

DIAGNOSES

Specierum novarum

in herbario Horti Regii Botanici Edinburgensis cognitarum.

CIII-CL.

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SPECIES BORNEËNSES.

Alangium (Marlea) kinabaluense, W. W. Sm. Sp. nov.

Inter species adhuc descriptas foliis parvis flores vix superantibus facile recognoscitur.

Frutex; altitudo non nota; ramuli crassiusculi primo tomentelli deinde glabrescentes saepe muscis hepaticisque epiphyticis tecti. Folia 2-3 cm. longa, 1-2 cm. lata, elliptica vel late obovata apice rotundata brevissima emarginata basi late cuneata vel subrotundata coriacea integerrima utrinque glabra, costa supra impressa subtus multo elevata nervis utrinque 5-6 plus minusve distinctis. Cymae contractae circ. 2 cm. longae 3-6-florae juxta apices ramulorum positae minute tomentellae, pedunculo brevissimo saepe vix evoluto pedicellis 3-4 mm. longis bracteis circ. 2 mm. longis lanceolatis vel subulato-lanceolatis. Calycis fulvo-tomentelli limbus in dentes 4 ovatos acutiusculos 1 mm. longos partitus ovario anguste turbinato circ. 3 mm. longo costulato. Petala loriformia fere 2 cm. longa extus dense rufo-tomentella intus dense albido-villosa. Stamina 4, 1.5 cm. longa vel paulo ultra filamentis dense longiuscule albo-villosis antheris usque ad 5 mm. longis. Stylus cylindricus stamina paulo superans glaber; stigma capitatum simplex. Drupa deest.

Borneo:—In Sarawak on Mt. Kinabalu at an altitude of 13,000 ft. 25th Sept. 1913. Native Collector. No. 49 in Herb. Edin.

A very remarkable species distinguished at once by the very small leaves. I find no previous record of any *Alangium* from this mountain.

***Anerincleistus monticolus*, W. W. Sm. Sp. nov.**

Species affinis *Anerincleisto Beccarii*, Cogn. a quo foliis basi cuneatis petalis subulato-acuminatis inter alia recedit; ad *A. glomeratum*, King foliis appropinquat inflorescentia valde divergit.

Fruticulus; altitudo non nota. Caulis teres brevissime denseque adpresseque fulvo-strigillosus. Folia petiolo 2-3 cm. longo fulvo-strigilloso suffulta anguste elliptica vel elliptico-lanceolata 10-15 cm. longa 2-4 cm. lata basi cuneata apice caudato-acuminata integra chartacea vel in siccitate subcoriacea supra fusco-viridia setulis minutis aspersa praeterea (sub valido lente) furfuracea infra pallidiora in nervis dense fulvo-strigillosa caetera setulis minutis conspersa 5-nervia venis transversis 3-4 mm. inter se distantibus subrectis. Panicula terminalis pedunculo usque ad 4.5 cm. longo dense fulvo-strigilloso suffulta ad 10 cm. longa tota fulvo-strigillosa. Flores saepissime 3-nati ad pedunculorum secundariorum ± 1 cm. longorum apices umbellatim positi; pedicelli ± 5 mm. longi. Calyx late cupularis 2-3 mm. longus 2-3 mm. latus 4-dentatus densissime fulvo-strigillosus; dentes brevissimi vix 1 mm. longi triangulari-ovati obtusi persistentes strigillosi. Petala 2-2.5 mm. longa (ex collectore rubra) ovata longiuscule subulato-acuminata nonnunquam setulis pluribus dorso ornata subcoriacea. Stamina 8, subaequalia 4 paullo majora; antherae majores 3 mm. longae sublineares basi longiuscule bilobae utrinque inappendiculatae minores oblongae 2 mm. longae basi bilobae. Ovarium vertice coronula 4-loba ornatum; stylus multo deflexus apice inflexus; stigma punctiforme. Capsula 3 mm. paullulo superans quadrivalvata valvis triangularibus.

Borneo:—On Mt. Santubong, Sarawak. 13th March 1914. Native Collector. No. 154.

This new species is closely allied to *A. Beccarii*, Cogn., but is at once distinguished by the leaves. The collector states that the colour of the flowers is red; this may refer to the stamens; the corolla is somewhat coriaceous, and, as far as one can judge from the dried specimens, presents no vivid colours.

***Antidesma cauliflorum*, W. W. Sm. Sp. nov.**

Species *cauliflora* ex affinitate *A. Roxburghii*, Wall.

Frutex ramis cortice griseo praeditis ramulis subteretibus primo $\pm$ dense fulvo-tomentosis atque pilosis mox glabre-

scentibus. Folia magnitudine variabilia, majora 40 cm. longa, 12 cm. lata, minora 12-14 cm. longa, $\pm$ 3 cm. lata, oblonga vel oblongo-elliptica subcaudato-acuminata basi $\pm$ late cuneata chartacea supra glabra subnitentia infra costa nervisque $\pm$ dense adpresse fulvo-pilosa cetera glabra vel subglabra $\pm$ nitentia nervis lateralibus utrinque 8-16 intra marginem arcuatis utrinque conspicuis subtus paulo elevatis nervulis distinctis bene reticulatis; petioli 3-20 mm. longi primo dense fulvo-tomentosi tandem glabri incrassati cortice griseo rugoso; gemmae ovoideae fulvo-tomentosae. Spicae masculinae e caule vetusto orientes fasciculatae 2-20-natae, 15-20 cm. longae simpliciter vel basi ramosae substrictae erectae, dense fulvo-tomentellae (ut bractee lanceolatae 3-4 mm. longae), pedunculo 2-3 cm. longo suffultae. Calyx vix 0.5 mm. longus 3-partitus extus dense pubescens. Discus parvus villosulus ovarii rudimento minimo vel nullo. Stamina 2-3, circ. 1.5 mm. longa filamentis glabris. Racemi feminei flexuosi spicis masculinis similes origine magnitudine pedunculis bracteis indumento congruentes; pedicelli 1 mm. longi villosuli; calyx circ. 0.5 mm. longus extus dense pubescens brevissime vel vix lobatulus. Ovarium juventute non visum, semimaturum 7-8 mm. longum ovoideum dense adpresse villosulum.

Borneo:—Limbang, Sarawak. Haviland. No. 726 ♂ in Herb. Kew.

Near Kuching, Sarawak. Haviland. No. 730 ♂ in Herb. Kew.

Baram. May 1894. Haviland. No. 3263 ♀ in Herb. Kew.; July 1894. Haviland and Hose. No. 3264 ♂ in Herb. Kew.

Kuching. April 1914. Native Collector. No. C133 ♂ in Herb. Edin.

A species readily distinguished by its cauliflory.

Argostemma humifusum, W. W. Sm. Sp. nov.

Species ex affinitate *A. Elatostemmatis*, Hook. f.; foliis membranaceis, parium minoribus petiolatis inter alia recedit.

Planta herbacea $\pm$ 12 cm. longa. Caulis prostratus basi nudus teres glabratus supra sat foliosus $\pm$ complanatus setulis vermiculiformibus $\pm$ dense conspersus. Folia opposita valde inaequalia; majora 6-9 cm. longa, 3-4.5 cm. lata, obovata vel subelliptica, apice lata $\pm$ breviter acuminata, basi $\pm$ late cuneata saepius valde inaequalia, margine integra vel paulo undulatula setoso-ciliata membranacea supra atroviridia sparsius setulis vermiculiformibus obsita subtus minute crebre pustulata nervis setosis utrinque 7-8 paulo elevatis; petioli 1-2 cm. longi setosuli; parium folia minora $\pm$ 1 cm. longa $\pm$ 6 mm. lata

ovata petiolo circ. 5 mm. longo praedita, cetera majoribus subsimilia; stipulae laminis foliorum minorum subsimiles late ovatae persistentes. Flores albi in pedunculis usque ad 2.5 cm. longis subglabris terminalibus umbellatim dispositi; pedicelli 6-8, $\pm$ 5 mm. longi subglabri; bractee plures late ovatae pedicellis multo breviores sparse minute pilosulae, involucriformiter aggregatae. Calycis circ. 3 mm. longi tenuiter membranacei tubus subcampanulatus circ. 1.5 mm. longus extus minute villosulus, lobi 5 fere rotundati glabri. Corolla 5 mm. longa vel paulo ultra haud bene aperta extus sparse pilosula. Stamina 5 filamentis brevissimis antheris cohaerentibus truncato-rostratis. Fructus deest.

Borneo:—Sarawak. 1865-67. Beccari. No. 150 in Herb. Kew.

Gunong Bayat, Sarawak. March 1914. Native Collector. No. D131 in Herb. Edin.

This species much resembles an *Elatostema* in habit, as does the closely allied species *A. Elatostemma*, Hook. f.

***Argostemma sarawakense*, W. W. Sm. Sp. nov.**

Species ex affinitate *A. Elatostemmatidis*, Hook. f., et *A. ophirensis*, Maingay, et *A. johorensis*, Ridley; caule glabro, parium foliis minoribus stipulas simulantibus et aequantibus inter alia recognoscenda.

Planta herbacea 30 cm. alta vel paulo ultra. Caulis basi $\pm$ prostratus nodis radicans supra ascendens vel suberectus sat foliosus subteres striatulus mox albescens squamuloso-decorticans. Folia opposita valde inaequalia; majora 6-12 cm. longa, (plerumque 7-8 cm.), 1.5-4 cm. lata, ovato-lanceolata vel lanceolata vel lineari-lanceolata apice acuta vel longiuscule acuminata basi rotundata vel $\pm$ late cuneata integra vel margine paulo undulatula coriacea supra atroviridia glabra subtus tomento brevissimo fulvido dense velata; costa subtus paulo elevata glabrescens, ut linea nigrida apparet; nervi utrinque 6-8, supra obscuri subtus distincti; petioli $\pm$ 5 mm. longi; parium folia minora 6-7 mm. longa lanceolata vel sublinearia sessilia vel subsessilia glabra vel sparse pilosula in caule inferiore saepe delapsa; stipulae foliis minoribus subsimiles paulo latiores saepe ovato-lanceolatae integrae. Flores albi in pedunculis usque ad 3 cm. longis glabris terminalibus umbellatim dispositi; pedicelli $\pm$ 12, $\pm$ 1 cm. longi $\pm$ pilosuli; bractee plures stipulis subsimiles involucriformiter aggregatae. Calycis subcoriacei nec reticulato-venosi tubus subcampanulatus circ. 2 mm. longus extus $\pm$ fulvo-pilosulus, lobi 5, circ. 2 mm. longi, $\pm$ late ovati $\pm$ obtusi, extus pilosuli vel subglabri intus glabri. Corolla 4-5 mm. longa ad medium vel ultra 5-partita (raro

3-partita!) lobis ovatis obtusis. Stamina plerumque 5, circ. 3 mm. longa antheris cohaerentibus. Ovarium biloculare; stylus apicem versus dense pilosulus stigmatē capitellato. Capsula (una matura visa) apice (operculatum?) dehiscens seminibus fibris paleaceis intermixtis; fructus maturi plures valde desiderantur.

Borneo:—Haviland. No. 689 in Herb. Kew.

Kuching; herb, flower white. Sept. 1892. Haviland. No. 1613 in Herb. Kew.

Kuching. May 1893. Haviland. No. 2958 in Herb. Kew.

Kuching; corolla, calyx and pedicels white. Nov. 1894. Haviland and Hose. No. 3408 in Herb. Kew.

Kuching; flower white, in swampy ground. Aug. 1913. Native Collector. No. 28 in Herb. Edin.

Sarawak, in swampy ground. Nov. 1913. Native Collector. No. 85 in Herb. Edin.

An interesting species with very unequal pairs of leaves. On the lower shoots the smaller leaves (which much resemble the stipules) and stipules are often deciduous, and the plant then appears to be alternate-leaved. The structure of the flower is quite that of *Argostemma*, although the corolla is not markedly rotate and the seeds appear to be intermingled with a quantity of paleaceous fibres. There is only one ripe fruit (Haviland and Hose, 3408) available, which I have refrained from dissecting fully. Some mature fruits are much desired to settle this somewhat interesting point.

