato-pinnatifid, superiora cordatis amplexi caulibus, floribus luteis. In campis arenosis. Quettah.

391. Silenacea.—Pedalis velutino pubescens, foliis linearibus basi ima connatis basique obsolete triveniis, dichotoma, floribus solitariis inter dichotom. Calyx uncialis fere e basi ovata gradatio conica. Petalis angustis roseis. Road sides Quettah.

392. Crucifera.—Iberoides. Prostrato decumbens, foliis glaucis carnosis, inferioribus numerosis cordatis, vel cordato ovatis, longuisculis petiolatis, superior obovatis, vel oblongo obovatis, vel oblongis sessilibus. Calyce fuscescente. Petalis albis. In swampy spots, in green sward of Scripus. Quettah.

393. Iris sp.—Bracteæ magnæ foliacceæ spathiformes. Perianthi reflexis, laciniis exterior oblonga, albi venosi, undulate, bases versus, fusco venoso reticulat, interior paullo latioribus secus centrum usque ad medium, pilis clavatis capito luteo barbatis Stigmata fornicate subobovate, apice bipartita, odor fortisnimis suavis. In gardens Quettah I have long seen the flower.

394. Gnaphalii sp.—On Mountains Quettah.

395. Festucoides.—Erecta foliis parvis dense et firmâ cæspitos. Panicula erecta e viridi purpurascens. Rocks base of Mountains Quettah.

396. Gramen.—Dense cæpitos decumbens spiculis viridibus. Cumpræcedentibus.

397. Caryophyleæ.—Stellarioid sub erecto glauca, plus minus pubescens pedicellis fructum deflexis. Cum præcedentibus.

398. Frutex humilis vix pedalis densissim ramosis, foliis oppositis linearibus. Pedicellis dichotomis, trifidis, alabastris hispido villosissimis. Cum præcedentibus.

399. Ranunculi sp.—Annua ramis numerosis decumbentibus vix spithamæus, foliis ternata divisis, lobis bi tripartibus. Calyce reflexo. Petalis luteis. Carpellis paucis utrinqe echinatissimis. In fields Quettah.

400. Potentillæ sp.—Planta robustiuscula prostrata, floribus luteis. In agris Quettah.

401. Anthemis sp.—Prostrato decumbens cano villosiuscule odore proprio, radio albo, arcte reflexo, disco $\frac{2}{3}$ sphærico, luteo. Cum 397, et præcedent quibusdem.

402. Campanulæ sp.—Fruticosa humilis cana, foliis undulatis. Calyce amplo foliaceo, alabastris rubro tinctis. Cum præcedentib. In crevices of rocks.

403. Rosæ sp.—Frutex erectus 6 pedalis. Cult in hortis Quettah Flores non visa.

404. Papaver.—Plante valde varians in solo suco spithamæa, in solo umbroso $1\frac{1}{2}$ pedalis, tenera glauco albida; foliis pinnatifidis lobis plerumque 3 dentatis, floribus terminalibus, solitariis, pedunculis elongatis, alabastris ovatis, glabris, cernuis. Petalis viride coccineis Ovarii oblongum, stigmata radiis 7.

Quettah near foot of Mountains, enumerated before from base of Chiltera.

404*a*. Vide 385.—Planta annua, hirsuto pilosa, foliis pinnatifidis, pinnis etiam pinnatifidis, floribus terminalibus etiam axillaribus, alabastris cernuis, sepalis hispidis, petalis astivatione crispis, coccineis, basin atro tinctis. Staminibus pluribus, non numerosis, filamentis atro sanguineis. Ovario cylindraceo, trisulcato. Stigma capitat trilobum.

Rocky and shingly ground base of mountains Quettah.

405. Asphodeli sp.—Plantæ habitu in statu juniori quodam modo Mesembryanthemum. Radiculis longissimis crassis sub clavatis albidis, foliis infimis in squamis vaginantibus membranaceis abeuntibus maturis linearibus, paginis duabus conformibus, pubescente ciliatis, intus concavis, extus obtussisimis trigonis. Scapo centrale, foliis excedent, ast non ante florescentiam. Stam declinata. Bracteis membranaceis vena centrale fuscescento, inferior acuminatissimis superior, loculis omnibus latiusculis.

Pedicello cito elongato, floribus numerosissimis sub nutantibus, carneis, lacinea quaque vena, centralo fuscescento.

Periant biseriat æqual, laciniis limbo concavis unguibus petioliform, angustissimis, ovarium arcte includens, laciniis demum reflexis. Filamentis sub capillaceis. Stylo longissimo, Stigma simple. Ovar sub globosum.

Gravelly plains Quettah, common. The claws of the perianth appear to unite below the ovary into a short green foots talk, which is articulated with the summit of the pedicel. A curious plant, reflexion of perianth more like that of Dicotyledons. Common towards Hydosis on low curious reddish hills.

406. Asphodeli sp.—Habitus præcedentis ast major Narcissi, radiculis luteis, 3 plo major. Scapo valde elongato. Bracteis in setam longissima acuminatis, flores expansus non vidi. Rocky ground base of mountains near Quettah, local species. To Kuchlak, in the Pass not common.

407. Ceratophylli sp.—In aquis dulcibus, caules longissimi.

408. Charæ sp.—Pallida sub glaucescens asperula in aquis lene fluentibus, Quettah, late cæspitos.

409. Charæ sp.—Sp. minima vix 4 uncialis internodus etiam foliosis, foliis setaceis vix vere verticillatis, videtur dioica. A very curious species, and one which deserves thorough examination. In agris dulcibus, Quettah, forming large patches.

410. Compositæ.—Annua ramosa glaucescens, foliis linearibus, flosculis paucis citrinis, ligulatis. Akenius extrorsum echinatis, incurvato falcatis.

Not uncommon in gravelly slopes, and dry water courses, varies much in stature.

411. Graminea.—Facie Anthoxyanthi, cæspitosm spithamæa. Panicula spiciforma brunneo tincta.

In margins of fields near Quettah. local.

412. Hordeoides.—Pedale, foliis lineari angustis erectis, spica erecta, aristis viridibus longissimis. Ravine, bed of, in Shingle; to Kucklak. Not uncommon.

413. Hordeoides.—Pumilum 4 unciale, spiculis villosis, spicis ovatis compressis cum præcedent, but less common.

414. Ægilopsoides.—Erectum, spica teretiusculo, viridis cum præcedent, not common.

415. Euphorbiæ sp.—Basi suffruticosa, foliis integris Carnosiusculis, cæsio, glaucis involucris glaucescentibus. Ravine descent to Quettah.

416. Gramen Hordeoides.—2 3 uncial spica viridis ob compressum sub disticha. Gravelly slopes, the pass to Kucklak commonish.

417. Composita.—Minima fere acaulis, foliis sub glaucescens carnosuisculis. Anthod ovato, apice angustato floscul discoideo lingulato citrina. Gravely banks near ascent to the Pass of Kuchlak.

418. Papaveracea.—Hispido strigosa ramosa annua statura valde varians alabastris cernuis hispidissimis, sepalis apice cornutis. Petalis amplis, oblongo obovatis cris patulis vivide coccineis, basin versus macula fusco lata paraboli atrata: imo basi ejusdem coloris. Stylus 5 gonus. Stigmata 5 linearis apice angulor occupantia. Common in rocky ground, especially dry water courses of Pass to Kuchlak.

419. Crucifera.—Brassicoidea. Erecta ramosiuscula pendulis, foliis dentato lobatis, floribus purpurasc siliquis elongatis teretiusculis. Rostro longo Cylindraceo Gravely and shingly ground, about Kuchlak Pass, commonish.

420. Compositæ.—Discoideo ligulat. Cana parvula ramosa anthod subhæmisphærico, radio albo, disco plano, flosculis albo

cæruleis intus Sanguineo brunneis, uti antheræ et stylus etc Kuchlak Pass, in rocky ground.

421. Papaveraceæ.—Glaucioides Decumbens ramosa spithamæa, foliis pinnatifidis. Siliquis hispidis. Petal obovatis atro purpureis. Gravely slopes about Kuchlak Pass; generally mixed with 418. Calyx teretuisculus simplex.

422. Stellarioid.—Gracilis pubescens ramosa. Petalis bilobis Kuchlak Pass, among rocks.

423 Onosomæ sp.—Pusillum strigosissima, corollis luteis. Kuchlak Pass *rare*.

424. Ficus sp.—Vix arbusculoid ramor teretum folior lobis angustis, fructibus solitariis pyriformibus. Kuchlak Passs with Lycium.

425. Astragaloides.—Decumbente prostrat floribus purpureis. Le guminib sub 4 gonis sursum leviter falcatis. Gravely slopes to Kuchlak; floribus binis.

426. Astragaloides.—Habitu præcedentis, sed multo minor; floribus paucis umbellato capitatis lilacinis. Cum præcedent.

427. Crucifera.—Senebieroides. Cana ramis decumbent; floribus minutis ochroleucis. Sandy and gravelly plains near Quettah, Common in some spots.

428. Lycium.—Frutex imbricatus spinosus, ramis deorsum, extrorsu curvatis, floribus albidis Kuchlak Pass. cum 424.

429. Allii sp.—In agris, along water courses. Quettah, foliis teretibus.

430. Labiatæ.—Mininum, foliis cordatis subtus rubescent, floribus quasi umbellatis distinct involucro, stramineis lab super carneo tincto. Labio superior fornicato. Infer 3 lobo, lobis lateralibus reflexis, medio rotundato convexo. Gravelly banks. Kuchlak Pass, inconspicuous.

431. Astragali sp.—Erecta cano pubescens vix ramosa. Calycibus demum vesiculosis, ferrugineo tinctis, floculis citrineis. Sandy plains among peculiar low Hills Hydozey, not rare.

432. Isatides. Carnosuiscula, erecta glaucescens; floribus lutescent. Calycibus fuscis. Siliculis spathulatis pendulis. Cum præcedent.

433. Alii sp.—Pedale gracile, umbello clauso globoso, involucro, rubro. In agris, to Hydozey.

434. Tamarix sp.—Frutex humilis, virgatus, ramis elongatis non longe ramosis fere simplicibus. Racemis brevibus, floribus pulchris lilacino rosaceis, ovario saturatus. Cor 4 partita. Stam 4. Stigmata 2, foliis minutissimis, Sandy banks of rivers, to Hydozey.

335. Iris sp.—1½ pedalis, vel pedalis, vilosa bulbis vaginatis, fol. lineari concavo, canaliculata non equitant, longa, Bracteæ vaginiformes, acuminatiss, membranac, flore parvo, sub erecto. Periath laciniis exterior medio geniculato reflexo patentibus, purpureo cæruleis, medio partis patentis macula albida, lanceolat spathulat. ungue, vel parte erecte lutescens centro, maculis purpureo cæruleis, interior laciniis sub erectis linearibus, demum incurvis. Stigmatibus linearibus, profunde bipartitis cœruleis uti stamen.

Excessively common about sandy plains, especially in old cultivated grounds, Quettah Hydozey, Kuchlak.

436. Rutæ sp.—Frutex vix pedalis, fol. sub linearibus, alabastris rubro tinctis, valde graveolens, immatura tantum vide. To Achulzey. Low red and white hills.

437. Leguminosa.—Frutex albo canus, humilis ramosis, ramis senioribus in spinos sub abeunt. Calyce carneo, floribus rosaceis. Among low red hills to Achulze.

438. Compositæ.—Erecta glaucescens, flosculis luteis, to Achulze common in sandy places under shrubs.

439. Chenopodea —Humifusa. Crystallina glaucescens, foliis carnosis, floribus viridescent. Sandy places to Achulzey not common.

440. Labiata.—Herbacea robusto Salvoidea, pedalis fol. infimis in terram depressis, verticellastris dichotomis. furcatis; foliolis linearibus, angustis, flore centro præcociore, magno; calyce ob conico anguste dentibus 5 spinuloso mucronatis, conduplicato concavis. Corolla bilabiat, lab super fornicato fuscescent, intus villosis, infer 3 lobo, conduplicato, lobis lateralibus majoribus rotundatis medio bilobo. Stam didynama arcuata connectivo magno, loculis divaricatis in eadem linea, brunneis. Stylus bifidus breviter.

Very common in gravelly places in the valleys of Hydozey and Achulzey, a handsome plant.

441. Crucifera.—Erecta ramosa pilosa, floribus albidis Matthioloides. To Achulzey, along the river, not common.

442. Crucifera.—Erect ramosa glabriusculi tenera. Petalis lilacinis. Under shrubs to Achulzey sandy places.

443. Boraginea.—Erect cana digitatis, floribus pallidis fere. albidis Sandy spots to Achulzey common.

444. Crucifera.—Erect, ramosa, decumbens, hispidiuscula; floribus carneo albidis siliquis tortis. Sandy places Achulzey, commonish

445. Umbellifera.—Robusto vaginis inflatis cymbiform alabastris lutescent. Capt Wheeler Quettah.

446. Rutacea.—Planta pusilla ramosa carnosa, fol. semiteretibus clavatis supra canaliculat, floribus ex albo viridibus; on saltpetry spots near Hydozey, common.

Gen. novo Rutacearum ?

Cal: a fleshy cellular urn with 4 teeth, flat base. Petals oblong concave alternate.

Stam 4, petalis alterna. Anth bilocular rotundat, longit dehiscens.

Pollen lanceolat, sub 3 plicat.

Ovarium 4-5 lobum, si 4 lobi petalis opponuntur centro valde depressa. Stylum brevem, columnarum exserens. Stigma obtusum.

Loculi tot quot lobi, angulus internus placent solubilis, lateri exterior ovule gerens, ovula vel 2 pendule, ab apicem plecentæ columnam libera, si 3 tertia inferior intermedium, foramen supera hilum prope.

Herba inter minimas Chenopodear, carnose.

Fol. alternis semi amplexicaul, sub hastatis.

Floribus pedicellatis, axillaribus solitarium. Summit of the branches passing into bracteat racemes.

Placentæ apex sub fungosum.

Fol. lobati irregulariter divis. Sæpius 3 lobo, lobis lateralibus $\frac{1}{2}$ amplexicaulibus, sæpuis inæqualibus. Floribus minute.

Nothing can shew cleaver that the lobes of the carpella are mere productions upwards of the carpellary leaves, than the plæcentæ being free. These carpellary leaves are cucul-

late, all above the placental point, not being from marginal cohesion. Fig. 27.

(446 ?.) [Appears to be Rutaceous. Not noted whether graveolent or not: few salt plants are.

Minima decumbens fol. alternis lobatis, sæpius 3 lobis duabus lateralibus basilaribus ½ amplexicaul carnosis.

Floribus minutis axillaribus solitariis, summis sub racemosis.

Calix, a rim, carnosus, dentibus 4, Pet 4 æstiv imbricato concava. decidua.

Stam 4 sepalis opposit.

Ovar 4 5 lobum sæpius 4 lobis, petalis oppositis e centro depresso surgit, stylus columnaris brevis, stigmata obtuso simplici teminat.

Loculi tot quot lobi, Placentæ cujusque loculi libera stipitat, ex apice sub *fungosa*, ovula dua, *anatropa* pendant, vel si 3 tertio intermedio inferior, all from the outer side of the placenta.] Fig. 28.

447. Staticineæ.—Planta minima vix 1½ uncialis, floribus albis. Common or saltpetrey spots Achulzey.

[Flores in spicam undique disposita, aggregata glomerulis paucifloris basi bractea scariosa. Spice vel nude vel basi versus folio instructe; fol carnosa glauca tenera para runcinato pinnitifida.

Habitus Amarantearum vel Polygonearum.

Inflorescentia præsingularis: glomeruli spicæ baseos secundæ gyratæ, floribus interior superioribus, prius evolutis, basi bibracteatus, bracteo exterio scariosis, *interiora* minora.

This second bract is always present, although the flowers are at the apex of the spike often reduced to one; it shews how very compound, this inflorescence is. It must belong to the terminal flower: and is brought down to its situation by the extreme shortness of the axis of the glomerul. Fig. 29.

Calyx tubulosus lamina brevi rotatata scariosa subcrenato dentata, in setas 5 patente recurvas subito acuminat.

Tubo lineis 5 (corresponding to the nerves of component parts) pilorum alborum capilatorum densorum, præcurso 5 gonus plicatus ?.

Corolla persistent withering imbricated, lamina of 5 concave, roundish concave parts, of 5 obovate petals tapering gradually to the base.

Petala 5 lamin oblongo obovate patent attenuat gradat ad basin.

Stam 5 petalis opposita iis altius adnatis, filam capillac.

Anth lineares, magna medio insertæ versatiles, bilocul longit dehiscet, cells devaricatish as far as insertion of filament, all the parts adnate? to the gynophore. Ovarium clavatum vel oblongum stipitat.

Polygam. Petgamopet.

Stigmatibus 5 subclavatis papillosis, Stylis inæqualib patentibus.

Ovulum unicum funiculi longo replicato sustentum, foramine supero.

Omnia Staticenearum.

Ovar fecundatum *inflatum*.

448. Silenacea.—Biuncialis simplex calyce amplo petalis angustis To Achulzey; in sandy plains rare.

449. Labiatæ.—Planta robusta, junior tantum visa. Ravines Kuchlak Pass.

450. Ranunculacea.—Delphinioides. Herba spithamæa, fol. palmatum pinnatifidis, floribus albis, calcare longo horizontal apice incurvo. Stamina definita. Plains Hykulzye, rare Connects Ranunculaceæ with Fumariaceæ.

451. Iris.—Cæspitosa rhizomato sub terra caulibus vaginis laceratis brunneis, foliis linearibus, equitant, angustis, pedunculo vaginato, bracteis foliaceis, foliis breviora, flora solitario amplo, sepalis exterioribus oblongo spathulat, ungue lato, semi reflexis, albidis, purpureo (præsertim lamina) vel pars reflexa pulchre venoso, inter (unguibus tenuibus) spathulatis purpureo cæruleis reflexis, saturatione colore venosis. Stylis angustiusculis, apice bilobis, purpurea cæterum albidis. Antheræ magna brunneæ polline aurantiaceo.

Koshuk Pass on rocky mountains alt 7300 ft.

452. Veronicæ sp.—Pusilla erecto ramosa, floribus cæruleis capsulis sub cernuis sæpissimus bilobus aliquando emarginatis tantum hispidis. Koshuk Pass 6000 to 7000 ft.

453. Umbellifera.—Spithamæa simplex, floribus albis, Koshuk Pass, under bushes.

454. Astragali sp.—Sub acaulis, radii longo, very longe, folio pinnulis, biparibus, oppositis, floribus amplis citrinis cano sericea. Koshuk Pass 7000 ft. in bare spots. Leaves very singular.

455. Ornithogaloides.—Minimum, foliis breviusculis, floribus albidis. Koshuk Pass in shingle. Differs as above from the yellow Trichonemoides.

456. Umbelliferæ.—Radix odorque Pastinacæ, foliis pinnatissectis; floribus aureis, Koshuk Pass 7300 ft.

457. Astragali sp.—Frutex parvus dense ramosus spinosus, petiolis etiam junioribus, spinosiuscula; foliis cano hirsutis. Koshuk Pass 6000 to 6500 ft. Arenarioides.

458. Frutex dense ramosus et foliosus, fere pulvinat, floribus capitalis? Koshuk Pass 6500 ft. in shingel.

459. Antirrhinoides.—Erect glauca 2 pedalis, ramis sub simplicibus, floribus racemosis, Koshuk Pass in shingle, 6000 ft.

460. Berberis.—Habitus B. vulgaris, foliis obovatis integris racemis nutantibus, Koshuk Pass 7000 ft.

461. Pomacea Cerasi sp.—Frutex virgatis fere sub inermis, foliis parvis, rotundato obovatis tubo cylindraceo fusco rubro basi bracteato. Pet carneis, elegans. Koshuk Pass 4300.

462. Pomacea.—Frutex 8 10 pedalis, inermis, foliis oblongo spathulatis serratis vix Cerasoideis floribus cernuis. Calycis tubo breviusculo magno, petalis albis. Koshuk Pass 6300 ft.

463. Gramen.—Agrostoid. Panicula ampla erect spiculis fuscescent In fields Hykulzey.

464. Astragali sp.—Sub caulis fol molliter hispidis, floribus amplis citrinis. Koshuk Pass 6700 ft.

465. Rutæ sp.—Vix suffruticosa graveolens hirsuta villosa, floribus luteis, alabast tantum visa; sandy fields Koshuk. Pass low down.

466. Crotalarioides —Frutex dense ramosis spinosis 1½ pedalis, foliis canescent. Calyce atrescente, floribus cernuis. Corolla lutea. Kushuk Pass, low down in shingle.

467. Sperguloides.—Carnosa pusilla glaucescens. Hykulzey, in fields.

468. Veronieæ sp.—Minima erecta villosa, floribus albidis cæruleo venosis. Koshuk Pass 7300 ft. common.

469. Veroniceæ sp.—Caulescens digitatis foliis subtus rubro tinctis. Floribus albis carneis. Koshuk Pass 7300 ft, in shingle.

470. Crucifera.—Pusilla glabera, foliis amplexicaulibus glaucis, floribus luteis. Koshuk Pass 6500, to 7330 ft.

471. Polygonum sp.—In fields Hykulzye, fl. white.

472. Incertæ sedis.—Herba villosa pussilla vix digitatis, floribus viridibus. In plains Hykulzye.

473. Stellariæ sp.—Caule carnoso vix ultra 1½ pedale acute tetragon. Petalis semi refiexis bidentatis carneis. Koshuk Pass, in ravines near water.

474. Valerianæ sp —Odore generis aromatico 1-1½ pedali, floribus carneo tinctis. Koshuk Pass 7300 ft. sides of Mountains.

475. Bryonioid.—Humifusa sub viscosa moschi odore. Ravines. Koshuk Pass 7300 ft.

476. Labiata.—Minima 2·3 uncialis, floribus albis labio superiore fornicato, lateralibus labium inferiores reflexim terminat porrectiusculis. Shingly ground, ravines Kushuk Pass.

477. Allii sp.—Robusta, bulbis depressiusculis, foliis scapum sub æquant, carnosis, intus concavis. Involucro spathac fisso, floribus numerosis, purpurascent (junioribus) alabastris viridibus. Koshuk Pass in moist shady parts of ravines.

478. Crucifera.—Cæspitosa pulvinat, foliis demum sub spinescent, floribus albis, calyce fusco viridi summit of Koshuk Pass. Major Sanders.

479. Silenacea ?—Basi decumbens, herbacea, glauca, foliis carnosis Koshuk Pass 7300 ft.

480. Assafætida —Robustissima, petiolorum basibus vaginant: foliaceis, vel membranaceis, floribus aureis. Succus lacteus, odore aromatico fœtido.

481. Lathræoides.—Spithamæa carnosa, squamis lanceolato ovatis, colore viridi orbatis loco squamaram, Pars axeos exsert, purpurascens. Radiculæ fibrosæ. Sepalis e basi lanceolato acuminatis concavis fere carinat, laciniis apice patulis. Cor. ringens tubo sub cylindraceo leviter arcuato sursum. lab super semi reflexo, bilobo, lobis tribus, labium inferioris sub æqualibus reflexis sinubus in carinas albidus elevatis palato loco. Coloris, livide purpurascens, carina albus. Grows among loose clay state. Koshuk Pass. 7000 ft. not growing apparently on any other rock.

482. Bromoides.—Spica cernuo nutans fuscescens. In Bushes, 13th Feby. Chokey.

483. Allii sp.—Pedalis, fol. teretibus, floribus albis vena centrali viridi, Choky gravelly hills.

484. Silenacea —Pusilla viscosa pubescens, petalis emarginatis albis centro sanguinea, macula cuneata. Choky in Shingle.

485. Leguminosa —Humifusa cano hirsuta. floribus albidis.

486. Rheum :—Planta robusta, processibus cellulosis exasperat, foliis amplissimis. subrenif rugosis petiolis crassissimis rubescens. Panicule erecte amplis, floribus ochroleucis, common about Chokey 5000, to 5500 ft.

487. Composita.—Hieracioides, glauca, involucris ovato conicis, hispidissimis, carinatis. In shingle Chokey.

488. Silene.—Basi fruticosa, basi valde ramosa, foliis glauco, calyce clavato fusco tinct. Petalis bilobis initiæ ochroleucis, demum fuscescent. Shingly hills Chokey ; commonish.

489. Linariæ.—Basi suffruticos, tota glauca, foliis concavis carnosis, floribus albidis brunneo venosis. Calcare incurvatulo, in shingle Choky.

490. Boraginea.—Pedalis ramose strigoso hirta, floribus per minutis pallida hypocraterif azureis. Pedicellis clavatis fructium sub cernuis. Shingle Choky.

491. Boraginea.—Basi suffruticos cano hispida, foliis lineari lanceolatis, racemis gyratis, floribus tubo brevi, lamina hypocraterif infundibuliforma fauce gibberibus, bilobis 5 semi clausa.

Nucibus in cyathor more dorso excavatis. Plante elegans Primula simulans, floribus sanguineis. Choky in Shingle under bushes.

492. Crucifera.—Erectâ basi decumbens canescens, floribus albis, siliqua torta, apice cornuta. Shingley hills Chokey, common.

493. Bromi sp.—Erectum aristis purpureis. In bushes Chokey.

494. Leguminosa.—Frutex erectus dense ramosus sub armatus canescens, calyce fusco, corolla lilacina. Gravelly hills Chokey.

495. Labiata.—Erectâ caule purpureo, foliis etiam canis, floribus albis bilabiat, labio superiora fornicato.

496. Stipoidem gramen.—Dense cæspitosum sub rigido glaucescens Shingly hills Chokey.

497. Glaux.—Decumbens pallida, floribus carneo albidis. In swampy places Chokey.

498. Silenacea.—Foliis acerosis, pygmæa inflorescentia valde ramosa. Petalis carneis. Shingly places Chokey.

499. Santonica achillæoides *—Pedalis. per fragrans, flosculis aureis, fol. pinnatis pinnis verticalibus very common throughout Khorasan in sandy and Shingly plains.

500. Gramen.—Paniculo erecta In swamps Chokey.

501. Gramen.—Phleoidem, spicis ovatis erectis viridibus, common at Chokey in shingle or under trees.

502. Boraginea.—Erecta ramis patentibus attenuatis, floribus hypocraterif pallida azureis, nucleis dorso præsertim marginibus echinatis, non raro, cyathiformibus. Chokey in shingle common.

503. Leguminosa.—Prostrata, canescens, floribus rosaceis, alis carneis. Leguminibus asperis falcatis. In shingle Chokey.

504. Gramen.—Nardoidem totum hirsutum. Chokey in shingly hills, not very common.

505. Avenacea gramen.—Panicula nutante, spiculis cernuis. Common near Chokey on rocky sides of hills.

506. Crucifera.—Habitus Sinapidis, glaucescens, floribus aureis, rostro silicular foliaceo. In bushes, in Shingle near Chokey.

507. Umbellifera.—3 4 pedalis, foliis carnosis supra decompositis floribus aureis, odor sub pastinac. rocky hills near Chokey 5500 ft.

508. Iridis sp.—1½ pedalis, foliis linearibus angustissima rigidis acuminatis equitant bracteis spathaceis imbricatis, laciniis perianth exterior oblongis sub spathulatis albidis, ½ reflexis purpureo venosus, et punctulatis, interior majoribus, erectiusculis lilacinis venosis, stylo albido apice bilobo purpureo venosis et punctulato, interior majoribus erectiusculis lilacinis venosis, stylo albido apice bilobo purpureo, dorso purpureo, punctato. Anth brunneæ pollina aurantiaceo. Shingly hills Chokey. Mojor Sanders.

509. Scrophularia sp.—Basi fruticosa pedalis valde ramosa, foliis glaucis pinnatifidis. Cor. quasi resupinato lobo superiora nempe, maximo et lobis lateralibus quasi huic oppositis, sanguineo

purpurea, alba variegato, genitalibus declinatis. Shingly hills Chokey. Major Sanders.

510. Astragaloid.—Basi suffrutic pumila, cano sericea pinnis conduplicatis, valde approximatis. Corolla demum atriseis. Leguminibus ovalibus vel oblongis valde inflatis, turgidis. Chokey. Major Sanders.

511. Matthioloides.—Cano papillosul, basi fruticosa. Petalis junior citrinus ad anthesin fuscescent erectus, cito atratis spiraliter revolutis. Chokey. Major Sanders.

512. Lotoides.—Basi fructicosa valde ramosa, glauca, floribus aureis common on hills near Cookey 5500 ft.

513. Matthioloid.—Cano pubescens ramosa, petalis erectis albis. Siliquis sub sessilibus patentibus vel deflexiusculis. Mountain Chokey, in ravines.

514. Gramen.—Rottboelliod. Spicis erectis cano pubescent, sides of hills. Chokey not uncommon.

515. Crucifera.—Erecto sub simplex canescens, floribus albis. In ravines Koshuk Pass 6500 ft.

516. Umbellifer.—Cano hirsutiuscula, caule sulcato, floribus densis albis umbellulis simplicibus, rocky mountains near Chokey 5500 ft.

517. Salviæ sp —Basi suffruticosa grisea, hispida pilis crispatulis, foliis rugosis, bracteis albidis viridi pictis; floribus albis tubo ad faucem deorsum gibbo. Stylus exsertus. Stigmatibus purpureo, rocky mountains Chokey 5500 ft. aromato Juglandis.

518. Gramen Nardoidem.—Chokey found among other specimens collected casually.

519. Labiatæ.—Pilosa minima ramoso, foliis subtus purpureis, floribus purpureis, labio superior sub erecto bilobo, inferioris medio saculiformi, lateralibus rectis. Ravines Chokey on Shingle.

520. Gramen.—Agrostido Airoidem. Cœspitosum glacuscens. Panicula effusa cernua, spiculis basi viridibus cæterum albo membranaceis. Choky on rocky mountains 5500 ft.

521. Composita Centaureoides.—Basi suffruticosa vix pedalis, caule foliis que subtus albo lanatis, on rocky mounts. Chokey 5500 ft.

522. Composita.—Centaureoid. Cnicoides cano albo sub herbacea, spithamœa, anthod ovato, spinis apice rubescent exterior recurvis, in ravines in Shingle Chokey.

523. Fediæ sp.—Sp. altera, laciniis calycis fructus foliaceis spathulatis, Choky in Shingle.

524. Frutex 5 6 pedalis: scraggy, ramis in spinis abeunt, foliis fasciculatis spathulatis, floribus aggregatis æstivation imbricatis lutescent. Ravines Choky commonish.

525. Nitellæ sp.—In aquis stagnant. Choky, common.

526. Glaucii sp.—Annua ramosa carnosa glauca. Petalis aureis basin versus croceo sanguineis. Species pulchra, Choky Major Sanders.

527. Chenopodii sp.—Prostrat; foliis subtus albo crystallinis. Caule angulato rubescente, floribus viridibus. Putoollah.

528. Heliotropioides.—Basi suffruticosa hirsuta; floribus lutescent vix gyratis, near Putoollah, in sandy Places.

529. Thymeleæ sp.—Gnidioid.—Frutex 2 pedalis ramosus gracilis elegantiusculius, foliis læte viridibus, floribus spicatis tubo coccinescent lamina lutea, tubi basi alba. Commences at a low range of hills near Dund i Golai and continues to Killa Putoollah in sandy Places.

530. Valerianinaceæ sp.—Minima inflorescente densissimi subglobosa, floribus minutis albidis. Calycis lamine triloba foliaccea. Dund i Golai, Killa Putoollah, sandy Plains along water cuts.

531. Fedioides.—Pusilla floribus albis. Sandy Places Dund i Golai, Killa Puttoollah.

532. Erodii sp.—Prostrat Canescens, floribus albis rostris longissimis. Commences near Dund i Golai continues to Killa Putoollah.

533. Centaureoides.—Decumbente radiatus ramosa ramis albis uti spinis involucri, floribus cerneis. Gravelly places Dund i Golai and Killa Putoollah.

534. Gramen.—Profundum in arenis rigidum glaucum spicis axi adpressis disticho compressis glaucis. In sand. Dund i Golai Putoollah. not very common.

535. Centaureoides.—Ramis ascendentibus albis spinis involucri patente, recurvatis robustis sub 3 gonis, flosculis luteis. Dund i Golai Putoollah, commences towards the low range of hills near Dund i golai.

536. Composita.—Common about Dund i Golai in sand, also Putoollan in old fields.

537. Bromoidis.—Spicis viridibus rigidis, erectis, common about Dund i Goolai and Putoollah.

538. Allii sp.—Foliis subplanis, scapo breviora, floribus numerosis roseis, laciniis apice incurvis. Putoollah umbella multiflora.

539. Allii sp.—Bulbo ovato retusa, foliis subulatis supra canaliculatis, involucro membranaceo lacerato umbella congesta, floribus pallide lilacinis vena media saturatione, laciniis omnibus æqualiter erectis. In sandy plains to Putoollah.

540. Allii sp.—Bulbo præcedentis statura 3 plo minor, foliis subulatis varia tortis, supra planis, non canaliculatis umbella pauciflora.

Pedicellis exterioribus patentibus. Periant biseriatum exterious erectiusculum laxum interius erectum formans, apice tantum reflexiusculis, color læte rosaceus vena centrali saturatione. In gravelly places, common, not variable.

541. Silenacea.—Dundi Golai. Major Sanders.

542. Iris.—Rhizomata cæspitosis, aggregatissimum, retiferis, foliis varia tortis, lineari angustissimis, equitant, bracteis spathaceis fructibus oblongis $1\frac{1}{2}$ uncialibus.

Laciniis perianth exterior apice reflexis, purpureo venosis, cæterum fuscescent, interior spathulato oblongis erectis, purpureo venosis tinctisque stigmatibus albidis, laciniis angustis Antheris brunneis. In sandy plains near Putoollah; either the same, or very nearly allied to a former species.

543. Composita.—Gravelly hills. Pass near river. April 22nd.

544 Portulacea gossypina.—Under bushes Sandy valleys towards river. april 22

545. Astragali sp.—Frutex brevis, dense ramosus petiolis rigidis in spinis desinent, calyce fructus inflata, membranaceo albo.

Gravelly valleys and hills to Dair Haj. Common.

546. Thymalæa.—Frutex $1\frac{1}{2}$ pedalis dense ramosus. An idem cum 529 sed pubescens.

Low stony hills to Dair haj; common here and there.

547. Artemisioides.—Frutex humilis 1-$\frac{1}{2}$ pedalis, elegans ob foliis canis, caulibus ramisque atris lucidis to Dair Haj, near Putoollah, in Swardy spots.

548. Umbellifera.—Herbacea vix ultra pedem, fructibus hispidissimis vestitis. Gravelly ground towards Dair Haj, not uncommon.

449. Cytisoides. —Frutex 4 5 pedalis, densus, foliis canescent, floribus luteis, racemis erectis. Commences 1½ way to Dair Haj in ravines, and is common.

550. Thesioides —Herba pusilla, gracilis glauceis, floribus ochroleucis. Common in swardy or sandy ground, or old cultivation, from Dund i Golai to Dair Haj.

551. Portulaceaceæ —Decumbens hispido vestita, petalis lilacinis, Caducis sandy sides of river. Common.

552. Cyperacea.—Pass to river Dair Haj among stones, densely tufted.

553. Crucifera.—Brassicacea Herbacea pedalis, decumbente erecto, floribus mediocribus, lilacinis siliculis, *hastatis!* common in one or two low stony hills ½ way to Dair Haj.

554. Tanacetoides.—Herba elegans, 2 3 pedalis, erect, corymbis densissimis, aureis, swardy spots, local near the halting place ½ way to Dair Haj.

555. Composita. —Cano albo involucri spinis exterioribus recurvis, under bushes. Pass to Dair Haj.

556. Composita.—Prenanthoid glauca, decumbens, anthoidio longe anguste conico, stipet pappo longissime gracillimo. Halt near river in shingle.

557. Heracleoidis.—Fructibus cereis lucidis. Herba robusta perennis ? foliis anni prioris magnis. In stony ground, half way to Dair Haj.

559. Orobanche.—Fuscescens pallida floribus exceptis qui albi sunt et subodor. Corolla, infundibuliforma lamina sub regulari, lobis patentibus, lateribus reflexis, on stony hills not apparently growing from any particular plant, generally at some distance from any shrubs, tubus levissima deorsum curvatus subtus prefunde 3 sulcatus.

560. Orobancha.—Vix pedalis calyce livido cœruleo flore curvato, lamina, bilabiato, cærulescent. Pass to Dair Haj, stony ground.

561. Frutex 3 5 pedalis foliis carnosis spathulato obovatis, fructibus cernuis in pedicellis brevibus, foliaceo 4 alatis, combretaceis. Stylo unico terminat tot locule quot alæ, tot ovula pendula, quot locule. Radicula supera, embryo etiam junior perviridis. Commences not far from Putoollah, continues to Dair Haj, not uncommon on stony hills.

562. Gramen Stipoides.—Glauceum spithamæum dense cœspitosum, pass to Dair Haj, and stony ravines about the halting place near the river.

563. Bryoniæ sp.—Scandens canescens pomis pisiformib baccatis intus pulpa repletis seminibus paucis albis lævibus. Pass to Dair Haj, rare.

564. Celsiæ sp.—Subviscosa floribus luteis. Pass to Dair Haj in the road among stones very local.

565. Gramen Dense cæspitosa pedali, spiculis carneo tinctis. Pass to Dair Haj, not uncommon.

566. Quid.—Frutex fragilis dense ramosus pedalis, foliis rigidis spinescentibus corymbis densifloris; floribus carneis, an Plumbaginea, common on hills throughout, especially Dund i Golai and to Dair Haj.

567. Vitex negundo?—Arbuscula vel potius frutex 6-8 pedalis, occurs in patches. Pass to Dair Haj, very local.

568. Salvioides.—Fragrantissima odora Ribes nigrum, foliis rugosis, subviscosa, calycibus amplis compressis præsertim post anthesin floribus purpureis, extus albidis. Pass to Dair Haj and stony ravines towards river.

569. Echinops.—Glaucescens sæpius ramosa. Ravine to Dair Haj, not uncommon.

570. Silenacea.—Annua erecto viscosa noctiflora. Petalis carneis, stony ravines to Dair Haj, common enough.

571. Leguminosa.—Sub prostrata plus minus rubro tinct. Leguminibus oblongo reniformib processubus hirsutis echinatis. Stony ground on this side of the Pass to Dair Haj, not rare.

572. Chenopodea.—Fuscescens vel rubescens, foliis cylindraceis, floribus viridibus margins of fields, near river, also river bed ½ way.

573. Composita.—Capitulo aureo, herba canescens variabilis. Stony ground Dund i Golai to Dair Haj, commonish.

574. Gramen.—Cæspitosum culmo ramoso glaucescens spiculis albis erectis, common in Pass to Dair Haj.

575. Scirpe sp.—Cæspetose culmis teritibus 3 pedalibus. River Dori.

576. Rotthboelleoides.—Gramen basi decumbens spicis subulatis erectis viridibus.

In wheat fields, along water cuts River Dori.

577. Silene sp.—Spithamæa viscosa, floribus albis suave odoris, sandy and gravelly plains to Dair Haj.

578. Heliotropii sp.—Cano pubescens basi suffructicus dense ramosum, floribus inconspicuis albis. To Dair Haj, sandy plains, local.

579. Frutex vix pedalis argenteo glauceis, foliis usque ad medium, caule adnates quasi? floribus non visis. To Dair Haj, sandy plains, local.

580. Mimosea.—Frutex 1½ pedalis cæspitosus spicis elongatis junior tantum visa, near Dair Haj in Sandy plains, common here and there.

581. Frutex humilis dense carnosus ramulis veluteis, foliis carnosis, mucrona spinosa, floribus in axillis solitariis bibracteatis subimmersis, carneis, alabastris albidis. Sandy Plains to Dair Haj, not uncommon.

582. Calligonum.—Frutex 3 pedalis dense ramosus, ramulis cylindraceis, foliaceis, foliis, inconspicuis, subulatis, ochreo, membranaceo inconspicuo, fructibus pendulis unilocularibus, alis maximis 4, extus in lamellas duas membranaceas, partitis, lamellarum facierum interiorum, pilis ramosis longissimis peculiaribus vestit, basi calyci conico, lamina 5 partita membranacea suffult. Semen unicum. Radicula supera. Cotyledonibus linearibus, plano convexis. Semen erectum testa, in statu juniori celluloso venosa, viridescens.

Sandy ground near Dair Haj, a remarkable plant. Polygoneis affinis.

583. Planta inter minimas, annua ramosa cano, pubescens, fol. alternis basi vaginant recurvis, sub teretibus, spinuloso mucronatis, floribus solitariis in axillis, bibracteatis. Perianthio scarioso. Stamina per singular connectivo elongato in ungue, ferent laminam clavatam vesicosam læte rosaceam reflexam petala omnino simulares. Cæt. examinando; stony hills near Dair Haj, a very singular plant.

584. Convolvuli sp.—Humifusa repens floribus carneis plicis saturationibus, waste places about fields Khoshab.

585. Astragali sp.—Albescens basi suffruticosa, floribus ochroleucis about fields near Khoshab, not uncommon but local.

586. Composita ligulata.—Basi suffruticos quasi subapylla 1-2 pedalis, canescens, ramis flexuosis, divaricatissimis, flosculis paucis citrinis. Gravelly ground to Khoshab, common.

587. Tamarix.—Frutex Jhowoideus elegans, lamina foliorum evolut floribus minutis, sub urceolatis carneis, to Khoshab, chiefly about the gravelly dry bed of a rather large stream.

588. Composita.—Prenanthoideus, glaucescens, flosculis citrinis under bushes, in shingly ground, to Khoshab.

589. Scirpus.—Foliis carinato canaliculatis, reflexis ad ripus agrorum, of water cuts Khoshab.

590. Plantago sp.—Foliis glaucescent 5 veneis, near Khoshab about fields.

591. Heliotropii sp.—Hirta basi suffruticos, ramosa $1\frac{1}{2}$ pedale, floribus distantibus albis, vix gyratis. To Khoshab in gravelly plains.

592. Pæderioides.—Ramis *foliaceis*, foliis ternis linearibus sub spinescent, stipulis sub obsoletis, alabastris vestitis, odore *proprio*, suffruticosa, dense ramosa $1\text{-}1\frac{1}{2}$ pedalis. To Khoshab—Gravelly plains.

593. Lolioides.—Spica erecta viridis. In wheat fields Khoshab.

594. Composita.—Spithamæa glaucescens, anthodio ovato conico arcte clauso, demum in cupula coroniforma, aperiente; flosculis citrines, in plains Khoshab.

595. Composita.—Prenanthoides foliis rosaceis, flosculis albis. Khoshab gravelly plains.

596. Cynodontis sp.—Cæspitos spicis albis, Khoshab versus ; in plains about fields.

597. Stellariæ sp.—Laxa decumbens scaber ; floribus albis. Wheat fields Khoshab.

598. Jasmini sp.—Foliis ternatis vel pinnatis, floribus luteis vix odoris, Cult Candehar ; frutex 4 6 pedalis arbusculoideus.

599. Cheiranthi sp.—Petalis aurantiaceis odora suaviusculo, non proprio. Smell very different from Cheiranthus Cheiri, in hortis Candehar.

600. Calendulæ sp—Smell etc same as that of the species cultivated in Europe. In hortis Candehar.

601. Ranunculacea.—Delphinioides, folii fere capillacea pinnatisectis Racemis erectis Sepalis 2 linearibus, foliaceis quintopos-

tico petaloideus obovato. Calcare longiusculo sursum curvato acuto, in alabastro uncinato, 2 lateralibus unguiculatis, lamina rotundato, 2 inferioribus unguiculatis obovatis, Galea postice sepalo postico opposita, deltoideo, subtriloba conduplicato, lobo medio apice bilobo, Calcare cavitate calcaris, sepala postea exact implento. Colour cyaneo purpur. galea lilacina, maculosis Stamina pauca anisomera subdeclinata atro purpureis. Ovario unico? Filamenta basi valde dilatata, infima et extima majora.

In hortis, Candehar. A curious plant, the situation of the lower sepals proves that the linear foliaceous bodies are bracts, there are thence 5 sepals, and one petal. The galea is evidently formed of two, alternately with the posticous sepal, the 3 lower petals are wanting, and are transformed into as many stamina, larger than the rest, alternating with the sepals, and having the filaments coloured at the top.

602. Scirpus.—Cæspitosus culmis subterraneis in aquis repentibus, exsertis teretibus appyllis apicem terminali. Water cuts Candehar.

603. Chenopodii sp —Erecta glaucescens, advias Candehar.

604. Ranuncula sp.—Pedalis vel ultra ramosa, calyce reflexo, floribus majusculis (varnished) luteis. In aquosus, Candehar.

605. Melilotoideus.—Sub repens, ramosus, floribus sanguineo purpureis. Banks of cuts Candehar.

606. Residæ sp.—Erecta 3 pedalis, floribus albidis, foliis glaucescent, odore florem rutaceo. ruderatis. Candehar luteola affinis.

607. Compositæ.—Herbacea bipedalis viscosa involucris, cylindraceis, flosculis luteis ligulatis. In agris et advias. Candehar, not uncommon.

608. Gramen Agrostidem.—In agris Candehar.

609. Leguminosa —Cano pubescens erecta sub ramosa racemo amplo stricto. Calyce albido, petalis ochroleucis, cult candehar odor florum sinapideus.

610. Rumex sp —Sub glaucescens $1\frac{1}{2}$ 2 pedalis, foliis repand undulatis, along water cut Candehar.

611. Trifolii sp.—Cæspitosum repens, foliis immaculat, floribus carneo roseis. Calycibus demum inflatis. Along cuts Candehar, not rare.

612. Caricis sp.—Culmo obtuse 3 gono, spica composita, nutanto. About cuts Candehar common, very variable in size according to quantity of moisture.

613. Carduaceus.—Erectus sub simplex, involucro ob conicuiscula, flosculis rosaceis, in agris, Candehar, common here and there, flores odorato.

614. Erucoideus.—Robusta 3-4 pedalis ramosus, ob foliis decurrentibus, omnino spinosus involucro ovato squamis spinescentibus exterioribus, sub patentibus, flosculis lilacinis; along cuts Candehar.

615. Ranunculaceus. Nigelloides.—Habitu odoris; bipedalis, foliis pinnatisectis, floribus albidis nectareis viridescent; loborum apicibus nigro capitatis. Ovariis viridibus. Sepalis 5 breve unguiculatis oblongisvenosis, initio foliaceis demum petaloideus imbricat œstivatione.

Nectariis 8 sitio irregularibus? Cum sepalis semper alternantibus, et plerumque inter hæc per paria interjectis unguiculatis, lamina cum unguem patent, angulum rectum formantibus, bilamellata, lamina interiore ovato cuspidato, cavitate parvo, margine velutino, laminam exteriorem applicet, lamina exteriora bilobo, lobis sub acinaciformibus vel dolabriformis, basin versus glandularum viridem magnorum gerent, cæterum pilis sub clavatis, laxis parcis obsit. Annulum atro purpureum ad apicem dolabri, et linea concolor curvato glandum paullo suprum.

Stamina non numerosa, filamentis viridescentibus. Antheris adnatis, lateraliter dehiscent, introrsis potius quam extrorsis, valvula interiora minora. Anth interior vacuis. Ovaria 6 coalita glandulosa. Stylis teretibus viridibus, radiata patentibus. Stigmatibus concoloribus, indistinctis simplicibus. Ovulis oo biseriatis transversis.

In hortis Candehar.

