HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

FOURTH SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

VOL. IV.

OR VOL. XXIV. OF THE ENTIRE WORK.

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VOL. IV.—PART I.] [MAY.

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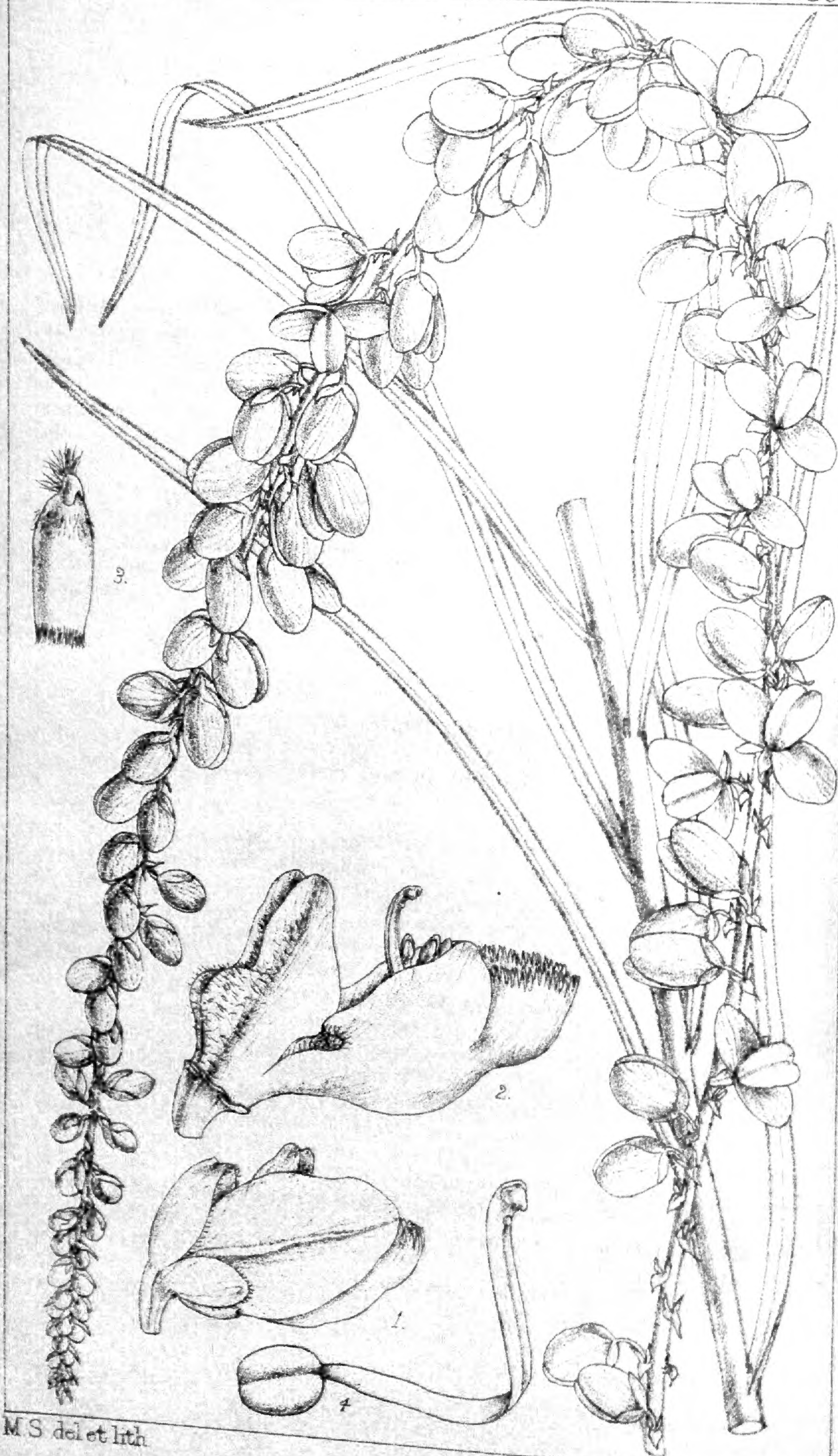


M.S del et lith

Plate 2301.

POLYGALA BUTYRACEA, *Heckel.*

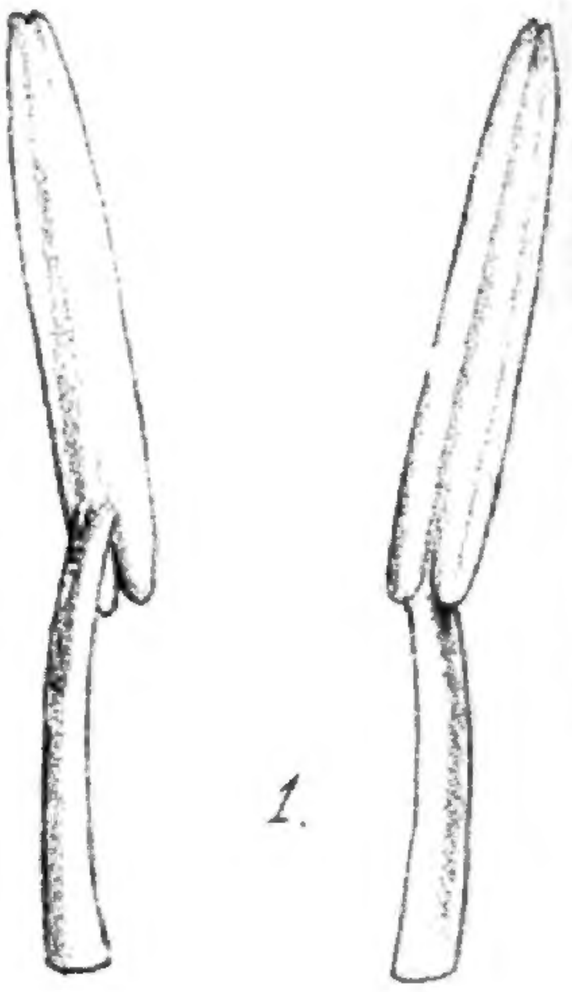
Polygalaceæ.

P. butyracea, *Heck. in Bull. Soc. Géogr. Marseille,* 1889 : '*Les Végétaux utiles de l'Afrique tropicale* ;' frutex pluripedalis caulibus elongatis virgatis hirto-pilosulis, foliis elongato-linearibus apice attenuatis hirtis costa subtus prominente, racemis terminalibus elongatis multifloris basi sæpe ramos 1–2 erectos emittentibus, bracteis persistentibus ovatis acuminatis recurvis, bracteolis geminatis erectis lanceolatis oblongisve quam bractea brevioribus, pedicellis recurvis bractea paullo longioribus, sepalis anticis liberis late ellipticis obtusis concavis, sepalo postico majore cymbiformi apice dorsaliter minute apiculato, alis ovato- v. obovato-ellipticis obtusis integris reticulato-venosis, corollæ carina fimbriato-cristata, petalis posticis carina paullo brevioribus apice obliquo obtusis v. obtusiusculis, ovario obovato-elliptico apice retuso glabro, styli marginibus integris, capsula elliptica emarginata angustissime marginata, seminibus oblongis compressiusculis apicem basinque versus parce albido-pilosulis. P. oleifera, *Treub in Versl. 's Lands Plantentuin,* 1888, 46 (without description).

Hab. W. Tropical Africa ; Sierra Leone, or the interior from thence, *Hart, Scott-Elliot* (No. 4072, cultivated near Kitchom) ; cultivated, S. Leone and indigenous in the Timné and Koranko country, *fide* Heckel (*l.c.*).

Professor Heckel, to whom we are indebted for a specimen enabling us to identify his plant with other examples in the Kew Herbarium, all received since the publication of the first volume of the 'Flora of Tropical Africa,' was the first to describe and call attention, in the memoir cited above, to the economic value of this plant as affording in its seeds on pressure a fatty matter 'of excellent quality and of very agreeable taste.' Professor Heckel says (*l.c.*) that the only *Polygala* described at the date of his publication 'qui réponde de loin' to his plant is *P. rarifolia,* D.C. But this species belongs, as shown in the 'Flora of Tropical Africa,' i. 126, 132, to a different section of the genus in which the anterior sepals are connate. The species most nearly allied to it in the 'Flora' are *P. multiflora,* Poir., and *P. tenuicaulis,* Hook. f., or rather the plant of Barter's which I there called var. *longifolia* of that species, a plant which I observe M. Chodat, in his fine 'Monographia Polygalacearum' (Genève, 1893), regards as a distinct species which he calls *P. Baikiesi.* Professor Heckel gives the indigenous name of *P. butyracea* as *Maloukang* or *Ankalaki.* Mr. Scott-Elliot calls it *Black Beni-seed.* For a detailed account, and analysis, of the 'butter' afforded by the seeds, see Professor Heckel's memoir, which I only know as a separate issue, extracted from the 'Bulletin of the Geogr. Society of Marseilles.'—D. Oliver.

Fig. 1. Lateral view of flower. 2. Same, sepals removed. 3. Seed. 4. Pistil. *All enlarged.*



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M. S. del et lith.

Plate 2302.

IRIS THOROLDI, *Baker*.

Iridaceæ. Tribe Moreæeæ.

Iris (§ **Apogon**) **Thoroldi**, *Baker in Journ. Linn. Soc.* xxx. 168; humilis, fibris radicalibus numerosis graciliter cylindricis, caulibus brevissimis unifloris dense cæspitosis foliorum vetustorum reliquiis copiosis recurvis crinitis, foliis anguste linearibus acutis rigidiusculis marginibus leviter incrassatis longitudinaliter 3–5-nervosis glabris v. minute papilloso-scaberulis, spathæ valvis plus minus membranaceis, floribus pallide luteis, perianthii tubo sursum leviter dilatato, segmentis exterioribus obovatis plus minus barbatis in unguem adscendentem gradatim angustatis, segmentis interioribus oblanceolatis erectis exterioribus vix brevioribus.

Hab. Central Tibet, *W. W. Rockhill*, alt. 17,800 feet, *Surgeon-Capt. W. G. Thorold* (No. 116, *bis*).

Folia 2–3 poll. longa, 1–1½ lin. lata. *Perianthii* tubus 12–14 lin. longus, limbus 9–12 lin. longus.

Mr. Baker regards this as a well-marked novelty belonging 'to the group of beardless Irises with a produced perianth-tube. Its other near neighbours are *I. Rossii*, Baker, of Corea and Northern China, and *I. Ludwigii*, Maxim., a plant of the Altai mountains.'—D. Oliver.

Fig. 1. Anther, back and front. 2. Stigma and bipartite crest. *Enlarged*.

Pl. 2303.

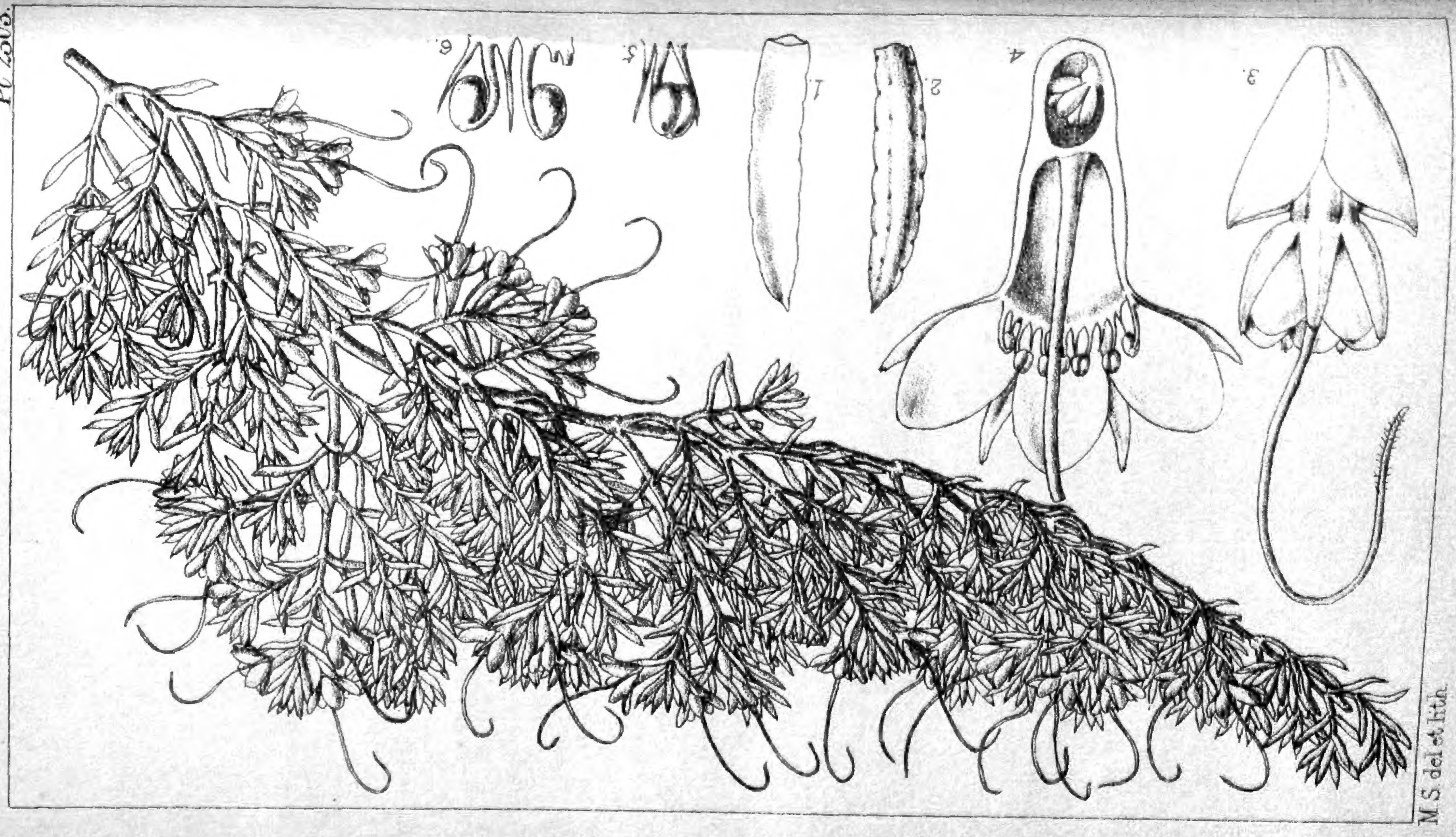

Plate 2303.

DARWINIA SCHUERMANNI, *Benth.*

Myrtaceæ. Tribe Chamælaucieæ.

D. Schuermanni, *Benth. in Journ. Linn. Soc.* ix. 181 ; *Flora Australiensis*, iii. 14 ; decumbens, fruticulosa, ramosa, foliis linearibus mucronatis subsessilibus triquetris facie superiore subplana eglandulosa cæteris glanduloso-pustulatis, floribus folio duplo longioribus in axillis superioribus breviter pedicellatis solitariis, bracteolis geminis calycis basi insertis rotundatis apiculatis conduplicatis tubum calycis glabrum valide 5-costatum æquantibus lobis calycinis lanceolatis acutis petalis late ellipticis v. obovato-rotundatis subæquilongis, filamentis apice incurvis corolla dimidio brevioribus, staminediis subulatis, ovulis c. 6–8 prope basin cavitatis ovarii oblique insertis, stylo longe exserto. Schuermannia homoranthoides, *F. v. Muell. in Linnæa*, xxv. (1852) 387 ; Genethyllis Schuermanni, *F. v. Muell. Frag.* i. 12.

Hab. South Australia, near Port Lincoln, *Wilhelmi*.

Folia $\frac{1}{4}$–$\frac{1}{2}$ poll. longa. *Flores* 5–6 lin. longi.

At the suggestion of Sir F. v. Mueller we willingly accord space to a figure of this 'very rare and almost extinct' species, which has not, so far as we are aware, been collected since it was first gathered by Herr C. Wilhelmi in 1851, whose researches in the neighbourhood of Port Lincoln were greatly forwarded by the kindness of the late Rev. C. W. Schuermann, whose name the species commemorates. Mr. Bentham describes the ovules as geminate, but we find them 6 to 8 in number, as they are also represented by Herr Eckert, in an elaborate drawing of the plant communicated by Sir F. v. Mueller. They should be examined in the fresh state, their appearance in the few dried flowers examined being unusual, possibly from early shrivelling up or abortion. —D. Oliver.

Fig. 1. Leaf, upper side. 2. Under side of same. 3. Flower and sheathing bracts. 4. Vertical section of flower. 5. Stamen and staminodes, front view. 6. Back view of two stamens. *All enlarged.*

6.

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2.

M.S. del et lith.

Plate 2301.

CALOPHACA DEPRESSA, *Oliv.*

Leguminosæ. Subtribe Astragaleæ.

C. (Chesneya) depressa, *Oliv.* (*sp. nov.*); fruticulosa, depressa, cano-tomentosa, foliis 5–7–10-foliolatis, imparipinnatis, foliolis alternis oblongo- v. obovato-ellipticis v. terminali obovato-cuneato, mucronulatis sericeo-villosis, stipulis minutis ovato-lanceolatis, floribus solitariis, calycis 5-fidi segmentis deltoideo lanceolatis acutis v. 2 posticis angustioribus lineari-subulatis, vexillo calyce duplo longiore carina subæquilongo rotundato breviter unguiculato, alis breviter obliquis oblongis obtusis brevissime unguiculatis auricula brevi obtusa, carina obtusa, legumine turgido cylindrico mucronulato villosulo 5–6-spermo.

Hab. Kashmir, Prov. Baltistan, Gilgit Expedition, 6,000 feet, *Dr. Giles* (No. 385), Indus Valley near Katzura, 7,000-8,000 feet, *Duthie* (No. 12083).

Folia $\frac{1}{2}$–1 poll. longa, breviter petiolata; foliola 2–3 lin. longa, brevissime petiolulata. *Flores* $\frac{1}{4}$–$\frac{1}{3}$ poll. longi, breviter pedunculati, axillares, folio sæpe breviores; pedunculo sericeo-villoso. *Legumen* 4–5 lin. longum, $1\frac{1}{2}$–2 lin. latum.

Perhaps more nearly resembling C. parviflora, *Jaub. et Spach*, than any other species in this herbarium, but the flowers are solitary and very much smaller than those of *C. parviflora*, besides a very different calyx; the legume also is much smaller.—D. Oliver.

Fig. 1. Calyx laid open, showing diadelphous stamens. 2. Vexillum. 3. Ala. 4. Carinal petal. 5. Pistil. 6. Seed. *All enlarged.*

M.S del et lith.

Plate 2305.

MELICSMA HERBERTII, *Rolfe.*

Sabiaceæ.

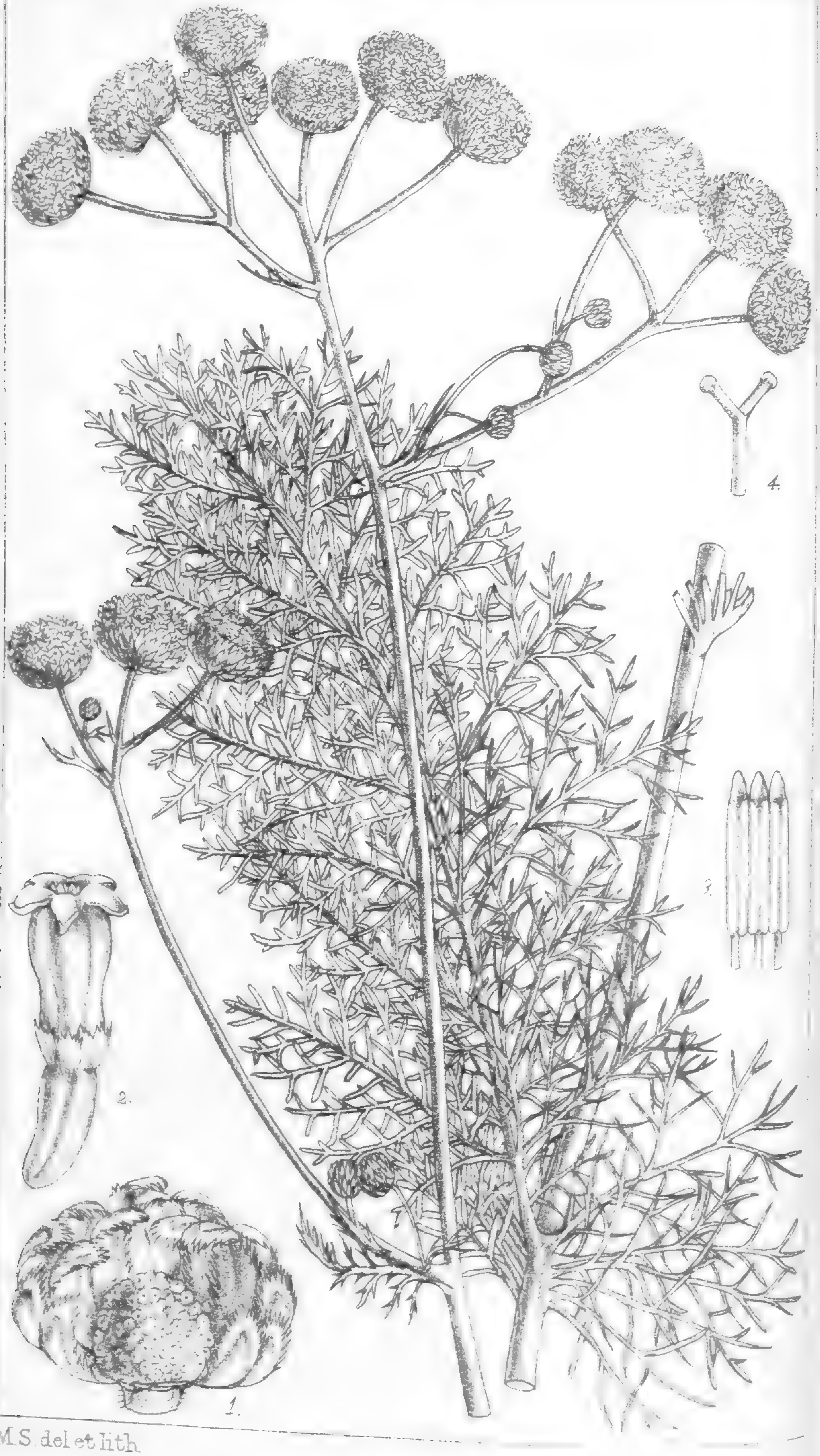
M. Herbertii, *Rolfe in Kew Bulletin*, 1893, 244 ; foliis simplicibus petiolatis ovali- v. oblongo-oblanceolatis basi cuneatim angustatis apice cuspidatis v. breviter acuminatis integris v. leviter repandis coriaceis glabris v. costa subtus nervisque parce setulosis, nervis lateralibus utrinque 7–9–11, paniculis terminalibus folia vix superantibus densifloris ferrugineo tomentellis, floribus subsessilibus, fructibus obovoideis endocarpio osseo.

Hab. West Indies ; St. Vincent, *Messrs. Herbert H. & G. W. Smith* (Nos. 830, 1837).

Arbor 30–60-pedalis. *Folia* 4–7 poll. longa, $1\frac{2}{3}$–$2\frac{2}{3}$ poll. lata ; petiolus $\frac{1}{3}$–$\frac{2}{3}$ poll. longus. *Sepala* orbicularia concava ciliolata. *Petala* 3 majora rotundata glabra calyce paullo majora staminodia totidem basi adnata ; petala minora stamina antherifera opposita squamiformia bifida connectivum incurvum fere superantia. *Ovarium* ovoideum glabrum 2-loculare. *Fructus* $\frac{2}{3}$ poll. longum, 6–7 lin. diam.

This is perhaps the most interesting novelty contained in the fine collections made by the Messrs. Smith in the Windward Islands in 1889 and 1890 at the cost of Mr. F. Ducane Godman, and presented by him to the Royal Gardens. Of this collection a detailed enumeration is given in the Kew Bulletin cited above. The genus is chiefly Indian and Malayan with a few species extending northward in Eastern Asia from Formosa to Japan. None is known from Africa, and very few in the New World. *M. oppositifolia*, Griseb., of Cuba is the only West Indian species in the Kew Herbarium.—D. Oliver.

Fig. 1. Bud. 2. One of larger petals and opposed staminode. 3. Squamiform, bifid, smaller petal and opposed stamen. 4. Pistil. 5. Transverse section of ovary. 6. Fruit and its pedicel. 7. Longitudinal section of fruit, showing intruded endocarp. *All enlarged.*



M.S. del et lith.

Tanacetum tripinnatifid[illegible]

Plate 2306.

TANACETUM TRIPINNATIFIDUM, *Oliv.*

Compositæ. Tribe Anthemideæ.

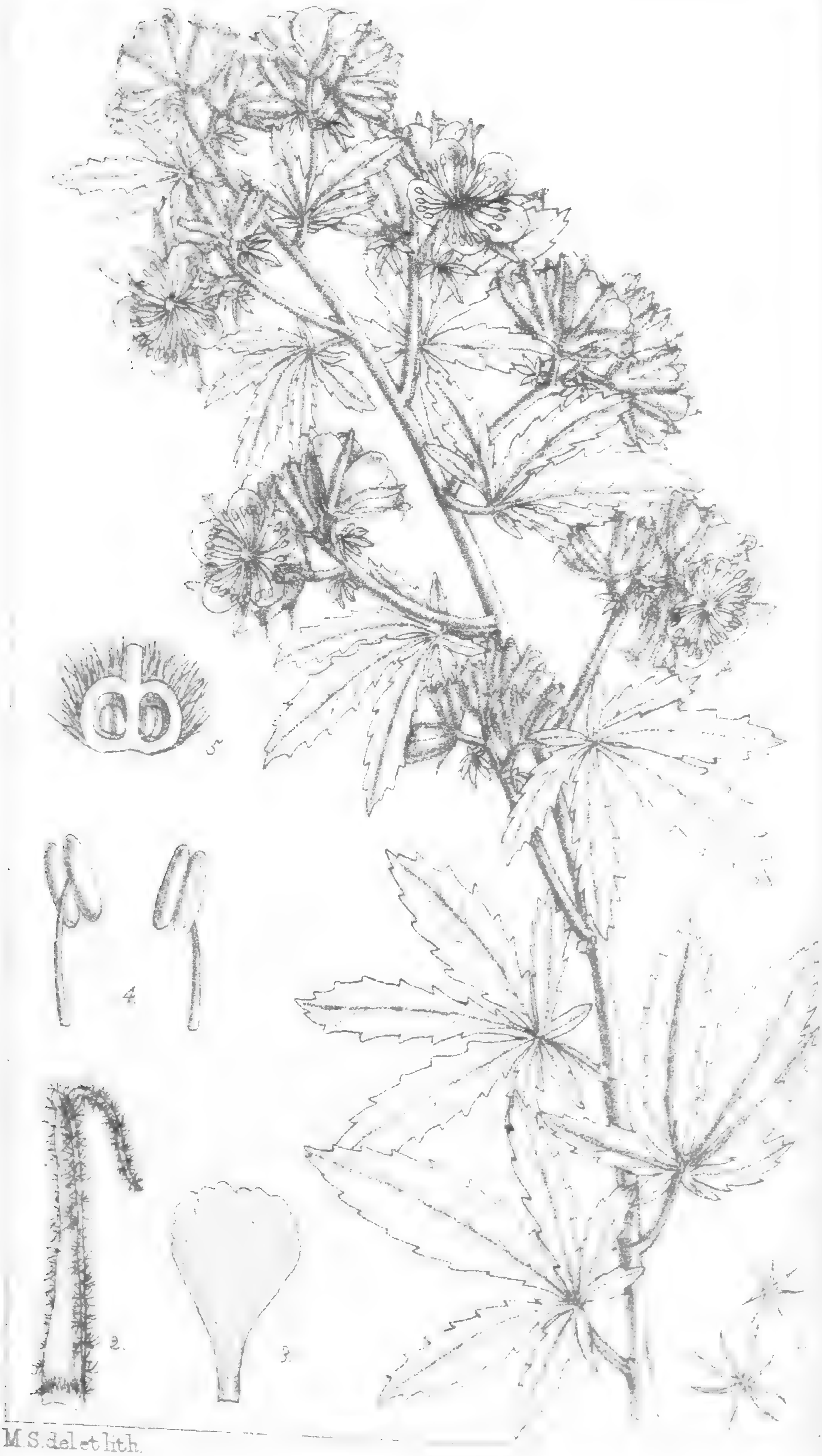
T. tripinnatifidum, *Oliv.* (*sp. nov.*); herba erecta 2–4-pedalis caule costato glabro v. prope nodos pilis sparsis villosulo, foliis caulinis sessilibus bi-tripinnatipartitis segmentis linearibus rigidiusculis setoso-apiculatis glabratis v. pilis sparsissimis gerentibus, capitulis mediocribus multifloris hemisphæricis pedunculatis homogamis in cymis 3–7-cephalis dispositis, pedunculis apicem versus involucrisque plus minus pilosulis, involucri bracteis exterioribus lanceolatis acuminatis interioribus oblanceolatis margine scariosis dentatis fimbriatisve, receptaculo convexo, achæniis (immaturis) leviter incurvis 5-costatis, inferne angustatis apice truncatis pappo scarioso ovario 3–4-plo breviore inæqualiter inciso v. 5–6-partito segmentis acute dentatis coronato.

Hab. Kashmir, Prov. Baltistan, alt. 9,000–10,000 feet, *Duthie* (No. 12128).

Folia inferiora caulina 5–6 poll. longa, pinnis primariis $1\frac{1}{2}$–2 poll. longis; segmentis ultimis $\frac{1}{3}$ lin. latis. *Capitula* 5–6 lin. lata.

The foliage of this plant is very similar to that of T. millefoliatum, *F. & M.*, and of some forms of *T. longifolium*, Wall. In habit it is allied to T. setaceum, *R. & S.* (*sub Pyrethro*).—D. Oliver.

Fig. 1. Receptacle, part of involucre removed. 2. Floret. 3. Anthers. 4. Style-branches. *All enlarged.*



M.S. del et lith.

Ceratosepalum digitatum, Oliv.

Plate 2307.

CERATOSEPALUM DIGITATUM, *Oliv.*

Tiliaceæ.

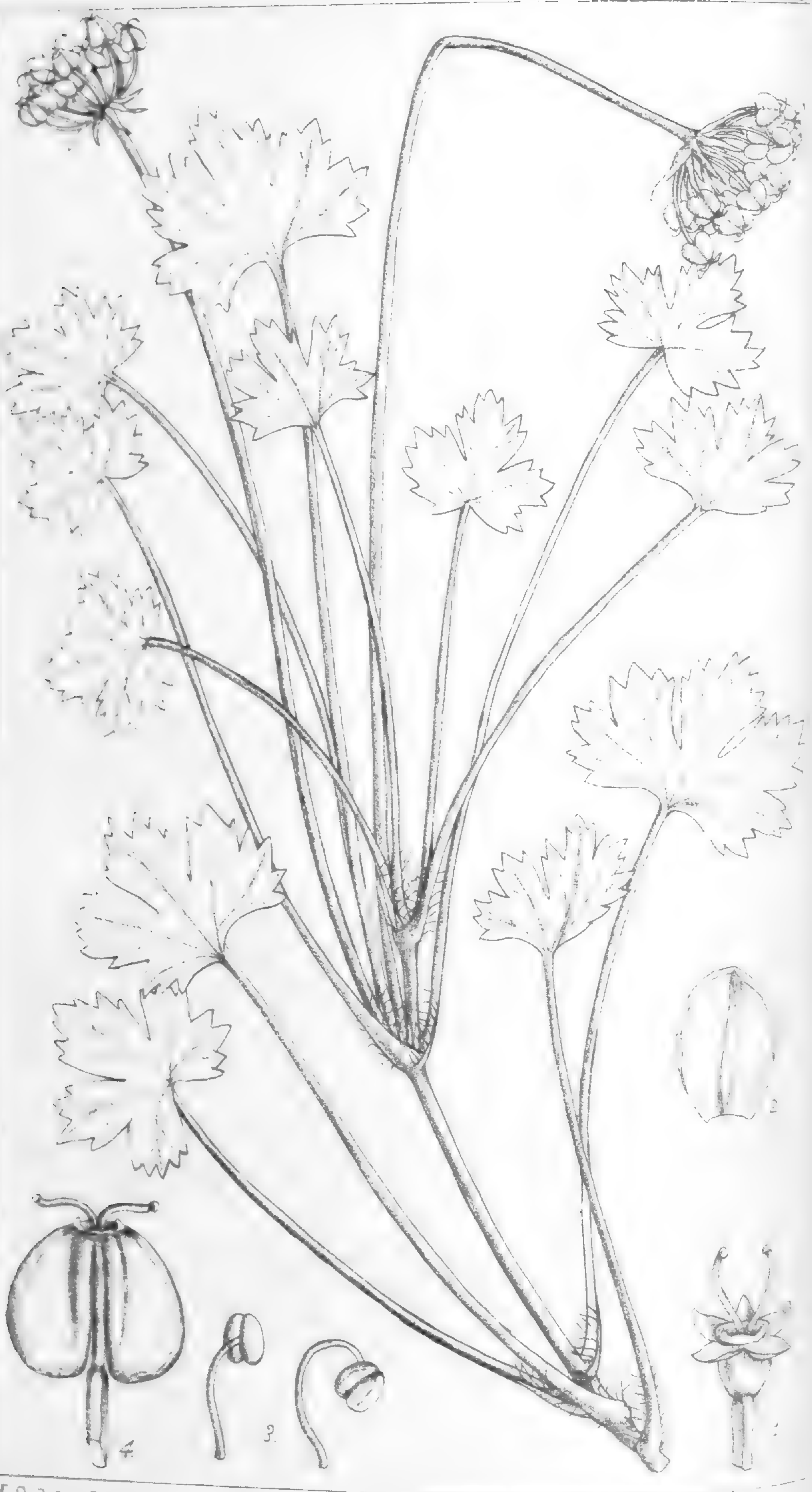
Ceratosepalum, *Oliv.* (*nov. gen.*) *Calyx* 5–partitus, segmentis æstivatione valvatis, linearibus extus hirsutis apice cauda cornuiformi hirsuta appendiculatis. *Petala* libera, calyce breviora, obovato-cuneata unguiculata apice emarginata v. etiam eroso- v. crenato-dentata. *Stamina* indefinita, omnia antherifera ; filamenta gracillima glabra ; antheræ versatiles, oblongæ, didymæ, loculis linearibus parallelis corollam leviter superantes. *Ovarium* depresso-globosum, 5-6-loculare, dense hirsutum, sessile ; stylus elongatus, filiformis, glaber, apice vix aut leviter incrassatus minutissime denticulatus. *Ovula* geminata, adscendentia, infra medium affixa. *Fructus* . . . Frutex *ramis erectis, virgatis.* Folia *alterna, petiolata, profunde 5–7-partita, segmentis oblongo-ovalibus oblanceolatisve, acutis, dentato-serratis, supra pilis stellatis scabrida, subtus stellatim cano-tomentosa.* Flores *in cymis pauci- v. plurifloris pedunculatis terminalibus et in axillis superioribus dispositi, bracteolati ; bracteolæ lineari-subulatæ.*

Hab. Tropical Africa ; neighbourhood of Lake Tanganika, *A. Carson* (No. 1).

C. digitatum, *Oliv.* (*sp. unica*). *Rami* floriferi erecti $1\frac{1}{2}$–2-pedales, tomentelli et stellato-hirsuti, basin versus excepti foliiferi. *Folia* petiolo $\frac{1}{2}$–$\frac{2}{3}$ poll. longo ; segmentis majoribus basi angustatis 1–$1\frac{1}{2}$ poll. longis, 4–5 lin. latis ; in foliis 7-partitis segmentis exterioribus multo minoribus $\frac{1}{3}$–$\frac{1}{2}$ poll. longis ; stipulæ obsoletæ. *Flores* $\frac{1}{3}$–$\frac{1}{2}$ poll. longi.

I believe the affinity of this interesting plant to be with *Honckenya* and *Sparmannia.* It differs from both genera in all the stamens being antheriferous, and in its geminate ovules. The leaves are divided so deeply that it is only on close examination one can discern that they are not compound. The withered petals are, in our dried specimen, of a dull yellowish colour. The appendix of the sepals is curious, but I believe there is indication of similar processes in *Honckenya.* The name which I have adopted, referring to these appendices, has been applied generically by Oersted to a species of *Passiflora,* but by common consent it is regarded as having no claim to generic rank. The name is too applicable to the present plant to be wasted.—D. Oliver.

Fig. 1. Stellate hairs of indumentum. 2. Sepal, showing apical appendix. 3. Petal. 4. Stamen, back and front. 5. Vertical section of ovary. *All enlarged.*



M.S. del et lith.

Trachymene saniculæfolia

Plate 2308.

TRACHYMENE SANICULÆFOLIA, *Stapf.*

Umbelliferæ. Tribe Hydrocotyleæ.

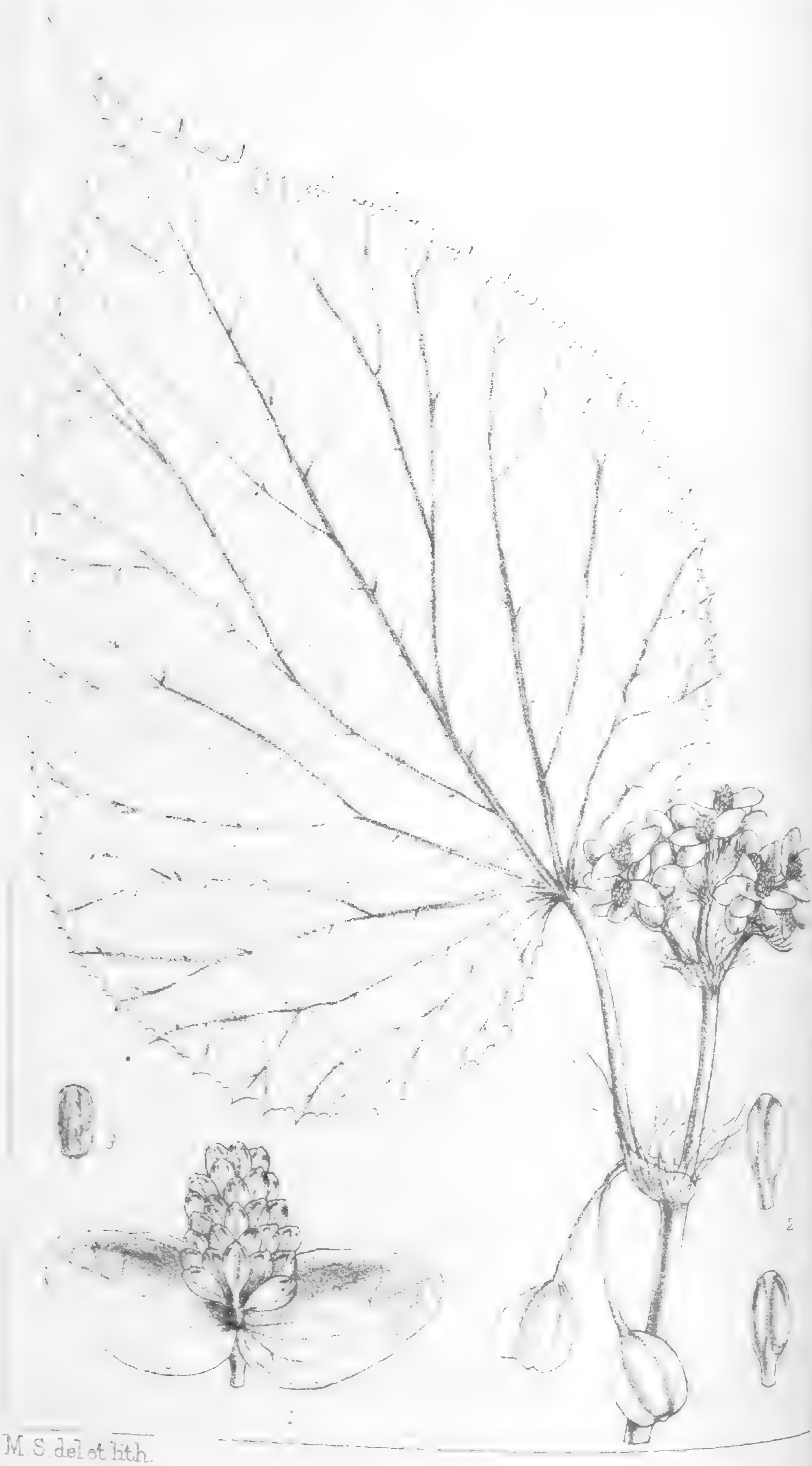
T. saniculæfolia, *Stapf.* (*sp. nov.*); perennis, rhizomate prostrato v. adscendente ramoso, in stirpibus rupicolis valde abbreviato dense foliorum reliquiis squamiformibus vestito, in stirpibus soli humidioris sæpe elongato in parte subterranea crebre radicante et e basi longe prostrato adscendente, internodiis interdum folio longioribus, foliis longe petiolatis cordato-rotundatis plerumque transverse latioribus 3–5-fidis segmentis obovato-cuneatis 3-lobulatis lobulis acute 3 (2–4)-dentatis, cum petiolo glabris v. laxe setoso-pilosis, scapis quam foliis longioribus, involucri foliolis linearibus v. lineari-lanceolatis floribus æquilongis v. eisdem brevioribus, pedicellis compressis flore longioribus, calycis dentibus parvis deltoideis, petalis albis ellipticis obovatisve, fructibus a latere valde compressis late cordato-rotundatis, mericarpiis æqualibus v. subæqualibus glaberrimis exalatis jugis intermediis tenuissimis.

Hab. Borneo, Kinabalu, 7,000–11,000 feet, *Lowe, Burbidge*; 7,700–13,400 feet, *Haviland.*

Folia petiolo 2–5 poll. longo, lamina $\frac{2}{3}$–$1\frac{1}{2}$ poll. lata. *Scapi* 3–10 poll. longi. *Umbellæ* $\frac{2}{3}$–1 poll. diam. *Fructus* $\frac{1}{6}$–$\frac{1}{5}$ poll. latus.

The nearest ally of this plant is *T. humilis*, Benth. (*Didiscus humilis*, Hook. f. in 'Icones Plantarum,' 304), of Victoria and Tasmania, from which it differs in the distinct calyx-teeth and form of the leaves. It is a variable species, both in stature and in the absence or presence of copious loose-spreading rusty-purplish hairs on stem, petioles, and scape, paler when present on the upper surface of the leaves.—O. Stapf.

Fig. 1. Flower and compressed pedicel. 2. Petal. 3. Stamens. 4. Fruit. *All enlarged.*



M. S. del et lith.

Begonia inostegia, Stapf.

Plate 2309.

BEGONIA INOSTEGIA, *Stapf.*

Begoniaceæ.