Boea Brettiana, W. W. Sm. Sp. nov.

Species affinis *B. crassifoliae*, Hemsl. quae foliis supra glabris nec dense villosulis inter alia recedit.

Herba brevicaulis nonnunquam fere acaulis; rhizoma longum crassissimum lignosum apicem versus vaginis alutaceis foliorum praeteritorum dense indutum; caulis pars foliata plerumque 8–10 cm. alta nonnunquam multo brevior quadrata dense albido- vel fulvo-tomentosa. Folia basi lata sessilia pleraque basalia vel subbasalia 10–30 cm. longa 2–5 cm. lata lineari-oblancoolata vel anguste spathulata vel oblongo-spathulata apice subobtusa vel subacuta basi paulo attenuata crassissima coriacea margine undulatula supra atroviridia densissime atque subscabridule villosula, hic illic flocculoso-albido-lanata, subtus tomento densissimo mollissimo albido vel fulvido induta; costa supra ut linea albida apparens infra eminens usque ad 3 mm. lata; nervi supra evanidi infra utrinque 8–12 satis distincti. Inflorescentiae amplae 10–30 cm. longae fructu usque ad 40 cm. auctae, nunc caulem terminantes, nunc subscaposae in plantis

subacaulibus, nunc multae valde effusae ex axillis omnibus orientes superiores longissimae inferae breviter evolutae; pedunculi et ramuli pedunculorum cum pedicellis 1 cm. longis densissime fulvido-araneoso-tomentosi multiflori apice laxè cymosi; bracteae lanceolatae vel lineares parvae tomentosae. Flores (expansi) fere 2 cm. diametro caerulei. Calyx circ. 4 mm. longus dense fulvo-tomentosus alte 5-fidus in lobos lineares 3 mm. longos subaequales anteriores paullulo longiores. Corollae glabrae tubus brevis calycem paulo superans late campanulatus; limbus 2-labiatus, labio antico 1.2 cm. longo in lobos tres subrotundatos diviso labio postico 2-lobo multo brevior. Stamina 2 inclusa glabra sub medio tubo affixa filamentis incurvis 5-6 mm. longis antheris maximis circ. 5 mm. longis multo induratis arcte agglutinis. Ovarium glabrum circ. 2.5 mm. longum, stylo filiformi glabro 8 mm. longo stigmatè parvo truncatulo. Capsula linearis 3-3.5 cm. longa spiraliter torta seminibus minutis fusiformibus.

Borneo:—Mt. Start; limestone, at 1500 ft.; corolla blue. Haviland. No. 1460 in Herb. Kew.

Ban; limestone rocks; flowers blue. Ridley. No. 11,724 in Herb. Kew.

Near Sudan, Sarawak. Native Collector. No. 14 in Herb. Edin.

A very beautiful species with an ample inflorescence of blue flowers; evidently a xerophytic plant. The species is dedicated to the Raneë Mudah of Sarawak.

Clerodendron Brookeanum, W. W. Sm. Sp. nov.

Species valde affinis *Clerodendro myrmecophilae*, Ridley; foliis acuminatis textura multo tenuioribus corollae tubo multo longiore inter alia recedit.

Suffrutex ramulis subquadratis junioribus saltem non fistulosis cortice griseo praeditis. Folia siccitate tenuiter membranacea opposita integra plerumque oblonga apice abrupte breviterque acuminata basi rotundata vel paullulo attenuata utrinque glabra 25-30 cm. longa, 8-10 cm. lata; nervi utrinque 7-8, graciles subtus paulo elevati; petioli 7-8 cm. longi rigidi. Panicula terminalis multiflora minute glanduloso-puberula cum pedunculo rigido circ. 10 cm. longo usque ad 30 cm. longa, circ. 8 cm. lata; rami divaricati complanati cymulis paucifloris; bracteae 3-4 mm. longae lineares vel subulatae puberulae; bracteolae multae lineares vel setaceae; pedicelli graciles rubro-purpurei 5-10 mm. longi. Calyx $\pm$ 5 mm. longus siccitate rubescens puberulus in lobos lineari-lanceolatos acuminatos ad duas partes divisus. Corolla circ. 3 cm. longa siccitate rubro-

aurantiaca; tubus gracilis cylindricus circ. 2.3 cm. longa; lobi anguste obovato-oblongi apice rotundati superiores paululo longiores. Stamina longissime exserta (2-3 cm.) filamentis gracillimis rubris antheris minimis. Ovarium subglobosum; fructus deest.

Borneo:—Near Gunong Bayat, Sarawak. Jan. 1914. Native Collector. No. 142 in Herb. Edin.

Also a sheet without collector's name or number under *C. macrophyllum*, Hook. mss. (nec Sims) in Herb. Kew.

Haviland and Hose, No. 3560 in Herb. Kew., from Kuching, Sarawak, appears to be the same.

As pointed out by Sir Joseph Hooker in Bot. Mag. under tab. 7887, the Bornean plant is closely allied to *C. myrmecophila*, Ridley. The manuscript name *C. macrophyllum*, Hook., is antedated by *C. macrophyllum*, Sims, a synonym of *C. serratum*, Spreng.

The specific name is in honour of the Rajah of Sarawak.

Dendrochilum (Platyclinis) Dewindtiana, W. W. Sm. Sp. nov.

Species affinis *D. grandiflora* (Ridl.) Pfitz. sed floribus majoribus labello multo diverso inter alia discrepat; in eodem monte apud altitudinem eandem crescit.

Pseudobulbi approximati in rhizomate repente positi ovoideo-oblongi monophylli 1.5-3 cm. longi, usque ad 1.5 cm. lati. Folia 10-12 cm. longa, 1-2 cm. lata lineari-oblonga obtusa apice bilobula basi in petiolum pseudobulbo subaequilongum sensim angustata. Scapi usque ad 30 cm. longi foliis explanatis synanthi subrigidi vel subarcuati; racemi 15-20 cm. longi multiflori. Bracteae 3-4 mm. longae ovaria pedunculata paulo superantes patentes lanceolatae acuminatae dorso nervis crassis praeditae. Flores inter majores albidi. Sepala 7-8 mm. longa 2-3 mm. lata lanceolata acuta; dorsale paululo angustius. Petala sepalis paulo breviora paulo latiora oblanceolata apice obtusa vel subrotundata. Labellum dilatatum trilobum circ. 7 mm. longum; lobi laterales parvi vix 1 mm. longi falcato-denticuliformes paulo supra medium positi; lobus intermedius late obovatus circ. 4.5 mm. latus apice rotundatus; carinulae tres a basi ad tres partes pererrantes, mediana minus distincta. Gynostemium circ. 5 mm. longum; stelidia lateralia fere 2 mm. supra basin gynostemii inserta, 3 mm. longa lineari-oblonga subobtusata suberecta aliam apicalem gynostemii fere aequantia.

Borneo:—On Mt. Kinabalu, alt. 7200 ft. 28th Aug. 1913. Native Collector. No. 99.

On Mt. Kinabalu, alt. 13,000 ft. (?). 25th Aug. 1913. Native Collector. No. 68.

This species comes from the same locality and from approximately the same altitude as *Dendrochilum grandiflorum*, Pfitz. It differs in the larger flowers which have a labellum of quite a different shape from that of the species named. The general outline of the labellum approximates to that of *Dendrochilum longifolium*, Reichb. f., except that the apex is rounded and not pointed; cf. fig. in Engl. Pflanzenr.,—Kränz. Coelogyninae, p. 101. Among the species monographed in the above work by Kränzlin it seems to belong to the section *Dilatata*, Pfitz., in the neighbourhood of *Dendrochilum latifolium*, Lindl., and in company with *D. grandiflorum*, Pfitz.

The colour is said by the native collector to be white; in the dried state it is yellowish in tinge. This orchid is dedicated to the Ranee of Sarawak.

***Gynura albicaulis*, W. W. Sm. Sp. nov.**

Species ex affinitate *Gynurae bicoloris*, DC. a qua foliis superioribus petiolatis nec sessilibus inter alia discrepat.

Planta herbacea (basi suffrutescens?) 1 m. alta vel ultro parce ramosa supra sat foliosa pro maxima parte glaberrima. Rami subteretes striatuli sordide albidi. Folia basalia non visa; superiora 6–8 cm. longa, 2–3.5 cm. lata, obovata vel oblanceolata vel rarius subelliptica, apice rotundata vel subobtusata vel subacuta, apiculata, basi in petiolum $\pm$ 1 cm. longum sensim attenuata plus minusve coriacea margine integra vel remotius apiculato-denticulata apiculis utrinque 1–5, plerumque glaberrima, nonnunquam margine atque pagina inferiore sparse breviterque setosula; nervi utrinque 3–5, obscuri vel nonnunquam subtus prominuli; folia suprema medianis saepe vix minora, omnia petiolata. Inflorescentia terminalis circ. 10 cm. longa corymboso-paniculata glaberrima. Pedunculi recto angulo abeuntes 3–8 cm. longi remoti capitula solitaria vel bina (pedunculis secundariis divaricatis 2–3 cm. longis suffulta) plerumque gerentes; bracteae paucae 5–7 mm. longae subulatae. Capitula $\pm$ 1 cm. longa medio circ. 5 mm. lata. Involucri cylindracei phylla 1-seriata oblonga 7 mm. longa acuta vel subacuta marginibus late scariosa medio viridia, glabra vel sparse villosula, 1–2 subulata extus addita. Corolla tenuiter tubulosa circ. 8 mm. longa ex collectore rubrida. Achaenia oblonga 2.5 mm. longa striatula parce villosula; pappi setae corollam aequantes copiosae fragiles albae.

Borneo:—On Mt. Start (limestone), 1200 ft.; tall herb, corolla reddish, stamens yellowish. Haviland. No. 1500 in Herb. Kew.

Near Sudan, Sarawak. Native Collector. No. D2 in Herb. Edin.

Ilex Havilandii, Loesener, var. **major**, W. W. Sm. Var. nov.

Folia multo majora, 3.5-4 cm. longa, 1.5-2.5 cm. lata, coriacea obovata marginibus $\pm$ recurva utrinque nitida subtus glanduloso-punctata nervis supra impressis subtus distinctis. Inflorescentia similis ei typi.

Borneo:—Mt. Santubong, Sarawak. March 1914. Native Collector. No. D167 in Herb. Edin.

The specimens of this new variety suggest that they represent a lowland, or at any rate a less alpine, form of *Ilex Havilandii*, Loesener (*I. vacciniifolia*, Stapf). The leaves are much larger and less congested than those of the original Mt. Kinabalu plant.

Lucinaea parvifolia, W. W. Sm. Sp. nov.

Species ramulis crispato-pilosis foliis parvis capitulis paucifloris floribus pentameris conspicua.

Frutex ramosus supra suberectus basin versus semiprostratus hic illic radicans ramulis primo dense fulvo-crispato-pilosis deinde glabrescentibus. Folia stipulis brevibus ovatis petiolis 2-3 mm. longis glabris praedita, 2-3.5 cm. longa, 1-1.5 cm. lata, lanceolata vel ovato-lanceolata vel subelliptica apice acuta basi rotundata integra coriacea glaberrima supra nigrescentia infra pallidiora costa subtus paulo elevata nervis lateralibus utrinque 7-8 obscuris saepe evanidis. Capitula breviter pedunculata (2-4 mm.), plerumque solitaria terminalia 3-5-flora, cupula parva patelliformi 3-4 mm. lata bilobatula suffulta. Calycis fere 4 mm. longi tubus turbinatus, limbus annularis integer persistens, circ. 2 mm. altus. Corollae albae tubus brevis, lobi 5, 3-4 mm. longi tubo multo longiores, lineari-oblongi obtusiusculi primo erecti intus apice glabri infra dense longiuscule albo-barbati. Stamina 5 filamentis brevissimis antheris $\pm$ 1 mm. longis. Stylus filiformis fere 4 mm. longus ramis linearibus villosulis $\pm$ 1 mm. longis. Fructus maturus deest.

Borneo:—Sarawak (1865-68). Beccari. No. 3098 in Herb. Kew.

Path to Matang. Sept. 1892. Haviland. No. 678 in Herb. Kew.