The want of uniformity of the nectaries compared with the flora lenvelopes, their curious structure points out that they are modifications of stamina. All genuine Ranunculaceæ are thus in reality apetalous, the two extremes of structura viz almost perfect petaloid metamorphosis of the 5 out stamina, and the total want of any tendency to such metamorphosis,

occuring in Ranunculus and Clematis. The structura of the anther has much analogy with that of Berberideæ, and indeed valvular anthers in general in which the valvulets are always ? unequal, I shall not be surprised therefore to find Ranunculaceous plants with valvular anthers, properly so called.

616. Butomus.—Sesque pedalis, rhizomata repente superne undique folia basi equitantia emittent, foliis acute trigonis angula superi interstitio majis concavo, plus minus tortis acutis, glabris. Scapo tereta $1\frac{1}{2}$ pedali folia subæquant, umbella pluriflora, floribus basi bracteatis, bracteis tribus exterioribus majoribus, involucro mentientibus scariosis striatis. Pedicellis $1\frac{1}{2}$ uncialibus. Perianth biseriatum patens, subrotat, laciniis exterioribus ovatis, concavis, interioribus oblongis, duplo fere longioribus minus concavis, color albis dorso centrum rosaceus, exteriorum basis viridis. Stamina 9 per terna laciniis interioribus, opposit filament subulato. Anth bilocul brunneæ. Pollen aurantiac. Carpella 6, perianthio laciniis opposita, oblonga, oblique, sursum in stylum breve attenuata. Stigmata oblique facie internum sty lo decurrentum. Ovula oo affixa par retibus carpella, pertotam paginam interioris, infra medium dorso tantum excepto. Apex of inner tegument of ovula. Exserted a little at the time of expansion. Banks of cuts Candehar.

617. Borragineæ.—Herba strigosa, sub pungens 2-3 pedalis caule ramosa foliis glaucescentibus inferioribus obovato oblongis, superioribus oblongis, carnosis, margine repandiusculo. Racemis terminalibus gyrantis, *extrorsum* foliis parvis vel bracteis minutis.

Calyx ad basin fere 5 partitus sepalis lineari lanceolatis strigosis.

Cor. hypocrateriformis tubo sub cylindraceo, calyce paullo breviorum laciniis laminæ patentis oblongo rotundatis initio rubescent, cito azureis fauce squamis 5 magnis concavis dorso pilis subulatis dense vestitis clausa.

Antheræ biloculare post dehiscent $\frac{1}{2}$ tortæ, squamas faucis subæquantis, ideoque e tubo omnino exserta. Stylus robustus subulato filiformis, stigmata bina capitata, ovaria basi subannulata.

Calyx fructus ampliatis cæterum immulatus, laciniis patente

erectis, vel erectis. Nuces oblongæ obscure trigonæ ruguloso. discretæ. Semina basin versus adfixa. Radicula supera.

In segetis Candehar. The base of each nut is furnished with a mammilliform attachment. On separating this from the dilated receptacle, a deep pit is left.

618. Euphorbiæ sp.—Pedalis glaucescens, inflorescentia lutescente, In banks of fields Candehar.

619. Convolvulus.—Inter minimos, sericeo argentea cæspitosa caulibus rarius breviter repentibus, floribus carneis, banks of fields Candehar a local species.

620. Umbelliferæ.—Sub glaucescens sub simplex, floribus albis In agris candehar.

621. Triticoides.—Basi decumbens, spicis sub nutantibus. Lolioides simillimum, sed ex aristatum. About fields Candehar, commonish.

622. Hordeum leptostachys.—Hordeo vulgaris culto, gracilius et exaltatius. Spica gracili sub nutant compressa spiculis distichis, aristis scarber rimis supra spicum conniventibus.

In agris Candehar appears a distinct spicies, but who shall distinguish with sureness after Monacanthus et dua ista alia genera, generibus tribus exuna specie.

Adest Typhæ species angustifolia in palludisis.

623. Dipsacea.—Scabrosa, variat quoad siccatas loci a pede 1, ad 3, Dichotoma, caule scabræ fere strigosæ, foliis imparipinnatis; pinnulis inferioribus et omnibus terminali excepto parvis, inconspicuis terminal, lineari-oblongo, inferiore serrato summorum integrio cilitis.

Capitulis terminalibus subovatis erectis, squamis, rhomboideis albis, aristato cuspidutis. Flos, pallide purpurascens vel cæruleis.

Involucrum cyathyformum intus plicato sulcatum, dentibus aristo formibus 4, totidemque minutis interjectis. Calyx cupuliformis, dentibus mucronato aristiform irregularibus.

Cor. tubo longiusculo, angusta, infundibuliformi, limbo sub regulari 4 partito, laciniis oblongis extus hirsutis, venatio ordinaria.

Stam 4, 2 inferiora breviora !!

Laciniis alternantia.

Ovarim oblongum apicem versus attenuat, sulcat, 1 loculare. Stylus filiformis, pubescens. Stigma simplex. Ovulum solitarium pendulum. Stylus vasorum fasciculis tribus! the carinæ of ovarium fit into the sulci of the involucrum.

On what principle are we to explain the presence of the involucrum. It would seem from all analogy to indicate composition of inflorescence, and in this view each flower is a terminal one. But in such case the inflorescence is always? centrifugal, not centripetal, which it is in the present instance. The flower belonging as it does to the scale of the receptacle has no business with a double involucrum, if the inflorescence is really simple. If compound, the involucra may be considered as composed of several leaflets, the axils of which do not produce flower buds. In this case we may expect to find a Dipsaceons plant with more than one flower contained in the involucrum, these flowers may be sessile, or the inflorescence may still further be produced.

624. Mori sp.—Arbuscula vel arbor mediocris, corona oblonga dense foliacea, foliis glabris, spicis axillaribus solitariis, subcernuis oblongis, fructibus albis, cultivated about Candehar very commonly.

625. Elæagni sp.—Arbuscula ramis laxa patentibus, foliis utrinque argenteo lepidotis, floribus concoloribus axillaribus vel 2 4 racemosis in axillis. Cult Candehar, not very common.

626. Dianthus.—Erect ramos glaucescens, floribus solitariis, terminalibus, involucro 4 phyllo basi circumcinct, Calyx angusta ovatis utrinque attenuatus. Pet patentiusculis, roseis, roseo venosis, argute dentatis. in hortis Candehar.

627. Lamii sp.—Basi decumbens foliis, floralibus rotundatis, floribus albidis. Along banks of water cuts. Candehar,—very nearly related to a Bootan species.

628. Imperatæ sp.—Along water cuts. Candehar.

629. Anagallis sp.—Tenera glabra decumbens, caule acute 4 gono. Corolla miniata demum reflexo glandulis ciliatula, filament stuposis. Stylo declinato. Along water cuts Candehar, verisimiliter A. arvensis.

630. Dianthus.—Caryophyllaceus glaucescens $1\frac{1}{2}$ pedalis, bracteis 4, subflorem. Corolla amplum patens, odore caryophyllaceo,

petalis argute dentatis, genitalibus exsertis. Stylus stigmatiferis corniformibus longe exsertis. In hortis Candehar. This genus is essentially corymbiferous or *capitato-inflorescentiferous*, the terminal flower alone developed : it may either have 5 flowers in each capitulus provided with 4 bractes, or the bractes may develop branches of inflorescence, and even in this case judging from anology, the capituli will be 5 flowered, as it is probable that the energy of the plant thrown into developing the inflorescence may gradually diminish, we might have each branch of the lateral inflorescence provided with two bractes and one naked terminal flower, otherwise such inflorescences are infinitesimal. The other is an extremely natural one, and hence well worthy of study.

631. Crucifera.—Planta robusta decumbens, ramis rigidis, fructibus spicato racemosis, axi adpressiusculis. Siliculis subglobosis pubescentibus, rostro conico, brevi bilocularibus, bispermis. Radicula oblique (obpressione) incumbens in dorso colyle-ledon, Endocarpio sub osseo. About fields. Candehar.

632. Gnaphalii sp.—In agris. Candehar vide Icones.

633. Gnaphalii sp.—In agris. Candehar vide Icones.

634. Silenacea.—Spithamæa ad 1½ pedalis. Caule ramisque glandulosis pilis vestit, fol. glabris glauceis carnosuisculis. Inflorescentia axillaris paniculat. Calyce glanduloso pubescente erecto. Petalis subpanduriformibus (Fig. 30) erosis (nec ne) truncatis. Staminibus inclusis. Stigmatibusque. Fructus panicul amplum patentissima. Pedicellis capillaceis, apice versus articulatis, fructibus calyce fere clausis, pendulis, oblongis 1 locularibus. Seminibus albidis subreniformibus, rugoso cellulosis-Embryone peripherieo. Stylis 2.

Sandy places about fields. Candehar, very local.

635. Compositæ Cichorii sp.—Plantá annua vel biennis ? robusta 3-4 pedalis, valde ramosa subglaucescens, fol. inferior pinnatifidis superioribus indivisis undulatis. Inflorescentia laxi paniculata, divaricata. Ramis Capituligeris, robustis, rigidis apice et basi capitulum gerent, fistulosis uti caulis. Involuer biseriatum, seria externa 5 squamata, subreflexa interna pluri squamata laxuiscula, flosculis lingulata azurei cito marcescentis, paucuiscule, in agris. Candehar.

636. Capparis.—Interna decumbens pubescens, spinis uncinatis, floribus solitariis axillaribus amplis albis, staminibus filamentis apice lilacinus. Petalis sepalo oculato alternatibus, bases versus secus margines in carinam elevatam cohærentibus.
In *vinetis.* Candehar.

637. Marrubii sp.—Basi suffruticosa, 2 pedalis, foliis rugosis cano, albescentibus. Caule ramisque albolanatis. Calyce limbo patente radiato 10 fido. Corolla albo, bilabiat, lab superiore erecto, lateral, lab inferioris dentiformibus, medio lato emarginato reflexiusculo. Genital inclusis. In vinetes. Candehar.

638. Anthemedea.—Caule pedale ramoso, foliis pinnatisectis. Capitulis ampluisculis, radio fæmineo albo, disco hermaphrodito luteo. Invol. subhæmisphæricum. Squamis arcte imbricatis margine membranaceis. In vinetis. Candehar.

639. Carthamoides.—Pedalis vel sesqui. Caule etc albis, foliis pinnatifidis, lobis dentibusque in spicis lutescente, albis, desinent. Inferne glabruiscul, superne et præcipue partibus novellis arachnoid. Involucrum ovat, squamis spinosis externis foliaceis, floribus tubulosis læte citrinus. Stylus stigmatibusque læte luteis longe excertis. In vinetis. Candehar. Flores odorat.

640. Centaureoides.—Planta basi suffruticosa pedalis vel sesqui, canescens, foliis infer pinnatifidis superior dentatis tantum. Involucro ovato, squamis membranaceis, inermibus albis supra med membranaceis, interior apice reflexo utrioque piloso plumoso. Flores pallide purpurea.
Exceedingly common in fields, etc. Candehar.

641. Graminea!—Basi decumbens, 3 pedalis. Panicula subovate erecta. Along water cuts. Candehar.

642. Fici sp.—F. Carico affinis, arbuscula. Capitulis. Solitariis axillaribus, bracteis majusculis. Gemmis conicus, fructu depesso ? In hortis. Candehar.

643. Jasmini sp.—Frutex scandens ? Foliis pinnatis, floribus albis, sepalis setaceo. acuminatis, odore proprio generis. In hortis Candehar.

644. Rosæ sp.—Flowers extremely fragrant, dry or fresh. In hortis Candehar.

645. Rosæ sp.—Flowers whitish, much less fragrant. In hortis Candehar.

646. Iris sp.—Fol. ensiformibus. Bracteis spathaceis, margine membranaceis, approximatis. Flores ampli pulchre suave odori sub Heliotropii. Perianth ad apicem columnæ ovarialis Cupulum viride coalitum. Laciniæ exterior, unique canaliculato, (yellow cream coloured) fusco venoso, lamina rotundata subundulato-lutescens, venis fusco lividis, margine reflexis interior erectis, undulatis, ungue breve lutescente, lamina livido purpurascens, venis concoloribus base orios luteis. Styli ramis bipartitis, dorso fuscescens. Antheræ maximæ, luteo ochroleucæ.

In Hortis. Candehar a beautiful species.

647. Salici sp.—Arbuscula elegans, very generally planted along water cuts. Frequently liable to deformation. Candehar.

648. Leguminosæ—Vicia ?—Caule basi decumbente angulato, floribus albis.

In agris. Candehar.

649. Pomacea ?—Arbuscula elegans, foliis tremulis *acerinis* subtus albo suavis. In hortis Candehar.

650. Dauci sp.—Herba 3 pedalis robusta. Radix intus lutescens, floribus albis, antheris carneis; raro ? Cult. in agris. Candehar.

651. Cuscuta ?—Candehar, in agris.

652. Graminea —Is it not Rye ? Crops very luxuriant. Candehar.

653. Zygophylli sp.—Basi suffrutic valde ramosa, glaucescens carnosa, fructibus deflexo pendulis, sepalis petalisque leviter incurvis his, apice albis cæterum, miniatis, uti, filamentis et antheris, fialm apecibus albis exceptis, pistillo incluso.

In vinetis. Candehar. Common.

654. Umbelliferæ.—Pedalis. Herba basi decumbens in centro umbelli, massa gummosa rubra; floribus majusculis, albis.—Petalis carinatis et intus incurvis. Antheriis carneis, ovariis processibus cellulosis inflatis subreniformibus tectis. In agris. Candehar.

I consider the structure of the petals as indicating a tendency to become stamina, hence, and from the large disk, we may expect polyandrous plants of this order.

655. Umbelliferæ.

Planta annua ramosa, floribus albis, umbellis non patenti-

bus, fructibus echinatis. Stam 1-4. In agris, Candehar. Common in some places.

656. Papaveris sp —Herba 2-3 pedalis, rheaædes. Petalis rubro sanguineis. In hortis. Candehar. Stigma operculatum secedens.

657. Compositæ-Ligulata.—Herba erecta glauca, flosculis lutescentibus. In agris, Candehar.

658. Chenopodii sp.—Basi suffrut. carnosum. In ruderatis, Candehar.

659. Thesioides.—Glaucescens, erect, floribus lutescentibus. Chummum, Candehar.

660. Nasturtium.—Pungens acerb. In aquis lene fluentibus. Candehar. Quettah etc.

661. Andropogon.—Gramen 4-5 pedalis. Panicula effusa, ramis inferior nutant. In vinetis, Candehar.

662. Chenopodiacea?—Herba ramosa, albescens erect, floribus inconspicuus. In vinetis, Candehar.

663. Setaria.—Basi decumbens, spica viridis erecta. In vinetis Candehar.

664. Alisma.—Subaculis. In wet ditches. Candehar.

665. Lepidioides.—Pungens, in agris. Candehar.

666. Junci sp.—Rigid erect cæpitos. Chummum, Candehar.

667. Gramen.—Basi decumbens 2 pedalis. Panicula subeffusa. In vinetis Candehar.

Also Verbena officinalis, or a very nearly allied plant.

668. Typhæ sp.—Not seen in flower, 5 pedalis, foliis angustis erectiusculis, in wet ditches. Candehar.

669. Centauræ sp.—Varians quoad humiditat a 1 ad 3-4 feet. Ramosa, foliis inferior pinnatifid squamis in spinis robustissimis patentibus, vel recurvis productis, flosculis purpureis. In wheat fields, waste spots. Candehar. Is a thorny plant more perfect than an unarmed one? why is this division so generally furnished with means of defence? Dry climates, thinly vegetated, have five out of eight plants, spinous.

670. Ceratophyllum.—Immersus, in aquis stagnant, vel lene fluent. Candehar.

671. Malvæ sp.—In gardens Candehar.

672. Malvacea.—Cano albidem decumbens, in ruderatis. Candehar.

673. Platanus-Chenar.—Cortice lamellata alba. In gardens. Candehar, a small tree.
674. Fraxini sp.—Benowsh. Arbor mediocris, non conspicua. Corona rotunda. One of the most common trees about Candehar (Cult.)
675. Viciæ sp.—Laxa subscandens, floribus lutescent. In agris Candehar.
676. Junci sp.—Cæpitosa, banks of cuts Arghandab.
677. Sedaceum.—Foliis arctissima rosaceis, resembling a rosette. Panicula ramosa erecta, floribus carneis, foliis sæpius rubescente brunneis. Barren hills Arghandab, throughout Khorasan, also on shingle.
678. Echinops.—Spithamæa vel pedalis; glauceo argentea, flosculis albis. On limestone rocks, Argandab. Varies much in stature.
679. Gramineum.—Banks of cuts, Argandab, basi decumbens.
680. Carduaceæ.—Cano tomentosa capitulis magnis, spinis purpurascentibus. Candehar. Argandab, in rupibus.
681. Euphorbiacea.—Erecta canescens. In agris Candehar.
682. Plantago.—Depressa in arenam fere recondita, rosacea. Sandy banks of Argandab.
683. Gnaphalii sp.—Erecta cæspitosa, cano alba. Banks of cuts. Argandab.
684. Verbena.—Cultivation in Argandab. Candehar.
685. Composita.—Ligulat qasi decumbens, floribus luteis. Sandy banks of Argandab.
686. Trifolii sp.—Dense cæspitosa, floribus rubris. Sandy banks. Argandab.
687. Poa sp.—Spicis rubro tinctis. Sandy banks of Argandab
688. Gramen. Panica. Decumbens cæpitos in agris Lucerne. Candehar.
689. Cyperus.—In agris. Candehar.
690. Vitis.—In vinetis, Candehar.
691. Cerasi sp.—Arbuscula. In hortis. Candehar. *Rhett* varnac.
692. Umbellifera, Sium.—Erectum 3 pedali, floribus albis. In paludosis locis. Candehar.
693. Borragineæ.—Erecta ramosa, floribus albis. In vinetis. Candehar.
694. Salix sp.—Arbuscula, Candehar, cult.

695. Leguminosa.—Joussa. Floribus purpureo sanguineis, very common on all sandy plains. Hindustan and Khorasan; it is called Shootur karii.
696. Rubiæ sp.—Cult, about Candehar. Quettah etc, floribus luteis.
697. Cyperus.—In paludibus. Arghandab 3 pedalis.
698. Veronicæ sp.—2 pedalis, foliis subtus purpureis, floribus cæruleis. In paludibus Arghandab.
699. Filicis.—Limestone rocks. Arghandab, the 2nd Fern in Khorasan!
700. Centaureoides spinosa.—Fruticulus dense ramosus glaucescens, floribus stramineis. Rocky hills Arghandab.
701. Salsoloides.—Suffrutic basi ramosis armat, foliis linearibus summis in bracteis abeunt spinosis. Sandy banks near Arghandab. Cattle eat it greedily.
702. Cyperacea.—Near Arghandab in agris.
703. Samolus Valerandi. Glaucescens, floribus albis. Arghandab banks of cuts.
704. Gramen.—Glauca dense cœspitosa, on limestone rocks, Arghandab very common.
705. Dianthoides.—Frutex dense pulvinatus, floribus carneo lilacinis, a beautiful plant common on rocks. Arghandab.
706. Gramen.—Panicum. Decumbens spiculis brunneo tinctis, sandy banks of cuts Arghandab.
707. Chenopodii sp.—Sandy fields Arghandab.
708. Solani sp.—Floribus albis, nigrum? Arghandab; in fields.
709. Malvacea.—Tota dense albo tomentosa, corolla alba rotata. Waste places, as graves, and shingle. Candehar and Arghandab.
710. Gramen.—Repens, cæspitosum, pedalis, glaucam papillis asperum, spiculis albis; foliis pungentibus Banks of Turnuk river.
711. Composita-Centauroides.—Depressum spinosum, floribus lutescent. Banks of Turnuk. There is near the same place a curious Species of Salsola foliis coriaceo carnosis spinis abeuntib *cordatis*! of this I saw one specimen which is lost.
712. Mespeli sp.—Aloo?—Arbuscula, cult. Candehar.
713. Mirabilis —Certainly a distinct species, flower crimson. Cult. Candehar.
714. Pinus-P. longi folia aff. *Cheer*.—A young specimen, with the

usual habit, ramis subverticellatis ascendentibus, fol. ternis, plano-convexis. conis ovatis. subsessilibus. areolis elevatis centro sphacelato areolatis.

Cult in the garden of a mosque. Candehar.

715. Composita.—Herba ramosiss. ramis flexuosis in spinas abeuntibus multoties dichotomis, cano pubescent, foliis caulinis squamiformib radicalibus. Succus lacteus amarus. Anthodiis solitariis axillac. cylindraceis, floribus citrinis, common in gravelly plains, 2nd March from Candehar.

716. Salsoloides.—Basi fruticosa decumbens, carnosa glauco cæsia, foliis cordatis ovatis, nucronatis valde carnosis, univeniis, vena decurrent, floribus solitariis ex axilla bibractea ovate cymbiform demum cordata, bracteolis binis suffult, his demum sub globosis calyce ovato clauso, demum admedio versus, et ad basis laciniaram quasi annulo notat, ex annule processusbus 5, vel tot quot sepala membranaceis, striatis, margina denticulatis viruntur.

Near 2d halt from Candehar, in sandy ground, also bed of Turnuk near Candehar.

717. Composita.—Cana ramis decumbent lateralibus basilaribus fere prostratis, capitulis luteis, odore aromatico. Terebinthac fortissim. viscos. gratissim. Near Turnuk river, June 30th, not very common.

718. Incerta.—Annua ramosa ramis decumbent patentibus, fol. subulatis teretibus, tota glauco cæsia Antherarum globulis læte rosaceis, membranac canosis. Common in sandy spots towards the Turnuk in ravines, actually colouring the ground ; a beautiful plant in groups. The third species, of which the first is the Portulacea vestita, the 2nd the following.

719. Ejusdem generis.—Glauco alba velutina foliis inflorescent ampliatis concretis, flos solitariis e sinu cujusque, albus, foliis carnosis mucronatis, vel apice teretibus, ramis flexuosis. Antherarum globulis albidis scariosis.

Cum præcedente in locis arenosis, a very distinct speceis, leaves of inflorescence opposite and connate, not alternate as in the præceding.

720. Rutacea.—Basi fructicosa ramosa, quasi sali incrussat, foliis quasi semitortis, floribus solitariis, ex axillis pedicellis, brac-

teatis bracteis summis anthodii in more dispositis, sepalis his majoribus. Petalis æstivat imbricatis. Corolla subcampanulat dispositis. Stam oo hypogynis.

Intimis præcocioribus, exterior in æstivat deorsum in curvatis, (stylis 5) antheris demum labentibus? flowers carneous In raviney stony ground, with Artemesia, Centaurea spinosa. and Salsola aphylla, not uncommon.

721. Frutex humilis sub spinosus cortice alba, foliis minutis obovatis vel spathulatis, fasciculato, floribus cernuis minutis albis tincto, duplice modo 3 alato coccineo, pendulo. More Polygoneari. Banks of dry nullahs near Turnuk, also at entrance of Bolan Pass.

721*a*. Enonymus spinosus, frutex dense ramosus 5 6 pedals, fol. lineari spathulatis, fructibus carneis, roseo punctulatis, 3 lobis. lobis centro dehiscent, vesiculosis unispermis. Semina transverso brunneo.

722. Tritici sp.—Aggregat erect gracilo, spiculis distichis. In agris, Turnuk banks, Khilat Gilzee.

723. Phalaroides.—Humifusum, foliis distichis spiculis griseo viridescent. In arenosis Turnuk, Khilati Gilzee.

724. Astragaloid.—Griseus humifusus, petalis stramineis, calycis dentibus viridibus, legumin, vestitis, Turnuk banks, in arenosis.

725. Scirpus.—Cæspitos, fol. unico canaliculato, culmo subulato panicula secunda bractea, subulato; panicul æquant. In agris Khilati Gilzee.

726. Rumex.—Fol. oblongis sub undulatis, floribus viridibus Khilati Gilzee. in aquosis.

727. Chenopodium.—Depressum, glaucum, floribus lutescent. In arenosis. Khilati Gilzee.

728. Polygonum.—Ramosum erect, caule rubro maculato, foliis subtus glaucis, macula atro virida lunata, undulatis basi versus, floribus carneis, Turnuk banks, Khilati Gilzee.

729. Loloides.—Humifusa, glauco cana, floribus subumbellat paucis nutant aureis, Leguminibus pendulis, venosis compressis, secus placentam *dorsalem* carinatis. In arenosis Khilati Gilzee.

730. Centaurea.—Ex axi una, caules plurima erecta pedalis vel $1\frac{1}{2}$,

foliis glaucis pinnatis, anthodiis ovatis, squamis recurvo patent, floribus lilacinis, Khilati gilzee in gravelly or sandy ground.

731. Menthæ sp.—3 4 pedalis herbacea, canescens, spicis densis, floribus pallide cæruleis, Along Turnuk and it cuts. Khilati Gilzee, common throughout Khorasan.

732. Cochleariæ sp.—2 4 pedalis, foliis serratis sub coriaceis, floribus albis, siliculis sub obcordatis, along the Turnuk in sandy soil.

733. Carduacea.—2 3 pedalis, foliis radicalibus depressis, coriaceis pinnatifidis, spinosis subtus albo lanatis, inflorescentia lato paniculata, anthodiis ovatis, cano viridescent, spinis recurvo patent, floribus albidis. Gravelly ground Khilati Gilzee.

734. Punica Granat. Candehar.

735. Rhus sp.—Arborea. In hortis. Candehar.

736. Cuscutæ sp.—Floribus albis, Candehar.

737. Panici sp.—Cult near Shairi suffa.

738. Salsoloides luteiflora.—Frutex 2 pedalis dense ramosus floribus ochroleucis. Fort Khilati Gilzee on undulated shingly ground.

739. Salsola aphylla.—Intricat ramosa, 3 pedalis glauca not very common.

740. Vitex species.—Frutex 6 pedalis, flor purpureis along Nullahs to Turnuk, very common in one place.

741. Gramen Triticoides.—Shairi suffa, near Turnuk.

742. Incerta.—Floribus inconspecuis spicatis, fol. fasciculatis spinescent. This is the Pulvinate muscoid shrub of near. Quettah Turnuk in sand.

743. Salix.—Arbor parviuscule ramis inferior laxuisculis. Julduck. Cult, one of the few trees of Khorasan.

744. Cuscuta.—Intricate nexa, fuscescens, floribus albis dense glomerulis Jullongeer, Julduck. Sandy ground formerly cultivated.

745. Aurundinoido.-Agrostid 3-4 pedale, fol. distichis. Paniculе subovata, laxiuscula fuscescent, virid julduck, Khilat along the Turnuk very common. Habitu Arundinaceum.

746. Sioides.—Cæspitos. Pedale, florib, albis. Ditch of old Candehar.

747. Cyperacce.—Ibidem 2-3 pedalis.

748. Composita.—Pulicoides. Erect ramos 2 pedalis capitul inconspicuis luteis. Ibidem.
749. Sioides.—Præcedente altior. Ibidem.
750. Panicum —In vineto. Candehar, one specimen.
751. Chenopodii sp.—In agris Candehar.
752. Cyperacea.—Spiculis viridibus, old ditch Candehar.
753. Alismacra.—Panicula amplissime. In ditches Candehar.
754. Lemena.—Old Candehar Ditch.
755. Carduaceo Carthemoides.—Herbacea 1½ pedalis spinosa verisimiliter glaucescens anthodio ovato cylendraceo spinosissimo ovato spinis erectis, flosculis lutescent. Antheris purpureis. Common on shingly undulated ground. Sir i Asp.
756. Scrophularineæ.—Linaria. Herba pedalis gracilis glauce, fol. lincaribus, floribus albidis. Shingly grouud Sir. I Asp.
757. Scrophularinea.—Scrophularia or Linaria 2-3 pedalis ramosa, foliis linearibus parvis, inconspicuis stramineis. Shingly ground Sir I Asp.
758. Verbascum.—Erect 4-5 pedalis floribus luteis. Shingly ground, Sir I Asp.
759. Eryngium.—Caules erecte plures ex axi uno albi lucide, foliis coriaceis venis albis, umbellis simplicibus, involucro foliaceo 5 phyllo cinct, sessilibus, floribus abis. Common in shingly ground. Sir I Asp, Kojhuk Pass.
760. Composita Carduacce.—Cæspitosa basi fructicosa foliis, *radiculibus* petiolatis suborbicularibus coriaceis, cano albis, spinoso dentats, caulinus decurrentibus. Anthodius ovatis villosis, flosculis luteis. One march beyond Sir I Asp, in shingly ground Khojuk pass, and generally at elevations of 4000 ft. ?
760*a*. Equisetoides ramis sub fasciculatis, cylindraceis striatis ad articulis, vagina triloba (e foliolis 3, univeniis) circumcinctis, fructibus solitariis subsessilibus, transversis vel erectiusculis, squamis imbricatis carnosis baccatis rubris quasi immersis, squamæ subrotundæ, sæpius decussatæ vel ternati verticellatis. intimæ majores, extimis minutis. Semina bina, vel terna in axillis squamar, intimar, ovatæ subacut intus planiuscule, extus convexa, nigro brunnescente nitidiuscul, erecta; hilo punctiform mammille alba inconspicua ad apicem, tegumento bina

exterius coriaceum, internis membranaceo-apiculat fuscescens apicule micropylei exserta. Embryo carnosus in albuma carnosum, pendulum secus axim reforma, lineæ structura et aspectu difformi.

Ephedræ affinis, certæ Gymnospermis.

761. Umbelliferæ ?—Spinescens, vestita, uncialis vel ramosa fructibus bilobis, bicornutis.

Sandy ground, on plains. Noorook.

762. Labiatæ.—Leucades.—Herba ramosa lanata alba aromatic. Floribus rubris.

Calyce clausâ lanata immulata 5 venia condita, reliquis rudimentariis, basi subangulata. Semen erectum, tegument tenui membranac. Cotyledones carnosæ, albumenos, alb. nullum. Nucibus solitariis ovata oblonga punctulata, utrinqe vasc notat. Sandy ground. Noorook.

763. Silenacea ?—Cæpitosa fruticosa ramosissim. fol. basi connatis adpressis liniaribus.

Panicula gracili ramosa, capsulis rotundatis adpressis. Calyce basi cinctis.

Shingly ground. Noorook also, all along the Turnuk river.

764. Composita.—Carduacea. Erecta annua 3-4 pedalis simplex inflorescentia ramosissima divaricat. Anthodio ovato, spinis recurvis, flosculis lilacinis, foliis tenuiter pinnatisectis. In shingly undulations. Noorook, not very common.

765. Boraginea.—Frutex, asclepiadeo habitu, decumbens vel suberect, foliis glauco albis, floribus solitariis in axillis, corollis non visis, calyce valvatis. Shingly ground, Noorook, et alibi.

Eremostachyo affine.—Akeniæ vel nuces compressæ, intus trigonæ, angulas acutis apice oblique truncato, albo piloso, brunnia, tegument carpello adhærent tenuibus. Embryone ordinario. Noorook, in Shingly ground.

766. Plantago sp.—Habitu P. mediæ, foliis sub undulatis spicis erectis sub cylindraceis. In Swards in damp spots. July 1838.

767. Matthioloides.—Frutex 1½ pedalis ramosus canus, floribus fusco lutescent, siliquis elongatis, rostratis, compressis, valvis e basi secedent, Semina plura compressima membranaceo-marginat. Cotyledon marginibus in radicula replicato applicetis.

In ripis. a Nullah, along, the Turnuk.

768. Composita Prenanthoid.—Herbacea robusto ramosis, foliis linearibus ratione plantæ fere obsoletis, anthod cylindraceis, longe pedunculatis, totas paniculam ramosissimam effomant, flosculis luteis, dorso stramineis, brunneo pallide venosis. Akeniis cylindraceis striatis elongatis, pappo setaceo, lanato plumoso inæquali. Sandy banks, Turnuk valley, July 9th.

769. Composita.—Herbacea depressa, anthodiis ovato-conicis, flosculis citrinis.

Turnuk banks of.

770. Cuscuta.—Gracilis lilacino purpurascens, floribus racemosis lilac purpur. Corolla companulat, Tajee along cuts.

771. Polygoni sp.—Nutans, foliis oblongis, floribus roseis, spicatis. Cuts Turnuk, Tajee.

772. Charæ sp.—Cum præcedent very common.

773. Potamogeton sp.—Immerso graminifol.

Cum præcedent. Cum præcedent.

774. Secaloides Gramen.—Cæspitos, spica viridis, erect, culmus gracilis, banks of cuts, and of the Turnuk Tajee.

775. Composita, Carduacea.—Herbacea ramosa, foliis pinnatifidis, anthodiis ovatis, spinis recurvis, antheris rubro sanguineis, flosculis citrinis. Shingly valley of Turnuk throughout.

776. Composita.—Frutex, in extricat ramosus, ramis ramulisque in spinis abeunt, cortice dense pubescent alba, foliis ovatis sessilibus, organa foliacea additiona linearia, obtusa utrinque secus medium longitudinaliter axi ad natis. The curious bodies although in the branches obviously distinct from the leaves, are nevertheless decument portions, this is seen in the young branches in which they are continuous.

Two are attached on either side of a ramine leaf, they are unequal, and are only connected with the leaf by the line with which their line of attachment is continuous. Shingly valley of Turnuk, commonish.

777. Loti sp.—Decumbente prostrat ramosa, foliis carnosiusculis subglaucescentibus, floribus umbellatis inclusis aureis, demum coccineis. Leguminibus Cylindraceis. Turnuk banks, in swardy spots, common, a pretty plant.

778. Ranunculi sp.—Minima stolonifera, foliis cordato oblongis, apice grosse dentatis, carnosis. Calyce. Patent petalis lucidis.

Sepalis minoribus aureis. Sandy half inundated spots Turnuk, July 1th.

779. Junci sp.—Annua valde ramosa. Cum præcedent.

780. Cyperacea.—Subglaucescens, spiculis viridi fuscescent. Cum præcedente.

781. Cyperacea.—Spiculis globosis atratis. Cum præcedente.

782. Junci sp.—Cum præcedente.

783. Cyperacea.—Caricis sp. Spicis fuscescent distichis. Cum præcedent in aquosis.

784. Junci sp.—Cum præcedentibus.

784*a*. Composita.—Annua erect. foliis linearibus sub carnosis radio purpurio, disco lutescente. Cum præcedent.

785. Cyperus.—Prostratus radiat spiculis e virida atratis. Turnuk, banks of wet sand. It is very nearly allied to the C. fuscus? of Bootan.

786. Cyperacea.—Repens cæspitos, fol canaliculat, scapo triquetro, squamis scutiosis, In aquosis Turnuk.

787. Cyperaceæ.—Cæspitosa in aquis stagnant, ibidem.

788. Alisma.—1-2 pedalis foliis longe petiolatis limbo ovato oblongo. Panicula amplissima, floribus minutis petalis carneis. In agris stagnantibus. Turnuk, July 9-10. Common.

789. Sparganii sp.—3-4 pedalis gregarii, fol. subtrigones specis fæmineis globosis.

In ditches, Turnuk valley very common.

790. Junci sp.—Caule $1\frac{1}{2}$ pedalis glumis fuscescentibus gregaria, Cum præcedente, common.

791. Labiata.—Basi fruticosa, aromatica, in partibus novellis canescens, calyce purpurea fuscescent. Cor. bilabiat, lab sup 4 lobo, infer, integro, ambobis semi reflex. Stam 2 porrect. In ravines of mountains along the Turnuk July 9-10.

792. Leguminosa.—Cæspitos dense prostrata, floribus pallida, cæruleis. Turfy spots. Turnuk July 9-10.

793. Epilobii sp.—Sub canescens, floribus parvis, rubescent, variat magnopere statura in locis idoneis, 2 pedalis, ramosa in arenosis sterilibus vix spithamea. Turnuk banks, July 9-10.

794. Equisetum.—Caule laxiusculo, bank of cuts. Turnuk July 9th. Not common.

795. Composita Carduacea.—Caule $1\frac{1}{2}$ pedale, foliis cano albidis

spinosis decurrent, squamis involuc foliaceis, reflexis, flosculis amplis rubris. In ravines of mountains. Turnuk 9-10.

796. Crucifera.—Foliis rosaceis runcinatis siliquis teretibus longe rostratis, floribus purpureis. Petalis patentibus. Turnuk sandy banks.

797. Polygonum.—Prostrat. fol. undulatis medium maculatis, floribus carneo albis. Sandy places. Banks of Turnuk July 9-10.
Cum Centaurea cyanea, C. magnispina, Dipsacus, Glaux, Scabiosa montanum.

798. Veronicæ sp.—V muscoides Repens depressa, floribus carneis, foliis carnosis. Cum præcedent.

799. Epilobii sp.—4 5 pedalis. Cano tomentos, floribus amplis sanguineo. Banks of cuts, Turnuk, July 9-10.

800. Artemisiæ sp.—Erect caules plures ex axi una, erecte capituli subhæmisphærcis, disco aureo. Banks of the Turnuk, commonish, but eaten down to the roots by camels.

801. Composita Asteracea.—Herbacea erecta 2 3 pedalis ramosa. radio lilacino, disco luteo. About cultivation, Cushmi Shadee.

802. Gramin.—Rigidum decumbens, spiculis viridi fuscescent. In aquosis Mookhloor.

803. Gramin.—Cum præcedent.

804. Triglochin.—Vide Icones It. Affgh. Pedalis vel sesqui, pedalis, foliis subulatis sub teretibus, petiolis basi dilatatis, mirgina membranaceis. Racemo erecto filiformi.
In aquosis turfosis. Mookhloor.

805. Umbellifera.—Ramosa caulescens $1\frac{1}{2}$ pedalis. Petalis ochroleucis sordide. Mookloor.
Limestone conglomerate. Pastinacei aromat.

806. Umbellifera.—Glauca canescens, foliorum limbo subobsoleto petalis luteis. Mookloor, Cum præcedent.

807. Rutacea.—Suffrutex ramos, fol. glaucis. Inflorescentia axibus glandulosis, luteis. Petalis luteis. Mookhloor cum præced. Umbellifera alia adest, humilis robusta, umbellis magnis. Seminibus alis pluribus maximis alatis.

808. Urticea.—Bæhmerioid. Cæspitos canescens. In crevicis of same rocks.

809. Labiata.—Dense cæspitosa, glanduloso viscosa perfragrans, floribus albidis, lab inferioris sanguin. Cum præsed.

810. Composita.—Basi suffruticosa glauca, anthodiis reflexis demum in statu juniori subcylindraceis, floscul non visis. Mookloor on rocks.

811. Caryophyllacea ?—Frutex, dense pulvinatus, ramis albiscent› foliis glaucis, spinescent, per rigidis, capitulis aggregatis, floribus albis.

Mookhloor on limestone rocks, the same genus as Dianthoides. ?

812. Populusa mygdalacifolius.—Arbor mediocris, corona ordinaria. Mookhloor along water, common as willow.

813. Astragali sp.—Humifusa cæspitosa calyce rubro punctulato, corolla sanguineo lilacina, in turfosis humidis, Mookhloor.

814. Composita.—Depressa, foliis adpressis humo. Capitulis sub immersis, flosculis luteis radii et disci. Common in turfy spots, from Gogham to Mookhloor.

815. Typhæ sp.—Foliis longis angustis, longe vaginant spathis deciduis, axi flor. masc. persistent indurata. Mookhloor, very abundant.

816. Echinops.—Statice. Erect 2-3 pedalis ramosus. Capitulum præsertim hæmisphær. super. spinis longis, radiantibus armat. flosculis cæruleo cyaneis. Margins of fields Jumrat.

Adest in campis versus Jumrat.

817. Dianthoides. Staticina species prima similes sed robustior, tota cano velutina, floribus carneis. Plains to Jumrat, not very common.

818. Staticoides.—Frutex humelis dense pulvinatus, foliis regidissimis, spinosis, spicis elongatis, floribus pauce aggregatis in axillis bractearum membranacea carneis hypocrateriform. To Jumrat in Plains.

819. Crucifera.—Decumbens basi suffruticosa, floribus minutis albis. Siliculis late ovatis. Compressis. Sandy ground. Mookhloor. Scarce. Karabagh common.

820. Compositæ —Annua spithamæa cano glauca, involucris angulato plicatis, flosculis ligulatis luteis. Karabugh.

821. Statice.—Decumbent depressa, (cauline foliation Tamariscinoid,) paniculæ ramis secundi flores, floribus pallide purpureo cærulescens. Sandy plains to Karabagh not common.

822. Astragalinus.—Muscoideus dense cæspitos, canescens, flori-

bus pallidissima cæruleo tinctis, vexillo saturatione lineato. Carina, apice lilacina. Swardy spots to Karabagh.

823. Labiatæ —Basi suffrutic (as all the others) cæspitosa semet. Canescens, floribus albis, labio inferior, cæruleo basi sanguineo punctulato.

Rocky hills near halting place.

824. Andropogon.—Dense cæspitos glaucescens, spicis erectis binatis, cum præcedent.

825. Campanula.—Fruticosa. Cano alba, ex axi dense ramosa. Corollis rotato campanulatis, cæruleo lilacinis.

Cum præcedent.

826. Chenopodiaceæ.—Basi suffrutic 3-4 pedalis ramosa cæspitosa, niveo tomentosa, floribus spicatis, vel glomeratis in axillis lunatis odor subo. Cum præsed.

827. Malvæ sp.—3 pedalis. Canescens erect ramos, floribus medio cribus lilacinis, carneis venosis. Pet, cordatis. Along cuts-Ghuznee.

828. Artemisiæ sp.—Erect 3 pedal canescens capitulis unilateralibus subcernuis, along water cuts. Ghuznee Commonish.

829. Poæ sp.—Pedalis basi decumbens. Panicule effusa subovata, spiculis fuscescent, about fields Ghuznee.

830. Umbelliferæ.—2-3 pedalis, erect odor Pimpinella umbellis congestis, floribus albis. Cult. Ghuznee.

831. Chenopodium sp.—Humilis ramosa, glauca, floribus viridescent In cult. Ghuznee.

832. Orobanche sp.—Pedalis vix ultra, omnino floribus cæruleo azureis exceptis fuscescens, pubescens. Alabastris fuscescent. Cor. bilabiat, tubo compress, ambitu sub trigono, angulo infimo bisulcato, pubescens, labiis, reflexis, palato bilineato albo tomentoso. On a species of Cucumis, which had been completely eaten up except base of stems, a handsome species growing in clumps.

833. Solanum.—*Bangum*. Floribus cernuis amplis, cæruleo purpureis Cult Ghuznee.

834. Celosiæ sp.—Cult Ghuznee picked up on the road.

835. Graminea.—Decumbens gracilis panicule effusa, divaricata, tenuis, spiculis viridibus, banks of cuts Guznee.

836. Malvacea.—Corolla ochroleuca, basi sanguinea. Ghuznee Cult.

837. Cicer arietinum.—Cult about Karabagh.

838. Astragali sp.—Humilis fructicos cano alba, floribus luteis. Karabagh and generally from heads of Turnuk valley common.

839. Glyceriæ sp.—Banks of springs. Chushma i Shadee.

840. Plantago.—P. majori similis. Wet places Chushma i Shadee to Ghugnee.

841. Trifolii sp.—Cult perfragrans, florib purpureis alabastris albis, humifusa, laxa succulent Ghuznee. Karabagh, Mookhloor.

842. Leguminosa.—Fruticosa basi, prostrata, legume moniliform. Ghuznee in sandy plains.

843. Rutacea.—Frutex fragrans, fructibus echinatis, Ghuznee, in plains.

844. Leguminosa.—Decumbens, cano albo, floribus vexillo lutescent brunneo-venoso carina purpur. Ghuznee, sandy plains.

845. Malvacea.—Cano hirta, Corolla ampla alba, (petalis obcordatis bilobis) sub infundib campanul. Involucro cyathiforma, 6-8 partitis.

Banks of river Ghuznee.

846. Arundo sp.—In aquis stagnant, culmo exserto, 5-6 pedalis, folii s rigidis planis, unifariis, panicula (immaturum) sub natans, fusco tincto. In palludib, Ghuznee.

Mooklhoor, et secus Turnuk.

847. Cyperacea.—Aquatica, culmo emerso 3-4 pedale obtuse trigono, panicule lateral, folio terminal, longior. Culmo immers. teretiuscul.

In palludibus Ghuznee.

848. Composita.*—Frutex in extricato ramosa, varians e spithamæa ad $2\frac{1}{2}$ pedalis, ramis angulatis cortice alba, folia singularia, subligulata, decurrentia primo (subsequently the decurrent parts become separated from the limb, remaining attached to the stem in the form of two oblong linear bodies attached along the centre) fol. infer runcinato pinnatifida. Capitulis axillaribus, solitariis sessibus, cylindraceis, flosculis ligulatis paucis sub quaternis luteis.

Common all over Khorasan, in gravelly or shingly plains, very common toward Ghuznee.

The flowers resemble much certain 4 partite corollæ? this

* Composita foliis dislocatis of the Private Journal p. 382, 387, etc.

and some others obviously tend to the usual *discrete* structure in the invariable definity of the floscules.

849. Dianthi sp.—*Subacaulis*, foliis cæspitosis linearibus sub pungentib, ramis unifloris. Calyce longissimo cylindraceo. Petalis fimbriato capillaceis, laceris albis, demum sordido lilacinis.

Gravelly ground Shusgao.

850. Scutellariæ sp.—Cæspitosa fruticosa humilis, sub viscoso glandulosa, floribus erectis, tubo viridescent, lamina purpureo sanguineo. Hills Ghuznee, Pass to Shusgao, common.

851. Aristidoides.—Culmo 3 4 pedal. Panicula ramis cernuo nutant, fuscescens. Pass to Shusgao.

852. Thymi sp.—Frutex in cæspitibus densiusculis, humilibus calyce cylindraceo striato, labio superior, apice reflexo, inferior deflexo, color albido cæruleis, fauce obscure maculat. Shusgao Pass. Perfragrans.

853. Polygoni sp.—Humifusum, obscure, floribus carneis, Ghuznee. Karabagh, Shusgao.

854. Lotoides.—Decumbente prostrata, canescens; floribus luteis. Pass to Shusgao.

855. Boraginea.—Vix pedalis, hirto canescens, inflorescentia gyrata, floribus hypocraterif. intense cyaneis, tubo basi lilacino, pulchra species. Pass to Shusgao, one specimen.

856. Dipsacus.—Vix bruncialis in cæspitibus muscoidis densis, foliis canescentibus involucro simplici capitulo magno densifloro, floribus carneis suave odoratis, radii irregularibus. Shusgao pass, not uncommon.

857. Staticoides.—In pulvinibus hæmisphæricis densis, foliis acerocis pungentibus, floribus carneis.

Very common in Shusgao pass.

858. Spiræcæ faciæ sed minimum fructu, Frutex, fructibus sub baccatis deflexis ovatis rubis drupaceis, sapor carnis grato acidâ. Semen. ovatum unicum pendulum.

Tegument membranac radicula supera. Colyledones carnosæ, plano-convexæ, raphe fuscescent ad chalaz conspicuui-ramosa, ramis ad micropylem current fere. Sapor embryonis forte amar acid prussici. Certe Pomacea. Mahomods tomb.

859. Convolvuli sp.—Basi fructicosa, foliis lineari ligulatis, ramis. prostratis gracilibus, foliis linearibus, floribus axillaribus soli-

tariis, rubro carneis. Huftasya, gravelly undulated ground.

860. Vicia Faba.—Cult near Huftasya.

861. An Plantaginacea.—Frutex pulvinatis, basi valde ramosis cano pubescens, spicis ramosis terminalibus, floribus distantibus, inconspicuis, bracteis 3 foliaceis, obtectis tubo fuscescente oblongo ovato, lamina e laciniis, anguste dentiformibus, subradiatis albis. Slopes of hills shingly ground. Shusgao.