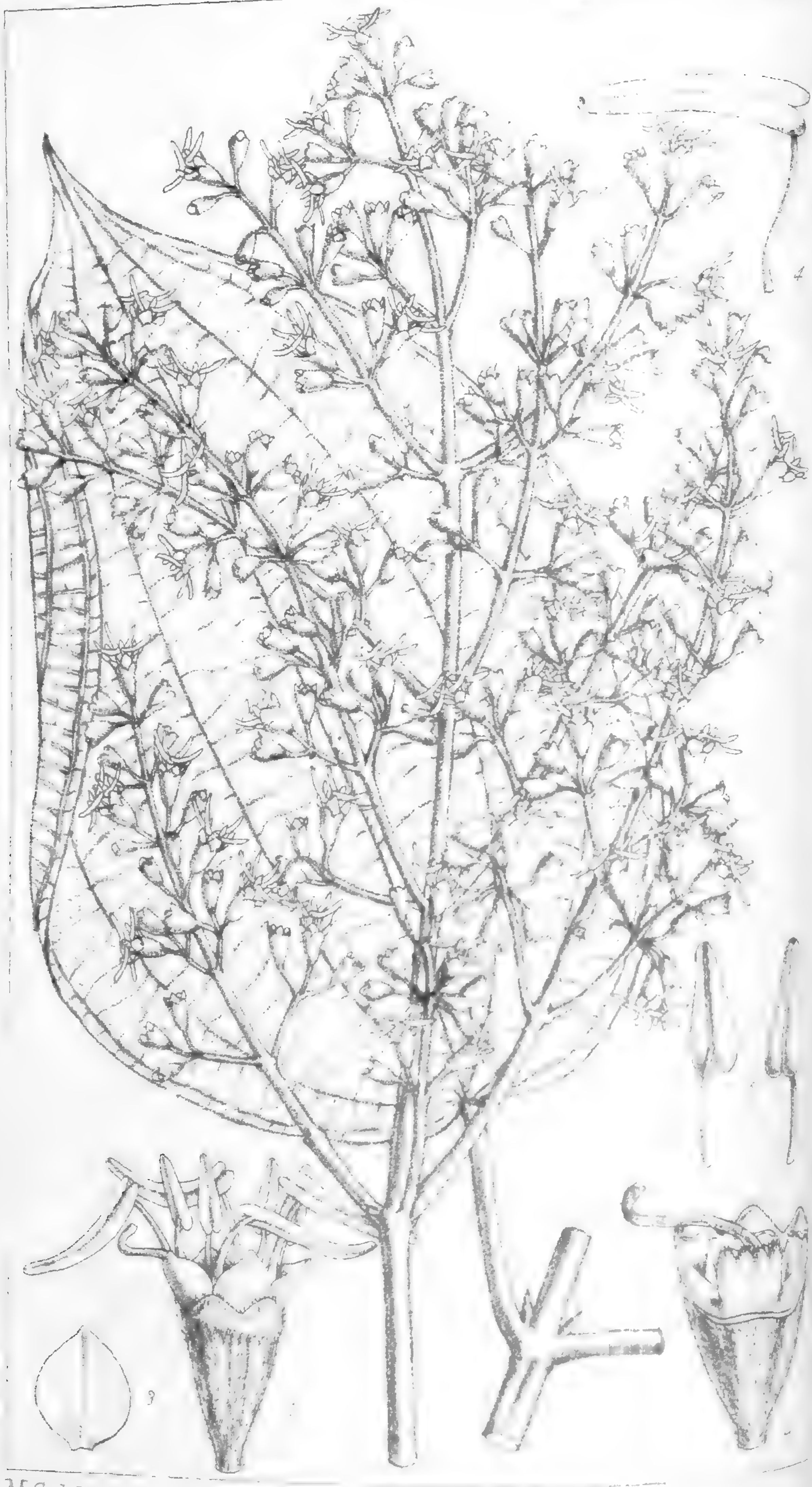
B. (§ **Petermannia**) **inostegia**, *Stapf* (*sp. nov.*); caule ut etiam petiolis inflorescentiaque breviter et parce crispule hirsuto inferne glabrato, foliis longe petiolatis circ. 9-nerviis late et oblique cordato-ovatis sinu latissimo apice breviter acuminatis margine repando-denticulatis tenuiter membranaceis fere concoloribus, supra basi excepta glaberrimis subtus in nervis minute setulosis, stipulis persistentibus ovatis acutis v. rotundatis nervis crebris pluribus excurrentibus crinito-fimbriatis, inflorescentia mascula pedunculata terminali folio breviore 2–3-chotoma, cymulis plurifloris bracteatis, bracteis stipulis conformibus, floribus pedicellatis, sepalis 2 albis ovatis v. elliptico-ovatis, petalis 0, andrœcio oblongo-ovoideo, staminibus pluribus in toro elongato insertis, antheris obovatis, inflorescentia feminea ex axilla folii summi orta in spec. nostro fructifero tantum biflora, capsulis longe pedicellatis recurvis, capsulis obovoideis alis 3 basi ultra loculos productis, placentis bifidis, seminibus minutis breviter cylindricis laxe reticulatis.

Hab. Borneo, Kinabalu, 6,000 feet, *Haviland* (No. 1190).

Folia 5–6 poll. longa, 4–5 poll. lata; petioli 1–3½ poll. longi. *Stipulæ* 4–7 lin. longæ; nervis excurrentibus elongatis lamina interdum 2–3-plo longioribus. *Pedicelli fl. masc.* 1–2 lin. longi; *fl. fem.* 1½ poll. longi. *Capsula* 5–6 lin. longa, alis 1–1½ lin. latis.

The excurrent nerves of the stipules are very singular. *B. inostegia* approaches *B. borneensis*, A. DC., in habit and floral structure.—O. Stapf.

Fig. 1. Staminate flower. 2. Anther, back and front view. 3. Seed. *All enlarged.*



M.S del et lith.

Anerincleistus corniculatus Auct

Plate 2310.

ANERINCLEISTUS CORDATA, *Stapf.*

Melastomaceæ. Tribe Oxysporeæ.

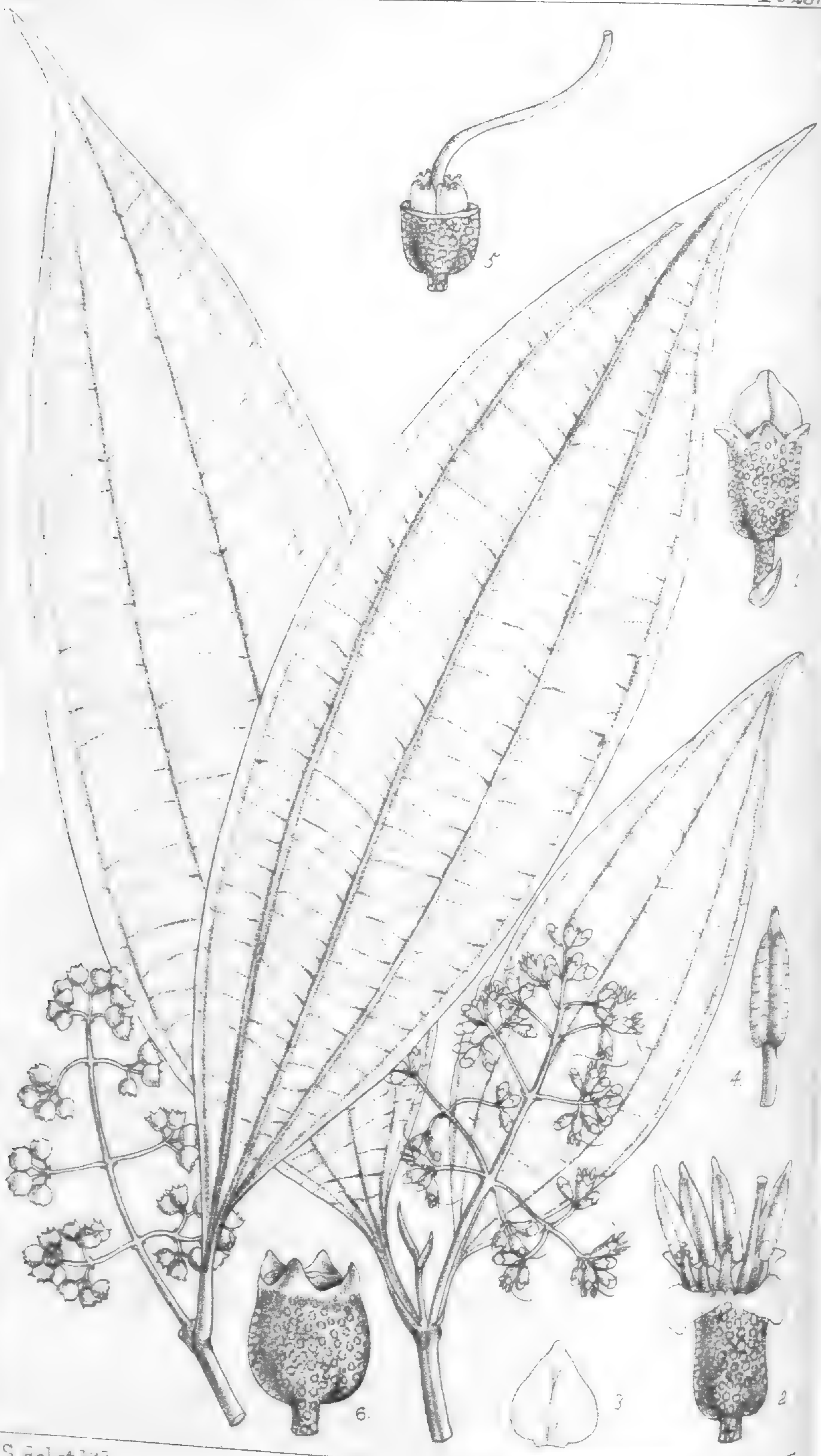
A. cordata, *Stapf* (*sp. nova*); frutex, ramis dense fulvo-tomentellis, foliis petiolatis late rotundato-ovatis basi breviter cordatis apiculatis membranaceis 7–9-nerviis supra in nervis setulosis præterea setulis minutis fulvis aspersis subtus pallidis præcipue in nervis venisque fulvo-pilosulis tomentellisve, venis transversis, panicula terminali folia superante pedunculata multiflora fulvo-tomentella, floribus ad ramulorum secundi ordinis apices umbellatim 1–6 congestis umbellis pedunculatis v. sessilibus, calycis turbinati hirto-setulosi dentibus brevissimis late deltoideis, petalis albis rhomboideis acutis, staminibus subæqualibus (4 paullo majoribus) antheris fere linearibus basi bilobis obtusis inappendiculatis, ovario vertice coronula 4-loba lobis emarginatis ornato, capsula turbinata 4-valvata, valvis deorsum visis triangularibus emarginatis.

Hab. Borneo, Kinabalu, Penokok, 3,500 feet alt., *Haviland* (No. 1281).

Folia 5–9 poll. longa, $3\frac{1}{2}$–$6\frac{1}{2}$ poll. lata; petiolus dense tomentellus $1\frac{1}{2}$–4 poll. longus. *Panicula* semipedalis; pedunculus c. 4 poll. longus; pedicelli calyci æquilongi v. breviores. *Calyx* $1\frac{1}{2}$ lin. longus.

The leaves may not be quite equal in each pair; the petioles at any rate are unequal in the only pair remaining attached in our specimen.—O. Stapf.

Fig. 1. Flower. 2. Same, part of calyx-limb, petals and stamens removed. 3. Petal. 4. Larger, and 5. smaller, stamens. *All enlarged.*



M S. delet lith.

Blastus Cogniauxii

Plate 2311.

BLASTUS COGNIAUXII, *Stapf.*

Melastomaceæ. Tribe Oxysporeæ.

B. Cogniauxii, *Stapf* ; Ochthocharis parviflora, *Cogn. in DC. Monogr.* (*Melastomaceæ*) vii. 481.

Hab. Borneo, Sarawak, Beccari (No. 1403) ; *Haviland* (No. 540), Kinabalu, 4,000 feet alt., *Haviland* (No. 1280).

Frutex, ramulis gracilibus puberulis glabratisve crassitie pennæ corvinæ. *Folia* consimilia v. in eodem jugo paullo asymmetrica, petiolata, ovato- v. oblongo-lanceolata acuminata, basi cuneata 5-nervia nervis lateralibus inframarginalibus, membranacea repando-denticulata supra obscure puberula v. glabra, subtus parce glanduloso-punctata et in nervis interdum minute furfuracea, 4 7 poll. longa, 1–2¼ poll. lata ; petioli ⅓–¾ poll. longi. *Paniculæ* paucifloræ axillares et terminales, glanduloso-furfuraceæ ½–1½ poll. longæ atq. latæ ; pedunculus ½–1 poll. longus, pedunculi secundarii graciles sæpius 3–5-flori, patentes. *Flores* albi, tetrameri, parvi, brevissime pedicellati ; bracteæ minutæ. *Calyx* hemisphærico-campanulatus, primum parce glandulosus deinde glaber, denticulis brevibus deltoideis.

There is no doubt that *Ochthocaris parviflora*, Cogn., is a true *Blastus*. It has four stamens with anthers of the same form as those of *B. cochinchinensis*, and bears the very characteristic discoid glands of this species on the under side of the leaves, petioles, younger branches, and inflorescence ; these are so numerous on the youngest parts as to form a continuous furfuraceous covering.—O. Stapf.

Fig. 1. Bud. 2. Expanded flower. 3. Petal. 4. Stamen. 5. Ovary and style. 6 Capsule. *All enlarged.*

Dimeria Woodrowii, Stapf.

Plate 2312.

DIMERIA WOODROWII, *Stapf.*

Gramineæ. Tribe Andropogoneæ.

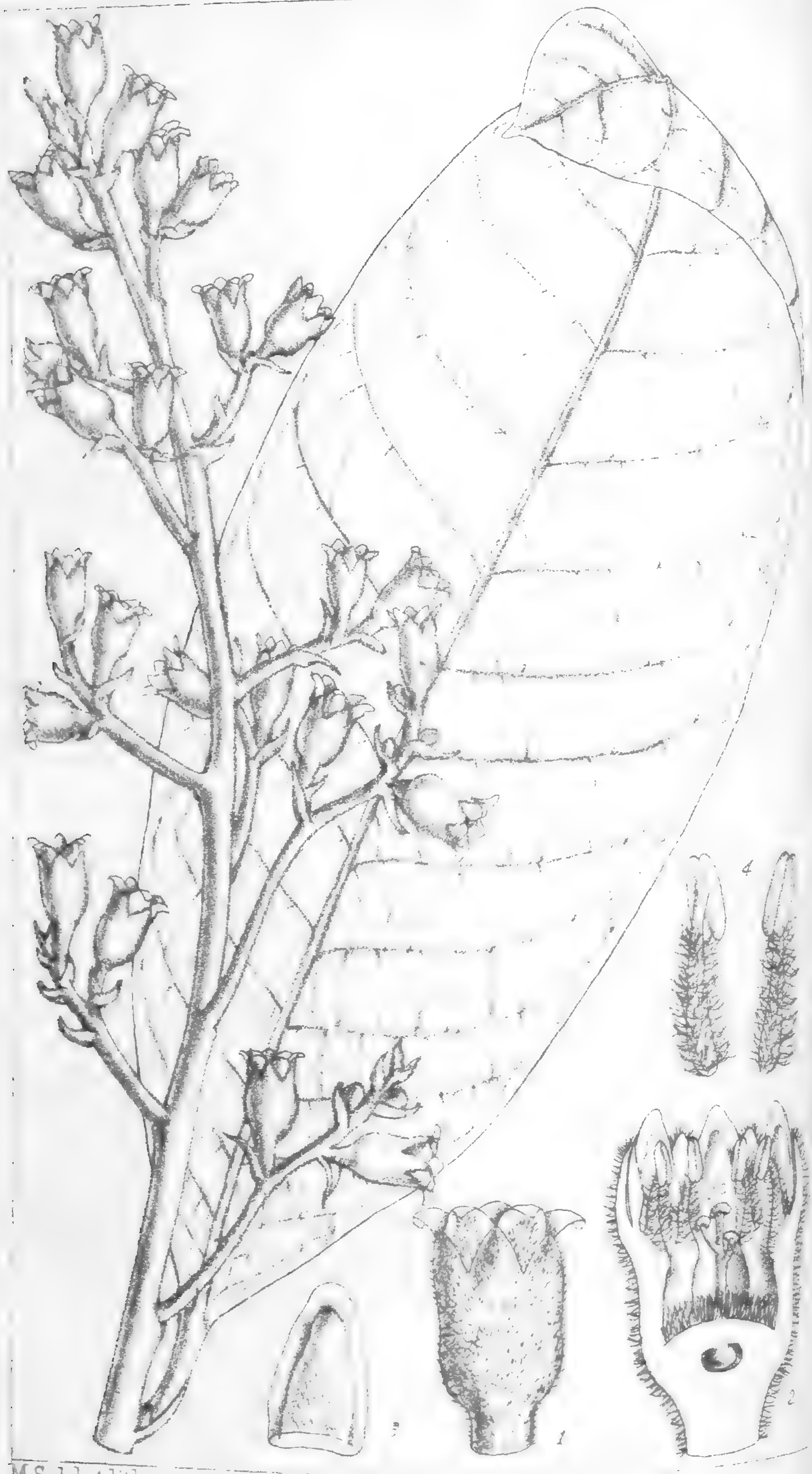
D. Woodrowii, *Stapf* (*sp. nov.*) ; annuum, 3–6-pollicare, culmo gracili paucinodo plerumque ramulos 1–2 edente vaginis involuto demum ad internodii summi basin geniculato in nodis pilorum fasciculo ornato, vaginis glabris internodia æquantibus vel inferioribus longioribus, ligula brevissima hyalina, lamina anguste lineari longe acutata glabra vel sparse pilosa in foliis summis plus minusve reductis 3-nervia, nervo medio subtus carinante cæteris tenuibus, racemis geminatis terminalibus sub anthesi strictis demum circinatim involutis glabris, rachi subundulato, internodiis spiculis brevioribus, pedicellis distinctis, spiculis sublinearibus, callo barbula cincto, gluma I. lineari acuta plicata uninervi glabra vel pilosula, II. perpaullo longiore quam I. latiore acuta plicata dorso anguste carinata et incrassata, III. anguste lineari hyalina interdum mucronulata, IV. quam II. paullo breviore acute breviterque bidentata inter dentes aristata hyalina, arista exserta, palea nulla, caryopsi lanceolata.

Hab. India : Rutnagherry District, South of Bombay, *Woodrow* ; near Goa.

Spica explicata $\frac{3}{4}$–1 in., pedicelli $\frac{1}{3}$–$\frac{1}{4}$ lin., spicula $1\frac{3}{4}$ lin., caryopsis $\frac{3}{4}$ lin. long.

Allied to D. pubescens, *Hack.*, et D. fuscescens, *Trin.*, but very distinct in the spikes which, in a ripe state, are much incurved, forming a small ball. At the request of Dr. Lisboa, who first communicated this grass to the Kew Herbarium, the specific name commemorates the services to Botany of Mr. G. M. Woodrow, formerly of the Royal Gardens, Kew, now Lecturer on Botany in the Poona College of Science.—O. Stapf.

Fig. 1. Spike in its circinnate stage. 2. Floret. 3. Palea, side and front views. 4. Flowering glume. 5. Stamens. 6. Pistil. *All enlarged.*



M.S. del et lith.

Melanochyla beccariana, Oliv

Plate 2313.

MELANOCHYLA BECCARIANA, *Oliv.*

Anacardiaceæ. Tribe Semecarpeæ.

M. beccariana, *Oliv.* (*sp. nov.*) ; **ramulis crassis dense ferrugineo-tomentosis, foliis petiolatis oblongo- v. oblanceolato-ovalibus apice obtusis mucronatis, subtus præcipue in costa nervisque patentibus prominentibus primariis utrinque c. 17–19 venulisque ferrugineo-hirsutis supra parce pilosis denique costa hirtella excepta glabratis, petiolo crassiusculo tomentoso, paniculis terminalibus dense ferrugineo-tomentosis ramulis lateralibus brevibus adscendentibus pauci- v. plurifloris, calyce campanulato crasso limbo quam tubo 3–4-plo breviore segmentis crassis ovato-deltoideis valvatis subvalvatisve tubo intus glabro ore leviter constricto, petalis alte perigynis calycem paullo superantibus crassiusculis ovatis utrinque (apice leviter recurvo excepto) hirsutis, filamentis dense pilosis petalis brevioribus, ovario immerso apice tempore florifero convexo v. subplano dense piloso, stylo inæqualiter 3-fido, stigmatibus capitellatis.**

Hab. Borneo, Sarawak, *Beccari* (No. 2546) *var. breviflora*, Sarawak, *Haviland* (No. 814).

Folia 7–10 poll. longa, 3-$3\frac{1}{2}$ poll. lata ; petiolus 1–$1\frac{1}{2}$ poll. longus. *Paniculæ* foliis sæpius breviores. *Flores* $\frac{1}{2}$ poll. longi, v. in *var. breviflora* $\frac{1}{4}$–$\frac{1}{3}$ poll. longi, $\frac{1}{4}$–$\frac{1}{3}$ poll. lati.

To this curious genus, founded by Sir Joseph Hooker, upon four Malacca species collected by Maingay, in his 'Flora of Brit. India,' ii. 38–9, and to which no addition was made by Professor Engler in his monograph of Anacardiaceæ, Dr. Stapf has added several new species in his elaboration of the Haviland Bornean collections. He has also identified as congeneric the plant here figured, presented to the Kew Herbarium by Signor Beccari, which had been left doubtful until taken in hand by him. This species is remarkable in the extent to which the ovary is immersed in the axis, being indeed wholly inferior in at least the early stages of flowering. In the generic figure given by Professor Engler (De Cand. Monogr. iv. tab. xv. fig. 21) the ovary is wholly free. —D. Oliver.

Fig. 1. Flower. 2. Same, longitudinal section. 3. Petal. 4. Stamens, back and front views. *All enlarged.*

M.S. del et lith

Thannea diosmoide

Plate 2314.

THAMNEA DIOSMOIDES, *Oliv.*

Bruniaceæ.

T. diosmoides *Oliv.* (*sp. nov.*); fruticulus ericoideus erectus v. adscendens glaberrimus, foliis parvis crassiusculis imbricatis ovato-lanceolatis acutiusculis basi obtusis dorso obtuse carinatis, involucralibus longioribus lanceolatis basi dilatatis concavis, floribus solitariis terminalibus 5-meris, segmentis calycinis oblongo-lanceolatis acutis scariosis rubro-brunescentibus ovario 6-plo longioribus, petalis albidis basi rubescentibus cum lamina elliptica acutiuscula longe et anguste unguiculatis, ovario breviter turbinato glabro longitudinaliter 10 sulcato biloculari ovulis in utroque loc. 5 v. 4 pendulis, fructibus bracteis involucrantibus 2–3-plo brevioribus breviter cylindraceis 10-sulcatis basi styli persistente brevi coronatis, pericarpio osseo.

Hab. South Africa; eastern slopes of the Skurfdebergen near Gydouw, *Bolus* (No. 7479); Rocks above the Tulbagh cataract, *Schlechter* (No. 1662).

Folia circa lineam longa, sub lente papilloso-scabriuscula: superiora involucrantia c. 3 lin. longa. *Flores* 6–8 lin. longi. *Petala*, lamina cum ungue, 5–6 lin. longa. *Filamenta* gracilia, glabra; antheræ anguste lineares basi sagittatæ. *Stylus* simplex, gracilis, staminibus fere æquilongis.

The leaves have the minute dark brown or blackish, at length deciduous, tips characteristic of several allied species. *T. diosmoides* is near allied to *T. uniflora*, Sol. The habit and ericoid more or less adpressed foliage are as in that species, but the flowers are many times larger; as in *T. uniflora* they terminate the main branches and short leafy axillary shoots, and are produced so freely that, with the elegant habit of the plant, it specially commends itself as suitable for ornamental culture. Although Mr. Bolus's specimen is in fruit, I cannot, without too much injuring the specimen, indeed without a series of fruits in different stages of maturity, satisfy myself as to the contents of the ripe pericarp, the lower half of which consists, in the interior, of a spongy or corky parenchyma fused externally with the bony wall. The ovary, as I have already explained ('Journ. Linn. Soc.' ix. 331), is dicarpellary in *Thamnea*, and I think *Tittmannia*, Brongn., may well be united with it.—D. Oliver.

Fig. 1. Attached leaves. 2. Leaf, inner face. 3. Flower laid open. 4. Petal. 5. Longitudinal section of ovary. 6. Fruit. *All enlarged.*

M S del et lith.

Plate 2315.

IMBRICARIA SECHELLARUM, *Oliv.*

Sapotaceæ.

I. Sechellarum, *Oliv.* (*sp. nov.*); glabra, foliis tenuiter coriaceis oblongo- v. obovato-ellipticis apice obtusis integris v. retuso-emarginatis basi late v. rotundato-cuneatis subtus costa prominente, pedicellis vix uncialibus, sepalis persistentibus exterioribus oblongo-lanceolatis extus cinnamomeo-tomentellis intus apicem versus canis, interioribus linearibus extus cano-tomentellis, petalis exterioribus oblongis alte bifidis, interioribus ovali-lanceolatis apice attenuatis integris, staminodiis dense villosis, bacca globosa lævi, 5-loculari.

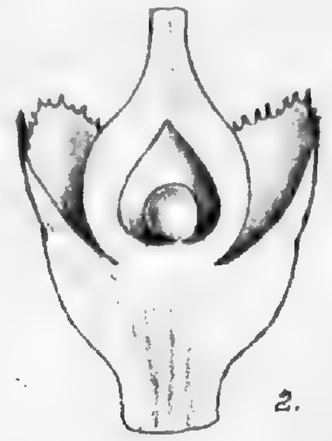
Hab. Seychelles; Mahé, *Horne, Button, Estridge, Griffith.*

Folia 4–6 poll. longa, $2\frac{1}{3}$–$3\frac{3}{4}$ poll. lata; petiolus $\frac{2}{3}$–$1\frac{1}{6}$ poll. longus. *Pedicelli* $\frac{2}{3}$–1 poll. longi. *Fructus* $2\frac{3}{4}$–3 poll. diam. *Semina* compressa, basi acutata, $1\frac{1}{3}$ poll. longa, $\frac{3}{4}$ poll. lata, $\frac{1}{2}$ poll. crassa; albumen carnosum; embryo semine æquilongus atq. -latus, radicula inferiore cotyledonibus planis basi rotundatis multo breviore.

For excellent fruiting specimens in fluid we are indebted to T. Riseley Griffith, Esq., C.M.G., Administrator at the Seychelles; upon these Miss Smith's figure is based. Our only flowers, from Mr. Estridge, are unfortunately detached, but the length of the pedicels, 1 inch or shorter, as shown by these flowers, is confirmed by the fruiting specimens just received from Mr. Griffith. The nearest ally of *I. Sechellarum* is perhaps *I. coriacea*, DC., of Madagascar, which, apart from the absence of staminodes, differs from our plant in its long pedicels ($1\frac{1}{2}$–3 inches) and much more coriaceous leaves.

Our plant is the 'Bois de Natte' of the Seychelles, referred to by Mr. Baker in his 'Flora of the Mauritius,' p. 195. The leaves of *I. maxima*, Poir., another allied species, differ in the characters noted by Mr. Baker. Mr. Horne speaks of the 'Bois de Natte' as one of the finest timber trees, becoming (1871) very scarce. 'There are very few large trees of it now, and these are in the most inaccessible parts of the mountain gorges.'—D. Oliver.

Fig. 1. Detached flowers. 2. Outer sepal. 3. Inner ditto. 4. Petals and staminodes, from within. 5. Detached petal. 6. Anther. 7. Pistil. 8. Seed. 9. Vertical section of seed showing embryo. *Parts of the flower enlarged.*



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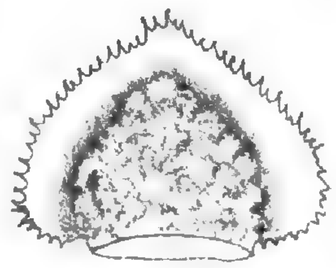

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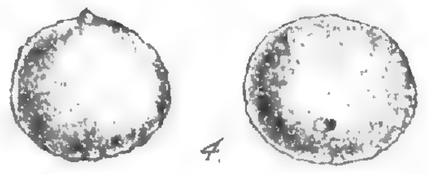

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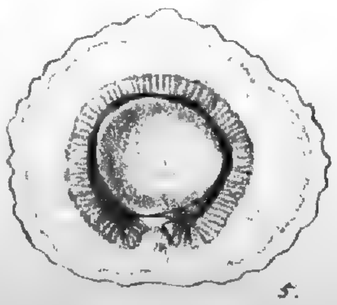

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6.

M.S del et lith

Plate 2316.

ARDISIA MEGAPHYLLA, *Hemsl.*

Myrsinaceæ.

A. megaphylla, *Hemsley in Kew Bull.* 1894, 6 ; arbuscula erecta glaberrima, caule sæpius simplici foliis ad apicem congestis coronato, foliis ($2\frac{1}{2}$ -3 ped. longis) breviter petiolatis tenuiter coriaceis oblongis acutatis basi anguste cordatis auriculis obtusis petiolo æquilongis v. eodem longioribus costa subtus valida nervis primariis utrinque c. 30, paniculis ad apicem rami aggregatis elongato-pyramidatis pedicellis semiuncialibus lævibus solitariis v. subumbellatim confertis basi articulatis, sepalis (in fl. cor. delaps.) ovato-rotundatis obtusis v. subapiculatis ovarii basin arcte cingentibus, fructibus globosis lævibus, embryone cylindrico curvulo cotyledonibus brevissimis.

Hab. Fiji Islands, *Horne* (No. 429) ; Viti Levu (one or two miles inland on the south side of the island), *Yeoward.*

Mr. Horne calls this plant a shrub with a 'single stem unbranched,' and with leaves of a 'dark metallic green.' Mr. Yeoward says 'The natives say it grows to 100 feet straight up, almost without a break, and they call it *Dacea*,' in habit therefore recalling species of *Clavija* or certain Araliaceæ. It is allied to *Ardisia grandis*, Seem., of the same islands, and to *A. scrobiculata*, Seem., of New Caledonia. In the dimensions of its noble leaves it must exceed any of its congeners. The corollas are fallen in our specimens.—D. Oliver.

Fig. 1. Calyx and enclosed pistil. 2. Vertical section of same. 3. Detached calyx-segment. 4. Fruits. 5. Vertical section of same. 6. Section of seed, showing curved terete embryo. *Parts of flower and sections of fruit and seed enlarged.*

M.S. del et lith.

Oberonia biaurita, Hk f.

Plate 2317.

OBERONIA BIAURITA, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

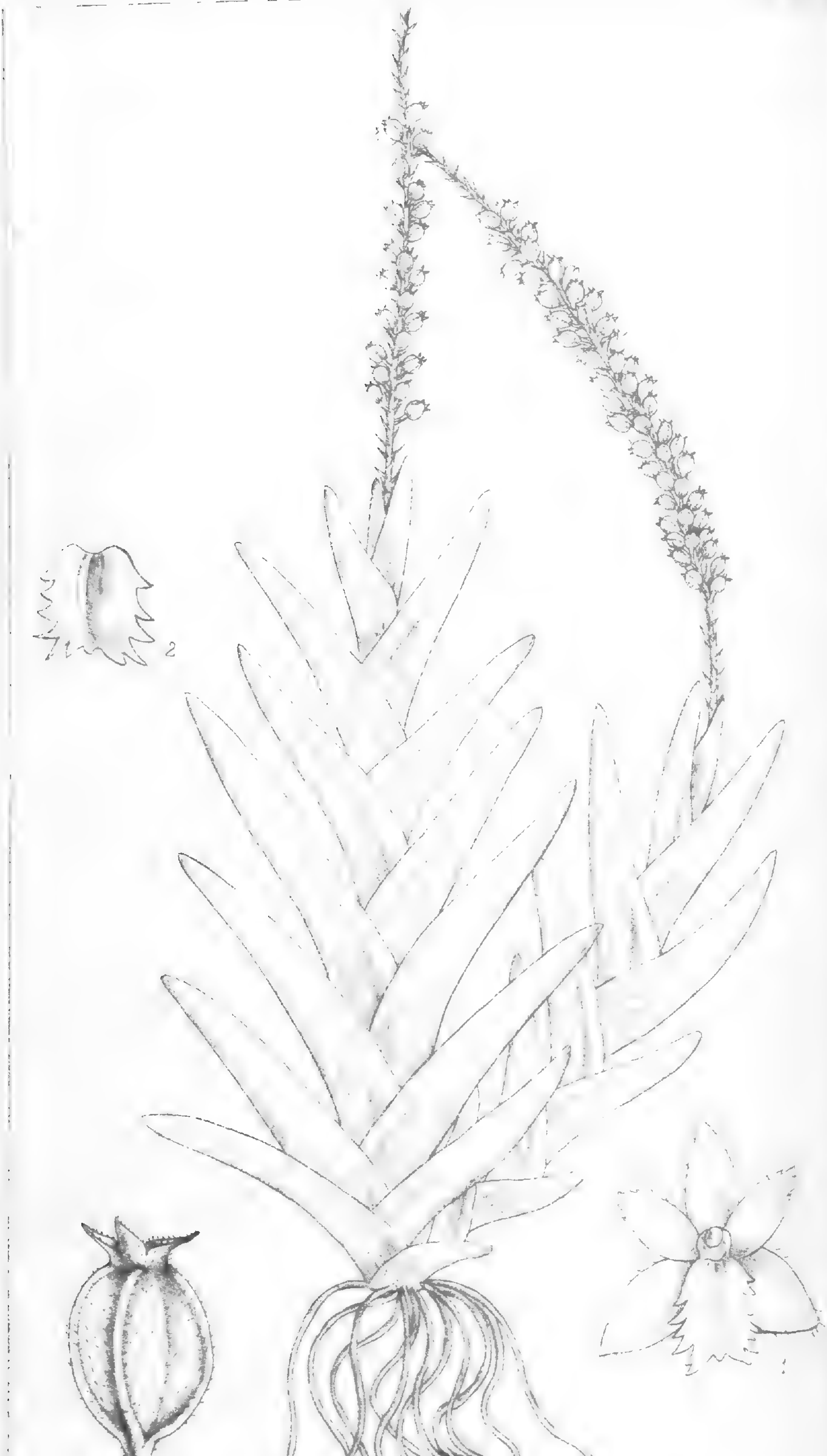
O. biaurita, *Hook. f.* (*nov. sp.*) ; acaulis, foliis 2–3 lineari-ensiformibus acutis subfalcatis carnosis, scapo brevi ad basin bracteolato, bracteis minutis setaceis, floribus minimis sessilibus, sepalis obtusis dorsali ovato lateralibus multo minore et angustiore, petalis linearibus obtusis, labello majusculo grosse acute dentato, rotundato v. subbialato v. trilobo lobis lateralibus auriculæformibus terminali parvo crenulato 2-lobo.

Hab. Singapore, *Ridley* (No. 364).

Folia 2–3 evoluta, 2–5 poll. longa, $\frac{1}{3}$–$\frac{1}{2}$ poll. lata, basi squamis foliaceis instructa, enervia, recta v. lente curva. *Scapus* unacum spica gracili decurva 2–4-pollicaris ; flores conferti, subverticillati, ad $\frac{1}{20}$ poll. diam. ; bracteæ glabræ.

O. biaurita belongs to the first group of the Indian species as defined in the 'Flora of British India' (vol. vi. p. 675), being stemless, and having a deeply toothed lip. It differs very much in habit and in the lip from any hitherto described plant of the section. The lip varies remarkably, both in size and shape ; in what I regard as the typical form (fig. 1) it is rather longer than broad, with two large side-lobes that are prolonged upwards far beyond the column, giving an ear-shape to each lobe, and with a small terminal retuse mid-lobe, which is broader than long. In a greatly reduced form (fig. 3) the lip is much broader than long, two-winged, with spreading sides. An intermediate form is shown at fig. 2, whose terminal lobe is suppressed, and the lateral are produced upwards, together forming a semicircular sinus around the column.—J. D. H.

Figs. 1, 2, and 3. Various forms of lip. *All enlarged.*



M S del et lith.

Plate 2318.

OBERONIA CILIOLATA, *Hook. f.*

Orchideæ. Subtribe Malaxeæ.

O. (**Caulescentes**) **ciliolata**, *Hook. f. Fl. Brit. Ind.* vi. 181 ; caulescens, foliis late ensiformibus obtusis equitantibus, scapo erecto, racemo gracili densifloro, bracteis minutis lanceolatis pilosulis, floribus minimis breviter pedicellatis, sepalis ovatis acutis enerviis petalisque oblongis pilis elongatis ciliatis, labello recurvo oblongo-quadrato truncato subpectinatim irregulariter dentato.

Hab. Singapore, at Krangi, *Ridley*.

Caules cæspitosi $1\frac{1}{2}$–4 poll. longi, foliosi. *Folia* 1–2 poll. longa, basi $\frac{1}{4}$–$\frac{1}{2}$ poll. lata, fere recta, a basi late equitante sensim in apicem obtusum angustata, sicca coriacea, enervia. *Scapus* 1–2-pollicaris, demum elongatus, ad basin bracteolatus. *Flores* $\frac{1}{3\bar{0}}$ poll. diam., vix verticillati, sparse pilosi ; petala apices versus interdum subdentata. *Capsula* globosa, $\frac{1}{1\bar{6}}$ poll. diam., crasse 3-costata v. subulata, puberula.

O. ciliolata is a very well-marked species of the caulescent Oberonias, and is nearest to *O. anceps*, Lindl., differing in the more slender raceme, entire lanceolate bracts, and lip.—J. D. H.

Fig. 1. Flower. 2. Lip. 3. Capsule. *All enlarged.*

2.

M.S. del et lith

Habenaria Grossa. Wall.

Plate 2319.

HABENARIA GIBSONI, *Hook. f.*

Orchideæ. Tribe Ophrydeæ.

H. (**Ate**) **Gibsoni**, *Hook. f. Fl. Brit. Ind.* vi. 135 ; tuberibus ovoideis, caule robusto folioso, foliis lineari-oblongis lanceolatisve subacutis, racemo robusto paucifloro, bracteis foliaceis, floribus amplis, petalis 2-partitis laciniis linearibus falcatis obtusis, labello 3-partito laciniis lineari-subulatis subæqualibus acutis carnosulis, calcare apice clavato ore inappendiculato.

Hab. The Concan ; near Kyreswur, and at Kandalla, *Gibson*.

Caulis 8–12-pollicaris, crassitie pennæ anatinæ, infra medium vaginatus. *Folia* 4–6-pollicaria. *Racemus* 6–8-florus ; bracteæ 1–1½ poll. longæ, membranaceæ, late lanceolatæ, acuminatæ, nervosæ. *Flores* iis *H. digitatæ* consimiles, sed fere duplo majores. *Sepalum* dorsale ovato rotundatum, lateralia duplo longiora ovato-lanceolata acuminata. *Petala* adscendentia. *Calcaris* os inappendiculatum. *Anthera* lata, loculis paullo divaricatis, tubulis adscendentibus. *Stigmatis* processus projecti crassi ; rostellum parvum triangulare obtusum.

H. Gibsoni resembles *H. digitata*, and may prove to be a very large form of that common Indian species, but it wants the curious erect ligula at the mouth of the spur in that plant.—J. D. H.

Fig. 1. Petal. 2. Lip. 3. Column. *All enlarged.*

M.S. del et lith.

Habenaria concinna, Hk. f.

Plate 2320.

HABENARIA CONCINNA, *Hook. f.*

Orchideæ. Tribe Ophrydeæ.

H. (Hologlossa) concinna, *Hook. f. Fl. Brit. Ind.* vi. 155; pumila, caule gracili folioso foliis parvis sursum decrescentibus, infimis sessilibus ellipticis subacutis superioribus bracteiformibus, spica multiflora, bracteis inferioribus herbaceis flores æquantibus v. iis longioribus, sepalis lateralibus linearibus obtusis, dorsali petalisque dimidiato-ovatis obtusis duplo angustioribus, labello a basi latiore lineari v. lineari-lanceolato obtuso sepalis æquilongo, calcare ovario æquilongo incurvo acuto.

Hab. Khasia Hills, alt. 5,000 ft., *J. D. Hooker* and *T. Thomson*; *Clarke*.

Herba 4–8-pollicaris. *Radix* e fibris crassis fere tuberosis. *Folia* interdum fere imbricata, infima 1–1¼ poll. longa, obtusa, superiora acuta. *Spica* 2–4-pollicaris, subdensiflora; bracteæ ⅓ poll. longæ, ovato-lanceolatæ, acutæ; ovarium suberectum. *Sepalum* dorsale ovatum, 3-nerve, lateralia obtusa reflexa 1-nervia. *Petala* sepalo dorsali æquilonga, erecta, 1–3-nervia. *Labellum* angustum. *Anthera* magna, loculis subremotis, divergentibus, tubulis 0; rostellum triangulare.

A very distinct little species of the section *Hologlossa*, with the habit of sect. *Peristylus*, but differing from the latter in the reflexed lateral sepals. The stigmatic processes so frequent in *Habenaria* are entirely absent in *H. concinna*.—J. D. H.

Fig. 1. Flower. 2. Lip and column. *Both enlarged.*

M S del et lith

Habenaria secundiflora, Hk.f.

Plate 2321.

HABENARIA SECUNDIFLORA, *Hook. f.*

Orchideæ. Tribe Ophrydeæ.

H. (Dipyla) secundiflora, *Hook. f. Fl. Brit. Ind.* vi. 165; pumila, tuberibus subglobosis, caule erecto v. recurvo, foliis paucis linearibus acuminatis lateribus complicatis, spica densiflora, bracteis lineari-lanceolatis inferioribus flores secundos longe superantibus sepalis lanceolatis 1-nerviis, lateralibus petalisque angustioribus falcatis erectis, labello sepalis æquilongo lineari-oblongo trifido puberulo, lobis parallelis ovatis lanceolatisve acutis, calcare labello paullo breviore conoideo, pollinia glandulæ unicæ affixa, glandula lobis 2 inflexis rostelli operta.

Hab. Subalpine Himalaya; Kumaon, alt. 9,000–10,000 feet, *Duthie*; Sikkim, alt. 14,000 feet, *J. D. Hooker*; Chumbi (Tibetan Sikkim), *King's collectors.*

Herba 3–5-pollicaris, gracilis. *Folia* 2–3, cauli fere æquilonga, basi vaginantia. *Spica* 1–2-pollicaris; flores rosei, ad $\frac{1}{4}$ poll. lati. *Sepala* et petala in laminam erectam conniventia. *Labellum* decurvum.

A very curious plant, technically a member of the *Peristylus* section of *Habenaria*, but very unlike any species of it in habit, and with the two pollinia attached to one obcordate gland, which is covered by the inflected lobes of the rostellum. I have carefully dissected every Indian and many other Habenarias and found no structure like this in any, and I have in my remarks under *Habenaria* in the 'Flora of British India,' vol. vi. p. 132, suggested that it should form a distinct genus, should observations in the living plant confirm these characters, which are most difficult of observation in specimens that have been dried. The likeness of the plant to another aberrant *Habenaria*, *H. urceolata* (Clarke in 'Journ. Linn. Soc.' xxv. 73, t. 30, *Diphylax urceolata*, Hook. f. in 'Ic. Pl.' t. 1865), is striking, but superficial. The coalescence of the glands of the pollinia is what occurs in some sections of *Orchis* and in *Aceras*, and being foreign to *Habenaria* is a further reason for regarding *Dipyla* as a distinct genus.—J. D. H.