Sarawak, in swampy ground. Nov. 1913. Native Collector. No. 136 in Herb. Edin.

This species is akin to *L. Pentacme*, Stapf.

Neurocalyx matangensis, W. W. Sm. Sp. nov.

Species ex affinitate *N. Gardneri*, Thw.

Planta humilis villosa. Caulis simplex plerumque 2-8 cm. vix superans in uno specimine ab Havilandio notato usque ad

1 m. evolutus, basi crassus lignosus dense fulvo-pilosus vestigiis foliorum praeteritorum stipulisque fere celatus, nonnunquam pro maxima parte subterraneus. Stipulae majusculae 1-2.5 cm. longae multifidae longiuscule strigoso-pilosae. Folia opposita, plerumque conferta subbasalia petiolo 2-3 cm. longo dense fulvido-crispato-pilosulo atque longiuscule albido-setoso suffulta, 9-24 cm. longa, 4-8 cm. lata, oblanceolata apice subrotundata breviter acuminata basi sensim attenuata vel rarius subrotundata, firme membranacea margine undulata longe setoso-ciliata supra rugosula vel bullatula atroviridia setis longis albidis atque setulis minimis fulvidis crispatis $\pm$ dense obsita infra ad costam nervosque longe albido-setosa, caetera crispato-pilosula; nervi utrinque 15-20 subparalleles leviter arcuati fere ad marginem producti ibique ascendenti-confluentes supra paulo impressi subtus $\pm$ elevati. Inflorescentiae axillares 4-8 cm. longae floribus apicem versus corymbose congestis subnutantes vel ascendentes; pedunculi, pedicelli $\pm$ 5 mm. longi, bractee lanceolatae $\pm$ 5 mm. longae, calyces, omnes albido-setosi atque fulvo-crispato-pilosuli. Calycis tubus subglobosus 2 mm. longus fructu ad 3 mm. auctus, lobi 5 mm. longi breviter unguiculati nunc omnes subaequales lanceolati, nunc valde inaequales 2-3 ovati ampli 3-2 lanceolati vel lineari-lanceolati, membranacei reticulatim venosi. Corolla alba 5-partita $\pm$ calycem vix aequans segmentis lanceolatis. Stamina circ. 4 mm. longa antheris in tubum connatis. Ovarium biloculare; fructus maturitate alte bisulcatus coriaceus setis setulisque persistentibus, tandem in duas partes ab apice dehiscens.

Borneo:—Sarawak on sandstone rocks, alt. 2500 ft. Lobb, in Herb. Kew.

Sarawak (1865-68). Beccari. Nos. 1695, 2965 in Herb. Kew.

Sepudang; herb 3 ft., corolla white, tube short. Haviland. No. 677 in Herb. Kew.

Baram. May 1894. Haviland and Hose. No. 3412 in Herb. Kew.

Matang, 3000 ft. Haviland. No. 682 in Herb. Kew.

Matang. July 1893. Ridley. No. 11,750 in Herb. Kew.

Matang. Dec. 1913. Native Collector. Nos. 104, 244 in Herb. Edin.

Oldenlandia santubongensis, W. W. Sm. Sp. nov.

Species affinis *O. corymbosae*, Linn. sed habitu diverso rhizomate perenni longo gracili foliis floribusque majoribus recedit.

Herba perennis $\pm$ ascendens cum inflorescentia usque ad 12 cm. alta $\pm$ minute pilosula; rhizoma lignosum repens plantam rupicolam suggerit; caules angulati basi vestigiis

foliorum praeteritorum crebre annulati supra $\pm$ bene evoluti nunc internodiis valde approximatis nunc subremotis foliosi. Folia 3-6.5 cm. longa, 5-7 mm. lata, plerumque approximata lineari-oblanccolata apice acuta vel longiuscule acuminata basi in petiolum fere usque ad 1 cm. longum lamina vix discretum sensim angustata, coriacea margine integra $\pm$ revoluta nonnunquam ad costam, supra viridia subscabride minute pilosula nonnunquam subglabrescentia subtus pallidiora minute pilosula vel subglabra; costa subtus paulo elevata venis primariis evanidis; stipulae breves cartilagineae persistentes. Inflorescentiae plures axillares graces dichotome paniculato-cymosae laxae 5-15-florae minute pilosulae vel glabrescentes bracteis lineari-subulatis minutis pedicellis gracillimis $\pm$ 1 cm. longis. Calycis tubus subglobosus, dentes 4 vix 2 mm. longi ovati acuminati. Corollae infundibuliformis albae glabrae tubus circ. 4 mm. longus, lobi obtusi 2-3 mm. longi. Ovarium simile ei *O. corymbosae*, subglobosum in duos loculos dehiscens; semina vix 0.5 mm. longa angulata nigra minute granulata.

Borneo:—Lobb, in Herb. Kew. (anno 1853).

Sarawak, 3000 ft. Aug. 1884. Hullett. No. 356 in Herb. Kew.

Santubong, Sarawak, 1000 ft. Haviland, in Herb. Kew.

Santubong. July 1893. Ridley. No. 11,759 in Herb. Kew.

Santubong. 1906. Hewitt. No. 12,387 in Herb. Kew.

Matang Mt., Sarawak. Dec. 1913. Native Collector. No. E285 in Herb. Edin.

Mt. Santubong. March 1914. Native Collector. No. D182 in Herb. Edin.

The general character of the rhizome suggests a rupestral plant growing probably on the limestone of Mt. Santubong.

***Pleomele sarawakensis*, W. W. Sm. Sp. nov.**

Species affinis *P. congestae*, N. E. Br. (*Dracaenae congestae*, Ridley).

Caulis pars suprema tantum adest lignosa cicatricibus foliorum delapsorum crebre annulata. Folia 12-30 cm. longa, 2.5-6 cm. lata lanceolata acuminata basi sensim in petiolum angustata coriacea; petioli 5-10 cm. longi robusti alte canaliculati basi lata amplexicauli praediti. Inflorescentia breviter pedunculata pedunculo vix 1-2 cm. superante, 5-15 cm. longa, simplex vel basi ramosa, floribus plurimis arcte congestis 2-4-natis, albidis. Bractae 3-5 mm. longae ovatae vel lanceolatae scariosae. Pedicelli 2-4 mm. longi. Perianthium infundibuliforme 1.9-2.2 cm. longum, $\pm$ ad medium in lobos lineares subaequales divisum; tubus angustus basi paulo dilatatus. Stamina tubo ad basin

loborum affixa filamentis gracilibus antheris 2 mm. longis. Stylus filiformis stigmatē capitato. Bacca deest.

Borneo :—Kuching, Sarawak. Feb. 1893. Haviland. No. 3126 in Herb. Kew.

Mt. Santubong, Sarawak. March 1914. Native Collector. No. D161 in Herb. Edin.

This new species has a very dense spiciform panicle and is akin to *Pleomele congesta*, N. E. Br. of the Malay Peninsula. The latter grows in limestone districts, and *P. sarawakensis* is probably from similar formations on Mt. Santubong. The specimens from this last locality are more slender and have slightly smaller flowers than Haviland's specimen, but I take them to be the same species.

***Randia kuchingensis*, W. W. Sm. Sp. nov.**

Species affinis *R. longiflorae*, Lam. sed calyce ferrugineo-piloso et corolla majore inter alia discrepans.

Arbor parva ramis ramulisque exarmatis teretibus striatulis primo $\pm$ dense ferrugineo-pilosis deinde glabrescentibus ; stipulae trigonae acuminatae 2-3 mm. longae ferrugineae. Folia petiolo vix 2-3 mm. superante ferrugineo-pilosulo praedita 10-22 cm. longa, 5-9 cm. lata, elliptica vel obovata vel late oblanceolata apice rotundata vel subobtusa vel breviter abrupte acuminata basi late cuneata vel rotundata integra coriacea supra saepius nitida glabra vel subglabra costa nervisque ferrugineo-pilosulis exceptis, subtus tomento minuto fulvido $\pm$ dense velata costa nervisque dense ferrugineo-pilosulis ; nervi laterales utrinque 7-11 supra plerumque impressi infra $\pm$ eminentes. Corymbi contracti subsessiles axillares vulgo 3-4-flori erecti pedicellis 4-8 mm. longis ferrugineo-pilosulis, bracteis stipulis subsimilibus. Calycis dense ferrugineo-pilosi tubus 7-9 mm. longus, dentes 7-9 mm. longi lineares. Corollae albae fragrantis tubus usque ad 5.5 cm. longus, in sicco complanatus 3 mm. latus, extus dense fulvido-pilosulus intus sparse, lobi patentes 2-2.5 cm. longi elliptici subacuti vel obtusi. Antherae sessiles 1.3 cm. longae. Stylus tubum aequans supra pilosulus infra glaber. Bacca ovoidea usque ad 5 cm. longa, 3 cm. lata, 2-locularis, seminibus 16 in quoque loculo, complanatis pulpa immersis.

Borneo :—Sarawak, Penrissu road, 2nd mile. 1884. Haviland. No. 676 in Herb. Kew.

Near Kuching. Dec. 1892. Haviland (under No. =676), in Herb. Kew. ; April 1893. Haviland. Without number in Herb. Kew.

Niak (*sic* ?). May 1892. Haviland and Hose, in Herb. Kew.

Sarawak, in swampy ground. Nov. 1913. Native Collector. No. 74 in Herb. Edin.

Sarawak, 9th mile, Matang road, flower white. April 1914. Native Collector. No. C226 in Herb. Edin.

Timonius Esherianus, W. W. Sm. Sp. nov.

Species ex affinitate *T. stipulosi* (Scheff.) Val. qui calycis segmentis permagnis appressis inter alia differt.

Arbuscula 5-6 m. alta; ramuli subtetragoni rigidi crassiusculi primo densissime ferrugineo-villosi; stipulae $\pm$ 1 cm. longae deciduae ovatae acuminatae, ut innovationes densissime ferrugineo-villosi. Folia (superiora tantum visa) 8-14 cm. longa, 5-8 cm. lata, late obovata vel late elliptica, apice lata breviter vel vix acuminata basi late cuneata, coriacea supra primo atroviridia $\pm$ dense longiuscule ferrugineo-setosa tandem fusca subglabrescentia rugosula furfuraceo-subscabridula subtus primo densissime ferrugineo-tomentoso-setosa deinde vix parcius; nervi laterales utrinque $\pm$ 8 supra impressi distincti primo densissime ferrugineo-setosi tandem glabri subtus prominentes maturitate densissime ferrugineo-setosi, prope marginem adscendentes atque confluentes, venulis distinctis reticulati; petioli 1 cm. longi vel minores crassi ferrugineo-setosi. Inflorescentiae forma ignota, floribus omnibus sejunctis; flores tetrameri pedicellis 5-6 mm. longis setosulis suffulti; bracteolae binae sub ovario positae 8-12 mm. longae ovarium fere maturum paulo superantes vel aequantes, lineares dense ferrugineo-setosulae. Calycis dense ferrugineo-setulosi tubus 2 mm. longus 3 mm. diametro, dentes $\pm$ 5 mm. longi lineari-lanceolati acuti. Corollae extus dense fulvido-sericeae tubus circ. 7 mm. longus anguste infundibularis ad faucem paulo dilatatus, lobi circ. 3 mm. longi lineari-oblongi extus dense sericei apice ferruginei. Ovarium fere maturum globosum vix sulcatum $\pm$ 1 cm. diametro calyce persistente coronatum densissime ferrugineo-setosulum sarcocarpio magno; pyrenae verticales $\pm$ 12, subregulariter cruciatim dispositae, aream 2 mm. diametro occupantes ellipsoideae.

Borneo:—On Mt. Santubong, Sarawak. March 1914. Native Collector. No. 200.

A very beautiful species; the leaves have a fine covering of persistent ferruginous setae, which are also found on the calyx and ovary. There is in the type specimen only one corolla, which I have not dissected. The species nearest akin is *T. stipulosus* (Scheff.), Val., figured in *Icones Bogorienses*, tab. ccxcix. Compare also Valetton's *clavis analyticus* in Bull. Dép. Agric. Ind. Néerl., xxvi (1909), 27. The specific name is in

honour of the Right Hon. Viscount Esher, under whose sympathetic administration as Secretary of H.M. Office of Works, rejuvenescence of the Royal Botanic Garden, Edinburgh, took place, and by whose kind mediation this and other Bornean plants were secured for the Garden.