862. Polygoni sp.—Basi fructicosa, muscoidis, an idem cum 858, sed ramis quibusdam prostrat. flagelliformibus. Shusgao. Shingly slopes.

It either has or has not such branches.

863. Composita.—In dense circumscribed tufts. Reliquiis vegitationis anni præcedentis ampliatis. Caulis decumbentis vix ultra pedalis, foliis coriaceis oblongo spathulatis, lobis dentibusque spinosis. Anthod. involucro e foliis summis, biseriatis, intimis multo angustioribus minoribusque cinct, ovat, squamis exacte firmissimeque imbricatis, mucrone setaceo subreflexo, floribus forte adoratis subsuaviterque regularibus, lilacineo-carneis, exterior majoribus et castratis? Antheris florum interior albid carneis, foliis glauco albis. Anthod. squamis albo-tomentosulis medium supra. Dhunishere Pass. Base of hills Shusgao, not uncommon a beautiful species.

864. Umbellifera.—Pedalis foliis subradical, glauceis, anguste spathulatis, floribus luteis. Shingly slopes. Shusgao.

865. Labiatæ.—Annua erecto ramosa, foliis conduplicatis deflexo recurvis, floribus parvis, pallide cærulescent. Anth cæruleis aromat. tubo angusto.

Shusgao, shingly slopes, local but not uncommon.

866. Composita, carduacea.—Erect robusta subsimplex, 2½ 5 pedalis foliis infimis undique patente ascendent, vena crassa, lobis plerumque ternatis, lineari subulatis rigidissimis, spinosis, interno quaod venam decurrent, adsunt lobi minores lateralis directio loborum (taken altogether radiated) superioribus capitulos foventibus, ad venam spinosam, spinulusque lateralis redact. Capit sessilib. In axillis inferior. sæpius ternatis, summis binis vel solitariis *præcoliorib.* Anthod angusto ovato, squamis foliaceis in spinis longis rigidis desinent (abeunt) interior chartaceis lamina majora, flosculis pauciusculis albis, lamina erecta. Antheris exterior albis fusco-tinct, interior purpureis.

Shingly undulated ground towards Dhuni shere Pass, about Shusgao and Huft asya common.

867. Composita, Carduacea.—Robusta 3-5 pedalis, spinosissima ramosa, folia fere præcedentis. Anthodiis in ramulis solitariis. globoso-ovatis, basi latis squamis rotundatis spina recurva vel patent, subulata longa forte terminat, internis membranaceæ apice quasi truncatis, albis, floribus lilacinis. Antheris carneis Shusgao, Huftasya. Shingly undulated ground. Common.

868. Composita.—Carduacea. Pedalis, ramosa, fol. spinoso lobatis, decurrent, anthodiis globoso, ovatis e basi lata, spinis fortibus recurvis, radiatis triquetris, flosculis albis, antheris lilacino purpureis. Stigmat albis. Shusgao Ghuznee nearly allied to a former speceis, than which it is less common.

869. Labiatæ, Salvia.—(Horminum). Frutex humilis vix pedalis ramosus, foliis pinnatis.—Calyce venoso petaloideo, ore trumpet-shaped, Sanguinea. Corolla pallidior. bracteæ *ecoloratæ* Shusgao. Huft asya. Shingly bases of hills.

870. Composita.—Carduacea.—Robusta canescens 2 3 pedalis, foliis spinoso lobatis dentatisque, subtus niveis. Invol. e squamis lanceolatis foliaceis in spinis abeuntibus, sub arachnoideis, lato globosis, patentibus squamis intimis membranaceis albis, flosculis parvis purpureis.

Slaty hills among shingly, or angular fragments, common Huft asya.

870*b*. Cnicus grandis. On slopes.

871. Polygononacea.—Frutex humilis ramosus, fol sub coriaceis, floribus (withered) rubris nutantibus.

Cum præcedent.

Asphodelius mesembryanthif. Equisetoides Ephedra, Sedoides, Tulipa. Crucifera foliis coriaceis fuscescent, siliquis magnis, Thlaspes.

872. Composita.—Carduacea $1\frac{1}{2}$ 2 pedalis, ramosa, foliis decurrent; cum præcedent. Only seen withered.

873. Rutæ sp.—Basi fruticos graveolens, spithamæa, foliis glauco albidis glandulosis, floribus luteis parviusculis; gravelly ground Shekhabad.

874. Scirpus.—Rice fields Shekhabad.

875. Leontodonides.—Foliis depressis, common in swardy spots banks of Schneesh, Hyderkhet.

876. Composita *Lactucoides* sect. Humilis herbacea, flosculis læte cæruleis, swardy banks of Schneesh, Hyderkhet. Rosa, Salsola of Arghandab, Equisetum, Salix arborea diam 2 pedalis, Tamarix.

877. Zea maize.—Humilior quasi Hindostanee. Cult in irrigated fields, vally of Schneesh. Very common about Hyderkhet.

878. Populus.—Arbor 50-60 pedalis, corona oblonga, foliis tremulis. Hyderkhet, banks of Schneesh.

879. Salix sp.—Frutex 5-6 pedalis virgatissima in ramulis ultimatis, foliis angustissimis. Assumes the form of hedges, along the Schneesh, Hydekhet.

880. Quid?—Silenacearum vel affineo huic ordini, non obstant. Semenibus solitariis. Huftasya, shingly ground.

880*a*. ——— Herba annua, spithamæa vix ultra ramosa, foliis oppositis membranaceis, univenius, ramulis ultimis tomentosulis. Calyx imbricatis biseriatus, 4 sepalis, sepalis 2 exter, 2 inter scariosis lanceolatis, foliis similibus.

Petalis totidem exunguiculatis, brevioribus linear lanceolatis.

Capsula breve stipitata, ovata, membranacea, stylis 2 e basi paullo supra recurvo deflexis terminat, 1 locularis. Semen unicum vel duo erecta oblongo vel oblongo obovata, basi reniformi vel potuis angusta hippocrepidiformi echinatula, Tegumenta membranacea, concreta.

Albumen album farinacea centrale.

Embryo viridescens, curvatus circum albumen. Radicula teres, colyledonibus linearibus, $\frac{1}{3}$ brevior apice alba.

In shingly ground Cabul, not uncommon.

881. Salviæ sp.—Frutex humilis, more solito cano albus, fragrans, fol. basi pinnatifidis. In patches.

Micaceous hills Shekhabad.

882. Rutæ sp.—Basi frutic, plures caules ex axi una foliis, angustissimis, floribus luteis.

Cum præcedent, common. The same as 873? which is a poor starved specimen.

883. Hippuris sp.—Pedalis eflorif. in ditches, moist banks of Logurh, Shekhabad.

884. Santalacea.—Herbacea erecto, laxa glaucescens, floribus ochro

leucis, certainly distinct from the other species, with which it is as widely spread, although by no means so common. Swardy banks of Logurh river. Shekhabad.

885. Leguminosa.—Planta pusilla 2-3 uncialis. Among angular fragments. Cliffy rocks. Shekhabad.

886. Salviæ sp.—Herbacea vel basi suffrutic, foliis ovato lanceolatis, basi cordatis rugosissimis crenatis irregulariter. Calyce bilabiato. Corolla labio superior. Compresso arcuatissimo, cæruleo, inferiore irregulariter calceolariforme, obsolete trilobo albido, stramineo, calceole margine saturate brunneo fundoque brunneo punctato, viscosa aromatica.

Poplar groves. Cabul, with Ranunculus stoloniferus; Medicago, Epilobia, 2 Trifolium fragiferum. Thermopsis. Potentilla and Veronicæ 2 or 3.

887. Labiatæ.—Herbacea, laxa 3-4 pedalis, viscosa, floribus albis. In rose bushes Cabul.

887*a*. Rosæ sp.—Fruticosa. Ramis laxiusculis, spinis binis albis subrecurvo uncinatis utrinque stipulæ cujusque. Sepalis reflexis. Petalis albis, stigmatibus vix exsertis. Shady Poplar groves Cabul.

888. Bidens sp.—Herbacea erecta spithamea vel 2 pedal, flosculis luteis. Banks of cuts and wet places Cabul.

Thlaspi Bursa pastoris.

889. Silene sp.—Annua humifusa. Ramosa, foliis recurvato revolutis. Calyce clavato, flore ampliusculo, albo, demum fusco brunneo. Petalis bilobis. Sandy and gravelly spots, Cabul river, one specimen. Viscosa.

890. Gnaphalioides.—Cano lanata, flosculis fuscescent. Banks of Cabul river in sand.

891. Ononis sp.—Fruticosa 2-4 pedalis, variat. spinoso pubescente viscosa, floribus roseo carneis. Common in shady spots along the Cabul river.

892. Cyperaceæ sp.—Caules plurimi ex axi una, omnibus decumbent prostratis, spiculis viridescent, lateribus brunneo lineatis. In watery places Cabul.

893. Malvaceæ sp.—Prostrato decumbens. Maize fields Cabul.

894. Coricoidius.—Robust spinosus hirsuto lanat, involucro ovato globoso, squamis numerosissimis, spinis recurvo patent, apice diaphanis, floribus purpureis. Kilat Mahummud. Mydan.

894*a*. Tussilaginis facie in umbrosis aquosis; not in flower.

895. Labiata.—Stachydes. Caulescens 3 pedalis, laxa hirsuta calyce sub campanulato, ore patent, floribus carneis roseo-venosis, labio superioris oblique erecte planiusculo, lab inferioris lobo medio porrecto, obcordato lateral reflexis. Graveolens. In umbrosis, humidis. Cabul.

896. Aconiti vel Delphinii sp.—In umbrosis under, Poplars along banks of canals. Cabul.

897. Umbellifera.—Ramosa 1 2 pedalis, floribus albis, banks of fields Cabul.

898. Agrostidium.—Panicula effusa tenuis nutans. Borders of fields Cabul.

899. Andropogon.—1½ 3 pedal, spicis pluribus erectis e viridi rubescent. Banks of fields of Cabul.

900. Achillæoides majus.—Caule 1 1½ pedali, foliis pinnatis, pinnulis pinnatifidis, floribus aureis, odore Tanaceto. Cabul Mydan, etc. about fields.

901. Cynoglossoides.—2 pedalis, ramosa fol. oblongis, floribus azureis, fauce ½ clausa fornicibus, fructibus cernuis, in banks of fields, Cabul, cum Verbena, Chæmæydrys, Polygonum, Chenopodium et Cyperaceæ plures, Junci 2-3.

902. Panici sp.—Decumbent prostrat spicis viridibus in fields, Cabul.

903. Viciæ sp.—Decumbent prostrat floribus in axillis solitariis, vexillo stramineo, fusco indistincto venoso, cæteris albis. In maize fields, Cabul.

904. Zanthium.—In fields. Cabul, not uncommon.

905. Cyperaceæ sp.—Depressa, common in sandy or gravelly wet places. Cabul.

906. Boraginea.—Species formosa; floribus cernuis, azureo cæruleis, roseo venosis, Corolla infundibuliformi. Banks of fields Mydan.

907. Cicer sp.—Pedalis ramosis, floribus albis, cernuis. Cult at Mydan.

908. Panicum stagninum?—Spicis purpureo tinctis, common in rice fields Cabul, Shaikabad, Mydan, etc.

909. Cyperus junciformis.—Common in rice fields. Mydan Cabul.

910. Juncus glaucus.—Culmis dense cæspitosis, glaucescens sulcato striatis. In aquosis Cabul.

911. Cyperus.—Spiculis brunneo sanguineis. In oryzetis Cabul. Alisma, very common.

912. Polygonum Hydropiper?—Basi decumbens, spicis nutant pendulis, watery places, Cabul river.

913. Onopordoides.—2 3 pedalis, caule undique foliaceo biennis, involucro globoso ovato, spinis numerosissimis, erectis basi laribus recurvis, floribus lilacinis. Mydan. Cabul about fields.

914. Cratægi sp.—C. oxyacantho affine habitu et fructu, (which I have seen once arbusculoid) frutex, about hedges Cabul.

915. Oryza sativa.—Panicule erectiuscula, glumes viridibus arista rectiuscula alba. Cult. Shaikabad, Mydan Cabul.

916. Ammanniæ sp.—Erecta spithamœa, caule 4 quetro, floribus ternis in pedunculis, petalis sanguineis. Common in rice fields Cabul.

917. Bergioides.—Erecta hirsuta ramosa, floribus in axillis aggregatis albis.

Cumpræcedent common.

918. Coryli sp —Arbuscula cortice brunnea, fructum non visum. In hortis Cabul.

919. Tribuli sp.—Ramis a humo longe currentibus, floribus amplis luteis. In fields Cabul.

920. Euphorbiæ sp.—Humifuso radians glauca, foliis crenatis serratulis, involucro limbo albo, in fields Cabul.

921. Euphorbiæ sp.—Varians statura ex uncial. ad pedal. ramosis glauca, foliis obliquis, floribus viridibus.

922. Erythrææ sp.—Glaucescens erecta, 3 uncialis usque ad pedalem, floribus carneis.

In fields Cabul, local.

923. Composita.—Carduacea, erecto ramosa, lanata, foliis decurrent. Capitulo globoso ovato, spinis dilatatis recurvis vel patentibus, flosculis albis antheris purpureis stigmat carneis.

Çabul in fields.

924. Daphnaceo Santalacea.—Vide Icones It. Affgh.

925. Chenopodii sp.—Ramis lateralibus decumbent, fol. hastato deltoideis, carnosis spicis attenuatis, erectis. In fields Cabul.

926. Verbascum.—Erectum ramosum, 3 pedal glabrat, floribus aureis, stupo purpureo, species pulchre, inflorescente glanduloso e viscosiuscula.

About fields Cabul.

926*a*. Sinapis sp.—Monstrosity shewing the conversion of all the parts of a flower into leaves, and even of the ovula. Icones. et mss.*

927. Asclepiadea.—Cynanchi faci, erect plures caules ex axi una, Canescens, rocky ground in hills behind Babers tomb.

928. Leguminosa.—Thermopsides. Frutex dense foliosus 3 4 pedalis, gregaria. In thickets, behind Babers tomb.

929. Echinops.—Erecta ramosa 2 pedalis, foliis subtus albidis, involucella squamis sub inermibus glaucis flosculis, albis; antheris fuscescent, rocky ground behind Babers tomb.

930. Compositæ Centaureoides.—Humifusa flosculis citrinis, squamis involucro triquetris, patentibus. Cum præcedent.

931. Compositæ-Carduacea.—Caules plures ex axi una, plerumque sub simplicis. Fol infimis breve petiolatis oblongis. dentata lobatis, spinosis, glauco albidis, superioribus sessilibus. Capitulis sæpe ad apicem caulis aggregat. In volucro ovato arachnoideo. Spinis patentibus interioribus longioribus scariosis, flosculis albis, et stigmata antheris purpureis. On rocks or rocky dry ground, Babers tomb.

932. Composita.—Onopordoides.—Canato alba, foliis decurrent undique spinosa, involucro, depressa globoso, lunato arachnoideo, squamis lanceolatis in spinis longis, rectis, patentibus abeunt, flosculis lilacino purpureis. Cum præcedent (but lower down in Shingle.)

933. Composita.—Carduacear. tribus. Robusta, e basi ramosa spinosa, albo tomentoso, spinis fuscescent. Involucris aggregatis in apici ramulorum, foliis subrecondit, angusta, ovatis-arachnoides, spinis breviusculis patento recurvus, floribus sanguineis. Base of rocky hills, Babers tomb.

934. Lythrarieæ.—Planta spithamœa vel minor, ramosa caule ramisque, 4 quetris, foliis linearibus ascendentibus, floribus solitarius in axillis sub sessilibus basi bibracteolatis, majusculis lilacino purpureis.

Calyx sub clavatus 10 costatus, costis dentibus propriis 4-5 dentibus minoribus, aliis in processubus carnosis viridibus, petalis oppositis excurrent, liber persistens, demum

* Notulæ ad Plant. Asiat. p. 124, part. 1. Icones ad. Pl. asiat Pl. 35.

chartaceus, dentibus propriis cordatis in setam brevem fuscum desinent. Petala 4-5 oblonga, obsoleto undulata, sessilia. Stam tot quot petala iis alternantia basi tubo versus affixa introrsa sub reniforma, structura peculiari iterum examinand., biloculares, filament subulat subæqual.

Ovarium oblongum, biloculare, ovulis oo. ascendent hilum, prope foramen, stylis brevis, stigma capitat, papillos. Fructus capsularis, calyce unduratiusculo recondit, apice exserto stylo stigmat persistent, indehiscens irregulariter? cylindraceo-oblonga. Semen oo, minuta Testa cellulosa albida membrana interior fuscescens, albumen o. Embryo orthotropus.?

In paludosis arenosis, Cabul.

935. Lythrariæ.—Planta pusilla herbacea decumbens vel sub prostrata, caule ramisque angulatis, fol. ut in præcedente alternis, spathulatis, apice fere retusis, floribus sessilibus in axillis, basi bibracteatis calyce elongato clavato, limbo ut in præcedent.

Petala oblonga infra medium alba, supra pulchre rosacea. Stam tubo centrum versus inserta, ad bases horum, tubus sub petaloideus est! et venæ rubræ sunt, supra hæc viridescent. Stamina ut in præcedent.

Ovarium olongum ad bases stamineum attingens. Stylus filiformis, ovarii circiter longitudine, 4 plo longior præcedentis. stylo stigma capitat.

Calyx fructus ut in præcedent connubus tot quot processus laciniis alternant. Fructus cylindraceus. Semen albidis. Cum præcedent. a qua differt, habitu decumbente, foliis spathulatis, calyce fructuque cylindraceis.

936. Cratægus oxyacantha?—*Dourana.* Arbuscula, inermis, fructibus sub pendulis, sub globosis, rubris, very common in Babers Garden also at Ghuznee and Mahomouds tomb.

937. Leguminosa.—Caules plures ex axi una, foliis glauco albidis floribus, lætis cernuis vexillo luteo, ut carinaquæ basin versus superne sanguinea. Leguminibus planis, echinatis, præsertim ambitum, et venoso reticulatis. Hills behind Babers tomb, in Shingle.

938. Crucifera—Nasturtium —Decumbens læte viridis tenerum, floribus minutis luteis, siliquis sausage shaped, here and there

sub strangulated. Semenibus fuscis, reticulato cellulosis. Radicula in colyledon versus commisuram applicita. In damp, banks Cabul.

939. Urticæ sp.—Erect, 2 3 pedalis spicis sub cernuis, vix punpungens, in sæpibus, Cabul.

940. Scrophulariæ sp.—Basi suffruticos ramosa pedalis, hills, behind Babers tomb.

941. Cochleariæ sp.—Basi suffruticos, foliis glaucescent, floribus albis.

Waste ground Babers tomb, and on hills behind it.

941*a*. Bauhinioides.—Arbuscula, 10, 15 pedalis. Leguminibus pendulis foliaceis, sutura placentat carinato alata, inter suturis venosis reticulatis. Babers tomb, common, cult.

942. Capparideæ.—Polanisioidis, annua erecta ramosa, caule ramisque luteo viridibus, foliis trifoliolatis, floralibus simplicibus, floribus racemoso axillar, pedicellis gracilibus, and fuscescento rubris, sepalis reflexis. Petalis superne secundis. Stam. demum sub declinat rubris, siliquis stipitatis, torulosis uncialibus.

943. Trifolii sp.—Caulibus longis decumbent, floribus lilacinis. Cabul.

945. Salsolæ sp.—Caule ramoso, ramisque basilaribus decumbent, albo, cæsiis, foliis oppositis e basi vaginant, lateralibus membranaceis spinescent subulata, floribus axillaribus.

Under Çabul wall, in higher portions of the ridge, 7600 ft.

947. Chenopodiacea.—Betæ affinis planta annua Dioica succulenta, floribus fœmineis dense aggregatis in axillis foliorum, demum transverse bicornutis. Stylis 2 3 cult. Cabul. An excellent spinach. (Beet is also very good at Cabul.)

948. Asteracea.—Erecta ramosa, læto aspectu, floribus disco luteis, radii albis lilacinis vel rosaceis. In Gardens Cabul.

949. Dianthi sp.—Floribus rubris.

In gardens Cabul.

950. Ranunculi sp.—R. acri similis, flower yellow, sides ditches Cabul.

951. Labiatæ sp.—Humilis ramosa molliter hirsuta; floribus 2-3 in axillis. Corolla superne fissa, lobis labri superioris acutis, ascendentibus, lateralibus labio inferioris conformibus, margine in curvis, centrale, porrecto-deflexo oblongo obcordata purpu-

reus, lab super, albid, lobo mediisque labii inferior, basi albo et purpureo variegat, in wet ditches. Cabul.

952. Solanum Dulcamara?—Scandens, fol. variis senioribus, hastato lobatis, corolla reflexa, saturatissim violaceo purpureo (color pulcher) petalis quoque basi maculis albis 2, baccis sub globosis miniatis.

In sepibus in humidis locis Cabul; local.

953. Composita——Lactucacea.—Statura valde varians, spithamæa vel 3 pedalis, foliis glaucescent inferior runcinato lobatis. Panicula terminal, laxiusculi, ramis divaricatis. Involucro cylindraciusculo, flosculis læte lilacino purpureis. In hedges Cabul, noted before reaching Shaikabad where it occurs in a very small state, with Spargamium, Ranunculus aquatica. Potamogeton as before, Mentha, Naiades of Dadur, and Chara as before. Potamoget natans as before, and indeed all the water plants of Ghuznee. and Mookhloor occur here, except Typha.

954. Tagetes.—In Gardens, Cabul with Calendula mirabilis, not very common, Celosia cristata, Dianthus, Helianthis annuis Iris germanæ similis. Rosa Chinese, Aster single and double, common stock, purple and white hollyhock.

Adest inter arbusculos fructiferos Zyziphi sp. ramis laxis pendulis, foliis lucidis, fructibus axillaribus solitarius.

955. Hippophaæ sp.—Frutex 8 10 pedalis, foliis lineari oblongis, ramis ramulisque spinis desinentibus, fructibus pisi forma magnitud, læte coccineis, acidis, edulis. A fruit tree, Cabul not common. This species, or one very like it, is found along the river at Mydan.

956. Euphorbiæ sp.—Prostrata glauca, fol. carnosis oblongis basi inferne obliquis involucris albis margine. Barren shingly ground, Cabul, fragilis ad articulos.

957. Salviæ sp.—Basi suffruticos, fol. ovatis, rugosissimis, cana, pallid fuscescent tomentosiss, floribus non visis.

Barren shingly hills, Cabul not common.

958. Scrophulariæ sp.—Basi suffruticos, ramis pluribus, glaucescens, floribus sanguineo purpureis, tubo albo. Barren shingly hills, Cabul.

959. Loti sp.—Decumbens, prostratave, glauca, floribus luteis, vexillo basi rubro pallide striato. Banks of ditches Cabul.

960. Polygoni sp.—Erect 3 pedalis, ramosa virgato, floribus albis, In cultivation, Cabul.

An varietas speciæ communissimæ decumbentis.

961. Cuscuta sp.—Scandens in salices, floribus spicatis, dense carneis. Along canals, Cabul. Sp. magna carnosa longe scandens.

692. Amaranthaceæ.—Celosioid, spicis compositis, viridi coccineo sanguineis pendulis.

In gardens Cabul.

963. Artemisiæ sp.—Stricta, 3-6 pedalis ramis floriferis, in directione caulis, ascendent, flosculis inconspicuis. Along canals Cabul.

964. Labiata.—Lycopus Europæus? caulibus ramoso ascendent, pedalibus vel. 2 ped., foliis dentato lobatis. Corollis albis sub campanulat, 4 lobis, lobis reflexis, superiora paullo majora. emarginato. Stam? brunneo.

Along canals, Cabul.

965. Parietarioides Decumbens.—In agris. Cabul.

966. Plantaginis sp.—Sub acaulis, foliis linearibus plano convexiusculis, canaliculatis supra rosaceis, patent. Spicis, folia excedent erectis viridescent. On the east Chummum of Cabul very common in the drier parts with Dhoop grass, (Panicum dactylium) Glaux etc.

967. Portulacea.—Carnosum annuum ramosum humifusum. In agris. Cabul, local but common.

968. Umbellifera.—1 $\frac{1}{2}$ 2 pedalis foliis decompositis, pinnis sub oppositis, lobis angustissimis. Umbella composita. Hemi carpiis plano convexis subhæmisphæricis ambitu, alis 5 maximis chartaceo membranaceis undulatis. Epicarp? crassum, spongioso suberosum album.

Vittis nullis, album corneum sectio reniformis, margine bus interiorib intro flexis. Cabul Goolsheer.

Fructus magnus hab. quodammodo Tiliæ stip. binis decidius gemmar squamis ommis mentient.

969. Celtidea.—Arbor mediocris corona rotunda, fol. oblique subtus glaucescent, fruct solitar, longipeduncul: axillar: globosis, cerasi parvi magni: Stigmat binis brevibus, *toro piloso? drupaceus*, testa membranac. Cotyledonib crumpled foliaceis.

Semen pendule, radicula supera, inner teg send, proceeds inside. between the lamina and the cotyledons, suturis 2, sigmat opposit indistinct cortice tenaciuscula.

Habitu Celtiodes Sir i Cushma over one of the springs.

970. Hyoscyami sp.—Prostrato decumbens, canescens, fructibus inferne secundis. In disintegrated mica slate. Gorge to Sir i Chushma.

971. Silenacea.—Cæspitosa, glauca, calyce clavato, medio inflatiusculo, petal sordida rubris, involutis. Cum præcedenti, Common.

972. Boraginea.—Habitu Cynoglossi officinalis, præsert in foliis inferioribus. Cum præcedente.

973. Composita.—Fruticosa, humilis, (prim in appearance) flosculis lutescent. Gorge to Sir i Chushma on rocks.

974. Artemisiæ sp.—Foliis canescent, fruticos humilis. To Sir i Chushma, not uncommon.

975. Centrantheræ sp.—Herba erecta, ramosa, foliis pinnatisectis. Cor. rosaceo, carneo tubo deorsum curvato, sub bilabiat, rotato laciniis bilobis. (Fig. 34) Sides of fields near Sir i Chushma, sub ascendentibus.

976. Leontodon sp.—Flosculis citrinis, road side to Sir i Chushma. Gravelly plains, Cabul Ghuznee.

977. Bryoniæ sp.—Scandens, fructibus nigris pisiformibus, sides of fields Sir i Chushma.

978. Scrophulariæ sp.—Herba robusta, caule 4 alatis fætida. Cor. sordido fuscescens, lobo medio labii inferioris recurvo, sides of main branch of Cabul river, to Sir i Chushma.

979. Myosotis sp.—Decumbens, tenera, floribus hypocraterif. pulchris azureis lutescent. Wet banks to Sir i Chushma.

980. Euphorbiæ sp.—Tenera, decumbens, dichotoma glaucescens ; Walls, to Sir i Chushma in watery places.

981. *Sedoides.*—Planta muscoidea dense cæspitosa, foliis imbricatis glaucis, pallida, ramis unifloribus, flore *uno perianth* 4 partito, clavato, sub aromat.

On rocks, forming the Gorge near Sir i Chushma.

982. Clematis sp.—Scandens, cirrhosa, racemis axillaribus subcymosis, flore centrale præcocia, sepalis 4 rotatis intus viridescent luteis, dorso viridescent, fucescent demum rubro fusces-

cent, utrinque concoloribus, filamentis sanguineis. Caudis sericeis Banks of Stream, Sir i Chushma caulis fragil.

983. Rosæ sp.—Frutex erectus parvus, spinis numerosus inæqualibus. Calyx fructus tubo ob clavatis vel oblongo medio incrassat rubro cereo, lamina foliacea. Sir i Chushma.

984. Arenarioid.—Gracilis pussilla, under walls, Sir i Chushma.

985. Composita.—Conyzæ triba.—Pumila glaucescens, flosculis luteis, ascent to Oonnoo Pass. 9500 ft.

986. Cnicus acaulis.—Foliis depressis, floribus rosaceis, swardy damp spot Yonutt, 10500 ft.

986*a*. Hyoscyamoidis.—Herba viscosiuscula sub graveolens prostrata. Corollis unilabiatis, labio ascendent 5 lobo, centrale interior. Aureo fauce pallida, nigro striato. Stam 3 inferior curvato deflexa, 2 superior erecta, saltem post anthesin. Micaceous slate hills. Ascent to Oonnoo in ravine of the river, 9500 ft. Also from Sir i Khujoor, Bolan Pass.

987. Labiata.—Erectâ ramosa, foliis serrato dentatis. Corollis cyaneis, lab. inferior reflexis, terminal compress quasi medio carinato. Ascent to Oonnoo, as high as 9800 ft. road sides.

988. Glaucium.—Biennium, fol. albo griseis pinnatifid, floribus plurimis terminal aureis. Siliquis strigosis, about fields towards base of 1st Kotul, on banks 9500 ft.

989. Polygoni sp.—Prostrata, floribus rubris Yonutt in sward.

990. Statice sp.—Hystricoides, densissima pulvinata, floribus terminalibus binis ternisve, amplis roseis. Calyce fructus castaneo fusco. Summit of Oonnoo pass, very common. Occurs as low down as 9800 ft. at top of 1st Kotul with the Statice of Dund i Sheere Pass.

991. Carduacea.—1½ pedalis ramosa, grisea cana. Involucris sub arachnoidis, squamar spinis triquetris inferior deflexis, cæter patent, ore involucri constrict, floribus roseis. Summit of Oonnoo, pass. road side (also obtained before.)

992; Salsoloidea.—Frutex prostrata, ramulis albidis, foliis linearibus carnosis, sepalor marginibus sanguineis. Open stony ground Yonutt.

993. Leguminosa.—Frutex humilis ramis decumbent, petiolis spinosis, pinnulis apice merso dentatis. Corolis purpureo cæruleis. Calyce dorso basi gibbo, leguminibus oblongis tumidis. In fields Yonutt Top of Pass. 11000 ft.

994. Potentillæ sp.—Humilis decumbens floribus luteis along banks of fields Yonutt. Probably a mere variety.

995. Leguminosæ.—Basi fruticos erecta. 1½ pedalis, floribus cernuis, lutescent glauca. In fields Yonutt.

996. Leguminosa.—Prostrata glauca, floribus luteis, vexillo dorso fusco striato. Leguminibus compressis. Yonutt in agris marginib.

997. Graminea —Cæspitosa glauca pannicula tenua glumaram parte membrano fusco purpur, cæt viridi. Banks of fields Yonutt.

998. Gramen.—Cæspitos, coarse, 2 3 pedale, panicula erecto, spiculis viridi lutescent, cum præcedent, also on summits in stony ground.

999. Gramen.—Cæspitos annuum, panicula effusa spiculis viridescent fusco tinctis. Margins of wet banks of fields Yonutt.

1000. Gramen.—Pussillum viridescens, panicula spicifor erecta, Cum præcedent.

1001. Gramen.—Festuca annua? cæspitos viridescens, cum præcedent. Also below pass Sir i Chushma.

1002. Juncus.—Minimus erectus, sub glaucesc. floribus viridibus.

1003. Staticoides.—Prostrata elegans, fruticos foliis teretibus spi-no sulis. Calyce fusco glandulos, florib dense cymosis, rosaceis, lamina rotata, antheris plumbeis.

Open stony ground. Yonutt.

1004. Gramen.—Triticoides.—Cæspitos viscos glaucum, spicis erectis pubescentib hirtis carneis tinctis swardy banks of stream Yonutt.

1005. Junci sp. vel Luzulæ sp.—Cæspitosa fol. canaliculat capsulis brunneis nitidis. In paludib Yonutt.

1006. Graminea.—Annua erect, spicis fuscescent viridib in agris Yonutt.

1007. Incert.—Humifus caulib. rubescent, foliis glaucis. In agris Yonutt.

Gnaphalii sp.—Canescens. In agris Yonutt.

Carex sp.—Spica sub erecto, in palud. Yonutt.

1008. Polygonum Fagopyrum. In agris Yonutt.

1009. Umbelliferæ.—Perennis, ramosiss 1½ pedalis, odore peculiari aromat. Common on slate rocks ravine Yonutt.

1010. Labiatæ.—Basi suffrutic 1½ pedalis, erecta, flores non vidi. Cum præcedent.

1011. Graminea.—Coarse tufted, spicis erectis spiculis bifariis carneo tinctis. Open ground Yonutt.

1012. Statice sp.—Uti aliæ species Hystricoideum glaucescens spinos, floribus secundis, bifariis, calycibus fructus albidis, Oonoo Pass, 11300 ft. Ravines Yonutt. 10,800.

1013. Caricis sp.—Cæspitos laxa, forming sward, spicis erectis brunneo atratis. Along rivulet Yonutt.

1014. Cruciferæ.—Canescens fol. undulatis. Siliquosa semenibus planis marginato alatis.
Ravine Yonutt; slaty rocks.

1015. Artemisiæ sp.—Basi suffrutic cæspitos, cana capitulis secundis cum præcedent. common.

1016. Chenopod.—Rubescens, fol. hastatis, floribus etc. sanguineis. In agris Yonutt.

1017. Graminea.—Cæspitos glauca pannicula spiciformi sub erect vel nutant. Gluma virides apices versus atro purpureæ.
Sward of ravine, Yonutt along water.

1018. Umbellifer.—Along rivulet Yonutt erect.

1019. Caricis sp.—Laxa cæspitos, spicis nutant along rivulet Yonutt.

1020. Graminea.—Cæspitos 2 pedali panicula effusa rubescens, in sward along rivulet Yonutt.

1021. Graminea.—Sub fluitans in aquis fluent, tenera spicis, glumis viridescent paleis fuscescent in rivulet Yonutt.

1022. Carex sp.—In rivo Yonutt, spicis erectis.

1023. Quid.—Slaty rocks, Yonutt, ravine, basi suffruticos.

1024. Gentianæ sp.—Minima, flora purpureo fauce fimbriâ donata, sward Yonutt.

1025. Carduacea.—Herba biennis? Perennisve, robusta albo lanata, ramis pluribus erect 1½ 2 pedalis squamis involucri 3 angular, in spinis attenuatis, inferior patenti recurvis, floribus purpureis akeniis marginato alatis, common on sward, drier parts of Yonutt.

1026. Composita.—Corymbif petiolis rubris, vix pedalis radio purpur: disco lutesc, Siah Sung river banks 10500 ft.

1027. Centaureæ sp.—1½ pedalis, basi sub decumbens floribus aureis, involucro scariosa fuscescens. Helmund river in cultivat.

1028. Gramen.—Cæspitos tough panicula laxa spicifor erecta. Disinteg. slaty rocks Siah sung.

1029. Gramen.—Dense cæspitos very tought glauca spiculis secundis, purpureo nitidis. Slaty rocky soil, Siah sung ravine 10500 ft.

1030. Umbelliferæ sp.—Cæspitos erect 3 4 pedali, foliis luteo viridib floribus albis, ravine of Siah sung. Slate rocks very common at 10500 ft. odor sub aromat.

1031. Cuscutæ sp.—Caule atris, papillis punctata, tota albescens, floribus carneo albidis, corollis campanulat antheris brunneis. Siah sung ravine 10300ft.

1032. Geranii sp.—Prostrato repens, fol. senior rubris, floribus amplis, concavis purpur cæruleis swardy spots, Siah sung secus 10,500ft.

1033. Graminea.—Coarse 2 4 pedali, cæspitos, panicula plumosa, oblonga erecta. Sward secus Siah sung, 10000 ft. Local.

1034. Compositæ.—Gnaphalioides, basi suffruticos canum erect, corymbis aureis.

Siah sung ravine in slaty rocky soil.

1035. Woodsioides.—Polypodioides, in crevices of slaty rocks in rorantibus Siah sung river, the only fern seen since that of the Bolan Pass.

1036. Prangos.—Umbellifera. Robusta 4 5 pedalis, foliis capillacea pinnatisectis, umbellis compositis.

Carpellis alis 5 magnis, undulatis, fruit as in the Cabul one, but the testa is only spongy opposite the wings, albumen corneous, (Fig 34) common on limestone rocks, Siah sung.

1037. Composita.—Annua erecta sub viscosa, floribus lutescent. Cum præcedent.

1038. Leguminosa.—Frutex 3 pedalis glaucescens in agris. Siah sung.

1039. Cruciferæ.—Habitu Umbellifer. fructibus planis globoso cordatis, semi pendulis.

In agris Siah sung.

1040. Polygoni sp.—Basi suffrutic ramosiss. tenera, post florescent vidi. Limestone cliffs, Siah sung.

1041. Scrophulariæ sp.—3-5 pedalis, robusta herbacea. It commences up the ravine of Siah sung, and ends with it.

1042. Silene sp.—Basi suffrutic viscosiss. superne, floribus pallida fuscescent, Siah sung, in limestone.

1042. Cuscutæ sp.—Caule rubro filiformi capillaceo, floribus roseo carneis in globulis.
Near Choky Siah Sung.

1044. Junci sp.—In marshes, ravine Siah Sung.

1045. Aconitum Salisburifolium.—3 pedalis, fol. infimis. Salisburiæ fere. Corollis dense cyaneo-cæruleis. Limestone cliffs Siah sung.

1046. Leguminosæ.—Prostrata, floribus capitulis, vexillo carneo alis, carinaque sanguineis. Bottom of Hajeeguk, on sandy sward, 1100 ft.

1047. Crucifera.—Cardaminoides. Robusta glauca.

1048. Gentiana sp.—Caule decumbent, floribus amplis, campanulat, albis, plicis fusco viridibus. Marshy spots, ravine base of Hajeeguk 11400 ft.

1049. Gentianæ sp.—Spithamæa tenera caulibus aspectu lucidis, plumbeis, foliis pallida viridibus, cum præcedent, but in wetter places.

1050. Swertiæ sp.—Pussilla ramosa, floribus rotatis pallida, cæru lescent. Cum præcedent.

1051. Swertiæ sp.—Robusta 1½ pedulis, erect. In paludibus Siah Sung ravine, half way down Hajeeguk, west side. In marshy spots.

1052. Compositæ sp.—Basi decumbens capitulo aureo erecto Hajeeguk snow ravina 11400 ft.

1053. Cruciferæ.—Erecta pedalis, floribus aureis; odor faint Cheiranthi. Cum præcedent.

1054. Cruciferæ sp.—Prostrata, flor. luteis, siliquis torulosis. Cum præcedent, gravelly spots.

1055. Junci sp.—Cæspitos. In palludib. Snow ravine Hajeeguk.

1056. Cruciferæ sp.—Depressa prostrata, fol. lutea, to base of Hajeeguk in sandy spots.

1057. Primulæ sp.—Snow ravine 11500 ft. pallide viridis.

1058. Pumulæ sp.—Pussilla pallescens, tubo ochroleucescent uti faux, lamina roseo-carnea, in black marshy spots, close to snow ravine Hajeeguk 11500 ft. odor faint of primrose.

1059. Pumulæ sp.—Foliis subtus albo farinaceis. Cum præcedent.

1060. Pedicularis sp.—Vix spithamæa caule supra livid uti calyx corol albo carnea fusco tinct. Cum 1058.

1061. Euphrasiæ sp.—Parva erecta florib albis, marshes in snow ravine 11400 ft.

1062. Astragali sp.—Frutex decumbens canescens, floribus luteis, Ravine towards snow in gravelly spots, 11300 ft.

1063. Astragali sp.—Depress conescens; fl. citrinis Cum præce dente.

1064. Plantago sp.—Pusill glabrum rosaceum. In sward, ravine to snow, 11400, 11500 ft.

1065. Ranulculi sp.—Pusill decumbens. Calyce fusco tinct, floribus amplis aureis. Cum præcedent, in damp places.

1066. Gramen.—Cæspitos coarse, glauce 3-5 pedal panicula nutant. Spiculis albidis purpureis. Above Siah sung on the Shingly road.

1067. Umbelliferæ sp.—Robusta, odor: stercorac: pessim:, fol· decompositis fere spinescent, carnosis, floribus albis, fructibus alis 5 angulat. A most marked Plant, with a vile smell, somewhat Assafætodish. Siah Sung. Limestone.

1067*a*. Astragali sp.—Astragalus (*prim*) Leguminibus foliaceis, planis. Limestone rocks Siah Sung.

1068. Clematis sp.—Basi suffrutic erecta glaucescens, floribus albis. Ravine of Kulloo.

1069. Medicaginea.—Rubescens prostrata, floribus luteis. rubro revoluto. Kulloo Angust 31 in fields.

1070. Composita.—Annua discis luteis. In fields Kulloo radio revoluto.

1071. Labiatæ sp.—Subacaulis, fol. pinnatisectis, spica densa tomentosa, post florescent vidi. Among granite boulders. Kulloo:

1072. Plantaginacea?—Cana sub spinosa, cæspitosa ramis florigeris erectis. Cum Præcedent.

1073. Gramen Festucoid.—Decumbens basi panicula subnutans spiculis e fusco viridescent. Sward, Kulloo.

1073*a*. Labiatæ sp.—Decumbens habit Menthæ, floribus cæruleis, lab super obcordato reflexo lateribus inferior lobis lateral omnino reflexis centrale medio carinato utrinque carinæ concavo. Hajeeguk Passs, moist ravines 12300 ft.

1074. Campanulæ sp.—In Cæspitibus densiusculis odor Rutaceus, succus copiosus lacteus herbaceus 2 pedalis ramosus, tener, Floribus cernuis amplis pallide caruleis, fundo violaceo cæru-

leis imo fundo annulo? luteo fusco. Stigmatibus maximis, trilobis albis. Hajeeguk, about springs 12400, 12000 ft.

1075. Carduacea.—Herbacca 1½ pedalis pinnarum lobis superior erectis, involucro globoso arachnoides, spinis reflexis. Corollis albis. Antheris. Stigmatibusque carneis.
Hajeeguk 12400 to 12000 ft.

1076. Statice sp.—Hystricoides glauca, aliis minus spinosa, bracteis latis cuspidatis scariosis, floribus secundis bifariis. Calyce fructus trumpet or funnel shaped (accidental) magno. Hajeeguk Pass exposed faces 12200 ft.

1077. Gramen Melicoides.—Erect paniculis nutantibus, approximata purpur. Snow ravine in marshy spots 11400 ft.

1078. Juncus.—In paludibus base of Hajeeguk 11400 ft.

1079. Umbelliferæ —About water. Cum præcedent.

1080. Gramen.—Spithamæum Panicula effussa about fields. Hajeeguk bottom of 11400 ft.

1081. Umbelliferæ sp.—Fl. white in marshes, base of Hajeeguk 11400 ft.

1082. Compositæ—Tanacetoides.—Frutex cæspitosa, fol. fere pinescent, florib luteis. Hajeeguk; exposed places 11 to 12000 ft.

1083. Hieracioides.—Decumbens Hajeeguk in ravines 12000 ft.

1084. Composita.—Conyzoides 3-4 pedal, fol glaucis, floribus luteis Hajeeguk in marshes 11400 ft.

1085. Astragali sp.—Pussilla canescens, flor luteis Hajeeguk snow ravine, in gravel or sward 12000 ft.

1086. Umbelliferæ sp.—Flower white. In marshes Hajeeguk 12000 ft.

1087. Cerastium sp.—Laxum gracil: flowers white. In marshes Hajeeguk 11400 ft.

1088. Orchidea!—In marshes, Hajeeguk; Kulloo side 12000 ft.

1089. Arenarioides.—Gracilis pusilla erecta. fl. alba. In palludosis Hajeeguk snow ravine 11400,12000ft.

1090. Salix sp.—Frutex 2 3 pedalis, gregaria erecta, Hajeeguk, Kulloo side in ravine swamps.

1091. Galii sp.—In marshes, Hajeeguk, 11400 ft.

1092. Potentillæ sp.—Hajeeguk Kulloo side in marshes, 12000 ft.

1093. Gnaphalii sp.—On mossy spots Hajeeguk ravine 12300 ft.

1094. Polygoni sp.—Frutex prostratus minimus, fl. albida. Hajeeguk snow ravine, gravelly spots 12300 ft.

1095. Astragaloid.—Prostrat cano tomentosa calyce fusco, florib sordido sanguineis, gravelly spots. Hajeeguk, snow ravine 12200 ft.

1096. Parnassiæ sp.—Spithamæa, pallida, floribus albis. In swardy marshes. Hajeeguk snow ravine 12,200 ft.

1097. Silene sp.—Minima cæspitos calyce purpurasc, fl. albidis, cito fuscescent.

Gravelly spots, Hajeeguk snow ravine 12200 ft.

1098. Salsolæ sp.—Frutex more solito ramosus, cortice rough white ramulis, distinct articulatis, sub teretibus; fol. oppositis, minutis carnoso, squamiformibus. Ramuli foliaque glauco albida, floribus spicato, fructus dense spicato; calycis processubus scariosis, carneis basi fere croceis.

Near Topchee. over the ravine, in loose soil; an elegant species well marked, in dense tufts, common.

1099. Salsola sp.—Pusilla decumbens, foliis e basi dilatata, spinoso subulato cum mucrona glaucescens, processubus scariosis, carneis, basi rubris. At the same place, one specimen.

1100. Salsolæ sp.—Fruticosa $1\frac{1}{2}$ pedalis, ramis pluribus ex axi una, ramis albidis, ramulis viridib,fol. teretibus carnosis, basi attenuatis apice obtusis, floribus viridibus inconspicuis, fructibus processubus conspicuis carneis infra media, coccineo sanguineis.

At the halting place on Kulloo river, slate rocks, common. Also up the ravine to Kulloo Pass, also descent to Topchee.

1101. Salsola sp —more solito fruticosa, ramis pluribus prostrata decumbentibus, ramis ramulisque albidis, foliis glaucis, sub teretibus, supra planiusculis e basi gradato attenuatis conspicuis ob processus fructuum luteis.

Cum præcedentibus. Commonish, rami fragiles.

1102. Salsolæ sp.—Præcedente affine, magis pubescens, conspicua, ob processus fructuum, bright claret coloured, a mere variety, more common than the others.

1103. Salsolæ sp.—Fruticosa dense ramosa, ramis albescent, ramulis foliisque glauces, fol. inferior plano convexa, vel intus concavo canalicul, 2 lineata, superiora squamiformi, floribus luteo viridibus, processus fructum, carneo albidis, basi rosaceis, cum præcedent.

1104. Polanisiæ sp —Habit of the Cabul plant, very ramous, 2 pedal, foliis canis, floribus genitalibusque sordido fusco sanguineis, odor similis cum præcedent, at foot of deseent.

1105. Bromoidis.—Glaucescens coarse cæspitosa spiculis cernuis, brunnescent; summit nearly of Kulloo, in exposed places.

1106. Triticoides.—Cæspitos glaucescens coarse, spiculis purpureo brunneis, summit of Kulloo, 12500,13500 ft.

1107. Leguminosæ sp.—Basi suffrut. 1-3 pedalis, glauca; Kulloo Mts. as high as 12500 ft. here and there.

1108. Umbelliferæ.—Erect ramosa, fl. white. Kulloo Pass, ravine at foot. Common in the Yonutt ravine.

1109. Glaucii sp.—Ramosa, glauco fragile, petalis croceis apice aurantiaceis, siliquis scabris sæpius tortis, very ramous, foot of Kulloo, in barren places, also at 12,500 ft. very common here and there.

1110. Euphorbiæ sp.—Very ramous. Glaucescens. At top level, in barren places near halt, Kulloo road.

1111. Ribes sp.—Frutex, 4 5 pedalis aspectum canum, odor: contus peculiar, faint, baccis pendulis miniatis insipidis, base of Kulloo, here and there, and up the mountain under rocks as high as 12500 ft.