Fig. 1. Sepals and petals cohering. 2. Lateral sepal. 3. Petal. 4. Lip. 5. Column, with the two lobes of the rostellum spread apart and lying parallel to processes of the stigma. 6. Pollinia. *All enlarged.*

M S del et lith

Haberaria Griffithii, Hk.f.

Plate 2322.

HABENARIA GRIFFITHII, *Hook. f.*

Orchideæ. Tribe Ophrydeæ.

H. (Dithrix) Griffithii, *Hook. f. Fl. Brit. Ind.* vi. 197 ; caule gracili paucifoliato, foliis ellipticis lineari-oblongisve acutis obtusisve, spica secundiflora, floribus parvis decurvis, bracteis ovato-lanceolatis ovario longioribus, sepalis patentibus ovato-oblongis obtusis, lateralibus deflexis, petalis linearibus sublanceolatisve suberectis, labello sepalis æquilongo basi saccato ecalcarato oblongo apice 3-fido lobis parallelis v. divaricatis ovatis, anthera brevi sessili dorso basi utrinque filo erecto incurvo apice clavellato instructa loculis divergentibus rostello 0, stigmatis area infra antheras late quadrata. H. decipiens, *Hook. f. Fl. Brit. Ind.* vi. 165 (*not of Wight*). Herminium, *Griff. Notul.* iii. 270 ; *Ic. Pl. Asiat.* t. 285, f. 1.

Hab. Afghanistan, *Griffith* ; Kurrum Valley, *Aitchison* ; N.-W. India, *Edgeworth* ; Lahul, *Thomson*.

Herba 6–8-pollicaris, tuberibus parvis oblongis. *Caulis* erectus v. flexuosus. *Folia* 1–2½ poll. longa, sive membranacea, inferiora subpetiolata. *Spica* 1–2-pollicaris ; flores ⅛ poll. lati, albi.

A very curious plant, the flowers of which I have repeatedly analysed without satisfactory results, because of their very soft tissues. It resembles a *Spiranthes* more than a *Habenaria*, and was mixed with one in Griffith's herbarium. Griffith analysed its flowers in a fresh state and figured them in his 'Icones,' and referred to these figures in his 'Notulæ,' but these are hardly intelligible. The curious filaments on each side of the anther he regards, no doubt rightly, as sterile stamens. I was quite unable to detect the 'furcation of the clinandrium into a rostellum,' which he describes, and which is probably in dried specimens shrivelled up and not discernible.

When describing this plant under the name of *Habenaria decipiens* in the 'Flora of British India,' I was under the impression that *H. decipiens* of Wight was the same as *H. longicalcarata*, A. Rich. with which, and *H. montana*, Wight (not A. Rich.), it was confounded in Wight's Descriptions, Icones, and Herbarium. I have disentangled these plants at vol. vi. p. 197 of the 'Flora of British India.'—J. D. H.

Fig. 1. Flower. 2 and 3. Lip. 4. Front, and 5. back, view of anther. *All enlarged.*


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Plate 2323.

DIZYGOTHECA NILSSONI, *N. E. Br.*

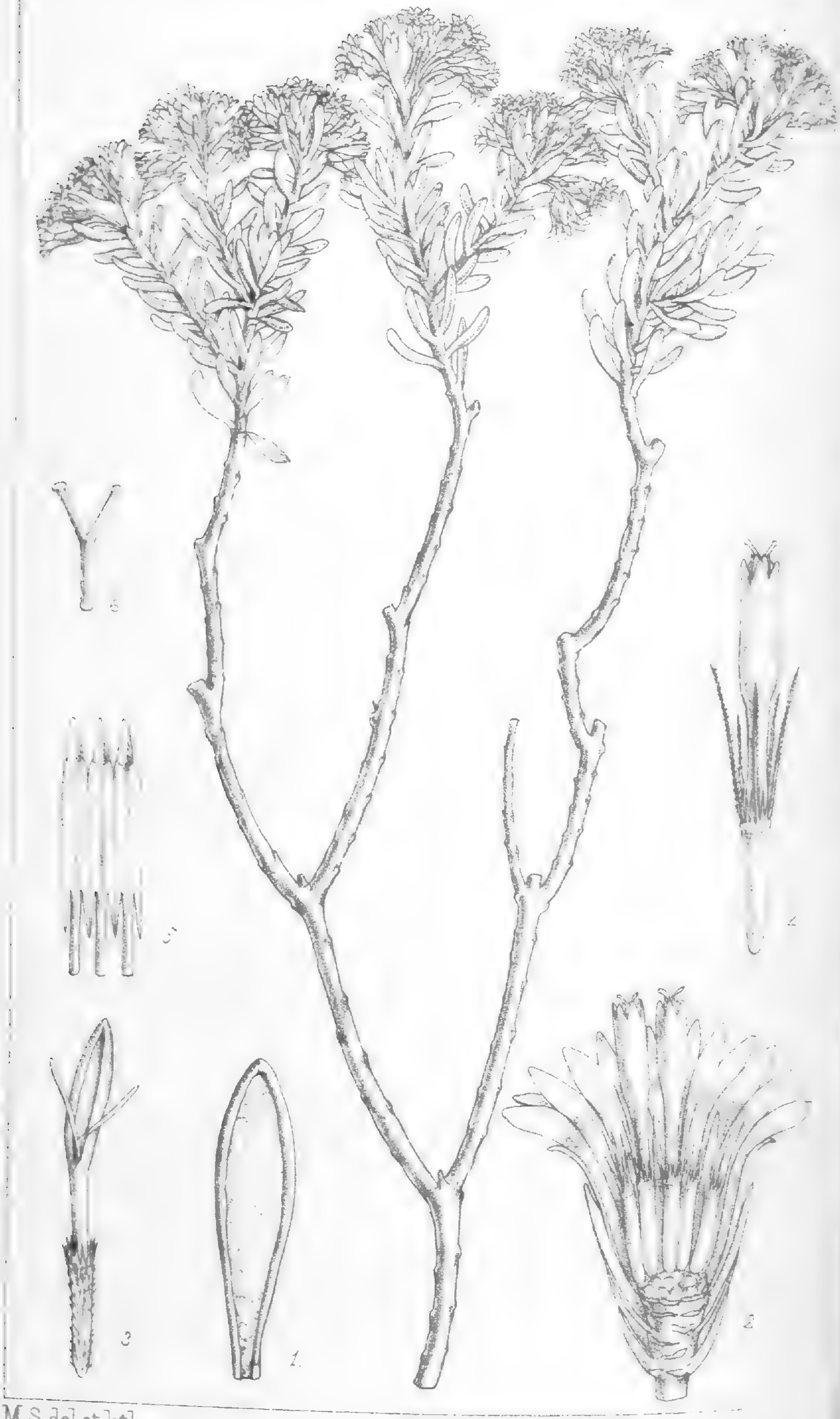
Araliaceæ. Series Panaceæ.

Dizygotheca, *N. E. Brown in Kew Bulletin*, 1892, 197. *Calyx* 5-dentatus. *Petala* valvata. *Stamina* 10, 5-adelpha (sed primo aspectu 5-andra, antheris 4-locularibus); filamenta crassiuscula subulata petalis alterna; anthera composita late oblonga symmetrice 4-locularis (8-locellata), rimis 4 longitudinaliter dehiscens. *Ovarium* 10-loculare; styli 10, primum papilliformes, mox stellatim patentes v. recurvi, sulcati, sursum papillosi; ovula solitaria, pendula. *Fructus* subglobosus v. ellipsoideus, baccatus; pyrenæ a latere compressæ, indurate, rugulosæ; albumen æquabile.—Arbor *parva, glabra, caule simplici, inermis.* Folia *alterna, longe petiolata, digitata*, 9–11-*foliolata; foliola elongato-oblonga leviter sinuata, glabra, apice obtusa v. retusa, basi leviter angustata, longiuscule petiolulata.* Inflorescentia *terminalis, umbelliformis, radiis primariis circa* 7, *medio pauciradiatis, apice c.* 10-*radiatis, umbellulis longiuscule pedunculatis, pedicellis cum flore continuis.* Petala *viridi-lutea.* Antheræ *albidæ.* Baccæ *atroviolaceæ.*

D. Nilssoni, *N. E. Br. l. c.* (*sp. unica*); *Plerandra* (*Pentadiplandra*) *Vieillardi*, Baill. in Adans. xii. 136.

Hab. New Caledonia, *Pancher, Vieillard* (*fide Baillon, l. c.*). *Caulis* 7–10-pedalis. *Petioli* 18–20 poll. longi; petioluli 2–3 poll. longi. *Foliola* 9–13 poll. longa, 2–3½ poll. lata. *Inflorescentia* circa 18–20 poll. diam.; rami primarii 8–9 poll. longi; pedunculi secundarii 2–3 poll. longi; pedicelli ½ poll. longi. *Flores* ⅔–¾ poll. diam. *Baccæ* ⅜ poll. diam.

This interesting plant, of which a living specimen was received at Kew in 1880 from M. Linden, flowered for the first time in November 1891, and was published with a careful description by Mr. N. E. Brown, as constituting a new generic type, in the Kew Bulletin (*l. c.*) I find, however, what I cannot doubt to be the same plant described by Dr. Baillon in his 'Recherches nouvelles sur les Araliées' in Adansonia (*l. c.*), as a species of *Plerandra*, of which genus he regarded it as a new subgeneric type, to which subgenus he gave the name *Pentadiplandra*; his name, like Mr. Brown's, pointing to the distinctive character of the andrœcium, which consists apparently of five



M.S del et lith

Nestlera corymbosa, Bolus.

Plate 2324.

NESTLERA CORYMBOSA, *Bolus*.

Compositæ. Tribe Inuloideæ.

N. corymbosa, *Bolus* (*nov. sp.*) ; fruticulus pedalis vel ultra ; ramis teretibus adscendentibus, inferne nudis, cicatricibus foliorum delapsorum parce verruculatis, superne tantum foliosis, foliis alternis confertis obovato-oblongis, subobtusis, margine inflexis, superne tomentosis, subtus glabris nitido-viscosissimis, 1-nerviis, incurvo-erectis, corymbis 5–7-capitulatis, pseudo-terminalibus, at enim ex pedicellis annotinis persistentibus evidenter lateralibus, pedunculis gracilibus capitulis brevioribus, involucro cylindrico-campanulato basi angustato, squamis exterioribus lanceolatis interioribus angustiores lineari-oblongis intimis apice patentibus flores disci subsuperantibus, receptaculo alveolato epaleaceo, floribus radii circa 6, ligulis brevibus oblongis corollas tubulosas vix excedentibus, achæniis obscure trigonis sericeo-villosis sæpe abortivis, floribus disci circa 16, achæniis glabris lævibus, pappo interiore e setis 5–6.

Hab. South Africa : Karroo, hills near 'Touws River Railway Station,' alt. 850 metr., *H. Bolus* (Herb. No. 7355).

Folia 3–5 lin. longa. *Capitula* glabra 3 lin. longa ; pedunculi breves canescentes. *Corolla* (disci) tubuliformis, supra medium leviter dilatata, ore minute 5-dentata. *Antheræ* basi caudatæ, caudis setiformibus connatis. *Pappus* (disci) setis inæquilongis, setis longioribus paucis (5 ?) rigidiusculis, barbellatis, caducis, brevioribus hyalinis complanatis v. angustissime paleaceis interdum incisis.—H. Bolus.

There is but choice of difficulties in assigning this plant to any described genus as at present defined. Mr. Bolus inclined to refer it to *Rosenia*, but comparison with our figure ('Ic. Pl.' 2228) of the original species of that genus, with its more or less scaly receptacle and uniform pappus, does not favour that affinity. The general aspect of the plant is similar to that of some species of both *Nestlera* and *Relhania*, both belonging, as does our plant, to Inuloideæ. Indeed, in *Athanasia*, amongst Anthemideæ, the same habit recurs with the infrequent condition, also characteristic of *N. corymbosa*, of the hairy indumentum of the leaf being confined to its upper surface. As *Relhania* has a paleaceous receptacle, I have thought it best, with the free leave of Mr. Bolus, to place it in *Nestlera*.—D. Oliver.

Fig. 1. Leaf, upper surface. 2. Capitulum, the receptacle partially exposed. 3. Ray-floret. 4. Disc-floret. 5. Anthers. 6. Style-branches. *All enlarged.*

M S del et lith

Heliophila patens, Oliv.

Plate 2325.

HELIOPHILA PATENS, *Oliv.*

Cruciferæ. Tribe Sisymbrieæ.

H. (§ **Selenocarpæa**) **patens**, *Oliv.* (*sp. nov.*); annua glaberrima fere e basi graciliter divaricatim ramosa, foliis anguste linearibus indivisis carnosulis, racemis 10–30-floris, floribus albidis v. pallide purpurascentibus, siliquis pedicellatis ellipsoideis v. rhomboideo-ellipsoideis compressis valvis maturis purpurascentibus lævibus leviter convexis 1 2-spermis, stylo persistente recto siliqua æquilongo, pedicellis patentibus gracillimis siliqua 3–5-plo longioribus.

Hab. Cape of Good Hope, near the village of Piquetberg, *H. Bolus* (No. 7530).

Herba 6-8-poll.; caulis teres lævis v. obsolete striatus. *Folia* inferiora 1 poll. longa, angustissima. *Sepala* elliptica obtusa concava purpurascentia. *Petala* calyce 2-plo longiora, obovata integra, basi angustata brevissime unguiculata, calyce 2-plo longiora. *Ovarium* oblanceolatum v. oblongo-obovatum, stylo brevius, 1- v. 2-ovulatum.

The nearest ally of this plant is *Heliophila flacca*, Sond., known only from Ecklon and Zeyher's specimens. This interesting new species, the fourth species of the peculiar section *Selenocarpæa*, discovered by Mr. Bolus, is distinguished by its very slender stem, much branched from about an inch above the root, the long patent pedicels of the small elliptical pods, and, so far as our specimens show, the undivided very narrow leaves.—D. Oliver.

Fig. 1. Sepal. 2. Petal. 3. Stamens and pistil. 4. Pistil. 5. Fruit, laid open. 6. Seed. 7. Embryo. *All enlarged.*

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OF NEW AND RARE PLANTS,

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EDITED FOR THE BENTHAM TRUSTEES BY

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EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

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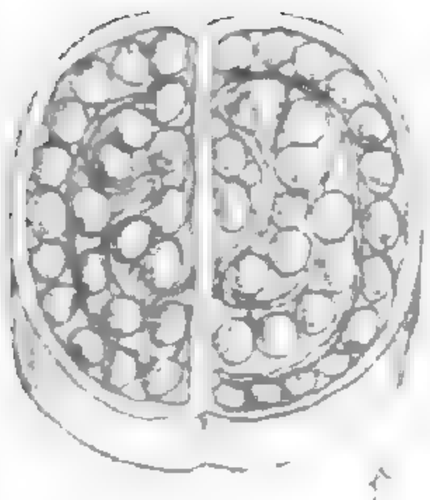

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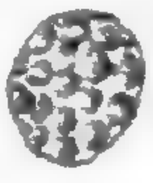

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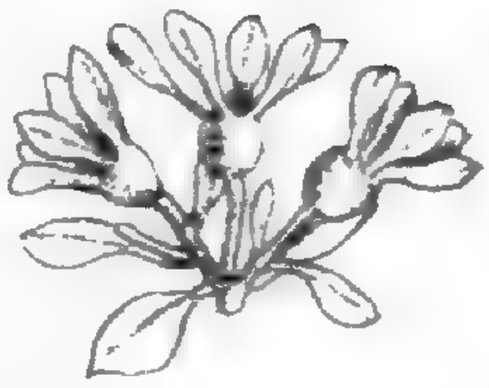

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Pentaloncha humilis Hk.f.

Plate 2326.

PENTALONCHA HUMILIS, *Hook. f.*

Rubiaceæ. Tribe Mussændeæ.

P. humilis, *Hook. f. in Benth. et Hook. f. Gen. Plant.* ii. 73; herbacea glabra v. glabrescens, caule decumbente, foliis obovato-ellipticis obovatisve petiolatis paribus sæpe inæqualibus minore minimo sæpius breviter apiculatis basi in petiolum angustatis, nervis lateralibus incurvis utrinque 9 10, stipulis interpetiolaribus indivisis v. interdum apice laciniatis erectis lanceolatis acutis petiolo æquilongis v. longioribus, floribus in cymis brevissime pedunculatis axillaribus exinvolucratis umbelliformibus congestis stipulis subæquilongis, calycis tubo campanulato-turbinato costato limbo tubo 4-plo longiore, segmentis subæqualibus corolla brevioribus petiolatis lamina lanceolata v. ovato-lanceolata (v. in calyce fructifero late ovata) acuta, corollæ tubo cylindrico limbo breviter 5-lobato lobis ovato-lanceolatis, staminibus prope medium tubi insertis, filamentis anthera brevioribus, antheris linearibus mucronatis, ovario 2-loculari, fructibus campanulato-globosis, pericarpio tenui placentis seminiferis ramosis, seminibus numerosis subglobosis, testa crustacea scrobiculata.

Hab. W. Trop. Africa, Sierra del Crystal, *Mann* (No. 1734).

Herba 1–2 pedalis. *Folia* 3–5 poll. longa, $1\frac{2}{3}$–$2\frac{2}{3}$ poll. lata; petiolus $\frac{1}{3}$–$\frac{1}{2}$ poll. longus; stipulæ $\frac{1}{2}$ poll. longæ. *Flores* 4–5 lin. longi.

The ovary is described as 5-locular: I do not find it so, but certainly 2- and also 3-locular in the few flowers at my disposal for analysis. The changes in the placenta, its division and complex lamination in more advanced stages make it very difficult to understand or describe intelligibly without adequate material. I do not find the ridges on the ovary, conspicuous in the flowering stage, but obsolete later, to correspond very definitely with its internal arrangements. The inequality in size of the leaves in at least some, possibly in all, of the pairs was first noted by Miss Smith in preparing her drawing for our lithograph.—D. Oliver.

Fig. 1. Flower. 2. Corolla laid open. 3. Pistil. 4. Transverse section of ovary 5. Transverse section of fruit. 6. Seed. 7. Section of seed, showing the embryo *All enlarged.*

M. S. del. et lith.

Temnopteryx sericea Hk. f.

Plate 2327.

TEMNOPTERYX SERICEA, *Hook. f.*

Rubiaceæ. Tribe Mussændeæ.

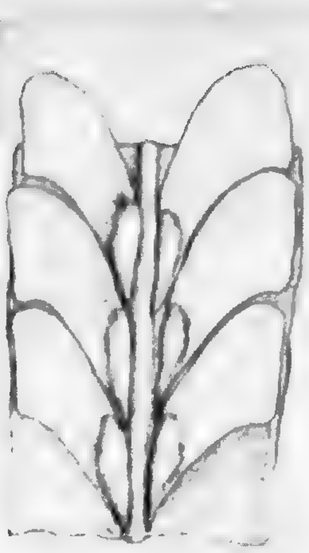
T. sericea, *Hook. f. in Benth. et Hook. f. Gen. Plant.* ii. 72 : herba robusta 2–3-pedalis, caule pilis ferrugineo-sericeis induto et in stipulis multifidis sericeis vaginato, foliis oblanceolatis v. oblongo-ellipticis graciliter acuminatis basi in petiolum longe attenuatis supra glabris subtus et præcipue in costa nervisque lateralibus 14-16 prominentibus ferrugineo-sericeis, floribus in cymis axillaribus contractis v. glomerulis breviter pedunculatis bracteis stipulaceis multifidis vaginatis dispositis pedicellatis v. subsessilibus, calycis tubo anguste turbinato costato limbi segmentis magnis inæqualibus petiolatis majoribus 1 3 cum lamina late ovata v. subcordata acuta minoribus spathulatis v. lamina lanceolata supra glabra, corollæ tubo calycem superante superne leviter dilatato lobis carnosulis brevibus ovatis tubo 8–10-plo brevioribus, staminibus prope v. supra medium tubi insertis, filamentis brevissimis, antheris anguste linearibus mucronulatis, fructu subgloboso apice truncato vestigiis limbi calycini coronato, pericarpio septisque tenuiter crustaceis. Hiern. in Oliv. *Fl. Trop. Afr.* iii. 78.

Hab. W. Trop. Africa, Sierra del Crystal, *Mann* (No. 1427).

Folia lamina 6-14 poll. longa, 2–3½ poll. lata ; petiolus 1–2 poll. longus ; stipulæ 1–1½ poll. longæ. *Flores* 1–1½ poll. longi ; calycis segmentorum laminæ ad ¾–1 poll. longæ. *Fructus* ½–⅔ poll. diam.

This fine plant has not to our knowledge been refound since Mr. Mann's memorable expedition to the mountain range in 1° N. lat., known then as the Sierra del Crystal, where some peculiar forms not elsewhere collected by him were found. The divisions of the style, which is much stouter than the corolla-tube in our specimens, are five in number, and narrowly linear. Whether the enlarged lamina of some of the calyx-segments is coloured or herbaceous, I cannot clearly say.—D. Oliver.

Fig. 1. Corolla laid open. 2. Pistil, the ovary in vertical section. 3. Transverse section of ovary. *All enlarged.*



M S del, et lith.

Stenomeris borneensis. Oliv

Plate 2328.

STENOMERIS BORNEENSIS, *Olic.*

Dioscoreaceæ.

S. borneensis, *Oliver (sp. nov.)*: dioscoreaeformis, glaberrima, foliis arcuatim 7-nerviis cordato-ovatis ovatis vel superioribus ovato-lanceolatis graciliter acuminatis, cymis axillaribus, breviter pedunculatis v. subsessilibus pluriflоris, floribus viridescentibus pedicellatis urceolato-infundibuliformibus ore leviter constrictis laciniis adscendentibus linearibus carnosulis rigidiusculis apice haud acuminatis mucronulatis tubo brevioribus v. subaequilongis, capsula elongata triptera septicide trivalvi, seminibus compressis adscendentibus superne alatis ala oblique truncata, embryone ut videtur minuta basilari.

Hab. Borneo ; Sarawak, near Kuching, *Haviland* (No. 1664).

Folia petiolata lamina 4–5 poll. longa, $1\frac{1}{2}$–2 poll. lata : petiolus $1\frac{1}{2}$–2 poll. longus. *Perianthii* segmenta $\frac{1}{2}$–$\frac{3}{16}$ poll. longa. *Fructus* 10 poll. longus, $\frac{3}{4}$–1 poll. latus. *Semina*, ala inclusa, $\frac{1}{8}$–1 poll. longa, ala exclusa $\frac{3}{16}$ poll. longa.

The only species of this singular genus which has been described, so far as I have ascertained, since the original publication of *Stenomeris dioscoreæfolia* by Dr. Planchon (in 'Ann. Sc. Nat.' Sér. 3., xviii. 320), is *S. Cumingiana*, described by Sign. Beccari ('Nuovo Giorn. Bot. Ital.' ii. 1870, 8, t. 2), a plant not represented in the Kew Herbarium, where the Cuming number quoted for it by Beccari is represented by a *Leptaspis*, as indicated in 'Genera Plantarum' under *Stenomeris*, (vol. iii. 745). These two described species agree in having the segments of their perianths finely acuminate : in *S. borneensis* they are not attenuated at all, but fleshy, linear, and abruptly acute or mucronate. The singular dilatation of the filiform prolongation of the connective of the anthers I cannot venture to figure from our dried specimens. Sign. Beccari gives a careful analysis of this appendix in his plate of *S. Cumingiana*, referred to above.—D. Oliver.

Fig. 1. Flower, the perianth laid open. 2. Anthers, showing inner and outer faces. 3. Longitudinal section of ovary and style. 4. Seeds *in situ*. 5. Vertical section of seed, with part of wing attached, showing minute embryo at the base. *Except fig. 4, all enlarged.*

Plate 2329.

PTYCHOPETALUM ANCEPS, *Oliv.*

Olacineæ. Tribe Olaceæ.

P. anceps, *Oliv.*, *Fl. Trop. Afr.* i. 347, var. *β*; frutex v. arbuscula glaber, ramulis ultimis compressis angustissime bialatis, foliis tenuiter coriaceis subsessilibus oblongo-ellipticis acuminatis basi sæpius plus minus rotundatis, venis lateralibus primariis utrinque 6–7, racemis brevibus pauciflоris axillaribus v. quasi terminalibus, bracteis oblongo-lanceolatis cymbiformibus pedicello duplo longioribus deciduis, alabastris ovatis acuminatis, calyce obsoleto, petalis liberis anguste lineari-lanceolatis acuminatis intus prope medium barbatis, staminibus c. 8, e per paria 2 singulatim petalis oppositis eisdem adnatis, ovario leviter sulcato fere ad apicem solido in stylum angustato, fructu ellipsoideo, semine solitario pericarpio tenuiter crustaceo conformi longitudinaliter sulcato transverse leviter areolato, albumine carnoso, embryone minuto.

Hab. W. Trop. Africa, River Bagroo, *Mann* (No. 838): a specimen collected at Grand Bassa by *T. Vogel*, the type of Miers' *Alsiandra anceps* with leaves rounded and narrowly cordate at base, is perhaps identical, but scarcely adequate for comparison.

Folia 3–4 poll. longa, $\frac{3}{4}$–$1\frac{1}{2}$ poll. lata. *Bracteæ* 2–3 lin. longæ. *Flores* $\frac{1}{4}$ poll. longi. *Fructus* $\frac{1}{2}$ poll. longus.

Excepting that the ovary is gradually narrowed into the style, and the petals (and buds) are acuminate, the flowers are similar to those of *P. petiolatum*. The paired adnate stamens are unequal in length.—D. Oliver.

Fig. 1. Flower. 2. Petal and adnate stamens. 3. Pistil. *All enlarged.*


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Plate 2330.

PTYCHOPETALUM PETIOLATUM, *Oliv.*

Olacineæ. Tribe Olaceæ.

P. petiolatum, *Oliv. Fl. Trop. Afr.* i. 347; frutex 12–15-pedalis glaber, ramulis teretiusculis v. ultimis compressiusculis, foliis petiolatis ovato-ellipticis lanceolatisve acuminatis basi rotundatis v. late cuneatis, floribus in racemis brevibus interdum 1–2-ramosis axillaribus dispositis, bracteis minutis ovato-rotundatis, calyce obsoleto, petalis oblongis carnosulis apicem versus recurvis demum liberis intus prope medium barbatis basi et dorso glabris, staminibus 5–7 petalis oppositis et eisdem adnatis, antheris ovatis v. ellipticis dorsifixis, filamento apice glabro, ovario columnari glabro inferne sulcato in stylum æquilongum subito angustato.

Hab. W. Trop. Africa, Kongui and Muni rivers, *Mann* (Nos. 1746, 1793).

Folia integra, tenuiter coriacea, $2\frac{1}{2}$–4 poll. longa, 1–$1\frac{1}{2}$ poll. lata, venis primariis utrinque 3–5; petiolus 1–2 lin. longus. *Flores* 2–$2\frac{1}{2}$ lin. longi; alabastra obtusa.

Dried specimens assume a dark reddish-brown colour; the lateral nerves are connected by broad curved loops considerably within the margin. I have not made any serious attempt to describe the contents of the ovary from our dried specimens. There are very few flowers available for analysis, and specimens preserved in alcohol are necessary for satisfactory examination. The ovary on section simply presents the solid cellular mass characteristic of so many Loranthaceæ, with which this plant would appear to have close affinity, although the 'calyx,' or calyculus, is obsolete and the ovary entirely free.—D. Oliver.

Fig. 1. Flower. 2. Petal and adnate stamen. 3. Pistil. *All enlarged.*

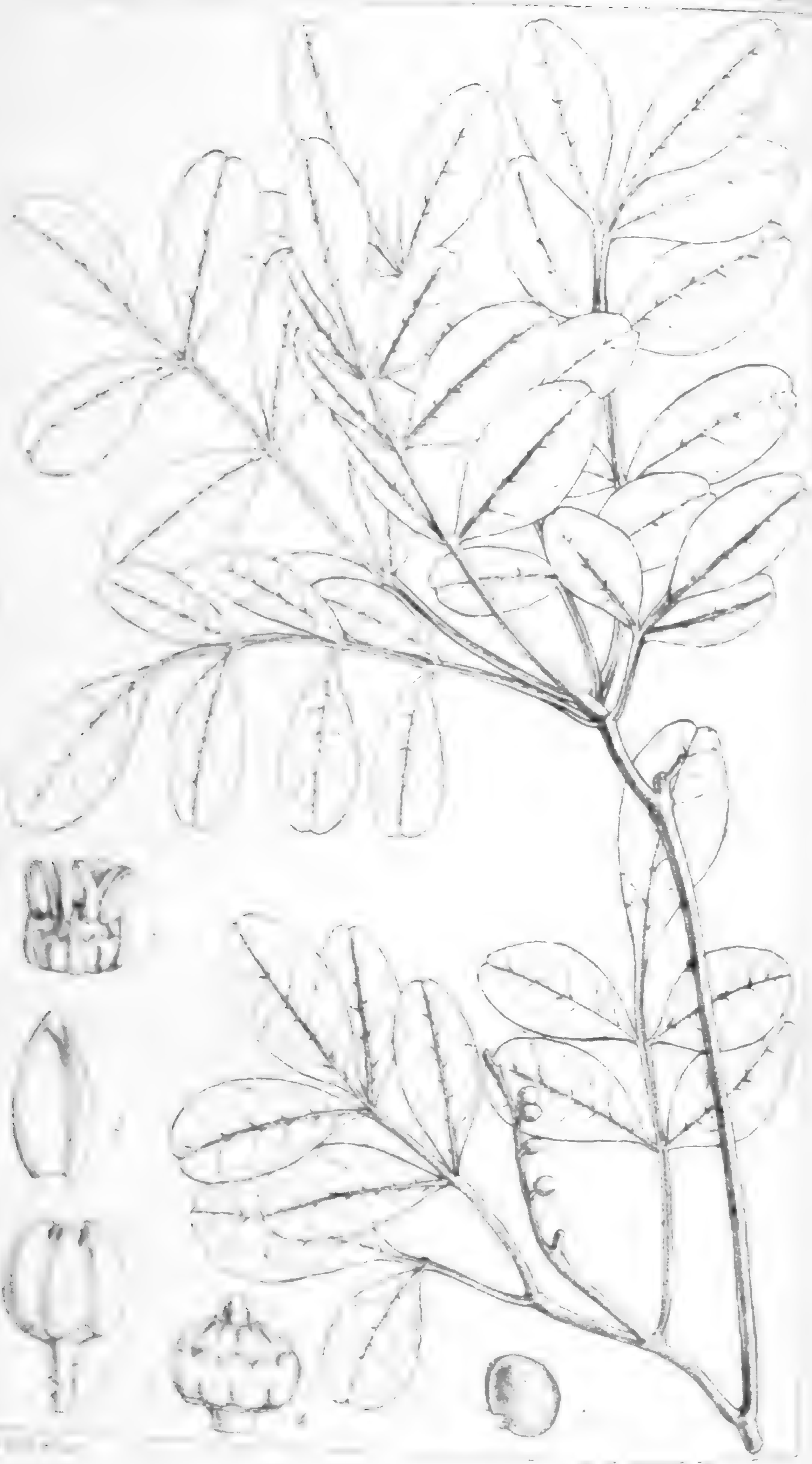


Plate 2331.

PILOCARPUS MICROPHYLLUS, *Stapf.*

Rutaceæ. Tribe Zanthoxyleæ.

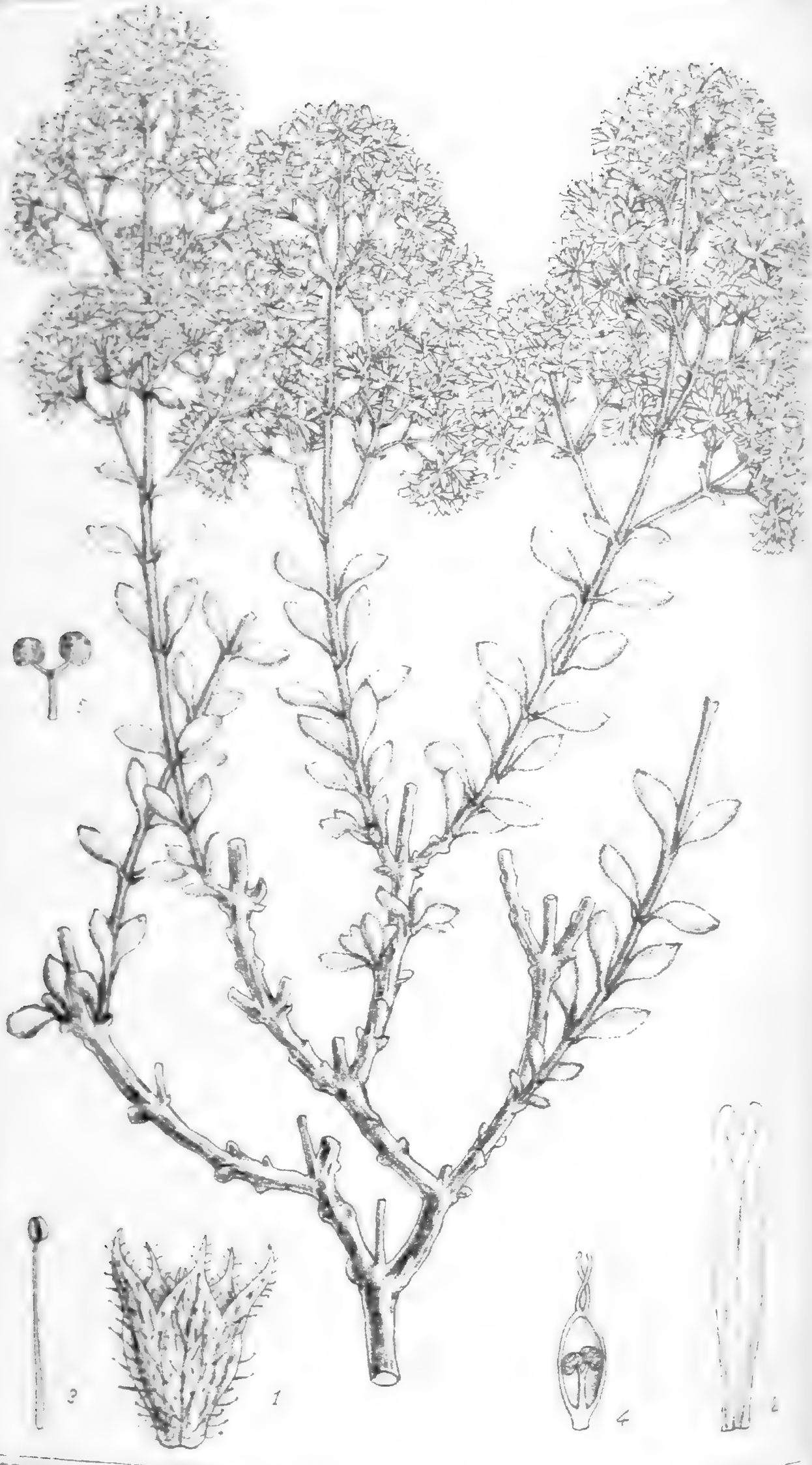
P. microphyllus, *Stapf, in Kew Bull.* 1894, 4 ; glaberrimus, ramulis gracilibus teretibus, foliis imparipinnatis, foliolis parvis lateralibus sæpius 2–3-jugis ellipticis v. obovato-ellipticis apice emarginatis subsessilibus basi cuneatim angustatis, terminali basi longe attenuato v. petiolulato, petiolo communi inter foliola angustissime alato, racemis simplicibus solitariis tenuibus laxifloris, floribus breviter pedicellatis, calycis minuti lobis ovatis, alabastris parvis late ovoideo-globosis, coccis lateraliter compressis oblique ovoideis.

Hab. Brazil. *Glaziou* (No. 13417).

Folia cum petiolo 2–4 poll. longa ; foliola circ. 1 (–1½) poll. longa, ½–⅝ poll. lata.

Expanded flowers are wanting ; the advanced buds in our specimen are about $\frac{1}{16}$ inch in diameter. The raceme is probably from 1½–2 inches in length. The only fruiting-carpel seen, picked out of a sample of the leaves sent to the Kew Museum as a new 'Jaborandi' by Messrs. Evans, Sons & Co., of Liverpool, measured about ⅜ inch in length and breadth.—D. Oliver.

Fig. 1. Bud. 2. Detached petal. 3. Stamens and pistil. 4. Pistil and adnate disk. 5. Detached fruit-carpel. *All enlarged.*



M.S. del. et lith.

Crescentia biovulata Stard.

Plate 2332.

GYPSOPHILA BIOVULATA, *Stapf.*

Caryophyllaceæ. Tribe Sileneæ.

G. biovulata, *Stapf* (*sp. nov.*); fruticosa intricata, ramis hornotinis floriferis patentim glanduloso-hirtis, foliis petiolatis ellipticis acutis carnosulis scaberulis setulosisve, cymis in paniculis terminalibus multifloris glanduloso-pilosulis dispositis, floribus graciliter pedicellatis, calyce tenui obconico-campanulato patentim glanduloso segmentis tubo æquilongis lanceolatis acutis, petalis calyce subduplo longioribus anguste cuneato-oblongis apice emarginatis v. breviter bifidis, filamentis filiformibus, ovario biovulato.

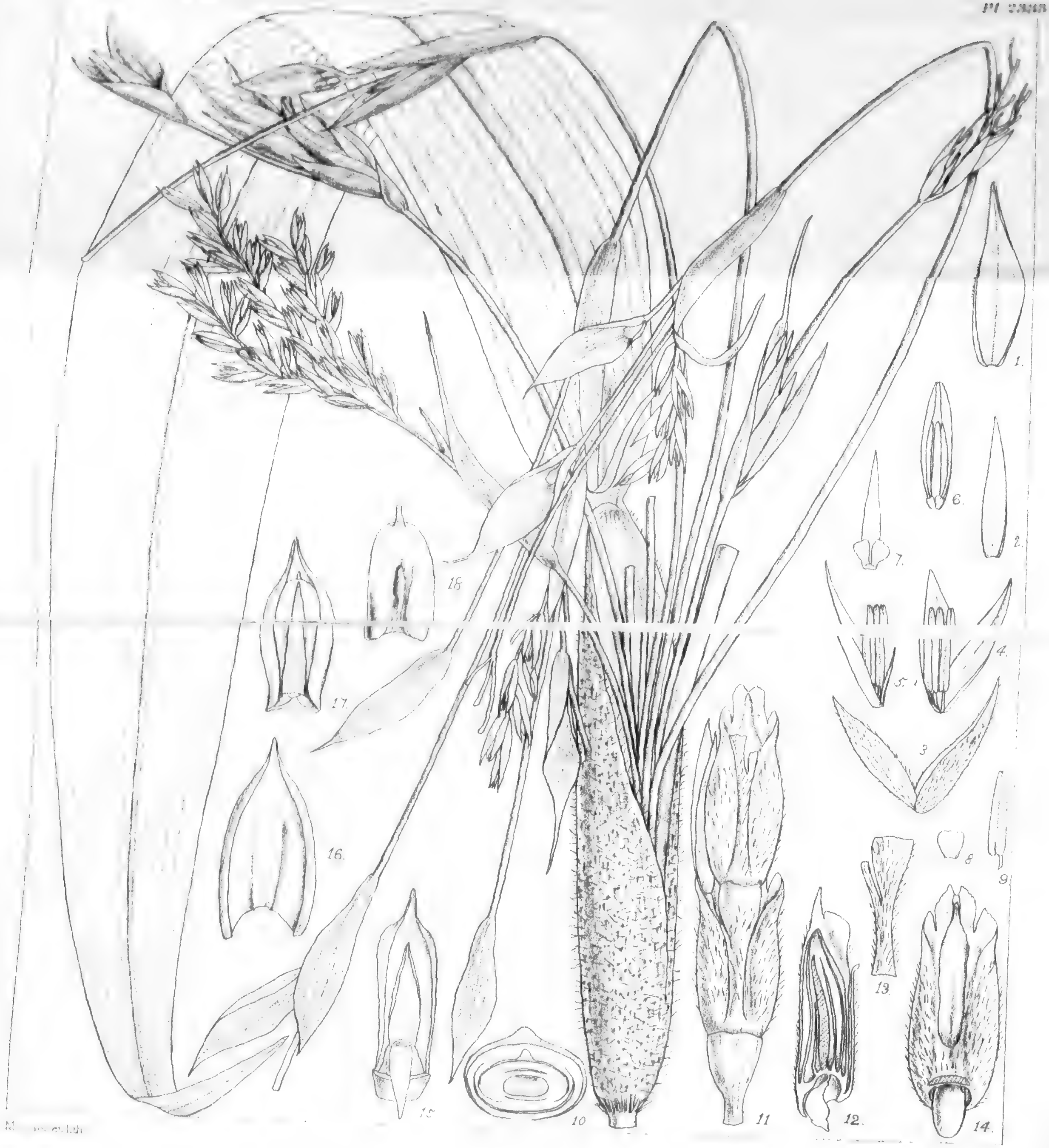
Hab. Persia; mountain above the great naphtha springs of Daleki, near Bushire, *Stapf.*

Frutex 1–1½-pedalis, dense intricatus, hemisphæricus. *Pedicelli* ⅛–¼ poll. longi. *Bracteæ* parvæ, ovales v. lanceolatæ. *Calyx* ⅛ poll. longus.

The two ovules are borne on an erect basal placenta, about half the length of the cavity of the ovary, each on its short divaricate funicle.

The general habit, form of the leaves, delicate calyx and biovulate ovary of this plant, constitute a somewhat exceptional type amongst the *Eugypsophileæ*.—O. Stapf.

Fig. 1. Calyx. 2. Petal. 3. Stamen. 4. Longitudinal section of ovary. 5. Placentary stipes. *All enlarged.*



Polytoca Cookei, Stapf.

Plate 2333.

POLYTOCA COOKEI, *Stapf.*

Gramineæ. Tribe Maydeæ.