***Tristania Moultoniana*, W. W. Sm. Sp. nov.**

Species ab omnibus speciebus malayicis ob flores maximos valde diversa; habitu foliisque ad *T. ellipticam*, Stapf. appropinquat.

Arbor vel frutex. Ramuli crassiusculi hic illic complanati glabri pallido-brunnei; gemmae terminales subulato-lineares usque ad 6 cm. longae. Folia omnia alterna remota, nusquam approximata, petiolo brevissimo vix a lamina discreto vix 1-2 mm. superante suffulta, oblanceolata vel anguste obovata vel subelliptica, 10-20 cm. longa, 3-6 cm. lata, basi cuneata apice rotundata vel obtusa, coriacea glaberrima utrinque sublucida, costa supra paullulo impressa subtus vix prominente, nervis lateralibus infra distinctioribus utrinque ± 30 parallelis rectis 3-4 mm. a margine cum nervo marginali junctis venulis siccitate infra distincte reticulantibus. Inflorescentiae in axillis foliorum superiorum orientes ± 6 -florae umbelliformes glabrae; pedunculi 4-5 cm. longi multo complanati; ramuli divaricati; pedicelli 1-1.5 cm. longi multo complanati; bractae non visae. Calycis coriacei glabri tubus depresso-turbinatus circ. 4 mm. longus, dentibus subquadratis circ. 2 mm. longis apice rotundatis. Petala obovata vel elliptica 1.3-1.5 cm. longa, 6-9 mm. lata glandulis punctata. Stamina perplurima paulo exserta in phalanges 5 petalis oppositas connata filamentis pro maxima parte liberis antheris versatilibus. Ovarium semisuperum 3-loculare globosum glabrum stylo brevi filiformi. Fructus deest.

Borneo:—In the neighbourhood of Sarawak, in swampy country. 21st Nov. 1913. Native Collector. No. 172.

A species very distinct from all the described species of *Tristania* from Indo-Malaya. Only the Australian species approach it in size of flower. Its nearest ally in Malaya is undoubtedly *T. elliptica*, Stapf. (Beccari No. 2244, collected in Sarawak and undescribed according to Stapf in Trans. Linn. Soc., 2nd ser., iv (1894), 152, is a different species with much smaller flowers.) The colour of the flower is given by the collector as red: this may refer to the stamens; in the dry state the tint of the corolla is yellowish. In the specific name opportunity is given for recording the work done by J. C. Moulton, Esq., Curator of the Sarawak Museum, in superintending the collection of these Bornean species.

Vaccinium borneëse, W. W. Sm. Sp. nov.

Species affinis *V. acuminatissimo*, Miq. a quo inflorescentia contracta subglobosa bracteis ovatis pedicellis brevissimis vel nullis calycis lobis majoribus inter alia recedit.

Rami mediocres teretes cortice atrobrunneo tecti crebre lenticellati. Folia 10-15 cm. longa 3-4.5 cm. lata elliptica vel elliptico-lanceolata acuta mediocriter acuminata basi $\pm$ late cuneata vel subrotundata coriacea integerrima supra lucida glabra infra pallidiora lucida costâ nervisque breviter pilosula caeterum glabra vel subglabra, 5-nervia; nervi e basi ipsa orti, intermedii tres intramarginalibus multo distinctiores supra impressi subtus multo elevati nervulis transversis crebris distinctis bene reticulatis; petioli 2-3 mm. longi pilosuli. Inflorescentiae axillares multo contractae in fructu 1.5-2 cm. longae ovoideae vel subglobosae; pedunculi bracteis ovariisque celati dense pilosuli; pedicelli nulli vel fere nulli; bracteae bracteolaeque ovatae 1.5-2 mm. longae dense fulvo-pilosulae multicostulatae, sub ovario ipso arcte positae. Calycis tubus subglobosus, in fructu semimaturato 3-4 mm. diametro, dense fulvo-vel subrufo-pilosulus, dentibus 5 ovatis vel ovato-lanceolatis circ. 2 mm. longis obtusiusculis multicostulatis subcoriaceis $\pm$ pilosulis persistentibus conniventibus. Corolla staminaque non visa. Baccæ $\pm$ 20-spermae.

Borneo:—Sarawak in swampy country. Nov. 1913. Native Collector. No. 66 in Herb. Edin.

This new species is a close relative of *V. acuminatissimum*, Miq., with very similar leaves, but with a very characteristic inflorescence which is so contracted as to be quite subglobose, while the pedicels are scarcely distinguishable. It is possible, however, that *Vaccinium acuminatissimum*, Miq., forma *borneënsis*, Miq., in Ann. Mus. Bot. Lug.-Bat. I (1863), 36, may be the same as this new species. I have not seen Korthals' original; the Malayan material of *V. acuminatissimum* at Kew and at Edinburgh shows nothing matching the Sarawak plant.

SPECIES CHINENSES.**Acer oblongum**, Wall., var. *biauratum*, W. W. Sm. Var. nov.

Folia parte superiore trilobata lobis lateralibus terminali plerumque multo minoribus nonnunquam subaequantibus, plerumque 4.5-6 cm. longa, 4-5.5 cm. lata, paulo longiora quam latiora.

"Shrub of 25-35 ft. In fruit. In open thickets in side valleys on the mountains of the Chungtien plateau. Lat. 27° 55' N. Alt. 10,000 ft. July 1913." G. Forrest. No. 10,644.

This variety of *A. oblongum* occurs in the same area as a plant with normal foliage (Forrest, No. 10,669). The leaves are nearly always trilobate, though occasionally a leaf is found indistinguishable from the leaf of *A. oblongum*, and are moreover nearly as broad as long. No. 10,669 differs from typical *A. oblongum* in the wings of the fruit being horizontal, and may be equivalent to var. *horizontale*, Pax, previously recorded only as a cultivated plant in the Botanic Garden of Florence (Pflanzenreich-Aceraceae, p. 31).

Adenophora Forrestii, Diels, var. *minor*, W. W. Sm. Var. nov.

Planta a typo habitu graciliore foliis integerrimis flore solitario multo minore (1 cm. longo) stylo exserto ita recedit ut fortasse pro specie propria haberi possit; speciminibus in herbario paucis, cum *A. Forrestii* interim est conjuncta.

China:—Western Yunnan, near A-tun-tsi, on screes at 13,000 ft. F. Kingdon Ward. No. 1077.

Agapetes Wardii, W. W. Sm. Sp. nov.

Species affinis *A. buxifoliae*, Nutt. sed foliis lanceolatis vel oblanceolatis integerrimis calyce glabro inter alia differt.

Frutex epiphyticus gracilis; ramuli subteretes setis adpressis nigris densissime vestiti. Folia vix petiolata, $\pm$ 2 cm. longa, 6–7 mm. lata, lanceolata vel oblanceolata apice acuta vel subacuminata basi anguste cuneata integerrima coriacea glabra supra viridia nitentia subtus pallidiora opaca, nervis supra distinctis infra obscurioribus, costa supra elevata infra evanida. Flores axillares solitarii vel bini vel 3–5-nati ramulos terminantes; pedunculi vix evoluti; pedicelli 7–9 mm. longi glabri bracteolis duabus circ. 1 mm. longis subulatis basi praediti. Calyx tubuloso-campanulatus rubridus glaber vix ad medium fissus; lobi quinque lanceolati vel anguste triangulares acuti erecti. Corolla circ. 1.5 cm. longa, 3–4 mm. lata, anguste tubulosa, rubra, glabra setulis paucis apicem versus exceptis, in lobos circ. 1.5 mm. longos triangulares obtusiusculos flavescentes breviter fissa. Stamina 10, circ. 1 cm. longa, filamentis 5 mm. longis glabris antheris elongatis, cum tubulis 5 mm. longis, calcaribus nullis. Stylus filiformis stamina paulo superans. Fructus deest.

Upper Burma:—"In the Kachin Hills, 7000–8000 ft. Small bushy undershrub growing on dry boulders or on trees. March 1914." Coll. F. Kingdon Ward. No. 200.

The collector notes that he came across the same plant in the Salween Valley, West Yunnan. This slender species is nearly related to *A. buxifolius*, Wall., and to *A. yunnanensis*, Franch.

Androsace Graceae, G. Forrest. Sp. nov.

Species nana foliis pro magnitudine longe petiolatis reniformibus integerrimis bracteis ovalibus obtusissimis inter congeneres conspicua.

Planta minima cum scapo vix 4 cm. superans plus minusve caespitosa. Folia omnia radicalia ± 6 , petiolo usque ad 2 cm. longo pilis multicellularibus albidis vel fulvis subdense velato suffulta ± 9 mm. longa, ± 11 mm. lata reniformia apice rotundata basi breviter cordatula carnosula integerrima supra atroviridia glabra vel subglabra infra subpurpurascencia pilis multicellularibus albidis vel fulvis conspersa nervis evanidis. Scapi 1-2, circ. 4 cm. alti erecti rigidiusculi pilis multicellularibus $\pm$ dense velati, ± 6 -flori. Bractee ± 6 , circ. 3 mm. longae, ± 2 mm. latae, carnosulae late ovalia obtusissima extus $\pm$ pilosae; pedicelli 3-4 mm. longi flexiles $\pm$ pilosi. Calyx campanulatus circ. 3 mm. longus ad medium vel paulo ultro partitus extus sparse pilosus; lobi 5-6 ovati obtusi. Corollae roseae tubus calycem subaequans; lobi circ. 2 mm. longi anguste obovati. Capsula calyce brevior depresso-globosa valvis 5-6 dehiscentis.

"Plant of 1-2 inches. Flowers rose. Open stony pasture on the Kari Pass, Mekong-Yangtze divide, Yunnan, Western China. Lat. $27^{\circ} 40'$ N. Alt. 14,000 ft. July 1914." G. Forrest. No. 13,010.

A very distinct species; it is distinguished from all the known species of the section *Pseudoprimula*, Pax, by its entire reniform leaves; from all those of the section *Chamaejasme*, Koch, by the long petioles (except from *A. mirabilis*, Franch., which is a tall robust species). The foliage recalls that of *Polygonum nummularifolium*, Meissn. The plant is dedicated to a sister of the collector.

Anthriscus yunnanensis, W. W. Sm. Sp. nov.

Species ob radicem tuberosam pro planta maximam conspicua.

Herba altitudine variabilis, nunc nana 10-20 cm. nunc usque ad 45-60 cm. alta. Radix tuberosa 5-10 cm. longa. Caulis erectus striatus glaber. Folia radicalia petiolo basi longe vaginante circ. 8 cm. longo praedita, caulina petiolo excluso vaginae insidentia; vaginae extus striatae albo-villosae, annulum villosum circa caulem formantes; in plantis minoribus annulo inconspicuo vaginae saepe fere glabrae; lamina 3-4-pinnatim decomposita segmentis ultimis pinnato-lobatis, 8-16 cm. longa, in utraque facie sparse albo-hirsutula; facies foliorum similis ei *Anthrisci vulgaris*, Bernh. Involucri phylla 0; umbellae radii 4-8 subaequales 1-2 cm. longi. Involucelli phylla 5-6, lanceolata acuminata 6-7 mm. longa umbellulam

vix aequantia viridia margine albo-villosula vel subglabra; umbellulae 6-10-florae pedicellis circ. 6 mm. longis. Calycis dentes obsoleti. Petala oblonga vel obovata 2-3 mm. longa, alba. Ovarium circ. 2 mm. longum, oblongum, glabrum. Fructus maturus deest.

"Plant of 4-8 inches. Flowers white. Open stony pasture on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,000-11,000 ft. July 1910." G. Forrest. No. 6020.

"Plant of 1½-2 ft. Flowers white. Mountain pasture on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11,000 ft. June 1910." G. Forrest. No. 5914.

Aster pycnophyllus, Franch. mss. in Herb. Paris. ex Diels in Notes Roy. Bot. Gard., Edin., vii (1913), 340. Ex specimenibus Forrestianis tantum descr. W. W. Sm.