1112. Compositæ Lactucacea.—Glauca præramosa, anthod e basi attenuatis, fl. not seen. Base of Kulloo, in barren spots. Local.

1113. Salsoloides.—Herbacea, depressa glauca rigida, foliis recurvis processubus fruct ternatis? croceis pallida. Base of Kulloo, cum 1112.

1114. Leguminosa.—Basi suffruticosa, glaucescens. Legumin. pendulis, Base of Kulloo 10,11000 ft.

1115. Hyoscyami sp.—Decumbens, viridis. Corollis 1 labiat. luteis parvis, calycis dentibus spinosis.
Cum Glaucio, at both places, but rare above.

1116. Linariæ sp.—Annua purpurascens, erect, base of Kulloo, in ravine, shingly spots.

1117. Leguminosa.—Basi suffrutic, glauca. Legum. pendulis, Kuloo here and there, up to 11500 ft.

1118. Aconiti sp.—A bad specimen, flore pallide cæruleo, Kulloo Pass 11500 ft.

1119. Umbellifera sp.—Herbacea per robusto 4 pedalis, fol. petiolis basi valde dilatat, supra decomp. lobis lineari setaceis fructibus dense umbellat, sub baccatis, planiusculis cæsio rosaceis.

Kulloo in shingle, 11000 ft. This also occurred on Kojhuk Pass.

1120. Statice sp.—Hystricoides glauca, spicis pedunculi; floribus magnis pallido rosaceis.

Common all over Kulloo from 11500,13000 ft. The most common species.

1121. Salsola sp.—Annua per succulento, glauco per ramosa, foliis sub teretibus cum mucronum processubus fruct albis scariosis, initio basi rubris. A very elegant well marked species. In shingle base of Kulloo.

1122. Carduacea.—1½ pedalis, foliis spinosissimis decurrent, flosculis purpureis.

Near base of Topchee valley, on barren spots.

1123. Carduacea,—2 3 pedalis corymbo ramoso patent, anthodiis pro tribu angustissimis, flosculis purpureis.

Cum præcedent but much more common.

1124. Clematis sp.—Scandens, floribus rubro fuscis, foliis glaucis. Topchee. An idem cum Clemat. e Sir i Chushma.

1125. Portulacea.—Modo solito fruticosa ramosa albo cana, calycibus fructus bilabiat. Ascent to Kulloo. More common between Topchee and Bamean.

1126. Salsolæ sp.—Branches numerous erect digitatis ex axi una prostrata difforma tereto, glauco albidem apice sæpius roseo tincto. Foliis minutis squamifor, margine membranac processibus magnis, læte stramineis, sæpe obpression bilabiat, To Bamean, on indurated clay or limestone rocks.

1127. Salsolæ sp.—Suffruticosa, ramis albid decumbent fol. teretibus obtusis supra basi concavis, abbreviatis. flor viridi glaucis processubus albidis.

Common towards Bamean.

1127*a*. Salsola—Suffruticos.—Ramis erectis 2 3 pedalis albis, ramulis albis etiam foliis late ovalis glauceis, carnosis decurrent, processubus magnis albis. To Bamean, about caves. Is this the same as the Turnuk plant?

1127*b*. Salsola sp.—Basi suffrutic in axi ramosa, ramis fo-

liis e basi dilatato subulato, spinosis, processubus roseo tinctis, To Bamean, in Bamean valley. An idem cum planta e valle Urghundab.

1128. Tamarix.—Habitu solito frutex 3 6 pedalis, ramis floriferis elongatis, ramulis sursum decrescent; frequently attacked by insects. Spicis flore simplicibus elongatis, floribus magnis, carneis, semen villosis. Bamean river, common in its bed.

1129. Heliotrope sp.—Vix pedalis, ramosa canescens, floribus ochroleuco tinctis. Ghoolgoola citadel-mound, common.

1130. Linariæ sp.—Glaucescens valde ramosa 1 2 pedalis, foliis linearibus canaliculatis recurviusculis. Corolla lamina fusco sanguinea, tubo fuscescent, brunneo striato. Calcare angusto subulato, odor fragrans Resedæ. Shingle, base of Ghoolghoola citadel.

1131. Salsoloid.—Annua, habitu peculeari Portulacearum, glauca, foliis longis $1\frac{1}{2}$ uncialibus teretibus basi, concavis, pilis longis villosis parce, floribus capilatis quasi in axillis ob fructus processubus læte luteis præ conspicuis.

Commonish on mound of Ghooghoola citadel.

1132. Salsoloides.—Rami plurimi prostrata, vel decumbentis ex axi una, ramis fragilibus, tenuibus flexuosulis, fol. sub teretibus brevibus recurvis, pubescent basi supra concavis, processubtus initio albis, demum carneis, basi rubris.

Cum præcedent.

1133. Salsoloidis.—Rami plurimi prostratrato vel decumb ex axi una, cortice alba ochroleuco, ramulis, lana brevi adpressa alba uti folio bracteis glauco albidis glabrioribus. Processubus inito albis demum carneis, basi rubris. Cum præcedent.

1134. Asparagi sp.—Longe scandens, inermis, foliis teretibus mucronatis, baccis globosis, magnit fuscis. Bamean vally among rocks.

1135. Gramen.—Festuco lolioidis, glaucescens, spici erecto virides-cens.

Bamean vally about cultivation.

1136. Chenopodiacea.—Prostrat, foliis quasi furfucam, calyce fructus planus bilabiatus.

Bamean vally salty spots with the following, Joussah

1137. Salsoloides.—Fruticos cortice albo valde ramos, ramis decum-

bent, glauca, foliis basi concavis cætera sub teretibus, fructibus inconspicuis albis membranaceis.

Bamean valley along the river in salt soil.

1138. Salsoloides.—Robusta herbacea annua ? succulent, foliis sæpius sursum curvatis, semiteretibus uncialibus, floribus viridibus.

Cum præcedent in umbrosis.

1139. Salsoloides.—More solito fruticos breve pubescens, foliis fasciculatis, teretibus sæpe rubro tinctis, fructibus inconspicuis processubus albidis. Among rocks Bamean valley not uncommon.

1140. Chenopodiac.—Spithamæa vel infra ramis sulcatis albidis, foliis ascendent linearibus. Carnosis; floribus inconspicuis viridibus.

On sward Zohawk.

1141. Lini sp.—Cult sparingly with Sinapis sp. Kojuk, used here for oil and fodder, in the Punjaub for thread, it does not appears to be used for cloth.

1142. Astragaloid.—Muscoides canescens, floribus elegante azureo purpureis. Towards Summit of Irak Pass. In sward, 12500 ft.

1143. Pedicularis sp.—Erecta $1\frac{1}{2}$-3 pedalis. In sward with Caragana, Kurzar.

1144. Thlaspi.—In arvis abique 6-12000 ft.

1145. Astragal sp.—Frutex erectiusculis, humilis, vix pedalis ramis castaneis, floribus luteis.

Siah Sung, limestone.

1146. Echioides.—Biennis. Canescens. Stam longe exsertis, Siah Sung.

1147. Gramen.—Erect 3-4 pedal panicule castaneo rubro. River at Siah Sung, near the bridge and elsewhere.

1148. Arabidea.—Pussilla cana, floribus albis. Limestone rocks Siah Sung.

1149. Astragali sp.—Frutex armatus. Caulibus rubris, brevibus; floribus luteis. Siah Sung, among rocks.

1150. Anthemidea.—Suffrutic ramis decumbent, disco luteo, foliis Canis.

Limestone rocks Siah Sung.

1151. Cruciferæ.—Frutex dense ramoso. Cæspitos armat, flori-

bus albus reliquis foliaceis, Erak Ravine, on rocky ground 10000, to 11000 ft.

Adest species altera siliqulis distinctis e Soktar.

1152. Gnaphalii sp.—Erak ravine in Shingle, cum Linaria, Violacea etc 11000 ft.

1153. Sinapidea.—Robusta 3 pedalis, fl. luteis Erak ravine in Shingle 11000 ft.

1154. Polygoni sp.—Prostrat filiforme rubrum. Erak ravine in Shingle 10900, to 12000 ft.

1155. Rosæ sp.—Frutex 8-10 pedalis, fl. albis odoratis. Erak ravine 10500 ft.

1156. Leguminosæ sp.—Prostrat floribus purpureis. Erak ravine, grassy spots 10500 ft.

1157. Graminacea.—Cultivat. Erak Ravine prostrato rosaceum 10500 ft.

1158. Silene fimbriata.—Perennis robusta glauca, floribus amplis ciliato fimbriatis albis, adore nuce moschato, Erak ravine Cult 10500 ft. Siah Sung 10500 ft.

1159. Leguminosæ.—Erect 3 uncialis vel pedale, flor purpureis Cum præcedent in sward.

1160. Boraginea.—Tota cana floribus albis. Erak ravine 10800 ft. in shingle.

1161. Cerastium.—Cæspitosa dense, læte viride, floribus albis, Swardy marshy spots. Erak ravine 10000, to 12000 ft.

1162. Labiatæ.—On rocky ground Soktar, Erak ravine 10000, to 11000 ft.

1163. Astragali 4 5 pedalis erect, fl. lutea. Erak ravine. Shingle, 10800 ft.

1164 Boraginea.—Robusta perennis canescens, inflorescentia gyrata, floribus sanguineis. Staminibus longe exsertis. Erak ravine. Shingle on sward 11000, to, 2000 ft.

1165. Caprifoliacea.—Frutex 8 pedalis densiusculis, baccis raris didymis, cæruleis. Erak ravine 9000, to 10000 ft. rare.

1166. Cruciferæ.—Ramosiss. gracile, flor. albis in shingle. Erak ravine, 9500, to 11000 ft.

1167. Labiata.—Cæspitosa 1½ pedalis cana, floribus azureis shingle. Erak ravine 10500 ft.

1168. Salsoloides.—Robusta herbacea viridis. Bamean valley along the river.

1169. Compositæ.—Sub aphylla. inextricat ramos cæspitos, floribus luteis.

Erak ravine, cum 1151.

1170. Caricis sp.—Erak ravine in sward 10500 ft.

1171. Fumariaceæ, annua ?—Robusta glaucescens, floribus luteis, fruct elastic dissilicet, valvis revolutis liberifactis.

Erak ravine 10000, to 12000 ft. common, rare on this side, Kurzar rare.

1172. Leguminosæ sp.—Viscosissima moschata, elegans dewy looking, floribus cæruleis.

Erak ravine, in loose shingle 10500, to 12000 ft. common here and there.

1173. Cnicus.—Grandis 2-4 pedalis, ramosus flosculis albidis. Common up the Cabul river commencing at Koti Ashruf, very common towards the foot of Oonnya, in Yonut ravine etc.

1174. Veronicæ sp.—Erak ravine, 10,11500 ft.

1175. Onosma versicolor.—Floribus initeo ochroleucis, demum atro sanguineis velutinis. Erak ravine, in flower, about snow 11500 ft., over the pass as high as 12900 ft.

1176. Asphodelus.—Habit A. mesembyanth. Spica 3 pedalis, floribus dense congestis albis, capsulis globosis, loculicidis, seminibus triangulato alatis Hajeeguk, Erak ravine 10500, to 11000 ft.

1177. Leguminosæ.—Cæspitos prostrata cana, floribus sanguineo purpureis. Erak ravine 10500 ft. in sward.

1178. Graminea.—In sward Erak ravine 10500 ft. sward.

1179. Cruciferæ. In shingle Erak ravine 10500 ft. with Linaria violacea, 1166 etc.

1180. Cruciferæ.—Erak ravine, in shingle very common, cum præcedent, fl. lutea.

1181. Composita.—Perennis, erect capitulis amplis aureis. Erak ravine shingly spots, 10800,12000 ft.

1182. Composita.—Capitulo purpureis, in sward along the river. Zohawk.

1183. Myriophylli sp.—In aquis stagnant. Cabul. Immersis spica flor except.

1184. Tanacetoides.—Artemisia with the usual growth, but less bushy, cana, capitulis progenere conspicuis aureis. Ascent

Bactrian pillar 7000, to 8000 ft. with Statices. Rosæ, Artemisiæ.

1185. Umbellifera.—Frutex habitu peculiare Affghanense, fol. linearibus, fructibus curvatis. Ascent to Bactrian Pillar 7000 ft.

1186. Arundinea.—In small tufts 3 pedalis, panicula fuscescente canescens, erecta densiuscula. Hills of ravine to Koord Cabul.

1187. Artemisia.—Habitu ordinario, argenteo cana, capitulis oblongis apice castaneis. Koord Cabul, on barren stony hills.

1188. Quercus ilicifolius.—Frutex corona oblonga densissima e basi axeos orient! vel arbor 20 30 pedalis, foliis coriaceis sub deltoideis lobato dentatis, spinosis subtus glaucis, foliis junior sæpe integris Diospyraceis. This is the Baloot! acorns oblong $1\frac{1}{4}$ uncial, cupulis urceolatis profundis. Limestone hills, and conglomerate. To Taizeen; in ravines in Taizeen valley common, with Zanthoxyl, and Rosa. Much cut for charcoal; so like a Holy that I mistook it for one.

1189. Spiræacea.—Frutex pusillus, vix spithamæus, foliis rubro tinctis. Limestone. Towards summit of Kothul to Taizeen, rare.

1190. Composita.—In small toughly adherent patches, canescent, in crevices of Limestone cum præcedent.

1191. Mespilus.—Frutex 6 8 pedalis, e basi ramosa. Baccis rubris sub rotundis.

Limestone hills towards the Pine groves Taizeen.

1192. Artemisiæ sp.—Habitu peculiare capitulis oblongis ochroleucis. Stony ground Taizeen valley.

1193. Andropogonea.—In coarse tufts, a large 6-7 feet grass, very common at 5000 ft. to Jugdulluk, spicis albis, Taizeen ravine near Barikab.

1194. Composita.—Frutex ramis densis, ramulis viridibus, foliis angustissimis, lineari spathulatis, capitulis terminalibus, angusto ovatis, squamis angustissimis setaceis.

Post flores tant vidi. Common among stones in Taizeen ravine.

1195. Rutæ sp.—Basi suffrutic, pedalis (ob imperfect) fol. lineari spathulat. glaucis carnosis, flor. citrinis graveolens. To Jugdulluk on barren hills; only one bad specimen.

1196. Labiatæ.—Herba canescens 1½ 2 pedalis floribus rubro tinctis. About dripping rocks, Puri-durah. Jugdulluck common.

1197. Epipactis sp.—Cum præcedent among a tropical looking Andropogon, rare.

1198. Rubi sp —Frutex canus scandens, acinis paucis atro-purpureis. Cum præcedent.

1199. Erythrææ sp.—Annua gracilis pallens, floribus roseis cum 1197 rare.

1200. Terebinthacea.—Arbuscula brevis, corona majuscula.

Same genus as khinjuck, baccis gratis rubris, contus fragrant. On rocks Pur i durrah, common with Zanthox khinjuck.

1201. Arundinis sp.—Sp. 8 pedalis, robusto, foliis bifariis sub secundis glaucis panicula densa fuscescens.

In one thick patch half way to Jugdulluk 5000, ft. Lycioides of Shikapore re-appears near this.

1203. Andropogon vel Saccharum in cæspit parvis, a coarse grass 8-10 ft. high. Panicula matura, apice nutans, ramis sub secundis purpurascens. Puri durrah, Jugdulluk 5, to 5500 ft.

1204. Ejusdem generis, certe Sacchari, habitu simili, sed multo minor, fol. angustissimis, panicula erect villoso sericea alba elegans. Cum præcedent.

1205. Scirpoid.—Gramen robust. Coarse in cæspitib. densis, panicula ampla effusa, sub ovata fuscescens, common about Taizeen, and Jugdulluk. Past flowering except in damp places, Puri durrah. Panic ramis inf. nutantib.

1206. Saccharoid.—Statura, no. 1203, fol. angustis, pannicul sub erecto molliter et dense villoso, sericea alba, Puri durrah, Jugdulluk.

1207. Vites sp.—Longe scandens baccis atrascent. In wet places. Dur i Purrah.

1208. Fici sp —Arbuscula vel frutex humilis. Cum præcedent Limstone. Arbor trunco brevi. Corona magna fructibus globosis solitariis, atro purpureis. About Gardens Gundamuk.

1209. Pulicarioid. Lanata alba, fragrens decumbens, capitulis luteis. Rocks, Duri Pur Jugdulluk.

1210. Composita.—Cheiranthiflore ejusdem generis ac C. dislo-

cata, ramis albis flosculis luteis. Cruciferiform. Rocks Puri Durrah, Jugdulluk.

1211. Stelleriæ sp.—Annua prostrata decumbens, floribus albis. in arenosis aquosis. Pur i Durrah. Adest circa Jugdulluk, Glycyrrhizæ sp sapor radices G. officinali omnino similis. It is the Ussli sooss, Zaisee of the natives, used for coughs.

1212. Quid.—Habitus Lobeliæ pyramidalis, robust 6-8 pedalis, foliis pinnatis, pinulis grosse dentatis, racemis paniculatis cernuis nutantibusve, floribus paucis ex axillis, folia linearis canaliculat. Çalyce adhærent 3 4 dentato. Coroll etc non-visa.

In ravines Soorkhab.

1213. Typhæ sp.—Repens subtis læte cæspit, foliis 3-4 pedalibus angustissimis, plano convexisimis, basin versus dorso obtuse angulatis acuminatissim. Scapo folia paullo excedente, subulata *dura*. Semen massa, oblongo ovata $1\frac{1}{2}$ unciali grisea. Along the Soorkhab. Common but local.

1214. Cupressi sp.—Arbor 30 pedalis funerea. Corona anguste ovato, fol. adpressis squamiformibus 4 stichis glaucis, strobilis size of gooseberry, areolis medio obsoleto laminatis. In gardens Gundamuck with Chunar, Toot.

1215. Lythrum hypericoides.—Basi suffruticosa, ramis simplicibus ascendent, folia rubro tinctis, petalis non visis. Sand stone rocks Gundamuk with Erythræa. In marshes sp. formosa 2 3 pedalis, fl. magnis lilacinis.

1216. Leguminosæ.—Basi decumbens, glaucescens, floribus carneis pulcherrima, sanguineo purpureo venosis. In fields Gundamuk.

1217. Andropogonea.—Pluri caules basi decumbentis ex axi una 4 5 pedala. Panicula effusa patens elegans spiculis rubro tinctis.

In fields Gundamuk.

1218. Capparis.—Habitu omnino Zizyphus cujusdam Bheir, frutex ramis decumbent, internexis, foliis sub glaucis, floribus amplius culis initeo albis, cito purpureis.

Sandy or gravelly ground Gundamuk Futtelabad.

1219. Sagittariæ sp.—Petalis albis sp. robusta in rice fields. Gundamuk.

1220. Ammanniæ sp.—Rubescens statu perfecto pyramidalis, odora muriatico.

1221. Lythrariæ sp.—Valde variabilis 2 uncialis pedalisve rubescens, caule 4 gono ramoso, capsulis pisiformibus, rubris, cum præcedent.

1222. Cyperacea.—In oryzetis Gundamuk.

1223. Cyperacea.—Cum præcedent.

1224. Veronicæ sp.—Sp. tenera foliis, subtus purpurascent, racemis foliaceis, erectis nutantibusve, flor. pallide cæruleis.

1225. Cyperaceæ.—In rice fields Gundamuk.

1226. Polanisiæ sp.—In fields of Maize. Gundamuk.

1227. Artemisiæ sp.—Sp. parviusculi argenteo alba elegans perfragrans. About cultivation. Gundamuk.

1228. Physalis sp.—Ramis subprostratis, tenera, floribus luteolis. In fields Gundamuk.

1229. Digeræ sp.—Parva erecta; floribus rubris. About cultivat. Gundamuk.

1230. Oxalis corniculata.—About cultivation Gundamuck.

1231. Anagallis arvensis.—In fields Gundamuck florib. miniatis.

1232. Celosiæ sp.—Spicis erectis albo. carneis. In Maize fields Gundamuch.

1233. Violæ sp.—Stoloniferis. habitu V. serpentis. Dripping banks Gundamuk.

1234. Conyzoides.—Per fragrans viscosa, fl. luteis about Marshy spots local. Gundamuk.

1235. Conyzoides?—Erecti laxiuscul. ramosa radio purpurascent. Under banks and thickets. Gundamuk.

1236. Penniseti sp.—Spici nutans Gundamuck. Cult.

1237. Phaseoli sp.—(Moong Mhai, Affgh.) humilis vix pedalis Gundamuk. Cult.

1238. Glycyrshizæ sp.—Afsul soos) 2 pedalis ramis erectiusculis. Legume echinat. brunneis. Common Gundamuk. Toorkhab used by natives for coughs.

1239. Clematis.—Scandens elegant.—Calycibus fusco ochroleucis. Gundamuck in hedges.

Verbena officinalis, Plectranthus. Joussa, Eryngii sp. Lycioides of Shikarpore, Periploca aphylla of Bolan Pass.

1240. Labiatæ Lavandulæ habitu.—Frutex humilis ramosa scraggy,

fol. dense undulato pinnatis, flore cæruleo purpureo, tubo pallido longiusculo, lab superior truncato bilobo, sub fornicato, lab. inf. lobis lateral, rectiusculis, medio cuneato obcordato sub reflexo, flos intus purp cærul venosus

Sandstone and conglomerate hills Gundamuk.

1241. Holcus Surghum.—Panicula erect raro nutans. Futtehabad Cult. sparingly.

Gwara cultivated. Also Phaseoli sp?

1242. Andropogonis sp.—Cæspitosa *uncia*, spicis rubescent, culmis basi decumbent. Sultanpore, in arenosis humidiusculis.

1243. Gramineæ Aristoides. Decumbent, fere prostrat spicis fusco rubescent.

Cum præcedent.

1244. Graminea.—Poa etc. basi decumbens. Panicula effusa sub ovato spiculis rubro tinctis. Cum præcedent.

1245. Cyperacea—Cladia subterraneo culmo, subtrigono, fol. (bracteis) abbreviatis panicula unilateral.

In aquosis. Sultanpore.

1246. Cyperi sp.—Fol. culm, excedent triquetro, canalicul culmo acute 3 gono, bracteis panic umbellamve excedent, spiculis brunneis, cum præcedent.

1247. Isachne sp.—Culmo basi decumbent Panicula effusa, spiculis pallidis, cum præcedent.

1248. Hypericinia—(Reamuria? ericoides) Suffrutex humilis, ericoides ramis decumbentibus, glaucescens, fol. oppositis brevibus linearibus denticulatis patentibus.

Stipulis 2, omnino similibus sed paulo minoribus, axillis expertibus! adeo foliatio verticillata, hoc modo (Fig. 35); floribus axillaribus solitariis (Ericinæ aspectu) apices versus ramulorum epproximatis, cernuis et subsecundis albis, subcampanulatis more *Convallariæ majalis*. Sepala 5 petaloidea secus centrum fuscescentia, basi versus viridescent, patentissim. demum erecte. Petala in corollam companulato urceolat disposita, alba. Genital inclusa.

Hastily examined probably. Tamaricineous. Stipulation worthy of examination.

About a burial ground Sultanpore with Fagonea. Appears to be Tamariscineous, or, probably Reaumurioid specific name if undescribed, ericoides.

Floribus axillaribus solitariis pedicello folio breviora basi bibracteato, bracteis stipulis similibus.

Cal. subovatus e sepalis 5, subcarinatis acutiuscula centro excepto membranaceis, imbricatus. Pet totidem alternant convolut.

Stam 10 his sepalis oppositis magno evolutis. Anth. biloculares inclusæ medio affixæ.

Ovarium ovatum, e carpellis, 5 sepalis opposit sursum attenuatum in stylum 5 sulcatum, apicem 5 fidum.

Stigmata 5 locularis, apiculum papillosum Placentæ axiles, ovula indefinit. Minute.

Herba ericiformis, fol. minutis oppositis : basi bi-stipulatis. Stipulis dentatis. Floribus vel alternis, vel oppositis, si alternis sæpius subsecundis. Probably Hypericineous.

The dehiscence of the fruit is probably loculicidal, it approaches in technical characters to Crassulaceæ. In natural ones to Fumaricaceæ.

1249. Bergioides.—Canescens, inferne ramosa, ramis decumbentibus, floribus in axillis conjestissimis. In arenosis, Cabul river Julallabad.

1250. Ludwigia.—Demissa ramosa, ramis decumbent tota rubescens, fructibus sanguineo brunneis. Petalis minutis, luteis, sepalis vix longior. Stam 4 Cum præcedent.

1251. Ammanniæ sp.—A neat elegant sp. Caula obtuse 4 gono, fol. sæpius deflexis, inflorescentia rubra. In arenosis. Cabul river Julallabad.

1252. Ammanniæ sp.—Sub decumbens, rubro pallida tinct, caule 4 gono, foliis floralibus decussatis, patent recurvis, petalis rubris, erectis.

In sand Cabul river Julallabad.

1253. Cyperus leptostachyus.—Spicis brunneis umbella subnutant subsecunda. Cabul river, ibidem.

1254. Bidens sp.—Fl. luteis. Cum præcedent.

1255. Portulacacea.—Prostrat glaucescens ramosa, foliis oppositis petiolis dilatatis, fere connatis, floribus aggregatis, vel dichotomis, breviter pedicellatis sepalis e viridib, margine rubris. Petal o, Stam ?—sepalis alternant, Ovar, fucescens. cito auct. apice bilobum margine loborum denticutat. Styli 2,

pericarp (an drupacea?) biloculare. Seminibus 4, atratis, testa sub ossea. Embryone peripherico.

In agris cum Cucuma, Kuraila dict. Certe Chenopodiaceis affine non obstant, fol. opposit. Stamin situ, pericarpio biloculare et *seminibus*. An Portulacacce.

1256. Digitariæ sp.—Sultunpore spicis lividis. In arenosis humidiuscul.

1257. Sesamum.—Balabagh. Cult.

1258. Dalbergia Sissoo. Cult in hedges. Balabagh.

1259. Vernoniacea.—Conglomerate banks of Soorkhab, Balabagh.

1260. Crotalaria juncea.—Cult Balabagh. Sparingly.

1261. Capparideæ Polanisiæ sp.—Annua robusta, ramosa hispida fol. orbicular simplicib siliquis subulatis utrinque attenuatis 1½ uncial, Pilis glandulosis. Capitib magnis per fragrans viscosaque.

Ascent to stony plateau in sandstone, ascent to Barikab.

1263. Chenopodium. Habitu.—Prostrat, fol. alternis carnosis, sub cymbiform, longe piliferis, apice floralibus canalis albo lanatis, cum præcedent.

1264. Chenododiaceæ.—Frutex ramis decumbent, fol. confertis carnosissimis, oblongis obtusis.

Ali Baghan banks of river.

1265. Cyperacea.—Longe repens in arenis. Bussoollah in sand.

1266. Herpestes Monnieri.—In paludibus Bussollah.

1267. Cyperacce.—Robust foliosa spicis brunneis. In paludibus Bussoolah very common.

1268. Gentianeæ sp.—Common in moist sward. Bussoollah.

1269. Zyziphi sp.—Arbuscula vel arbor parva, ramis dependentibus. To Bussoollah, about villages.

1270. Rhamnea.—Arbuscula vel frutex, sub spinoso, inextricati ramosa, ramis foliis subtis inflorescente que subtus, breviter, albo tomentosis, racemis spiciformibus in paniculis dispositis, axillaribus terminalibusque, floribus minutis albis.

Khyber Pass. Slate rocks 2400, ft.

1271. Heliotropium flavum.—Planta ramosa 1-3 pedalis canescens, floribus flavis, infundibuliformi compræsse disticho secundis.

Commences to appear at Julallabad. Common on slate

rocks. Huzarnow. Lalpoore, and in the Khyber Pass, on conglomerate to Lundy khanah.

1272. Andropogon.—Culmo ramosa 3-4 pedal, foliis glauceis, flosculis villosis. Panicul erecta ovata.

Near the entrance of the Khyber from Lalpoore; 1800 ft.

1273 Urticea.—Herba ramosa basi suffruticosa strigosa, pilis per adhærent, foliis subtus niveis. Habitu quodammoda Labiata.

End of 1*st Year's Affghan Collections.*

BOOK. III.

Chapter II. *Affghanistan Flora, Second Year Kooner Kafiristhan.*

1. Edgeworthia.—Arbuscula, 10-20 pedalis, atrovirens, corona rotunda. Habitus certe Myrsinaceus. Ramulis velutino albidis; foliis lineari obovatis vel interdum spathulatis coriaceis integris, apice rotundatis, integerrimis. Accidit certe Sapotaceis.

Racemis abbreviatissimis axillaribus, alabastris ferrugineis floribus inconspicuis, parvis. Calyce e bracteis ferrugineis imbricat. Corolla laciniis 5, acuminatis profundis, cum his alternant, processus similis sed multo minores. Stam abort. Stam petalis opposita. To be again examined with good specimens. Myrsineæ really with stamens opposite petals in all cases? in this, which is the real calyx. Also found on the mountains about Pushut, with the Cryptandrious Rhamea which affords the fruct, *Momunna*.

Very common in the Khyber, above Ali musjid, or between 2300, and 3500 ft.

2. Urticea.—Planta annua decumbens tenera, floribus minutis viridibus. Shady damp places under conglomerate rocks, Lundy Khanah.

2*a*. Hyoscyami.—Planta perennis robusta, dense ramosa, carnosa viscosa ramis petiolisque purpurasc, fol. magnis sub deltoides dentato lobatis, floralibus, integris sub lanceolatis racemis in æstivat gyratis. Calycibus profundis infundibulif, viscoso pubescent, sub 5 dentatis. Corolla infundibulif, calyce $\frac{1}{3}$ longior. lobis 5, paullo inæqualibus, 2 superior minoribus, color albus, laciniis 3 posticis saturat purpureo sanguineo tinctis et maculatis. Staminibus inæqualibus, longioribus sub exsertis, antheris magnis versatil: plumbeis. Stylus exsertus stam: longior: paullo longiore rectiusculo purpureo. Stigmat capitato bilobiusculo. Corolla, superiora latere parum profundo fissa, hinc unilabiat: videtur, Odor amylaceus, weak. On conglomerate rocks Lundy Khanah. Bolan Pass on rocks. The flowers have a curious resupinate appearance, consequent on the gyrate raceme.

Habitus Cyrthandraceus.

3 Solanacea. An Physalis.—Herba decumbens robusta ramosa, velutino pubescens, griseo viridis, fol. concavis undulatis. Calyce 5 angulato inflato, ore urceolato, præsertim fructifero, floris non inflatus, sed paullo urceolat. Corolla sub cylindracea, tubo ut tubus calycis, et eadem longitudine, laciniis lanceolatis, patento erectis, viridescent lutea. Stamina etc. inclusa.

Calyx fructus, minute reticulos scariosus, inflatus, baccam pisiformeam miniatam includ. Sem. vix numerosa. About old ruins Lundy Khanah.

4. Myrtacea—Myrtus.—Arbor magnitudine mori vulgaris hujus patrice. Foliis dense oppositis coriaceis, interdum ternatis· Myrto vulgaris fere *variant* consistentia. Pedicelli uniflori axillares, rari. Fragrantia. Myrtus vulgaris.

In montibus australibus Pushut. Nomen vern: *Manoo.*

5. Oleina?—Arbor magnitudine Populi—*Baid* nomina vel *Salius*· fol. opposit sub lanceolat lineata, subtus evenia, subferrugineo albis, ramis albidis.

Arbor, nomine Zaitoon, it varies a good deal in the shape of its leaves, which pass into lanceolate or even ovate, and also in ferruginescence. See. specimens *5a. 5b. 5c.* which are said to be the same.

The other plants are Cryptandroides, which is a genuine Rhamna, vern. nom. Momunna, affording a small edible fruit. Is not this a passage into an Australasian form, as also Dodonæa, vern. nom. Ghoorazky. It is also viscid, at least when drying, like some of its comrades from New South Wales. Goorgoora.

Thymelæacea, another N. S. W. looking thing, called *Laighoona.*

Lycioides called Khumazoori—used for making *cards.*

Urticea—Arbuscula, foliis subtus niveis *Khurwulla.* Quercus Baloot? *Chairreye.*

Dracocephalum of the Bolan Pass etc. here called Shinshob.

6. Polygonea.—Frutex singularis, foliis longe petiolatis hastatis, superioribus ad ochreas parvus redactis ob hanc causam, ramuli *nudi* flagelliferi, nomen *Trookeye.*

10 or 12 Mosses may be found about here. The prevailing forms, ie. as to number of species, being Tortulæ, Grimmia pul-

vinata, very common. Bryum cæspiticium. Funaria hygrometria, Phascum and Gymnostomum. The most are to be found in crevices of rocks, or under stones on the sloping sides of hills. Bryum alium.

6*a*. Crucifera.—Frutex humilis, dense intricate ramosus, partibu senioribus, cortice albidis cæterum omnino glauco albid, fol. linearibus canaliculatis sub revoluteis.

Floribus inconspicuis. Calyce basi e saccato æquali semi-patent fuscato. Petalis longe unguiculatis, ungue fusco, lamina atro purpureo sordida, demum non revolutis.

Fructus brevi-pedicellatis, ascendens semuncialis, compressa secus margines, carinat, medio ob semena rugosa. Stylo brevissimo, stigmatibus terminat; bivalvis replo et phragnat persistent. Semena pauca vix ultra 6 cuivis loculo plana subreniform, luteo castanea, margine omni ala lata alba circumcincto (Fig. 36) six times nat size.

On the bank of an old water cut. Pushut.

7. Erythræa.—Planta gracilis spithamæa, pallens, fol ascendente incurvatis, margin revolutis, floribus roseis.

Banks Pushut, sæpe valde ramosa.

8. Oxalis.—Planta perennis, dense repens, floribus stramineo luteis. On banks. Pushut. It must be different from the common O. corniculata.

9. Conyzoides.—Erecta 2 pedalis ramosa basi suffuticosa, fol subascendent, involucri squamis apicem rubris. Corymbis initeo nutant.

Banks Pushut; one of the most tropicial forms of Compositæ.

10. Ceterach. An vere distinct a Grammito.

Rhizoma vix repens. Frondibus digitalibus vel fere spithamæis carnosius fragilibus, pinnatis, pinnis alternant, oblongo rotundatis subundulatis, et sublobatis, *basi latâ*, supra glabris, subtus squamis dense coriaceo membran tect. Capsulæ in massas lineares, disposito, squamis, subobtect venateo (ut in Hemionitis) nempe sub reticulata, versus margin vena parimaria cujusque pinnæ, flexuosa; secundaria bifurcata; thecis in ramo superiora, *more solito*, devisionibus ultimis rursus furcatis intro margin desinent. Crevices of rocks, Pushut.

11. Felices.

Rhizoma vix repens tota præsertim pagina, dorsalis villosa, tomentosa frondib digitalibus bipinnatis, pinnis alternantibus pinnulis basi latiuscule affixis, subrotundatis quasi crenatis Venatio inconspicua.

Capsulæ intro marginalis vel margini approximat, furcam ultimas occupantes, pilis longis setaceis obsito densissim. In crevices of rocks Pushut.

Erytheræa, Equisetum, Tamarix, Alhagi, Fagonia, Lobelia ? Rubus, Artemisia pyramidalis, Hippophae, Mentha and Eruceis, all found about Pushut.

Narcissus. Nargros vern. Bulbus cum squamis magnitudine pomi, vaginis, vel foliis semi-evolutis, albis truncatis supremis ore obliquis. Fol. ligulatis bifariis, patente erectus, carnosis glaucis, secus margin utrinque canaliculatis obtusissimis, $\frac{1}{4}$? tortis. Scapo, fol. æquant, vel excedent compressuisculo striato angulato. Spatha membranae scariosa univalvi.

Flores plures, fragrantiâ ordinario. Pedicelle trigoni et inter goniis striatis. Ovarium vel basis tubo calycis vel perianthe 3 gonium, faciebus planis. Tubus perianth etiam 3 goniis. Per biseriat. Corollinum album.

Sepalis rotundatis, exterior majoribus demum reflexis, interior sub cordatis, Cupula aurea e materia staminfera vel glandulosa, parum profunda, oræ integro varie sub undulat. Stam exteriora, ie. sepalis exter. oppos. exsertis, quoad tubum, interiora inclusâ.

Stylus stam longior paullo exced. Stigmat 3 parva. Cult all over Khorasan. Pushut.

Wild in abundance in sandy fields near Kulloor fort. There is no difference between it and garden one, perhaps the leaves are a little narrower; the flowers are brought in here in bunches.

12. Arbuscula glaucescens, tinged with fuscous, fol. coriaceis, oppositis, vel sub oppos lineari spathulatis, integerrim utrinque similibus, gemmis terminalibus,, et axillaribus, squamis tetrastichis, arcte imbricatis. Spici sub patentib, brought from the hills, to south of Pushut.

13. Pinus.—Arbor ut dicitur excelsa magna, fol. (ramuli) longissimis, fere pedalibus, ternis infimis horizontalibus vel nutantibus

reliquis erectis obtuse trigonis apice sphacelatis indurato spinosis, vaginis pluribus, (looking like fine tow, rolled round the base of the leaves) margin, varie ciliatis, fol. primar. suffult. lineari lanceol scariosis brunneis reflexis.

Strobilus resiniferus in unico spici stricte transverso ovato ovi anserini, brunnea, squamis apici incrassatis, et quam maxime reflexis, præsertim basilaribus. Brought to me from Mountains south of Pushut.

14. Amygdalus.—Badam Tulk. Arbuscula. Calyce urceolato rubro tincto. Pet patent albis, flor odoratis.

A handsome shrub when in flower, very common not far from Chugur Serai Paire, on barren Hills.

15. Viola.—Caule subterraneo repent, fol cordatis griseis, floribus pallide carneis, vix odoratis, pet infimo infra medium lilacino striato.

Very common, on the banks of water. Cult. near Chagur Bala.

16. Viola sp —Stolonifera, nana, fol cordatis ovatis, floribus amplis, odore V. propriæ, pallid lilacino cærul. Pet 5 to, purpureo venoso, admedium porrecto reliquis patentissimis.

Stony banks, Bala Chugur.

17. Pteridis sp.—Wet banks. Bala Chugur. This is the fifth Khorasan Fern met with.

17*a*. Quercus Baloot.—Arbor mediocris, fol perennant, trunci e basi fere ramoso. Corona densa Oblonga ; fol. coriaceis subtus glaucis (Cortice sub suberosa). Glandibus oblongis uncialibus microne (e stylo) robusto cupula ore subcontracto, squamis plurimis minutis densisimo imbricatis.

Mountains Bala Chugur serai 3000, to 5500 ft. cum Oleina.

18. Visci sp.—Radice una uti Visci omnes (Loranthus plures habet) dichotom. habitu solit. fol. oblongis coriaceissimis. Sursum curvatis.

In Oleina, non rara 3590, to 4000 ft.

19. 86*a*. Primulacea.—Perennis cæspitosiuscule, fol. reniformibus grosse dentatis, floribus umbellatis, umbellis longiuscule pedunculatis, ascendentibus simplicibus. Hills near Bala Chugur 3500 ft. last years specimen.

20. Melanthaceum? Crocoides.—Bulbus profunde immersus in ter-

ram, oblongis, parce tunicatis vaginis castaneis, axis florifera lateralis, squamis vaginat, floribus ante folia evolutis, fol. juniora linearia concava canaliculat. Periant liberum in tubum longissimo, basi connat, bipartit sepalis linearibus angustis (interior angustior) patente revolutis, aurea.

Stam aurea, 5, fauci inserta, filam brevia, his stamin sepalis exterioribus oppositorum logioribus. Anth basi ad fixæ bilocul. utrinque dehiscent, cito tortæ.

Ovar e carpellis 3, oblongum subterraneum 3 loc. ov. oo biseriat. Stylis 3 longitudine. Corollæ (Perianthii) part exserte e tubo aureæ. Stig. subsimplice. Often polygamous or rather male. Larger specimens from Kafiristhan. Among grass, on exposed faces of Mountains, Bala Chugur 4000, to 5500 ft.

Momuana. Cryptandroides—Stipa very common. Thymelæa do. extends to snow. The bark is used for matches. Scrophularia, Ditto. Arum.

Sedoides pictum.

21. Pinus sp.—P. excelsæ. Arbor dicitur excelsa et communis in montibus Kafiristhan, fol. sub nutantibus subsecundis trigonis, angustissimis acutiusculis quaternis vaginis obsoletis e squamis minutis imbricatis, membranaceis solitis nullis.

Strobilis juniores erecto longuiscule pedunculato pedunculis robustis squamis scariosis sparsis.

Maturis pendulis (sausage shaped) squamis latissimis obtusiss: inferior subcarinatis, planiusculis, superior quasi apice incurvis. Concave, or rather bulged out towards the apex.

Piunee, is the Kafir name; seeds not eatable.

22. Æsculus.—Of this I have only the seeds. Seutoalla is the Kafiri name. It is used as food for cattle.

Semen maximum reniforme nigrum, sub lucide, secus sinum raphe lata notat, raphe in depressione terminant, hilo magnum circulare centrum semenis versus Tegument fuscum intus crassum coriaceum. Cotyledonibus adhærens. Cotyledones consolidatæ carnosæ semeni conform: extus (correspond to the seed) rugosæ, Radicula curvato longe in cavitatem raphe respondentem recondit. Plumula inclusa? Fig. 37.

a Radicle, *b* hilum, *c* cotyledon, *dd* commissure, *e* depression at the commencement of the raphe, *f* included Plamule? It is green.

23. Querci sp.—Arbor. Habitu quoad ramulos Q. Baloot, foliis minus coriaceis, semper spinosis et non glaucis subtus.

Kafiristhan. Zaih, is the Kafiri name.

24. Euphorbiacea.—Herbacea decumbens, fol. glaucis rubro plus minus tinctis, involucro viride. Kafiristhan.

25. Hederacea.—H. Helix from Kafirithans. Praitsoo.

26. Asplenium.—Rachi atrata, cæterum tecto viridis, from Kafiristhan.

27. Pteris:—Rachi fuscescent pinnis linearibus acuminatis, serratis fertilibus majoribus, longo productis.

Color totus pallens, ideoque verisimiliter umbrosa.

From Kafiristhan.

28. Adianti sp.—Rachi atrat fronde supradecompos, pinnatis, cuneatis, margine supreme rotundatis, argute serratis, sp. elegans.

From Kafiristhan. Also brought to me from Gora Puirai Bhurrah, and said to be wild.

29. Valerian.—Perennis odor peculiaris fortis, radices longe cylindraceæ, apicem versus divisæ, fol. pubescent cordato, sagittatis, floribus albis.

From Kafiristhan.

29*a*. Dodonea.—Frutex erectus, 3-4 pedalis, fol. ramulis angulatis, fol. ascendent fere erectis coriaceis, supra vernice lucidis. Cymis densiusculis terminalibus, æstivat valvata, aperta, longe et sepalam reflexa sunt prius antherarum aurantiac; colora dehiscentia.

I have not seen the female, the plant is very abundant on all the barren hills about here, between 3000, and 4000 ft. it is perhaps the most common shrub, and is decidedly an Australasia looking one.

30. Labiatæ.—Caules floriferi plures, omnes præ statua lateralis, basi decumbent, rubescent, hispida planta, fol. lingulata vel obovata rugosa, Flores parvo purpureo lilacina, tubo longitud calycis cujus sep: postica breviora, lab super, minuto bilobo ascendent, infer 3 lobo, patenti lobis oblongis. centrale emarginato. Genit inclusa, faux pilosiuscula.

Banks of fields, at both Chagurs, very common.

31. Labiatæ.—Habitus præcedent sed cana, fol undulato rugosa

verticillas pauciflora, flos. curvatus. Calyx subæqual, lab superior albus horizontal, bilobo, inferiora porrecto, lobis lateral oblongis, centrale maximo, obcordato, bilobo, pallide cærulescent, genitalibus, semiexsertis. Antheris, arcuatum, appoximatis, brunneis. Stigmata sub æquant.

In fields Bala Chugur.

32. Violæ sp.—V. Patrinii facie. Estolonif, fol. e basi cordato interdum sub hastat, oblonga, flore carneo pulcherra purpureovenosa, pet 2 inferior lateral basi purpurea. On banks of fields not common Bala Chugur.

33. Iris sp.—Habitu typicali nempe rhizomatosa, fol. ensiformibus equitant glauces, flos amplus (axi foliis breviori), saturato azurea

Pet exter reflex, intern erectis connivent, barba alba Withered specimens from Kafiristhan.

34. Pinus.—Nukhtur of the Affghans, Arbor vasta, habitu laricis quodommoda formosa, ramis tabularibus, inferior dependentibus, ramulis senioribus abbreviatis dense foliaceis, junioribus elongatis. sparse foliosis (or rather,) ramis novellis (*apice*) elongatis, foliis sparsis, ramulis abbreviatis semperque foliis densis, petiolis persist, asperis. Foliis solitariis: subteretibus e basi ad apice gradatum, incrassat in petiolo fusco brevi distinct articulatis, vagina nulla. Conis masculis oblongis ovatis, magnis, squamis dense imbricatis, apice rotundatis.

Strobilis fæm erectis, late oblongo ovatis, apice depressis, squamis latissimis margine subinflexis. *Cedroideis.* Sem ferrugineis, pulchre cæruleo cæseis.

Very common on mountains about Bala Chugur, forming large forests; limit inferior 6500 ft. superior may be *guessed* at 9000, to 10000 ft. It is this species which forms the forests visible from Pushut, P. excelsa being said to be very rare. The male cones seen were only detached ones. This is not used for fuel. Baloot being preferred. It is a beautiful and occasionally a grand tree, even towards its inferior limits.

This makes the third Affghan Pinus known to me, or the 4th, including P. excelsa.

35. Geranii sp.—Habitu G. Robertiani, fl. læte rosei parva under hedges etc Otipore.

36. Gentiana —Sp. pusilla vix bi-uncialis, inflorescentium corymbosum, densum formans, foliis fusco viridibus, margine membranae concavo carinatis, deorsum semi curvat, flor: mediocribus, extus fuscescent (quoad saltem laciniнæ veræ) intus ad laminam pallide azureissinubus 3 *dentatis magnis*, genitatibus inclusis.

Water banks Otipore. One specimen.

37. Ornithogaloides. hipoxides: Bulbo globoso axi 2 3 uncialibus, fol. infimis 1-2 tortis linearibus, canaliculatis axibus unifloris pubescent, flore pubescent erecto magno præ planta, sepalis linear-lanceolatis acuminatis erecta patent, intus lutescent, extus viridiscent præsertim externis.

Dry gravelly ground Otipore, not uncommon.

38. Mazus rugosus ? variat Calyce.

Common in fields, about banks, Otipore. Pair Chugur. This is probably distinct: the *rugosus* is also found about Chugur Pair, and has a different calyx.

39. Cruciferæ.—Brassicaceæ. Robusta carnosa, glauca, fl. numerosis luteis. Calyce petaloideo luteo patente. Pet patentibus. Stam breviora, brevissima.

Cult at Otipore as food for cattle. Radix vix fusiformis.

40. Amygdalacea.—Frutex habitu et foliis Spiræaceæ cujusdam, fol. teneris obovatis vel ovatis ut plurimum deorsum curvatis, argute serratis: stipulis (petiolar) lineari setaceis, floribus solitarriis vel sæpius binis, pulchre roseo carneis, with a tendency to become double.