P. Cookei, *Stapf* (*sp. nov.*) ; annuum (vel perennans, sed anno primo florens?), culmo 3-pedali vel altiore lævi ad nodos annulo pilorum instructo, internodiis inferioribus quam vaginæ brevioribus superioribus longioribus plus minusve exsertis, vaginis laxiusculis setis patulis e tuberculis ortis obsitis striatis, ligula brevi subhyalina fuscescenti-pilosula, lamina lanceolata vel lineari-lanceolata basin versus angustata acuminata flaccida in margine dense serrulata utrinque pilosa, nervis utrinque 7–12 tenuibus sed distinctis aliis tenuissimis interjectis intermedio subtus valde prominente dorso rotundato albido, ramis florentibus in foliorum superiorum axillis fasciculatim congestis unoquoque basi prophyllo dorsali anguste lineari longe acuminato pubescente instructo iteratim ramificato, ramulis secundi vel tertii vel quarti ordinis eodem more collectis in inflorescentias heterogamas abeuntibus nempe extimo cujusque fasciculi (i.e. primario) elongato plus minusve exserto in paniculam masculam cæteris abbreviatis in spicas spurias mixtas sed functione femineas abeuntibus, foliis ramificationes inflorescentiæ compositæ subtendentibus plus minusve reductis superioribus in spathas laxas superne apertas demum sæpe explicatis setaceo-caudatas vel acutissimas mutatis striatis pilosis atque parce setosis, panicula mascula elongata patule pubescente in articulos secedente, spiculis geminatis uno longius altero breviter pedicellato vel sessili bifloris, gluma I. lanceolata acuminata pubescente membranacea multinervi nervo medio et duobus submarginalibus vel hisce solis sæpe validioribus cæteris tenuibus margine hyalino plus minusve inflexo, II. tenuiore tenuinervi paulo breviore, III. et IV. quam I. breviore glabra paucinervia hyalina, palea floris inferioris bicarinata emarginata hyalina quam gluma III. paulo breviore, palea floris superioris sæpe minuta lanceolata tenuiter hyalina enervi, antheris 3 linearibus, lodiculis 2 late obovatis truncatis carnosis crebre venulosis, ovarii rudimento nullo, rhachi spicæ spuriæ femineæ mox in articulas secedente, articulis circiter 5-6, inferioribus apice in cupulam basin articuli sequentis conicam recipientem ampliatis infimo nudo cæteris spiculigeris, spiculis geminatis in articulo secundo et tertio una sessili feminea basi excavata altera pedicellata neutra spiculæ masculæ simili sed ad glumas binas infimas redacta cum pedicello rhachi ad cupulæ basin adnata in articulis summis utraque neutra spiculæ masculæ consimili sed plus minus redacto, spiculæ femineæ gluma I. crustacea oblonga basi marginibus connatis et glumam II. amplectente apice crista triloba ornata lobis lateralibus oblique truncatis intermedio emarginato lævi dorso pubescente margine inflexo intus utrinque quasi cristulam oblique descendentem formante,

M. S. del. et lith.

Sarcanthus Gilberti, Hk.f.

Plate 2334.

SARCANTHUS GILBERTI, *Hook. f.*

Orchideæ. Subtribe Sarcantheæ.

S. Gilberti, *Hook. f.* (*sp. nov.*); caule brevi, foliis 2–3-pollicaribus patenti-recurvis breviter loriformibus apice late 2-lobis lobis ovatis sinu acuto, pedunculo gracili pendulo, glabro, racemo laxe multifloro, bracteis minutis persistentibus, floribus pedicellatis $\frac{1}{3}$-poll. latis, sepalis ovatis, petalis angustioribus oblongis, labello 3-lobis sepalis æquilongo, lobis lateralibus triangularibus acutis, terminali oblongo concavo obtuso, calcare incurvo labello æquilongo, anthera incurva longe cornuta, polliniis didymis canaliculæ filiformi elongatæ affixis, glandula minuta.

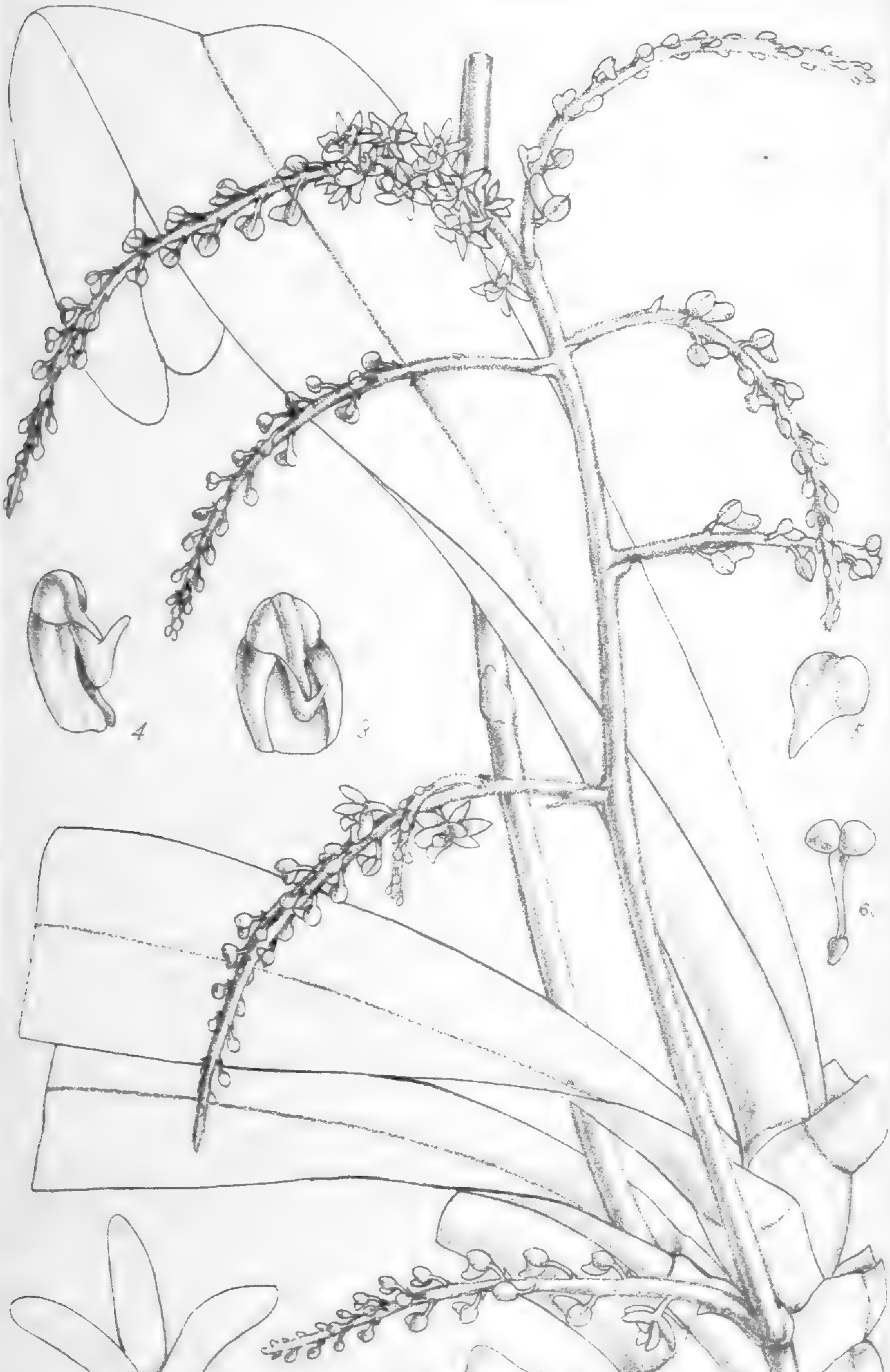
Hab. Tenasserim ; at Moulmein, *Gilbert ?* (*Hort. Bot. Calc.*).

Caulis 1-1$\frac{1}{2}$-pollicaris, crassitie pennæ anserinæ. *Folia* rigida, carinata, $\frac{1}{2}$-poll. lata, late viridia, lobis terminalibus acutis v. obtusis intus sæpe retusis. *Scapus* unacum racemo 3–5-pollicaris, interdum basi ramosus, pedicellis $\frac{1}{6}$ poll. longis. *Sepala* obtusa v. subacuta, pallide fusco-viridia, basin versus roseo punctata. *Labellum* roseum, calcare pallido, intus 2-partito. *Columna* brevis, rostello prominente. *Anthera* basi globosa, dein in rostrum gracile incurvum acutum producta.

Sarcanthus Gilberti belongs to the group of this genus with a short stem and loriform leaves, and is most nearly allied to *S. Parishii*, Hook. f. ('Bot. Mag.' t. 5217), which has longer leaves, with very unequal, rounded terminal lobes, golden yellow sepals banded with red, a very short triangular mid-lobe of the lip, a much shorter anther, and the pollinia are stipitate on a much broader straighter caudicle.

The plate is from a drawing in the Herbarium of the Royal Gardens, Calcutta.—J. D. Hooker.

Fig. 1. Flower. 2. Lip and column. 3. Section of lip, showing the septum and callus at the base of the column. 4. Top of column with the anther arching over the rostellum. 5. Anther. *All enlarged.*



M S del et lith.

Cleisostoma Kunstleri Hk f

Plate 2335

CLEISOSTOMA KUNSTLERI, *Hook. f.*

Orchideæ. Subtribe Sarcantheæ.

C. Kunstleri, *Hook. f.* (*sp. nov.*) ; caule brevi, foliis 6–10-pollicaribus loriformibus apice breviter bilobis lobis rotundatis, pedunculo erecto ramoso ramisque puberulis, ramis alternis patenti-recurvis ad basin fere floriferis, bracteis minutis, floribus $\frac{1}{3}$ poll. latis breviter pedicellatis, sepalis lineari-oblongis obtusis petalis angustioribus, labello parvo saccato, lobis lateralibus parvis obtusis, terminali ovato recurvo, callo infra columnam glabro 2-lobo lobis emarginatis, columna brevi rostello uncinato, anthera rostrata, polliniis rhombeis caudicula gracili glandula parva oblonga.

Hab. Malaya Peninsula ; at Perak, *Kunstler* (*Hort. Bot. Calcutta*).

Caulis 2–3-pollicaris, crassus. *Folia* 1–1$\frac{1}{2}$ poll. lata, carinata, pallide viridia. *Pedunculus* foliis æquilongus v. longior, pauci-bracteatus, crassitie pennæ corvinæ ; rami distantes, 3-pollicares, rachi robusta subdensiflora. *Flores* pallide lilacini. *Sepala* lateralia petalaque decurva. *Labellum* sepalis æquilongum v. brevius.

C. Kunstleri approaches nearest to *C. ramosum*, Hook. f. *Fl. Brit. Ind.* vi. 71 (*Saccolabium ramosum*, Lindl.), which has broader ob ovate yellowish sepals and petals, and a conical spur which as well as the callus below the column is pubescent within. The plate is from two drawings in the Herbarium of the Royal Gardens, Calcutta.—J. D. Hooker.

Fig. 1. Flower. 2. Lip laid open, showing the calli at the base of the column. 3. Front, and 4. side, view of column. 5. Anther. 6. Pollinia. *All enlarged.*

M.S del.et lith

Diospyros bilocularis, Oliv.

Plate 2336.

DIOSPYROS BILOCULARIS, *Oliv.*

Ebenaceæ.

D. bilocularis, *Oliv.* (*sp. nov.*) ; arbor floribus pedicellisque exceptis glabra, foliis petiolatis coriaceis late ellipticis v. obovatis obtusis interdum breviter et obtuse apiculatis, fl. ♂ . . ., floribus ♀ axillaribus in fasciculis pauciflоris dispositis, pedicellis crassiusculis apicem versus incrassatis, calycis 4-partitis segmentis rotundatis dorso et margine cum pedicello ferrugineo-pilosulis, corolla 4-fida crassiuscula æstivatione dextrorsum contorta, hypocarpio primum obconico mox breviter crasse cylindrico, lobis calycinis æquilongis basi articulatis, staminodia 0, ovario glabro oblongo- v. ovali-ovoideo apice angustato calycem superante biloculari, ovula in utroque loculo geminata, pendula, fructibus oblongo-ellipsoideis apice brevissime apiculatis, monospermis, pericarpio haud crasso coriaceo epicarpio (in sicco) parce ruguloso glaucescenti-purpureo oculo armato minute papilloso-tuberculato, albumine insigniter radiatim ruminato.

Hab. Singapore, in the Jungle by the Botanic Garden, *Ridley* (No. 2755). Received also from the same locality in 1882 with female flowers in bud.

Arbor, ramuli teretes læves. *Folia* 3–5 poll. longa, $1\frac{3}{4}$–$2\frac{3}{4}$ poll. lata ; petiolus $\frac{1}{2}$–$\frac{7}{8}$ poll. longus. *Pedicelli* $\frac{1}{2}$ poll. longi ; hypocarpium fructiferum $\frac{3}{16}$–$\frac{1}{4}$ poll. longum, $\frac{1}{4}$ poll. latum. *Calyx* fructiferus vix accrescens ; segmentis patentibus, tempore florifero erectis.

This curious *Diospyros* would seem to be the type of a new section of the genus. It has the symmetrically ruminated albumen of § *Melonia* and the geminate ovules of § *Cargillia*, but a 2-celled ovary. Male flowers I do not know.—D. Oliver.

Fig. 1. Pistil. 2. Same in longitudinal section. 3. Transverse section of seed. *Fig. 2 enlarged.*

Tabernanthe Iboga, Baill.

Plate 2337.

TABERNANTHE IBOGA, *Baillon.*

Apocynaceæ. Subtribe Tabernæmontaneæ.

T. Iboga, *Baill. in Bull. Soc. Linn. Paris*, i. 782; frutex glaber, ramis teretibus, foliis ovali- v. oblanceolato-oblongis obtusiuscule acuminatis brevissime petiolatis v. subsessilibus, nervis lateralibus haud conspicuis utrinque 9–11, cymis pauciflоris e dichotomiis ortis pedunculatis foliis multo brevioribus pedicellis flore interdum longioribus, sepalis ovatis acutis, corollæ fere *Tabernæmontanæ* tubo ovoideo-dilatato limbi lobis æstivatione sinistrorsum tortis, antheris supra medium tubi insertis acuminatis basi sagittatis, ovario integro basi biloculari medio et supra uniloculari placentis parietalibus multiovulatis.

Hab. W. Tropical Africa; Gaboon, *Mann* (No. 943); Cape Lopez, *Griffon du Bellay*; Congo, *Comm. Dr. H. Mueller*; Angola, *Welwitsch* (No. 5950).

Folia 3–5½ poll. longa, 1–2 poll. lata. *Flores* ½ poll. longi.

First discriminated by Dr. Baillon (*l.c.*) but its position left doubtful, though its points of contact with *Tabernæmontana* and other groups of Apocynaceæ were clearly indicated by him. Were it not for the complete consolidation of the carpels one would hardly hesitate to merge it in *Tabernæmontana* itself. It was sent to Kew by Dr. Hugo Mueller in 1883, under the native Congo name of 'Bocca root,' said to be 'used and much valued on the lower Congo as a febrifuge.' Baillon says it is known at Cape Lopez as the *Iboga*, and that it is the *Aboua* of the 'Pahouins' and *Obouété* of the Gaboon.

It is described as having a large bitter root, eaten by the Gaboon people. 'Ils la disent enivrante, aphrodisiaque, et avec elle ils prétendent qu'on n'éprouve aucun besoin de sommeil.' Dr. Baillon in his 'Hist. des Plantes,' x. 170, says the *Obouété* of the Gaboons is a 'plante médicamenteuse des plus remarquables.'—D. Oliver.

Fig. 1. Bud. 2. Calyx-segment and gland. 3. Corolla-tube laid open. 4. Anther. 5. Pistil. 6. Transverse section of ovary near the base. 7. Same near the middle. *All enlarged.*

M.S del et lth.

Icacina macrocarpa, Oliv.

Plate 2338.

ICACINA MACROCARPA, *Oliv.*

Olacineæ. Tribe Icacineæ.

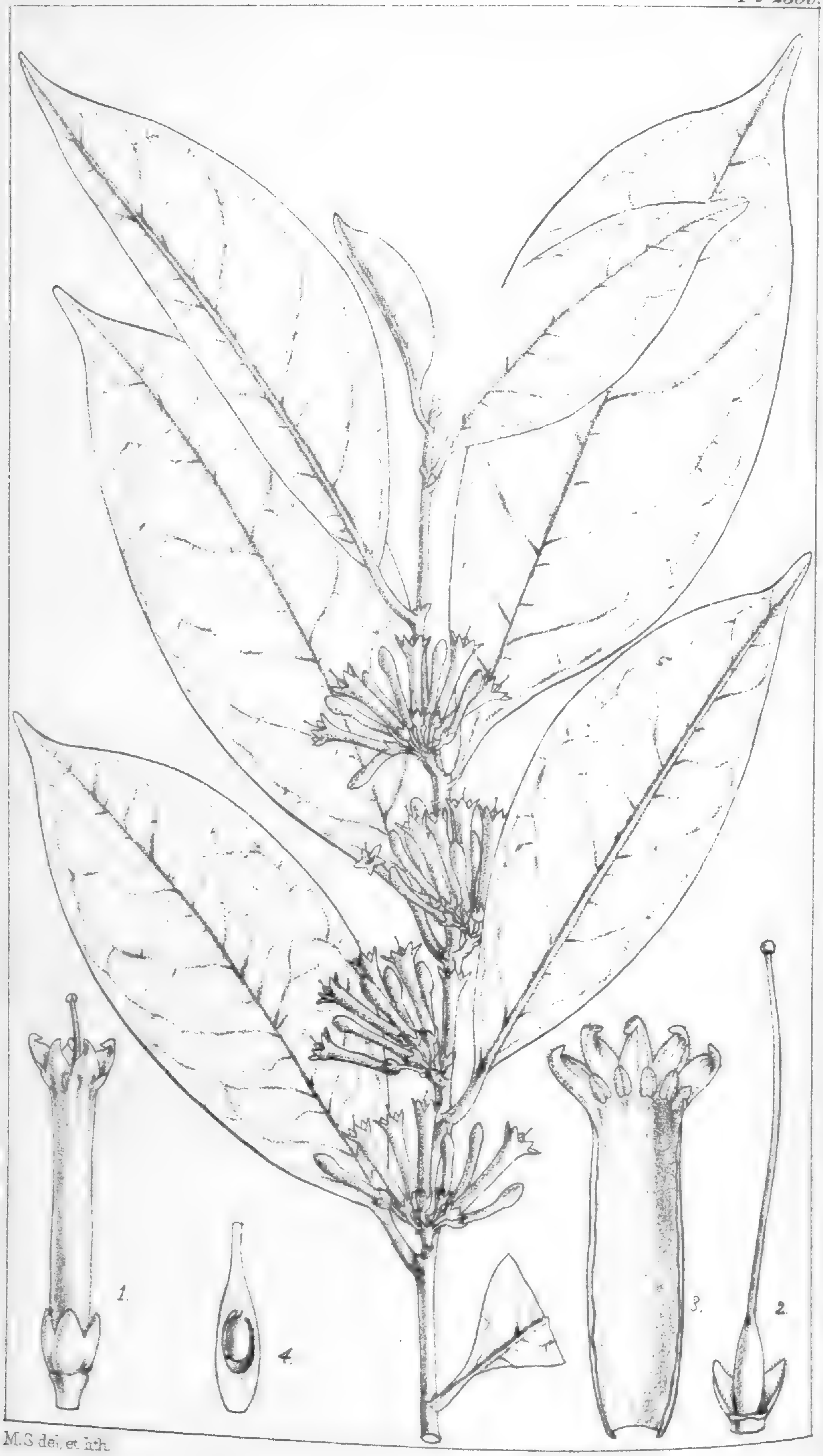
I. macrocarpa, *Oliv. Fl. Trop. Afr.* i. 357 ; longe scandens ramulis foliiferis stellato-pubescentibus, foliis breviter petiolatis oblongo-ellipticis saepius breviter obtusiuscule apiculatis integris penniveniis costa plus minus stellato-pubescente nervis primariis utrinque 6–8 venisque subtus prominentibus supra glabris, floribus parvis sessilibus fasciculatim congestis in paniculis ramosis ferrugineo-pubescentibus cum ramulis divaricatis dispositis, calycis cupuliformis lobis deltoideis, petalis glabris intus haud carinatis crassiusculis, filamentis linearisubulatis apice attenuatis glabris, antheris late ellipticis utrinque emarginatis, ovario dense hirsuto, ovulis geminatis pendulis leviter inaequalibus, stylo recto glabro ovario subaequilongo, stigmate capitato, fructu ellipsoideo, pericarpio crasso endocarpio tenui lignescente, semine solitario, albumine copioso carnoso, embryonis radicula supera brevissima obtusa, cotyledonibus tenuiter foliaceis undulato-plicatis albumine brevioribus, plumula conspicua. Lavigeria macrocarpa, *Pierre, Flor. Forest. de la Cochinchine* (*Olacinées*), *Fasc.* xvii. (1892).

Hab. W. Tropical Africa, Fernando Po, *Mann* (No. 43); Libreville, Gaboon, *Klaine.*

Folia 6–10 poll. longa, 3–4½ poll. lata, costa nervisque primariis subtus exceptis glabra v. parce stellato-pubescentia : petiolus ¼–⅓ poll. longus. *Panicula* laxe intricatae 5–6 poll. longae atque latae. *Fructus* 2–2½ poll. longus, 1½–2 poll. diam. pericarpio ¼ poll. crasso. *Semen* 1½–2 poll. longum, raphe conspicua.

M. Pierre, who has received the same, or a closely allied, species from the Congo, of the fruit of which he has favoured me with a careful and elaborate analysis, has published this plant as generically distinct from the original *Icacina* (*I. senegalensis*) of Jussieu. From the great difference in the fruit, as well as minor floral differences, I think there may be adequate ground for this. The only panicle of flowers in the Kew Herbarium is detached. Mr. Mann describes the stem as extending 80 feet, at a height of 8 or 10 feet above the ground. The flowering branches of *I. senegalensis*, Juss., remarkably recall the habit of those of the Icaco (*Chrysobalanus Icaco*, L.), which name suggested *Icacina* adopted by Jussieu. In this plant the petals are sericeo-hirsute externally and barbate within near the base.—D. Oliver.

Fig. 1. Bud and remains of two flowers with calyx and ovary. 2. Petal. 3. Stamen, back and front. 4. Upper portion of ovary, laid open. 5. Fruit. 6. Seed. 7. Same in longitudinal section. *Excepting fruit and seed, all enlarged.*



M.S del. et lith.

Leptaulus daphnoides. Berth.

Plate 2339.

LEPTAULUS DAPHNOIDES, *Benth.*

Olacineæ. Tribe Icacineæ.

L. daphnoides, *Benth. Gen. Plant.* i. 351; frutex 10-15-pedalis glaber v. novellis puberulis, foliis alternis petiolatis tenuiter coriaceis oblongo-ellipticis obtuse v. interdum acutiuscule acuminatis caudatisve, cymis multifloris sessilibus v. brevissime pedunculatis extra-axillaribus, floribus breviter pedicellatis v. subsessilibus, calyce parvo 5-partito fructifero immutato, segmentis calycinis ovatis acutiusculis, corollæ tubulosæ tubo teretiusculo lobis brevibus ovato lanceolatis, antheris ore corollæ tubi insertis subsessilibus oblongis, ovario angusto in stylum longum gracile attenuato, stigmate leviter dilatato breviter exserto, ovulis geminatis pendulis, fructibus ovoideis acutatis glabris v. obsolete puberulis 1-spermis, semine conformi longitudinaliter 1-sulcato, albumine carnoso, embryone minimo radicula supera, pericarpio tenuiter carnoso endocarpio tenue crustaceo v. osseo.

Hab. W. Tropical Africa, Bagroo River, *Mann* (No. 806), Sibange Farm on the Gaboon, *Soyaux* (No. 164); Monbuttu-land, *Schweinfurth* (No. 3464); Sierra Leone, *Scott-Elliot*.

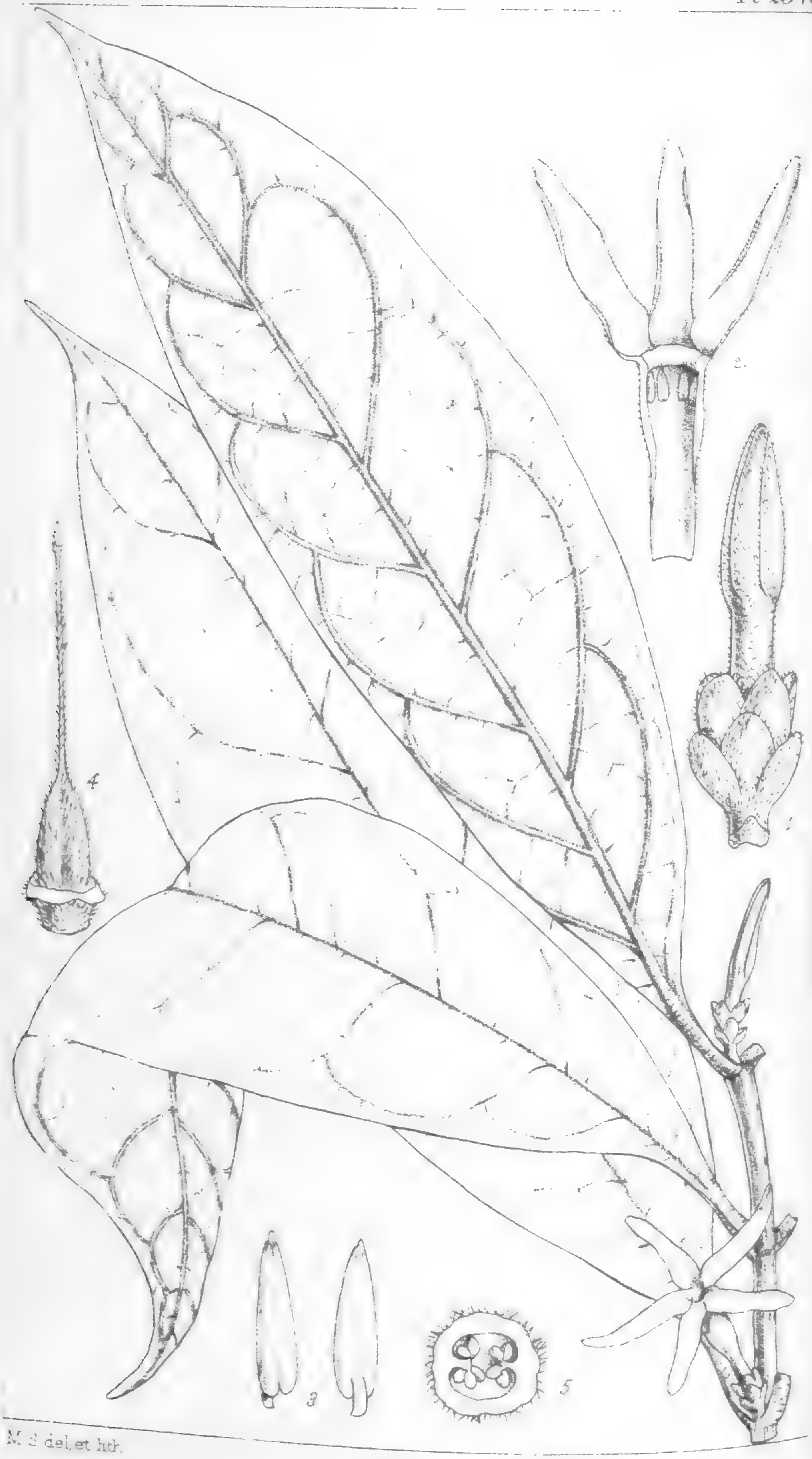
Folia (+ —) 4–5 poll. longa, $1\frac{1}{2}$–$1\frac{3}{4}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Flores* $\frac{1}{2}$ poll. longi. *Fructus* 5–6 lin. longus, basi calyce immutato persistente stipatus.

Var. *macrophylla* (an species distincta?), foliis 9–11 poll. longis, $2\frac{1}{2}$–4 poll. latis, floribus subsessilibus, lobis calycinis lanceolatis, tubo corollæ valide sulcato, fructu oblongo-ovoideo apiculato 1–$1\frac{1}{4}$ poll. longo.

Hab. Mount John, Kongui River, *Mann* (No. 1781).

A shrub with the *facies* of some of the axillary-flowered species of *Cestrum*. In the 'Flora of Tropical Africa' I indicated the differences between the Kongui specimens and the type, but more recently specimens in fruit have come to hand from M. Soyaux, which would almost justify specific separation of the form referred to above as var. *macrophylla*. The flowers of *Leptaulus* are extra-axillary, but inserted at or near the level of the petioles. M. Baillon describes another species of this curious genus in 'Adansonia' (iii. 375, *adnot.*) from Madagascar.—D. Oliver.

Fig. 1. Flower. 2. Pistil. 3. Corolla laid open. 4. Longitudinal section of ovary. *All enlarged.*



M. S. del. et lith.

Carpodinus uniflorus, Stapf.

Plate 2340.

CARPODINUS UNIFLORUS, *Stapf.*

Apocynaceæ. Tribe Carisseæ.

C. uniflorus, *Stapf in Kew Bulletin*, 1894, 19; scandens, ramulis ultimis primum obscure pubescentibus mox glabratis, foliis oblongo-ovalibus obtuse acuminatis basi angustatis pallide viridibus nervis lateralibus utrinque 6–8 sub ipso margine arcuatis subtus prominulis, floribus axillaribus solitariis brevissime pedicellatis 4–5-bracteolatis, bracteolis late ovatis obtusis calyce brevioribus pubescentibus, lobis calycinis bracteolis consimilibus, corollæ puberulæ segmentis linearibus patentibus tubo æquilongis, staminibus supra medium tubi insertis, ovario tomentello.

Hab. W. Tropical Africa, Sibange Farm on the Gaboon, *Soyaux* (No. 269).

Folia 6–9 poll. longa, $1\frac{3}{4}$–$2\frac{1}{4}$ poll. lata; petiolus $\frac{1}{2}$ poll. longus. *Flores* 1 poll. diam.; corollæ tubus $\frac{1}{2}$–$\frac{5}{8}$ poll. longus.

Stated to yield 'very fine india-rubber.' *C. parviflorus*, Stapf, would seem to be the nearest ally of this plant, also growing on the Gaboon, but its flowers are very much smaller.—D. Oliver.

Fig. 1. Bud and bracteoles. 2. Corolla laid open. 3. Anther, front and back views. 4. Pistil. 5. Transverse section of ovary. *All enlarged.*

M.S del. et lith.

Ectinocladus Benthami. Baill.

Plate 2341.

ECTINOCLADUS BENTHAMI, *Baill.*

Apocynaceæ. Subtribe Euechitideæ.

E. Benthami, *Baillon, Hist. des Plantes*, x. 211 ; frutex 15–30-pedalis, ramulis teretibus divergentibus v. patentibus primum puberulis mox glabris, foliis petiolatis oblongo- v. oblanceolato-ovalibus obtusis v. obtuse apiculatis basi cuneatis tenuiter coriaceis glabris v. in costa puberulis venis subtus prominulis arrectis anastomosantibus, cymulis puberulis paucifloris terminalibus v. quasi-axillaribus subsessilibus, pedicellis flore sæpius brevioribus, bracteis minutis ovatis, sepalis ovatis obtusiusculis, corollæ tubo calyce 3–4-plo longiore segmentis patentibus reflexisve oblanceolatis v. obovatis ciliatis v. intus pilosulis tubo duplo longioribus, antheris medio tubi insertis, ovariis distinctis hirtis, stylo superne dilatato, folliculis teretibus striatis, seminibus anguste linearibus coma terminali instructis. *Stapf in Journ. Linn. Soc.* xxx. 88–9.

Hab. W. Tropical Africa, Old Calabar, *W. C. Thomson* ; Sierra Leone Boundary Commission, near Mofari, Scarcies River, *Scott-Elliott* (No. 4440).

Folia 2 poll. longa, $\frac{1}{2}$–$\frac{7}{8}$ poll. lata ; petiolus, $\frac{1}{8}$–$\frac{1}{6}$ poll. longus. *Flores* flavidi fauce rubri, in cymulis folio multo brevioribus. *Folliculi* 5 poll. longi, angusti. *Semina* (immatura) pollicaria, coma fere æquilonga.—D. Oliver.

Fig. 1. Front calyx-lobes and corolla removed, showing pistil. 2. Corolla laid open. 3. Anther, anterior and lateral views. 4. Seed. *Figs.* 1–3 *enlarged.*

M.S. del. et lith.

Baissea laxiflora Stapf

Plate 2342.

BAISSEA LAXIFLORA, *Stapf.*

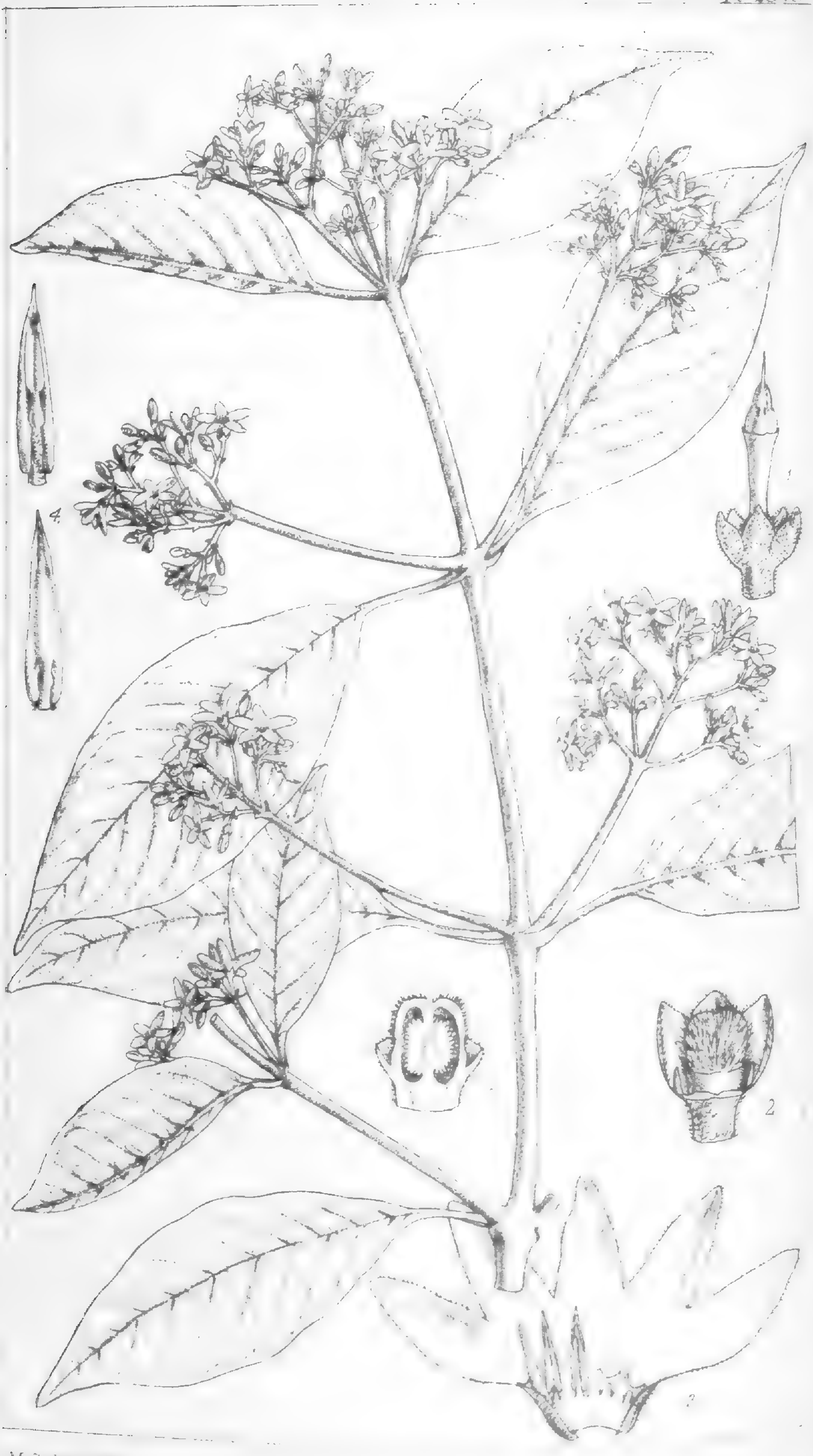
Apocynaceæ. Subtribe Euechitideæ.

B. laxiflora, *Stapf in Kew Bullet.* 1894, 124 ; alte scandens ramulis gracillimis crispe puberulis glabrescentibusve, foliis ovali-oblongis oblanceolatisve acuminatis basi cuneatis leviter rotundatisve breviter petiolatis nervis primariis utrinque 3–5 subtus prominulis, venis inconspicuis subtransversis glabris v. subtus in axillis nervium pilosulis, floribus in paniculis racemiformibus gracilibus puberulis axillaribus folio subæquilongis dispositis, bracteis minutis lanceolatis, pedicellis calyce 2–6-plo longioribus, corollæ tubo obconico minute pubescente calyce 4-plo longiore, segmentis lineari-lanceolatis tubo longioribus.

Hab. W. Tropical Africa, Old Calabar and Muni river, *Mann* (Nos. 1756, 2258).

Folia $2\frac{1}{4}$–$3\frac{1}{4}$ poll. longa, $\frac{3}{4}$–1 poll. lata ; petiolus $\frac{1}{8}$–$\frac{3}{16}$ poll. longus. *Flores* semipollicares. *Sepala* ovato-lanceolata $\frac{1}{16}$ poll. longa. *Corolla* profunde 5-fida. *Stamina* basi corollæ tubi inserta ; filamenta brevissima ; antheræ conniventes, basi sagittatæ, appendiculis vacuis compressis utrinque leviter incurvis. *Carpella* plus minus coalita ; ovula plurima.—D. Oliver.

Fig. 1. Calyx laid open, showing pistil. 2. Corolla laid open. 3. Anther, back and front views. 4. Transverse section of ovary. *All enlarged.*



M.C. del. et lith.

Baissea brachyantha, Stapf.

Plate 2343.

BAISSEA BRACHYANTHA, *Stapf.*

Apocynaceæ. Subtribe Euechitideæ.

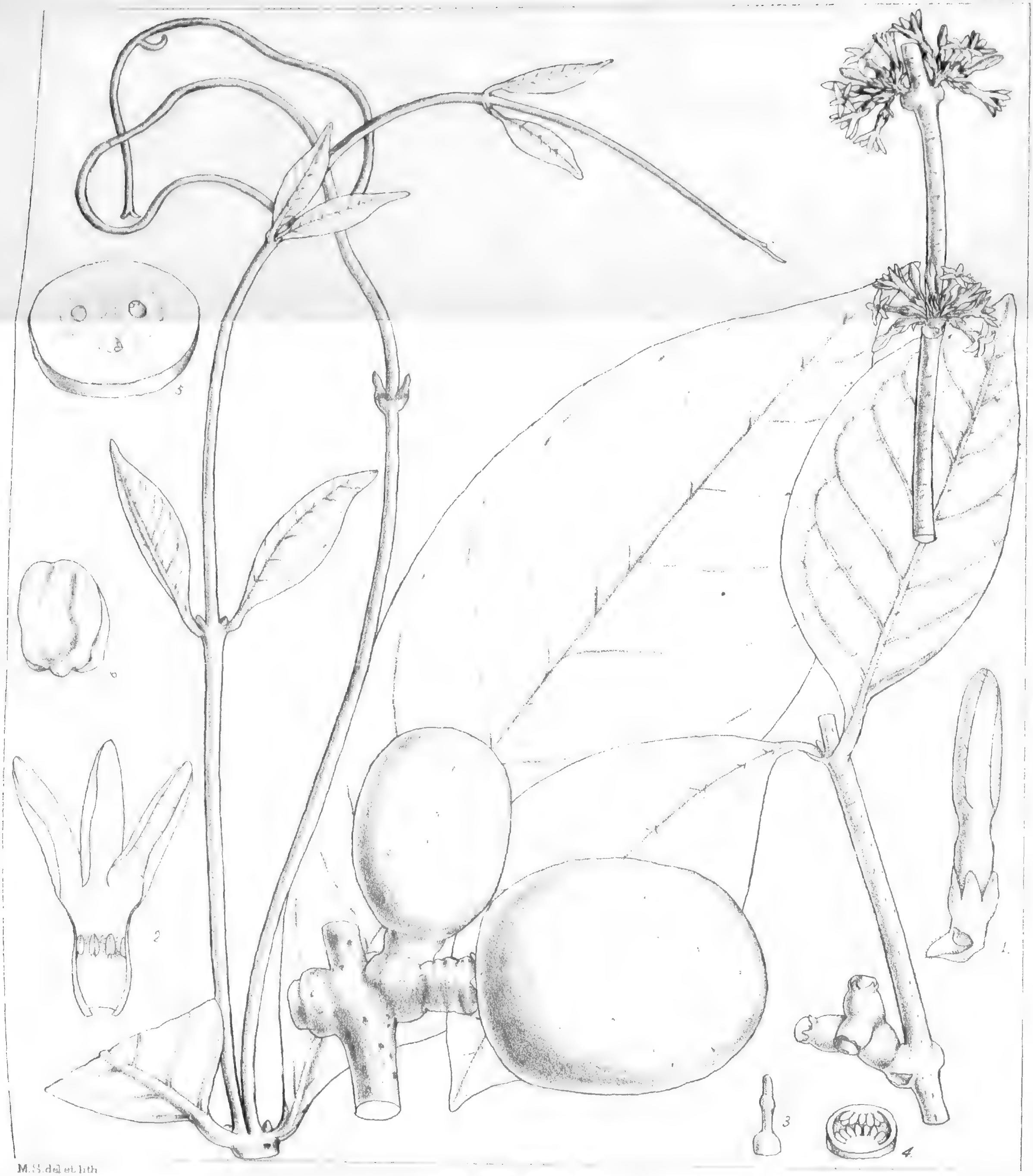
B. brachyantha, *Stapf in Kew Bullet.* 1894, 125; scandens, ramulis teretibus ultimis compressiusculis fusco-puberulis mox glabris, foliis late v. anguste ellipticis breviter obtusiuscule acuminatis v. apiculatis, nervis primariis utrinque 9–11, venulis inconspicuis transversis approximatis glabris tenuiter coriaceis, cymis in paniculis axillaribus pluri- v. paucifloris pedunculatis folio sæpius brevioribus, pedunculis secundariis divaricatis fusco-puberulis, pedicellis floribus subæquilongis, alabastris fusco-puberulis, calycis parvi segmentis ovatis acutiusculis, corollæ tubo late infundibuliformi calyce 3–4-plo longiore segmentis ovato- v. oblongo-lanceolatis intus glabris, antheris infra medium tubi insertis lanceolatis apice tenuiter acuminatis basi appendiculis vacuis anguste linearibus rectis, ovario apice hirto carpellis coalitis.

Hab. W. Tropical Africa; Bagroo river, *Mann* (No. 854).

Folia 2–3 poll. longa, $\frac{3}{4}$–2 poll. lata; petiolus $\frac{1}{3}$–$\frac{1}{2}$ poll. longus, lamina in foliis angustioribus in petiolum attenuata. *Inflorescentiæ* pedunculi $\frac{3}{4}$–$1\frac{1}{2}$ poll. longi. *Flores* expansi $\frac{1}{4}$ poll. diam.