Species ex affinitate *A. trinervii*, Roxb.

Planta 30-60 cm. alta, erecta, rhizomate longo reptante praedita. Caulis flexuosus teres infra subnudus, medio foliosus glabrescens ruber, supra ± dense villosulus, simplex nisi in regione inflorescentiae. Folia petiolata petiolo 1-2 cm. longo; lamina usque ad 7 cm. longa, 3-4 cm. lata, ovata vel ovato-lanceolata, apice longiuscule caudato-acuminata, basi rotundata, repando-dentata dentibus indurato-apiculatis, supra olivaceo-viridis minute setosula, marginibus densius, vix scabridula, infra cinereo-setosula, nervis supra obscuris infra eminentibus bene reticulatis. Inflorescentia paniculato-corymbosa, ampla, ramulis plurimis dense albido-villosulis, foliis bracteiformibus multis 1-2 cm. longis linearibus vel lineari-lanceolatis praedita; pedunculi ultimi circ. 1 cm. longi. Capitulum cum ligulis in sicco circ. 1 cm. diametro 30-40-florum; involucri phylla pauciseriala, circ. 4 mm. longa, linearia, apice aristato-apiculata, extus crispato-villosula intus glabra. Flores radiati circ. 20; tubus corollae 2 mm. longus, ligulae patulae circ. 5 mm. longae lineares laete purpureo-coeruleae, pappus 3 mm. longus albidus; in floribus disci corolla aurantiaca 4-5 mm. longa. Ovarium obovatum 1 mm. longum parce pilosulum.

"Plant of 1½-2 ft. Ray florets bright purplish blue, disc florets orange-yellow. Shady ledges of cliffs in side valleys on the eastern flank of the Tali Range, Yunnan. Lat. 25° 40' N. Alt. 10,000-11,000 ft. Sept. 1906." G. Forrest. No. 4001.

Betula Delavayi, Franch., var. **Forrestii**, W. W. Sm. Var. nov.

Magnitudine, foliis majoribus, ad 4.5 cm. longis, ad 3 cm. latis, ovatis nec lanceolatis, apice obtusis vel subrotundatis

nec acutis, supra longe sericeo-pilosis, inflorescentiis fructiferis ad 3 cm. longis a typo recedit.

"Tree of 25-40 ft. Open situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 10' N. Alt. 10,000 ft. May 1910." G. Forrest. No. 5546.

Betula Delavayi, Franch., var. *callicola*, W. W. Sm. Var. nov.

Planta nana, 30-45 cm. alta, ramulis novellis densissime incano-tomentosis: folia 1-2 cm. longa, 1-1.5 cm. lata, ovata vel fere orbicularia vel oblonga, apice rotundata vel obtusa.

"Dwarf shrub of 1-1½ ft. In the crevices of limestone cliffs on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11,000-12,000 ft. June 1910." G. Forrest. No. 5835.

I take Delavay's plant to be intermediate between the two varieties. Forrest No. 5546 is a tree; Delavay No. 3725 is a shrub; Forrest No. 5835 is a dwarf shrub. The leaves of the series differ much in size and in shape, but are much alike in consistency, in the arrangement of the lateral veins, and in the silky hairs which are specially prominent on the under side of the veins. The bracts and nutlets are very similar.

Boottia echinata, W. W. Sm. Sp. nov.

Species spathâ tubulosâ echinatâ conspicua.

Rhizoma atque folia ignota. Scapi longissimi, usque ad 100 cm. vel ultra, gracillimi. Spatha ♂ late tubulosa, 4-5 cm. longa, apice irregulariter dentata, dentibus circ. 8, duobus circ. 2 cm. longis, longe acuminatis, plus minusve echinatis, 5-6 multo brevioribus; tubus subangulatus, ut summus scapus sparse echinatus. Flores ♂ in quaque spatha ± 12, exserti, pedicellis circ. 6 cm. longis, nunc glabris, nunc plus minusve dense echinatis. Sepala 3, lineari-lanceolata, 12-18 mm. longa, obtusa, viridia. Petala 3, late elliptica, 15-20 mm. longa, circ. 10 mm. lata, aurantiaco-flava. Stamina 12, subaequalia, circ. 6 mm. longa, filamentis 3-4 mm. longis multo complanatis; stylopedia 3 massam oblongam formantia, bifida. Flores ♀ ignoti.

"Floating plant of 3-9 ft. Flowers orange-yellow. Shallow bays on the western shores of Lake Er-hai, Tali Valley. Lat. 25° 40' N. Alt. 6500 ft. Nov. 1910." G. Forrest. No. 7376.

Crepis setigera, Scott. Sp. nov.

Species caule petiolis costis pedunculis densissime purpureo-setosis facile recognoscitur.

Herba setosa 15-18 cm. alta. Rhizoma breviter cylindricum

crassum lignosum, 4-6 cm. longum. Caulis erectus vel suberectus, apice subcernuus, striatus, setis patentibus purpureis dense indutus. Folia fere omnia radicalia 7-10 cm. longa, 2-3 cm. lata, ambitu oblanceolata grosse et irregulariter dentata dentibus indurato-apiculatis; basi cuneata, apice acuta vel acuminata, supra glauco-viridia infra pallidiora, costa utraque facie conspicua setis longis purpureis dense velata, venis supra sparse setosis infra paulo elevatis setosioribus; petiolus 1-3 cm. longus densissime purpureo-setosus; folia caulina pauca 1-3 breviora fere sessilia ceterum radicalibus subsimilia, suprema fere linearia. Capitula 10-15 paniculam congestam formantia, 1-1.5 cm. longa, 0.5-1 cm. lata, pedunculis fusco-purpureo-setosis 0.25-1 cm. longis suffulta; bracteae 2-3 mm. longae lineares vel lineari-lanceolatae, dense setosae. Involucri phylla libera, 1 cm. longa, lanceolata, medio longe setosa, viridia, margine paullulo scariosa. Flores flavi paulo involucri phyllis longiores, circ. 1.3-1.4 cm. longi. Achenia 5-5.5 mm. longa, erostrata longitudinaliter costata albido-fusca glaberrima, pappo simplice fusco achenia $\pm$ aequante.

China:—West Szechwan. "Perennial composite; stems red tomentose, flowers yellow; mountain pastures at Tcha-ho. Alt. 2600 m. July 1913." E. E. Maire. Nos. 72, 197 (1914).

***Didiçsandra Agnesiae*, G. Forrest.**

Species pulchra foliis ovatis dense cinereo-adpresso-strigosis, scapis pilis atratis septatis glanduloso-capitatis indutis, corolla magna circ. 4.5 cm. longa valde ventricosa lobis acutis praedita inter congeneres conspicua.

Herba acaulis. Folia 6 rosulata, petiolo 1-2 cm. longo complanato dense fulvo-hirsuto praedita, 3-4 cm. longa, 1.5-2 cm. lata, ovata apice obtusa vel subobtusa basi sensim in petiolum angustata in dimidio apicali serrata subcoriacea supra dense cinereo-adpresso-strigosa infra dense fulvido-adpresso-strigosa; nervi supra obscuri subtus distincti 3-4-jugi. Scapi 1-2, 10 cm. alti, uniflori pilis atratis septatis glanduloso-capitatis undique densius induti; bracteae duae supra medium scapum insertae $\pm$ patentes circ. 5 mm. longae lineares strigosae. Flores pro genere magni (kermesini). Calyx 7-8 mm. longus extus pilosus intus glaber in lobos quinque sublineares vel lineari-lanceolatos acuminatos fere ad basin partitus. Corolla 4.5 cm. longa, medio 2.5 cm. lata (in sicco), ventricosa, extus sparsim pilis atratis septatis glanduloso-capitatis praedita tubo fere 3 cm. longo, ore multum obliquo lobis inaequalibus acutis duobus superioribus $\pm$ 1 cm. longis inferioribus tribus $\pm$ 1.5 cm. longis. Stamina 4 inclusa basi corollae affixa filamentis paulo dilatatis sparse

pilosulis antheris per paria connatis. Ovarium sparse pilosulum. Capsula nondum matura circ. 2.5 cm. longa lineari-oblonga.

"Plant of 2-4 inches. Flowers deep crimson. Open dry situations on rocks and cliffs on the Yung-peh Mountains, Yunnan, Western China. Lat. 26° 40' N. Alt. 9000-10,000 ft. July 1914." G. Forrest. No. 12,829.

Eria obvia, W. W. Sm. Sp. nov.

Species ex affinitate *E. bractescens*, Lindl. ; bracteis angustis ovaria subaequantibus, sepalis petalisque multo angustioribus, labello minimo tantum 2 mm. lato inter alia recedit.

Pseudodulbi aggregati anguste cylindracei, apice attenuati, saepius curvuli, 8-12 cm. longi, 2-2.5 cm. crassi, plerumque triphylli. Folia usque ad 25 cm. longa, 2-2.5 cm. lata, anguste lanceolata, acuta, basi cuneata, subcoriacea. Racemi 1-2, ex axillis foliorum orientes, foliis paululo breviores, plerumque 15-18 cm. longi, graciles, laxiflori, 20-30-flori ; bractee 6-10 mm. longae, circ. 2 mm. latae, lineari-lanceolatae acutae vel acuminatae, multo reflexae saepe rhachidi subadpressae, albidae vel pallido-luteae, glabrae ; sub inflorescentia bractee 1-3 inanes pedunculo brevi insidentes ; rhachis minute albo-villosula ; pedicelli $\pm$ 1 cm. longi bractee subaequantes vel paulo majores minute villosuli. Flores in vivo circ. 1 cm. diametro, resupinati, glabri, albi, odore cinnamomi tenui fragrant. Sepalum dorsale 10-11 mm. longum, 2 mm. latum, anguste lanceolatum acutum erectum vel paululo inflexum, sepala lateralibus circ. 8 mm. longa, 3 mm. lata, valde falcata, subacuta vel acuta, mentum circ. 3 mm. longum obtusum formantia. Petala circ. 8 mm. longa, 1 mm. lata, caeterum sepalo dorsali subsimilia. Labellum basi oblonga vix 2 mm. longa praeditum, lobi laterales auriculiformes vix 1 mm. superantes erecti margine purpureo-suffusi, intermedius late ovatus obtusus, usque ad mentum ipsum reflexus, circ. 3 mm. longus, 2 mm. latus, carnosulus, viridi-flavidus, lamellis tribus fere per totum discum percurrentibus, mediana paulo indistincta. Anthera mitraeformis apice purpureo-tincta pollinibus 8 pyriformibus.

"Dry open rocky situations on the lava-bed west of Teng-yueh, Yunnan. Lat. 25° N. Alt. 4500 ft." Plants collected in 1912 by George Forrest, flowered in the Royal Botanic Garden, Edinburgh, in July 1914.

Of the species of *Eria* known from the Indo-Chinese region *E. obvia* appears to come nearest *E. bractescens*, Lindl., but differs especially in the bracts, petals, and labellum from descriptions of that species. Cf. the figure and description of Himalayan specimens of *E. bractescens* by King and Pantling in Ann. Bot.

Gard., Calc., viii, 120, t. 166; and Kränzlin in Pflanzenreich—Orchidaceae-Monandreae-Dendrobiinae, part ii, 88. The plant has flowered freely with graceful racemes of white flowers which are by no means fugacious (King and Pantling note that Himalayan plants of *Eria bractescens* do not survive more than two days). The blooms have a faint odour of cinnamon. The empty bracts below the inflorescence are not conspicuous as in *E. bractescens*, as they are more or less concealed by the sheathing leaf.

***Eriolaena yunnanensis*, W. W. Sm. Sp. nov.**

Species ex affinitate *E. Candollei*, Wall. a qua foliis integris supra fere glabris fructibus minoribus inter alia differt.