Cal. tubulosus fusco ruber, 5 fidus, laciniis patentibus, dorso viridibus. Pet 5 breve unguiculat, ovata, integra vel dentata vel biloba. Stam. oo, sed non numerosa, longiora, fauci calycis inserta, reliqua intus tubum. Antheris sæpe in petalo transeuntibus, filamento immulato, petala sex trasformata profunde biloba, intimæ breviores, non raro abortivæ? Tube lined with a purple coating.

Ovarium unicum, gibbum pilosum. Stylus rectus, stig. exsertum, oblique capitat. Ovula 2 (vel unicum?) pendula.

Flowers sometimes without a pistil (once, in 5 instances).

Pair Chugur, on Hills previously marked as a Spiræa.

1 A curious thing worthy of notice is, the petaloid nature of the tube calyx, and the sepaloid nature of its teeth!

2 The purple lining of its tube, which colour depends on the colour of the petals? example Punica it which it is scarlet.

3 The hairy ovary, a very general character in this order.

This group of orders, Rosaceæ, Pomaceæ, Amygdaleæ, Sanguisorbeæ, Chrysobalaneæ, and Leguminosæ, is well worth extensive study. This plant is found on Hills about Otipore, form 3500 ft. to more considerable elevations, which I have been unable to determine. It varies with leaves underneath densely adpresso albo *cano*, at least I can find no other difference, marked enough, between the two, since the No. 40. one, is nearly glabrous, perhaps the fruit may differ.

41. Trichonema ?—Smilacinea, vel Lilacineæ Lindl, cum lamellis membranaceis. Planta pusilla elegans. Bulbus, size of a small marble, sæpius parum profundus, fol. e bulbo 1 2 lineari, setacea, scapum excedent vel œquant, semiteretia, supra canaliculat. Scapo folium unicum consimel gerens, gracili erecto. Flores vere paniculata, in ramulo quoque, sæpius terminali, prius evoluto, *utroque* stricto terminalibus, axillis bractearum vacuis, *erecta*.

Periant: rotatum sepalis lineari lanceolatis, intus aureis, extus plus minus viridi tinctis, interior duplo fere minoribus. Stamina *aurea* 6. Ovar obtuse trigon, stylus cylind. stigmata 3, conni. ventia?

Semina.

Very common about Otipore Pushut etc. and all over Khorasan at the bases of stony declivities in crevices of rocks.

42. Carex.—Dense cæspitosa, foliis canaliculat spiculis paniculatis (Panicul foliis breviori cernua vel nutanto) androgynis (at least some) ovato acuminatis, atratis.

Grassy damp banks Otipore, common.

43. Tulipa.—Spithamæa vel pedalis. Bulbo mediocri ovato, laminis amplectent, latis indurato coriaceis, versus apice lamella intima a medio supra in tomentum fuscum densum abeunt, extimo more or less split, secundo et intimo, apice tant fisso, affording a plete protection to the bulb itself, which is fleshy white and tender.

Bulbus novellus ad apicem radicis, maturiora aliorum fibullarum maximæ horizontalis, longæ evolut alter quasi in axillarum foliis inferne, et rotata lamelliformis.

Caule spithamæa, fol. 3 5, linearia, patenti revolute, interior erectiuscula torta, ad æpocham anthesis, glauca, quam maxima undulata, margina rubra æstivat, concavo conduplicata.

Pedunculus floris unius terminalis erect, ruber bi-uncial. Flos suave odrat. Sepalis exterior patent revolutis lanceolatis, basi macula atro purpurea; extus, secus medium rubro striatulis; inter: brevior: lanceolato obovatis albis, basi atropurp. Filam atropurp, robusto breviora; anth fusco aurantiac apices versus dehiscens, sep exterior opposit.

Ovar. obtusa 3 gon. Stylis o, Stigmata recurva papillosa.

Very common in fields Otipore. Four species are known to natives, their general name is *gratool.*

44. Fumariaceæ. Corydalis.—Spithamæa, glauca radix non visa. Fol. sub quaterna sub verticillata, circa basin racemo terminalis erecto, pluriflora. Petiol: carnosum supra plana. Pinnis, pinnatis sæpissime ternata, lobis lateral sæpius erectis et approximatis, terminal. majore, plus minus ovato deltoideo, margo purpurasc. uti venæ subtus, venæ supra indistinct.

Bracteis lobo terminal folior: simil: sessilibus. Pedicelli bractea demum exced:, flores mediocris calcare longo, apice constricto globoso, ad fauces carneæ, carina cujusque labio brunneo sanguinea, lab. super. ascendens fornicata, inferior reflexo. Stam. cylind: directione labi superior. Pet lateralia, apice (spoon shaped) adhærent intus brunneo sanguin.

From Kafristhan.

45. Fumariacea.—Corydalis præcedente affinis sed gracilior, fol. tenuioribus lobo terminal 3 lobo quasi crispata. Bracteolis lanceolatis accuminat. Calcare longo apice clavato. lab superior corollæ denticulat from Kafiristhan.

46. Urticea.—Specimen unicum visum Nomen vere *Taghur,* yields a fruit. Arbuscula 15 20 ft. high. cortice brunnea *ramulis* distichis, succo vix lacteo, gemmarum squamis pluribus imbricatis.

Pedicellis florum mascul; demi persistent.

Stipulis membranaceis oblongis, caducis, foliis novellis, obliquis, lanceolatis, cuspidato caudatis Celtidoideis.

Floribus axillaribus, inferior ramulor novell masculis, 1-3 in pedicellis brevibus, superior hermaphroditis solitariis, longius

cula pedicellat, Perianth foliaceo membranacea, 4 sepalos, e purpurascenti virida. Antheris-flor hermaprodit scrotinis, elastice demum dissilient, typicalibus. Ovar basi pilis cinctum viride glabrum. Stigmat 2 magnis, medio sulcatis, cuneiformi bus, carnosis, papillosis. Stylo no. Ovul 1 pendulum ex apice.

Fruct non vissus. Cultivated, Otipore.

The inferior situation of the males, is worth consideration as well as the decided hermaphroditism of the upper flowers, the singleness of which is not owing to the greater *nisus* required for the production of the additional organ, but depends upon the lesser luxuriancy of growth, always visible in a simple raceme as we proceed upwards.

The stipules are true scales of leaf buds: so that there are two sets of buds: one general, and one partial. Query do they really belong to the leaf, or rather to the bud present in the axilla of the leaf. To prove that the structure of stipulæ has been quite mistaken, I am quite able. Several orders supposed to be stipulate are not really so: for there is a primary distinction between genuine stipulæ and mere processes of the petiole.

46α. Dodonæa.—Frutex 3-4 pedalis, ramis flexuosis, angulatis; fol. ascendent pagina utraque stomatosa? set pæsertim inferne? superne vernical lineari lanceolata vel spathulat.

Flores dioica vel raro monoica, flor fæmin racemoso-paniculat, terminalis, deflexo cernua æstivat: angulato valvata.

Stylus longe exsertus apice tri, raro bifidis. Stigmata 2-3 obtusa. Ovar: bi-trilocul. Ovula plura.

Succus Terebinthaceus.

Otipore. In profusion on the low barren Hills, females rare in comparison to the males.

I am not aware of the transition forms, but unless they are very gradual, and consequently numerous, Dodonæa should be separated from Sapindaceæ. Is not this species a genuine Australasian form.

47. Urticacea.—Arbuscula humilis Cortice tenaciæ, fol. acuminato lanceolata aspera, serrata, supra prærugosa, subtus nivea, stipulis scariosis parviusculis deciduis æstivat conduplicat. Flores di-

oicis: glomerulis axillaribus, densis, subrotundis, e rubro canescent cæt ordinis, filam. (more solito) transverse sulcuta, inflexa demum elastica dissilient. Rud fæm o ?

About watery places. Otipore not common.

Urticaceæ however distant from Melastomaceæ have curious analogies with that order, some affecting the habit, and especially the structure of the leaves, others the disposition of the stamina. I have a Melastomaceous plant from Lat 11 North ie. one degree south of mergui which is mistakeable at first sight for an Urticeous genus.

47*a*. Platanus.—Arbor formosa, magna, ramis (if left to themselves) dependentibus gemmar squamis membranaceis, foliis dense tomentoso sericeis ferrugineis.

Capitulis masculis ramulos inferioris novellos terminant cernuis, receptaca globoso. Anth *singulæ*. Fæm: ramul terminant cernui. Stylis stigmatibusque rubris sexus utrinque capit sæpius binate.

Otipore, common. A really fine tree, Chugar *Pair*.

Memo. to examine its flowers and the situation of the ovula. The surface of the male torus is curiously lobed, and there appear on the branches two sorts of tomentum.

Scarcely to be included in Urticeæ on account of the naked male flowers and want of milky juice?

It has certain analogies, or, affinities? with Hamamelidæ through Sedgewickia. Scales of buds general and partial: similar?

Attains a large size, 100 years produce perfect specimens, the trunk is never of any great height.

48. Valerianæ sp.—Herbacea; fol. infer pinnatis, lobo terminal. reniformi rotundat, floribus albo carneis. Stam 3. Otipore.

49. Scrophulariæ sp.—Erect basi sub suffrutic; foliis pinnatisectis glabris, lobis dentato lobatis acutissimo. Thyrso erecto tenui (thin) pedunculis oppositis reliquis alternant, 1 dichotomis, bracteatis, floribus pallidis. Calyce simplci. Cor: globoso urceolat, tubo quasi depresso lamin minute, labio superior bilobo reflexo, lateral latis reflexis, inferiora (labia infer) sub porrecto minore. Stigma exserta. Stylus deorsum porrectis. Stam. inclusa 5 to, apice dilatatiusculo dentat. on rocks Otipore.

50. Borragineæ.—Myosotidis facie. Planta decumbens strigosula, fol. obovato spathulif. ascendent. Cor. amplis fere rotatis, tubo mempe calyce brevior, petalis obcordatis venosis, cyaneis uti sunt fornicis bilobæ.

On rocks in shady damp or dry places Otipore. The colour of the scales at the throat is unusual; they are generally yellow.

51. Myrsineæ.—Myrsine, Frutex elegantius 4 5 pedalis, fol. supra læte virid, subtus pallidis, patentibus vel deflexo patent, floribus minutis in axillis aggregatis calyce curneo albo. Antheris saturate miniatis.

River side half way between the two Chugur serais, nothing can exceed the apparent difference between true Myrsineæ and Ardisaceæ. Are they not really distinct; there is something about Myrsine which puts me much in mind of Coriaria, Zanthoxylon etc.

Datura Stramonia occurs here, bearing the same name as in other places, Datura. How very curious is this universality of certain names, it is a sure proof, of the plant not being indigenous. *Toombaco* and Anamass, are other instances. Among the plants in Meer Alum's garden, are a species of Cactus, and one of Aloe, both brought from Bajore.

Ricinus communis (Arundoo, nomen vernaculus), yet people are ignorant of its purgative properties.

52. Urticeæ morus.—Habitus et aspectus mori albæ, of this country, but the female spikes are much elongated. The fæmale only occurs as a fruit tree; it is called Shah toot, *Sai meah* It has yellowish fruit. Succus lacteis.

52*a*. Leguminosæ, Lotus.—An sp. distincto ab iste Cabulense. Statura majora. This genus is I think ex stipulate, although the lower parts of leaves called stipulæ, protect the others in vernation. On this point it is worth examining, as well as for the inflorescence, which is a passage to that of Trifolium. From which division Lotus is very distinct in the venation of the leaves.

53. Polygonea.—Frutex humilis forming low bushes, very common on rocky dampish ground, Chughur Pair. Rami striato angulato, flexuoso, novelli viridis. Ochreæ *indistinct*, membranaceæ. Fol. petiolis viridibus, carnosis, supra canaliculatis longis laminat. *hastate-ternata*, lobo terminat: horizontal : lateral :, quasi

erectis(both faces vertical. Fig. 37 *a. b.*) Panicula sparsa terminalia, flores herbacei, dioici ?. Sepalis 3 4 herbaceis concavis. Stam 6, rubro tinct sub pendula, filam basi persist. Petal 3 squamifor : minuta !!

Sapor acidus. A curious plant especially in habit. The relative situation of the stamina etc. worth while examining.

54. Astragali sp.—Frutex, demissus canescens, petiolis spinosis, floribus luteis, interdum rubro tinctis, rocky dry mountains Pushut. March.

55. Primulæ sp.—Sub pedalis, foliis canescent. Scapo composito erectio, umbello terminali pluri-floro, floribus parviusculis aureo ochroleucis, extus pubescent. Calyce laxo foliaceo.

Banks of canals. Pushut, not common.

56. Fedeæ sp.—Habitu solito glauca, erecto, florib albidis. Fields pushut.

It is a curious thing that in Valerianeæ, the anthers are caducous. Compare this with compositæ.

57. Astragali sp.—Cano hirsutiuscul humifusa. Petiolis et pedunculis rubro tinct, racemis axillarib, fol. brevior pauciflori, bracteis linear : patente. Calyce sanguinolent sinu superioro latissimo vexillo apice reflexo, bilobo plus minus sanguinolent intus carnea, cæter fl. albus. Pushut, on sandy places.

58. Lotus sp.—Prostrata subglauca, floribus solitariis, vel binatis terminalibus elegant :, vexillo initio (in alabastro) sanguineo coccineo, demum aurantiacea : alis luteis basi versus aurant : tinct. Legumen: teretibus. Sandy ground, among short grass. Pushut.

59. Sedum.—Radices carnosæ fasciculat. Caulibus carneis 3 uncial : ad pedalibus, foliis ascendent, carnosis, planiusculis. Cymis erectis dichotomis, floribus magnis læte carneis. Antheris initio croceo-brunneis, demum plumbeis. Corolla tubulosa, laciniis a medio supra $\frac{1}{2}$ patent.

On rocks. Pushut, common, an elegant species.

60. Hyacinthus.—Bulbo ovato, ovi magnit : foliis recurvis in humo dependentis, carnosis, linearibus canaliculatus, sæpius scapo longioribus.

Scapis solitatariis, raro binis, erectis ; bracteis albis scarioso-membranaceo : initio carinatis demum ob pedicellum deflexum, -*aceris*, vel bilobis, omnino irregular : alabast : albidum apice levidus.

Flos elegans, purpureo-cæruleus, pedicellis fusco-plumbeis laciniis subinæqual, sexto imfimo elatione, e basi fere reflexa, 2 superior, sæpe approximat.

Genitalio erecta. Anth : cæruleis filam albis.

Among rocks, in mountains. Pushut. A very pretty plant. The corolla has a somewhat unilabiate appearance ; the two, and two, inferior lateral sepals, are not so much reflexed as the others. Hoc modo Fig. 38

61. Polygalæ sp.—Parvula tota glauca, floribus purpureis. Shingly ground. Pushut.

62. Mespilus.—Bhee. Calycis limbo arcte reflexo. Pet. planiuscula carneo-alba. Antheræ brunneæ. Cultiv. commonly. Pushut.

63. Plantago.—Præpusilla pubescento cana, foliis linearib. concavo canaliculatis, subdentatis erectis. Pedunculo ascendent, foliis brevior. Capit. ovat. Periant. scariosa reflexa.

Dry Shingly ground. Pushut.

64. Iris.—Fol. alternis angustissimis concavo conduplicatis margine membranaceo, albis. Bracteæ laxæ lineari apathulatis, flos luteis mediocris. Sepalis angustis, reflexis, (interior segments reflexed) apice obovatâ. Stigmatibus erectis etiam luteis.

Mountains south of Pushut.

65. Labiata.—Chæmadrifolia, a good deal like in habit, Verb. chamædrys. Basi suffrut. basin dense ramosa. Caulibus purpurascentib, fol valde rugosis. Cymis oppositis, pedunculatis breviter dichotomis, flore central præ-præcocior. Calyx tubo longo devisum curvato striato, (Fig. 31) laciniis lineari setaceis, æqualibus, flos majusculus pallide roseo carnei basi *labello* maculis lilacino, lab super bilobo, lobis subreflexis *divaricatis*, lateral : oblongis reflexis centrale maximo patente concaviusculo, lobis dentatis, basi longe piloso, genitalia exserta. Stam stylo longior.

On the barren Mountains about Pushut. Common.

65*a*. Ejusdem generis.—Elatior, fol. sub rugosis. Cymis dense approximatis,in spicam bracteatam, rubescent. Cor. cyanea, tubo fauce inflato, lab superior ad basin fisso, lobis divaricatis, lateralibus minutis, centrali bilobo, lobis concavis, integris, basi pilis brevibus.

Common throughout Khorasan, Brought from the moutains south of Pushut.

66. Cerasus salicifolius.—From the hills south of Pushut. In this family the subsequent changes in the Calyx are worth noting, for it assumes a perfectly petaloid form, separating in a very marked manner from the dilated apex of the pedicel.

67. Ephedra ?—Asparagoides ? Frutex subscandens. Cuticula *e silicia.* Cortice castaneo brunneo longitudine fissa, fol squamiformibus vel subacerosis, ternis vel sæpius basi connatis, ramulis axillaribus complanatis, illis e floriferis planiusculis elongatis, illis floriferis, sæpe aggregatis, floribus masculis tant visis, et his valde juvenissimis, *terminatibus.* Rocky mountains. Pushut. One specimen found.

Fol. ramul. novell, eflorif 3 6, certe acerosis, quamdum carnosis, ramul teret, ramusculis planis.

67*a*. Tulipæ sp.—Bulbus eadem structura sed major, folia glauca margine membranaceo albo, vix undulata. Flos. erectus, perianth patente erecto, sepalis lanceolatis exterior $\frac{1}{3}$ major: et dorso pulchre roseis, interioris albis, omnibus basi lutescent. Stam. invariably yellow. Anthera per totum longitudinaliter dehiscent, magnitudine valde variabilis. Stylus o. Ovar 3 gona, angulis sepalis exterior oppositis, stigmatibus papillosis, sub coniformibus.

Common in corn fields to Kooner. This is Gratool. Unless specific characters are foundable on variation in colour, this is scarcely distinguishable in any other respect from the Chughur Bala species.

67*b*. Iris—Zumbuch —Habitu typicali sepalis exterior oblongo, obovatis, a medio reflexis infra medium luteolo venosis cæterum albis, barba alba interior erecto connivent, unguiculatis, margine reflexis, basi versus luteolo venosis. *Stigmat* ? fornicat, apice bilobo inflexo.

In gardens, scent faint, and rather disagreeable.

68. Fritillaria (Imperialis) Planta robusta, 2 3 pedalis. Radice tuberosa, foliis pluribus sub verticillatis, inf. lanceolata ovata, super elongato-lanceolatis nitidis, caulis apice abrupto terminatus verticillo folior, e quibus axillis nascuntur, flores solitarii penduli magni, rubro, aurantiaceo venoso. Sepalis in Corolla campanulat digest, nempe erectis, apice patulis. Genitalia alba, longitudine sepalorum, ovarii angulum sepalis exterior opposit.

Squama nectarifera magna, vena exteriores sepalorum, sub dicotyledoneo ramosa. Brought from mountains south of Pushut.

A very handsome plant.

69. Gramen.—Caules plures e basi una, erect spithamæa flagellat attenuat in apicem spica, purpurscent viridis. An Rottboellioidem.

Sandy wettish places Pushut, one specimen.

70. Polygoni sp.—Subscandens ut videtur, suffruticos, præramos, racemis albis cernuo pendulis.

Brought in from mountains south of Pushut.

71. Astragali sp.—Demissa, tota cano-villosus, flores recondita intro folie. Calyce carneocent, petalis albidis demum carneo tinctis.

Brought in from mountains.

72. Carex.—Rhizomat subterran repent, in locis aquosis 3 pedalis in siccioribus pedale, panicule nutant.

Pushut in ditches or in marshy spots.

73. Leguminosa.—Depressa glauco canescens, racemis spicatis elongatis floribus ascendent albidis, vexillo, sanguineo pulchre venoso, venis intra margin arcuatum nexis demum ob fruct tortum cito tortum. Legum. junior reniform, dense albo tomentosa.

In sandy grassy islands, or banks of rivers, not uncommon. Adest Cucurbitis bryonioid. In collibus occident Solanum jacquinii in agris.

74. Bignoniacca.—Videtur esse frutex humilis, vel. fere planta perennans, foliis impari-pinnatis pubescentibus, foliolis carnosis, basi superne obliquis, ovatis vel ovalibus grosse dentatis subtus glauco-albidis. Venis secondariis inconspicuis. Racemis terminalibus, erectis, bracteolatis, floribus maximis læte carneo roseis, tubo carneo.

Calyx campanulatus, dentibus 5, carinatis, demum 5 angulat. Cor. infundibuliform sub regularis, limbo patente, (lab superior minus patens) lobis oblongo rotundatis, tubo infra et intus plicis reminent (rudiment palato) a fauce ad partem angustatum basi versus current.

Genitalia inclusa. Anth perparia arcuatæ, loculis divaricatis, saltem post anthesin villosiusculæ. (rud 5th small). Stigma bi-lamellatum.

Discus hypogynus sub 5 dentatus. Ovarium tereto compressum, biloculum, locul oo ovulat, oblique. Stylus stamin longior. Brought in from the mountains.

I am not sure of the form of corolla, the specimens being somewhat withered, but from one specimen, I believe it to be Bignoniaceous, viz. infundibuliformâ tubo, lamina bilabiat, lab superior reflexo, inferior, porrecto, lobis, labii superior minus profunde divisis, cæterum sub æqualibus. A beautiful plant.

75. Orchideæ —Eulophoid, flores ante folia.

Rhizomat sub terraneo, informa, alba fere nudum scapus racemos. 1-2 pedalis, basi vaginis 3 4 fuscescens confertis vaginat. Bracteæ scariosæ, ovaria subæquant. Flores resupinat cernui subsecund, lutescent, extus fusco tincto.

Sepalis, spathulatis patentibus laterat basi inferne sub obliquis. Pet minora paullo. Labellum calcare coniformum subulato recto, 3 lobum, (lateribus erectis) lobis lateralis rotundatis, centrali porrecto, oblongo, undulato lamina, cristis 5, processum erectum, 2 externis minimis, 3 centrat ad calcar current, *æstivat inflexo subintegro*

Columna directione labelli, semiteres. Rostello brevi subintegro recurvo. Anthera terminalis. Clinand. antica superficial.

Pollinia cerea bina (subsolida) fissa ad insert caudicul. Caudicula lata, brevis præ elastica, glandula viscosa, *intra stigma !* angulis in setis product ! Fig. 39.

Common in the shingly grassy islands along the river bed, Pushut. One or two others, also occur, one apparently an Epipactis. In this plant, if the Bauerian theory is ever correct, impragnation must necessarily follow without any change taking place in the situation of the pollinia, because the gland is in contact with the stigmatic surface.

76. Linum ?—Planta annua glauca erect, foliis linearis, cauli quasi adpressa, margine asperrimo cartilag. dentat : more Gramen. Cymis, terminalibus parvis dichotomis paucifloris, sepalis ut folia sed minora. Pet æstiv. leviter convoluta ovata venosa, lutea. Stam 5, basi in urceol. unit, dentibus setaceis interjectis, stigmat 5 capitat, ovar 5 loc ? sterilis pluribus biseriatis.

Pushut river bank. Not found in flower.

77. Typha angustissima.—In florescentia ,folius præcocior. Scapo,

1 2 pedali, maribus superne, fæmin infra sitis, basi spatha membranacea decidua suffult. Foliis vix unquam ad epochu inflorescent scapum æquant: obtuse trigonis, angustissimis glaucis.

Very common in islands of Pushut river, it varies a good deal with variation in moisture

It is a most distinct species, occurs also, on the Soorkhab. Setæ of two sorts, the larger and clavate ones obviously representing abortive ovaries.

Memo. Keep this genus in view, for it has a decided analogy with Sarcocordalis, in the slight developement of the female organs, which are very generally the most developed of the two sexes. Typha is an instance of their minimum development in monocotyledonous plants, in this species the ovary is most minute, the style much developed, but very cellular in structure. I regret not being able to examine it leisurely.

78. Orchideæ.—Epipactidea ?

Sepal. venos, cano pubescent, postico lanceolato, subtus gibba lateral, valde obliquis, sed inter se vel cum labeli, non connat. Alabast visa tant.

Vide 125*a*. seq. Pet sepaloid ovato-lanceolat vonos. libera. Labellum in apice ungue sursum curvato, fere calceolaribusque articulat, 3 lobum, lobis lateralis rotundatis, centralis lingui formibus carnosum præsertim lob. lateralis ungue intus processubus.

Columna alba. sub clavata brevis utrinque dente (anth: abort ?) rugoso. Anth. terminali maxim viridis superfice cellulosa simpliciter bilocul. longit. dehiscens, basi immers in clinandrio profundo.

Stigma orbicularis, sursum product in process : capitat, antheris approximat, margo infimus utrinque dente conspicuo.

Pollinia ? in massam 2 cohærent, pulverea facile solubilia.

Foliis vaginant. Habitu Epipactidis. Grassy damp spots along the river. Pushut.

79. Labiatæ—Eremostachys.—Planta perennis robusta, 2-3 pedalis caule tomentoso simplice. Folia pinnatifida infima conferta magna, lobis pinnatisectis. Spica magna formosa verticillaster, confertis lanatis, Calicis dent sub spinescent. Cor. magna for-

mosa lutea, tubo calyce fere duplo longior. Labia super : for nicata, compressa, centro dorsi canaliculata, hispida, intus, infer. porrecta, compressissa, fere conduplicit, 3 lobum, lobis rotundatis.

Centrale intimo. Stylus inæqualus bifidus. Stigmata punctifor. Lab lateralis super intus sanguinea.

Estivat ordinis, lab super extimo, 3 tioi lab infer omnino inclusa, lob lateralibus.

A very handsome showy sp. common on rocky mountainous ground all over Khorasan.

80. Sedum.—Repens et cæspitis formans, fol. inferum rosacei patent, cæt altern. omnino spathulata, carnosissima, axillis sæpius vacuis interd, floriferis. Racemis terminal. compos. e cymis 2-3 floris racemiformis pluribus (Cymi sunt quorum flos centralis præcocior) cernuis apice ; flores parvi, fere cylindraceis, ochroleucis, petalis nempe erectiusculis.

On rocks, in shady spots near Pushut.

80*a*. Buddlææ sp.—Frutex dense ramosus 4-6 pedalis, ramis subrotundis, foliis etc lana dense brevi albis. Folia e basi deltoid. ovato acuminata.

Triflor composit e cymis, pluribus trifloris ex axillis bracteærum, linearum sæpuis congestis in spicarum capitulifor. Calyx dense lanato albus, dentibus erectis. Corolla tubo calyce duplo longior, medio paullo incrassato, lamina hypocraterif. lobis 4 roseis subæqualibus, fauce aurantiaceo ; fl. odorata, on rocky ground, generally near water on the way to Otipore.

81. Cruciferæ.—Cheiranth. Erect ramos $1\frac{1}{2}$ pedal, fol. bi-pinnatifidis. Calyx sepaloideus basi sub bi-saccatus erectus vel apice subreflexus. Pet lamina patentissima alba ungue lutescent.

River side. To Otipore.

82. Fabæ sp.—Glaucescens floribus compressis, vexillo nempe conduplicato, sordide purpur.

Sandy places, to Otipore, about Fields.

83. Astragaloid.—Herba perennis 3 pedalis. Caule erecto rubro tincto. Stipulæ (foliacei veræ) maximæ, valde alternat inæqualitis e basi cordato reniformi obliquo ovato acuminat. Pinnis folior ovalibus glaucis, mucronat.

Racemis erectis longis, fol. excedent, in statu juniora stipulis protectio. Bractea cuique flori alba, lineare lanceolatis, flores

cernuo citrino secundo. Calyx glaucescens viride luteus vexillo centro carinato concavo, cæterum reflexo.

Stony sandy ground, river side, to Otipore. A fine species

84. Astragaloid.—Basi fruticos vix 2 pedalis dense lanato villos. Stipulis membranaceis, amedio reflexis. Pinnis orbicularibus, venis secundariis penniformi subinconspicuis.

Racemis erectis axillaribus, fol. brevior bracteis linearibus reflexis, pedicellis brevibus 3-4 longior; flores ascendent magni læte citrino tuteis. Calyx luteo viridis e dentibus setaceis et ore obliquo vexillo bifido, Carinato, marginibus reflexis. Same ground as the former, a fine species.

85. Allii sp.—1½ pedalis, fol. subulatis involucro reflexo, flores, densi erecta, pedicella purpurascent. Sepalis exteris roseis, oblongo lanceolatis, oblique emarginatis, univenius, inter albid multo minor basi, secus centrum gibbis, fere calcaratis, gibbere protruso inter sepalorum exterior bases.

Stam basin versus unito in cupul. connat, etiam cum sepalis interior, filamentis latis, his stam. interior seu potius, sepalis calcaratis opposit. latioribus.

In corn fields Pironi, a very distinct section.

86. Myrsinea.—Futex humilis, ramulis rubescentis, fol. lanceolatis, serrulatis.

Stony rocky bank of small river Otipore.

86*a*. (Vide 19.)—Caulis e maxima parte subterra. Petiolis longis basi dilatatis, sanguineis, glanduloso pilosis, fol. reniformis dentato lobatis, lobulis sæpe bifidis. Scapo potiis duplo longior. involucro e foliis pluribus, sub cuneatis, apice dentatis. Umbella erecto. Calycis tubus brevis campanulat, laciniis foliaceis magnis, reflexo patent. Cor. tubo brevi, tubum calycinum subæquans, lamina planissima hypocraterif. lacinis ob cordatis, roseis, fauce minuta, luteola; genitalia inclusa.

Grassy shady banks Otipore.

87. Lilium.—Planta formosa, bulbus oblongo ovatus, squamis plurimis membranaceis laxis vestit, in axilles harum bulbi plurimi ovato, costata.

Fol. linearia, isto e bulbo, et basi caulis reflexo recumbent in huma. Caulis erectus 1½-3 pedalis subcæsuis, folius linearibus patentibus vel reflexo patent. Racemo terminal sim-

plici fere spicat, bracteis, fol. super simil : sed minor. Pedicellis flora brevibus, flores amplis, carneo-lilacinis, suaviter et fortiter odorat, (odor jonquil.)

Sepalis in corolla campanulata dispositis, sepalis lineari oblongis, vel sub spathulatis, apice reflexis, his demum e basin patentiusculis. Corolla aperta fit basi versus, macula sordido rubra.

Stam : sepalorum longitudine, filam carneis, post anthesin declinat. Anth (cream coloured,) erect oblongæ. Pollen aurantiacea.

Stylus, staminib. paullo longior, subdeclinat. apice trifid, Ovar. obolong 6 sulcat, sulcis dorsalibus incompletis. ovul. biseriat.

Steep banks of Kafir river, among bushes and rocks, common. It increases prodigiously owing to the vegetation of the bulbs.

88. Impatiens.—Glabriuscula, fol. ovatis, crenato-serratis, patentibus. Racemis axillaribus, bi-tri-floris, rubro tinctis. Pedicellis. strictis. Calcare fusco rubro stricto, apice curvato, initio valde arcuato. Pet. supremo cochleariform, rotundato integro, 2 infer, oblique biloba.

Color roseus Pet infer basin versus albis, limbo aurantiaceo maculatis.

Moist sandy ground chiefly near Otipore.

89. Crucifera.—Habit Lepidium. Annum erect spithamæum vel infra. fol. linear siliculis obovato-oblongis fere planis. Sandy ground near the river Otipore. Calyx sepaloid erect. Petal. aurea, semipartita vel tri-bi-loba.

90. Similacinea—Trichonema ?—Gracillima 2-4 uncialis, fol. bulbi teretibus subulatis, paniculæ lineari lanceolato-acuminatis, flores inconspicua sepalis patentibus, angustissimis, viridescent luteis, demum ½ patentibus. Capsula acuto 3 gona.

Very common under rocks, among mosses, it differs from the other species especially in the shape of the capsule.

91. Caprifol.—Frutex subscandens, ramulis rubo cæsio tinctis, elongatis. Cortice ramor : brunneo sanguin. fol. ovalibus integris glabris reticulatis (venis secundariis rete minuta nexis) spicis terminalibus. Capituliform polyanthis, floribus extus pubescent. Corol. bilab. lab. sup. 4 fido, devisionibus 2 cen-

tralis, minoribus reflexo ; infer. integro oblongo lanceol. patent. Stam 5 filam rubris. Stigma capitat.

Color roseus sanguineo tinct, odor solitus suavis. Rocky ground, Otipore, a showy species.

Fol. inf, ramul, florif minoribus obovatis vel spathulatis.

92. Astragalus.—Indigoferius fol. Frutex humilis habitu solito Petiolis spinescent and very weak, foliolis conduplicatis racemis bifloris. Calyce obliquo rubro tincto. Cor luteo viridis.

Rocky ground Otipore.

93. Adianti.—Sp. elegans sp. juniori visa, frond diffor. sterilo renifoma lobato fertile decomposita, more solito, sp. tenerrima pallens.

Under rocks in damp shady places Otipore.

94. Nephrodii sp.—Rhizomata apice erecto brevi. Frondes decompositæ 2 3 pedalis, rachi angulato viridi. Ramentis difformibus basilaribus margnis et gossypinis. Damp banks, Otipore. Basis perisistent, and enlarged. Are they capable of separating into bulbs.

95. Orchidea. Herminioides.—Bulbus solitarius terminalis e caulis partis subterraneæ radiceis simplicis crassæ. Fol. infima reflexa oblonga, carnosa superior ascendentis gradatum in bracteis abeunt. Racemo terminali spiciformi, sub secunda.

Bractea lanceolata acuminata ovaria subæquant. Sepalis herbaceis, lineari-oblongis postico paullo major. Flos ringens. mutuo approximatis lateralibus ad basi labello subadnat. Pet. conform paulo minora latera inferior labello connat. Labellum cucullat. 3 lobum carnosum integrum, lobis later ovato subulatis acuits, centrale sublinguiformibus, cum columnæ basi continuum.

Columna brevissima. Anth. terminalis membranaceo biloculär, persistens, pollinia granulosa caudicula brevi. Glandula inconspicua.

Clinandrio superfice antea bifurcato, in rostell : furcæ planæ apice ineflexæ et glandulæ applicitæ firme. Stigma faciè antica columnæ nuncup. Grassy banks. Shady damp places. Otipore. Planta pallens spithamæa vel pedalis.

96. Campanula.—Planta annua hirsuta erecto-ramosa, vel sub simplex, fol. sessilibus spathulato oblongis ascendent panicula ter-

minalis contracta, floribus parvis pallida cæruleis, In fields. Otipore and at Pushut.

97. Veronica.—Euphrasioides.—Annua erecto sub simplex pubescens, fol. paucis oblongo ovatis, infer integriusculis superior grosse dentatis vel pinnatifid, floralibus linearibus, sepalis sub simil. fl. minute cærulei.

Otipore, stony ground

98. Labiata.—Ramosa decumbens, fol. grosse dentatis, verticillastris in spicam congestis. Tubo corollæ ad medium sub geniculat, fauce ampliata, labio super. bipartito ad basi, lobis oblique ascendentibus, lateral. labii inferioris minutis reflexis, terminata transverse, sub quadrato, centro carinato, utrinque concavo, col. cæruleo purpur, lab infer bass pilosiuscula albida. Otipore.

99. Cruciferæ. Cardamin.—Planta robusta erecto ramosa, fol. pinnatis, pinnis pinnati lobatis. Calyce ½ petaloid, ½ ascendent. vel demum patent. Pet. albis, erectis; wet shady places, Otipore. Sapor sub Sinapiceus.

100. Crucifere Capsella, simillima Bursæ Pastoris, sed fol. indivisa. Calyx sub petaloid, laxus, Otipore, an varietas.

101. Thalictri sp.—Caule erecto, 1, 1½ 2 pedalis, foliis patento viridibus supra decompositus, floribus amplis albis. Pet. lanceolato spathulatis. Antheris erectis ovariis sulcato brunneo striatis. Stylo corniformi-recurvo, in woods, about Bharowul ranging 5500, to 7500 ft.

102. Cruciferæ —Planta erecta, 1-2 pedalis, fol. inferior sub rosaceis, caulibus pluribus racemo densiflora, floribus majusculis, sepalis, viridescent, basi simplice laxe erectis demum ½ patent. Pet albis, patente ascendent, sectione Cheirantha.

Common, on the edges of woods, about cultivation Bharowul.

103. Leguminosæ: Astragaloid, herbacea perennis nigro villosus foliis albo sericeo villosis, floribus compressis albis. Common about fields Bharowul. The tender stalks when stripped of their skin are eaten greedily by the natives. Sapor sub Ghlycyrrhizis.

103*a*. Mysinea.—Frutex humilis baccis rotundis, atro cæruleis. In ravines, below Bharowril 5500 ft.

104. Leguminosæ Caragana?—Ramis elongatis foliis brevibus, racemis axillaribus, floribus amplis vexillo amplo, reflexo aureo

basi reflexæ, partis fusco, basi quamis bicarinatis alis lineari oblongis aureis ascendent oblique. Carina valde curvata sursum apice processum dentiform.

Barren Hills to Bharowul, 4000 to 4500 ft.

105. Anemone.—Tuber subrotundus. Folio unico ternatum partito. Scapo spithamæo vel pedale, e foliolis 3 sessilibus (strap shaped) apice dentato lobatis. Floribus sæpuis ternis (*terminalibus*) 2 ex axillis foliolorum, involucri, terminal. Involucellum, circiter medium pedicellorum, excepto pedicello central terminal qui nudus est, fl. suave odorat.

Sepalis pulchre lilacino roseis patentibus cito connivent. Anth: sanguineæ. Genital fæm roseæ, very common in fields Bharowul.

106. Graminea.—Annuum spithamuæm præ elegans. Culmis basi ramosis vaginis, fol. contriplicatis ideoque planis carinatis, lamine lineari acuminat tenera, ligula maxima demum lacera.

Panicula terminalis racemiformis, ramulis inferior divisis, summis simplicibus. Locustis cernuis et secundis mobilibus, quaternis, lateralibus et infimo neutralis, clavatis centrale, herhermaphrodito.

Glumæ membranaceæ, scabrellæ carinatæ acuminatiss. insertione æquali! interiora paullo majora.

Paleæ, fl. (exteriorib tant) convolutis, triuncialis margine ciliatæ, emarginetæ vel bifidæ, seta interject.

Locust neutro multi fl. Locusta centralis biflora, flos. infer. hermaphrod, super. neuter ad palea reduct, interdum que stipiti floris alternis. Palea exterior convoluta, bifida, sinu aristam scabrum, longe projicient 5 venia, interior bivenia.

Stam 3, filamentis rigidis! Antheris ideo erectis 2 integræ, basi gibbæ. Ovar. apice oblique. Stylis discretis sub nullis, stigmatibus dentatis tenuibus.

Adjicitur locustæ neutræ latori interior. flos hermaphrodito abortivo.

107. Medicago. Prostrata canescens, racemis 2-4 floris, floribus luteis. Otipore in fields.

108. Carduacea.—Planta perennis? robusta, armata, 4 pedalis. Caule crasso sulcato. Foliis amplexicaulibus, infer pedalibus vel. $1\frac{1}{2}$ pedal. oblongis sub lobatis, sub albo, maculatis et pre-

tis, conduplicatis. Spinosis præ seto ad lobos amplexicaulibus.

Capitulis solitariis terminalibus, magnis.

Involucrum basi planum, squamam exteriorum 2, seriebus extimis, foliis structura accedent, planis reliquis multo majoribus basi capitulo supposito, ascendento, tunc reflexo, patent et inspinam maximam, margine involuto product. Os. anthodii constrictum. Floscul numerosiss. purpureo-rubra. Antheris saturatiusculis coloratis. Flosculis initio roseis purpureo pallida, demum colore antheras, Otipore.

This is the type of Carduaceæ possessing such perfection that the flower is completely guarded from all approach by its immence thorns.

109. Arum.—Tuber depressum, caule brevi, petiolis pedal, fol. hastato oblongis medio rotundatis, vena intro margin distinct.

Scapo folia æquant. Spatha basi foliacea, versus apicem livido purpur, ovaria ad basin, antheræ supernæ, corpora intermed, et summam in filis sauguineis desinent. Spadicis apex sub cylind. nudus.

Under rocks etc. Otipore Bharowul.

The venation certainly approaches to Dicotyledoneous, but not so much as that of certain Smilacineæ, it shows that on such an isolated character some Smilacineæ are not separable from others. In Botany the Macleayen doctrines are completely overlooked. We must expect in the more numerous orders, passages into other grand divisions, and their occurrence is a proof that they alone should furnish grounds for separation. Smilacineæ is the typical group of distinct, normally alternatiug Monocotyledons.

110. Salix.—Arbor parva, ramulis ascendent, near a stream Bharowul 7000 ft.

111. Crucifera. Thlaspidea.—Tota glauca, floribus albis, in woods Bharowul, and about cultation. Common.

112. Graminea.—Festucoid, cæspitos. Panicula laxa erectiuscula. In woods Bharowul 7000, to 7500 ft.

113. Asplenii sp.—Under rocks Bharowul wood.

114. Filicis sp.—Cysteoides? Woodsia?

Bharowul woods under rocks.

115. Pinus sp.—Arbor.

Foliis undique patent, solitariis subulato clavatis rigidis. sub pungent.

Strobilis pendulis oblougis, sausago shaped, squamis rotundatis latis, color lucid chesnut brown.

Habitus, P. Smithea. Brought from Kafiristhan.

116. Taxus ?—Arbor, foliis alternis linearibus compressis, sulcato univeniis basi ½ tortis. Brought from Kafiristhan with the preceding, the under surface of the leaves subsequently becomes uppermost from torsion of the base. The change takes place gradually judging from the slight obliquity of young leaves. Stomata blocked up, with a brown curious cuticular substance.

In the blue Kafiristhan Iris, the bractea are 3, spathiform, of these the uppermost and innermost have flowers, hence that which is uppermost appears to have two spathæ, The beautiful adaptation of the fringe of the outer petals, which act, as a brush to apply the pollen to the stigmata is worthy of remark, for it explains the different directions of the two series of the Perianth. Neither must the marcescence and twisting of two flower after expansion be ommitted. Analogy with Pontederia in this.

117. Astragaloides.—Sub erectus, hirsuto-pubescens, fol. ascendent, foliolis rotundatis, racemis axillaribus, foliis brevior paucifloris. Floribus secundis mediocribus, luteis, vexillo lateribus revoluto reflexis. Legum. utrinque alternant, inflata. Otipore.

118. Vicia.—Debilis caule angulat. Stipulis breve stipulatis, ½ sagitatis, acutis, inciso dentatis, floribus solitariis, vexillo purpureo cæruleo pallida, alis albidis.

Otipore, about cultivation. The pedicels almost more from the axilla of one of the stipules, than from that of the leaf. This plant has true stipules viz. leaves belonging to an independent series, performing the fructions of scales of buds.

119. Gramineæ Alopecurus.—Erect pedale spicis cylindraceis erectis (strictis).

Glumis solutis. Lodicul o. Stam bina uno laterali abortivo.

Otipore, in fields. This is much like a Himalayan and Assamese species.

120. Composita.—Carduacea ? Erecta 2-3 pedalis hirsuta, fol sub-

tus cano albidis. Anthod sub globoso, squamis lineari acuminatis subspinescent, patent seria interiora erecta, flosculis carneis. Otipore. Radix fusiform.

121. Graminea.—Culmis basi radicant in arcu sub terran : demum erectis sub pedalibus, vaginis longis, ligulis, lobatis. Panicula erect, ovata, ramulis secundi floris.

Locustæ unifloræ, glumæ univeniæ chartaceæ hirtellæ, muticæ, vix carinatæ exterior major.

Palææ 2, mutatæ, glumis minores exterior membranaceæ major.

Exterior convoluta, 5 venia, apice truncata, sub 5 dentata. Interior bivenia.

Lodiculæ magnæ, oblongæ basi gibbæ.

Stam 3. Stigmata plumosa. Stylis subo, Ovar oblique. In arenosis fluminis Otipore.

The glumes tend to be subequal, but according to the Brunoian rule of obliteration, the outer ought to be the smaller. These one flowered grasses are worthy of study, for the palæ are always smaller than the glumes, and always more or less membranous, whereas the outer, in the many-flowered genera is always glumoid, the glumes are of nearly equal insertion, it hence is necessary to study the situation of the stamina, in order to determine the position of the glumes, which may be inferred also, from the largest palea being always on the outside, and opposed to the outer glume.

122. Filicis.—Under rocks Bharowul.

123. Filiceis Adiantoides.

Pusilla, repens, rhizomato simplici ?, glaberrimum. Frondes dimorphæ, altera prius evoluto reniformo-biloba, lobis binatis lobatis, margine denticulatis, stipit breviori, altera 3 uncialis spithamave simpliciter, pinnato bilobis, lobis basi cuneatis, binatum lobatis. Indus. o. Sori lineares in frondibus ambabus in venarum fuscis, etiam venas ultimas, *vel simplicis in* his tantum.

Thecæ subsessilis atræ. Sporula magna pauca lævia.

Ramenta nulla. Anther epilis incurvatis simplicibus frondes novellissimas circumdantis.

Frons reniformis interdum sterilis.

A curious fern, altogether like an Adiantum, except in the uninflexed and unmembranous margines of the leaves. In umbrosissimis subtus rupes. Otipore.

Nequaquam ab adiantoideis.

124. Labiata.—Decumbens ramosa pedalis, venis secundariis distinctis arcuatis. Cymis verticillatis, floribus carneis tubo recto, lab. superior bifido, planiusculo ascendent, inf. 3 lobo, lobis oblongis deflexis, macula rubra, media versus cujusque. Banks of ditches in moist places Otipore.

125. Scrophularia.—Antirrhinium Erect, spithamæa vel pedale simplex, fol linearibus (Silenaceis) floribus breviter pedicellat axilla solitario calyce ascendent, sepalis secundis, linearibus angustissimis. Cor, personate basi inferne gibba, lab superius fornicatum bifidum, inferius 3 lob., lobo lateral rotundatis, obsoletis centrale minima angusta, porrecta, apice deflexa. Barren rocks, or rocky grouud, Otipore.

125*a*. Epipactis? Vide 78—Rhizoma repens. Caulis 1½ pedalis purpurascens, foliis basi in vagina brevi concreto lanceolato acuminatis, teneriusculis patentibus, sæpius concavis, floribus solitariis in axillaribus nutantibus, sepalis viridescent venis prominulis. Petalis viridescent, a medio inf. basi purpurascent.

Perianth ½ patens, labelli lamina porrecto, ungue purpurascent, lamina extus albida, intus fusco purpur.

Otipore.

126. Orchidea.—Spiranthes. Radices fasciculatæ carnosæ, caulibus erectis 1½ pedalis. Fol. inferioris reflexo patentis, oblongo lanceolatis, venis 3, cæteris conspicuosior superioribus erectis summis ad bracteas reduct. Spica erecta torta pubescens, bracteis lanceolat. Ovariis ad pressis et paullo longior, floribus albis inodoris. Floris spica dispos. Per ringens. Sepalis lineari oblongis lateralibus apices versus patent. Pet cum sepalo postico, labium 3 fidum formant. Labella spathulato-rhomboid, margine undulato crispato. Perianth quam maxima cellulos. Labello intus utrinque gibbosum. Columna semiteres. Clinand. antica producto in rostello acuta, et approximat bifido, postice superficial. Anth membranacea. Pollinia 4, granulosa, sessilia glandul. angust. In shady damp places. Otipore.

It is curious enough, that in this species the gland divides,

when examined at the proper period, (viz. just before dehiscence of perianth) into 3 pieces, of these the central one is true gland, the two lateral ones which partake considerably of the glandular structure, are the ends of rostellum lobes.

Fig 40, *a. a.* Stigma; *b.* gland; *c.* now glandular; *d.* point of the separation.