The lateral nerves of the leaves are about twice as numerous as in *B. laxiflora*, and the flowers are much shorter and smaller, though the inflorescence is not quite so compact as represented in our plate. In both species I find the carpels more or less distinctly connate.—D. Oliver.

Fig. 1. Calyx and pistil. 2. Calyx and ovary, two of the calyx-segments removed. 3. Corolla laid open, showing insertion of the stamens. 4. Anther, front and back views. 5. Longitudinal section of ovary. *All enlarged.*



M.S. del et lith

Willughbeia firma, Bl

Plate 2344.

WILLUGHBEIA FIRMA, *Blume.*

Apocynaceæ. Tribe Carisseæ.

W. firma, *Blume, Mus. Bot.* i. p. 154; frutex alte scandens ramis pro parte cirriferis, foliis oblongo-ellipticis breviter obtuseque acuminatis basi acutis coriaceis nitidis nervis subpatulis 12–14, cymis congestis subsessilibus multifloris, pedunculo atque pedicellis florum fecundatorum post anthesin valde incrassatis, calycis lobis oblongo-ovatis obtusis minute ciliatis, corollæ lobis tubo sublongioribus linearioblongis patulis, antheris tubo medio insertis, bacca (submatura) oblongo-globosa. *Fl. Brit. Ind.* iii. 624.

Hab. Malay Peninsula and Archipelago, from Sumatra to Borneo. *Various collectors.*

Folia 3–5½ poll. longa, 1¾–2¼ poll. lata. *Calyx* vix ⅛ lin. longus. *Corollæ* tubus vix ¼ lin. longus.

The figure was drawn from specimens sent in spirits by Mr. Leembruggen in the Lampong'sche Districten, Sumatra. According to him, the plant yields a good sort of india-rubber. It appears from the material at Kew that there are several varieties of *Willughbeia firma*, some of which are known by different native names, but their discrimination would require careful observation on the spot. I take, however, the form figured here to be the type of Blume's species.—O. Stapf.

Fig. 1. Bud. 2. Corolla, laid open. 3. Pistil. 4. Transverse section of ovary. 5. Transverse section of fruit. 6. Seed. *Except the fruit, enlarged.*

Wrightia parviflora Stapf.

Plate 2345.

WRIGHTIA PARVIFLORA, *Stapf.*

Apocynaceæ. Tribe Echitideæ.

W. parviflora, *Stapf in Kew Bullet.* 1894, 121; frutex novellis pubescentibus, foliis ovali-oblongis v. ellipticis subabrupte acuminatis basi late cuneatis rotundatisve opacis subtus sæpius puberulis, nervis lateralibus sæpe vix prominulis utrinque 7–8, petiolo brevi, cymis pubescentibus in paniculis terminalibus breviter pedunculatis contractis, pedicellis gracilibus, bracteis parvis ovatis v. lanceolatis deciduis, calycis segmentis ovato-rotundatis, corollæ puberulæ segmentis oblongo-ellipticis tubo fere æquilongis, in fauce fimbriis numerosis apice 2-3-fidis exsertis instructo 6–9 sub quoque lobo, folliculis elongatis utrinque angustatis longitudinaliter striatis glabris, seminibus linearibus testa costato-rugosa a basi ad apicem pilis mollibus gracillimis elongatis induta, albumine tenui, embryonis carnei cotyledonibus convolutis radicula cylindrica longioribus.

Hab. W. Tropical Africa, near Lagos, *Barter*, *Sir C. A. Moloney*, *Rowland*; Yoruba Expedition, *Millson*; Eppah, *Barter*.

Folia $2\frac{1}{2}$–5 poll. longa, 1–2 poll. lata; petiolus $\frac{1}{8}$–$\frac{1}{4}$ poll. longus. *Corolla* aurantiaca, $\frac{1}{3}$ poll. lata. *Follicula* omnino libera, 14–22 poll. longa. *Semina* $\frac{1}{2}$–$\frac{2}{3}$ poll. longa.

The seeds of *Wrightia* are described in 'Gen. Plantarum' as 'apice . . . ecomosa, inferne coma decidua appendiculata.' The soft hairs are so easily separable from the testa that, from our dry specimens, I am afraid to speak positively, but suspect that there may be no marked difference between the seed-hairs as described in *W. parviflora* and in the Indian *W. tinctoria*.—D. Oliver.

Fig. 1. Calyx laid open, showing pistil. 2. Calyx segment and alternating glands, 3. Corolla-tube laid open. 4. Trifid scale from mouth of corolla-tube. 5. Anther, front and back views. *All enlarged.*

M S del et lith

Oncinotis gracilis, Stapf.

Plate 2346.

ONCINOTIS GRACILIS, *Stapf.*

Apocynaceæ. Subtribe Euechitideæ.

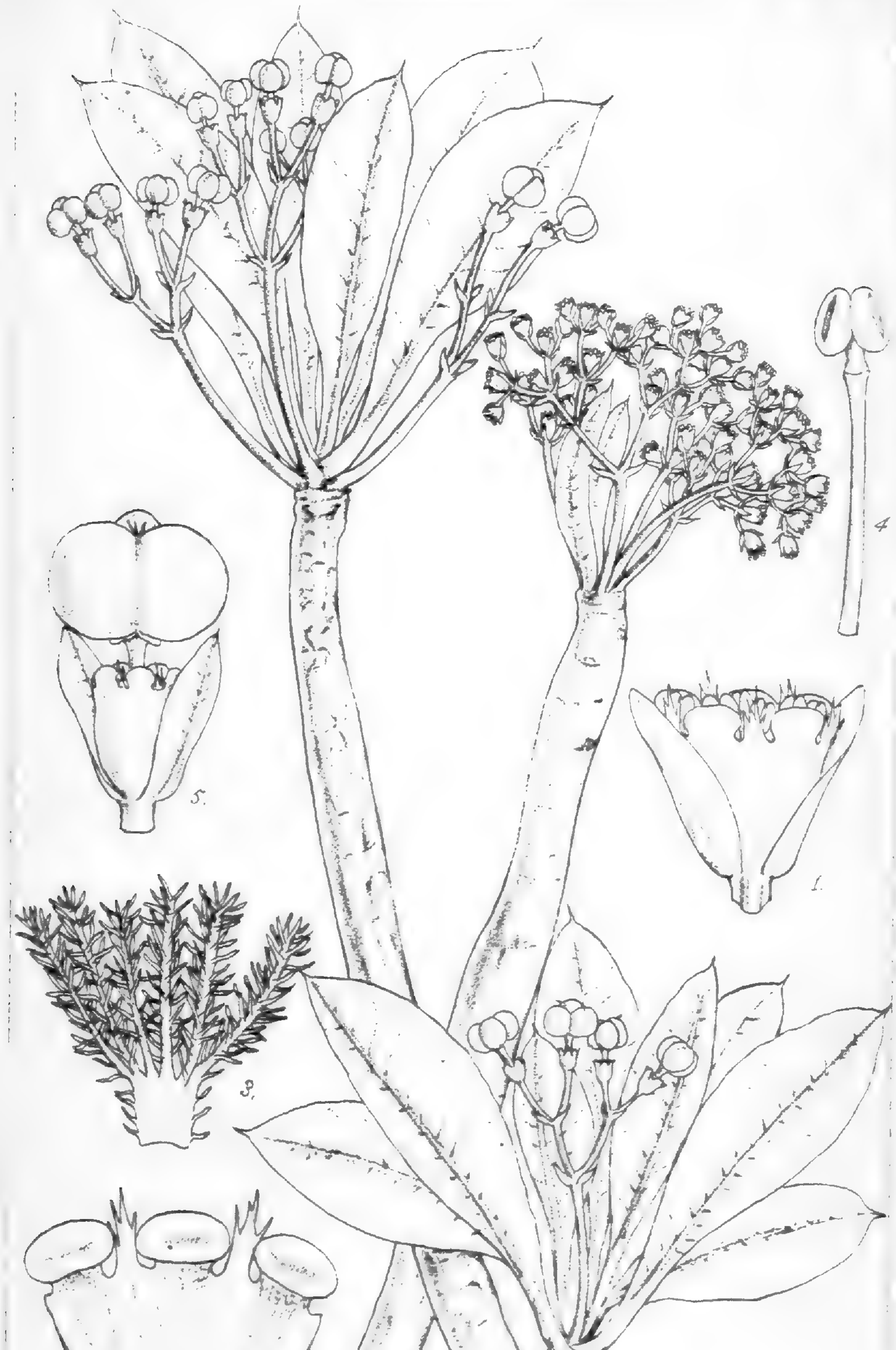
O. gracilis, *Stapf in Kew Bullet.* 1894, 124; scandens ramulis ferrugineo-hirtis teretibus, foliis petiolatis obovato- v. oblanceolato-ellipticis obtusiuscule acuminatis basi obtusis supra costa parce hirtella excepta glabra subtus pallidiora costa nervisque primariis utrinque 5-7 pilosulis, paniculis axillaribus ferrugineo-hirtis folio sæpius brevioribus breviter pedunculatis ramis inferioribus longioribus divergentibus, floribus congestis brevissime pedicellatis, alabastris angustis subulato-linearibus, sepalis ovatis acutiusculis, corollæ rotatæ tubo cylindrico calyce 2-plo longiore, limbi segmentis tubo æquilongis patentibus oblongis, fauce squamulis 5 lobis limbi alternis parvis instructa, antheris omnino inclusis prope basin corollæ insertis, anguste linearibus lobis basalibus divergentibus obtusiusculis leviter dilatatis, carpellis apice pubescentibus basi glandulis 5 carnosulis circumdatis.

Hab. Received from the Lagos Botanical Station, *H. Millen* (No. 106).

Folia $3\frac{1}{2}$–4 poll. longa, $1\frac{1}{2}$-$1\frac{7}{8}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{3}$ poll. longus. *Flores* $\frac{1}{4}$ poll. longi.

Nearly allied to *Oncinotis hirta*, Oliv. ('Ic. Plant.' 1232), from which it differs in indumentum, more distinctly acuminate leaves, more slender buds, and smaller acute rather spreading sepals. I have not seen the fruit.—D. Oliver.

Fig. 1. Calyx laid open, showing pistil. 2. Corolla laid open. 3. Anther, lateral and front views. *All enlarged.*



M.S. del et lith

Euphorbia Abbottii, Baker.

Plate 2347.

EUPHORBIA ABBOTTII, *Baker.*

Euphorbiaceæ. Tribe Euphorbieæ.

E. (§ **Goniostema**) **Abbottii**, *Baker in Kew Bullet.* 1894, 150 ; fruticosa, ramis teretibus lævibus apicem versus interdum leviter crassioribus, foliis ad apices ramulorum confertis petiolatis oblanceolatis ovalibusve lamina membranacea basi in petiolum angustata apice graciliter apiculata glabra venis primariis utrinque 15–20, stipulis obsoletis v. minutis conicis, cymis pedunculatis dichotomis 6–12-cephalis foliis quasi-terminalibus suffultis eisdem primum longioribus, bracteis ovatis acutatis v. temp. fructifero late oblongo-v. obovato-ellipticis, involucro campanulato glabro basi bracteis 2 involucro æquilongis arcte suffulto, glandulis transverse oblongis lævibus inappendiculatis, involucri lobis deltoideo-lanceolatis incisis, capsula profunde 3-loba, lobis lævibus lateraliter compressis carina obtusis, seminibus globosis albido-marmoratis.

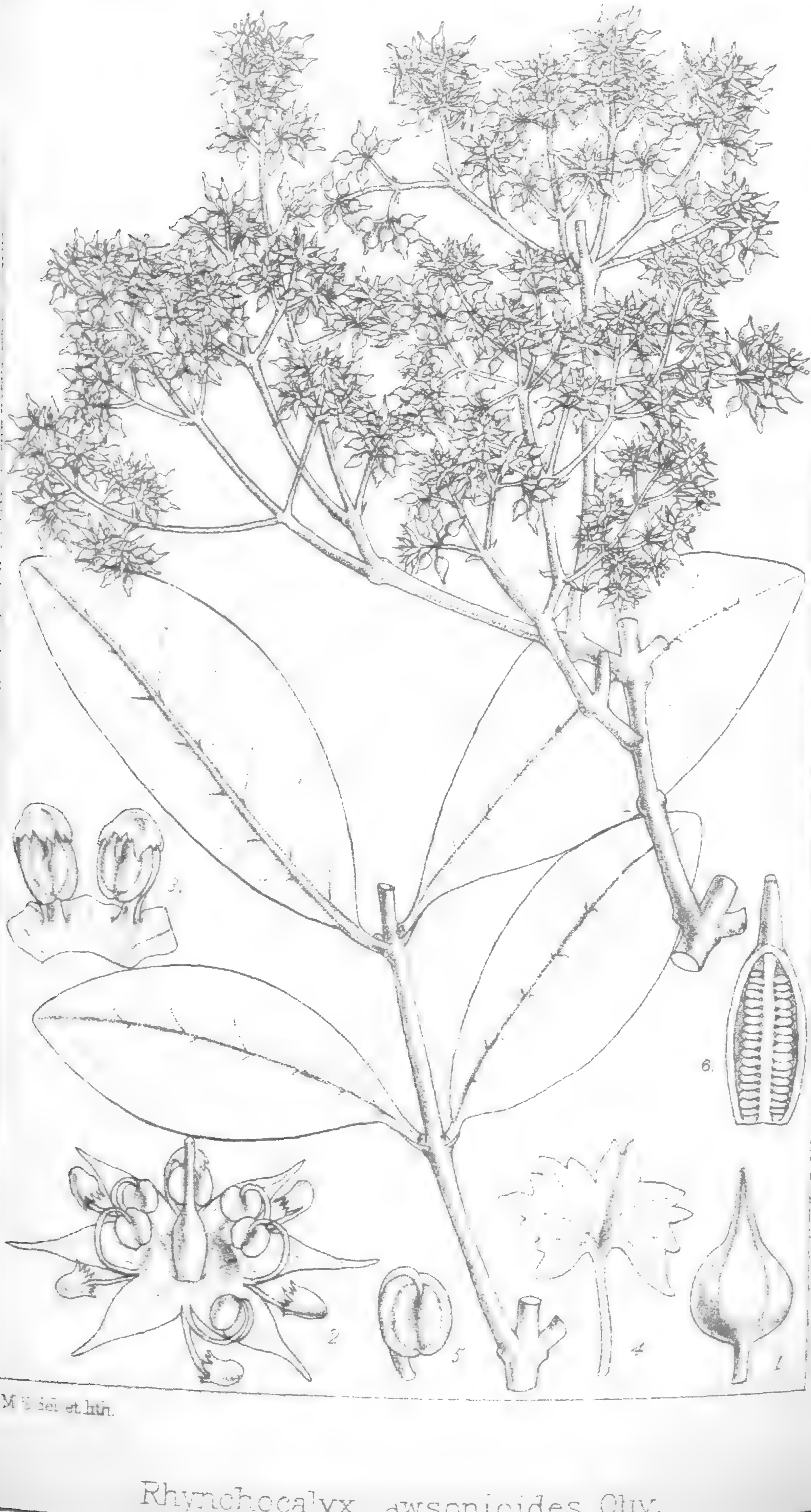
Hab. Indian Ocean ; Aldabra Island, *Dr Abbott.*

Folia cum petiolo marginato 2–2½ poll. longa, ½–¾ poll. lata. *Bracteæ* ½–⅙ poll. longæ. *Capsula* ¼–⅓ poll. diam.

This is one of several new species collected in Aldabra by Dr. W. L. Abbott, an American naturalist, who visited the island in 1893, and who kindly communicated his botanical material to the Royal Gardens.* It is allied to other species of this section, which appears to be restricted to Madagascar and the Western Islands of the Indian Ocean.—D. Oliver.

Fig. 1. Involucre and bracts. 2. Part of involucre laid open, showing marginal glands and incised segments. 3. Fimbriate bracteole. 4. Stamen and its stipes. 5. Involucre and bracts with capsule.

* *Vide* 'Kew Bulletin,' 1893, 154, and 1894, 146.



M.S. del. et lith.

Rhynchocalyx lawsonioides. Oliv.

Plate 2348.

RHYNCHOCALYX LAWSONIOIDES, *Oliv.*

Lythraceæ.

Rhynchocalyx, *Oliv.* (*nov. gen.*). *Calyx* tenuis, alabastro ovoideo-globosus apice rostratus, expansus profunde 6-fidus, tubus patelliformis; lobi lanceolati, acuti. *Petala* isomera lobis calycinis alternis perigyna graciliter et longiuscule unguiculata; lamina rotundata v. deltoideo-cordata undulata v. plicata margine dentata calycem subæquantia. *Stamina* isomera perigyna petalis opposita, æstivatione inflexa; filamenta subulato-filiformia; antheræ late ellipticæ, 2-loculares, longitudinaliter dehiscentes, dorso prope basin affixæ. *Ovarium* omnino liberum compressum, 2-loculare in stylum fere æquilongum angustatum; ovula plurima, horizontalia, sub-biseriata; stigma terminale indivisum. *Fructus* . . .—Arbuscula *glaberrima, ramulis di-trichotome ramosis, subteretibus.* Folia *tenuiter coriacea, opposita, breviter petiolata, ovalia v. oblongo-elliptica, obtusa v. obtusiuscula, margine integra anguste revoluta.* Inflorescentia *paniculata, paniculæ multifloræ terminales v. in axillis superioribus dispositæ, folia sæpius superantes. Flores parvi graciliter pedicellati; bracteæ obsoletæ.*

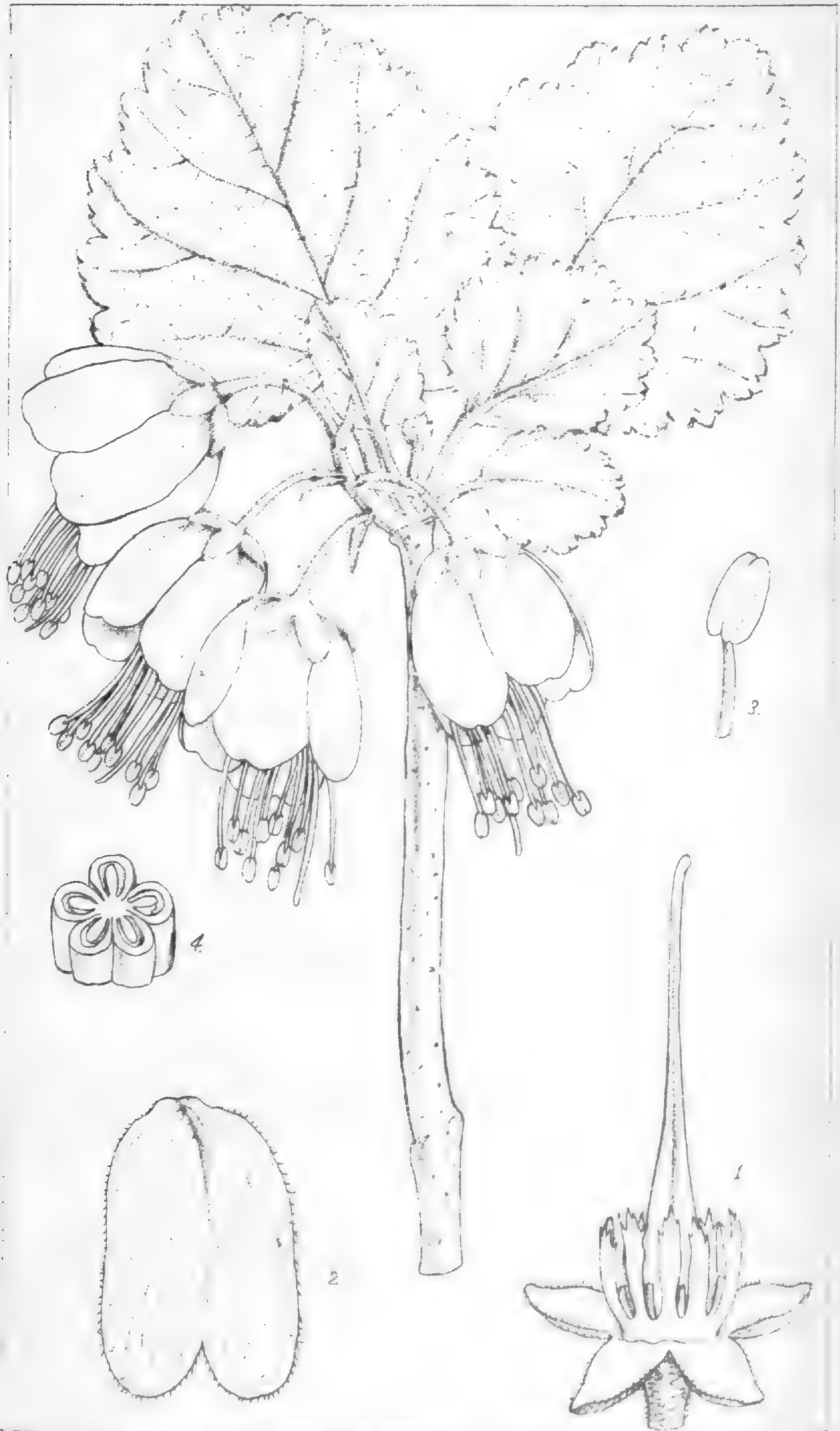
R. lawsonioides, *Oliv.* (*sp. nov.*)

Hab. Natal; edge of the Bush near Murchison, *J. M. Wood* (No. 3124).

Folia $1\frac{1}{4}$–$1\frac{3}{4}$ poll. longa, $\frac{2}{3}$–1 poll. lata; petiolus 1–2 lin. longus. *Paniculæ* 2–3 poll. longæ atque latæ. *Pedicelli* alabastris æquilongi. *Flores* $\frac{1}{4}$ poll. lati; calycis segmenta temp. florifero reflexa.

Of this interesting plant, sent to Kew about nine years ago by Mr. Wood in bud and flower, we still are in want of fruiting specimens. The isomerous stamens, singly opposed to the petals and the bilocular compressed ovary with numerous horizontal axile ovules, I think, entirely justify its discrimination as a new generic type. The general *facies* of the plant is quite that of *Lawsonia inermis.*—D. Oliver.

Fig. 1. Bud. 2. Flower expanded. 3. Anthers and subtending petals. 4. Petal, the lamina opened. 5. Stamen. 6. Longitudinal section of ovary.—*All enlarged.*



M. S. del. et lith.

Greyia Flanigani, Bolus.

Plate 2349.

GREYIA FLANAGANI, *Bolus.*

Sapindaceæ. Tribe Melianthеæ.

G. Flanagani, *Bolus (sp. nov.)*; arbor mediocris ramosus, foliis ad apices ramulorum confertis patentibus petiolatis ovatis vel orbicularibus saepius cordatis lobulatis dentatisque venosis, subtus cum petiolis tenuiter albo-tomentosis, racemis terminalibus brevibus laxe 4–5 floris, pedicellis filiformibus pubescentibus, bracteis subulatis, floribus magnis speciosis pendulis, sepalis oblongis obtusis pubescentibus, petalis erectis subinæqualibus imbricatis oblongis retusis glabris, disco cupulari ex annulo brevi 10-lobo, lobis erectis eglanduliferis subulatis acutis irregulariter lacerato-dentatis, staminibus longe exsertis, filamentis filiformibus, ovario columnari glabro in stylo staminibus subaequilongo sensim attenuato.

Hab. Cape Colony (South-eastern Region), exposed rocky slopes near Komgha, alt. 2,000 ft., fl. Nov., *H. G. Flanagan* (No. 328).

Folia ad 2 poll. longa et lata; petiolus 8–10 lin. longus. *Racemi* et pedicelli ½ poll. longi. *Sepala* 2½–3 lin. longa. *Corolla* 8–9 lin. longa, 7 lin. lata. *Disci* cupularis lobi 3½–4 lin. longi.

Distinct from *G. Sutherlandi*, Hk. et Harv., of which an excellent figure, from a cultivated specimen, is given in the 'Botanical Magazine' (tab. 6040), as also from *G. Radlkoferi*, Szyszylowicz (in 'Polypetalæ Rehmannianæ,' p. 49) in the disk, the lobes of which in *G. Flanagani* are subulate acute and more or less toothed but destitute of the glandular disk which terminates the lobes in the two former species. The flowers also are larger and in solitary few (3–5)-flowered racemes. The leaves of *G. Radlkoferi*, which may well be a variety of *G. Sutherlandi*, are almost precisely similar in form and indumentum to those of our plant. We are indebted for excellent specimens to the collector, who has detected many novelties in the rich region explored by him.—H. Bolus.

Fig. 1. Flower, the petals removed. 2. Petal. 3. Anther. 4. Transverse section of ovary.—D. Oliver.

M.S. del, et lith.

Holalafia multiflora, Starf.

Plate 2350.

HOLALAFIA MULTIFLORA, *Stapf.*

Apocynaceæ. Tribe Euechitideæ.

H. multiflora, *Stapf in Kew Bullet.* 1894, 123; alte scandens glaberrima, ramis teretibus lævibus, foliis petiolatis oblongo- ovato- v. obovato-ellipticis breviter obtuse acuminatis cuspidatisve basi late rotundatis v. interdum subcordatis, paniculis terminalibus multifloris congestis subsessilibus foliis superioribus multo brevioribus, bracteis parvis late ovatis obtusis submembranaceis, pedicellis divergentibus decurvisve calyce 3–5-plo longioribus, sepalis inæqualibus ovato-ellipticis obtusis glandulis totidem carnosulis ovatis rotundatisve alternantibus, corollæ hypocrateriformis tubo supra calycem leviter dilatato intus infra antheras lineatim cum setis deflexis hispido, segmentis late obovatis glanduloso-marginatis, fauce exannulato, antheris infra medium tubi insertis lineari-lanceolatis acuminatis basi sagittatis, carpellis coalitis, ovario biloculari multiovulato.

Hab. W. Tropical Africa; Fernando Po, *Mann* (No. 1164); Rio del Rey, Cameroons, *Johnston.*

Frutex scandens 40-pedalis. *Folia* 4–7 poll. longa, 2–3½ poll. lata, linea interpetiolari juncta; petiolus ¼–½ poll. longus. *Flores* expansi, 1–1¼ poll. diam.

We have here a case analogous to that of *Tabernanthe* (Pl. 2337), standing in the same relation to *Alafia* as *Tabernanthe* to *Tabernæmontana*: differing, that is, from the old genera respectively in the consolidation of the carpels. In general *facies* of the plant and its condensed divaricating terminal panicle it corresponds nearly with *Alafia landolphioides.* The anthers are those of the Euechitideæ, not of the Carisseæ to which *Landolphia* belongs.—D. Oliver.

Fig. 1. Calyx and pistil. 2. Same, two sepals removed to show the ovary. 3. Corolla-tube laid open. 4. Anther, back and front views. 5. and 6. Transverse sections of the ovary. *All enlarged.*

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EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

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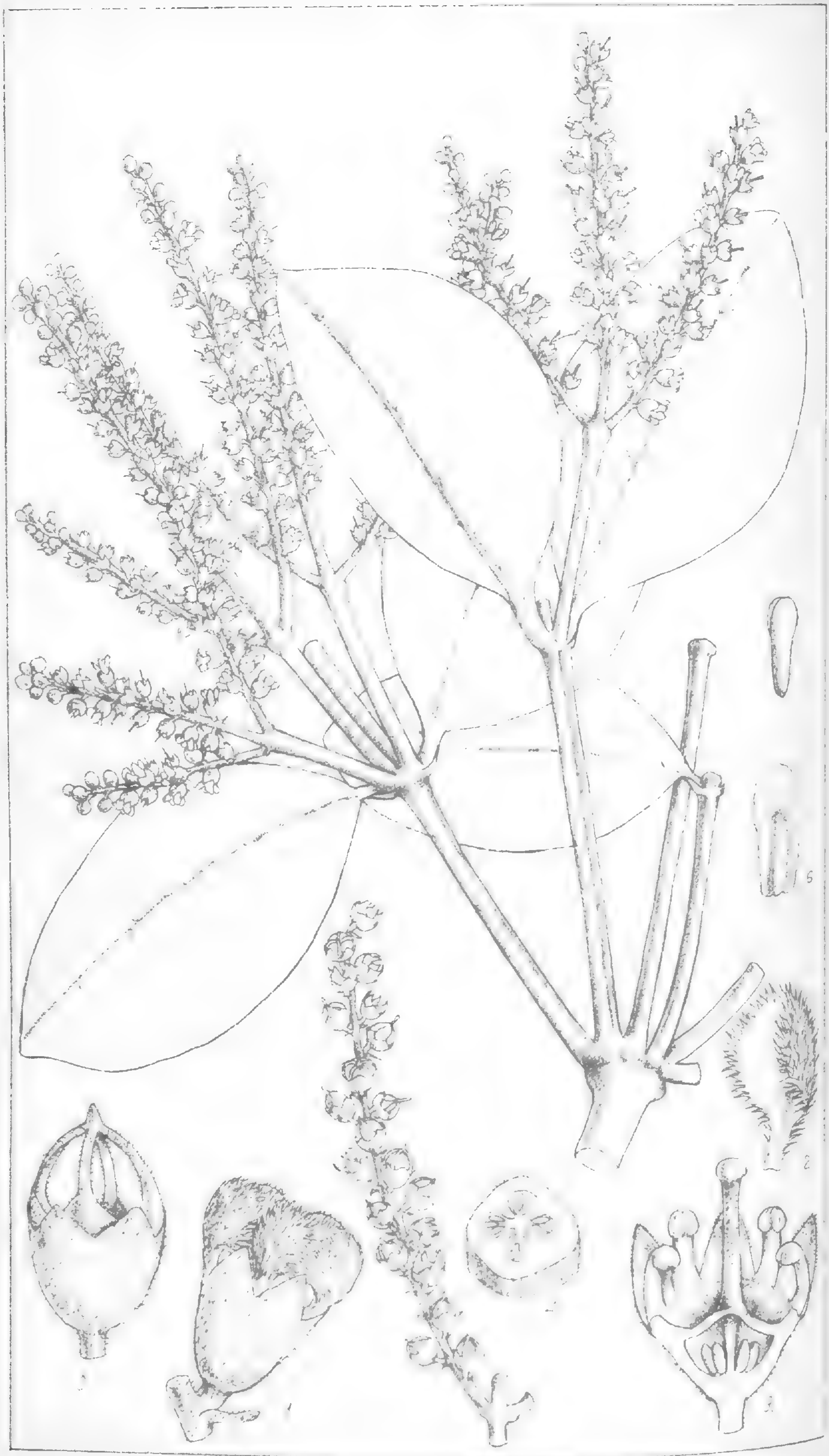


M.S.del, et lith.

Dactylocladus stenostachys Oliv.

Plate 2351.

DACTYLOCLADUS STENOSTACHYS, *Oliv.*

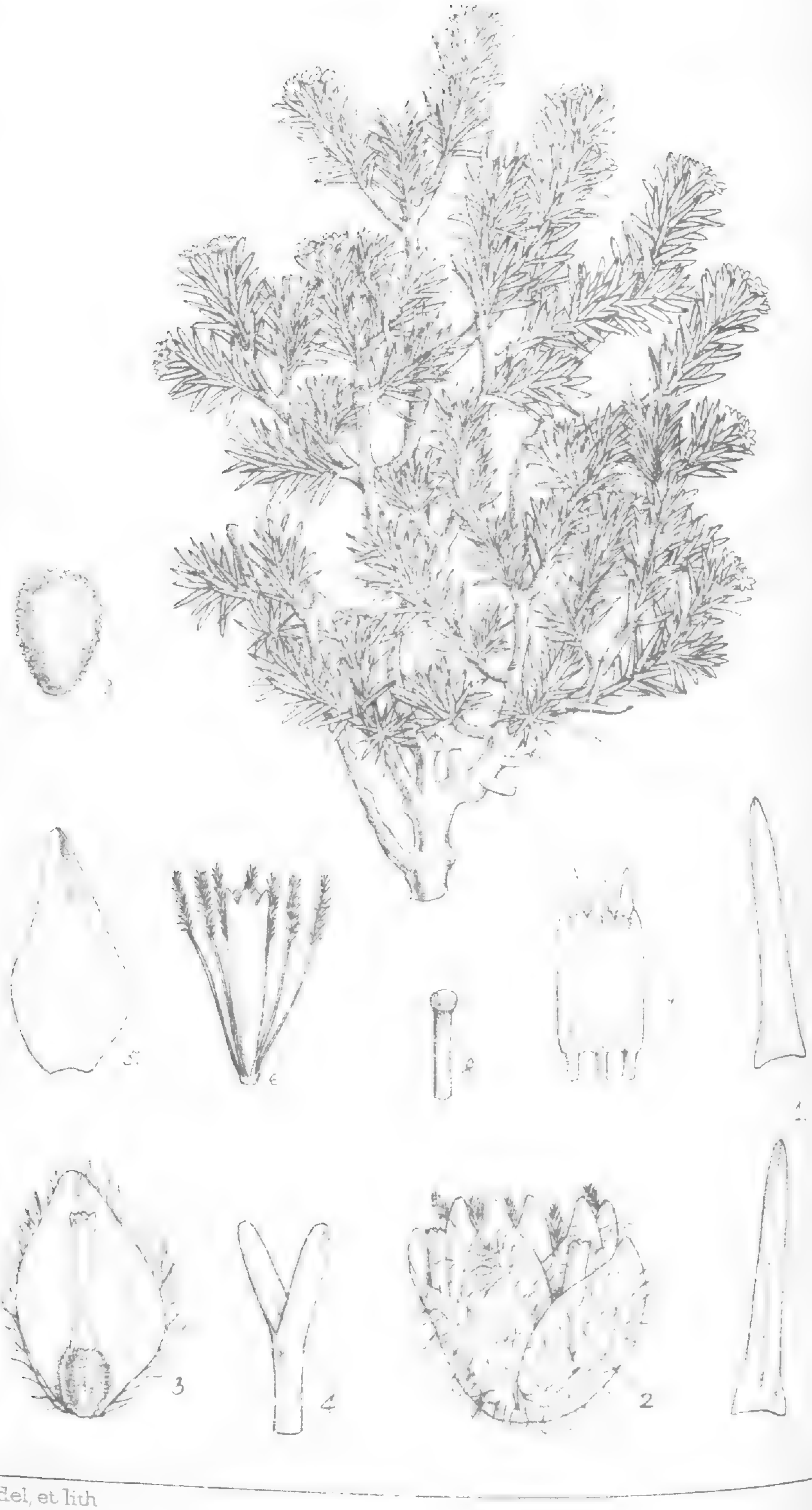
Melastomaceæ. Tribe Memecyleæ.

Dactylocladus, *Oliver* (*nov. gen.*). *Calyx* late campanulatus, breviter 4–5-fidus, dentibus deltoideis æstivatione valvatis ; tubus supra ovarium semi-inferum breviter productus, disco hirtello adnato. *Petala* perigyna, libera, unguiculata, sub sinubus calycinis inserta calycem leviter superantia, caduca ; lamina semiorbicularis extus tomentella ; unguis q. lamina paullo brevior. *Stamina* 5 petalis opposita, perigyna, calyci æquilonga ; filamenta complanata ; anthera bilocularis, fere hemisphærica carnosula, dorso rotundata, margine pollinifera, æstivatione inflexa. *Ovarium* $\frac{1}{2}$–$\frac{2}{3}$-inferum, placentis 4 (3–5) intrusis sed vix coalitis ; ovula in loculis incompletis sæpius 3 a basi cavitatis adscendentia ; stylus 1 tomentellus, mox exsertus ; stigma capitatum. *Capsula* apice libera loculicide 4–5-valvis, valvis deltoideis acuminatis apice sæpe (ob stylum imperfecte fissum) coalitis ; semina albida erecta oblonga ; testa laxe spongioso-cellulosa alata ; nucleus oblongus, exalbuminosus ; embryo rectus, radicula subteres cotyledonibus complanatis æquilonga v. paullo longior.—Arbor v. arbuscula *inflorescentia puberula excepta glabra ; internodia superiora sæpius plus minus 4-angulata.* Folia *coriacea, opposita, oblongo- v. obovato-elliptica, obtusa v. late acutata, integra, nervis primariis venisque obscuris ; petioli breves.* Flores *parvi in racemos terminales spiciformes sæpius 3–5-natim paniculatos dispositi, pedicelli brevissimi ; bracteæ minutissimæ, caducæ.*

D. stenostachys, *Oliver* (*sp. unica*). *Internodia* superiora sæpius 2–4 poll. longa. *Folia* 2–3 poll. longa, 1–1$\frac{1}{2}$ poll. lata ; petiolus $\frac{1}{6}$ poll. longus. *Inflorescentia* pedunculata ; racemi 1–3 poll. longi. *Flores* $\frac{1}{10}$ poll. longi. *Capsula* $\frac{1}{8}$–$\frac{1}{6}$ poll. longa.

Hab. Borneo : Sarawak, *Beccari* (3272) ; Sibu, on the Rejang river, *Haviland* (2916).

The affinity of this interesting plant is no doubt with the genus *Axinandra*, first described by Thwaites, from Ceylon, to which Maingay added a species from Malacca, and Beccari three from Borneo, the latter described by M. Baillon (‘Bull. Soc. Linn. Paris,’ i. 127–128), which he distinguishes from the type under the subgeneric name *Naxiandra*, their ovules being geminate in each cell, not solitary as in *A. zeylanica*. *Axinandra* was left as ‘genus anomalum’ under Lythrarieæ by Bentham and Hooker in ‘Gen. Plantarum.’ M. Baillon, however, points out (*l.c.*) its relationship to the American genus *Mouriria* in the anthers inflexed in æstivation,



M.S del, et lith

Petalactella Woodii, N.E.Br.

Plate 2352.

PETALACTELLA WOODII, *N. E. Br.*

Compositæ. Subtribe Gnaphalieæ.

P. Woodii, *N. E. Brown in Kew Bulletin*, 1894, 100; fruticulus nanus intricate ramosissimus, foliis alternis confertis linearibus subtrigonis v. semicylindricis facie superiore canaliculatis obtusis ad apices ramulorum argyreis parce lanatis deinde glabratis, capitulis ad apices sessilibus 2–5-congestis folia paullo superantibus, campanulatis, involucri squamis exterioribus c. 4 scariosis ellipticis cymbiformibus singulatim florem ♀ subtendentibus, squamis intermediis vacuis, interioribus oblongis inferne ovato- v. rotundato-dilatatis marginibus hyalinis apice obtusis albidis breviter radiantibus, receptaculo nudo, floribus ♀ epapposis v. pappo 1–2-setoso, ovario compresso parce glanduloso glandulis sessilibus, corolla tubulosa ore minute 4-dentato, styli ramis exsertis anguste linearibus divergentibus, floribus ♂ disci 10–12, pappi setis paucis (circ. 5-6) corolla subæquilongis apice flabellatim v. distiche plumosis, corolla tubulosa superne leviter dilatata dentibus brevissimis, antheris anguste linearibus basi minute bidentatæ v. integræ.

Hab. South Africa: Orange Free State, at an elevation of about 5000 feet, *J. M. Wood* (No. 4813).

Fruticulus 3–6 poll. altus. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ lin. longa. *Capitula* $\frac{1}{8}$ poll. diam.

Mr. Brown (*l.c.*) regards Don's genus *Petalacte* as the nearest ally of this plant, pointing out the resemblances and differences between them. In *facies* it recalls some species of *Metalasia*. The occurrence of the female florets in the axils of the outermost squamæ of the involucre, while the inner intermediate squamæ are empty, as noticed by Mr. Brown, is a very singular condition, to which I do not remember any near parallel in the Order. —D. Oliver.

Fig. 1. Leaves, upper and lower surfaces. 2. Capitulum. 3. Outer involucral scale and ♀ floret. 4. Style. 5. Inner involucral scale. 6. ♂ floret. 7. Anthers. 8. Style. 9. Achene. *All enlarged.*

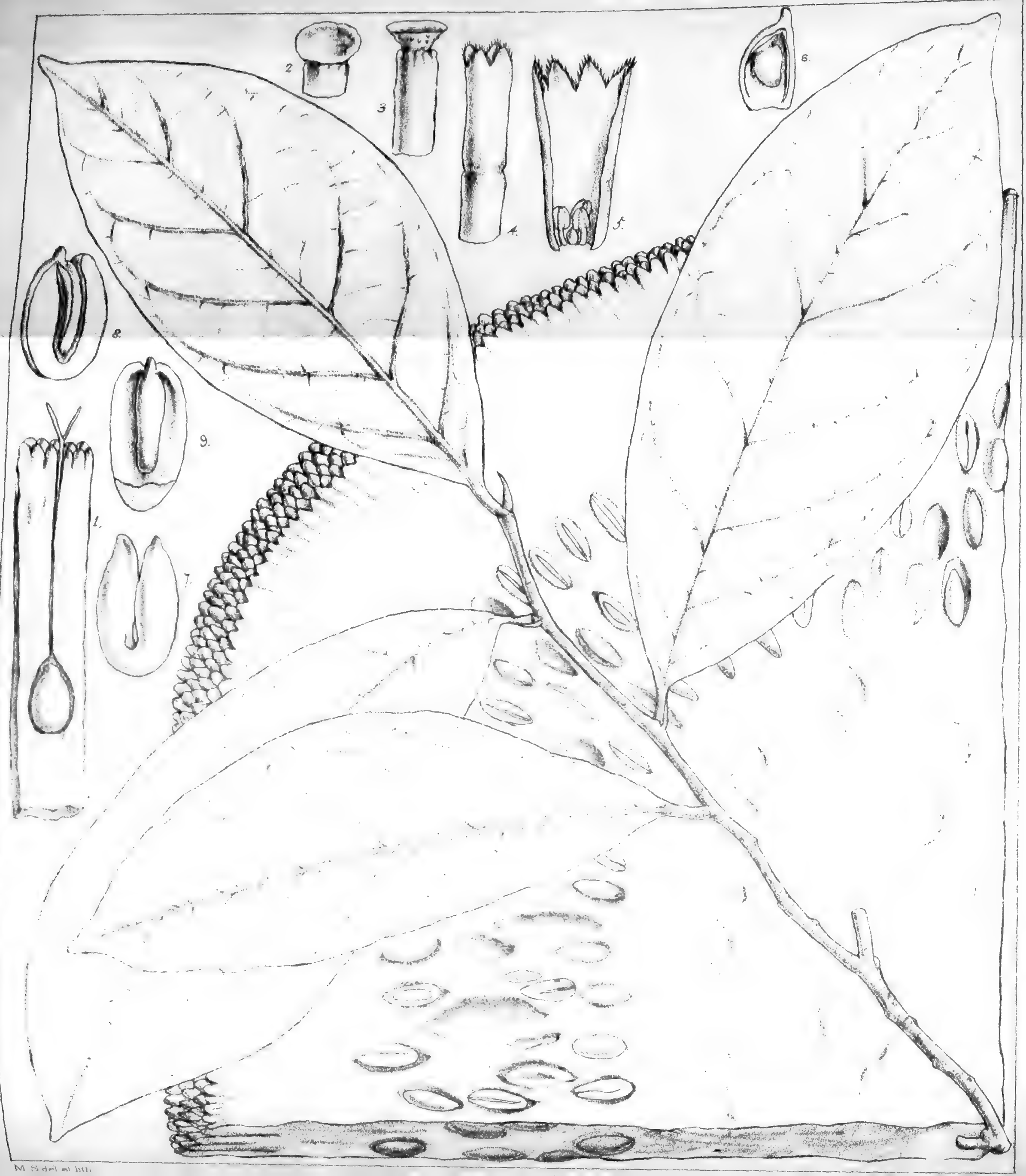

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Plate 2353.