Arbor 10–18 m. alta ramulis crassis primo $\pm$ stellato-tomentosis mox glabrescentibus. Folia 5–10 cm. longa 3–5 cm. lata oblonga vel ovato-oblonga apice subacuta vel breviter acuminata basi rotundata vel brevissime cordatula coriacea integra vel margine paullulo sinuata supra (matura tantum visa) subglabra (juniora probabiliter $\pm$ stellato-tomentosa) subtus dense ferrugineo-stellato-tomentosa; nervi basi 5 palmatim orientes, duo exteriores breves, medius aliis multo major secundarios 3–4 utrinque gignens, omnes supra impressi subtus eminentes; petioli 1–2 cm. longi $\pm$ stellato-tomentosi. Pedunculi pluriflori. Flores desunt. Capsula 2.5–3 cm. longa circ. 2 cm. lata ovoidea lignosa 10-lobatula 10-valvata loculicide dehiscens extus ferrugineo-stellato-furfuracea; semina (alis exceptis) 8 mm. longa 4–5 mm. lata ovoidea compressiuscula; alae 1.2–1.5 cm. longae, 4–6 mm. latae brunneae.

“Tree of 20–40 ft. Open situations in mixed forest on the slopes of the Shweli Valley on the Teng Yueh-Talifu road, Yunnan. Alt. 6000–7000 ft. September 1905.” G. Forrest. No. 809.

“Tree of 30–50 ft. In fruit. In forests on the divide between the Shweli and Yengyueh Valleys, Yunnan. Lat. 25° N. Alt. 7000 ft. May 1912.” G. Forrest. No. 7893.

Forrest collected this plant twice—with an interval of nearly seven years—but did not succeed in obtaining flowers. It is so distinct from the *Eriolaenae* of India and Burma that I have no hesitation in describing it from the foliage and fruits—apparently the first species of this genus definitely recorded from China. Henry, however, collected near Szemao (No. 12,506A in Herb. Edin.) an allied species in fruit with larger deeply cordate leaves which so far has not received a name.

Herminium Souliei, Rolfe, var. **lichiangense**, W. W. Sm.
Var. nov.

Foliis floribusque typo multo major. Planta ad 30 cm. alta. Folia 2-3, oblonga, ad 12 cm. longa, ad 2 cm. lata, obtusa. Spica ad 15 cm. longa. Flores eis typi simillimi sed omnibus partibus majores.

"Plant of 9-12 inches. Flowers green. Open stony pasture on the eastern flank of the Lichiang Range. Lat. 27° 35' N. Alt. 11,000 ft. Aug. 1910." G. Forrest. No. 6399.

A very much robust plant than Forrest No. 4864 from the Tali Range. On dissection and comparison of the flowers I find no difference except in size.

Impatiens clavicuspis, Hook. f., nomen tantum in Herb. Kew.
et Herb. Edin. descr. W. W. Sm.

Species inter *I. aquatilem*, Hook. f. et *I. radiatam*, Hook. f. in Herbario Kewensi a claro Hookero f. sub numero 37 apud species chinenses posita.

Herba 30-60 cm. alta erecta substricta, setulis glanduligeris paucis exceptis glabra, caule parce ramoso gracili basi longe nudo superne folioso. Folia 7-9 cm. longa, 2-3.5 cm. lata, petiolo 1-2 cm. longo gracili praedita, alterna tenuiter chartacea ovato-lanceolata vel lanceolata longiuscule acuminata basi ± late cuneata, regulariter crenato-serrata setulis inter crenaturas interjectis, subtus pallida nervis utrinque 6-8 obscuris. Pedunculi axillis superioribus orientes foliis paulo longiores erecti graciles 10-12-flori basi longe nudi; pedicelli 1-1.5 cm. longi, fructiferi paulo elongati; bracteae 6-8 mm. longae, ovatae in aristam glanduligeram laminae subaequalem productae subsistentes. Flores majusculi pallido-lutei apice purpureo-tincti vel pallido-purpurei basi luteo-albidi. Sepala 2, oblique ovato-rotundata 4-5 mm. diametro in aristam glanduligeram circ. 2 mm. longam acuminata, membranacea multinervia. Vexillum suborbiculare circ. 1 cm. diametro costa distincta apiculata. Alae 3 cm. longae; lobus basalis subrotundatus circ. 1 cm. diametro; distalis duplo longior a basi paulo dilatata sensim angustatus. Labellum saccatum circ. 2 cm. longum (calcare excluso), basi in calcar 1 cm. longum vel paulo ultro incurvum attenuatum, ore horizontali 1.6-1.7 cm. lato apiculato. Filamenta late linearia antheris ovatis. Ovarium lineare rectum acutum. Capsulae 2.5 cm. longae lineares vix stipitatae acutae oligospermae. Semina semimatura circ. 2 mm. longa breviter fusiformia.

"Plant of 1-2 ft. Flowers pale yellow, tips of corolla

purple. Shady moist situations on the divide between the Mekong and Yung Chang Valleys on the Teng Yueh-Talifu road. Lat. 25° 10' N. Alt. 8000-9000 ft. West Yunnan. Sept. 1905." G. Forrest. No. 1004.

"Plant of 1-2 feet. Flowers purple (pale) shading to yellowish white at base of corolla. Damp shady places on the Ming-Kwong-Irrawadi divide. Lat. 26° N. Alt. 7000-8000 ft. Oct. 1905. Upper Burma and N.W. Yunnan." G. Forrest. No. 1006.

"Yunnan, Mengtze, 5500 ft., yellow flowers." Henry. No. 9762 in Herb. Kew.

"Yunnanfu; fl. jaunes." Ducloux. No. 432 in Herb. Kew. (This is probably the same.)

Impatiens cyclosepala, Hook. f. nomen tantum in Herb. Kew. et Herb. Edin. descr. W. W. Sm.

Species ante *I. Davidi*, Franch. in Herbario Kewensi a claro Hookero f. sub numero 81 in serie specierum chinensium posita.

Herba 30-60 cm. alta erecta primo crispato-setosula mox subglabrescens caule supra parce ramoso vix robusto basi longo nudo superne folioso. Folia 7-9 cm. longa 2.5-3.5 cm. lata, petiolo 1-2 cm. longo primo ± dense fulvo-crispato-setosulo praedita, alterna charactea ovato-lanceolata longiuscule acuminata basi ± late cuneata, regulariter serrata serraturis glanduloso-apiculatis, supra scabridiuscule setosula, infra subglauca vel apud costam setosula nervis utrinque 5-7. Pedunculi axillis superioribus orientes foliis multo breviores erecti vel suberecti 1-3-flori; pedicelli 1-2 cm. longi; bractae circ. 3 mm. longae late ovatae breviter obtuse apiculatae. Flores majusculi flavidi perpaululum purpureo-tincti. Sepala 2, orbicularia 8-10 mm. diametro brevissime glanduloso-apiculata membranacea reticulato-nervosa. Vexillum suborbiculare circ. 1.5 cm. diametro, costa in medio cornuto-carinata. Alae circ. 2.5 cm. longae, sessiles; lobus basalis subrotundatus circ. 1 cm. diametro; distalis paulo longior late obovatus. Labellum late saccatum circ. 2 cm. longum (calcare excluso), medio 1 cm. latum, basi in calcar 4-5 mm. longum multo incurvum abrupte attenuatum ore 1.4 cm. lato paulo ascendente apiculato. Filamenta 4-5 mm. longa antheris apice acutatis. Ovarium lineare acutum. Capsula matura deest.

"Plant of 1-2 ft. Flowers yellowish, faintly marked light purple. Moist open situations in side valleys on the eastern flank of the Tali Range, West Yunnan. Lat. 25° 40' N. Alt. 8000-9000 ft. June 1906." G. Forrest. No. 4271.

Impatiens Forrestii, Hook. f. nomen tantum in Herb. Kew. et Herb. Edin. descr. W. W. Sm.

Species ante *I. cyclosepalum*, Hook. f. et *I. Davidi*, Franch. in Herbario Kewensi a claro Hookero f. sub numero 80 in serie specierum chinensium posita.

Herba 30-90 cm. alta erecta caule subsimplici vel paulo ramoso gracili basi longe nudo superne folioso glabro vel supra setis raris consperso. Folia magna usque ad 15 cm. longa, ad 5 cm. lata, petiolo 1-2 cm. longo glabro praedita, alterna, exsiccata membranacea, ovato-lanceolata vel subelliptica acuminata basi $\pm$ late cuneata regulariter serrata serraturis magnis glanduloso-apiculatis supra hic illic setosula infra glaucescentia sparse minute setosula nervis utrinque 8-9. Pedunculi axillis superioribus orientes folia aequantes vel paulo breviores suberecti vel paulo deflexi flexuosi graciles 2-3-flori; pedicelli 1-2 cm. longi glabri; bracteae 3-4 mm. longae ovato-lanceolatae glanduloso-apiculatae costa distincta nigra nonnunquam setosula praeditae. Flores magni roseo-purpurei saturatius maculati et striati. Sepala 2, oblique late ovata fere orbicularia 8-9 mm. longa, longiuscule glanduloso-apiculata membranacea reticulato-nervosa. Vexillum reniforme circ. 2.8 cm. latum 1.8-2 cm. longum costa distincte carinata apicem versus cornuta. Alae 3.5 cm. longae vel paulo ultro breviter stipitatae; lobus basalis subrotundatus diametro circ. 1.4 cm.; distalis fere duplo longior falcatis flabelliformis obtusus. Labellum late saccatum cum calcare circ. 3 cm. longum medio (in sicco) circ. 1.5 cm. latum, basi in calcar circ. 1 cm. longum incurvum abrupte attenuatum ore 1.8 cm. lato ascendente apiculato. Filamenta 3-4 mm. longa antheris acutatis. Ovarium lineare acutum. Fructus deest.

"Plant of 1-3 ft. Flowers rose purple with darker markings. Moist open and shady situations on humus-covered boulders in side valleys on the eastern flank of the Tali Range, West Yunnan. Lat. 25° 40' N. Alt. 9000-10,000 ft. July 1906." G. Forrest. No. 4275.

"Branched plant of 1-2 ft. Flowers rose-red. Sides of streams and similar moist shady situations on the Irrawadi-Ming-Kwang divide, also in the Irrawadi basin, Upper Burma. Lat. 25° 50' N. Alt. 8000-10,000 ft. Oct. 1905." G. Forrest. No. 1002.

Impatiens pinetorum, Hook. f. nomen tantum in Herb. Kew. et Herb. Edin. descr. W. W. Sm.

Species inter *I. loulanensem*, Hook. f. et *I. dichroam*, Hook. f. in Herbario Kewensi a claro Hookero f. sub numero 26 apud species chinenses posita.

Herba erecta ramosa glabra 30-60 cm. alta floribus majusculis caule sat robusto ramisque foliosis. Folia 4-10 cm. longa, 2-4.5 cm. lata, alterna apicem versus approximata petiolata membranacea ovato-elliptica vel subelliptica acuta vel acuminata, crenata setulis nigris inter crenaturas interjectis, subtus glauca basi in petiolum brevem (5-10 mm.) angustata, nervis utrinque 6-8. Pedunculi foliis breviores vel subaequantes graciles erecti saepe apices ramulorum versus aggregati multiflori; pedicelli filiformes usque ad 1 cm. longi; bracteae ovatae usque ad 5 mm. longae in aristam glanduligeram circ. 1 mm. longam productae. Flores ad 2 cm. vel paulo ultro expansi luteo-albi kermesino-maculata. Sepala 2, oblique ovata 8-10 mm. longa in aristam brevem acuminata membranacea nervis obscuris. Vexillum rotundatum 10-12 mm. diametro costa dorso carinata mucronata. Alae ad 2.5 cm. longae basi cuneatae; lobus basalis subrotundus; distalis multo longior a basi perpendicularum dilatata sensim angustatus acutus. Labelli infundibularis limbus symmetricus ad 3 cm. longus in calcar gracile ascendens vel (saltem in sicco) fere rectum limbo multo longius sensim attenuatus ore ascendente cuspidato. Filamenta circ. 3 mm. longa. Ovarium haud maturum fusiforme rectum.

"Plant of 1-2 ft. Flowers yellowish white with a spot of crimson on the lower lobe. Very moist situations in pine woods on the Teng Yueh-Talifu road, near Shiu-Chai. Lat. 25° 15' N. Alt. 7000-8000 ft. Sept. 1905. West Yunnan." G. Forrest. No. 1104.

Impatiens polyceras, Hook. f. nomen tantum in Herb. Edin. descr. W. W. Sm.