127. Leguminosa.—Melilotoid. Prostrata basi suffruticosa, cano glaucescens, floribus luteis pendulis demum aureis. Brought in from mountains about Otipore. Odor anthoxanthæ dulcissimus.

128. Asperula.—Flores albi, odor dulcissimus anthoxant. Brought in from above Kuttoor Kilat. Differs in no respect from Galium, and is apetalous. Ovules nucleary inner membrane of carpella distinct.

129. Androsacea villosa.—Priori speciei propinque, sed cano villos. Corollæ carneo roseæ.

brought from Kafiristhan.

130. Phleoides.—Gramen erect, parva, vaginis laxis, complanatis, spica viridescescens; hab. Panicoides, brought from Kafiristhan.

131. Dianthi sp.—Habitu Solito. Corollæ rosea, Otipore. Barren hills.

132. Dianthi sp.—Vide 3 sketches.* Baren hills among shingle. Otipore.

133. Fragariæ sp.—Hab. F. vescæ. Stolonif. fl. alba. Bharowul common.

134. Geranii sp —Habitus et flores speciei alterius hujus loci, an vere differt.

Bharowul,

135. Umbellifera.—Planta erecta 3 pedalis, robusta, foliis decompositis, floribus albis radiis neutris irregularibus. Bharowul. Sapor et odor sub nulla.

136. Orchideæ.—Epipactidæ. Habitus Geodori? Radiculæ cylindraceæ caule erecto sulcata angulato vaginis brevibus· Per conniven amplexicaulibus, fol. ascendente patent, conduplicata concavis racemus terminalia nutans?

Floribus inconspicuis albis. Sepalis lineari oblongis incurvit

* To be given in Icon Plant Asiat:

sub carinatis laterate paullo longior. Pet brevior sed latior oblongo lanceolat. Labella cucullat directione columnæ, 3 lobam, basi sub inflat, lobis later dentiform, oblongis, columnæ oppositis, central mobila, latum integrum, lateribus erectis.

Cristis 7 inconspicuis albis apice aurantiaceis papillosis et confluentibus columna alba ½ teres, apice 3 dentib. dento postica magna. ante affigens, later acutiusculi erecta. Anthera carnosa mobilis, loculis centro approximatis angustis rostello o. Stigma rotund. simplex. Bharowul. Altogether an European form.

137. Diospyros Umlovok.—Arbor mediocris cortice sombre, fol. oblongis supra lucidis subtus glaucescent floribus axillaribus 2-5 aggregatis. Corollis urceolatis, cereis ochroleucis, laciniis reflexo revolutis, Antheris inclusis. How like the male flowers of this genus are, to those of Eurya. Masc. tant vidi. Otipore

The Samolus of this country has by no means invariably sterile stamina; in one case they were altogether wanting, and when present, they belong to the outer series, and are consequently higher in point of attachment than the fertile ones.

138. Rosa.—Frutex spinosus scandens, petalis albis, odor parvus In hedges. Otipore.

139. Phleum.—In fields, and about waste places. Otipore Paniculis viridis.

140. Centaureoid.—Planta humifusa, axi basi centro florifero radiis radiatis involucro ovato, ore coarctato squamis exter foliaceis, floribus luteis. Waste ground. Otipore. Habitus quodammodo Hyoscyami vix pungens.

141. Melia—Bukheim—Cult. about all the villages, in low parts of Khorasan.

142. Pinus.—Arbor, foliis quinis (adultior vagina obsoleto, junior scariosa, lamina ascendent, patula) angustissimis, margine scabrelis patentibus vel ascendentibus e pungent.

Sofaid Koh very distinct from any of the other species.

143. Boraginis sp.—Basi suffruticosa robusta, ramosa, aspera, glauca, fol. carnosis. Cortice alba.

Cor. rotata laciniis reflexissimis, lato obcordat, acuminatissimis. Stam exserta, filam, tomentosis dorso. Antheris corneis in conium angustum connivent. Cal. valvat demum ampliat. Fl. formosa azurea. Sandy hills Jugdulluck.

144. Rubia oppositifolia ?—Suffrutex subscandens, cortice alba, fl. luteolis, Jugdulluck.

145. Thymus.—Fl. whitish, ibidem, frutex humilis.

146. Convolvulus.—Decumbent prostrat, canescens, foliis repandis. Cor. limbo albo, (exactly like the month of a funnel,) margine denticulatis, plicis fusco carneis. Sandy hills. Barikab.

147. Companulæ sp.—Basi fruticosa, pedalis, canescens, calyce basi in processub product, a medio patento reflex. Cor. $\frac{2}{3}$ partit tubo brevi albo laciniis reflexis cæruleis.

From Gundamuck, to Koord Cabul, Sandy hills.

148. Acanthac—Labiat.—Frutex cæspit, humilis, calyce foliaceo Corolla acanth. high ground. Huft Kotul, ejusdem generis cum frutic altior e Khyber.

Butomus trigonifoliis. In this as in all other cases the anther becomes petaloid before the filament.

The stamina appear constantly 9, and appear placed by 31 in front of the petals.

Or, as this situation is quite anomalous, two may be said to be opposed to each sepal, one to each petal; those opposite the sepals, may be assumed as displaced by pressure? (Fig. 41. The placentæ reach nearly to the dorsal suture.

149. Characeæ.—Chara dioica, vel confervoidea. Planta spithamæa immersa. Caulis inferne nudus et tubo cenralis redact, sursum pilis ramis simillimis hirsutissimis.

Rami? subo inæqualis, verticillato—subulat per statum primum, materia viridi farct, demum effæt. e cellula subulata simplice.

Fructus oblongus sessilis axillaris. Capsulæ tegumento unico laxo membranaceo, apice in dentibus 5 approximatis, *continuato* cum his dentibus, striæ spirales alternant, spiris ad semen attingentibus, et superficiem ejus sculptant. Semen erectum. Capsula, spiraliter notatum. Pede diaphano brevissimo e cellulis (1-2-3 on the same plane). Continet more solito materea grumosam, granulisque amylaceus plurimas maxima inæqualis.

Wuzeerabad near Cabul.

A curious species with the general structure of Chara, but without globules? and with the external tubes in the longer joints of the alternating series.

There can be little dout but that the reproductive organ, represents a joint of the stem, as it consists of a central tube, 5 external ones spirally twisted at a very early period, and 5 small cells, terminating these, for in all parts, the developement appears to be reversed, the uppermost fruits of each whorl being the earliest developed. The nucules are axillary, the suffulting cell being rudimentary, an semper, at an early period, the central tube contains nothing but grumons matter. Soon after, it present but little difference except in size and colour from the mature one. In one instance I thought I perceived primary globules in the centre of the grumous matter. The young reproductive organs are reddish, the number 5 is constant, the branches about them are also often reddish.

The whorls of the axis are approximated, and sometimes perhaps irregular, the cells are much more numerous than those on the branches, but generally smaller, they have not the same attachment, I think, but arise from small cells terminating the long ones.

I do not think that in the divisions of the axis, any analogy can hold with Phænogams ? Analogies certainly exist in the constantly quinary number of the spiral and terminal cells, and in the whole appearance of the organ, which is a good deal like an inferior Phænogamous dicotyledonous fruit.

I have seen nothing like the globules, and this constitutes its singularity, together with the tubes being filled with green matter, in such a way, that circulation scarcely seems likely, except in the central tube, or in the lateral ones after the disappearance of the green matter.

The plant is a mysterious one, but the ferules ? approach more toward the nature of gemmaceous organs than the reproductive organs of other acrogens. The germination if I remember right differs in no respect from that of the axis, the chief peculiarity being the emission of radicles. The amy laceous granules are more compatible with the nature of buds than reproductive e sexubus organs. But after all, nature may wish to shew us perhaps the maximum amount of a developement analogous to that of Phænogams, and so conti-

nues the axis in the reproductive organ. The nucleus in the very early stages reaches from the attachment to the end of the reproductive organ, so that its subsequently appearing not do so is of importance.

150. Lathyri sp.—A weak species, scandent among herbs, fl. yellow, grassy damp spots Siah Sung, along the river.

151. Ranunculi sp.—Cæspit. læte virens, fl. luteis, fol. radia longi petiolata, ovato linguiformibus. Hajeeguk ravine, upper Kurzar in swamps, common.

152. Veronicæ sp.—Digitatis cæspitos. pallens, flor. albis. From the same place.

153. Composita.—Canescens, decumbens, fl luteis. Near the summit of Hajeeguk, dry exposed places, and on the descent, but not below 500 ft. from the summit.

154. Ranunculus.—Pallens fol. radical reniform 3 partit, fl. luteis, Hageejuk swamps, and lower Kurzar.

154*a*. Orchidea.

Bulbis bipartis, lobis divaricate bilobulis, fl. lilacinis, labello saturatione, colore maculat. Hajeeguk, in swamps not uncommon.

155. Ephedræ sp.—Habitu solito, a densely branched dwarf shrub, young branches tender, and in this state not unlike some of the Bamean Kochioids. Ramis glaucis fol. fuscis, vel. rubris, inflor. fœm trichotom, fructib binis maturis rubris.

Barren hills Kaloo infer common.

156. Aconito sp.—Simplex calyce cæruleo, petalis albidis calcare recto, floribus sub secundis ½ way up Kotul i Kaloo.

157. Pedicularis.—Erecta simplex, fol. pinnatisectum, ⅔ down Kaloo. How curious that this form of the genus affects very dry places.

158. Hypericum —Frutex humilis, prostrato decumbens, fol. carnosis crystallinis glaucis, fl. solitar terminal, calyce sub duplici. Corolla cerea, carnea rubro tinctum. Dry barren ground foot of hills Topchee.

159. Umbellifera.—Habitus Coriandra, odor subo, fl. albo carpellis longe-rostratis, erodiformibus. In fields, especially of lucerne Bamean.

160. Gramen.—Erect stricta spica cauleque rubescent. Swampy spots in the bed of river Bamean.

The Caragana of the higher parts are also found along the bed of the river.

161. Erodium.—Basi decumbens, fol. simplicibus, caulibus rubescent, rhynchis stipæ.

Stony bed of river Bamean.

162. Gentianea?—Silenacea ?—Minima pallens, petalis albis. Dried up pool. Akrobat ravine, 10,000 ft.

163. Astragali sp.—Suffruticosa, densissima, albescens, habitu quodammodo. Onosmatis.

Akrobat kotul, 10500 to 11500 ft.

164. Fumariacea..—Adiantifol. ruta muraria, glauca: on rocks. Akrobat ravine: 8500 ft.

165. Pedicularis sp.—Cor. roseis.

Very common in swamps. Akrobat ravine, 9500,to 10000 ft.

166. Triglochin.—Glaucescens, fol. concaviusculo convexis, spica fruct albid.

Cum præced. common.

167. Onobrychoides.—Glaucescens, sub repens, fl. viri similiter roseis, demum fuscis, Akrobat Kotul, in dry places, 10500 to 11000 ft.

Plants of the Kotul are itself chiefly, Artemisia, Statica 2-3 grasses, Umbellifera, Carduacea 2, Triticoides, Gramen and Artemisia being by for the most common, Roylea, Asphodelus, Sinapis exaltata occurs up the ravine, and on the Kotul as high as 10500 ft. Salvias common all up the ravine, but not on the Kotul. The chief shrubs of the ravine is Caragana, and the little Rosa. no Hippophae.

168. Zygophylli sp.—Humilis, axeos basi incrassata lignea cæterum glaucescens carnosa. On hills Akrobat.

(Zygophyllus dendroides.

A low shrub with stout whitish branches, fol: spathulatis vel obovato spathulata, basi articulatis carnosis, glauco patentibus, fructibus axillaribus pendulis, uncialibus 5 alatis, stylo 1 terminal.

Dehisc. loculicida, loculis 1 spermis. Sem. pendul. medium paullo supra affixa, foramine supero)

169. Astragaloides. Akrobat.

170. Tanacetoid.—Capitul luteis, about fields Akrobat.

171. Linariæ sp.—Perennis, carnosa glauca, fl. aurei calcare gracili, sub erecto, hills Akrobat.

172. Labiatæ sp.—Basi decumbens fl. minuto luteo fuscescent. In fields Byani.

173. Glaucii sp.—A stout glaucous plant, petalis luteis. Barren hills Byani.

174. Statice.—A tall straggling almost scandent plant with coriaceous glaucous per foliate leaves. Along Syghan river.

175. Statice sp.—A tufted species with spathulate coriaceous crystalline leaves, past flowering. No species like these occur on the East side of Hindoo Koosh.

176. Labiata.—Planta robusta cana, 3 pedalis floribus cærulescent Soorooth Dhurrah. Cor. ringens, lab. super lobis reflexis, centralia inferioris concav.

177. Composita.—Serratuloid.—Sub simple, 2-3 pedalis glaucesc. carnosa, capit lilacinis.

Akrobat nearest Dhurrah, on the way to Bamean, 10,000 ft. in damp thickets.

178. Umbelliferioid Thalictrum 4-5 pedale, pallens cum præcedento.

179. Astragalus dendroides.—Ramulis crassis albis fol. glaucis, tegumina pendulis, a scraggy shrub 1-2 ft. high on Onnoo. Pass summit, and on Akrobat.

180. Malvaceæ.—Planta 3-5 pedalis annua robusta herbacea, glabriuscula, fol palmat 5 lobis, lobis rotundatis dentatis, racemis pubescent nudis (ob-lapsu) Involucro nisi annulum subintegrum ad basi calycis. Cal. spatha fissa, dentibus setaceis cohærent. Cor. sub campanulat vix regularis, aspectu apocyneo. Pet alba, ($\frac{1}{2}$ infer tubum formant sanguin.)

Columna hinc inclinata.

Pet et stamin basi altiuscula unita, stigmata 5 capsula erecta hirta 5 angularis, interangula concavo unilateral uti flores, 5 locularis. Sem. uni seriatis rotundatis, pisi parvi magnit, sessil, hilo longit seminis fere coty. foliaceæ conduplicato plicatæ.

In fields Peshowur: vix Cult.

There are many points resemblance between Malvaceæ and Curcurbitaceæ.

The stems of the larger tropical grasses are proped up by stiff (simple) roots, proceeding from the lower joints, these appear to be simple prolongations of tissue near the circumference of the axis, the inner white, the external green or cuticular. The latter is not prolonged, but is ruptured to allow the passage of the radicle.

This passage of radicle is, in grasses, confined to the joints, why?

The same occurs in all the Endogenous plants with typical vegetation. The most perfect instances occur in grasses, the the intermediate in Bamboo, the least perfect in Palms, in which last, they are thrown out in excessive numbers, forming a cone round the base of the tree, and acting as supports, rather by giving that form to the base, than by individual attachment to the soil, for they are so short that none of the upper ones reach the earth.

[Stony tract between Futtiahbad and Barabagh 1½ mile evidently from inundations of Khugjur river.

Stony bed of Cabul river from gorge, and Soorkab, where cut by rorrent, in some places 60, to 100 ft. deep, barren low hills here and there, but the country is not so undulated as towards Futtiahbad.

Sofaid Koh, lower rangs generally barren.

Ficus, observed close to Shaiva.

Rice, transplanted now June 26. plants 11 inches high.

Croton of Candehar occurs here, Toot, Singit, Chunais the latter rare, Anais very common. Apricots large trees Umlook, or Liquorice also occurs.]

181. Leguminosa.—Habitus Crotalariæ quodammodo. Erect angulat. glaucum, fl. albis, vexillo, et parti corollæ aliis divaricatis, quasi didelphis, albis. Leguminibus erectis, planiusculis, induratis.

In fields. Khoteba Chuch.

182. Graminea.—Rigid glauca, radiat decumbens, spiculis echinatissimis. Ibidem.

183. Leguminos.—Prostrat radians, cana, fl. rubro sanguineis. Legumin deflexis planis, torulosis. Ibidem.

184. Heliotropium.—Heliot. Prostrat. radiat, basi suffruticosa. Corollis albis, Ibidem.

185. Leguminos.—Centro erecto cæterum decumb, canescens, fol. ovatis, basi cordat, glomerulis sub sessilibus, fl inconspicuis rubris. Ibidem.

186. Leguminos.—Radiat prostrat: foliis angustis, concavis, racemis fol. longitud. Legumin spheroidal. Ibidem.

187. Leguminosa.—Radiat prostrat cana, fl. rubris inconspic. Legum. sub cylind. sub torulosis, Ibidem common.

188. Cucumis.—Prostrat cana, fl. luteis, fructibus ovi (pigeon) magnitud, viridi maculat in fields, Khoteba.

189. Leguminos.—Centro erect: laterib. prostrat, glandulos: odore resinosa, florib. sanguineis. Legumin, cylindrac. In fields khotiba.

190. Leguminosæ.—Melilotoid: tribu. Erect ramos: magnitud valde varia, fl. luteis Legum. gibbo rotundatis, stylo ascendent. Ididem.

191. Cyperaceæ.—Minim. spicis viridis. Ibidem.

192. Leguminosa.—Basi suffruticosa, 2 pedalis, glauca, fl. purpureis. High sandy plains Chuch.

193. Urtica hippuroides.—Laxa basi decumbens, fl. et fruct. albidis, margine rubris. River side Hussun Abdul, also India.

194. Labiata.—Basi suffrut. decumbens. Caule foliisque subtus sanguineo brunneis.

About fields Hussun Abdal. This is the same genus as the very common Labiata tomentosa of Khorasan.

195. Gramen (Mnesithea) Rottbœllioides.—Humile decumbens, spicis purpureo viridibus, bed of Hoomooh river.

It appears to me curious, from the niches in the rachis being opposite, and each, one flowered, and the perforated rachis; the flowers are of equal size too.

In all probability the flowers of each pair as they stand on, the rachis, belong to different spicules, the perforation of the rachis is unexplained, as the flowers are not yet examined microscopically.

196. Menispermea. Phyllanthoides.—Frutex subscandens, sub volubilis pendens e muris, cano griseus, floribus minutis viridibus. Manikyala tope. Habit altogether of Phyllanthus.

197. Malvacea.—Herbacea, 3 pedalis caule petiolisque cæsio glaucis, foliis cisso subglabris, pedunculis, axilaribus longis uniflo-

ris, apicem versus articulatis, supra articula incrassat, involucro plurifol. 10-11, foliis radiatis subulatis hirtis, calyce, profunde 5 partito. vix patens. Corolla aperta non visa, alabastro lutea basi atro sanguineo.

On Manikyala tope.

198. Grewiæ sp —Frutex humilis 2-3 pedalis e basi, ramosa, fructibus 3-4 nis Aurantiaceis. Ibidem. This and Bhair are the most common.

Tradescantia, Sidæ sp., Conyza, and Achyranthes also occur.

199. Schænanthoides.—Cæspitos, panicula nutans. On sandstone or cliffs. Bukriala ravine. Also between it and Raivil Pindi.

200. *Smilacinea.*—Asparagis aff. Frutex scandens, sub volubilis cortice cinerea, Foliis nullis, nisi squamæ coriaceæ paucæ basin caulis versus, reliquis in spinis abeuntibus, quarum in ramis devisum curvato. plano subulato fortissima. Racemis florum aggregatis in harum axillis, basi bracteatis, floribus minutis articulatis in pedicellis, (odor very oppressive) sepalis 6 a3 anthesin patent, revoluta albi. Stam totid his opposit, antheris castaneis, stylus brevis, stigmato tria brevia, sub recurva. Ovar. ovatum glabrum, Æstiv imbricat scandens in Phulahi. Bukriala Khudd.

Certe Monocotyledone, quæmvis aspectu Dicotyledoneas.

201. Chenopodiacea.—Planta prostrata sub crystallina, fol. lanceo latis, acutis, margine recurvis, glaucis, floribus axillaribus, ovario truncato, et apice concavo. Wuzirabad in fields.

This plant exhibits an affinity between Chenopodiaceæ and Mesembryanthemum.

Supplement to the Preceding List of Kooner and Kafiristhan Plants.

1. Mathioloidea ?—Planta cana pube substellat, erecta annua, in exemplaribus robustior ramosa, fol. radicalibus, lyratum pinnatifidis, lobo terminali maximo rotundato, superior, spathulatis dentato pinnatifid: calyx æstiv imbricat, more solito floriferis, basi e saccat, erecto patenta.

   Flowers are very fragrant, odore Cheirant. or of Heliotrope, but not powerful.

   Petala ungue breve, parte ultra medium (quoad erect) patens albida, post anthes. purpureo pallida tinct, et erectiuscula.

   Pistill longitud stamin. Styllus crassus brevis. Stigma sub capit.

   Siliqua immature, gracilis, longa, teretiuscula stylo etc. immulato ? terminat et cornuta.

   Otipore shady rocky places common, varies greatly. fl. sometimes purple.

   Sapor, odor sub. o.

2. Cardamine.—Erecta annua. Spithamæa pedalisve, fol. pinnatis, Racemiger. Calyx erectus, sepalis concavis, petalis albis exungue mediocra fere patentibus, demum erectis; Stam breviora longiuscula, siliqua teretiuscula, connula stylo etc. Sapor Nasturtium, et Brassicæ.

   Wet places. Otipore common.

3. Cruciferæ.—Annua erect, pedalis vel ultra? fol. inferior, pinnatif segmentis sæpius unilateral basi dentat linearibus et arcuata recurvis, et tort, terminat dentato ovatiusculis superior basi sagittatis, dentato pinnatif. lobo terminali elongato. summis simplicibus basi sagittat.

   Racemus apice corymbiformis. cal: æst: imbricat sepaloid. sepalis laxa erectis concavis pilosiuscul.

   Flores compressi alba, petalis albis erectis (battledore shaped)

   Stam brevissima.

   Ovari compressis. Stigma orbiculare capitat, hispid. Evoluteo complicata, flores infimi et summi minus evoluto, illis, in pedicellis pilosis gracilibus longis saltem in *centrali, e foliosa*.

Otipore shady places only one specimen.

The difference in the central and unleafy axis, and the others is marked, not only in the inflorescence, but likewise in the Sapor sub nullus, sub-salinus.

4. Cruciferæ.—Cheiranthoid Planta papilloso cana. fol. inferior pinnatifidis, superior dentatis. Racemiger. Calyx lutescens petaloid laxa erect, sub concavis pilosis.

Pet spathulat erect lutea ungue lamina æquant.

Stylus sub o. stigma capitat papillos. Sliqua pube stellat cana teretiuscul. Sapor sub o. Sinapid.

Otipore : Sandy wet places.

5. Crucifera.—Tenera fol. infer reniformibus integrioribus ! superior grosse dentatis plus minus cordatis. Racemiger.

Sepalis petaloideis albis, concavis patentibus æstivat imbricat. Sepal alba, obovato spathulat, ungue breviusculo e medio tantum supra patent.

Stamina vix exserta, cornuis apices centrat. Siliqua more solito, stylo cornuto, stigma punct. odor forte alliaceum.

Shady places Otipore not uncommon.

6. Cruciferæ.—Spithamæa vel fere pedalis, fol. inferior aggregatis, rosaceo patentib. pilosis, obovatis, racemis glabriusculis, fl. luteis inconspicuis.

Calyx quam maxima calycinus, laxe erectus, sepalis planiusculis.

Pet lutea, sepala vix æquant, erectiuscula apice tandem (tendency to spread) ungue mediocro. Stigma capitato papillosa Stam vix exserta.

Siliquæ erectæ prius sepalis (tendency to become foliaceous) basi circumdat, his lapsis nuda compressa, glabra breve cornuta stigma punctiforma.

Habitus etc. Drabacearum.—Wet sandy places Otipore.

7. Draba —Spithamæa, fol. rosaceo patent, calyx laxe, erectus sepaloid, pilos. Sapor sub Sinapid.

Pet. alba erecta, sepala paullo excedent, biloba ! (genitalia inclusa demum certe elongata, et siliculæ applicita.

Wet sandy places Otipore, common.

8. Cruciferæ Nasturtioid.—Herbacea erecta, fol. pinnatifidus lobato dentatis calyce sepaloideo, semipatent apicibus inflexis lutescent.

Pet lutea, sepalis paullo brevior ungue longo, lamina orbiculari.

Stam petalis vix longior, stigma orbicular. River banks in sandy wet places, Otipore.

9. Cruciferæ Alyssoides.—Planta pussilla annua erect caule pilis typical. stellatis, racemus terminatis. Calyx herbaceus, viridis sepalis compresso concavis. pet lutea erect clausa, sepalis $\frac{1}{3}$ longior demum persistentia, albe facto erecto.

Genital inclusa.

Silicula emarginat orbicularis marginato disco inflato.

Common all over Khorasan in dry shingly ground.

10. Brassicacea.—Erecto ramosa glauca carnosa, fol. inf. pinnatifid caulineis, dentatis, basi sagittatis racemis terminat, floribus sub purpureis, calyce subsimple erect clausus fuscesc. viridis.

Petal, erectiusculis concavis venosis genital sub inclusis.

Siliquor (pedicellis deflexis, et secundis) Allantodiformibus, torulosis, rostro robusta brevior.

Common over Khorasan, dry shingly ground.

11. Cruciferæ.—Frutex humilis præ ramos. cortice albo cæterum totus canus, calyx cylindricus (tendency to split irregularly,) clausus, pet. patentissima margine revoluta demum reflexa, purpurea genital inclusa. Common on barren hills. Pushut.

Pet. venos, but differs from Sinapidea.

12. Ejusdem generis.—Habitus idem sed robustior minus canus, flores rubri, demum lilacini.

Very nearly allied to 11, both scentless.

Semen. margine alatum.

13. Crucifera.—Herba humilis, strigosa, fol. inferior pinnatifida dentatis.

Calyx ex erectis hispidus simplex, rubescens. Pet. patentia spathulata venosiuscul, lilacino basi sanguinea genital inclusa.

Siliqua juniora, ovato acuminato longiuscul rostrata strigosissima pilis patentibus albis.

Common on barren dry spots. Pushut.

14. Isatis sp.—2 Pedalis glauca, racemis paniculatis floribus erectis cernuo demum pendulis luteis, calyce $\frac{1}{2}$ patentibus, petaloideo lutea. Pet erectiuscula, Anth deciduæ. In fields Otipore.

15. Thlaspidea.—Erecta annua glauca, foliis oblongis, basi sagitta-

tis, lobis amplexicaulibus, racemis erectis, siliquis obcordatis. utrinque sed præsertim supra centro carinatis.

In fields, Otipore.

Hyoscyami sp. Racemi *secundi gyrate.*

Corolla formosa infundibuliformа, ore obliquo, laciniis 5, inæqualibus, 2 inferior minoribus, reflexis, 3 superior subæqualibus, sinubus plicatis, sub erectis vel tantum $\frac{1}{2}$ patent. Color of the ground white, tinged with bluish lilac, throat splendidly purple violet. Stam declinat, colour of the corolla!

This varies apparently a good deal, the first species, 2*a* p. 324, was gathered at a very early period, it is very clammy, and has a heavy smell, the texture of the Corolla is very delicate. This type is very different from that so common in this country, in which the fissure between the two segments is so deep, that the corolla becomes unilabiate.

Is there not resupination in some of this genus.

Common: about conglomerate cliffs, between the two Chugur Serais.

BOOK, IV.

Chapter 1, *Notes on the Vegetation about Malacca.*

[*Littoral vegetation*—Calophyllum, Sideroxylon. Scævolia, Pterocarpus? Catappa, Verbesina, Premna, Ficus, Vaccinium, Sapindaceæ, Hoya, 3, Cassyatha, Hydnophytum, Grammatophyllum, Loranthus retusus, Dicranum glaucum, Pogonatherum, Vitex Pandanus, Xylocarpus, Crotalaria longipes, Rotang, Myrica, Engenia, Plectranthus, Epithina, Pomacea maba, Gmelina, Ferns, and on rocky cliffs sea weeds, etc.

Pulo Penang.—Is a long a low island towards Pulo Bisser, laid down in charts. It is submerged in high tides, but at other times a few masses of the Malacca rock, i. e. gneiss and laterite appear above high water mark. With the exception of the masses of rock just named, the surface would appear to be coral, or its disintegnations.

The hollow, or concave basin in the middle of the island, is occupied with shallow water, generally about a foot deep, but with an irregular coral, muddy bottom, the water in sunny weather becoming much heated.

In the sheltered recesses more particularly of this lagoon, where there is a good deal of mud, Enhalus abounds. It is rarely found in fruit, (September) it is very variable in size, and never large, except in the open sea.

Another submerged, terete-leaved, odd looking plant, is also found out of flower, with creeping stems, and often interleaved with Enhalus. These, and several Fuci, constitute the vegetation.

The only trees, or rather shrubs remarked, are one Sonneratia apetala? and the smaller. Avicennia, all which have an incrustation of *sward* like form, such as we see affecting trees exposed to winds prevailing in one direction.

The Avicennias are, as it were, dipped to high water mark, and at a distance, look exactly like cattle.

The Sonneratias are fewest only 2 or 3, but they are most conspicuous. Neither are there many Avicennias.

Pulo Java another small island close to Malacca. In charts; bearing a lateral mass much eaten up, or corroded on the south face,

sandy flats of disintegrated coral and mud, with rocks of laterite extending all round. The flats of this Island are inhabited by a large Sonneratia, together with two Avicennias. One of these, the most common, is the third species, namely A. intermedia, This generally occurs as a shrub, sometimes as a small tree, but never with a trunk like that of the others.

It is difficult to distinguish it, but its leaves are obovate, pale green, scarcely white underneath. Fruit small, not acuminate. The A. tomentosum is not found on Pulo Java. Pyrrhanthes, red and white flowered varieties, Rhizophora mangle, R. stylosa and Excæcaria likewise occur.

On the rock, Terminalia catappa, Mimosa, Morinda, Cassyatha, Dolichos lutei flora, Premna, Liriodendron Guettardia, Thespia, Paritum, Psidium (Guava) Menispermum, Verbesina, Convolvulus Pes Capræ, Scirpus, and Andropogon occur. The scandent Mangrovey, Dalberzia, Leguminosa alia, Polypod. repens likewise occur.

This is the best place for Avicennia intermedia, and the edible sea weed.

What is the use of the subulate branches sent up from the roots of all? Mongrovey trees except genuine Mongroves, Sonneratia has them, all Avicennias have them, Pyrrhanthus? Excæcaria? Heretiera? Few of them in Avicennia, and none in Sonneratia appear to turn into real stems. September 23, 1843.

Domestic Plants.—About houses, which are often buried in trees, and generally situated on naturally open swardy places on the banks of cuts, one finds Pierardia, Cocos nucifera, sometimes C. pygmæa, Mangifera indica (*Baching*) Areca catechu, Arenga particularly the large one of the interior.

Eriodendron, sometimes Rhamnus jujuba, Averrhoa Corambola, Bilimbi. Cynometra cauliflora (*Bea sow*). The various kinds of Eugenia Jambolana, of *Pisang*, of Plaintain and of Citrus, Myristica moschata, Eugenia caryophyllus. Lansium domestica. Durio rubethinus, Kohena, Garcinia Mangostana.

Among the introduced plants, are 2 Passifloræ, Ravenula, Malpighia, Cycas revoluta, C. circinalis, Allamanda, Barleria, Croton pictum or painted, Acanthaceæ, Fourcroya, Cactus, Theobroma.

In gardens.—Pardanthus Chinensis, Zephyranthus Pancratium, Crinum, Amaranthus, Gomphoræma various shewy Compositæ, Ta-

getis, Cycas circinalis, C. revolutis, Casuarina this is uncommon, only three trees of it at Ching, one, at Tonjong, one in Mr. Rodyk's garden a Cynometra, shewy from its pretty pink pendulous young leaves, Barleria, Ravenula, one young tree in Rodyk's garden, Lantana, Poinciana, Murraya exotica, Polianthus, Hibiscus Rosa sinensis, Passiflora laurifolia, P. fætida, Bæckia fruticens like a weeping willow.

Vegetables.—Various Cucurbita, as Indian, but not so many. A few Leguminosæ, yams from Dioscorea, but generally from a large leaved Caladium, Capsicum, some few salad plants, but no European vegetables are to be found good, Asparagus very poor, sweet potatoes, cabbage, coconut-cabbage, a sort of leek.

The lower orders eat spinaches of a wild Amaranthus, and Herpestes monniera, and many others; but the malays are not so indiscriminate in this respect as the Burmese.

Scents.—Anthoxanthus.

Sward.—Torenia polygonoides, Vandellia arguta, Leguminossa, Poa, Salomonia, Spermacoce, Burmania, Scirpus.

An Indian Forest.—There are few things more oppressively solitary than an Indian forest just before sun set, and however proud man may be inclined to feel at all times, in crowded cities, where the noise and bustle of population convince him that he is the principal agent, the silence of the forest, (save where broken by the unnatural screaming and groaning cicades) and the vast size of most of the objects by which he is surrounded, prove him to be a thing of nothingness, to say nothing of the feeling of utter helplessness, which must steal across the mind of every one in such loneliness.

Similar feelings always overcome me, when looking from a towering mountain, over a wide expanse of level country, as often occurs in the East, where a vast map may be extended before the eyes without the sign of a human habitation, and often marked by a grand river, stealing noiselessly on, lifeless as the forest, with the sandy tracts stretched along it, or the patches of clear spots, as if intended expressly for human habitation.

Even in those cases in which the country before us is known to be densely peopled, producing abundance of the necessaries of life, yet monotonous and flat from the distance at which we view it, the same feeling steals over the soul, perhaps the more so, when we consider that a few brief miles are sufficient, to render the works of man invisible.

Anonacea, habitu Guttiferæ, qualiter Hebradendron, the aspect of the young flower is like that of a Meliacea, æstivation imprimis aperta, 3 sepala, 6 petala, albiflora. Dillinia macrophylla.

Balookar.—This always occurs on soil strewed with laterite, Hibiscus macrophyllus. Cæsalpinia.

In great forests the surface of the soil is moist, generally clayey. No gregarious plants occur but Melaleuca Leucodendron, and Man groves, the former alone exclusively so.

Henslovia rubiflora.—Arbor magna, fol. coriaceis conduplicatis, racemis paniculatis, calyce rubescent, filam longe exserta. The aspect at first resembles some Sapindaceæ of this place. Two trees of this were blown down in Bhyass jungle, Ching, Oct. 1842.

Scrophularinea, Synphyllium. Prostrat radicans, fl. ringens complanat, lob 2 parallelis apice tantum recurvis, supera albo, inferioris albis cæruleo-striatis.

On foot paths in the margins of dense jungles.

Aya Punus. Hot spring—The hot spring is built up as a well, and is so hot that you are just able to bear your fingers in it. The water bubbles up, occasionally emitting a sulphurous smell. It is said to be hotter in the morning, and after rain than at other times. But all the surrounding swamp is hot, the latter consists of ferruginous mud. The discharge of water from the spring is ever the same.

There does not seem to be any change in the surrounding vegetation, the swampy parts presenting the usual marshy features, one *Sirdung* (Corypha) appeared to suffer. The jungle *Balookar* is much the same as at Prinjite, and Ayer Punnut. On the road out there is little to be seen but *Balookar*, the forest having been cut down to within fifty fathoms of the road of on each side, which is now separated from the forest, by dense *Balookar* vegetation. Nor is the forest itself so grand as that of Rhim. The same Balookar forest extends to Ayer Punnus, except at Ladang, where there was some recent clearing. During the journey to the hot spring I did not get more than five plants I had not found before, namely, Eriodendron; a shrub called *Kaboo-Kupass* Gossypium, *Kupass Kupass* jungly Gossypium with 4 cottony seeds, *Mirbow* is I think Leguminosa and *Bilirouz* belongs to the same family.

Rawa Rawa Mangifera, Arbor mediocris, corona dense rotunda. Fruit flesh yellow, when ripe out side is blue. *Lebang*, Vitex (tri-

folia) I mean the arborescent one, answers for boat building. *Tampah* Artocorpus, Calamus common about Ching, the petiole is used for baskets and also for working Artup.

Epoo. Arbor toxicaria. Ching, properties, very fatal to fowls and dogs. Jelortoong milk tree the giant of the forest, and a magnificent tree, but worthless wood.

Palms. Rungum, is *Zalaccæ* sp. leaves 18 ft. long. the petiole throughout is armed underneath with incomplete verticels of stout strong long flat spines, Pinnæ ascending, patent, generally more or less fasciculated, outline linear spathulate, above with three stout carinate veins, spines serrate distinctly striate, leaves much like those of Zalacca, but the leaflets are more crowded and the armature is greater.

Inflorescence—spadix, very long, slender, nutant, pendulous towards the apex, with long narrow brown ferruginous split sheath, upper ones nearly black, each much longer than the lower, and nourishing a digitate stout cylindrical pluri-seriate-flowered spike, spikes at the apex sometimes radiant. Flowers unequal, one large, and one small.

Fruit oblong obovate, often curved apiculate, passing into a stout style with a stigma-bearing apex, rough from recurved bristles of scales, 3 seeds in the fruit.

Rotan inconspicua.

Scandens, vagina irregularly armed, spines deflexed, rarely in completely verticillate, about 2½ inches below petiole, gibbous, margines brown scarious dental irregular.

Petiole trigon or plano-convex, armed on convex dors. Pinnulæ distant, 1-1½ foot long, linear lanceolate, very acuminate passing into a subulate bristle, plane or lævis with the exception of above the centre carinate vein, above dark green with beautiful irregular undulate incomplete white lines. Spadix supra axilla and opposite axiles small, outer spath nearly complete flagellate, acuminate, boat shaped scarious on dorsum armed, thence to each branch of inflorescence smooth, scarious.

Ebool occurs only on the slope and base of hill, near Ching, close to the road, I did not go within 50 yards of it, as the jungle was very thick, and no flowers or fruit were seen. It is a lofty Palm with the habit of a Cocos, yet different. The trunk is distinctly annulated, unarmed, and said to be like that of Cocos. The crown is

handsome, very dense in consequence of the close-set-ness of the Pinnæ and the leaves, which spread in every direction, new ones ascending, the pinnulæ are patent with a tendency to be recurved.

Bertam occurs, covering the upper part of the cleared hill, at the base of which the road runs, many are destroyed by burning, some trees occur with it, but there is little or no under-wood, the space occupied by each specimen is large, each forming an impenetrable bush, around are strewed the remains of old leaves, and pits filled with rubbish.

It appears to be a plant with a number of offsets. The leaves are very broad and spreading, particularly the outer ones of each branch. The plant is about 20 feet high, the lower half of pinnæ well armed. Pinnules spreading. The inflorescence, much shorter than the leaves, often $\frac{2}{3}$.

Anowe Kutaree, Petiole shortly sheathing, margine of the upper part i. e. at base of petiole itself is porcupiny, with black quills, this is deeply grooved or channelled. Pinnules all on the same plane patent slightly decurved, white underneath.

A young tree was brought in 15th Oct. 1842.

Habit, and colouring of the leaves exactly as in the Cobang, 6 paces long 2 broad, general outline of lamina blunt lanceolate. Spath sub-lanceolate, the 2nd outermost a little armed, fruit obovate turbin ; surmounted by style and 3 incurved stigma. Scales green with white margins, brown apex, upper spathes of specimen much more elongated, and coming nearly from the base of the axilla.

Generally there is no difficulty in distinguishing between the leaves of *Kutaree* and *anowe*, although this last has not all the leaves pinnated fasciculately, nor is the character of solitary pinnæ ever variable in *Kutaree.* But the leaves of *Anowe* are larger, often more or less undulated, ever fresh, with a convex upper surface, and the pinnæ are curved conspicuously towards the apex were they are fasciculate, the lower ones ascend obliquely, the upper are patent and somewhat deflexed. *Anowe* and *Kutaree* appear to be perfectly distinct.

Note. Magnificent Epiphytical Orchidea, growing in dense firmly adherent tufts on trees, root pungent. Stems long, ascending, arched, often, with exactly ditichous vaginæ; upper half pendulous distantly undulated, canaliculat linear; sessile tendency to twisting,

young stems as thick as ones wrist. Of this which is I fancy a Grammatophyllum (thought the character in Lindley does not agree) I have seen old spikes, as long as the stems, and with scars of numerous flowers, so that it may be a most magnificent plant.

Between the bases of the stems is a huge mass of radicles, the outer of these ascend, are divided, and sub-pungent. It is the largest Orchidea I know.*]

Plants of Padam Bhattoo.—Rhodamnia uniflora, Alyxia,

Bæckia sinensis, Aurundinaria, Dacrydium, Nepenthes, Illicium, Cyperaceæ, Dischidia, Hedyotis, Eria, Polypod: abrorescens, Leucopogon, Leptospermum, Ardisia, fol. speciosis, spinuloso. serratis. Burmannia, (Summit)—Lindsæa, a lax decompound sp. Lycopodium (top of Toon dook) and Ledang, Davallia pachyphlex (Foot of Ledang), Matonia, Schizæa pumila, Lycopodium scandents, Nephrodium fol. verticillatis soris costæ propinq. I seriat. solitaria, allied to the Khasyah species. Summit of Ledang, Lycopodium cernium. Ledang higher parts, Trichomanes, Hymenopyllum, Polypodium, pinnatim, Adenophorus, with 1 pinnate, frond pinnulæ pinched up, at the back no glands.

Tree-fern, Polypodium from the venation. This on *Padam Bhattoo* is of no size, Lycopodium (distich.) high up, (Plants of the summits of Goonong Ledang.) A shrubly Elæocarpus, with the look of an Andromeda, petals toothed at apex, and dicœccous or polygamous, 10 androus flowers! ! Anneslæa obovata, Tristania, A Vittarioid Fern pusila, with the intro-marginal fissure reaching to the costa; which is the only vein, on the under or ventral part of frond, on transverse section 3 angular, the 3rd angle abutting on the midrib Lindsæa, Nephrodium, Burseracea, Rhododend 2, Vaccinum rotundifol. Cælopyrum, Chrysobalanea or Pomacea, Symplocos, Trichostosia, Dendrobrium, Cypripedium, Habenaria or Herminium, Spathoglottis, Hedychinum, high up, Panax frutex fol. 1 pinnatis, (Toondook and Ledang higher,)—Hydrocotyle. Leptospermum, (begins at *Padam Bhattoo*, Eugenia, Sonnerila under rocks, Juncus under ditto. Dischida sine asciduis. High up Toondook, a tropical Rubiacea, from *Padam Bhattoo* throughout, Ditto another scandent, Myrsinia, on the upper parts. Dacrydii 2, about and above (*Padam Bhattoo.*) Impatiens like I, Mastersiana high up in wet places, Dianella under rocks. Ditto Smilax tropical, Burmania with Impatiens, Cælopyrum, Damasonium Trapa, Ionesia scandens, Menispermum, Amygdalia frutex apetal. decandria facei Memecylon, Frutex habitu Olacis, ovario infero, biloculari. Stam. monadelphis OO.

* The whole of the preceding within brackets printed from pencil writing. Ed.

BOOK, IV.

Chapter, 2. On the Sexual Organs of Gymnosperms, and relative value of Characters in Botanical Classification.

Podocarpus or Taxus. The pollen of this, (which is named in my Bootan List no. 529) Abies Brunonis, is simple and angular. Immersion in water causes it to become circular, the discoid centre and the external margin being opaque, it is brownish, and the disc is as usual granular. After some time, immersion causes the centre to protrude, apparently at no definite point, and this protrusion is soon carried so far, that the outer coat is thrown off, frequently too with a jerk. The centre now appears as a gelatinous hyaline mass, with a granular disc. This hyaline portion, is evidently extensible, and after protracted immersion assumes irregular forms. I have not seen any protrusion of a boyau, or any alteration in the granular disc.

Spirits of wine causes the pollen to contract, but renders it the more transparent: immersed in this fluid it appears angular with a central striate granuliferous portion of nearly equal extent with the outer coat. Subsequent immension in water causes it to undergo the same changes as simple immersion in water, but the central granular disc always remains contracted. The last circumstance to be noted, is the appearance of an inner disc surrounding the granular mass.

It is this areola round the centre, that induces me to believe M. Mohl's assertion respecting the three coats to be correct. The fovilla must be of a singular nature, since the mobility of the fovillam of many (most ?) pollens continues active in spirit of wine, while in this they become aggregated into an irregular grumons mass.

Nothing can prove more distinctly the nature of the outer coat of pollen than this instance, because it is unprovided either with fold or pores, it is thrown off by bursting.

The extensibility of the hyaline coat would seem to militate against Mohl's opinion, because it is the coat in contact with, or enclosing the fertilising particles that is extensible, and yet the want of change of form of the granular disc, in conformity with that of the hyaline coat strengthens it. But this will be cleared up by observing the effect of stigmatic action.

The flowers of this, and of some other Coniferæ, may be single and polyandrons, Mr. Lindley says, that this is impossible, but it must be borne in mind, that no bracteæ, or scales, are found intermixed among the anthers, which might be expected to be the case, were each anther a male flower. I believe that in all genuine amenta, scales will be found sub tending such anthers, or anther, as form a distinct male flower. It is the case in the female inflorescence of Pinus. In this genus there is a tendency towards the formation of a perianth, at least if the expansion of the inner scales, and their partial reflexion may be considered in this light.

Bearing on portions of the above, we have to enquire whether obliteration of parts takes place most frequently in the male, or female organs, and secondly, whether the want of correspondence of form and number between the male and female flowers of unisexual plants, be such, as to warrant us in not attaching much importance to their non correspondence in Coniferæ.

With reference to the first, it may be urged that the anthers, each of which forms a single male flower, are mere alterations of the scales, which in all cases are developed round the lower part of each male amentum. But this reasoning will not do, for there is no instance of a flower being neither axillary or terminal, neither of which can such a supposed case be. The whole of the genera must be examined, for if bracteæ do exist sub tending the anthers in some, the analogy is, that their absence in others is due to suppression. The remaining points for solution must be post-poned.

The scales *of the female fruit of Cupressus pendula* are analogous to the membranous scales of Pinus, hence they are not carpellary leaves, but bracteæ. This species is remarkable for the indefinite number of its ovula. which are arranged irregularly, and in two series in the axil of each scale: these again are opposite, and decussate, becoming by approximation quaternarily subverticillate. The ovula as in Pinus, consist of one tegument perforate at its apex, and enclosing a nucleus of ordinary form, they are erect, while in that genus they are inverted, pointing to, and not from the axis. It is this genus, so far at least as appears to me, that approximates to Gnetum, for supposing the scales to be completely connivent, we shall have the inflorescence of Gnetum, with this exception, that it is diclinous. See Ephedra. This genus proves other interesting facts, first that bracteæ

are more permanent in some cases than carpellary leaves, secondly that female flowers may literally consist of nothing but an ovule, as in Gnetum, thus strengthening Mr. Browns view. It would be needless to assert that the scales of this genus are carpellary leaves, because the ovula have no manner connection with them. I should not be surprised, were ample materials found to exist, at the separation of Cupressinæ into a distinct family. This is pointed out by the habit, the nature and opposition of the leaves, and the structure of the flowers. They are of a lower degree of organisation than true Coniferæ.

Mr. Blume's ideas of Gnetum are adopted by Dr. Lindley, and in his Introduction,* part of M. Blume's description is translated, and in it I find the statement, that Gnetaceæ are beyond all doubt of more perfect evolution than Coniferæ or Cycadaceæ.

This may be granted so far as the latter order is concerned, but not so with the former. For we have yet to learn whether a greater degree of perfection of the male flower in one way, is of more value than a smaller degree of perfection of the female in another. Gnetum having female flowers consisting of nothing but ovula, is minus in this sense, although its male flowers being provided with a perianth, cause it to be plus in that respect.