TRECULIA AFFONA, *N. E. Br.*

Urticaceæ. Tribe Artocarpeæ.

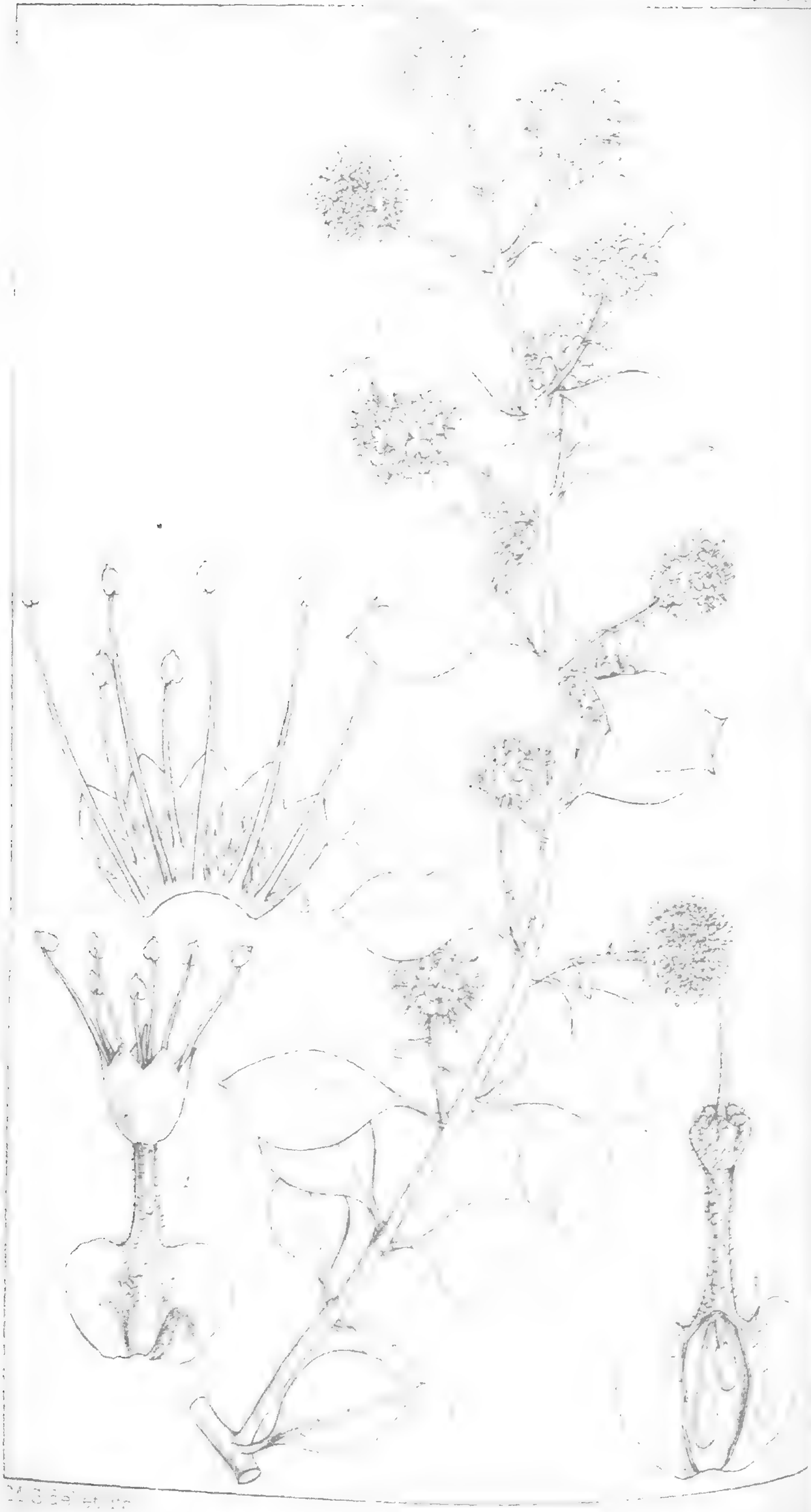
T. Affona, *N. E. Brown in Kew Bulletin*, 1894, 360 ; arbor glabra, foliis petiolatis oblongo-ellipticis v. oblanceolato-ellipticis breviter et obtuse acuminatis basi anguste cuneatis vix obliquis pergamentaceis marginibus leviter sinuatis, venis primariis utrinque 9–12, stipulis parvis deciduis ovato-lanceolatis acuminatis, capitulo fructifero *T. africanæ* magno globoso, bracteis apice squama peltata puberula ciliata decidua coronatis, nuculis ellipsoideis v. oblique ovoideis.

Hab. Niger Territory ; Yoruba, *Millson*.

Folia $3\frac{1}{2}$–6 ($2\frac{1}{2}$–$7\frac{1}{2}$) poll. longa, $1\frac{1}{3}$–$2\frac{1}{2}$ (1–3) poll. lata ; petiolus $\frac{1}{8}$–$\frac{1}{3}$ poll. longus. *Stipulæ* $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Capitulum* fructiferum 11–12 poll. diam. *Nuculæ* 4–6 lin. longæ, $2\frac{1}{2}$–3 lin. crassæ.

Allied, as pointed out in my notice of new species of *Treculia* (*l.c.*), to *T. africana*, from which it differs materially in the form and texture of the leaves. The fruit-heads of the two species are very similar ; the flowering heads of *T. Affona* I have not seen. Known as the *Affon-tree* in Nigritania. The seeds are probably used as food, as in the case of *T. africana*.—N. E. Brown.

Fig. 1. Fruit and surrounding connate bracts. 2. and 3. Peltate apical squamæ of bracts. 4. Staminate flower. 5. Same laid open. 6. Ovary laid open. 7. Embryo. 8. Longitudinal section of same. 9. Embryo showing the smaller cotyledon, the distal portion of the larger cotyledon removed. *Except fig.* 1, *all enlarged.*



Anogeissus Bentii Baker

Plate 2354.

ANOGEISSUS BENTII, *Baker.*

Combretaceæ.

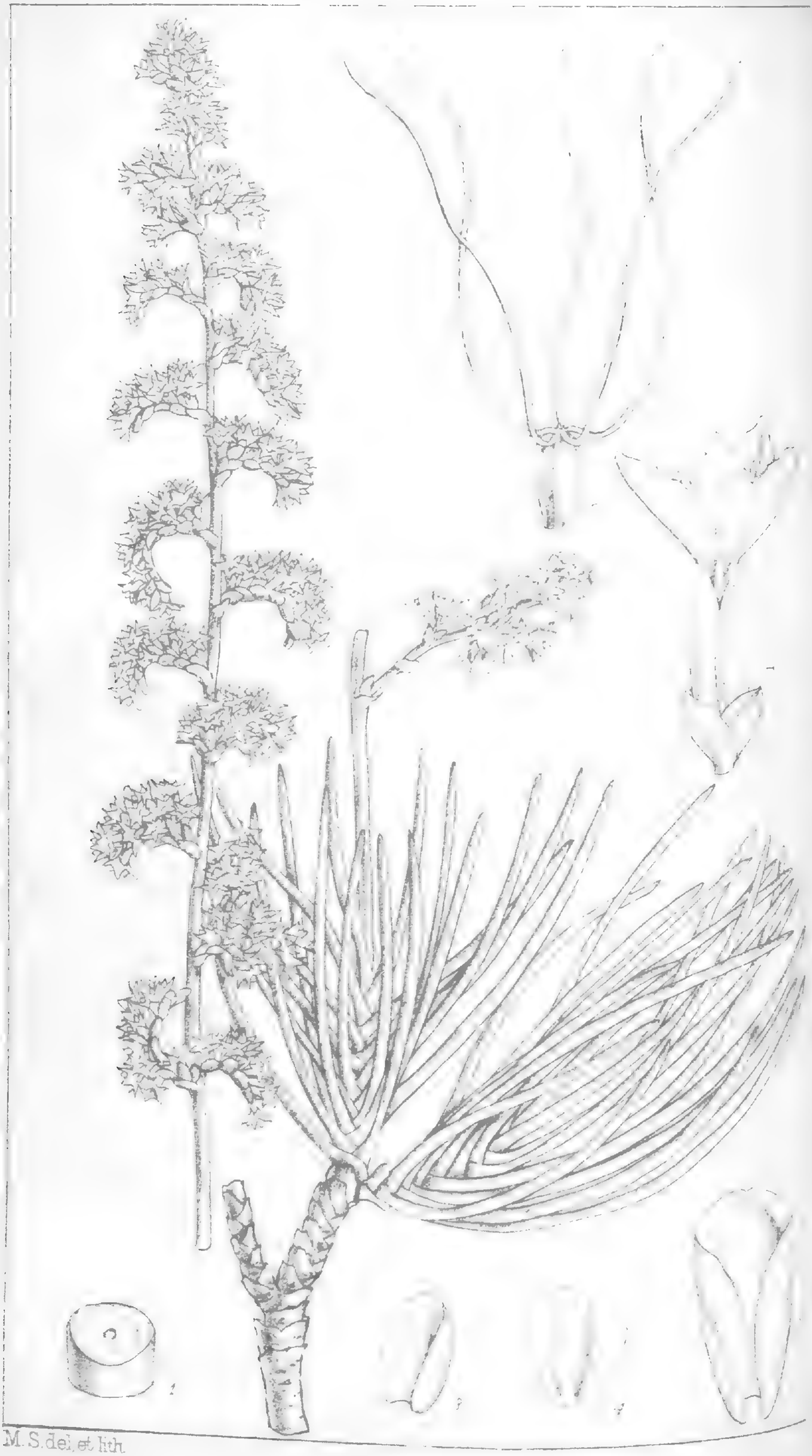
A. Bentii, *Baker in Kew Bulletin*, 1894, 332 ; arbor, ramulis divaricatis hornotinis gracilibus cano-tomentellis, foliis parvis coriaceis petiolatis obovato-cuneatis spinuloso-apiculatis minute cano-puberulis, capitulis pedunculatis, pedunculis patentibus rigidiusculis cum capitulo folio sæpius æquilongis, calycis limbo campanulato glabrato deciduo, dentibus deltoideis, tubo angustato pubescente, disco carnosulo plicato-undulato laxe piloso.

Hab. Arabia ; Hadramaut, near Ghail Omar, alt. 2200 feet, *Lunt* (No. 189).

Folia alterna v. approximatim opposita $\frac{3}{4}$ ($\frac{2}{3}$–1) poll. longa, 6–8 lin. lata, petiolus $1\frac{1}{2}$–2 lin. longus. *Pedunculi* 9–10 lin. longi, sæpius 1–2-bracteati. *Capitula* florifera $\frac{1}{2}$ poll. diam.

A copiously branched tree, with its divaricate branchlets and patent pedeuncles affording neat dull-grey herbarium-specimens. It is evidently very nearly allied to a species represented in the Kew Herbarium, and undetermined hitherto, from Rájputána collected by Mr. Duthie (No. 4663). In the Indian plant the calyx-limb is persistent and silky. The genus occurs both in India and Africa.—D. Oliver.

Fig. 1. Detached flower. 2. Calyx-limb and stamens. 3. Young fruit ; the ovary laid open. *All enlarged.*



M. S. del. et lith.

Statice teretifolia Baker

Plate 2355.

STATICE TERETIFOLIA, *Baker.*

Plumbagineæ.

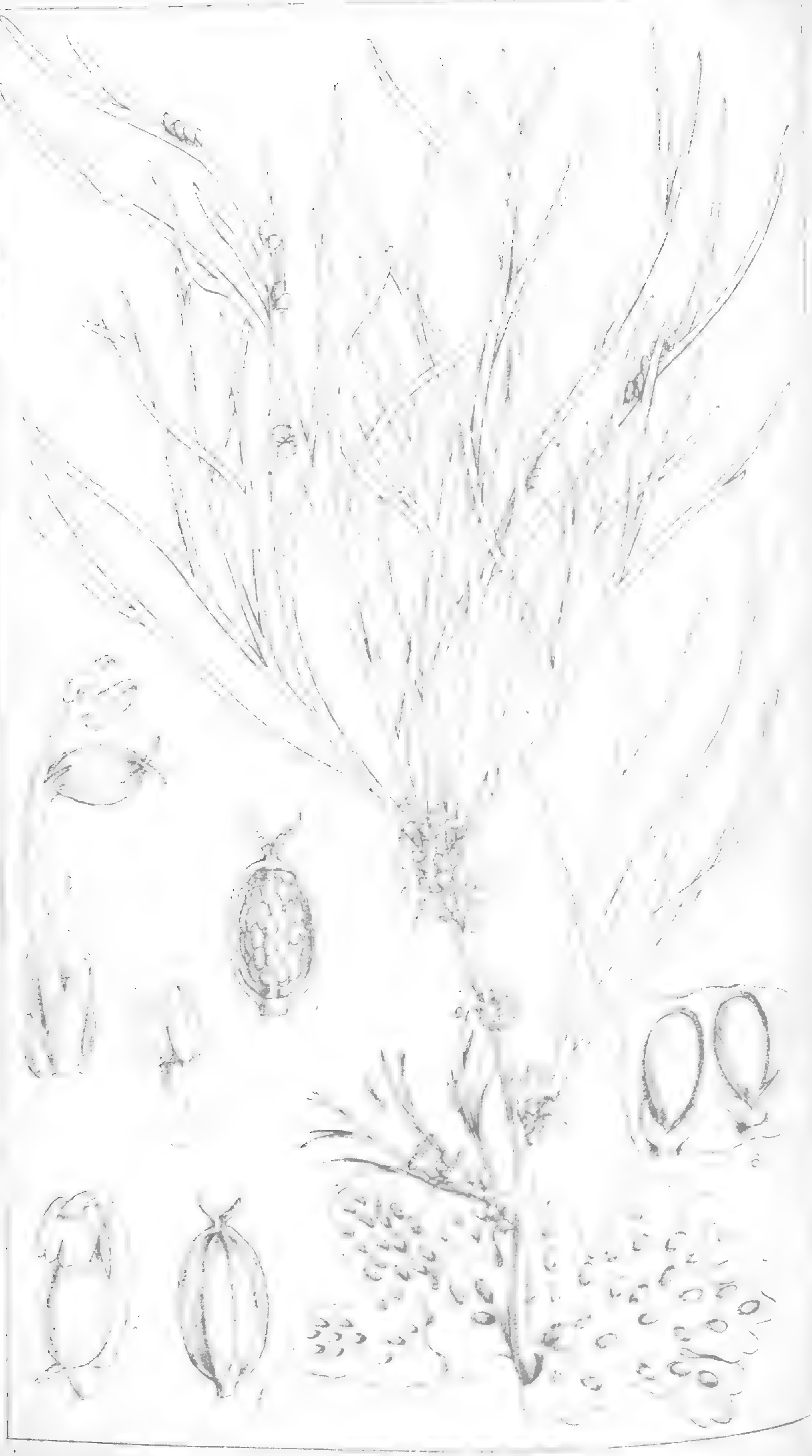
S. teretifolia, *Baker in Kew Bulletin,* 1894, 334 ; *S. cylindrifoliæ* simillima, differt : bracteis superioribus obovato-rotundatis plus minus truncatis calycis tubo cylindrico æquilongis.

Hab. Arabia ; Hadramaut, *Lunt* (Nos. 75, 98, and 235).

Caules suffruticescentes basi denudati superne dense foliosi. *Folia* cylindrica, obtusiuscula, minute glanduloso-mucronulata, pruinosa, 2–3½ poll. longa, $\frac{1}{20}$–$\frac{1}{12}$ poll. diam., basi in vaginam brevem coloratam dilatata. *Spicula* bi- v. unifiora in spicas breves secundas conferta ; bracteæ interiores fere orbiculares floribus breviores coriaceæ anguste hyalino-marginatæ. *Calyx* tubo hispidulo v. fere glabro, limbo exserto infundibuliformi albido 5–lobato, lobis deltoideis nervis coloratis percursis. *Petala* bidentata libera v. fere libera.

This plant has so entirely the general aspect of *S. cylindrifolia,* Forsk., of which we have specimens both from Socotra, collected by Prof. Balfour, and from South Arabia, collected by Dr. Schweinfurth, that it was not without hesitation we decided to regard it as specifically distinct, but the striking difference in the sheathing bracts, which are oblong, more or less pointed, and equalling the calyx in length in *S. cylindrifolia,* while in our species they are nearly orbicular and truncate or broadly obtuse, equalling only the lower cylindrical portion of the calyx-tube, are too marked to allow us to regard the two plants as conspecific.—D. Oliver.

Fig. 1. Transverse section of leaf. 2. Detached flower. 3 and 4. Outer bracts. 5. Innermost bract. 6. Pistil. *All enlarged.*



h acyssinica, W

Plate 2356.

SPHÆROTHYLAX ABYSSINICA, *Warming.*

Podostemaceæ. Tribe Eupodostemeæ.

S. abyssinica, *Warming in Engler and Prantl, Pflanzenfamilien* (*Podostem.* p. 22); caulibus dimorphis, aliis elongatis foliiferis sæpius ramosis fluitantibus, aliis thalloideis prostratis margine irregulariter lobatis subaphyllis, foliis elongatis 2–3-chotomiis laciniis angustissime linearibus, floribus ♂ in caulibus elongatis lateraliter glomerulatis, glomerulis interdum confluentibus, in caulibus explanatis sparsis, spathella uni-flora clausa sessile basi bractea minuta deltoidea vaginata demum apice v. lateraliter fissa, flore incluso stipitato stipite crassiusculo incurvo, antheris 2 sessilibus bilocularibus inflexis, ovario obovoideo v. ellipsoideo oblique inflexo antheras 2-plo superante basi squamellis minutis duabus lateralibus stipato, capsula ovario conformi costis 8 latis deplanatis notato, stipite denique rigido spathella 3–4-plo longiore. Anastrophea abyssinica, *Wedd. in DC. Prodr.* xvii. 79.

Hab. Abyssinia; near Gaffat, *Schimper*, 1863 (No. 1181).

Caules fluitantes 4–10 poll. longi; thalloidei $1\frac{1}{2}$–4 poll. diam.

Only known to us from Schimper's specimens. Dr. Weddell regarded the andrœcium as monandrous with a quadrilocular anther, but I think the view taken in 'Genera Plantarum' that it is diandrous, with the ordinary 'bilocular' anthers, clearly the right one.—D. Oliver.

Fig. 1. Flower with incurved stipes. 2. The same exserted, with basal spathella. 3. Anthers. 4. Capsule. 5. Same, laid open. 6. Two flowers, not yet emerged, from the basal thallus. *All enlarged.*

M S. del. et lith

Plate 2357.

ANGOLÆA FLUITANS, *Wedd.*

Podostemaceæ. Tribe Marathreæ.

A. fluitans, *Weddell in DC. Prodr.* xvii. 300; ramis primariis fluitantibus elongatis læte viridibus ramosis, foliis alternis dichotome laciniatis angustissime linearibus filiformibusve, floribus in cymulas pauci- v. pluri-flores irregulares laxas ramulos terminantes dispositis, singulis primum in spathella pedicellata ellipsoidea membranacea clausa reconditis dein exsertis, squamellis minutis, staminibus 3 (v. 4) filamentis basi brevissime plus minus coalitis, antheris late oblongo-ellipticis, ovario primum breviter stipitato fusiformi-oblongo angulato, stigmate capitato oblique ovoideo v. hemisphærico, ovario maturo ellipsoideo 8-costato, placenta centrali carnosula multiovulata, seminibus peltatis ellipticis marginatis dorsaliter complanatis, capsulis bivalvibus, valvis æqualibus cymbiformibus 3-nerviis.

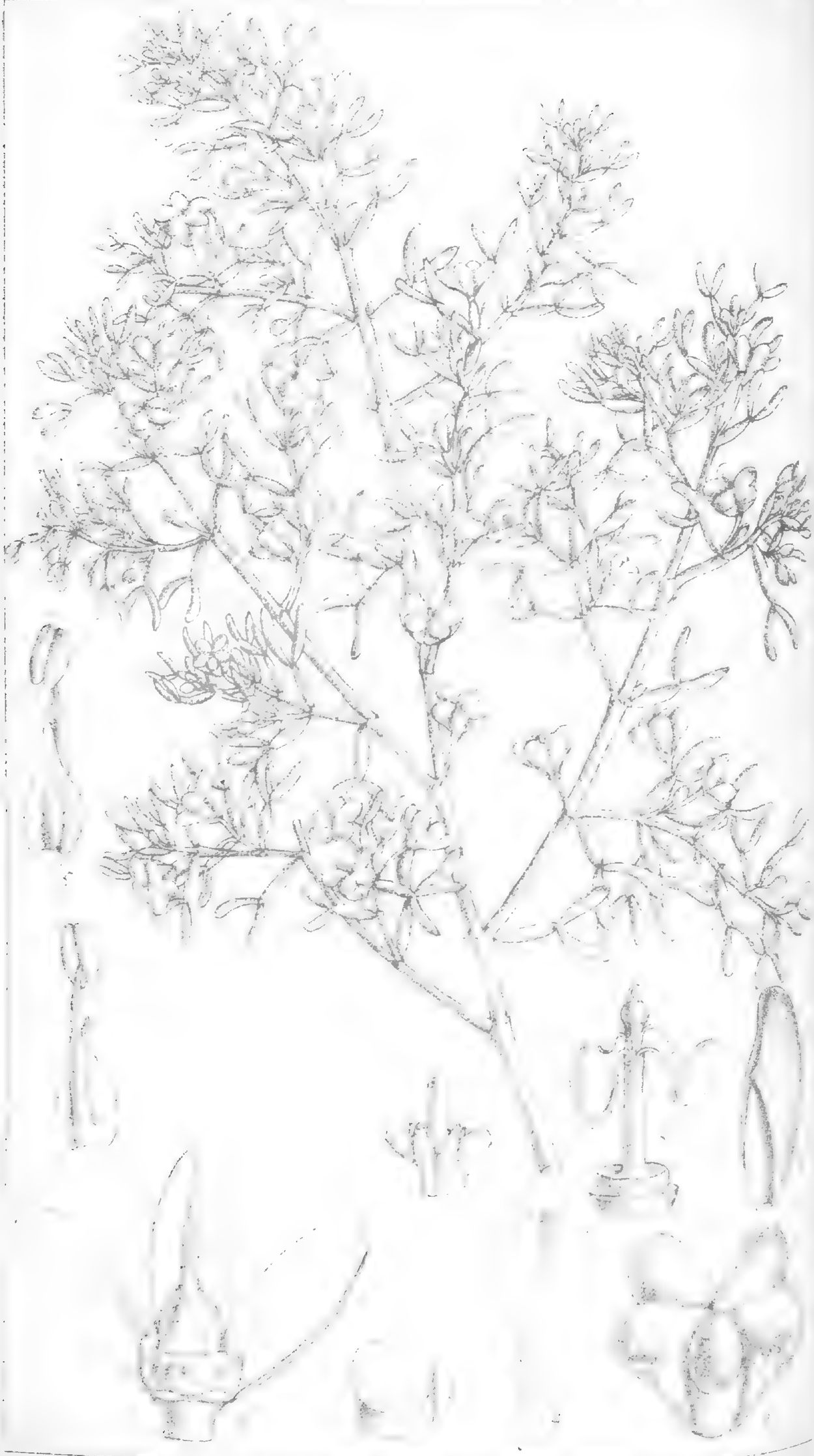
Hab. Angola, River Quanza, in the Cambambe rapids, *J. J. Monteiro*, 1872.

Rami primarii $\frac{1}{2}$–$1\frac{1}{2}$ ped. longi. *Folia* 1–$2\frac{1}{2}$ poll. longa.

It is now more than twenty years since the late Mr. Monteiro transmitted excellent specimens of this rare Podostemad to Kew, some of which I forwarded to the late Dr. Weddell, who had shortly before been engaged on the Order for the 'Prodromus.' His description of the plant was in time to appear in the same volume as an addendum. It has not since, so far as I am aware, been gathered by any collector.

Mr. Monteiro describes it as occurring very sparingly on rocks in the middle of the torrent; the stems when fresh, thick, translucent, and watery. I follow Dr. Warming (in Engler and Prantl, 'Pflanzenfamilien,' Podostemaceæ), in referring *Angolæa* to his tribe Marathreæ. —D. Oliver.

Fig. 1. Flower with ruptured spathella still present. 2. Same, spathella removed. 3. Anther, back and front view. 4. Longitudinal section of fruit. 5. Seed. *All enlarged.*



M.S del. et lith.

Plate 2358.

ZYGOPHYLLUM AMBLYOCARPUM, *Baker.*

Zygophylleæ.

Z. amblyocarpum, *Baker in Kew Bulletin*, 1894, 330 ; suffrutex 1–1½-pedalis, novellis cano-tomentellis mox glabrescentibus, foliolis unijugis glabris teretibus petiolo carnoso subæquilongis, pedunculo calyci æquilongo, sepalis obiongis obtusis marginibus tenuibus hyalinis, petalis spathulatis v. obovatis apice erosis denticulatisve longiuscule unguiculatis, squamis lanceolatis acutis v. apice dentatis filamento paullo brevioribus, antheris ellipticis basi bidentatis, stylo pilosulo, ovulis in utroque loculo paucis v. interdum solitariis adscendentibus longe funiculatis, capsula glabrata turbinata obtuse pentagona, carpellis apice obtusis dorso ecarinatis.

Hab. Arabia ; Hadramaut, 200–300 ft. alt., *Lunt* (No. 51).

Folia cum petiolo ½–⅔ poll. longa. *Flores* ¼–⅓ poll. diam. *Capsula* 3–4 lin. lata, 3 lin. longa.

Very nearly allied to *Zygophyllum album*, L., which is variable in its indumentum and, to some extent, in the fruit, but with the lobes of the capsule acute or distinctly keeled. After comparison with a considerable series of this species in this Herbarium, there seems no alternative but to regard the Hadramaut plant as distinct. The flowers Mr. Lunt describes as cream-coloured.—D. Oliver.

Fig. 1. Stipules. 2. Transverse section of leaf. 3. Flower laid open, petals and stamens removed. 4. Petal. 5. Stamen and basal scale, back and front views. 6. Fruit. 7. Detached lobe of same. 8. Axis with funiculate seeds attached after removal of wall of ovary. *All enlarged.*

M. S. del, et lith.

Plate 2359.

XEROTIA ARABICA, *Oliv.*

Caryophyllaceæ. Tribe Paronychieæ.

Xerotia, *Oliv.* (*gen. nov.*). *Flores* hermaphroditi parvi, breviter pedicellati v. subsessiles. *Calyx* persistens, 5-fidus, segmentis carnosulis, 2 exterioribus cæteris paullo brevioribus ovato-oblongis obtusis concavis anguste marginatis, 3 interioribus oblongis obtusis late membranaceo-marginatis. *Petala* 5 (an interdum pauciora?) perigyna membranacea oblonga calyci fere æquilonga, segmentis calycinis alterna. *Stamina* 5, perigyna inclusa sepalis opposita ; filamenta subulata complanata ; antheræ ovato- v. lanceolato-oblongæ versatiles biloculares longitudinaliter dehiscentes, filamento æquilongæ. *Ovarium* liberum ovoideum 1-loculare ; stigma subsessile obscure 3-lobulatum ; ovula 6–7 basilaria. *Capsula* breviter exserta oblongo-ovoidea 3–6-sperma 3-valvis, valvis coriaceis. *Semina* oblique pyriformia v. semi-ellipsoidea ; embryo dorsalis, incurvus ; albumen farinaceum.—Fruticulus *ephedroideus* $1\frac{1}{2}$–2-*pedalis*, *ramis fere aphyllis adscendentibus teretibus crassitie pennæ corvinæ lævibus cano-puberulis nox glabratis.* Folia *pauca opposita oblonga carnosa plus minus complanata obtusiuscula cano-puberula*, 1–4 *lin. longa.* Flores *in cymulis pauci- v. pluri-floris unilateralibus quasi-axillaribus sessilibus v. pedunculatis dispositi ; bracteæ minutæ deltoideo-ovatae scariosæ.*

X. arabica, *Oliver* (*sp. unica*).

Hab. Arabia ; Hadramaut, sandy plains between Gahfyt and Sibeh, *Lunt* (No. 82).

Although nearly allied both to genera of *Polycarpeæ* and *Illecebraceæ* as left in the 'Genera Plantarum' of Bentham and Hooker, I am unable to refer this plant to any described genus, and so, not without hesitation,* publish it under a new generic name, following Endlicher and Fenzl, as also Eideler, Baillon, and Pax, who have discussed the affinities of allied *Curvembryoneæ* since the publication of 'Genera Plantarum,' in regarding *Paronychieæ* and *Illecebreæ* as tribes of *Caryophyllaceæ.* In 'Kew Bulletin,' 1894, 340, through some inadvertence, the name of this genus in the enumeration of Mr. Lunt's collection, made during Mr. Bent's expedition, is given as *Xeractis.*—D. Oliver.

Fig. 1. Detached fragment of inflorescence. 2. Vertical section of flower, the ovary removed. 3. Capsule. 4. Same laid open. 5. Seed. 6. Embryo. *All enlarged.*

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* Remembering the pitfalls which beset workers on this group, into one of which I fell ('Icones Plantarum,' 1499), describing Dr. Anderson's *Sphærocoma* under a new generic name *Psyllothamnus*, having regarded the calyx (of Anderson) as involucral.

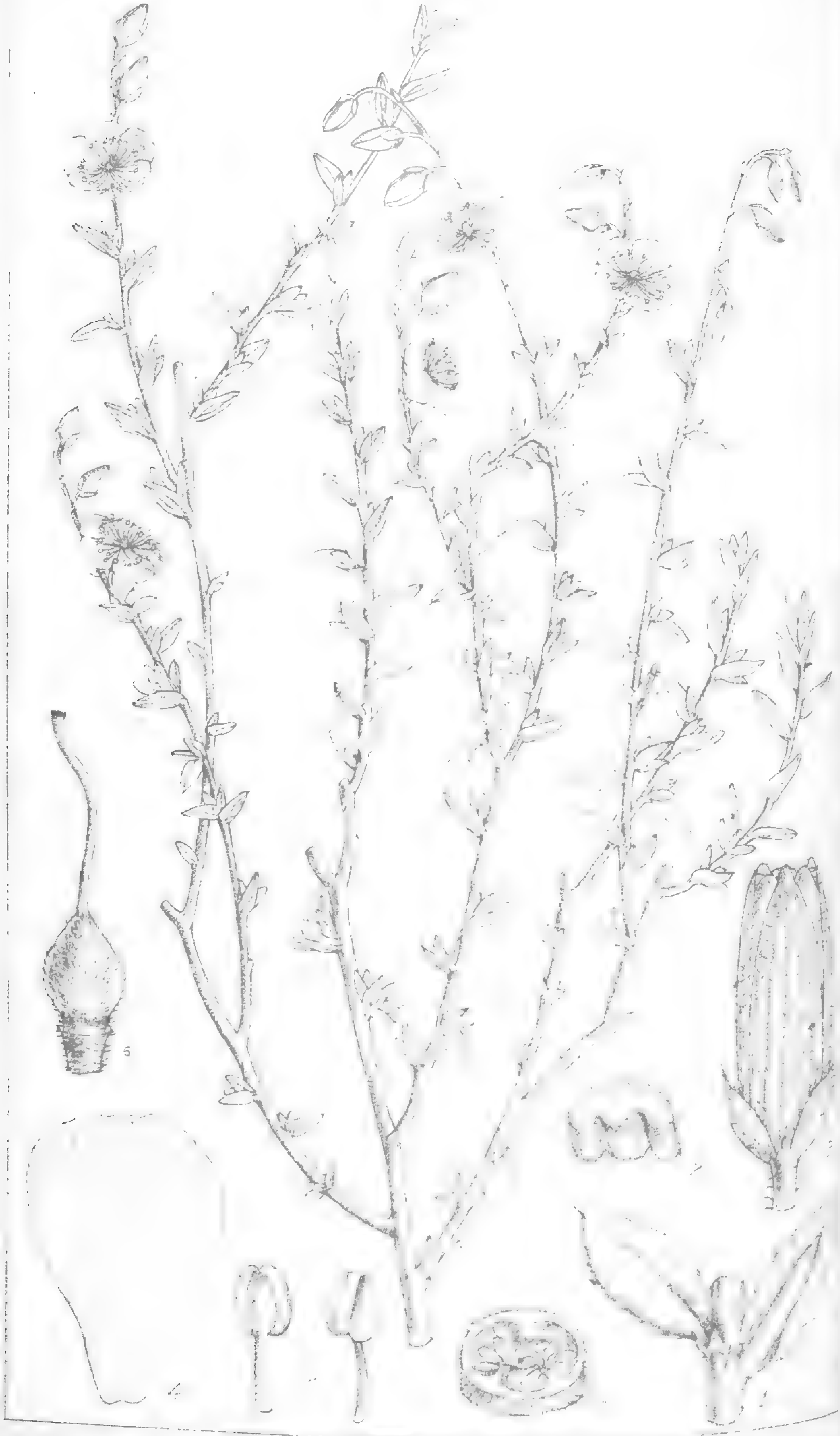
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Plate 2360.

HELIANTHEMUM ARGYRÆUM, *Baker.*

Cistineæ.

H. (§ **Eriocarpum**) argyræum, *Baker in Kew Bulletin*, 1894, 329; fruticulus incanus, ramis divaricatis gracilibus, foliis parvis alternis v. suboppositis lanceolato-oblongis acutiusculis argenteis marginibus arcte revolutis costa subtus inter margines revolutos prominente, stipulis minutis lanceolato-subulatis petiolo æquilongis, racemis pauci- et dissiti-floris, pedicellis sæpius calyce brevioribus, sepalis 2 exterioribus lineari-lanceolatis interioribus ellipticis 5-nerviis 3-plo brevioribus, petalis obovato-oblongis calycem superantibus, ovario globoso dense albido-tomentello, stylo erecto curvulo.

Hab. Arabia; Hadramaut, 4000 feet alt., *Lunt* (No. 213).

Folia 2–3 lin. longa. *Flores* flavi $\frac{1}{2}$ poll. diam.—D. Oliver.

Fig. 1. Two leaves, with their stipules. 2. Transverse section of a leaf. 3. Bud. 4. Petal. 5. Stamen, back and front view. 6. Pistil. 7. Transverse section of ovary. *All enlarged.*

Plate 2361.

EUCOMMIA ULMOIDES, *Oliv.*

Trochodendraceæ (*Prantl*).

E. ulmoides, *Oliver in Icones Plant.* 1950 ; floribus præcocissimis, masculis pedicellatis in axillis squamarum cataphyllacearum solitariis, staminibus circ. 8 (6–10) receptaculo nudo insertis, filamentis brevissimis, antheris elongato-linearibus obtuse tetragonis apice in connectivo oblongo-lanceolato acutiusculo productis, longitudinaliter dehiscentibus, rudimento gynœcii 0 ; floribus femineis breviter pedicellatis solitariis, ovario nudo uniloculari longe stipitato elongato compresso apice æqualiter v. subæqualiter bifido, lobis intus papilloso-stigmatosis, stigmatibus apice productis patentibus reflexisve, ovulis anatropis geminatis pendulis arcte applicitis.

Hab. China (in addition to localities cited under Plate 1950), Eastern Sze-Chuen, District of Tchen-Kéou-tin (cultivated), *R. P. Farges.*

The botanical museum of the Jardin des Plantes having recently favoured us with excellent specimens of this singular plant, collected by M. Farges, with staminate and pistillate flowers, which were wanting when I published the genus, it is desirable that an additional plate from the new material should be given in 'Icones Plantarum,' in which previously only fruiting specimens were represented. Meantime, moreover, Professor Baillon has informed me that *Eucommia* is identical with his *Euptelea Davidiana*, published in 'Adansonia,' xi. (1875), 305. At the time of publication of *Eucommia* I could not venture any serious suggestion as to its affinity. There cannot now, however, be any doubt that its nearest ally is *Euptelea*, although I cannot regard it as rightly referable to that genus, from which it differs in having an embryo equalling the albumen in length, a solitary ovary with bifid stigma, presenting every appearance of a syncarpous dicarpellary pistil, and finally the unique histological peculiarity of its unbranched caoutchouc-containing cells, described by Professor Weiss in 'Linn. Trans.' ser. 2, iii. 243.* I may point out that in our flowering specimens the staminate flowers are wholly destitute of any trace of carpels, the pistillate flowers, which are on a separate specimen, in like manner show no trace of stamens. Professor Baillon (*l.c.*) describes

* Professor Weiss, to whom I submitted fragments of *Euptelea* (dry), informs me that he cannot find, in either stem, petiole, or lamina of leaf, any of the caoutchouc-cells characteristic of *Eucommia*.

Werfurthia latifolia, Boiss.

Plate 2362.

SCHWEINFURTHIA LATIFOLIA, *Baker.*

Scrophularineæ. Tribe Antirrhineæ.

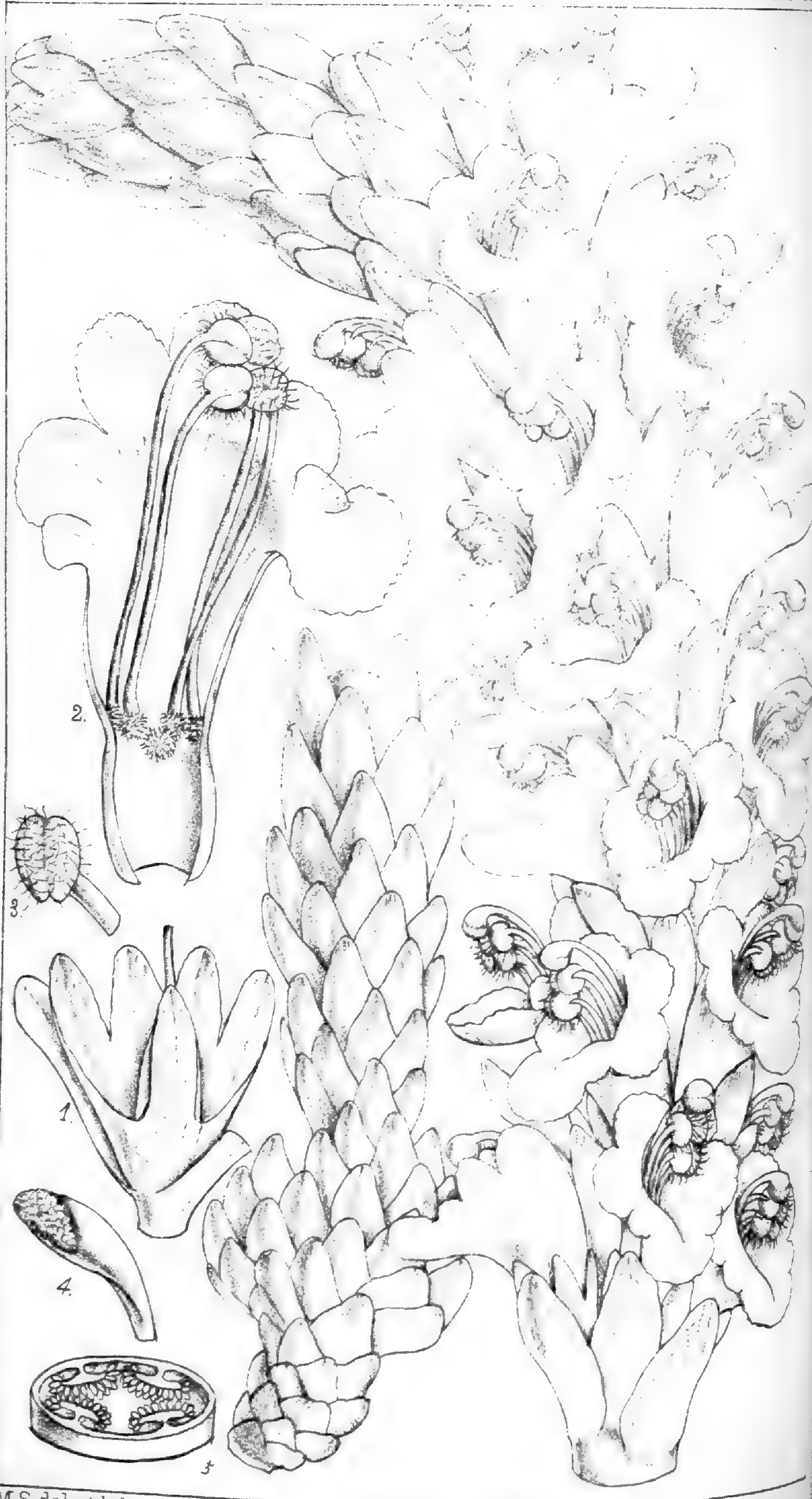
S. latifolia, *Baker in Kew Bulletin,* 1894, 338 ; herba suffrutescens molliter pilosula, ramis erectis, foliis petiolatis late ovatis rotundatisve breviter apiculatis basi rotundatis cordatisve, floribus in axillis solitariis pedunculatis folio sæpius brevioribus, sepalis herbaceis postico majore late ovato acutiusculo basi oblique cordato cæteris ovato-lanceolatis, corollæ labio superiore marginibus reflexis, inferiore ad palatum bigibbum glanduloso-pilosulum trifido, lobo medio oblongo-elliptico lateralibus angustiore.

Hab. Arabia ; Hadramaut, Mokalla, 200-300 feet alt., *Lunt* (No. 58).

Folia 1–1½ poll. longa, ¾–1⅓ poll. lata, laxe glanduloso-pilosula ; petiolus ⅙–¼ poll. longus. *Pedunculi* pilosi ½ poll. longi. *Flores* albido-flavescentes labio corollæ superiore purpurascente, 1–1¼ poll. longi. *Sepalum* posticum ¾ poll. longum.

The affinity of this plant is with *S. sphærocarpa,* A. Br. (*Linaria sphærocarpa,* Benth.), of the dry region from Scinde to Afghanistan.—D. Oliver.

Fig. 1. Calyx. 2. Corolla laid open. 3. Anthers, back and front views. 4. Pistil. *All enlarged.*



M.S. del. et lith

Plate 2363.

CISTANCHE ROSEA, *Baker.*

Orobanchaceæ.

C. rosea, *Baker in Kew Bulletin,* 1894, 339 ; glabra, scapo carnoso 10–15 poll. alto basi leviter dilatato dense squamato, squamis imbricatis obtusissimis ovatis ovato-oblongis v. superioribus inferne angustatis, spica densa, bracteis coloratis oblanceolato- v. obovato-oblongis obtusis floribus brevioribus alabastros superantibus, bracteolis spathulatis angustis, calycis lobis obtusis anticis tubo brevioribus ovato-ellipticis, corollæ roseæ lobo antico ovato-rotundato margine eroso tubo infundibuliforme dilatato incurvo, filamenta exserta glabra basi pilosa medio tubi corollæ inserta, ovario lanceolato-oblongo cum stylo elongato exserto glabro.