Species inter *I. cynantham*, Hook. f. et *I. margaritifera*, Hook. f. in Herbario Kewensi a claro Hookero f. sub numero 47 apud species chinenses posita.

Herba erecta ramosa glabra 20-75 cm. alta floribus parvis caule robusto ramisque foliosis glandulis stipitatis hic illic sparse conspersis. Folia 5-7 cm. longa, 2-3 cm. lata, alterna petiolata in sicco tenuiter membranacea ovato-lanceolata vel lanceolata acuminata crenata setulis nigris inter crenaturas interjectis, subtus glauca basi in petiolum alatum circ. 1 cm. longum late cuneata nervis utrinque 5-7. Pedunculi folia suprema subaequantia graciles erecti multiflori; pedicelli filiformes 1-1.5 cm. longi; bracteae lanceolatae 2-3 mm. longae in aristam brevem glanduligeram productae. Flores inter minores aurantiaci. Sepala 2, oblique lanceolata 3-4.5 mm. longa, in aristam glanduligeram producta. Vexillum orbiculare vel oblatum circ. 6 mm. diametro dorso bene carinatum. Alae sessiles 1.5-2 cm. longae; lobus basalis subrotundatus;

distalis paullo longior dolabriformis obtusus. Labelli limbus cymbiformis usque ad 2.5 cm. longus in calcar gracillimum incurvum limbo longius attenuatus, ore 8-9 mm. diametro paullo ascendente apiculato. Filamenta circ. 2 mm. longa antheris obtusis. Ovarium lineare apiculatum. Capsulae 1-1.5 cm. longae lineares oligospermae. Semina obovoidea circ. 2.5 mm. longa subtuberculata fulva.

"Sides of streams on descent of pass between Sung Kwei and Lang Kung Valleys. Alt. 9000 ft. Yunnan, 1904." G. Forrest. No. 483. *Type*.

"Plant of 1-2½ ft. Flowers orange. Moist pasture along the base of cliffs on the eastern flank of the Tali Range, Yunnan. Lat. 25° 40' N. Alt. 9000-10,000 ft. Aug. 1910." G. Forrest. No. 6904.

Also at Tsekou, Yunnan; coll. Père T. Monbeig, in Kerb. Kew.

Magnolia taliensis, W. W. Sm. Sp. nov.

Species ex affinitate *M. pumilae*, Andr.; foliis subobtusis subtus fulvo-pilosulis, ovariis glabris recedit.

Arbor vel frutex 3-7 m. alta, ramulis rubridis primo sparse rufo-pilosulis, mox glabris. Folia (superiora juniora tantum visa) 5-9 cm. longa, 2-4 cm. lata, oblonga, basi subrotundata, apice obtusa vel subobtusa, tenuiter membranacea, supra glabra costa rufo-pilosula excepta, infra pallidiora plus minusve sparse rufo-pilosula, nervis circ. 10 paribus, supra obscuris, infra eminentibus, ut costa densius rufo-pilosulis. Pedunculi breves, 5-15 mm. longi, arcuati, uniflori, rufo-pilosuli. Flores subcernui 8-9 cm. diametro, albi. Sepala 3, ovata, obtusa, ad 3 cm. longa. Petala 6, ovato-oblonga, ad 4 cm. longa. Stamina numerosa antheris 8 mm. longis filamentis 2 mm. longis, spica ovariorum minora. Carpella (immatura) glabra, rostrata, 2-semiifera.

"Shrub or tree of 8-20 ft. Flowers cream-coloured. Dry open situations amongst scrub on the eastern flank of the Tali Range. Alt. 7000-8000 ft. Lat. 25° 40' N. July 1910." G. Forrest. No. 7182.

Pleurospermum aromaticum, W. W. Sm.

Species affinis *P. Davidi*, Franch. sed foliis bracteisque inter alia manifeste divergit.

Rhizoma crassum. Caulis 60-90 cm. altus, basi reliquiis petiolorum pristinorum loriformibus cinctus, glaber. Folia firme papyracea glabra subtus glauca venis utrinque conspicue glandulis conspersis, petiolo 15-20 cm. longo robusto praedita; lamina ambitu ovata 20-25 cm. longa, 4-pinnata; pinnae primariae tres; segmenta ultima ovata circ. 2.5 cm. longa,

1.5 cm. lata, ad medium pinnatifida, lobulis ultimis ovatis circ. 5 mm. longis obtusiusculis margine minute scabridulis; folia superiora vaginis usque ad 6 cm. longis praedita. Umbellarum pedunculi usque ad 20 cm. longi robusti glabri; involucri phylla 5-7, foliacea, 10-20 cm. longa pinnata vel bipinnata segmentis similibus eis foliorum radicalium sed angustioribus, vagina $\pm$ magna praedita; umbellae radii 30-50, robusti glabri 7-10 cm. longi; involucelli phylla $\pm$ 10, linearia, nonnunquam apicem versus tripartita, complanata, dorso margineque albo-glanduloso-serrata, 3-5 cm. longa, flores superantia viridia nec scariosa; umbellulae 30-50-florae; pedicelli 6-8 mm. longi. Petala obovata circ. 2.5 mm. longa, circ. 2 mm. lata apice inflexa albida. Ovarium (immaturum) atro-viride circ. 2 mm. longum.

"Plant of 2-3 ft, strongly aromatic. Petals dull white, gynaeceum dark green. Root used medicinally by the Chinese. Ledges of cliffs and rocky alpine pasture on the western flank of the Lichiang Range. Lat. 27° 30' N. Alt. 12,000-13,000 ft. July 1910." G. Forrest. No. 6188.

Pleurospermum linearilobum, W. W. Sm. Sp. nov.

Species valde affinis *P. foetenti*, Franch. sed habitu elatiore foliis aliter divisus inter alia differt.

Rhizoma sat crassum. Caulis 60-120 cm. altus, robustus, vaginis foliorum inferiorum hornotinorum et pristinorum membranaceis usque ad 10 cm. cinctus, glaber. Folia papyracea glabra subtus glaucescentia, vaginis angustis 4-5 cm. longis petiolis 6-10 cm. longis praedita; lamina ambitu ovato-oblonga, 8-10 cm. longa, 3-pinnata; pinnae primariae 3-4-jugae; segmenta ultima circ. 1 cm. longa in lobulos lineares 3-5 mm. longos partita. Umbellarum pedunculi 15-20 cm. longi robusti striati glabri; involucri phylla 8-12, foliacea, 2-4 cm. longa, pinnata vel bipinnata lobulis ultimis similibus eis foliorum radicalium, vaginā latiusculā praedita; umbellae radii $\pm$ 25, robusti glabri usque ad 8 cm. longi; involucelli phylla 6-8, elliptica vel obovata, 5-10 mm. longa, nunc omnino scariosa, nunc laminā parvā viridi 3-5-fida apice praedita, flores subaequantia; umbellulae $\pm$ 20-florae; pedicelli 8-10 mm. longi glabri. Petala suborbicularia 1 mm. longa, alba. Ovarium (immaturum) circ. 2 mm. longum circ. 2 mm. latum ei *P. foetentis*, Franch. simillimum.

"Plant of 2 ft. Flowers white. Shady situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,000-11,000 ft. July 1910." G. Forrest. No. 6181. *Type*.

"Plant of 1-2 ft. Petals white. Shady openings in pine

and mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 10,000-11,000 ft. July 1910." G. Forrest. No. 6051.

This species does not appear to have the rank odour characteristic of *P. foetens*, Franch., which is its nearest ally.

Rhododendron Clementinae, G. Forrest.

Species cum nulla specie foliis subtus tomentosis praedita adhuc descripta congruens; ex descriptione ad *R. Principis*, Franch. spectat a quo sepalis haud ciliolatis staminibus furfuraceo-pilosis inter alia discrepat.

Frutex 2-3 m. altus erectus; rami hornotini breves crassissimi glabri vetustiores cinerei decorticantes; gemmae foliariae ovoideae perulis ovatis apiculatis glabris. Folia 9-11 cm. longa, 4-6 cm. lata ovalia apice rotundata vel obtusissima vix vel breviter indurato-apiculata basi aequae rotundata vix vel breviter cordatula margine paullulo revoluta valde coriacea supra atroviridia rugosula nervulis reticulatis haud lucida glabra subtus tomento denso mollissimo cinnamomeo induta; costa supra leviter impressa subtus prominula; petioli $\pm$ 2 cm. longi crassi glabri. Inflorescentia densa floribus 7-10 fere umbellatis composita; pedicelli sub anthesin 2-3 cm. longi erecti glabri, in fructu crassati rigidissimi. Calyx minimus $\pm$ 1 mm. longus in lobis triangulares partitus, fructu in discum lignosum 4-5 mm. diametro auctus. Corolla lactea kesmesino-maculata late campanulata 4-4.5 cm. longa siccitate complanata ore $\pm$ 6 cm. lata; tubus 2.5-3 cm. longus basi fere 1 cm. lata extus glaber intus basi ipsa pilosulus; lobi rotundati 1.5-2 cm. diametro breviter emarginati glabri. Stamina usque ad 15 inclusa inaequalia longiora 2 cm. longa filamentis basi fere ad medium albidofurfuraceo-pilosis, antheris 2 mm. longis ochraceis. Ovarium oblongum sulcatum 7-8 mm. longum glabrum; stylus vix 2 cm. longus deflexus glaber stigmate lobulato praeditus. Capsula fere 2 cm. longa, circ. 1 cm. lata, cylindrica recta 7-8-sulcata, ante maturitatem saturate atropurpurea, stylo vulgo delapso nonnunquam persistente. Semina numerosa $\pm$ 1 mm. longa angulata brunnea.

"Shrub of 6-9 ft. Flowers creamy-white with crimson markings. Fruits deep black-purple. In open thickets on the mountains of the Chungtien plateau. Lat. 27° 55' N. Alt. 11,000 ft. Aug. 1913." G. Forrest. No. 10,857.

"Duplicate of No. 10,857 in mature fruit. Oct. 1913." G. Forrest. No. 11,486.

"Duplicate of above collected in 1914 in flower." G. Forrest. No. 12,789.

The species is dedicated to my wife.

Rhododendron Roxieana, G. Forrest. Sp. nov.

Species distinctissima affinis *R. taliensi*, Franch. a quo foliis confertis anguste oblanceolatis subtus densissime ferrugineo-tomentosis pedicellis multo minoribus ovariis tomentosis inter alia recedit.

Frutex 1.5-3 m. altus erectus; ramuli hornotini breves crassi foliis congestis fere omnino velati densissime ferrugineo-tomentosi, vetustiores squamis petiolisque emarcidis atratis induti demum cinerei decorticantes; gemmae florales ovoideae perulis $\pm$ late ovatis usque ad 2.5 cm. longis apice rotundatis vel breviter acuminatis extus dense tomentosis intus sparsius. Folia 7-10 cm. longa, 1-1.5 cm. lata, lineari-oblanceolata vel rarius anguste lanceolata apice vulgo acuta indurato-apiculata basi sensim in petiolum angustata margine paulo revoluta (juventute multo magis revoluta) coriacea supra atroviridia rugosula nitida glabra subtus densissime ferrugineo-tomentosa (juventute prima tomentum sordide album); costa supra impressa subtus elevata; petioli $\pm$ 1 cm. longi crassi dense ferrugineo-tomentosi. Inflorescentia densa floribus $\pm$ 10 fere umbellatis composita; pedicelli sub anthesin 1-1.5 cm. longi tomento denso sordide albido induti. Calyx minimus 0.5 mm. longus vel paulo ultro albido-tomentosus lobis triangularibus haud distinctis. Corolla alba extus roseo-tincta campanulata 2.5-3 cm. longa, siccitate complanata ore 3-3.5 cm. lata; tubus $\pm$ 2 cm. longus, basi circ. 5 mm. latus, extus intusque glaber; lobi rotundati 1-1.5 cm. diametro breviter emarginati glabri. Stamina 10, inclusa inaequalia longiora 1.6-1.7 cm. longa filamentis complanatis supra glabris in triente inferiore allopilosulis antheris 1 mm. longis ochraceis. Ovarium oblongum sulcatum circ. 3 mm. longum, longiuscule albido-tomentosum; stylus vix 2 cm. longus glaber stigmatibus lobulato praeditus. Fructus maturus deest.