Neither does his statement as to the immediate fertilisation of the ovule, altogether hold good, that this process is aided, and probably in a primary degree by the styliform process produced from my additional membrane, there can be no doubt. Hence this important process, is, so far as the means by which it is effected is considered, intermediate between the usual mode of Phænogamæ, and the actually direct one of Coniferæ and Cycadaceæ.

The union of Equisetaceæ with Gymnosperms by Dr. Lindley appears to me a remarkable instance of inconsistency, particularly when we compare it with the dismemberment of Rhizantheæ. In the one, we have the separation made entirely from the want of division, or distinction of embryo, in the other we have a union on somewhat similar, but wholly untenable grounds, the seeds of Equisetaceæ being altogether analogous to those of certain Cryptogamia, with compound outer tunic. Neither will their comparison among Gymnosperms, to Ceratophyllum among Exogens, and Lemna

* Natural System, Edition 2d p. 311.

to Endogens hold good, because Ceratophyllum is endogenous itself, and because all have properly developed embryos. These latter instances, are instances of considerable amount of evolution of sexual organs, and inconsiderable of vegitative; while Equisetum is an instance of precisely the reverse nature, this question will lead me to examine the relative value of sexual, and vegetative organs in which question, all anomalies resulting from cohesion, as in Guttiferæ, Myrtaceæ etc. cannot be taken into account. The questions are these, are Rhizantheæ which approach so closely to Phænogamous plants in all points but, in the formation of an embryo, to be excluded on that account.

Are Equisetaceæ which approach only to certain anomalous forms of Phænogamous, in habit, to be united to that great class on that account, their sexual organs being totaly dissimilar.

Of the comparative amount of value here in favour of Rhizantheæ there can be no doubt. We have every thing phænogamous down even to the structure of the ovulum, "hence it is by a combination of characters, that the two great divisions are to be known, and not by any absolute single mark". The disunion of one, is therefore as arbitrary as the union of the other, reverse this, hic plerumque ad posterius, ille ad prius. No one would associate Lemna with certain Cryptogamiæ, nor would any one unite Podostemon to Marchantiacea, because these plants are frondose. Every days' experience shews the fallacy of relying on arbitrary and isolated characters, it is this reliance that has been, and will continue to be, so fatal to the production of a really natural system.

Xanthoxyleæ have male flowers, plus.—

Scepaceæ,	ditto	ditto	Minus
Garryaceæ,	,,	,,	plus
Trewiaceæ,	,,	,,	plus
Juglandeæ,	,,	,,	minus
Cupuliferæ,	,,	,,	minus
Myristiceæ,	,,	,,	plus
Balanophoreæ,	,,	,,	plus
Cucurbitaceæ,	,,	,,	plus
Hensloviaceæ,	,,	,,	plus

And I think it may be inferred a priori, that the excess in developement of the petals, will be in favour of the males, for, in most

cases of unisexuality, the irregularity is greater in the female, than in male unisexuality, and because petals are so intimately allied with the stamens in structure, and perhaps in function.

The argument is therefore in favour of the polyandrism of Coniferæ.

I was first led to suspect that Conaria is allied to Xanthoxyleæ, by the appearance of the young spike, which is like that of Xanthoxylum, and especially the deep colours of the anthers, a circumstance of unusual occurance.

I would throw the orders with which I am acquainted into the following groups, which are to be hereafter subdivided.

Ranunculaceæ, Papaveraceæ, Fumariaceæ, Dilleniaceæ. Magnoliaceæ, Anonaceæ, Schizandriæ, Myristiceæ, (Nymphaæceæ, Nelumbiaceæ, Hydropeltideæ, these three last, form a very natural aquatic group with Hydropeltis).

After all, the value of characters must be determined again. Is the excess of albumen, more valuable than adhesion of Calyx. Besides, it must be remembered that the law of representation, if true, would require an agreement between the more perfect cohering forms, granting that to be one type of formation, and the more perfect non cohering another. Thus we should have in Araliaceæ the most perfect of their tribe some corresponding point with Ranunculaceæ, which may be allowed to so in theirs. The same will be the case supposing that Polypetalism, Monopetalism and Apetalism are the three types, for the polypetalous adhering forms must as typical, represent the polypetalous non adhering ones.

The three primary types. I take to be Polypetalism, Monopetalism and Apetalism.

,, Or Typical Polypetalæ.

,, Subtypical Monopetalæ.

,, Aberrant Apetalæ. (Achlamydeæ=Fungoideæ.)

The secondary types require confirmation. Are the groups formed upon the French plan, more consonant with Nature, or, are they not.

The primary types may thus be considered.

Typical character, distinction of parts
Subtypical ditto, adhesion of ditto
Aberrant ditto, suppression of ditto

Tested by this, the perigynous type goes for nothing, for its consti-

tuents are by no means remarkable for a tendency to suppression; let us take instances.

POLYPETALÆ.

Typical character,	freedom, as in	*Ranunculaceæ*
Subtypical, „	adhesion, „	*Umbelliferæ*
Aberrant, „	suppression, „	*Euphorbiaceæ*

Berberideæ.—The affinities are obscure, in habit it certainly agrees with Grossulariea, especially in the abbreviated ramifications. The tripartite thorns representing a triveined leaf, point out another resemblance, but it is remarkable that none of the ramuline leaves have a similar disposition of their veins. If the supposition of their being modified leaves be correct, we may expect to find heterophyllous Barberries.

The dehiscence of the anthers is curious, it agrees with that of Bucklandia in the great inequality of the valves, but disagrees in the larger, remaining attached only at its apex, and not throughout its whole length. From those of Laurineæ, in the small valve not being revolute; or, in other words, they combine both the ordinary, and valvular dehiscence.

In the disposition of the petals, I think it approaches nearer to Menispermeæ than most others, especially in the ternary arrangement, a point of great importance. This last order cannot be separated as is done by Lindley, on account of Lardizabaleæ, which have the seed altogether formed as in the Ranal alliance. These will approach nearest to Berberideæ, especially in their compound leaves.

The ovarium is remakable for being almost equilateral, that tendency to obliquity, so conspicuous in all really simple carpella, being nearly overcome.

The stigma is remarkable, it is discoid and slightly foveolate in the centre, the foveola not entering the opening externally of the stigmatic canal. The stigmatic surface is confined to the outer margin of the disc, and perhaps, to that part which intervenes between this and the expansion of the style into the stigma, the above space is viscid and has the true stigmatic appearance. The upper surface of the disc is covered over with a layer of whitish lax sub papillose tissue, which is continued down the stigmatic canal. The use of this is very obscure, for although the line of the anthers corresponds to the margin of the disc, yet it is at once obvious that

impregnation would be more readily effected, were the whole disc stigmatic, than it is, from the superposition of the cellular coat. The application of the pollen sufficient to ensure fecundation, takes place solely along the margin. In its effects it appears to be slow, as, if we judge from the sphacelation sometime after the falling of the perianth, the boyaux have not reached the foveola. The perianth is deciduous, except the three outermost.

The bases of the inflorescence are persistent, and each inflorescence is, folio floriferous, so that each axil of a spiniform leaf, is indefinitely proliferous, a circumstance which does not usually obtain.

Rhododendron.—Upwards of 12 species occur in Bootan between Dewangiri and Tongsa, each has defined geographical limits, the species appear in many cases to run one into the other, and I should not be surprised, if, in a state of nature, many hybrids are produced. Examination is particularly needful between the larger arboreous species, and the lesser, which has not leaves argenteous underneath, although a species with the flowers of this latter, has the under surface of the leaves as in the larger.

The inflorescence is compound, this is indicated by the upper flowers opening first, and by the presence of two very narrow lateral bractes on the pedicel. The parts of the flower vary, 5 being the normal number; this, in the larger species is increased to 10.

The corolla has as may sacs at its base, as there are petals. The sacs contain honey.

The anthers are very curious, not that the opening by a pore is rare or singular, but the thickened margin of the pore would seem to indicate that it is covered in its earlier stage by an operculum. This is evidently not due to the almost total cohesion of the longitudinal furrow. Other instances of porous opening must be examined.

The pollen is compound, ternarily or quaternarily, and is rendered adhesive by curious filaments. Each component part of the pollen is furnished with one longitudinal furrow, furnished with a pore at its centre. Of the nature of the intermixed filament, I much doubt; there is nothing in their appearance to lead one to suppose that they are unabsorbed portions of the original polliniferous mass. The appearance is precisely that of woody fibre.

There is a tendency in the ovarium to a placentation, similar to

that which occurs in Thibaudia, I allude to the prolongation outwards of each placenta, until it comes nearly into contact with the outer wall of each cell. The ovula have no distinct integument.

The stigma of R. arboreum minus, foliis subtus argenteis, is peculiar, the style is dilated at its extremity, and this dilated portion is occupied by as many angular lobes or stigmata, as there are carpelpellary leaves; and what is more, they are *continuous directly* with these. This is an additional proof, if one were wanting, that the stigma is in all cases a continuation of the placenta, and that consequently, it is always a double organ. Being a continuation of the placentæ, it follows that each stigma is opposite to its placenta, of this fact indeed I have long been aware.

Rhododendron. Ic. tom. 11 fig. 1*.

Arboreum, foliis obovatis coriaceis supra lucidis, subtus albus, sub argenteis, venis tertiariis oblique transversis; bracteis ferrugineo hispidis, extimis glabrioribus viscosis, lateralibus angustissimis. Pedicellis in axi articulatis. Floribus sub duplicatis, 8 partitis, laciniis rotundato obcordatis repandis. Staminibus 16. Ovario 16 loculare, placentis bilamellatis.

There is a tendency in one species of Gaultheria, towards adhesion of the calyx with the ovary, in other words, towards to having an inferior fruit: It is distinct enough, although we still take into account the liability to dilatation of the peduncle, which is so conspicuous in Thibundia, and Gaylussacia. This species possesses a peculiar fragrance, which is lodged in brownish glands, these are abundant on the lower surface of the leaves. In it, the lateral bracteæ are approached towards the base of the Corolla. The inflorescence is altogether $\frac{1}{2}$ centripetal, the lower portion of the raceme flowering first. On what does this difference depend? for in Rhododendron it is entirely centrifugal. The terminal flowers of both general, and partial inflorescence, opening first. In this genus the æstivation (Fig. 42) is exactly that of Rhododendron, and the Pollen is similarly compound. The walls of the anthers are membranaceous: the pore by which they dehice is obviously due to cohesion of the lower portion of the longitudinal furrow. The horns of the Anthers are obviously continuations upwards of the locelli of each anther. The composition of the pollen is due to the non-separation of the grains after their formation.

* To be hereafter given in its proper place Icones Plantarum Asiat.

Vaccinaceæ differ in the flower, being articulate on the apex of a clavate pedicel, which is itself articulated to the axis. The anthers dehisce at the apices of their horns, the Pollen, is compound, but not adhesive, no fibrous tissue being developed. The angles of the corolla are, in all cases, highly developed.

Connected with the dehiscence of the anthers, is the invariable cernuousness, or direction towards of the flowers, which is at its minimum in Thibandia variegata.

The outer wall of the ovarium is in all cases produced inwards, so as to bi-sect the ovula. This prolongation continues to the placentæ, but no adhesion takes place. There is a tendency towards definity of ovules, as indicated by their uniseriate disposition in G. serrata ?

In the species which have the segments of the calyx enlarged, this organ is likewise more or less pentangular. Considerable variety prevails with reference to the comparative length of the horns and anthers; but the shorter the corolla, the shorter the horns are. Thus in G. serrata, they only equal the body of the anther, while in T. myrtifolia they are three times as long. The longer, the horns, the greater is the degree of pendulousness required, in order to allow fecundation to take place? The tendency likewise to produce basilar processes varies much; in T. myrtifolia they are conspicuous; while in G. serrata the bases of the locelli are nearly simple. Is there any relation between the development of the two. ?

The tendency to tesellation of the corolla is great, especially in all those with tubular flowers.

Of the species I have met with in flower, there are the following modifications in form.

Thibaudia. Cal 5 dentatus. Cor. tubulosa.

Gaylussacia. Cal 5 dentatus. Cor. urceolata. Stigma sub capitat.

Agapetes. Cal. 5 partitus. Cor. tubulosa. Antheræ cohærentes, Stigma truncatum.

In this last, at least in A. myrtifolia, the inflorescence is simple, the solitariness of the flowers depends on the developement of the lower flowers, as is pointed out by the several imbricately attached bracteæ, visible at the base of the pedicel.

Is there any coincidence between the nature of the openings of the anthers, and their being deficient in uniting tissue. A priori

we should expect that, in all those in which additional opposition is made to the free egress of the pollen, no connecting tissue would be present. That additional difficulty may exist in the elongated horns of many species is probable.

All the above Gaylussaciæ Thibundiæ and Agapetes are epiphytical. To oboviate this defect, large quantities of nourishment are amassed at the base of the stem, or apex of the root, which part is often in some species as think as a man's thigh. In one species, the magazines of nourishment are dispersed over various parts; and this species is a true climber.

Vacciniaceæ are an admirable instance of the weakness of the epigynous character, not from any inconstancy, in its occurrence, but from its causing the separation of this order from Ericineæ.

The 4th type is a shrub with the habit of Thibandia buxifolia, distinguished by the formation of its anthers. These have the loculi produced into a long membrane, which opens longitudinally, and nearly throughout its whole length: on the back of each, near the base, of the membrane is a filiform appendage. This may be supposed to originate from, some alteration in the apex of the locellus which bears it, but I conceive that such is not the case, it is an appendage of the connectivum, with which it agrees in structure, and with which, each is continuous.

The character of this is as follows. Cal. 5 fidus. Cor urceolata. Stam 10 cohærentia. Antheræ loculis dorso appendiculatis.

Loranthaceæ. An order which seems to me to be misplaced by Dr. Lindley. Why it is considered polypetalous is curious enough. Viscum is certainly apetalous, and as its calyx is valvate, it may be assumed that it represents the so called corolla of the more developed genus Loranthus. Its true affinity is no doubt with Proteaceæ, I have a species from Burma which would deceive any one on a casual examination. The calyx of Loranthus, is, I have no doubt, capable of being explained away.

Viscum is always attached by one root, it never sends out shoots as most species of Loranthus do.

The structure of the ovary has been mistaken altogether, for it contains no ovula, at least no ovula similar to those of other plants. In Loranthus a sac exists, which subsequently encloses the albumen, but in Viscum the formation of this depends on the performance, or completion of impregnation, and in this genus, at least in one spe-

cies it is erect, not pendulous, this sac is no doubt analogous to the embyonary sac, or mambrane of the vitellus of other plants, and is the only essential part of an ovule.

An additional affinity, corroborating its relation with Proteaceæ, may perhaps be inferred with Santataceæ, especially through Viscum. And it must be borne in mind that in Santalaceæ, the first steps towards the simplification of the ovule occur, for in Santalum, and probably as M. Brongniart conceives in the other congeners, the developement of the embryo is confined to the embryonary sac, which is for the chief part protruded beyond the nucleus!

The ovary in its earlier stages, is intimately united with the calyx, it is apparently quite solid, and of a homogeneous densely cellular structure. After fecundation, the first change that occurs, is the central tissue becoming transparent, as well as more lax, In this, towards the centre, will be found a cellular body composed of a variable number of superimposed cellules, according to its age, attached by its slenderest portion to the base of the cavity, irregular in form, and formed by dislocation. There is a tendency too, towards separation between the ovary and calyx, not that this ever amounts to absolute distinction, but merely to pointing out of the limits by a difference in form between the tissues. As the embryonary sac (for such I think is its nature) advances. That which subsequently becomes the envelope (in Loranthus Cornaceous) begins to appear in the form of whitish opaque tissue; it is developed from below upwards, and in its advanced state, is at the apex, or where it corresponds to the radicle, very thin. The limits of the ovary subsequently become more defined, and at length that organ becomes separated from the calyx by viscous tissue, the commencement of which is rather early.

The subsequent developements are easy to be followed, the embryo is of early appearance, and is then a circular cellular body; it is developed of course near the apex of the albumen: which is of a very lax nature at this period.

It agrees entirely with Viscum as before observed by me, except that the sac is aboriginally erect; in Loranthus it is certainly pendulous.

The leaves are not altogether abortive, they resemble much the bractea of the flowers, which are always developed in their axillæ.

The anthers of this species are so minute that I am not satisfied as to their structure. They are formed on the ordinary plan, and perhaps evince a tendency towards its resumption : The posterior face is normal, the only difference appears to be that the locelli are sub divided. See No 893, p. 175.

Magnolia.

The similarity between the scales of the floral, and the leaf buds would lead us to suppose that the nature of the two envelopes was the same. Neither is there any reason assignable for the assumption that the scales are opposite, and both combined. On the contrary the two lines supposed to indicate cohesion, may, and no doubt do arise from the nervure of the leaf, and the coalition of its margins. Moreover, this view is borne out by the spathaceous fissure, it being much more natural to suppose that separation would take place along the margin of coalescence, than that one margin would separate, and the other continue to adhere. Besides, these convolute stipules are generally found in alternate leaved plants, so that their being double organs by opposition, is against analogy. It is this that makes Bucklandia remarkable, the fact of opposite bud-scales with alternate leaves extends all through Cupuliferæ,

Ochreæ too, are nothing but dilatations of the petiole, there is nothing to indicate their composition. Besides, the fact of their existence in Costus is a strong proof that they are not stipulæ, these organs being unknown (?) among Monocotyledones. This fact alone, would make us doubt the special nature of stipulæ. For if they are special organs, why should they be so rare in the subtypical division of the Vegetable Kingdom ?

Gemmation has not been sufficiently studied, comparisons should be made between those plants which have no buds, so to say, and Monocotyledones, in which they seem not to be required. It is curious that in Camellia the species with leaves of the ordinary consistence, have the buds but slightly protected, whereas, the species with coriaceous leaves, have them nearly at their maximum developement. The large flowered Magnolia. (No. 755, p. 152,) differs from the odorous one in the carpella being coalescent, or at any rate united, while in the latter, they are all distinct. A space too, likewise exists between the lower carpella and the upper stamina.

The pollen of both has in the dry state, a very distinct longitudi-

nal fold, and in both it agrees in being lanceolar and utrinque acutum, and water causes the disappearance of the fold, and spirit the immediate collapse of the material contained in the inner coat.

Both species are aromatic, and the smell of such a nature as would lead me to expect the presence of glandular (Coniferous) markings. Nothing could shew better the nature of the stigmata, than these organs in the above plant; their double nature is obvious, as well as their being derived from the placentæ.

Dr. Lindley makes use of a curious expression in his characters of Magnoliaceæ, from which it would appear that he considered stipulæ as primary organs compared with the scales of buds. Liriodendron has, I believe, stipuliform scales of buds: now this may lead one to suppose a similar composition in the other genera. It is therefore worth examining whether, in this, in Bucklandia, and some others, the two stipules are not due to separation, rather than cohesion as in Liriodendron, although the reverse in the case in Bucklandia?

In some Pomaceæ. The stipulæ of the outer, and less developed leaves, cohere more or less with the petiole: But it must not be argued from this, that stipulæ essentially belong to the petiole, for this adhesion may, as is frequently the case, result from pressure. I am by no means uncertain whether Rosaceæ, and Pomacæ, are not really stipulate. I would limit the term to those generally linear processes, which have evident connection with the petioles That this may be the case, is evident from the study of Sedgewickia. Whether such, are a still lower modification of leaves I am not prepared to state, but I see no reason why petioles should not have appendages as well as any other portion of a vegetable. The stipulæ of a Cerasus have the same vernation as leaves. In a species of Cratægus from Punukka, the stipulæ are evidently processes of the Petiole, they are selæform and very minute.

Pomaceæ. In this order all degrees of cohesion take place between the carpella and calyx: In Amygdaleæ no cohesion takes place, but this is of little value, owing to a similar tendency in some true Pomaceæ. The order alluded to, differs principally in the constant abortion of all but one carpellum. The study of Rosa points out to us, that all cases of superior fruit may not arise from cohesion between the calyx and ovaria; on the contrary, may it not be doubted that most such cases have an origin similar to that of Rosa. Ficus

may be adduced as another maximum instance. The usual absence of a number of layers, which should exist, supposing the ordinary idea to be correct, would lead us to adopt the idea suggested by Rosa, and in this case Dr. Lindley is right in not attaching much importance to mere perigynism Escholtzia is a strong proof in point, but it must be seen whether the stamina really arise in this genus from the throat of the calyx, in which case they will be hypogynous, or, whether they terminate the glandular lining of the tube, in which case they will be perigynous. The curious effect produced by application of the stamina to the interior of the calyx is seen in Aquilarineæ, in which, without any cohesion with this organ, they are united inter se into a flat membrane.

The freedom from cohesion in Amygdaleæ, may arise from the abortion of the other carpella. This will be indicated, if it be found that in true Pomaceæ with fewer ovaria than ordinary, the cohesion is less constant as well as less in degree.

The proportion of the stipulate orders of Polypetalæ, to the ex-stipulate, is nearly as one to three, the total numbers of orders being 165, of which, 56 are stipulate.

But while the number of monopetalous orders is 61, the number of stipulate, is only 4, or rather more than one in fifteen.

Stipulæ are unknown among the naked seeded orders.

The proportion in Monocotyledones in favour of ex-stipulation is immense, the number of orders being 32, out of which only a portion of a single order is stipulate. Hence these appendages may be looked upon as a test of perfect evolution. Stipulæ are frequenly characteristics of great groups, and in such cases great importance is to be attached to their existence or presence, but they often occur as isolated characters, affording admirable diagnostic marks. Occasionally, their presence is not universal in a given order, and in such cases their presence carries but little weight. Of the first, the great groups of Malvacea and its allies, Rosaceæ and its allies, Cupulliferæ and its allies, and the three groups included by most botanist in Leguminosæ may be adduced; of the second, we have examples in Magnoliaceæ, Cunoniaeeæ, Rhamneæ, *Zygophylliæ*, Violarineæ, and of the latter in Euphorbiaceæ, Cistineæ, and Myriceæ.

Among the stipulate polypetalous orders, 48 have alternate leaves, 5 opposite, two both opposite and alternate, with stipulary ciliæ.

All the monopetalous stipulate orders have opposite leaves.

Of the former, four have Ficoid stipulæ, two inter petiolar stipulæ ; but of these, one is occasionally ex stipulate, two have scarious, one ochreate, and one axillary stipulæ. The remainder have stipulæ veræ.

Of monopetalous stipulate orders, three have inter petiolar stipulæ, this form it may be remarked, presumes the existence of opposite leaves.

Ovarium adnatum exists in 10 of the polypetalous stipulate orders, and in one of the monopetalous, but of the former, two have genera with superior ovaria.

Of the former, 19 have perigynous stamina, but in one of these, Vochyaceæ, genera occur with hypogynous stamins.

Definite stamins occur in 30, but of these, three have, definite or indefinite, and in all of the stipulate monopetalous orders, definite stamins occur.

Albumen occurs in all of these latter, and in 28 of the former, but its presence in six out of these, is not universal.

The only conclusions to be arrived at are, that stipulæ are almost exclusively confined to Dicotyledones, and that they are much more frequent in such of these as have their petals distinct.

The functions of these appendages are, either simple or compound, and they may be divided into two classes.

1st. Stipulæ veræ, which are always inserted on the same plane with the petiole, with which they always have some connection. Their functions being generally to increase the surface of the green parenchyma, at least when they are well developed. The ratio of these to those of the succeeding class, including both polypetalous and monopetalous, is as *one to seven.*

2nd Stipulæ tegentes, which in addition to that of increase of surface, perform the function of tegmina of buds, this includes the Ficoid, inter-petiolar, and ochreate forms. But it is very probable that many of these, as for instance those of Ficus, and Dipteroearpus, have no stomata. The stipulæ of this class frequently are not inserted on the same plane with the leaves, especially in some Rubiaceæ, and in Dipterocarpus; still they can scarcely be looked upon as forming a distinct series of leaves, since the parts which they protect are regulated by laws having reference to the leaves themselves, and not to the stipulæ as would otherwise be the case.

Thus the new leaves alternate with the last formed, or are opposite the stipulæ, and when branches are developed, they issue from the axills of the leaves, and not of the stipulæ.

From the examination of one species of Psychotria, it is I think evident, that the stipulæ do not belong to the leaves, by this I am far from meaning that they are not modifications of leaves, which is too evident to admit of any doubt. Their line of origin is evidently above that of the leaves, although this is only very evident in the young state of the terminal ones only. It is very evident likewise, that from the absence of a central vein they are composite, there again I may remark that the direction of their developement is contrary to that which I should imagine would take place were these organs portions of the leaves, see Fig 43. But I must examine, other instances before I can prove this. The great argument I look upon to be, the different plan of origin of the two.

In another Rubiacea, the proofs, or rather the assumptions are as strong, in this which has terminal verticellate leaves, and which is excessively Pæderioid in smell, the stipulæ are evidently a series of modified leaves forming a verticel somewhat above that of the leaves, with which they, as in duty bound, appear to alternate Fig. 44, *a. b.* The midrib of each is represented by a keel, necessarily alternating with the leaves, while the point of this is prolonged beyond the subulately bifid apex of the limb, and thence we have 3, trifid stipulæ.

The supposition that they form a distinct verticillus appears so natural that it is most probably true. Were they double organs forming part of 3 leaves, we should either have 6 points, or else 18, whereas we have 9, the line of union of the stipulæ being still opposite to the petiole. Fig. 45

The stipulæ of Wendlandia are to be considered in opposition, and although mutually adherent, they have an evident communication with the petioles, towards the base of which their principal vein is directed. This is particularly evident on tracing them up among the inflorescence, where likewise they do not adhere. Here they would be described as 3-partite bracteæ. Fig. 46 *a.* stipules of the leaves, *b.* stipule of the bracteæ.

From this instance we are authorized in coming to the conclusion, that there is scarcely any difference between stipulæ and bracteæ.

But I would limit the term bracteæ, to the scales protecting flower buds, or flowers: stipulæ may protect both, although generally they are destined for the protection of the former.

The stipels of Dipterocarpus are in all respects analogous to those of Ficus, and here too, their line of origin is very evidently above the line of exsertion of the leaf. In this genus too, they are at first foliaceous, but subsequently become coloured. Fig. 47, *a*. young branch, *b* scar of stipel, *c*. scar of petiole.

The supposition that in this genus, the branches are abruptly terminate, and proliferous, each proliferous portion bearing one leaf and a bud which is enveloped in one scale, (which besides appears to shew no traces of composition,) seems to me to be quite natural. Fig. 48 *a*. branch, *b*. petiole, *c*. next the petiole, *d. d bud, c. c. c.* stipel.

I would limit the term stipulæ to those foliaceous bodies, which originate on the same plane, with the base of the petiole, and with which they have some connexion. Examples, Rubus and Phyllanthus. Even here their functions are ambiguous, I must compare the gemmation of stipulate, with ex stipulate plants.

Polygonum is a truly stipulate genus, the composition is perhaps indicated by the fact that the ciliæ, excepting those (one or two) answering to the anterior line of union, are furnished with distinct vascular fascicles, while in these they draw their supply from the contiguous one on either side. [Nothing at all in this, the distribution of vessels being very particulary irregular.]

In the above notes I have overlooked a very important point, the relation that the young leaves or branches of the bud, have to the terminal leaves, or those to which the stipulæ are referred. This consideration at once gives the diagnosis, since if the stipulæ be considered to form a new whorl of leaves, or to answer when the leaves are alternate to a single leaf, the new leaves should be opposite the old ones, this is not the case, they alternate with them. Again spines should, if the stipulæ are leaves, come from their axils, and not from the axils of the leaves. In Vanguiera the spines which are abortive branches, come from the axils of the leaves.

The stipulæ of Spermacoce, are not gemmi-tegent, stipulæ (properly) being membranous, and evidently connected with the petioles. The central arista is the largest.

Mr. Herbert says in his Amaryllideæ, that bracteæ with regard to

a flower,are analogous to stipulæ with regard to leaves, yet the former are always suffultient organs. The latter only so when abnormal developement takes place. Stipulæ *besides* are always lateral with regard to their leaves.

Monopetalism is rare, although if it were a proof of imperfection, it should be more frequent among Mono than Dicotyledons. Cohesion between the ovary and calyx is much more frequent.

Although monopetalism is rare, when considered relatively to numbers of families, yet it is very common as to species, owing to the bulk of many of the orders. There is however various sorts of cohesion.

Cohesion is more common, as might be expected, between similar, than dissimilar organs.

The most frequent is that between carpellary leaves.

Mr. Brown's idea of the nature of stomata is borne out by the modifications and functions of these organs in the pitchers of Neperthes and Dischidia.

BOOK, IV.

Chapter 3, Botanical and Physical Geography, A. D. 1838.

The correspondence between the vegetable forms of North America, and Northern Asia, is curious, particularly when contrasted with the almost total want of correspondence between those of Southern America, and Southern Asia.

We are at once led to suppose that this is the effect of the relative contiguity of the two first mentioned portions of the world, and of the mutual distance of the two latter.

Elevation above the sea, produces the same effects as receding from the equator to the poles, or, what is called latitude. Both lessen the influence of solar heat in certain given proportions, subject to various local influences. Elevation, however, determines only the appearance of northern forms of particular floras: that is to say, it does not act generally. Thus elevation in south America produces elevational forms, but these are of a different nature from those produced by elevation in Asia. The division of the Globe into various sections, distinguished by the peculiar features of vegetation, is called Botanical Geography. Each division presenting a certain amount of peculiarity, sufficient to entitle it to a separate and distinct rank, is denominated a Kingdom. Division has been carried to a much too great extent by botanical writers. The writer who has distinguished himself most on this subject, is Schow. The Kingdoms he has sketched out, may be Sub Kingdoms, since they cannot all be of the same rank.

All those regions in which elevation produces similar northern forms should be included in one great Kingdom. And these may be sub divided according to their characteristic features

Thus, Africa will form one region, Australia another, Asia another, and America a fourth. Each of these will pass into one another along the lines of greatest contiguity. Each will differ most from one another along the lines of greatest distance.

Insular floras can be classed on the same principle with those parts to whose productions they shew a similarity.

Swainsons views, regulating Zoological Kingdoms are, I think, far more just than those of Botanists, and the same rules will apply to both.

With respect to plants, the most generally diffused genera, are perhaps aquatic, but the species are seldom if ever identical. It is curious that no Nymphæaceous plant is known in any Indian hill flora, yet from their indicating northernism by extending widely over the plains, they might be expected at least to rise to corresponding elevations above them on mountains. The discovery of Hydropeltis in India, destroys one of the exceptions, nor is there now a single aquatic order of plants in any part of the world, which has not a representative with us. ?

Plants of very high latitudes, require corresponding high elevations to cause their appearance, at, or near the tropics.

Thus the genera found constituting the flora of Melville Island, may be expected to be deficient on the highest land known to us near the equator, at least the extreme altitude required for their existence at the equator, would necessarily be very great, perhaps greater than we may really know to occur. Yet it is to great elevation in such low latitudes, that we are to look for our deficient genera.

Apres tout, much, very much remains to be done in India, in this branch of enquiry. Two thirds of the plants hitherto collected are herbaceous or shruby, I mean of such a size that they are easily accessible. It must have often been a source of regret to every collector, to be compeled to leave behind so many plants, rendered inaccessible to him from their size. It is only to persons who are stationary, and where good climbers can be obtained, that the whole of a given flora is to be considered accessible. The difficulty of getting flowered specimens of lofty trees, in the ordinary hurried travels of most collectors, is quite insuperable.

The most distinct region of our flora, is afforded by the dry arid geological structure, frequently presenting volcanic characters; and although these localities, or Botanical Provinces, may be widely remote, and separated by tacts of totally different configuration, presenting the maximum of a humid flora, yet the same features are always to be identified. Such are the tracts along the Irrawaddi, from above Ava to Prome, the Coromandel coast, a large portion of Central India, and the north-western Provinces of British India. These tracts are distinguished by the number of Mango, Tamarind, and Palmyras trees, fleshy Euphorbias and prickly pears. The wild vegetation is stunted, and almost invariably prickly, Balanites, Ximenia, Mimoseæ. Ziziphi, Parkinsonia, Mudar, etc.

In these tracts, hares, partridge, and quail, are of common occurrence, and are as strictly limited to them, as the plants themselves.

Another very distinct region is furnished in the Jheels of eastern Bengal. Of these I am only acquainted with the summer vegetation. In winter, a large extent of these inundated lands, when the inundations subside, are brought under cultivation. The region is of large extent, extending from some distance to the west of Dacca, to the foot of the mountains lying to the East. The vegetation of the spots not submerged, agrees exactly as might be expected, with that which characterises humid places in Bengal: viz. Calamus, Pterocarpus, Stravadium, Apluda, and Saccharum. The principal components of the aquatic vegetation, are Oplismenus stagninus, Leersia aristata, Panicum brunonianum. Oryza sativa, O aristata, and O. aristegera, are commonly met with, and form in many instances beds nearly as thick as those of Oplis. stagninus and Vossia procera, which appear to be local.

Nymphæaceæ abound. The most common species are Nymphæa pubescens, Villarsia indica, and cristata, Potamogeton, Myriophyllum, Cyrilla aquatica, and Utriculariæ 2 species, likewise occur.

The birds are the Cormorant, the jacena cauda alba, Anastomus coromandelianus, Ardea javanica, A. malaccanis, A. purpurea and another large species of Heron; Ciconia umbellata, C. argala, Ibis melanocephalus, and other wild fowl.

Fresh water shells abound in numbers, but not in the variety of species; at least I only obtained 6 or 7 in the course of 10 or 12 days. namely a large black muscle, Paludina, Turritella, Succinea, and a large Bulimus common every where in marshy places throughout Bengal. This is confirmatory of the remark by Swainson in Murrays Geography, as to the small amount of Indian fluviatile shells.

At equal elevations, moisture is certainly the most powerful agent we know of in the distribution of plants. This is particularly conspicuous in mountainous regions such as Bootan, where a great part of the country is barren, almost to an extreme.

This is very curious, and just the reverse of what we should be led to expect, since these barren regions occupy the lower tract, that is, from the plains to about 4500, or 5000 ft. This occurs almost without exception. Perhaps however it may be found to be confined

to those tracts corresponding in character to the arid parts of the plains, already pointed out, in which a great similarity of feature exists in some cases, for instance in the almost total absence of forest. Above 5000 ft, and between that and 13000, forests predominate. At similar elevations, and in such a variety of aspects, have I seen the vegetation totally changed by the presence of moisture. that the differences of solar influence are not appreciable, I have passed over, and over again, from humid forests into dry woods of Pinus longefolia with the usual characteristics, without any thing but the difference of humidity to account for the change.

These differences of humidity may be supposed to depend upon two causes, general, and local. The general causes are the open aspect of mountains presented to prevailing winds impregnated with vapour derived from an expanse of ocean, or of marshy plains. Thus the aridity of the lower mountain ridges of Bootan, below 5000 ft. may be accounted for by the atmosphere to that elevation, being drained of its moisture by the excessive rain thrown down upon the Khasyah mountains, which intercept the S. W. Monsoon before reaching Bootan. The higher altitudes of the Bootan mountains being so much more lofty than the Khasyah, are not sheltered by them, and consequently receive their full proportion of rain from the atmosphere.

The local circumstances affecting the degree of moisture of the soil, depend on geological causes, as the issue of springs, depending on the permeable or impermeable nature of the strata, of which the rocks are composed. The chemical nature of the rocks themselves I consider to have otherwise a very slight influence under equal circumstances of moisture. The vegetation at similar elevations is much the same, nor do I know a single instance in which a given plant may fairly be said to be limited to a given soil.

Of the orders found in Melville island, the following occur on plains within the tropics.

Cyperaceæ, Grasses, Juncus* Polygoneæ, Scrophularineæ, Campanulaceæ,* Cichoraceæ,* Corymbiferæ, Ranunculaceæ,* Cruciferæ,* Caryophylleæ,* Rosaceæ, Leguminosæ. Amentaceæ.

But Ericineæ, Papaveraceæ, and Saxifrageæ, are wanting.

Of the orders that are present, those marked with an asterisk are rare, and when represented by European forms, are of annual duration, and wintry occurrence.

The polarity of Grasses, Saxifrageæ, and Moses, is greatest in respect to numbers, and next to these are Cruciferæ, Ranunculaceæ, and Caryophylleæ.

It is precisely these orders that are most indicative of elevation, and of these, Grasses of northern forms, and Saxifrageæ, are those to obtain which in low latitudes, one must ascend very high; exceptions of course occur, but in such cases we must not look exclusively into details.

So far as grasses are concerned, the number of northern forms in India appears small, we must except of course many of the northern Cerealias, which may be supposed to have been acclimated. Barley, oats, and wheat, with one or two others, are therefore the exceptions.

So far as my own observations, go, nine out of ten grasses, even to an elevation of 9000 ft. are tropical, and belong almost exclusively to Andropogoneæ.

In the Khasya mountains, grasses form a predominant feature, yet I only know of a very few instances of northern forms

In Bootan the same is the case, although grasses form a much less predominant feature than on the before mentioned mountains; the most common species is the lemon grass.

The detection of the fruit of a Leguminous plant, probably of the sub order Mimoseæ, by Mr. McClelland or the Khasyah Mountains between Surareem and Churra, and at an elevation of about 5000 ft., would lead me to infer (if an inference may be drawn from a solitary instance), that during the period of the existence of the fragment alluded to, the laws regulating the distribution of vegetables, were in the tropics, much the same as they are now. Taking the site of the raised fossil marine Beach, p. 171, as the sea line at that period, the height of the mountains would be minus the present elevation of the sea beach; in other words, the elevation at which the plant flourished, was about 3000 ft., instead of 5000.

This corresponds well with our vegetation as it now exists; since the elevational limits of such plants, may be stated with tolerable confidence to be 3000 ft.

It is perhaps not unworthy of remark that a prickly Mimosea now exists on the fossil Sea beech itself, the conformation of its fruit however is materially different from that of the fossil.

The investigation of the real nature of our Indian fossil flora, has now become a matter of parmount interest. The instance above cited, proves that the vegetation of these latitudes under certain elevations was, in one, and that a striking feature, at least analogous to that which now exists. Further discoveries may prove the flora of the globe at a certain remote period to have been entirely tropical.

At any rate it is quite certain, that such floras of the now tropical countries, were never *boreal*, or even temperate.

It might not be amiss to notice here the article Botany in Murrays Geography, so far as it relates to the Botanical Geography of the East,

The explanation of the height of perpetual snow therein given, is wholly untenable, for were it true, the same line should occur at a lower elevation on the north, than on the southern face, and we know the contrary to be the case. We are then told that it is partly due to the easy slopes of the Himalayan chain, and lastly, that the Himalayan range partakes of the equatorial zone, in the character of its climate and vegetation, that "the lower plains of Nepal and Bootan differ little from Hindostan in their vegetation." What we are to understand by the vegetation Hindostan, is not explained, although we know it to be various.

Then we are told that no frost and snow is found in Bootan except on the high mountains, although it is said to snow annually at Katmandoo in similar latitudes, and at a very inferior elevation. Lastly the ripening of grapes at such elevations at 8,12000 ft. is attributed to the immediate effect of solar radiation, which is said to be more powerful as the intervening stratum of air is less thick and more aerified. It should rather be said that the effect of the direct rays of the sun is more intense under such circumstances, and that radiation is less. Humboldt however, has given a more satisfactory explanation. The effect according to this philosopher is, caused by radiation from the table land of Thibet, i. e. by mediate, or indirect radiation.

In the same work, a remark is made by Mr. Swainson from which we are led to infer, that vegetables are less defined in their distribution than animals, and that hence the study of the distribution in the higher branches of the organic kingdom, will give better results than that of the lower. To this argument objections may be taken.

With reference to the greater tendency of vegetables to have wider distribution, we may observe that, in all divisions of nature, some objects have wider distribution than others. The vegetable instances may be the very ones so characterised. And again, it appears that some birds of a small order, Raptores, are common to America and Asia, so that after all, the exception is in favour perhaps of vegetables, for 50 out of 600, are not perhaps equal to the Raptorial birds common to both continents, particularly when considered in relation to the numerical proportion of the order. Out of 600 Congo plants 1-12 are natives also of India, and South America; and further on it is said, in the above number of plants, no less than 22 species are enumerated as common to Equalaorit Africa, India, and America.

Steppes of Central Asia.

M. Meyendorff* alludes to the absence of dews during the hot season throughout the steppe of Kirghiz, he also mentions p. 106, that even so soon as April, vegetation had become yellow. Mountains of Ala Tagh, East of Khokan, present several peaks covered with perpetual snow. Mont Talku, he states, P. 129, is covered with superb forests which furnish *Kouldga* with wood. Cultivation consists of Wheat, Peas, Sesamum, Beans, Holcus Saccharum, Cotton, Melons. Rice of bad quality he says, is largely cultivated in Miankau and is also imported from Chehriesby. Gardens are very numerous, and generally very large. Flowers—Roses, Blue flax, Asters, Mallows, Poppys, Sun-flowers. Garden shrubs, none but Cercis siliquastrum.

Fruit trees, Quince Peaches, Apricots, Cherries, Apple, wild Pears, Prunes, Figs, Pomgranite, Grapes, Mulberries, Manna from a plant called *Tikan* found abundantly in the desert of *Carchi* S. S. E. about 60 miles from Bokhara.

Vegetables are, Turnips, red Beet, Cabbage, Radishes, Carrots, Onions, Cucumbers, and excellent Melons.

No forests in the western country, all wood used in building is floated down in rafts from Sumurcund. All the trees in the Oasis are cultivated, as Willows, Poplars, Planes, and a tree called in Hersian Goudgoum or Goudjoum narba. No fuel in Bokhara but the branches of these trees, and brush wood brought from the neighbouring deserts.

Steppes of Kirghiz.

Northern part between Orenburg and Bokhara, a great number of grasses, occur, Poa, Stipa, Elymus, Carex. Rosaceæ, Potentilla, Rosa Prunus, Amygdalus, Spiræa. Liliaceæ, Tulipa, Allium, Leguminosæ, Astragalus Glycyrrhiza, Spartium, some Ranunculaceæ, semi-flosculos and miæ. Ferula, Rheum, Capsicum, Salsola. Leguminosæ as Astragali and Robiniæ predominate among thickets of Poplars, Willows and brush-wood found in favourable places, along the course of rivers, Tamarix still more frequent.

* Voyage d' Orenbourg à Boukhara, Paris, 1826.

Of herbaceous plants, the only ones generally spread are Boragineæ and Cruciferæ, Anchusa, Myosotis, Onosma Echium, Lithospermum, Cruciferæ, Hesperis, Cheiranthus, Sinapis Arabis, and Raphanus. Secondary feature presented by small bulbous plants of the genera Hypoxis, Iris, Tulipa, Anthericum, Allium, Ornithogalum, and Asphodelus.

Among all these plants, or rather every where occur sculent plants such as Sedum, Sempervioms and Euphorbiæ. The Calligonum of Pallas, with the habit of Galenia africana, is constantly found in the sandy tracts, and constitutes the principal part of the food of Camels, which also feed on a large fruited Carex covering large Plains to the north of Bokhara, and on the South of Kezil-Coum desert.

Amygdalus nana found on the north of the Moughoudgar mountains. Rosa simplifolia, allied to R. berberifolia between the Kezil Coum desert and the N. E. point of the Aral.

Two Spiræa, (not found however beyond the eastern sides of Moughoudgar mountains north of the Aral, towards the Russian frontier) in fertile lands also Scorzonera, Leontodon valeriana, Phlomis, and Asparagus.

On the opposite side of the Moughoudgar range Robinia frutescens, Atraplaxis frutescens, Verbascum phæniceum, Alhagali, Cheiranthi, Hesperis, Onosma, Allium, Fritillaria, Meleagris. In some places on the western side of same range (How does this agree with the vegetation of steppe of Kirghiz)? Alopecurus pratensis the only gramineous plant the mission met with, between Orenburgh and Bokhara. On the borders of the Ilek river alone, Populus alba, Salix, a remarkably beautiful one, Lonicera tatarica. The least frequent plants along the coasts of Aral, were Leontice, Ephedra, Tragopogon. Tamarix songarica, was of general occurrence. The vegetation of the steppes increases in richness as one approaches Bokhara after passing the D'jan Daria. Ferula persica is the only Umbilliferous plants in Eversmann's Journal. Around Bokhara, Thlaspi bursa, Draba verna. Lithospermum arvense, Alopecurus agrestis, Adonis autumnalis, Sisymbrium tenuifolium, Euphorbia helioscopia, and others of the same genus. Several species of Poppy, Hygrophylla, Alyssum, Rheum, an crassinerve in Gardens. In the canals of Bokhara Ranunculus æqualitis falcatus, Veronica Persica. The animals present an affinity with Siberian Zoology in the comparative abundance of Rodentia, such as Arctomys, Dipus, Meriones, Oncetus, Georychus, Hypudæus, Mus, Sorex, Erinaccus. Absinthia seems to have formed a principal feature after passing Bassagha. The Kauvul (p. 18) a herb previously very common begins to be rare. The Salsola commences at Akh-chekodousa lat. 47, 30, Longt. E. 57, 30. Melons cultivated along the Gir, Lat. 45, 30. also Plane trees, Willows, and Whest.

The season are here very regular: fruit trees flower in the middle of February, Rain begins 7th to 15th February, and last to end of the month; sun powerful even in winter. Heat excessive, clouds of dust, no squalls, rains in October, 15 days or 21. Slight frosts in November, December, and some snow, announcing winter. January the coldest month: ordinary cold 2° Reaum. varies to 8°. Water freezes to 3 or 4 inches thick, Snow known to fall 15 days. In January; the heat in shade 10°, in sun 22°, violent winds in winter and in summer climate much, milder to the South than north of the Moughoudgar range.

KHASYAH MOUNTAINS

FORMING THE BOUNDARY BETWEEN

BENGAL AND ASSAM.

E. Long. 92°
Lat. N. 25°30.

			Granite.
Viverra rasse and Sciurus rufiventris,			
		Oaks, chesnuts. Bambusa, Fici. Magnolia arborea. Rhododendra.	Davalia, Pyrus, Panax. Loranthus arborea (?) Gordonia. Plectranthus azureus, Erythrina. Indigofera, Didymocarpus.
			Gneiss.
Cervus frontalus, in the winter but rare,		Myrica integrifolia, Pinus, longifolia.	Epilobium, Hydropeltis.
		Hypna, Nardus, Sarcocordalis.	Thibaudia buxifolia. Holcus.
		Styrax, Neckera, Swertia, Œschynomena.	Anemone, Viola patrina, Potatoes cultivated.
		Delphinium, Colquhounia.	Gaultheria, Impatiens. Agrimonia,
Churra Poonjee,		Eurena lobata, Gerardia delphinifolia.	Rhus, Pandanus, Berberis asialita.
		Parnassia, Carduus, Viburum.	Arum, Daucus, Salomonia, Geranium.
		Juncus, Xyris, Camellia candata.	Hyperici, Artimisia.
		Verbesina, Pteris, Potentilla.	Glycine tuberosa, Bucklandia.
		Codonopsis viridiflora.	Fragaria, Caryota, Prunella.
		Eleocarpus, Cleyera, Myrcine.	Osbeckias 2, Andropogonea.
		Tradescantia commelina.	Garcinia, Nepenthes, Chrysobaphus, Gnetum.
		Rice, Eleusine, and Coix cultivated.	Anthistiria arundinacea, Eugenia.
		Rubia cordifolia, Morus.	Clerodendron infortunatum, Peristrophe.
		Psychotria, Galium Betula corylifolia.	Butea suffruticosa, Marlea begonifolia.
		Sida, Tree fern, Volkameria.	Primulacea, Cnicus, Ligustrum.
		Chamærops martiana.	Tropical Rubiaceæ.
		Crotolaria, Panicum curvatum.	Mentha verticillata, Verbena.
		Callicarpa lilacina, Bombax, Leea.	Porana, Musa, Pteris aquilina.
		Holmskioldia, Triumfetta.	Panicum plicatum, Wallichia.
		Caryophyllea scandens, Desmochæta.	Clerodendron nutans, Artocarpus integrifolius.
		Ficus elastica, F, cordifolius, Recinus.	Tamarindus, guava, Solanum tobaccum.
		Croton malvæfolius, Congea.	Plumbago, Cassia tora. Adhatoda, Mangifera.
		Garcinia, cowa Zalacca.	Antidesma, Calamus, Mesua ferrea.
		Byttneria, Alstonia, Euonymus.	Roxburghia, Cedrela, Semecarpus.
		Orange groves.	Ophioxylon serpentinum, Modecca.
		Gigantic Sacchara, Mimosa.	Dalbergia bracteata, Grimmia, Cymbidium.