Hab. Arabia ; Hadramaut, near Mokalla, alt. 200 feet; parasitic on roots of *Pluchea Dioscoridis, Lunt* (No. 62).

Spica florifera 9–12 poll. longa. *Flores* $1\frac{1}{2}$ poll. longi. *Antheræ* dorsifixæ, albo-lanatæ, inappendiculatæ.

This fine *Cistanche* is perhaps more nearly allied to *C. tubulosa* than to any other species, but the squamæ and bracts are more obtuse.—D. Oliver.

Fig. 1. Calyx and bract. 2. Corolla laid open. 3. Anther. 4. Stigma. 5. Transverse section of ovary. *All enlarged.*

PLATE 2364.

VELLOZIA ARABICA, *Baker.*

AMARYLLIDACEÆ. Tribe VELLOZIEÆ.

V. (*Xerophyta*) **arabica**, *Baker in Kew Bulletin*, 1894, 342 ; herbacea, acaulescens v. caules breves sæpe formans vestigiis fibrosis foliorum delapsorum fibrosis vaginantes, foliis radicalibus v. quasi radicalibus anguste linearibus apicem versus attenuatis planis v. plus minus conduplicatis patentibus recurvisve longitudinaliter striatis glabris prope apicem marginibus setuloso-scabriusculis, pedunculis solitariis unifloris gracilibus cum ovario et perianthii segmentis exterioribus plus minus glanduloso-papillosis, segmentis perianthii oblongis v. ovali-oblongis obtusiusculis, antheris 6 linearibus complanatis filamento basi inappendiculato 3–6-plo longioribus.

HAB. Arabia ; Hadramaut, 4000 ft. alt., *Lunt* (No. 205).

Radix fibrosa, fibris primariis elongatis ramulos breves laterales emittentibus. *Caules* interdum $\frac{1}{2}$–$1\frac{1}{2}$ poll. longi. *Folia* 1–3 poll. longa, $\frac{1}{1\frac{1}{2}}$–$\frac{1}{5}$ poll. lata. *Pedunculus* 1–$2\frac{1}{2}$ poll. longus. *Flores* albi v. carnosi $\frac{2}{3}$–1 poll. diam.

The nearest ally of this species is, I think, *V. humilis*, Baker, of S.E. Africa.—D. OLIVER.

Fig. 1. Apex of leaf. 2. Anthers, back and front views. 3. Ovary, style and stigma. *All enlarged.*

Plate 2365.

LITTONIA OBSCURA, *Baker.*

Liliaceæ. Tribe Uvularieæ.

L. obscura, *Baker in Kew Bulletin*, 1894, 342 ; herba erecta glabra, cormo parvo ovoideo squamis paucis membranaceis obtecto, caule semipedali supra medium foliifero inferne longe vaginato, foliis inferioribus approximatim 3–5-verticillatis superioribus sparsis anguste linearibus marginibus sæpius involutis, floribus 2–4 quasi terminalibus v. in axillis superioribus pedunculatis, segmentis perianthii campanulati lanceolatis acutiusculis basi intus 2-callosis, staminibus perianthio brevioribus, stylo ovario oblongo trisulcato æquilongo, stigmate minute 3-lobulato.

Hab. Arabia ; Hadramaut, *Lunt* (No. 280).

Cormus $\frac{1}{2}$ poll. diam. *Folia* 2–3 poll. longa, flores sæpius superantia. *Perianthium* 4–5 lin. longum. *Antheræ* lineari-oblongæ extrorsæ, filamentis subulatis longiores, infra medium dorso affixæ. *Ovula* biseriata, c. 18–20 in utroque loculo.

L. minor, Defl., another Arabian species, is the species most nearly allied to our plant in this Herbarium, but the flowers are very different. The leaves of our plant show a strong tendency to involution, and consequently look narrower, say $\frac{1}{12}$–$\frac{1}{15}$ inch, than they actually are. The flowers, so far as one can judge, are greenish yellow in colour.—D. Oliver.

Fig. 1. Transverse section of leaf, showing strongly involute margins. 2. Leaf of perianth. 3. Flower, the perianth removed. 4. Stamens, back and front view. *All enlarged.*

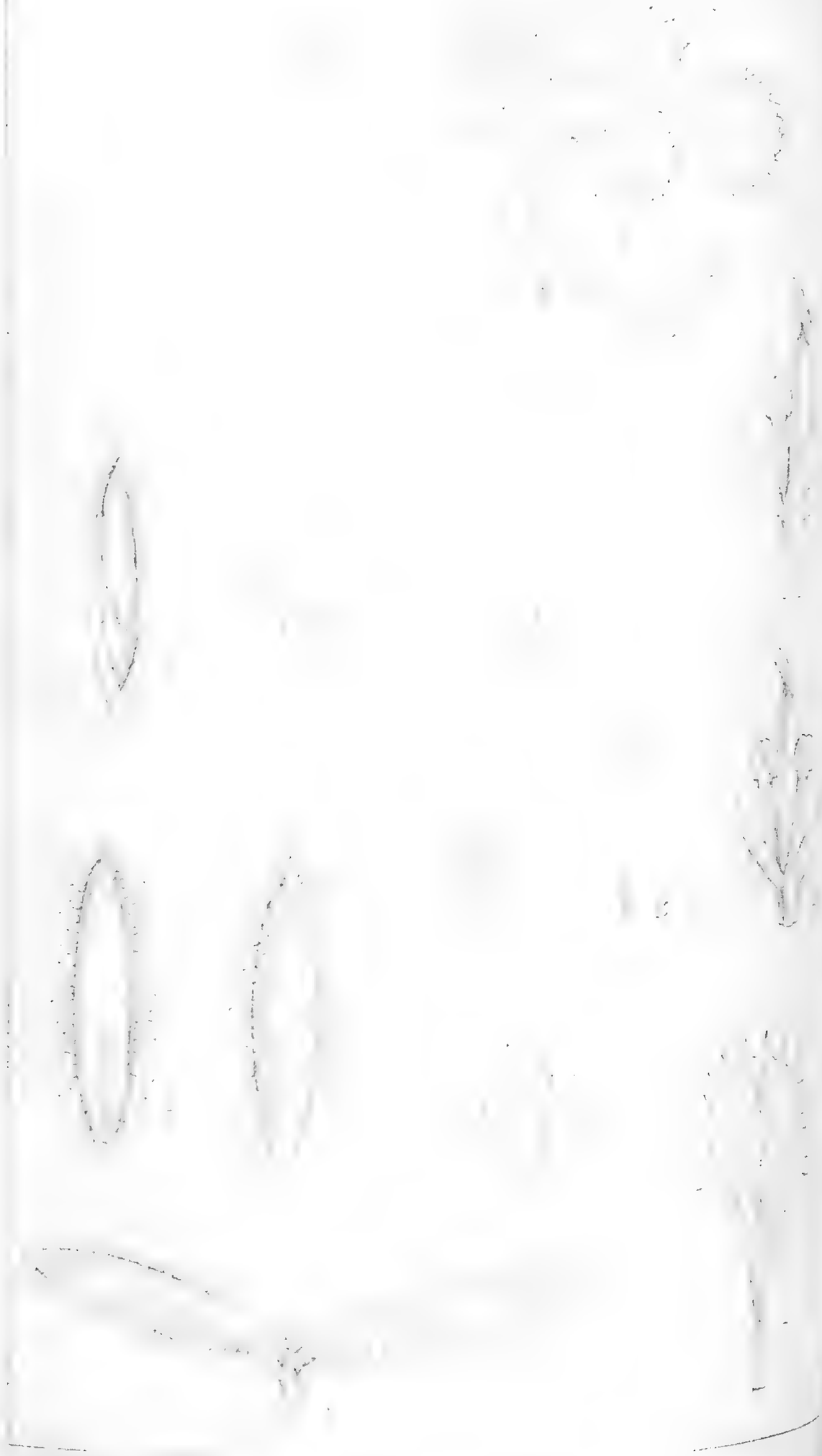


Plate 2366.

CIRCÆASTER AGRESTIS, *Maxim.*

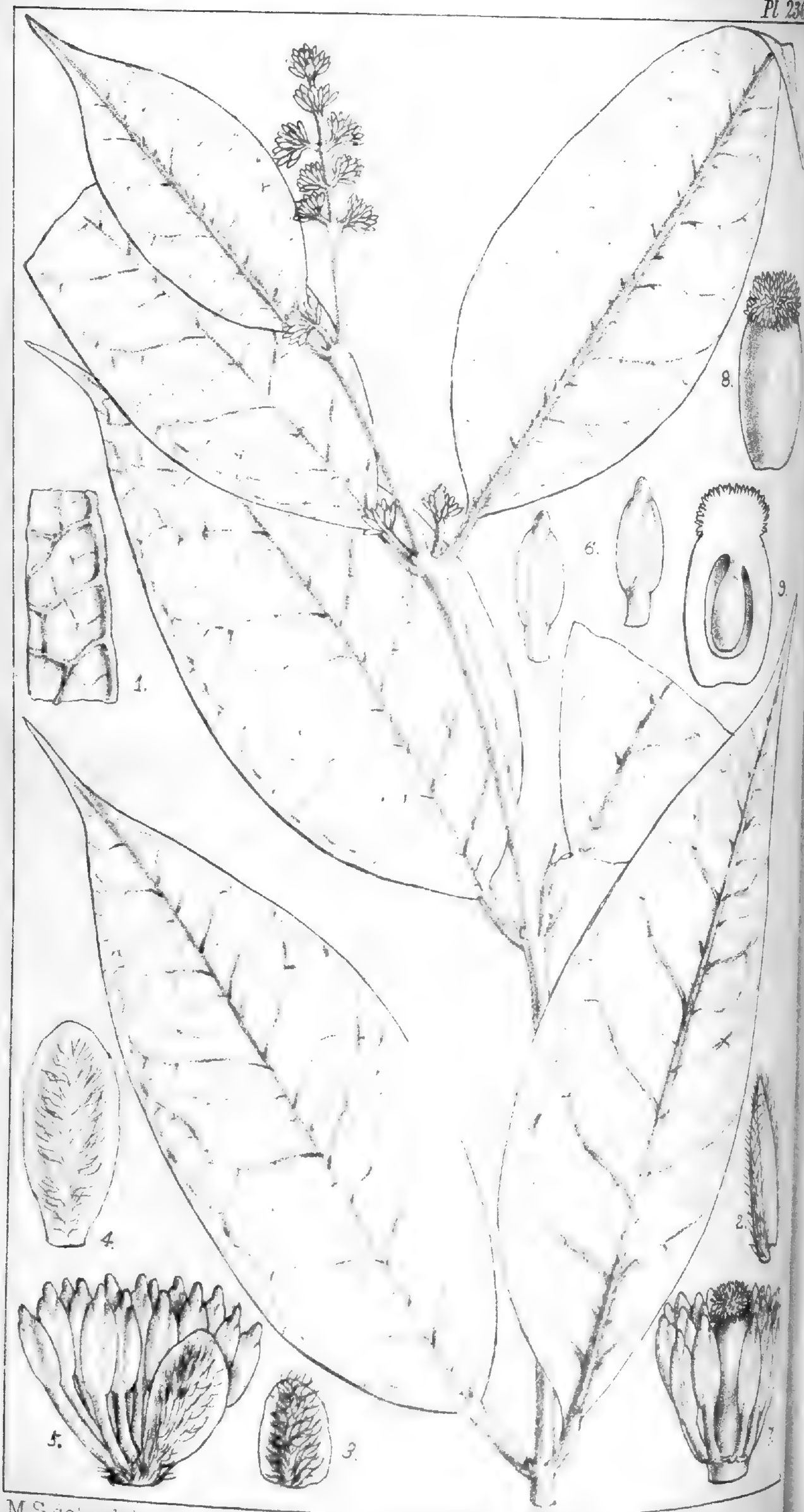
Genus anomalum affinitatis dubiæ.

C. agrestis, *Maximowicz, in Mél. Biol.* xi. 346 ; herbula annua simplex glabra, caule (hypocotyledoneo) erecto pellucido, cotyledonibus persistentibus lineari-oblongis uninerviis, foliis 5-7 quasi verticillatis cuneato-ovatis repando-serratis basi in petiolum gracilem sæpius longiusculum angustatis membranaceis subtus glaucescentibus, floribus minutissimis umbellato-fasciculatis foliis brevioribus pedicellatis, pedicellis tempore florifero brevissimis denique accrescentibus rigidis fructu sæpe 2–3-plo longioribus, fructibus monospermis lineari- v. oblongo-fusiformibus setis uncinatis plus minus obsitis.

Hab. China : Prov. Kansu, *Przewalski* ; Western Himalaya, Kumaon, *Strachey and Winterbottom, Duthie.*

Caulis gracilis 1–4 poll. longus, fasciculo solitario centrali fibrovasali percursus. *Cotyledones* persistentes evolutæ 5–6 lin. longæ, 1 lin. latæ. *Folia*, cum petiolo, $\frac{1}{4}$–$1\frac{1}{3}$ poll. longa, exstipulata. *Sepala* minutissima oblonga v. lanceolata, persistentia. *Petala* 0. *Stamina* hypogyna 2 (v. 1 altero tum ananthero). *Carpella* 1–2–4, sæpius solitaria, obliqua ; stigma terminale sessile lanceolatum v. oblongum, papillosum, coloratum ; ovulum solitarium, pendulum, orthotropum, breviter funiculatum. *Caryopsis* 2 lin. longa : albumen copiosum ; embryo teres radicula infera.

This singular plant was first gathered by General (then Captain) Strachey, and drawings prepared from his material by Sir Joseph Hooker for publication, together with the specimens, were unfortunately lost many years ago. It turned up next in Western China, and was very carefully described by the late C. J. Maximowicz (*l.c.*), who transmitted specimens to Kew in 1881. Since then it has been collected abundantly in Kumaon, at an elevation of 8000–10500 feet, by Mr. Duthie, to whom we are indebted for very copious material, and from whose specimens our figure has been taken. With regard to the affinity of the plant : the pendulous orthotropous ovule and general aspect of the plant suggested the possibility of some relationship to Chloranthaceæ, as intimated by M. Maximowicz, who referred the question to us (*l.c.*) ; but I now feel less satisfied with this suggestion, and in spite of its many anomalous features, of which the character of a pendulous orthotropous ovule is one of the more noteworthy, I should incline to regard it as a degraded form, allied perhaps to Anemoneæ



M.S del. et lith.

Plate 2367.

PIPTOCALYX MOOREI, *Oliv.*

Monimiaceæ.

P. Moorei, *Oliv. in Benth. Fl. Austral. V.* 292 ; frutex scandens ramis gracilibus cum inflorescentia costaque foliorum ferrugineo-hirsutis, pilis laxe appressis, foliis oppositis petiolatis punctatis ovato-lanceolatis acuminatis nervis lateralibus utrinque circ. 7–9, rete venularum prominente margine integro v. obsolete sinuato cum nervo utrinque contermino, subtus præcipue in costa venisque parce hirsutis supra glabratis, floribus polygamis in racemis terminalibus axillaribusque dispositis, breviter pedicellatis v. subsessilibus, bracteis flore brevioribus lanceolatis dorso dense hirsutis bracteolis 2 perianthio appressis eodem brevioribus ovato-ellipticis, perianthii segmentis 5 late ellipticis v. obovato-ellipticis subscariosis apice obtusis exterioribus dorso plus minus hirsutis, fl. ♂ staminibus 15–13 toro breviter elevato insertis, anthera adnata oblonga rimis longitudinaliter dehiscentia connectivo apice apiculata, filamentum evolutum æquante, rudimento ovarii 0, fl. ♀ staminibus fertilibus pauciora, ovario oblongo 1-loculare, stigmate sessili dense papilloso leviter obliquo, ovulo solitario prope apicem cavitatis latiuscule et oblique inserto pendulo anatropo.

Hab. Australia : N. S. Wales, Hastings River, *C. Moore* ; New England, *Stuart* (*fide Mueller, Frag. Phyt. Austr.* x. 106).

Frutex scandens 30–40-pedalis. *Folia* 4–5 poll. longa, $1\frac{2}{3}$–$1\frac{3}{4}$ poll. lata ; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Racemus* terminalis 1–$1\frac{1}{2}$ poll. longus, axillaris brevior.

Our material of this interesting plant is still very imperfect, though quite recently reinforced by fragments of inflorescence brought to Kew for identification by Mr. E. M. Holmes, F.L.S., who informs me that the leaves are being imported into Hamburg as a substitute for hops, and that they are said to be obtained '200 miles inland from Melbourne.' Hastings River must be three times that distance. The leaves are excessively bitter to the taste in the dried specimens and pellucidly punctate, though not very conspicuously. My impression on describing the plant many years ago was that its affinity was with Monimiaceæ, and, as pointed out in 'Genera Plantarum,' the flowers have much in common with those in *Trimenia*, Seemann, of the Fiji Islands, the leaves of which also are minutely punctate, though not distinctly bitter.—D. Oliver.

Fig. 1. Fragment of leaf, showing the marginal nerve. 2 and 3. Bracts. 4. Leaf of perianth. 5. Staminate flower, one leaf of perianth remaining. 6. Anthers, back and front views. 7. Hermaphrodite flower, perianth removed. 8. Ovary and sessile stigma. 9. Longitudinal section of same. *All enlarged.*


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Plate 2368.

HUMBOLDTIA DECURRENS, *Bedd.*

Leguminosæ. Tribe Amherstieæ.

H. decurrens, *Beddome in Herb. Kew cum descr.*; arbor 40–50-pedalis novellis cinnamomeo-tomentellis, foliolis sæpius 4–6-jugis, petiolo communi inter foliola alato, foliolis tenuiter coriaceis subsessilibus elongato- ovali- v. lanceolato oblongis acuminatis basi obtusis v. interdum latiuscule rotundatis primum tomentellis mox glabris costa subtus nervisque primariis prominentibus, stipulis persistentibus oblique lanceolatis v. ovato-lanceolatis acutis basi infra insertionem in appendicem majusculam oblique ovatam v. reniformem productis, racemis brevibus axillaribus solitariis geminatisve stipulas interdum vix superantibus tomentosis, petalis 5 calycem subæquantibus.

Hab. Indian Peninsula ; Travancore, near Colatoorpolay, *Beddome*, *Bourdillon*.

Foliola 6-15 poll. longa $1\frac{1}{2}$–4 poll. lata, inferiora sæpe minora ; stipulæ $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longæ. *Bracteæ* ovatæ alabastris breviores, deciduæ ; bracteolæ cymbiformes connatæ apicibus liberis late ovatis, pedicello, cum tubo calycino, temp. florifero æquilongo v. eodem breviores. *Sepala* 4, oblonga, æquilonga. *Petala* 5 oblanceolata v. ovalia, unguiculata, calyci fere æquilonga. *Stamina* 5–4 cum petalis in margine disci inserta ; filamenta æstivatione arcte inflexa ; antheræ oblongæ, versatiles. *Ovarium* oblongum, dense hirsutum, pauci-(3–4) ovulatum, stipite ad tubum calycis lateraliter adnato ; stylus evolutus superne glaber ; stigma capitatum. *Legumen* $3\frac{1}{2}$–5 poll. longum, apicem versus 1–$1\frac{1}{2}$ poll. latum, tomentellum.

This is the *Humboldtia* referred to by Col. Beddome in his 'Forester's Manual of Botany for Southern India,' p. xciii. He describes it as a very large tree, but had not then procured it in flower or fruit. Mr. Bourdillon, to whom we are indebted for recent specimens, speaks of it as a tree of 40–50 feet, the trunk 1 foot in diameter, and very common near Colatoorpolay. It is distinguished at once from other species of *Humboldtia* by the conspicuously alate rachis of its leaves.—D. Oliver.

Fig. 1. Flower and connate bracteoles, the anterior calyx-segment removed. 2. Petal. 3. Flower, the petals and calyx-limb removed. 4. Pistil. 5. Longitudinal section of ovary. *All enlarged.*

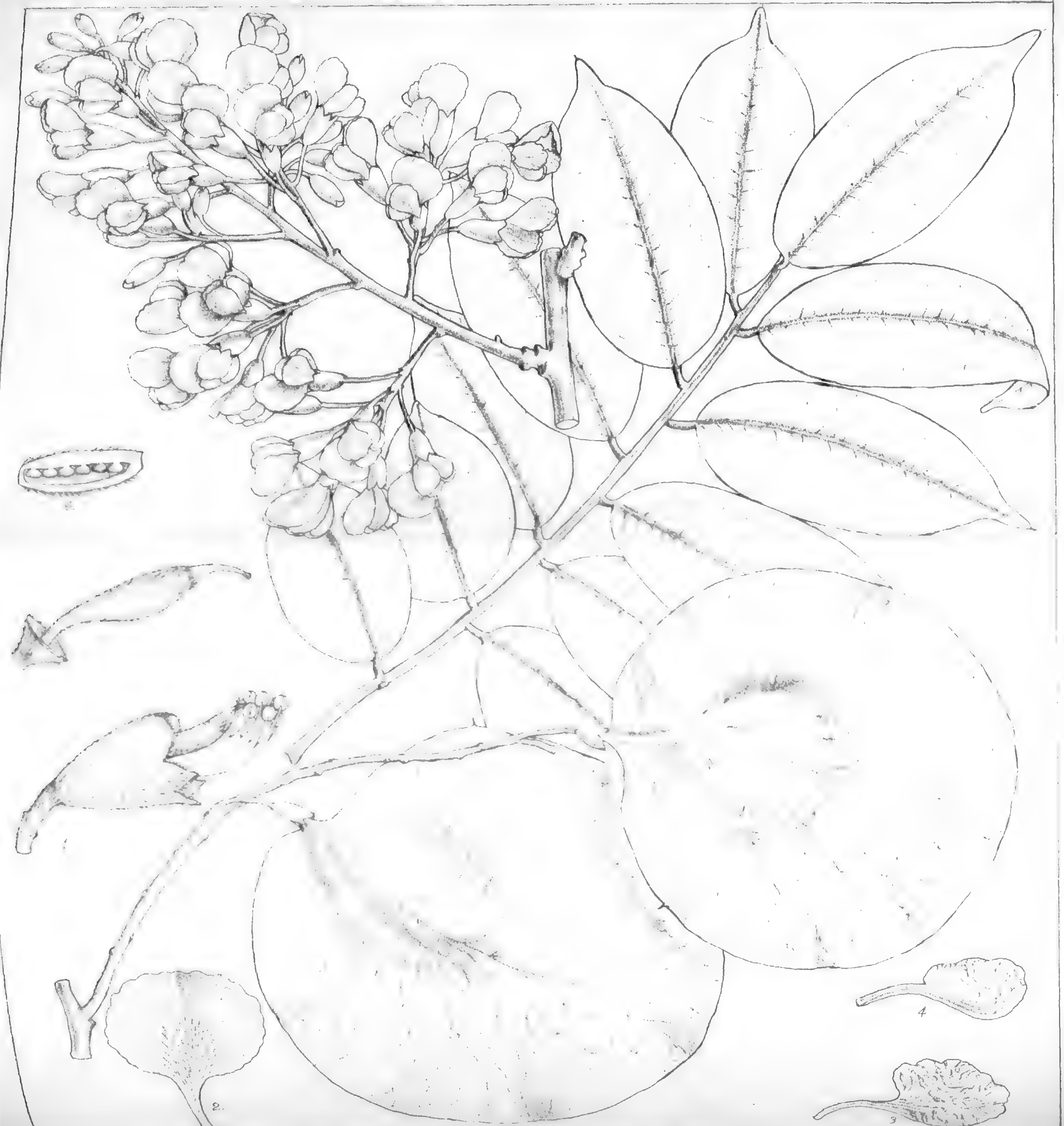
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Plate 2369.

PTEROCARPUS SOYAUXII, *Taub.*

Leguminosæ. Tribe Dalbergieæ.

P. Soyauxii, *Taub.* (*sp. nov.*) ; arbor ramulis teretibus cortice longitudinaliter rugoso-rimoso obtectis, novellis uti petioli inflorescentiaeque axes ferrugineo-tomentellis, stipulis non visis, foliis imparipinnatis, foliolis alternis plerumque 11–13 distincte petiolulatis lineari oblongis vel interdum subobovato-oblongis apice obtuse producto leviter emarginatis minutissimeque mucronulatis, basi obtusis vel rotundatis obsolete marginatis utrinque glaberrimis, inflorescentiis pyramidalibus paniculatis, floribus longe graciliterque pedicellatis, pedicello infra calycem bracteolis 2 alabastrum subæquantibus caducissimis munito, uti calyce subtubuloso-campanulato breviterque dentato pilis ferrugineis subsericeo-tomentellis, vexillo calycem duplo superante late rotundato subcordato supra basin utrinque breviter dentato in unguem lamina subæquilongum angustato, alis late obovatis longe unguiculatis quam carina petala duplo latioribus, ovario lanceolato stipitato pilis ferrugineis subsericeo tomentello stylo glabro circa $\frac{1}{3}$ breviore coronato, ovulis 4–6, legumine stipitato plano-compresso oblique orbiculato, ala papyracea reticulata cincto, ad semina reticulato-costato, leviter ferrugineo-tomentello.

Hab. West Trop. Africa : Gaboon, Silange Farm, *Soyaux* (No. 47 fl. No. 59 fr.) ; Camaroons, N. W. of Kumba, *Preuss* (No. 167 fol.).

Arbor ad 30-metralis. *Folia* petiolo communi $2\frac{1}{2}$–6 poll. longo ; foliola supra in sicco nitidula costa impressa, nervis primariis subparallelis prominentibus, secundariis prominulo-reticulatis subtus pallidioribus vix nitidulis, costa in novellis inferne ferrugineo-tomentella mox vero glabrescente. *Inflorescentia* 4–8 poll. longæ, $3\frac{1}{2}$–$4\frac{1}{2}$ poll. latæ, ramis patentibus v. subpatentibus, multifloris. *Pedicelli* circa $\frac{1}{3}$ poll. , bracteolæ tomentellæ, $\frac{1}{4}$ poll. longæ. *Calyx* tubo $2\frac{1}{3}$ lin. longo, dentibus 3 inferioribus acutis. *Vexillum*, cum ungue $2\frac{1}{3}$ lin. longo gracili, $\frac{1}{2}$ poll. longum, $\frac{1}{3}$ poll. latum, in sicco corrugatum, album, uti alæ carinaque petala medio ferrugineo punctatum lineolatumque ; alæ vexillum subæquantes, $\frac{1}{4}$ poll. latæ, ungue $3\frac{1}{3}$ lin. longo ; carinæ petala cum ungue 5 lin. attingentia. *Legumen* (non plane maturum) stipite $\frac{1}{4}$ poll. longo, diam. circa $2\frac{1}{2}$–$3\frac{1}{2}$ poll. *Semina* ignota.

Tree of the virgin forest 80–90 ft. in height, furnishing a *Bar-* or *Red-wood* used by the natives as a dye. It is readily distinguished from

Plate 2370.

ACHILUS SIAMENSIS, *Hemsl.*

Scitamineæ. Tribe Zingibereæ.

Achilus, *Hemsl. in Kew Bulletin*, 1895, 39. *Flores* minuti, in axillis bracteolarum solitarii, sessiles, unisexuales, ut videtur, vere monoici. *Flores* ♂ : *Calyx* cylindrico-tubulosus, obscure trilobatus. *Corolla* calycem dimidio superans, alte trilobata, lobis ovato-oblongis obtusis. *Staminodia* nulla. *Stamen* unicum ; filamentum filiforme ; antheræ exsertæ loculi paralleli, contigui, connectivo non producto inappendiculato. *Flores* ♀ : *Calyx* tubulosus, cylindricus, brevissime 3-lobatus. *Corolla* cylindrica, calycem paullo superans, etiam obscure trilobata. *Staminodia* nulla. *Stylodia* 2, filiformia, ovarium 1-loculare, placentis parietalibus, ovulis numerosis ; stylus filiformis. *Fructus* ignotus.

Herba *annua, nana, gracilis, caulibus simplicibus.* Folia *graminoidea.* Inflorescentia *terminalis, nutans, e spicis paucis, densis, distantibus, graciliter pedunculatis sistens, et bracteis amplis coloratis ornatæ.* Flores *bracteolis distichis arcte complicatis etiam coloratis fere occulti, inferiores* ♀, *supremus vel superiores* ♂.

Achilus siamensis, *Hemsl.* l.c. ; puberula caulibus 2–3-foliatis, foliis distichis longe vaginantibus, vaginis apertis ciliolatis apice transversim breviter ligulatis, lamina lineari-lanceolata acutissima atque vagina multinervia supra vix hispidula, bracteis sessilibus ovali-oblongis crebre longitudinaliter venosis venis prope marginem connexis, bracteolis rotundatis latioribus quam longis, floribus papillosis, ovario ruguloso.

Hab. Siam : open places on Mount Putsum, near Nam Kawng, at about 2000 feet, *F. H. Smiles.*

Caules 6–9 poll. alti. *Folia* absque vagina $1\frac{1}{2}$–2 poll. longa. *Inflorescentia* $1\frac{1}{2}$–2 poll. longa. *Bracteæ* 6–9 lin. longæ. *Bracteolæ* exteriores complicatæ circiter 3 lin. diametro. *Flores* 3–4 lin. longi.

This is the new genus alluded to (' Bulletin,' *l.c.*) as forming part of a small collection from Upper Siam, collected by Mr. F. H. Smiles, of the Royal Ordnance Survey. From his note accompanying the specimens, it would appear that the bracts and bracteoles are of a dark purple-red and the very small cylindrical flowers yellow ; but he, not being a botanist, did not correctly discriminate between the bracts and the flowers. *Achilus* is remarkable in having unisexual flowers and also from the total absence of labellum and of staminodia of any kind.—W. B. Hemsley.

Fig. 1. Detached lower portion of inflorescence. 2. Pistillate flower. 3. Ovary with style and stylodia. 4. Same, the ovary laid open. 5. Staminate flower. *All enlarged.*

Plate 2371.

CALOSTEMMA ALBUM, *R. Br.*

Amaryllidaceæ. Tribe Amarylleæ.

C. album, *R. Br.*, *Prodr. Fl. Nov. Holl.* i. 298 ; foliis ellipticis v. oblongo-ellipticis obtusiuscule acutatis membranaceis longe petiolatis, lamina utrinque 5–6-nervi venulis ultimis numerosis obliquis subparallelis, scapo erecto gracili, umbella multiflora, spatha 3–4-valvi segmentis lineari-lanceolatis, pedicellis flore sæpius brevioribus, perianthii tubo gracili cylindrico limbo subæquilongo segmentis plus minus patentibus anguste ellipticis obtusiusculis sæpius mucronulatis, staminibus perianthio brevioribus, antheris oblongis medio affixis, filamentis anguste subulatis in tubum (2–2½ lin. longum) tubulari infundibuliformem coalitis margine cum dentibus lanceolatis integris v. breviter bifidis filamentis alternantibus, ovario 1-loculare, ovulis 2–3 fere e basi cavitatis adscendentibus.

Hab. North Australia : Turtle Island, Gulf of Carpentaria, *R. Brown.*

Folia 4–8 poll. longa, 2–3 poll. lata ; petiolo ad 6–10 poll. longo. *Scapus* ½–1½ ped. longus. *Umbella* 1½–2½ poll. diam. *Flores* cum ovario infero c. 10 lin. longi.

We figure this rare plant at the suggestion of Sir F. v. Mueller. It has never, so far as I am aware, been collected a second time, and our figure is from specimens collected by R. Brown, and presented to Kew by direction of the late Mr. J. J. Bennett. It has all the *facies* of a *Eurycles*, the leaves perhaps narrower than those of *E. Cunninghamii*, Ait., but otherwise identical in venation. It might be better to regard it as a *Eurycles* with two cells of the ovary suppressed rather than as a congener of the other linear Narcissus-leaved species of *Calostemma*. Dr. Pax calls attention in Engler and Prantl, 'Pflanzenfamilien,' Amaryllidaceæ, p. 111, to Dr. Baillon's observation that *Calostemma* does not develop a normal embryo in the embryo-sac, but bulbillæ which grow towards the micropyle.—D. Oliver.

Figs. 1 and 2. Outer and inner perianth-segments. 3. Corona and stamens. 4. Apex of style. 5. Ovary, laid open. *All enlarged.*

Plate 2372.

PHYLLANTHUS PANICULATUS, *Oliv.*

Euphorbiaceæ. Tribe Phyllantheæ.

P. paniculatus, *Oliv. (sp. nov.)*; arbuscula 15–20-pedalis, glabra, foliis amplis membranaceis ellipticis v. ovato-ellipticis breviter obtuse acuminatis basi late cuneatis v. rotundatis nervis lateralibus primariis utrinque c. 5–7 rete venularum subtus prominulo, inflorescentia laxe paniculata ramis gracilibus divaricatis, pedicellis solitariis v. sæpe 2–5 fasciculatis gracilibus, bracteis minutis, perianthii laciniis 6 biseriatis subæquilongis exterioribus ellipticis interioribus obovatis, fl. ♂ staminibus 3 monadelphis, antheris liberis erectis ovato-lanceolatis acutis extrorsis, disco carnoso corrugato c. 3-lobato columnæ stamineæ æquilongo, fl. ♀ perianthio reflexo persistente, ovario ovoideo-conico glabro basi lobis carnosis truncatis 6 perianthii segmentis alternis circumdato, stylis 3 brevissimis obtusis indivisis conniventibus.

Hab. Polynesia: Solomon Islands, Faro Island, *Guppy* (No. 247).

Folia 7–8 poll. longa, $3\frac{1}{2}$–4 poll. lata; petioli breves. *Panicula* 7–9 poll. longa; pedicelli 4–9 lin. longi; flores albidi. *Capsula* globosa, 3-sulcata, lævis, $\frac{1}{4}$–$\frac{1}{3}$ poll. longa atq. lata.

Of this curious *Phyllanthus* unfortunately both our leaves and inflorescences are detached, though otherwise satisfactory as specimens. Of the two panicles one bears only pistillate, the other apparently only staminate flowers, so that probably the species is dicœcious. I do not find in this Herbarium any species nearly related to it.—D. Oliver.

Fig. 1. Staminate flower. 2. Staminal column and anthers. 3. Pistillate flower. 4. Transverse section of ovary of immature fruit. 5. Seed. *All enlarged.*

Plate 2373.

TYLOPHOROPSIS HETEROPHYLLA, *N. E. Br.*

Asclepiadeæ. Tribe Cynancheæ.

T. heterophylla, *N. E. Brown in Gard. Chron.* 16 (1894) 245; volubilis, caulibus gracilibus teretibus crispule pubescentibus, foliis petiolatis ovatis v. ovato-oblongis basi late rotundatis v. subcordatis acutiusculis v. obtusis obscure mucronatis supra glabris subtus in costa nervis primariis margineque parce pilosulis, pedunculis interpetiolaribus folio brevioribus cymulas paucifloras 1–3 gerentibus, pedicillis flori subæquilongis, corollæ rotatæ segmentis lanceolatis obtuse acuminatis intus papillosis, corona 5-loba cum lobis dorso carnosulis per totam longitudinem filamento adnatis gynostegio brevioribus. Tylophora heterophylla, *A. Rich. Fl. Abyss.* ii. 41, *tab.* 71; Vincetoxicum heterophyllum, *Vatke in Linnæa*, 40 (1876), 212.

Hab. Trop. Africa: Abyssinia, *Schimper*.

Folia magnitudine maxime varia, inferiora 2 poll. longa cum petiolis 1¼ poll. longis, folia superiora 8–14 lin. longa, petiola 2–3 lin. longa. *Flores* 5–6 lin. diam.

Mr. N. E. Brown having published his plant (together with a Yemen species) as generically distinct, and as the figure cited above in Richard's 'Flora Abyssinica,' which he identified—so far as I can judge, correctly—with the specimens of Schimper in the Kew Herbarium, is inaccurate in respect both of the pollen and corona, it would seem desirable to issue an illustration of his genus *Tylophoropsis* in 'Icones Plantarum.' I must point out, however, that if the genus be maintained it will involve a redistribution of the species hitherto included in *Tylophora*, in which genus both M. Decaisne (*DC. Prodr.* viii. 610, and *Deless. Ic. Sel.* v. 82) and the authors of the 'Genera Plantarum' would allow the pollinia to be either erect or '*a caudicula erecta pendula*, as *e.g.* in *Iphisia*, Dcne., as figured in Delessert, *l.c.* It would be very desirable to have all the species of *Tylophora* re-examined with a view to ascertain how far the direction of the pollinia may be variable. At the base of the gynostegium in our plant are five very minute teeth alternating with the adnate lobes of the corona, as noticed by Mr. Brown.—D. Oliver.

Fig. 1. Flower. 2. Gynostegium. 3. Pollinia. *All enlarged.*

Plate 2374.

TRICHOLÆNA MONACHYRON, *Oliv.*

Gramineæ. Tribe Paniceæ.

T. Monachyron, *Oliv.* ; culmo erecto basi geniculato interdum radicante hirtello nonnunquam superne glabrato striato, vaginis foliorum striatis parce hirtellis ore piloso-ciliatis ligula obsoleta, lamina lineari sensim acuminata utrinque minute hirta, panicula erecta ramosa pedicellis adscendentibus flexuosis apice minute dilatatis, spiculis bifloris flosculo inferiore ♂, superiore ♀, glumis 4 extima a cæteris distante parva oblongo-elliptica obtusa basi fasciculo pilorum cincta, gl. ii. acute carinata apice scariosa bidentata inter dentes graciliter aristata 5-nerve carina medio et infra longe ciliata, gl. iii. florifera secundæ vacuæ simili et æquilonga sed carina haud longe ciliata, palea lineari apice minute cucullata 2-carinata carinis ciliatis, fl. superioris ♀ gl. florifera hyalino-scariosa gluma vacua dimidio breviore obtusa emarginata carinata, palea fere æquilonga emarginata obscure 2-nervi. Monachyron villosum, *Parl. in Webb, Spic. Gorgon.* 190.

Hab. Cape Verdes, St. Jago, *Hooker* ; St. Nicolao, *Bolle* ; St. Vincent, perhaps introduced, *fide Krause* ; (? E. Trop. Africa, Abyssinia, *Schimper*, Nos. 218, 2310).

Culmus 1–2-pedalis. *Folia* 2 (v. in spp. Nub. 3) lin. lata. *Spiculæ* 3 lin. longæ.

Rhynchelytrum grandiflorum, Hochst. (in 'Flora,' 1844, 249), is very near to our plant, and perhaps might have been rightly reduced as synonymous, but in view of the much larger spikelets I have hesitated to cite it formally as such. Both *Rhynchelytrum* and *Monachyron* were reduced to *Trichlaena* by Hackel (Engl. and Prantl, 'Pflanzenfamilien,' ii. Gram. 36), and Dr. Baillon has also pointed out their identity in 'Bull. Soc. Linn. Par.' They are all three reduced by him to *Panicum* ('Hist. des Plantes,' xii. [Gram.] 175). In 'Genera Plantarum' they are referred to three different tribes ; *Monachyron*, at the time it was worked up, not being represented in the Kew Herbarium. *Trichlaena Wightii* is another near ally of our plant, with larger and more villous glumes.—D. Oliver.

Fig. 1. Junction of lamina of leaf with its sheath. 2. Spikelet. 3. Palea of staminate floret. 4. Anthers. 5. Hermaphrodite flower. 6 and 7. Flowering glume and palea of same. 8. Stamens and pistil. 9. Pistil. *All enlarged.*

Galpinia transvaalica, N.E.Br

Plate 2375.

GALPINIA TRANSVAALICA, *N. E. Br.*

Lythraceæ.

G. transvaalica, *N. E. Brown in Kew Bulletin*, 1894, 346 ; arbuscula glabra, ramulis intricatis ultimis tetragonis, foliis oppositis v. suboppositis breviter petiolatis coriaceis ellipticis v. obovato-ellipticis obtusis retusisve apice sæpe inflexis ‘costa infra apicem subtus glandulifera’ basi cuneatis rotundatisve, paniculis compactis multifloris terminalibus breviter pedunculatis, pedicellis calyce sæpius brevioribus, calyce glabro campanulato basi hemisphærico vix ad medium 5–6-fido, segmentis deltoideis apice glanduloso-apiculatis dentibus accessoriis totidem parvis conicis, petalis albis sinubus insertis oblongo-lanceolatis membranaceis longitudinaliter unicostatis margine undulatis lobis calycinis 3–4-plo longioribus, staminibus isomeris exsertis petalis oppositis medio v. infra medium tubi calycis insertis, filamentis æstivatione inflexis petala superantibus, antheris late rotundatis connectivo latiusculo dorso carnosulo loculis 2 longitudinaliter dehiscentibus, ovario libero turbinato glabro imperfecte biloculare, stylo gracile exserto, stigmate terminale, ovulis indefinitis anatropis e basi loculorum adscendentibus.

Hab. South Africa : Transvaal, French Bob’s Hill, Barberton, 2600 feet alt., *Galpin* (No. 889).

Arbuscula 15-pedalis. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, 10–15 lin. lata ; petioli 1–2 lin. longi. *Calyx* $1\frac{1}{2}$–2 lin. latus. *Petala* $2\frac{1}{2}$ lin. longa.

The affinity of this plant, as Mr. Brown points out, is with the American genus *Diplusodon*, in which the stamens may be reduced to the number of, and anteposed to, the petals. In this respect *Galpinia* agrees with *Rhynchocalyx* (‘Ic. Pl.’ 2348), which, however, differs materially in the calyx and petals, and more especially in the ovary and placentation.—D. Oliver.

Fig. 1. Calyx. 2. Flower laid open. 3. Stamens, back and front views. 4. Vertical section of ovary. 5. Transverse section of same. *All enlarged.*

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HOOKER'S

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OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

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FOURTH SERIES.

EDITED FOR THE BENTHAM TRUSTEES BY

DANIEL OLIVER, F.R.S., F.L.S.

EMERITUS PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON: LATE KEEPER OF THE HERBARIUM AND LIBRARY, ROYAL BOTANIC GARDENS, KEW.

Under the Authority of the Director of the Royal Botanic Gardens, Kew.

VOL. IV.

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Gerbera parva, N. E. Br.

Plate 2376.

GERBERA PARVA, *N. E. Br.*

Compositæ. Tribe Mutisiaceæ.