"Shrub of 4-6 ft. Flowers white, flushed rose on exterior. Boulder-strewn slopes on the mountains in the N.E. of the Yangtze bend, Yunnan, West China. Lat. 27° 45' N. Alt. 11,000-12,000 ft. July 1913." G. Forrest. No. 10,540.

"Shrub of 8-10 ft. Flowers rose? In open thickets on the mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 10,000 ft. Aug. 1913." G. Forrest. No. 10,991.

"Flowers white. 1914." G. Forrest. Nos. 12,609, 13,005. N.W. Yunnan. 1907. Monbeig. No. 169 in Herb. Edin.

This very distinct-looking plant is akin to *Rhododendron taliensis*, Franch., but differs markedly in the narrow, closely set leaves. I take this opportunity of acknowledging my indebted-

ness for kind hospitality to Mr. and Mrs. Hanna, of Tali-fu, by dedicating this plant to the latter.

Saxifraga macrostigma (Franch.) Engl. et Irmscher, var. **cordifolia**, W. W. Sm. Var. nov.

Habitus et magnitudo varietatis *Georgeanae*, Engl. et Irmscher. Dense caespitosa. Caules bene foliati, dense et longe glanduloso-albo-pilosi. Folia caulina late cordato-ovata, 5-7 mm. longa, 4-5 mm. lata, pilis brevibus glanduliferis supra et margine plus minusve dense obsita, infra glabra vel sparse glandulosa. Pedicelli uniflori dense et longe glanduloso-pilosi. Petala quam sepala 2-plo longiora, oblongo-ovata, circ. 7 mm. longa, circ. 4 mm. lata.

China:—Lichiang Range, Yunnan. G. Forrest. Sine num. in Herb. Edin. Cult. in Hort. Reg. Bot. Edin.

Tanacetum Delavayi, Franch. mss. in Herb. Paris. ex Diels in Roy. Bot. Gard., Edin., Notes, vii (1913), 405—nomen. Ex speciminibus Forrestianis tantum descr. W. W. Sm.

Species nana foliis fere omnibus radicalibus, capitulis in globulum congestis conspicua. Planta 10-20 cm. alta, erecta, aromatica, rhizomate crasso tuberoso praedita. Caules 1-2 basi bene foliati, supra fere nudi, infra $\pm$ dense incano-villosi, sub inflorescentia dense incano-tomentosi. Folia radicalia 6-10, petiolata petiolo 3-5 cm. longo incano-villosulo; lamina 3-6 cm. longa, circ. 2 cm. lata, ambitu oblonga, 2-plo pinnatipartita; segmenta ultima 5-7 mm. longa linearia acuta supra viridia glabra vel subglabra subtus albo-villosa; folia caulina remota, multo reducta, 1.5-2.5 cm. longa, segmentis linearibus pinnatifida. Capitula 15-20, in globulum circ. 2 cm. diametro plerumque congesta, raro paulo diffusa, 6-7 mm. diametro, sessilia vel pedunculo 2-4 mm. longo praedita. Involucri phylla circ. 4 mm. longa, circ. 1 mm. lata, oblonga acuta vel obtusiuscula, pallida scariosa glabra, apice marginibusque purpurascentia. Corolla aurantiaca glabra circ. 4 mm. longa; pappus deest.

"Plant of 3-9 inches, strongly aromatic. Flowers bright orange-yellow. Open rocky situations on mountain meadows on the eastern flank of the Lichiang Range, Yunnan. Lat. 27° 25' N. Alt. 12,000-13,000 ft. Sept. 1906." G. Forrest. No. 3047.

"Aromatic plant of 4-9 inches. Flowers yellow. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 35' N. Alt. 12,000 ft. Sept. 1910." G. Forrest. No. 6557.

Trachydium ? simplicifolium, W. W. Sm. Sp. nov.

Planta distinctissima, dubie ad *Trachydium* relata; cum illo genere ob folia simplicia ob involucri phyllorum absentiam bene non quadrat; fructus (immaturus) ad *Trachydium* certe spectat; fortasse typus generis novi sed sine fructu maturo vix recte describi potest.

Planta perennis 7-10 cm. alta rhizomate modice crasso praedita. Caulis solitarius erectus $\pm$ sparse albo-patentipilosulus. Folia 3-5, simplicia; radicalia vel subradicalia 1-2, petiolo 3-7 cm. longo dense albo-pilosulo vagina ampla 1-2 cm. longa praedita, 1.5-3 cm. longa, 2-4 cm. lata, saepius latiora quam longiora, ambitu latissime ovata breviter vel usque ad medium in lobos tres ovatos grosse crenatos divisa, basi $\pm$ alte cordata, subcoriacea utrinque glabra vel subglabra rarius margine minute pilosula supra viridia subtus pulchre purpurascencia nervis 5 basi digitatim abeuntibus; folia caulina radicalibus subsimilia sed minora petiolis multo reductis laminis nunquam vaginae insidentibus, suprema ad vaginam magnam et laminam perpusillam reducta. Inflorescentia folia vix superans; umbellae 2-3; involucri phylla nulla; umbellae radii 6-10, 1-1.5 cm. longi, glabri; involucelli phylla $\pm$ 10, circ. 5 mm. longa, linearia; umbellulae radii $\pm$ 20, circ. 5 mm. longi. Sepala inconspicua. Petala alba saepe purpurascencia obovata vel suborbicularia apice paulo inflexa basi in unguem brevissimum angustata, 1 mm. longa vel paulo ultro. Ovarium atro-viride 1-1.5 mm. longum. Fructus (immaturus) a latere paulo compressus ad commissuram constrictus jugis carpelli 5 obtusis vittis ad valleculeas solitariis vel rarius binis.

"Plant of 3-4 inches. Petals white, gynaeceum dark green. Barren limy pasture on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 9000-10,000 ft. Oct. 1910." G. Forrest. No. 7394.

A very distinct plant which has been put provisionally in the genus *Trachydium*. The simple leaves and the want of involucre make it a very anomalous member of that genus, and it may yet have to be transferred. The fruit bearing a very close relationship to that of *Trachydium* is unfortunately not mature.

SPECIES AFRICANAE.**Bulbophyllum inopinatum, W. W. Sm. Sp. nov.**

Species ex affinitate *B. nudiscapi*, Rolfe a quo petalis nigro-purpureis suborbicularibus longe ciliatis facile distinguitur.

Pseudobulbi ovoidei teretes nec angulati 3-4 cm. longi vaginis tenuiter membranaceis emarcidis hinc inde obtecti,

monophylli. Folia oblonga, ad 15 cm. longa, ad 3 cm. lata, subobtusata, basi in petiolum 4 cm. longum alte canaliculatum attenuata. Scapi elongati, ad 50 cm. longi, glabri, parte superiore florigera deflexa nigrescente minute punctulata, parte inferiore erecta viridi vaginis spathaceis distantibus circ. 1 cm. longis praedita; spicae multiflorae bracteis ovato-lanceolatis acutis circ. 4 mm. longis nigridis. Sepala 8-9 mm. longa, basi 3 mm. lata, ovato-lanceolata, acuminata, glabra viridia lineis purpureo-brunneis $\pm$ 5 percursa. Petala orbicularia circ. 1 mm. diametro, atro-purpurea margine pilis fuscis longiusculis ciliata basi viridia glabra. Labellum mobile circ. 5-6 mm. longum lineari-lanceolatum, basi circ. 2 mm. latum, atro-purpureum, medio labello excepto densissime crinitum apice pilis 2-3 mm. longis patentibus purpureo-fuscis basi praesertim in marginibus pilis circ. 1 mm. longis fuscis. Columna circ. 2 mm. longa dentibus falcatis longe acuminatis.

Cultivated in Royal Botanic Garden, Edinburgh. Its origin is obscure, but from its very marked similarity to *B. nudiscapum* and its allies it is in all probability from West Tropical Africa. The structure of the petals is the most marked distinction between it and its nearest allies. The labellum is very mobile, densely clothed, except in the middle, with long hairs; the hairs near the tip are susceptible to the slightest current of air.

Polystachya Hamiltonii, W. W. Sm. Sp. nov.

Species in vicinatem *P. Kirkii*, Rolfe et *P. affinis*, Lindl. ponenda; foliis longis, inflorescentiis racemosis, floribus circ. 8 mm. longis, labello trilobo appropinquat, structurā floris valde recedit.

Pseudobulbi caespitosi anguste ovoidei, circ. 2.5 cm. longi, vaginis membranaceis striatis praediti, 3-4-phylli. Folia usque ad 12 cm. longa, $\pm$ 2 cm. lata, oblonga, apice obtusa breviter et oblique emarginata, subcoriacea. Scapi erecti compressi pauciflori (4-6-flori) 4-5 cm. longi, minute pubescentes. Bractee squamiformes ovatae acuminatae 2-3 mm. longae sparse pubescentes. Pedicelli circ. 5 mm. longi dense pubescentes. Sepalum dorsale ovatum acutum 5-6 mm. longum, 2 mm. latum, planum, extus sparse pubescens intus glabrum; sepala lateralibus oblique triangulari-ovata acuta 8-9 mm. longa 3 mm. lata paululo concava extus puberula. Petala anguste spathulata 4 mm. longa, 1 mm. lata, glabra. Labellum trilobum paululo recurvum 7 mm. longum, medio 4 mm. latum; lobi laterales erecti subauriculiformes 2 mm. lati glabri; lobus intermedius late ovatus obtusus 2 mm. longus vix 2 mm. latus; per totum labellum apice excepta currit linea intermedia 1 mm. lata dense albido-

furfuraceo-tomentella. Columna circ. 2 mm. longa, vix 2 mm. lata basi in pedem 3 mm. longum producta.

Nigeria:—Exact locality as yet unknown. Sent to the Royal Botanic Garden by Mr. Kenneth Hamilton in 1913, and flowered in July 1914. The flowers are of a greenish yellow; the trilobed labellum is traversed longitudinally by a narrow strip of whitish scaly tomentum.

SPECIES HIMALENSIS.

Sedum Praegerianum, W. W. Sm. Sp. nov.

Species ex affinitate *S. linearifolii*, Royle; foliis floribusque minoribus, petalis erectis apice approximatis haudquaquam patentibus inter alia recedit; haud remota a *Sedo Hobsonii*, Hamet quod foliis ovatis differt.

Planta perennis radicibus crassiusculis. Caudex erectus crassus. Caules floriferi 7–12 cm. longi graciliusculi simplices glabri rubri, in cultura certe $\pm$ prostrati, in speciminibus siccis ut videtur nonnunquam suberecti. Folia alterna, infra insertionem in calcar non producta, 8–9 mm. longa, circ. 3 mm. lata, lineari-oblonga apice obtusiuscula, vix petiolata, integerrima, glabra, apice marginibusque rubro-tincta. Inflorescentia subcorymbiformis 3–7-flora; bractee foliis subsimiles vel multo minores lineares; pedicelli calyce multo breviores vel nonnunquam subaequantes. Calyx circ. 4 mm. longus, glaber, fere ad imum fissus in lobos lineari-lanceolatos acuminatos, pallido-viridis roseo-suffusus. Corolla circ. 6 mm. longa glabra rosea; petala basi paululo concreta, lineari-lanceolata, acuminata, brevissime apiculata, erectissima. Stamina 10 glabra, filamentis 4–5 mm. longis roseis. Carpella 5, circ. 5 mm. longa; squamae subquadratae, 1 mm. longae, brunneo-rubridae.

East Himalaya:—In the Chumbi Valley, Tibet, at Tarkarpo, at an elevation of 12,000 ft. Rohmoo Lepcha, No. 137 in Herb. Calc. et Herb. Edin. Also in cultivation in the Royal Botanic Garden, Edinburgh, where it flowered July 1914. A *Sedum* of very distinct appearance; the rose-coloured petals remain so erect, even approximate, that the flower has quite the semblance of an *Erica*.

The specific name is in honour of R. Lloyd Praeger, Esq., B.A., who has devoted much attention to the elucidation of the nomenclature of the species of this genus which are in cultivation.