-6000-
— 4000 —
— 3000 —
— 2000 —
Above the Sea
—— 1000 ft.——
Lat. N. 25° to 26°
E. Long. 91°

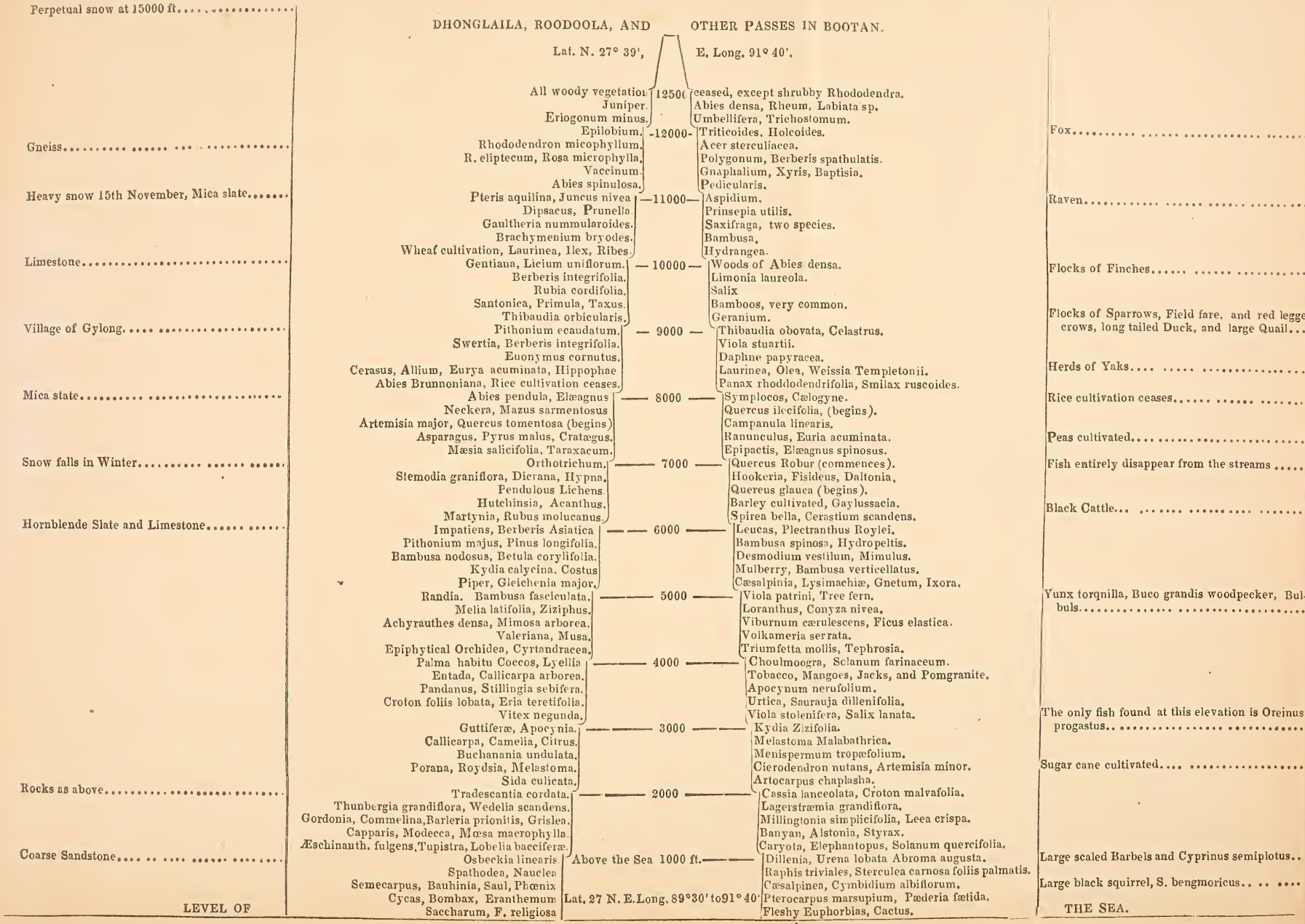
	Slaty Quantz rock, and Protogine.
	Dark blue compact limstone, containing numerous spiral and bivalve fossil shells.
	Coal.
	Sand stone, containing teredinous fossils, and fruit of a leguminus plant.
	Elevated Sea Beach consisting of overlying beds of tertiary fossil shells, with Spatangi.
	Jasper, and thin beds of coal.
	Blue compact limestone, with overlying limasses of blue, veined, and shelled marbles.

The fishes of the streams of these Mts. are nearly unique, the respective elevations at which the different kinds are found, has not yet been fixed.

Calcutta Journ. Nat. Hist. vol. 11 p. 560.

- Platycara aniuris.
- —— *lissorhinchis.*
- —— nasuta.
- Glyptosternon striatis.
- —— pectinopteris,
- —— sulcatis.
- —— radiatis.
- Bootia (Schistura) grandis.

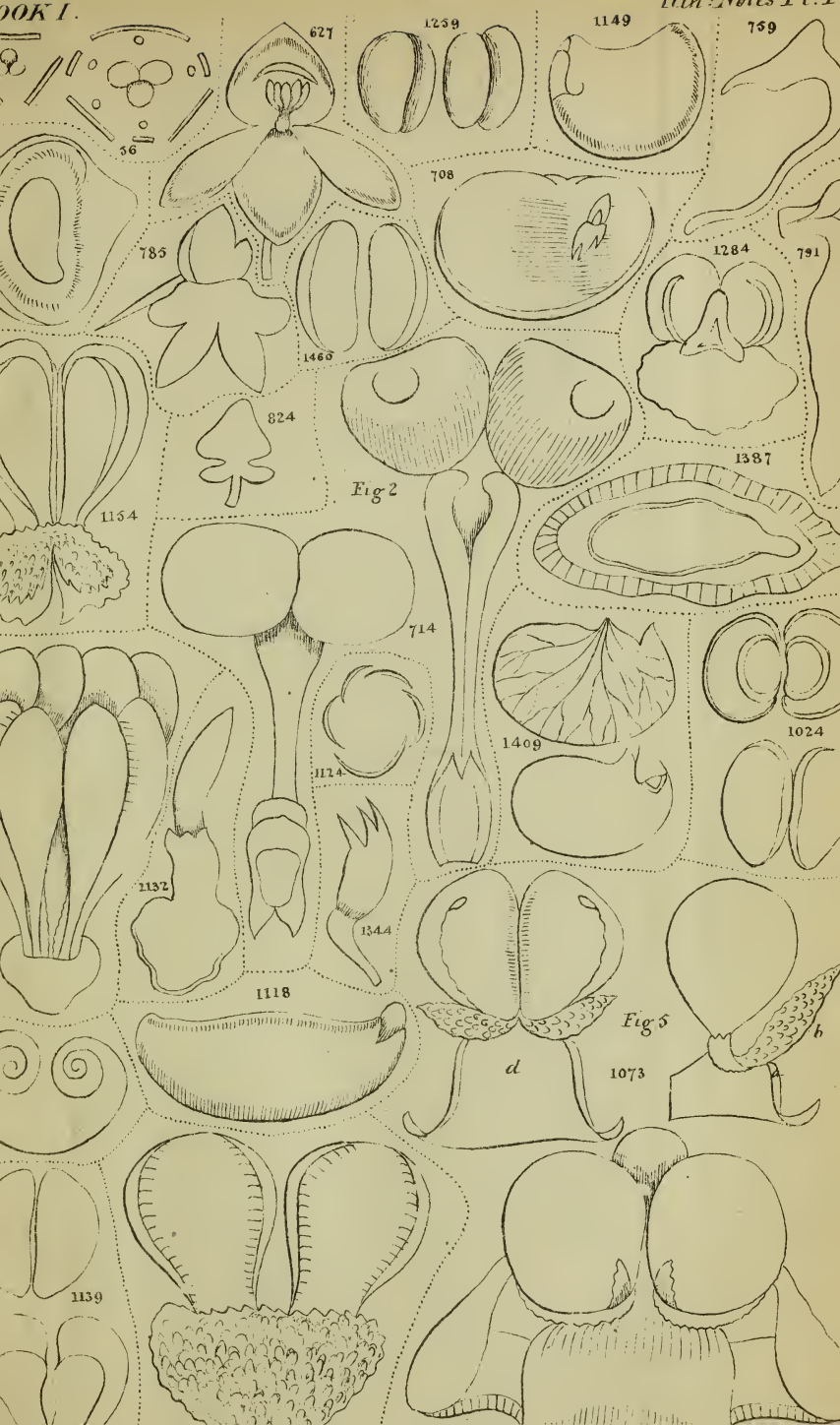
LEVEL OF THE SEA.


DHONGLAILA, ROODOOLA, AND OTHER PASSES IN BOOTAN.
Lat. N. 27° 39', E. Long. 91° 40'.
Perpetual snow at 15000 ft.
All woody vegetation ceased, except shrubby Rhododendra.
Juniper. Abies densa, Rheum, Labiata sp.
Eriogonum minus. Umbellifera, Trichostomum.
12500
Epilobium. Triticoides, Holcoides.
Gneiss
Rhododendron micophyllum. Acer sterculiacea.
R. eliptecum, Rosa microphylla. Polygonum, Berberis spathulatis.
Vaccinum. Gnaphalium, Xyris, Baptisia.
Abies spinulosa. Pedicularis.
12000
Heavy snow 15th November, Mica slate
Pteris aquilina, Juncus nivea Aspidium.
Dipsacus, Prunella. Prinsepia utilis.
Gaultheria nummularoides. Saxifraga, two species.
Brachymenium bryodes. Bambusa.
11000
Wheaf cultivation, Laurinea, Ilex, Ribes. Hydrangea.
Limestone
Gentiana, Licium uniflorum. Woods of Abies densa.
Berberis integrifolia. Limonia laureola.
Rubia cordifolia. Salix
Santonica, Primula, Taxus. Bamboos, very common.
Thibaudia orbicularis. Geranium.
10000
Village of Gylong
Pithonium ecaudatum. Thibaudia obovata, Celastrus.
Swertia, Berberis integrifolia. Viola stuartii.
Euonymus cornutus. Daphne papyracea.
Cerasus, Allium, Eurya acuminata, Hippophae Laurinea, Olea, Weissia Templetonii.
Abies Brunnoniana, Rice cultivation ceases. Panax rhoddodendrifolia, Smilax ruscoides.
9000
Mica state
Abies pendula, Elæagnus Symplocos, Cælogyne.
Neckera, Mazus sarmentosus Quercus ilecifolia, (begins).
Artemisia major, Quercus tomentosa (begins) Campanula linearis.
Asparagus, Pyrus malus, Cratægus. Ranunculus, Euria acuminata.
Mæsia salicifolia, Taraxacum. Epipactis, Elæagnus spinosus.
8000
Snow falls in Winter
Orthotrichum. Quercus Robur (commences).
Stemodia graniflora, Dicrana, Hypna. Hookeria, Fisideus, Daltonia.
Pendulous Lichens. Quereus glauca (begins).
Hutchinsia, Acanthus. Barley cultivated, Gaylussacia.
Martynia, Rubus molucanus. Spirea bella, Cerastium scandens.
7000
Hornblende Slate and Limestone
Impatiens, Berberis Asiatica Leucas, Plectranthus Roylei.
Pithonium majus, Pinus longifolia. Bambusa spinosa, Hydropeltis.
Bambusa nodosus, Betula corylifolia. Desmodium vestilum, Mimulus.
Kydia calycina. Costus Mulberry, Bambusa verticellatus.
Piper, Gleichenia major. Cæsalpinia, Lysimachiæ, Gnetum, Ixora.
6000
Randia. Bambusa fasciculata. Viola patrini, Tree fern.
Melia latifolia, Ziziphus. Loranthus, Conyza nivea.
Achyrauthes densa, Mimosa arborea. Viburnum cærulescens, Ficus elastica.
Valeriana, Musa. Volkameria serrata.
Epiphytical Orchidea, Cyrtandracea. Triumfetta mollis, Tephrosia.
5000
Palma habitu Coccos, Lyellia Choulmoogra, Sclanum farinaceum.
Entada, Callicarpa arborea. Tobacco, Mangoes, Jacks, and Pomgranite.
Pandanus, Stillingia sebifera. Apocynum nerufolium.
Croton foliis lobata, Eria teretifolia. Urtica, Saurauja dillenifolia.
Vitex negunda. Viola stolenifera, Salix lanata.
4000
Guttiferæ, Apocynia. Kydia Zizifolia.
Callicarpa, Camelia, Citrus. Melastoma Malabathrica.
Buchanania undulata. Menispermum tropæfolium.
Porana, Roydsia, Melastoma. Cierodendron nutans, Artemisia minor.
Sida culicata. Artocarpus chaplasha.
3000
Rocks as above
Tradescantia cordata. Cassia lanceolata, Croton malvafolia.
Thunbergia grandiflora, Wedelia scandens. Lagerstræmia grandiflora.
Gordonia, Commelina, Barleria prionitis, Grislea. Millingtonia simplicifolia, Leea crispa.
Capparis, Modecca, Mœsa macrophylla. Banyan, Alstonia, Styrax.
Æschinanth. fulgens, Tupistra, Lobelia bacciferæ. Caryota, Elephantopus, Solanum quercifolia.
2000
Coarse Sandstone
Above the Sea 1000 ft.
Osbeckia linearis Dillenia, Urena lobata Abroma augusta.
Spathodea, Nauclea Raphis triviales, Sterculea carnosa foliis palmatis.
Semecarpus, Bauhinia, Saul, Phœnix Cæsalpinea, Cymbidium albiflorum.
Cycas, Bombax, Eranthemum Lat. 27 N. E. Long. 89°30' to 91° 40' Pterocarpus marsupium, Pæderia fætida.
Saccharum, F. religiosa Fleshy Euphorbias, Cactus.
LEVEL OF THE SEA.
Fox
Raven
Flocks of Finches
Flocks of Sparrows, Field fare, and red legged crows, long tailed Duck, and large Quail
Herds of Yaks
Rice cultivation ceases
Peas cultivated
Fish entirely disappear from the streams
Black Cattle
Yunx torqnilla, Buco grandis woodpecker, Bulbuls
The only fish found at this elevation is Oreinus progastus
Sugar cane cultivated
Large scaled Barbels and Cyprinus semiplotus
Large black squirrel, S. bengmoricus

HINDOO KOOSH, FORMING THE BOUNDARY, BETEWEEN AFFGHANISTAN AND TOORKISTAN.

Lat. N. 37° E. Long. 66°

Perpetual Snow.	16000		15600	Very compact brown quartzose rock.
Many places uncovered with Snow Sept. 2d.	14800	Holcoides. Cheiranthes. Papaveracea. Phloxoides. — 15000 — Carex. Sedoides. Polygonum scariosum. statice densissima.	14300	No green sward above this, vegetation scanty
Grouse.	14200			
Limit of perpl. Snow indefinite and depending local circumstances.	13500	Fumaria. Primula. Ranunculus. — 14000 — Arenaria. Abelia, Triticoides. Grey shrubby Salix.	13200	Limit of cultivation.
		Carduacea. Onosma versicolor. Ribes. Euphorbia. Labiata, Leguminosa, Parnassia. — 13000 — Statice. Gnaphalium. Glaucum. Campanula. Silene, Salsola.		
Lepus.	12800	— 12000 — Thlaspus, Potentilla. Sinapis. Aconitum. Plantago. Juncus, Gentiana. Orchidea, Cerastium, Borago. Galium, Carex. Salix, Ephedra. Cruciferæ.	12100	Coarse quartzose grey granite.
Salmo, and a Loach.	11000	Onobrychoides. — 11000 — Symphorema, Asphodel. Astragalus. Sinapis exaltata. Potamogeton Salvia. Lathyrus, Roylea. Prangos, Rosa. Caracana, Geranium, Cnicus. Swertia, Umbelliferæ Zygophyllum, Cuscuta.		
Glyptosternon reticulatis, Oreinus plagiostomus.	10500	Tenaceoid, Erodium. — 10000 — Linaria, Hypericum. Clematis erectis. Cicer arietinum cultivated, Polanisia. Dianthus, Lucerne cultivated. Common thistle, and Centaurea angustifalia. Saponaria, Populus. Potentilla anserina. Hyoscyamus, Ferula, Peganum. Pomerculla.	10200	Snake of grey colour.
Schizothorax esocinus, Salmo, and Racoma gobioides, of the Bamean river.	9000	Bryonia. — 9000 — Caprifoliacea. Pedicularis. Populus heterophylla. Centrauthera.		
Wild duck.	8500	Heliotrope, Leontodon. Myosotis, Tamarix.	8500	Barley, Oats, and Trefoil cultivated.
Quail, Chakoor.	8200	Portulacea, Cerasus Cana. Lycium, Plectranthus. Mentha, Triglochin, Nais.		
		Hippurus, Cratægus oxyacanthus. — 8000 — Artemisia, Leucus. Pinus. Tanacetum, Veronica. Zea maize. Quercus (ilecifolius,) Baloot. Glycyrrhiza. Asclepiad, Cynanchus. Olea fragrans, Valeriana. Thymus, Typha angustifolia. Eryngium.		
Glyptosternon reticulatis, and Schizothorax Edeniana, of the Cabul River.	7000	Althæus, Hibiscus. — 7000 — Ranunculus aquatica. Calamus Alisma aquatica. Polygonum graminifolium, Amygdalus. Polygonum nutans, *Jousa* cultivated, Fraxinus. Solanum dulcimara, Nasturtium. Hippophae, Trifolium Lotus, Tagetus. Panicum stagninum, Juncus glaucus.		
		Mirabilis. — 6000 — Hyacinth, Mespilis. Calendula. Budlea, Draba. Ceratophyllum. Pomacea. Mulberry trees. Rubus. Stipa, Donax, Ilex. Impatiens, Adiantum,		
Racoma brevis, of the Helmund River.	5000	Zanthoxylon. — 5000 — Olea Raitoon. Papaver Rhæs. Ruta. Palma. Dracocephalum- Tortula, Grimmia. Daphne. Thalictrum. Euonymus spinosus.		
Racoma labiata, Pushut River.	4000	— 4000 — Dipsacus. Dodonea. Sedum. Morus cultivated. Santonica. Cyrtaudracea. Elæagus cultivated. Periploca. Apocynum Vimenale.		
Racoma chrysochlora, and R. nobilis, with other Schizothoracinæ here commence.	3000	Saccharum. — 3000 — Adhatoda, Vitex. Pomegranate. Ærua. Rice cultivated, Vines. Corchorus, Asclep gigantius. *Furas*, Capparis aphyllis *Kurell*. Melia *Bukheim*. Menispermum, Pæderia involucrata. Melilotus, *Bheir*, Bignonia.		Constructed from Information Contained in Private Journals and Itinerary Notes of William Griffith.
Large Scaled Barbels and Cyprinidæ of India end here.	2000	Isachnue, Pulicaria. — 2000 — Tobacco, Dolichos. Ricinns, Croton. Ranunculus sceleratus. Typha latifolia. Azolla, Riccia. Cynoglossum. Kochia Villosa. Nclumbium. Marsilia, Nitella.		
		Butomus trigonifolius. Above the Sea 1000 ft. Convolvulus spinosus. Aristida, Salvidora, Cassia. Medicago, Viola, *Rairoo* Nerium, Desmodium. Phyllanthus.		
LEVEL OF		Crotalaria, Oxalis, Orobanche. Lat. 30 to 37° N. E. Long. 66 to 72° Fagonia, Anagallis, Avena. Show. Fanarix, Ficus indica. Mimosa, Chenodium cymbifolium.		THE SEA.


627
1259
1149
759
36
708
785
1284
791
1466
824
Fig 2
1387
1154
714
1409
1024
1174
1132
1344
1118
Fig 5
d
1073
b
1139

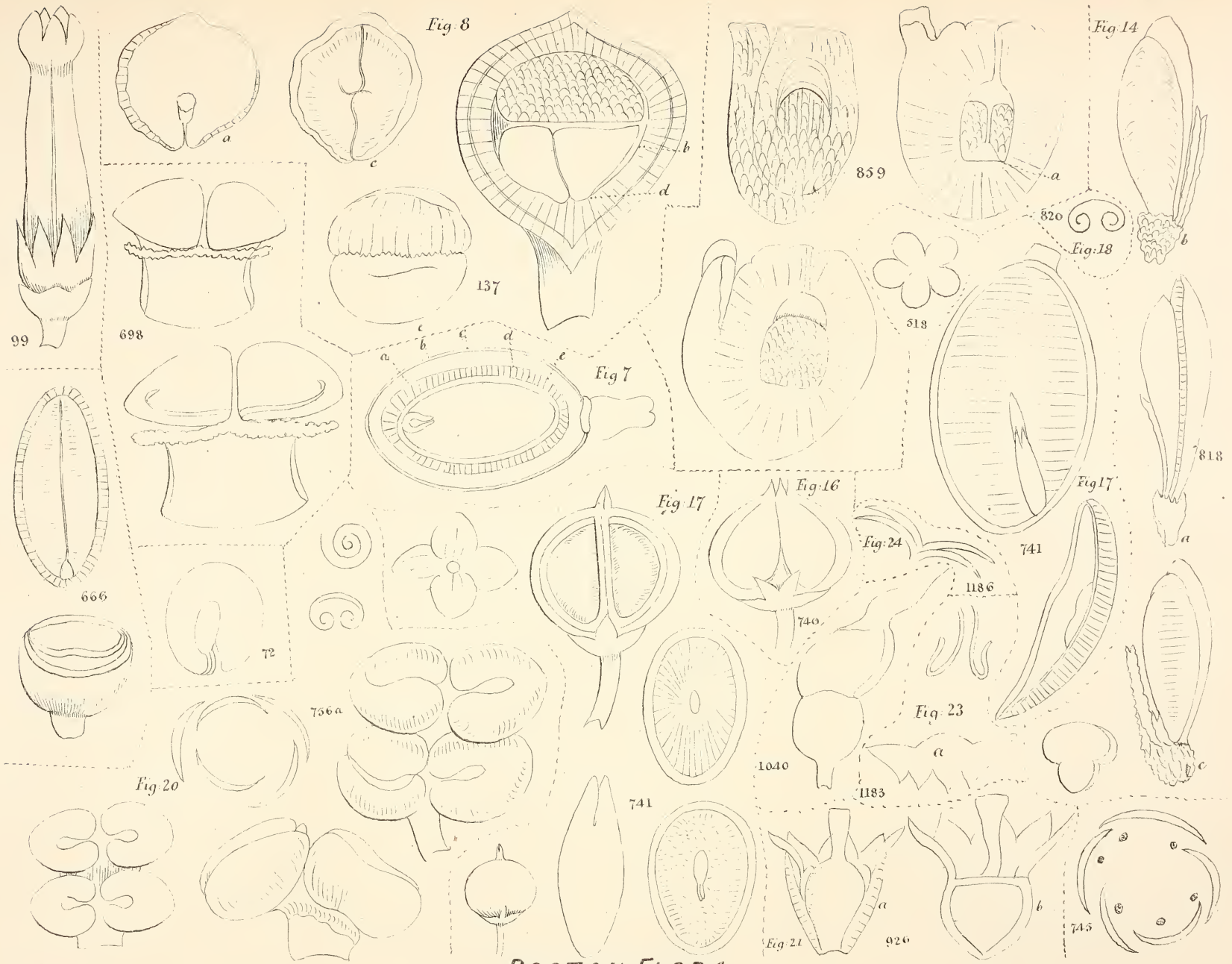


Fig 8
a
c
b
d
859
Fig 14
a
b
820
Fig: 18
99
698
137
513
741
Fig 17
818
a
Fig 7
a b c d e
Fig 17
Fig 16
Fig: 24
1186
740
666
72
756a
Fig 23
a
1040
1183
741
Fig 20
Fig 21
a
b
926
745
W Griffith del.
BOOTAN FLORA.

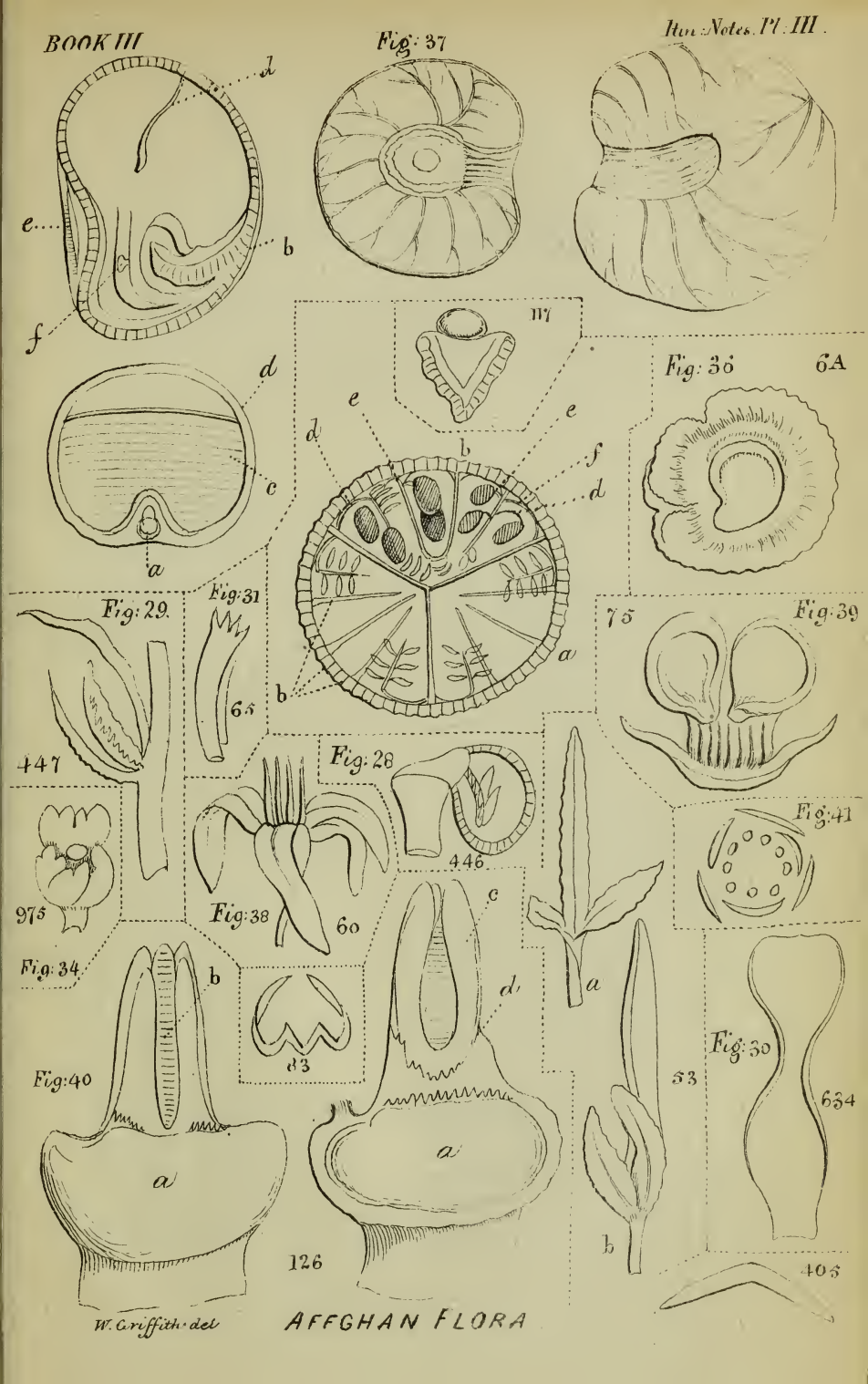


Fig: 37
d
e
b
c
f
m
d
e
e
d
b
f
d
c
a
b
a
Fig: 36
6A
Fig: 29.
Fig: 31
65
447
Fig: 28
446
75
Fig: 39
Fig: 41
975
Fig: 38
60
Fig: 34
b
Fig: 40
a
83
c
d
a
a
b
53
Fig: 30
634
126
405
W. Griffith. del
AFFGHAN FLORA

Index to Khasyah Flora,

Or Plants Collected when Proceeding from Calcutta to the Khasyah mountains, thence into Assam, and towards Bootan. Itinerary Notes. Book. I.

INDEX TO BOOTAN FLORA.

BOOK II.

Page 99 *to* 204.

A.

D.

E.

Index to Affganisthan Flora,

From page 205 *to page* 367.

END OF VOL. II.

ERRATA.

The indulgence of the reader is craved for the numerous typographical errors with which the foregoing work abounds. Although many of these are included in the following list, yet still to be complete, it would have extended too far, without any adequate advantage, since the repetitions of the trivial misprints are so obvious, that the reader will have no difficulty in correcting them, wherever they occur.

Parts between brackets, are from Ms. written in Pencil. Ed.

Page 7 line 3 from bottom for *tantu* read tantum. [bolium.
,, 10 ,, 2 ,, top for *Justice lobatum*, read Justicia Ec-
,, ,, ,, 10 ,, bottom for *florem*, read floris.
,, ,, ,, 10 ,, bottom for *dispositionem*, read dispositione.
,, 12 ,, 16 ,, bottom for *approxemati*, read approximat.
,, ,, ,, 15 ,, bottom for *simplica*, read simplicia.
,, ,, ,, 14 ,, bottom for *flora*, read flore.
,, ,, ,, 12 ,, bottom for *sinus*, read sinubus.
,, 13 ,, 11 ,, bottom for *etia*, read etiam.
,, 14 ,, 9 ,, top for *arct*, read arcte.
,, 15 ,, 4 ,, top for *duplis*, read duplo.
,, ,, ,, 4 ,, bottom, after radicibus *insert*, affixa.
,, ,, ,, 13 ,, top for *minuti*, read minute.
,, 16 ,, 8 ,, top for *alternantis*, read alternatis.
,, ,, ,, 15 ,, bottom for *excertis*, read exsertis.
,, 17 ,, 3 ,, top for *teuya*, read Terrya.
,, ,, ,, 11 ,, top for *subramosus*, read subramosis.
,, ,, ,, 13 ,, bottom for *tp.* read up.
,, ,, ,, 10 ,, bottom for *flosce*, read flosc.
,, 19 ,, 15 ,, top for *speculis*, read spiculis.
,, 20 ,, 9 ,, top for *similbus*, read similibus.
,, ,, ,, ,, ,, top for *longissima*, read longissime.
,, 21 ,, 2 ,, top for *albo*, read albis. [low.
,, ,, ,, 15 ,, bottom for *quarters is below*, read quarter be-
,, ,, ,, 7 ,, bottom for *ils*, read in.
,, ,, ,, 5 ,, bottom for *pedicellii*, read pedicelli.
,, ,, ,, 5 ,, bottom for *crocescentis*, read crocescentes.
,, 23 ,, 4 ,, top for *solitaria*, read solitarii.
,, 24 ,, 5 ,, top for *brevu*, read brevi.
,, ,, ,, 18 ,, bottom for *obliquais*, read obliquus.
,, ,, ,, 17 ,, bottom for *inverus*, read inversus,
,, ,, ,, 10 ,, bottom for *Foliæ*, read Folia.
,, ,, ,, ,, ,, bottom for *aspetu*, read aspectu.
,, ,, ,, ,, ,, for *velutino*, read velutine.
,, ,, ,, 2 ,, bottom for *apicem*, read apice.
,, ,, ,, 2 ,, bottom for *medium*, read medio.
,, 25 ,, 8 ,, top for *serratures*, read serraturis.
,, ,, ,, 10 ,, top for *calcara* read calcare.
,, ,, ,, 15 ,, top for *rationa*, read ratione.
,, ,, ,, 17 ,, top for *torrentis*, read torrentes.
,, ,, ,, 18 ,, top for *bibracteatu*, read bibracteati.
,, ,, ,, 19 ,, top for *inacqualis*, in inæquales.
,, ,, ,, 14 ,, bottom for *nivem*, read nivea.
,, ,, ,, 5 ,, bottom for *vivida*, read vividi.
,, 26 ,, 10 ,, top for *carmina*, read carmine.
,, 26 ,, 18 ,, top for *calcara*, read calcare.
,, 28 ,, 6 ,, top for *ascendentir*, read ascendentes.
,, ,, ,, 12 ,, bottom *connectivo*, read connectio.
,, 29 ,, 1 on top for *tertiarius*, read tertiariis.
,, ,, ,, 12 ,, top for *folius*, read foliis.
,, ,, ,, 12 ,, bottom for *solitarinm*, read solitarii.
,, 30 ,, 5 ,, bottom for *cosolla*, read corollæ.
,, ,, ,, 4 ,, bottom for *acuti*, read acute.
,, ,, ,, 4 ,, bottom for *trigons*, read trigono.
,, ,, ,, 4 ,, bottom for *paluda*, read palude.
,, 31 ,, 2 ,, bottom for *basim*. read basis.
,, 32 ,, 4 ,, bottom for *floris sparia*, read foliis spuriis.
,, ,, ,, 12 ,, top for *umbrosias*, read umbrosis.
,, 33 ,, 7 ,, top for *Briddlea*, read Buddlea.
,, ,, ,, 14 ,, top for *viridis*, read virides.
,, ,, ,, 15 ,, top for *ascendentis*, read ascendentes.
,, ,, ,, 14 ,, bottom for *Acrostictum*, read Acrostichum.
,, 34 ,, 1 at top for *utrinque*, read utriusque.

Page 35 line 8 from top after *erectis*, read petalibus erectis.
,, ,, ,, 21 ,, bottom for *Aplylla*, read Aphylla.
,, 36 ,, 17 ,, bottom for *bracteo*, read bracteæ.
,, ,, ,, 4 ,, bottom for *floris*, read foliis.
,, 37 ,, 8 ,, top for *uto*, read uti.
,, ,, ,, 10 ,, top for *aspetus*, read aspectus.
,, 38 ,, 1 on top for *reflexa* read reflexo.
,, ,, ,, 4 from top for *cernium*, read cernia.
,, ,, ,, 7 ,, top for *sanguinea*, read sanguinei.
,, ,, ,, 14 ,, top for *saltea*, read saltem.
,, ,, ,, 14 ,, top for *uto*, read uti.
,, 39 ,, 2 ,, bottom for *saltea*, read saltem.
,, 41 ,, 7 ,, top for *effoeie*, read effætæ.
,, ,, ,, 6 ,, bottom for *sangninea*, read sanguinei.
,, ,, ,, 3 ,, bottom for *albi*, read alba.
,, ,, ,, 7 ,, bottom for *citrina*, read citrini.
,, 43 ,, 3 ,, top for *fusi magnib.*, read pisi magnis.
,, ,, ,, 13 ,, bottom for *solitarum*, read solitarii.
,, ,, ,, 8 ,, bottom for *apicem*, read apice.
,, ,, ,, 1 ,, bottom for *tetrastiehis*, read tetrastichi.
,, ,, ,, 1 ,, bottom fo. *suturati*, read saturate.
,, 44 ,, 3 ,, top for *miniata*, read miniate.
,, 45 ,, 10 ,, bottom for *solitaricas*, read solitariis.
,, 46 ,, 15 ,, top for *subclavato* read subclavata.
,, 47 ,, 9 ,, bottom for *evolute*, read evoluti decembre.
,, 48 ,, 13 ,, top for *discum*, read disc.
,, ,, ,, 4 ,, bottom for *saturati*, read saturate.
,, 49 ,, 15 ,, top for *specia*, read specie.
,, ,, ,, 15 ,, top for *altera*, read alterum.
,, ,, ,, 11 ,, bottom for *paulifloris*, read multifloris.
,, ,, ,, 18 ,, bottom for *sanguinei*, read sanguinea.
,, ,, ,, 17 ,, bottom for *ima*, read imæ.
,, ,, ,, 11 ,, bottom for *excedentu*, read excedente.
,, ,, ,, 9 ,, bottom for *apice*, read apicem.
,, ,, ,, 8 ,, bottom for *vallea*, read valle.
,, 50 ,, 4 ,, top for *anthodus*, read anthodiis.
,, ,, ,, 11 ,, top for *foiis*, read foliis.
,, 51 ,, 2 ,, top for *flosculi*, read flosculis.
,, ,, ,, 14 ,, top for *pisa*, read pisi.
,, ,, ,, 15 ,, top for *magnitus*, read magnitud.
,, ,, ,, 14 ,, bottom for *apicem*, read apice.
,, ,, ,, 13 ,, bottom for *cernua*, read cernui.
,, ,, ,, 3 ,, bottom for *Arbusculo*, read arbuscula.
,, 52 ,, 11 ,, bottom for *Grammin*, read Gramin.
,, 53 ,, 5 ,, bottom for *disposite*, read dispositi.
,, 54 ,, 13 ,, bottom for *adpresse*, read adpressa.
,, ,, ,, 3 ,, bottom for *descumbens*, read descumbent.
,, 55 ,, 14 ,, bottom for *ruderates*, read ruderatis.
,, 56 ,, 1 on top for *læti*, read læte.
,, ,, ,, 1 ,, for *lutei*, read lutea.
,, ,, ,, 1 ,, for *cernu*, read cernui.
,, ,, ,, 2 ,, top for *profude*, read profunde
,, ,, ,, 18 ,, top for *inserta*, read insertæ.
,, ,, ,, 19 ,, top for *stylum*, read stylo.
,, 57 ,, 12 ,, top for *communa*, read commune.
,, ,, ,, 14 ,, top for *rubrus*, read rubris.
,, ,, ,, 7 ,, bottom for *fluentis*, read fluentes.
,, 58 ,, 20 ,, bottom for *viridiscentis*, read viridicentes.
,, ,, ,, 16 ,, bottom for *descensum*, read descensu.
,, ,, ,, 12 ,, bottom for *intermedius*, read intermediis.
,, ,, ,, 7 ,, bottom for *accidis*, read accedit.
,, ,, ,, 6 ,, bottom for *distiches*, read distichis.
,, ,, ,, 5 ,, bottom for *interstitus*, read interstitiis.

Page 59 line 3 from top for *functionis*, read function.
,, ,, ,, 4 ,, top for *sulcata*, read sulcato.
,, ,, ,, 15 ,, bottom for *puctis*, read punctis.
,, ,, ,, 14 ,, bottom for *pallidissima*, read pallidissime.
,, ,, ,, 10 ,, bottom for *magne*, read magni.
,, ,, ,, ,, ,, bottom for *læti*, read læte.
,, ,, ,, 9 ,, bottom for *paluda*, read palude.
,, ,, ,, 9 ,, bottom for *collis*, read colles.
,, 60 ,, 2 ,, top for *apicem*, read apice.
,, ,, ,, 10 ,, bottom for *foleis*. read foliis.
,, ,, ,, 8 ,, bottom for *flores*, read flor.
,, ,, ,, 8 ,, bottom for *albi*, read albis.
,, ,, ,, 8 ,, bottom for *petulis*, read petali.
,, ,, ,, 5 ,, bottom for *mensa*, read mense.
,, ,, ,, 2 ,, for *depressim*, read depressis.
,, 61 ,, 8 ,, top for *nutanti*, read nutante
,, ,, ,, 9 ,, top for *calcaris*, read calcari.
,, ,, ,, 9 ,, top for *brevis*, read brevi.
,, ,, ,, 9 ,, top for *incurvata*, read incurvat.
,, ,, ,, 7 ,, bottom for *superiora* read superiore.
,, 62 ,, 1 ,, on top for *albidi*, read albidis,
,, ,, ,, 3 ,, top for *Fructium* read Fructius.
,, ,, ,, 6 ,, bottom or *liftophyllus* read leptophyllus.
,, 63 ,, 1 ,, on top for *nutanti* read nutante.
,, ,, ,, 3 ,, top for *medii*, read med.
,, ,, ,, 7 ,, top for *læti*, read læte.
,, ,, ,, 7 ,, top for *viridiu*, read viridia.
,, ,, ,, 10 ,, top for *virridescens*, read viridescens.
,, 64 ,, 1 ,, on top for *luteum* read lute.
,, ,, ,, 14 ,, top for *acuti*, read acute.
,, 65 ,, 5 ,, top for *lat*, read læte.
,, ,, ,, 17 ,, bottom for *or*, read on.
,, 66 ,, 5 ,, top for *velutina*, read velutini.
,, ,, ,, 16 ,, bottom for *Densu*, read Dense.
,, ,, ,, 12 ,, bottom for *rupes*, read rupis.
,, ,, ,, 5 ,, bottom for *magnitudina*, read magnitudine,
,, 67 ,, 1 ,, on top for *Glycina*, read Glycine.
,, ,, ,, 7 ,, top for *laxiuscule*, read lexiuscula.
,, ,, ,, 15 ,, bottom for *scandeis*, read scandens.
,, ,, ,, 6 ,, bottom for *Ramosœ*, read Ramosa.
,, ,, ,, 4 ,, bottom for *purpurio*, read purpureo.
,, 68 ,, 6 ,, bottom for *prominales* read prominalis.
,, 69 ,, 11 ,, top for *bracseis*, read bructeis.
,, ,, ,, 13 ,, bottom for *terminales*, read terminalis,
,, ,, ,, 8 ,, bottom for *angustis*, read angueste.
,, 69 ,, 6 ,, bottom for *uto*, read uti.
,, ,, ,, 5 ,, bottom for *arcto*, read arcte.
,, 71 ,, 16 ,, top for *distincte*, read distincta.
,, 71 ,, 17 ,, bottom for *piœcedenti*, read præcedenti.
,, ,, ,, 14 ,, bottom for *initio*, read inter.
,, ,, ,, 3 ,, bottom for *sordida*, read sordide.
,, 72 ,, 6 ,, top for *Gneto*, read Gneti.
,, ,, ,, 18 ,, bottom for *ampla*, read ampli.
,, ,, ,, 17 ,, bottom for *clausa*, read clausi.
,, ,, ,, ,, ,, for *labella*, read labelli.
,, 113 ,, 16 ,, bottom for *stipub*, read stipul.
,, 114 ,, 11 ,, top for *aandum*, read randum.
,, ,, ,, 10 ,, bottom for *sesedens*, read secedens.
,, 115 ,, 14 ,, top for *arcto*, read arcte.
,, ,, ,, 8 ,, bottom for *strict*, read structure.
,, 122 ,, 12 ,, bottom for *arti* read arcte.
,, 124 ,, 9 ,, top for *versis*, read versus.
,, 125 ,, 2 and 17 from bottom for *incerti*, read incerte.

Page 126 line 17 from bottom for *pulchra*, read pulchre.
,, ,, ,, 3 ,, bottom for *laurina foliis*, read laurinia, foliis.
,, 128 ,, 6 ,, bottom for *Rotleræ*, read Rottleræ.
,, 129 ,, 3 ,, bottom for *proviniens*, read proveniens.
,, 130 ,, 10 ,, bottom for *pendulsis*, read pendulis.
,, 132 ,, 12 ,, top for *cudunt*, read cadunt.
,, ,, ,, 17 ,, bottom for *Petioleis*, read Petiolis.
,, ,, ,, 5 ,, bottom for *uto*, read uti.
,, 133 ,, 18 ,, bottom for *lota*, read lata.
,, ,, ,, 14 ,, bottom for *læte*, read læte.
,, ,, ,, 1 ,, bottom for *numi*, read humi.
,, 134 ,, 5 ,, top for *Phiolong*, read Phoolong.
,, ,, ,, 1 ,, bottom for *proping*, read propinq.
,, 136 ,, 2 ,, bottom for *ungucalatims*, read unguiculatis.
,, 137 ,, 8 ,, bottom for *solitiria*, read solitaria.
,, ,, ,, 6 ,, bottom for *Fisi*, read Fici.
,, 142 ,, 8 ,, top for *unguste*, read anguste.
,, ,, ,, 10 ,, top for *longi*, read longe. [lus.
,, ,, ,, 2 ,, bottom for *carnesiusculis*, read carnosiuscu-
,, 143 ,, 20 ,, bottom for *faccei*, read faciei.
,, ,, ,, 19 ,, bottom for *opplicita*, read applicita.
,, ,, ,, 9 ,, bottom for *continius*, read continens.
,, 144 ,, 7 ,, top for *valdei* read valde.
,, ,, ,, 10 ,, bottom *omit.* 1. and for 1000 *read* 10,000.
,, 146 ,, 10 ,, top for *viridis*, read viridis.
,, ,, ,, 5 ,, bottom for *læti*, read late.
,, 148 ,, 9 ,, top for 95000, read 9500.
,, ,, ,, 13 ,, bottom for *lobati*, read lobato.
,, 149 ,, 5 ,, top for *ferrugenio*, read ferrugineo.
,, 167 ,, 15 ,, top for *stata*, read statu.
,, 178 ,, 22 ,, bottom *discent*, read descent.
,, ,, ,, 13 ,, top for *dedalis*, read pedalis.
,, 179 ,, 23 ,, top for *abortio quiate*, read abortiv. quite.
,, 184 ,, 11 ,, top for *lacinus*, read laciniis.
,, ,, ,, 14 ,, top for *hehiscence*, read dehiscence.
,, ,, ,, 14 ,, bottom for *penicelli*, read pedicelli.
,, 185 ,, 18 ,, bottom for *triant*, read hiant.
,, 189 ,, 10 ,, bottom for *pedata*, read pedale.
,, 193 ,, 5 ,, top for *luteæg*, read luteo.
,, 201 ,, 12 ,, bottom for *at* read et.
,, 210 ,, 10 ,, bottom for *corpellary*, read carpellary.
,, ,, ,, 6 ,, bottom for *capillaeem*, read capillaceum.
,, 214 ,, 16 ,, bottom for *carnius*, read cernuis.
,, 215 ,, 22 ,, bottom for *ffixa*, read affixa.
,, 217 ,, 15 ,, bottom for *insiformi*, read ensiformi.
,, 220 ,, 22 ,, bottom for *cæruliam*, read cæruleam.
,, 225 ,, 10 ,, top for *alabastra* read alabastrum.
,, ,, ,, 19 ,, top for *adhærere*, read adhærens.
,, 227 ,, 4 ,, top for *agriis*, read aquis.
,, ,, ,, 18 ,, top for *compilehis*, read Campylepis Falk.
,, 229 ,, 21 ,, bottom for *pullide*, read pallide.
,, ,, ,, 17 ,, bottom *vestilla*, read vestita.
,, ,, ,, 10 ,, bottom for *Dpsacio*, read Dipsacio.
,, 248 ,, 5 ,, top for *fortisnimis*. read fortissimis.
,, 250 ,, 2 ,, top for *akenius*, read akeniis.
,, 251 ,, 11 ,, top for *teretum*, read sterilii.
,, 261 ,, 11 ,, bottom for *cerneus*, read carneis.
,, 269 ,, 5 ,, bottom for *biloculare* read bilocularæ.
,, 273 ,, 8 ,, top for *albo* read alba.
,, 278 ,, 11 ,, top for *nucroratis* read mucronatis.