G. parva, *N. E. Brown in Kew Bullet.* 1895, 27; herba concinna acaulis, foliis longe et graciliter petiolatis lamina late ovato-elliptica obtusa basi cordata repando-denticulata supra fere omnino glabra subtus breviter et laxe piloso-tomentella, scapo foliis 2–4-plo longiore supra medium plus minus tomentoso apicem versus sæpe squamulis paucis subulatis instructo, involucro disco æquilongo turbinato, squamis purpureo tinctis biseriatis cum paucis brevioribus lineari-oblongis acuminatis, receptaculo ut videtur leviter foveolato, floribus radii uniseriatis ligula exteriore 3-dentata, labio interiore ad dentes parvos redacto v. fere obsoleto, floribus disci cum labiis subæquilongis, pappi setis uniseriatis basi brevissime coalitis ovario longioribus scabridis albidis.

Hab. South Africa; in the Drakensberg, a damp place by Bushman's river, 6000–7000 feet, *Evans* (No. 57).

Folia cum petiolo $1\frac{1}{4}$–$2\frac{1}{4}$ poll. longa, lamina $\frac{1}{2}$–$\frac{3}{4}$ poll. longa, 4–6 lin. lata. *Scapus* $3\frac{1}{2}$–$4\frac{1}{2}$ poll. longus. *Capitula* florifera, cum radiis, $\frac{3}{4}$–1 poll. diam. *Antheræ* basi caudatæ, apice in appendicem membranaceam obtusam productæ.

An elegant little species, 'very like *Bellis perennis* at first,' according to Mr. Evans; perhaps more nearly resembling *Bellis rotundifolia* or *Bellidiastrum Michelii*. It was only found in one locality.—D. Oliver.

Fig. 1. Ray-floret. 2. Seta of pappus of same. 3. Disk-floret. 4. Stamens. 5. Style. *All enlarged.*

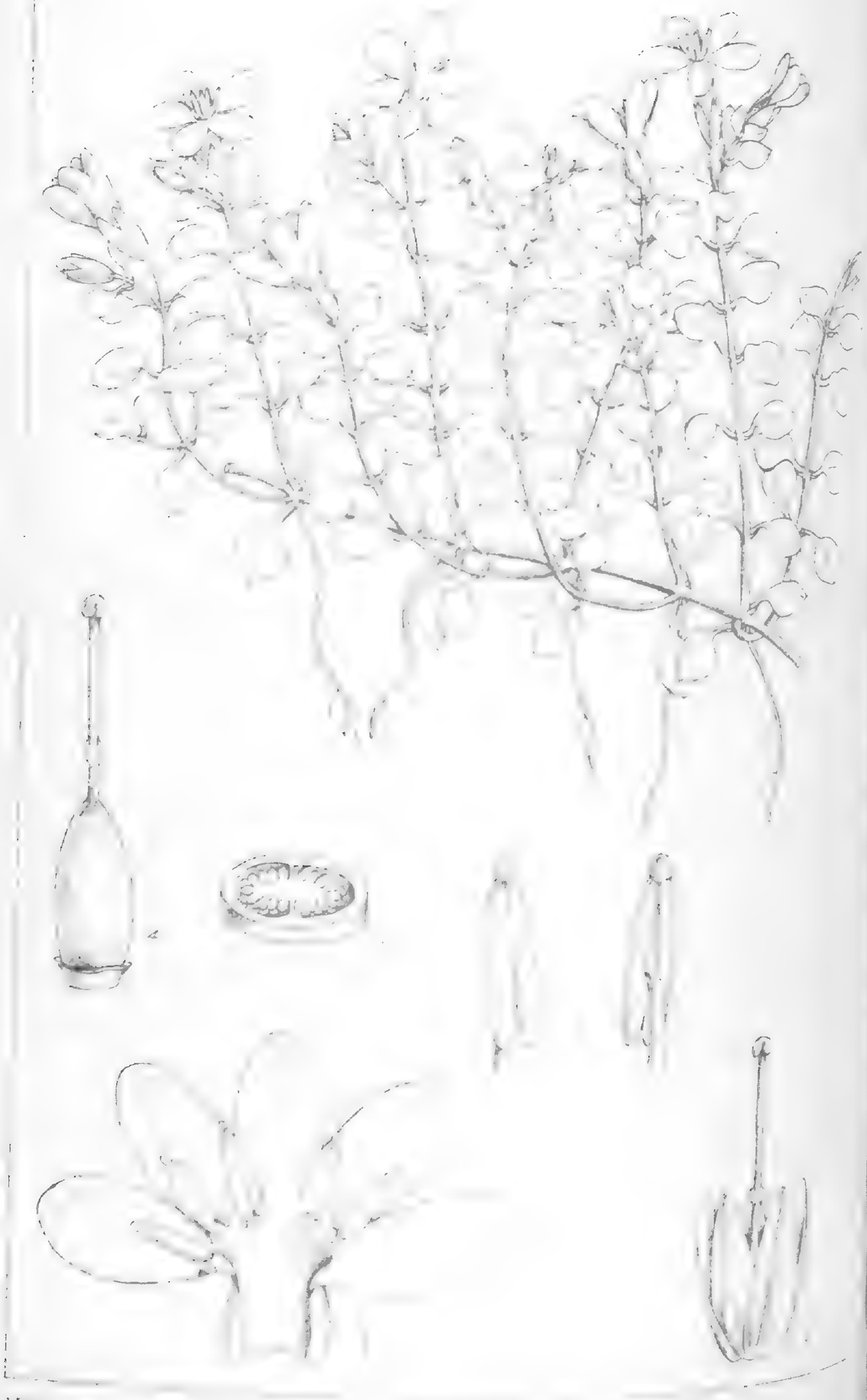


Plate 2377.

SEBÆA EVANSII, *N. E. Br.*

Gentianaceæ. Tribe Exaceæ.

S. Evansii, *N. E. Brown in Kew Bullet.* 1895, 27 ; herba humilis glaberrima ramulis primariis prostratis radicantibus, foliis petiolatis carnosulis ovatis rotundatis v. transverse ellipticis lamina in petiolum latiusculum interdum cuneatim angustata, floribus aureis terminalibus solitariis v. in cymulis 2 3-floris approximatis breviter pedunculatis, segmentis calycinis carinatis acutiusculis tubo longioribus, corollæ segmentis tubo longioribus obovato oblongis obtusis, antheris exsertis oblongo-linearibus rectis longitudinaliter dehiscentibus apice connectivo parvo ovoideo obtuso breviter producto coronatis basi bifidis, ovario biloculari, stylo ovario longiore infra medium biglanduloso, stigmate capitato bilobulato.

Hab. South Africa ; in the Drakensberg, *Cooper* (No. 2761), *Tyson* (No. 1378), *Evans* (No. 56) ; on rocks at an elevation of 6000–7000 feet.

Herbula 2–3-pollicaris *Folia* 2–3 lin. lata. *Flores* $\frac{1}{2}$–$\frac{3}{4}$ poll. diam.

Of this charming little plant, so different in its prostrate habit from its congeners, the excellent specimens sent to the Kew Herbarium by Mr. Evans enable us to furnish a satisfactory figure. Mr. Evans describes it as 'a lovely little plant growing in dense masses with hundreds of flowers together,' adding that it is well deserving of cultivation.—D. Oliver.

Fig. 1. Calyx. 2. Corolla laid open. 3. Anther, back and front. 4. Pistil. 5. Transverse section of ovary. *All enlarged.*

M. S. del. et lith.

Plate 2378.

CRUDIA SENEGALENSIS, *Planch.*

Leguminosæ. Tribe Amherstieæ.

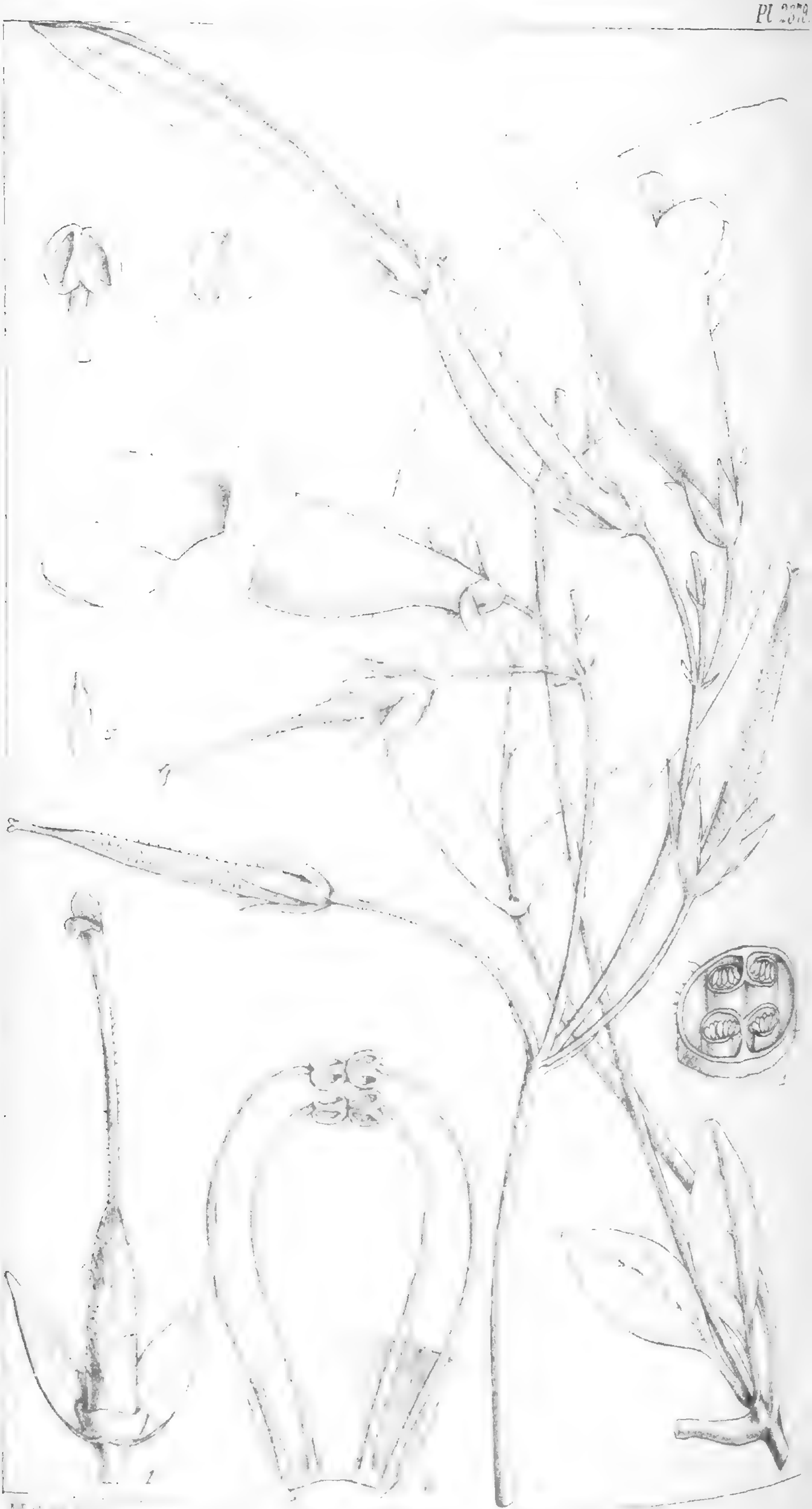
C. senegalensis, *Planch., Benth. in Linn. Trans.* xxv. 314; arbuscula glabra, ramulis teretibus, foliis sæpius 5–7-foliolatis, foliolis alternis petiolulatis tenuiter coriaceis oblongo-ellipticis breviter obtusiuscule acuminatis, foliolis inferioribus minoribus sæpe ovatis v. ovato ellipticis, stipulis conspicuis erectis rigidiusculis lanceolatis v. ovato-lanceolatis acuminatis, racemis (sæpe in ramulis brevibus lateralibus) terminalibus folia vix superantibus laxe multifloris, pedicellis gracilibus divergentibus, bracteis bracteolisque minutis v. temp. fl. obsoletis, calycis tubo anguste turbinato limbo 4-partito segmentis tubo multo longioribus subæquilongis late ellipticis v. obovato-ellipticis obtusis æstivatione imbricatis denique reflexis exterioribus concavis, staminibus 10 filamentis gracilibus glabris, antheris late ellipticis rotundatisve dorso affixis, ovario breviter stipitato cum stipite inferne lateraliter adnato dense fusco-tomentoso utrinque angustato 4–6-ovulato, ovulis superpositis, stylo gracili apicem versus glabro, stigmate terminali parvo, legumine late oblongo plano-compresso coriaceo glabrato apiculo terminali, valvis oblique nervosis, seminibus 1-2 compressis.—Oliv. *Fl. Trop. Afr.* ii. 312.

Hab. W. Trop. Africa; Senegambia, *Heudelot*; Eppah, *Barter*; Nun river and Fernando Po, *Mann*; Lagos, *Millen*.

Folia ½–1 pedalia; folio'a superiora 3 6 poll. longa; petiolulus 1 2 lin. longus. *Racemi* 4 6 poll. longi; pedicelli 6–8 lin. longi. *Legumen* $3\frac{1}{2}$–$4\frac{1}{2}$ poll. longum, 2 poll. latum.

Our knowledge of this species is now completed by the receipt of excellent specimens in fruit as well as flower from Lagos, sent by Mr. Millen. As pointed out by Mr. Bentham (*l.c.*), it is clearly similar to *C. Parivoa*, DC., of Guiana, excepting in the remarkable stipules, which Baillon (*Adans.* vi. 199–200) finds intra-axillary and at length connate in pairs by their inner margins to about half their length, though I have not observed connation to this extent in our specimens. The legume is much longer and flatter than in *C. Parivoa*, in which, moreover, they are closely tawny-tomentose.—D. Oliver.

Fig. 1. Detached flower. 2. Anther, back and front view. 3. Pistil; the ovary laid open. *All enlarged.*



Didissandra longipes, Hemsl.

Plate 2379.

DIDISSANDRA LONGIPES, *Hemsl.*

Gesneraceæ. Sub-tribe Didymocarpeæ.

D. longipes, *Hemsl. in Kew Bullet.* 1895, *ined.*; herba fere omnino glabra breviter caulescenti, foliis oppositis approximatis longe petiolatis lamina elliptica v. oblanceolato-elliptica obtusa basi angustissime peltata margine leviter repando-undulata subtus pallidiore nervis lateralibus utrinque 3–4, pedunculis elongatis gracilibus rigidiusculis, cymis 2–3–7-floris, pedicellis calyce sæpius (interdum 2–3-plo) longioribus, bracteis parvis anguste linearibus, calycis glabri 5-partiti segmentis ovali-lanceolatis acuminatis, corolla calyce 8–10-plo longiore ventricoso-infundibulariformi, labio superiore quam inf. breviore late et obtuse rotundato-bilobato, inferiore porrecto 3-lobo lobis subæqualibus rotundatis.

Hab. China; Prov. Yunnan, 'in crevices of shady rocks in a dark limestone glen,' Mongtse, *Hancock* (No. 50).

Folia cum petiolis $1\frac{1}{2}$–3 poll. longis, lamina 2–$4\frac{1}{2}$ poll. longa, $1\frac{1}{3}$–2 poll. lata. *Pedunculus* 5–15 poll. longus; pedicelli $\frac{1}{2}$–$1\frac{1}{4}$ poll. longi. *Calyx* segmentis temp. florifero $\frac{1}{3}$ poll., temp. fructif. $\frac{1}{2}$ poll. longis. *Corolla* 2–$2\frac{1}{2}$ poll. longa. *Stamina* didynama, inclusa, filamentis incurvis apice inappendiculatis, antheris per paria apice cohærentibus, loculis late-ellipticis v. rotundato-ellipticis basi leviter divergentibus. *Ovarium* lineare parce hirtum in stylo elongato attenuatum; placentis late bilamellatis, lamellis revolutis facie interiore tantum ovuliferis. *Stylus* apice dilatatus; stigma bilamellatum. *Capsula* linearis, bivalvis, compressa, $2\frac{1}{2}$ poll. longa, 2–3 lin. lata. *Semina* minuta, lineari-ovalia, utrinque angustata inappendiculata.

This fine species clearly belongs to Mr. Clarke's genus *Didissandra*, so far as its technical characters go; but the genus, with the additions made to it since the date of Mr. Clarke's 'Monograph of Cyrtandreæ,' is not a very natural one, and perhaps its species might without violence be distributed between *Didymocarpus* and *Chirita*, allowing these genera to include both diandrous and didynamous species, and distinguishing them by the form of the corolla. M. Baillon sinks both of these genera, and *Didissandra*, in *Rottlera*, Vahl, the resuscitation of which name, I think, is to be regretted on the grounds given in 'Gen. Plant.' ii. 1022.

In our dried specimens the under side of the corolla-tube is spotted or more uniformly pale yellow, the upper side and limb tending to purple. Clearly very ornamental and worth introducing.—D. Oliver.

Fig. 1. Part of calyx and pistil. 2. Base of corolla, showing attachment of stamens. 3. Anther, back and front view. 4. Transverse section of ovary. 5. Ovule. *All enlarged.*

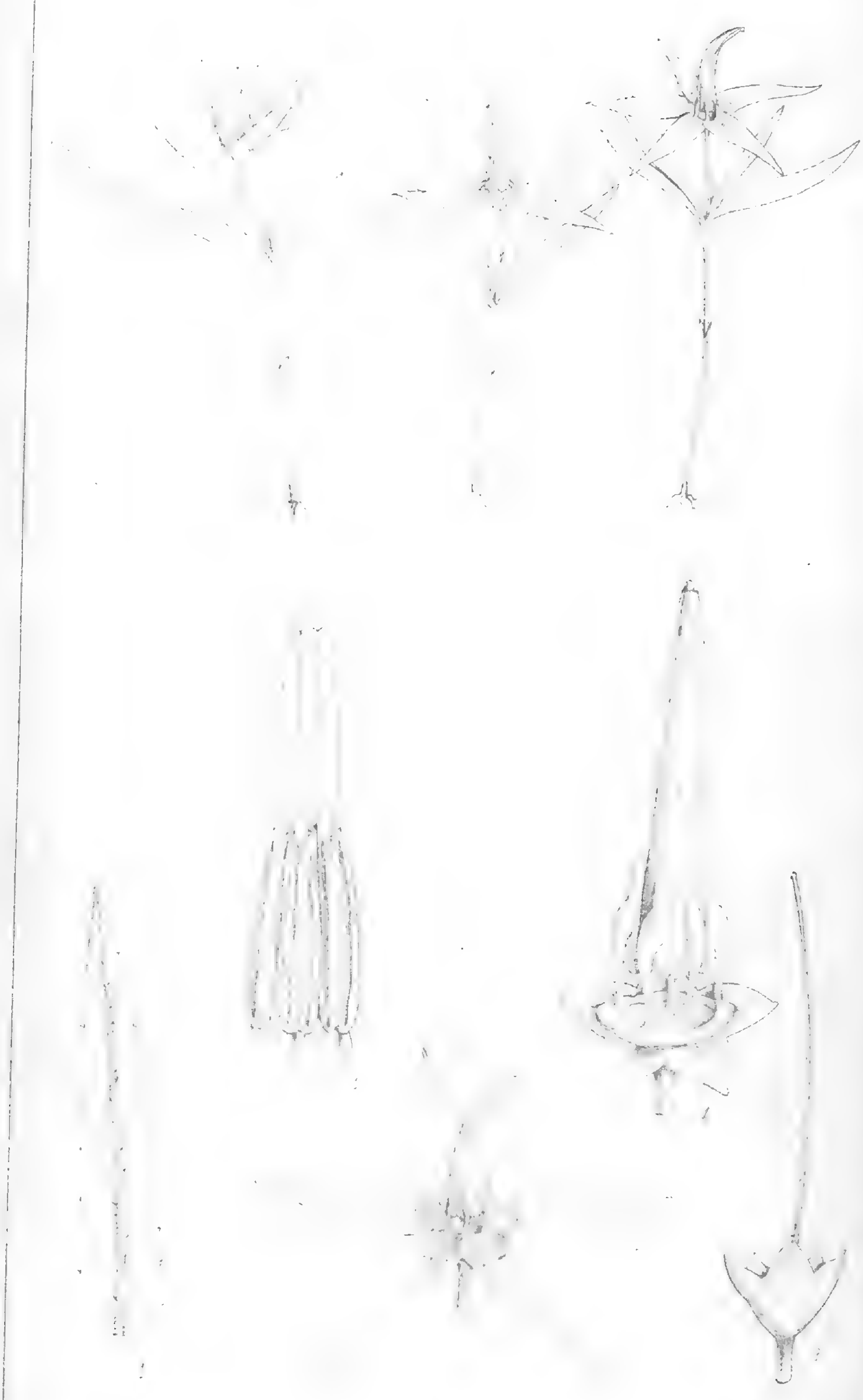


Plate 2380.

ARGOSTEMMA CONCINNUM, *Hemsl.*

Rubiaceæ. Tribe Hedyotideæ.

A. concinnum, *Hemsley in Kew Bull.* 1895, *ined.*; herbula uniflora humilis 1–2-pollicaris caule erecto filiformi glabro, foliis 4 pseudo-verticillatis inæquilongis linearibus v. anguste lineari-lanceolatis, pedunculo unifloro gracillimo foliis longioribus breviore, calycis tubo turbinato-campanulato limbo brevi 5-fido, segmentis ovato-deltoideis acutis, corollæ rotatæ profunde 5-fidæ tubo calycem superante infundibuliformi, limbi segmentis anguste lineari-lanceolatis, filamentis brevibus, antheris in conum elongatum leviter arcuatum cohærentibus, stylo gracillimo conum androecii brevissime superante.

Hab. Northern Siam; moss-covered rock, Pu Kaw, near Mount Mock, *c.* 6000 ft., *Smiles.*

Folia $\frac{1}{3}$–$1\frac{1}{4}$ poll longa, 1–$1\frac{1}{2}$ lin. lata. *Flores* albi, centro macula viridi notati, $\frac{2}{3}$–1 poll. diam.

The slender stem of this elegant little plant bears, about midway below the pseudo-verticil of leaves, more or less distinct traces of a pair of minute squamiform leaves, which possibly are cotyledonary. The structure and dehiscence of the anthers is doubtless as in *A. montanum*, Bl., and its allies, carefully described by Mr. Bennett, in his general remarks under that species, in 'Plantæ Javanicæ Rariores,' p. 93.—D. Oliver.

Fig. 1. Portion of leaf, showing the under surface. 2. Expanded flower. 3. Calyx. 4. Stamens. 5. Staminal tube laid open. *All enlarged.*

Rhododendron Hancockii, Hemsl.

Plate 2381.

RHODODENDRON HANCOCKII, *Hemsl.*

Ericaceæ. Tribe Rhodoreæ.

R. (§ **Lateriflora**) **Hancockii**, *Hemsl. in Kew Bullet.* 1895, *ined.*: frutex glaberrimus, foliis tenuiter coriaceis oblanceolato- v. oblongo ellipticis breviter acuminatis basi in petiolum cuneatim angustatis etiam subtus omnino nudatis, costa subtus prominula nervis lateralibus primariis (in foliis majoribus) utrinque 15–21, gemmis floriferis 1–3 in axillis foliorum superiorum 1–2-floris, squamis temp. florifero laxis deciduis inferioribus ovatis ciliolatis superioribus oblongo-lanceolatis acutis apice tantum pilosulis, calycis parvi segmentis liberis sæpius inæqualibus deltoideis oblongisve, corolla infundibulari-campanulata glabra alba, lobis late obovato-ellipticis basin versus macula flavida notatis, staminibus 10 corolla brevioribus filamentis inferne hirtellis, ovario 6-(5-)sulcato 6-(5-)loculari tomentello, stylo glabro.

Hab. China; Prov. Yunnan, Mongtse, in a mountain glen, alt. 6300 ft., *Hancock* (No. 156).

Folia persistentia, 4–8 poll. longa, $1\frac{1}{4}$–$3\frac{3}{4}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Pedicelli* 1–$1\frac{1}{2}$ poll. longi; squamæ majores basi attenuatæ 1–$1\frac{1}{2}$ poll. longæ. *Corolla* 4–$4\frac{1}{2}$ poll. diam.; segmenta $1\frac{1}{3}$–$1\frac{1}{2}$ poll. lata. *Stamina* $1\frac{1}{2}$–2 poll. longa. *Pistillum* 2 poll. longum: stigma capitatum.

This remarkably fine species belongs to the relatively small division of *Rhododendron* in which the inflorescence is not strictly terminal, but from the axil of one or more of the uppermost leaves. I rather hesitate, however, to refer it to the section *Rhodorastrum* of Maximowicz, although M. Franchet in adopting this section includes in it species with persistent leaves. It is allied to *R. pittosporifolium*, Hemsl. (perhaps identical with *R. staminеum*, Franch., which is the type of M. Franchet's new section *Choniastrum*), but differs in the short and wider tube of the corolla and included stamens.

This is another of Mr. Hancock's recent discoveries well deserving introduction to our gardens.—D. Oliver.

Fig. 1. Calyx and ovary. 2. Anther, back and front view. 3. Transverse section of ovary. *All enlarged.*

Ophiopogon clavatus, Wr.

Plate 2382.

OPHIOPOGON CLAVATUS, *Wright.*

Hæmodoraceæ. Tribe Ophiopogoneæ.

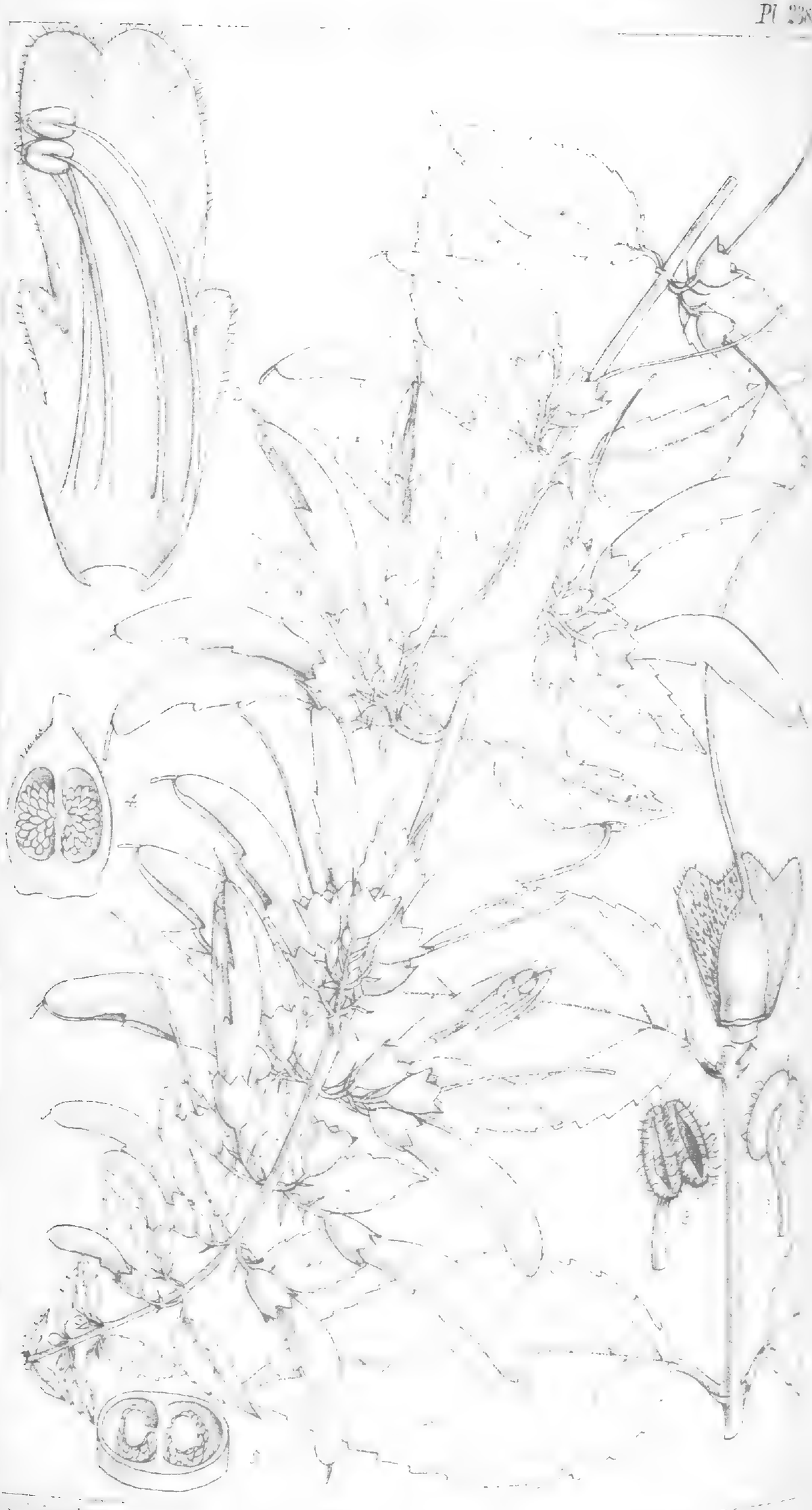
O. clavatus, *C. H. Wright in Kew Bullet.* 1895, *ined.*; rhizomatosus, rhizomate cataphyllis scariosis sparse vestito fibras radicantes emittente, foliis quasi radicalibus longe petiolatis, petiolis sæpe recurvis, lamina oblanceolato-oblonga obtusa v. late acutata basi in petiolum longe attenuata, longitudinaliter 7 15-nervosa nervis subtus conspicuis interstitiis pallidioribus, racemo foliis sæpius breviore 2-5-floro, bracteis pedicello subæquilongis, perianthii segmentis oblongo-lanceolatis obtusis apicibus interdum leviter galeatis, antheris linearibus filamento 3-4-plo longioribus, stylo elongato perianthii segmentis fere æquilongo.

Hab. China; Prov. Hupeh, in Bamboo woods, *Dr. A. Henry* (6065).

Folia petiolo incluso 4–5½ poll. longa, lamina 5–7 lin. lata. *Flores* rubentes 9–10 lin. lati.

A pretty species, deserving introduction into our gardens. It grows on mountains at an elevation of 6000 feet. Its nearest ally is probably a dwarf but acute-leaved species, of which a specimen has recently been received at Kew from Northern Siam, collected by F. H. Smiles: it is related also to *O. dracænoides*, Hk. f., of the Eastern Himalaya.—D. Oliver.

Fig. 1. Flower and bract. 2. Anther, back and front view. 3. Pistil. *All enlarged.*



Brandisia racemosa, Hems.

Plate 2383.

BRANDISIA RACEMOSA, *Hemsl.*

Scrophularineæ. Tribe Chelonæ.

B. racemosa, *Hemsl. in Kew Bullet.* 1895, *ined.*; frutex ramis ut videtur sarmentosis, gracilibus, fusco-hirtellis, foliis petiolatis ovato- v. oblongo-ellipticis acutis serratis basi rotundatis v. interdum subcordatis glabratis v. subtus in costa petioloque obsolete hirtis, floribus in racemis terminalibus multifloris v. in lateralibus abbreviatis breviter pedicellatis, bracteis superioribus parvis linearibus, calycis campanulati dentibus 5 deltoideis posticis latioribus, corolla calyce 5–6-plo longiore gibboso-arcuata labio postico quam antico fere duplo longiore apice emarginato v. breviter obtuse 2-lobato lateraliter compresso.

Hab. China; Prov. Yunnan, in shady copses, Mongtse, *Hancock* (No. 144).

Folia $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa v. superiora florifera minora; petiolus 1–3 lin. longus. *Flores* $1\frac{1}{3}$ poll. longi punicei; corollæ labium anticum brevissimum obtusum posticum eundem $\frac{1}{2}$–$\frac{2}{3}$ poll. superante. *Stamina* didynama, 2 antica paullo longiora, posticum 0; antheræ cordatæ barbatæ, loculis basi divergentibus. *Ovarium* ovoideum compressum, biloculare; ovula plurima, oblonga v. linearia; stylus apice exsertus.

Although different in *facies* from previously described species of this genus, from the glabrate foliage, flowers confluent in short or long racemes, and the excessive inequality of the lips of the corolla, there can be no doubt, I think, that it is a true *Brandisia*. Mr. Hancock describes it as a conspicuous shrub, with rich red flowers. It would seem a very desirable plant for introduction.—D. Oliver.

Fig. 1. Calyx laid open, and pistil. 2. Corolla laid open, and stamens. 3. Anther, back and front view. 4. Ovary, longitudinal and 5. transverse sections. *All enlarged.*

Plate 2384.

JASMINUM PRIMULINUM, *Hemsl.*

Oleaceæ. Tribe Jasmineæ.

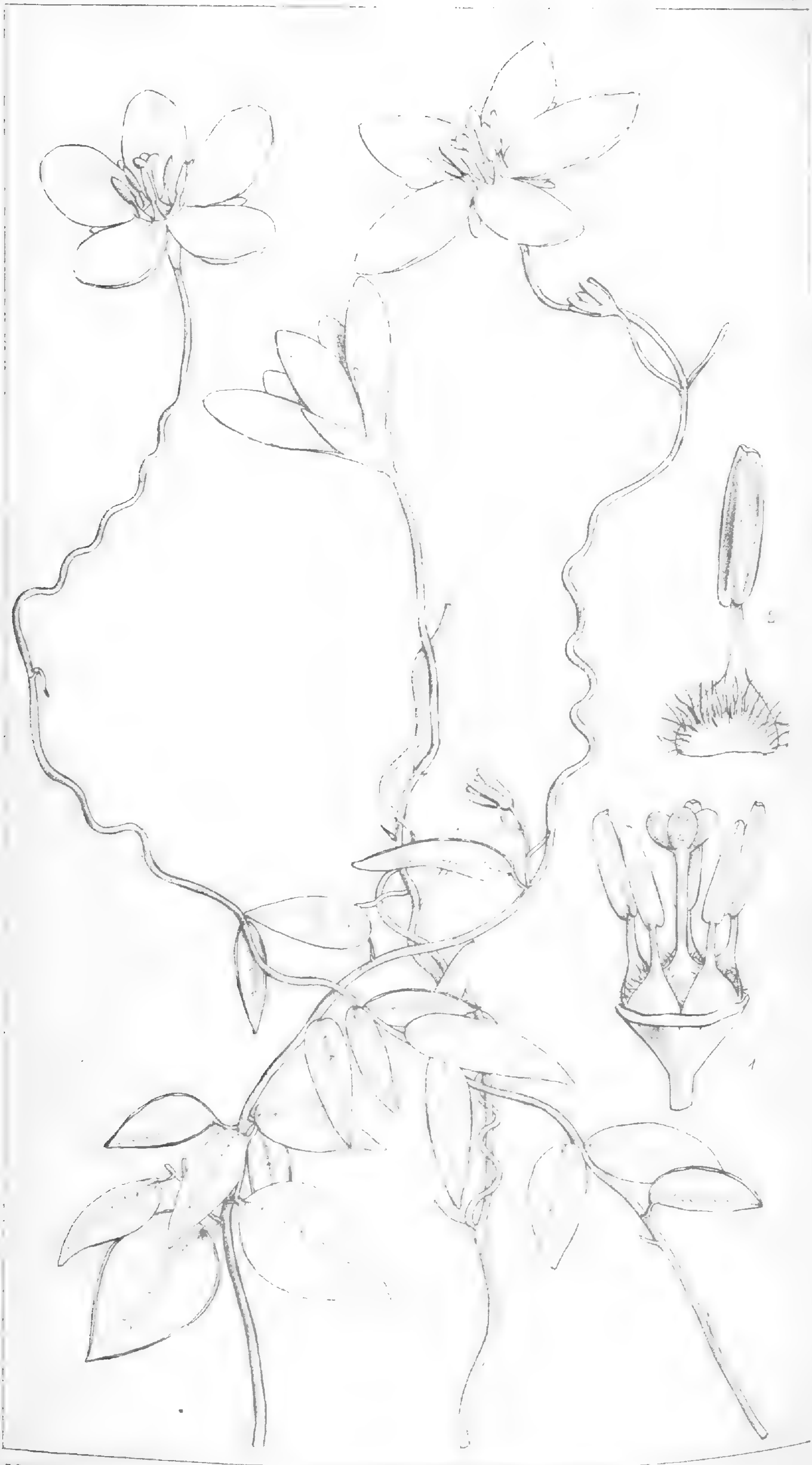
J. primulinum, *Hemsley in Kew Bullet.* 1895, *ined.* ; aff. *J. nudifloro*, ramis vimineis 4-angulatis glabris, foliis 3-foliolatis tempore florifero interdum evolutis, foliolis glabris marginibus scabriusculis lateralibus elliptico- v. oblongo-lanceolatis apice obtusis v. obtusiusculis mucronulatis basi oblique cuneatim angustatis subsessilibus, terminali majore oblongo-lanceolato petiolulato, floribus luteis sæpius præcocibus axillaribus solitariis pedicellis 6–8 bracteatis, calycis profunde 6–7-fidi segmentis tubo fere 3-plo longioribus lanceolatis v. lineari-lanceolatis acutis corollæ tubo brevioribus, corollæ rotatæ segmentis 6–7 late v. obovato-ellipticis tubo longioribus, stylo breviter exserto.

Hab. China ; Prov. Yunnan, Mongtse, in hedges and copses, *Hancock* (No. 6).

Folia opposita ; petiolus $\frac{1}{3}$–$\frac{3}{4}$ poll. longus ; foliola lateralia 1–$1\frac{1}{2}$ poll. longa, fol. terminalia $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa. *Bracteæ* inferiores parvæ, late ovatæ, intermediæ majores ellipticæ breviter petiolatæ, superiores ovales v. oblongæ. *Corolla* $1\frac{1}{2}$–$1\frac{3}{4}$ poll. diam.

Excepting in the larger leaves, sometimes fairly, if not fully, developed at the time of flowering, and much larger flowers, with the limb of the corolla exceeding the tube, this plant might be regarded as a glorified variety of *J. nudiflorum*, Lindl. It is evidently a very free flowerer, and in the very first rank of ornamental shrubs. Let us hope that Mr. Hancock may yet lay us under the further obligation of securing its introduction into British horticulture.—D. Oliver.

Fig. 1. Fragment of leaflet, showing setulose margin. 2. Calyx laid open, and ovary. 3. Corolla-tube laid open. 4. Apex of style and stigma. *All enlarged.*



M.S del. et lith.

Codonopsis convolvulacea, Kurz.

Plate 2385.

CODONOPSIS CONVOLVULACEA, *Kurz.*

Campanulaceæ. Tribe Campanuleæ.

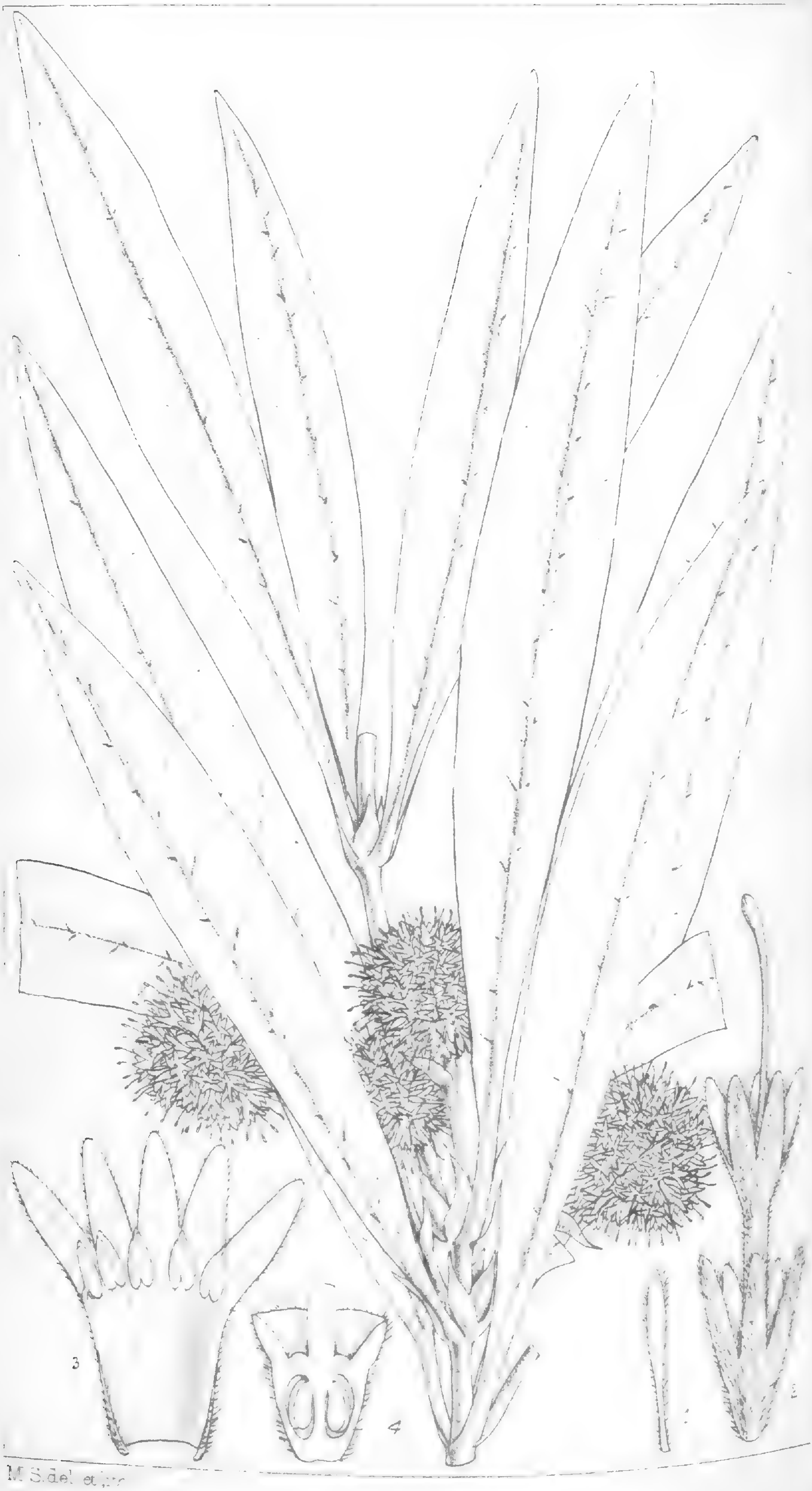
C. convolvulacea, *Kurz in Trimen, Journ. Bot.* 1873, 195 ; herba gracilis volubilis, foliis alternis v. oppositis breviter petiolatis linearis- v. ovato-lanceolatis integris acutiusculis basi obtusis v. in foliis inferioribus latioribusque subcordatis glaberrimis v. facie superiore marginem versus obsolete scabrido-hirtis marginibus angustissime revolutis, floribus sæpius terminalibus solitariis longissime pedunculatis pedunculo sæpius tortis, calycis tubo turbinato limbo 5-partito segmentis lanceolatis acutis, corollæ rotatæ 5-partitæ segmentis patentibus calyce 2–4-plo longioribus ellipticis acutatis.

Hab. China ; Prov. Yunnan, Mongtse, in mountain pastures, 5500-6500 feet, *Hancock* ; Hotha, *Anderson*.

Folia $\frac{3}{4}$–$1\frac{1}{2}$ poll. longa, 2–6 lin. lata ; petiolus $\frac{1}{12}$ poll. longus. *Flores* $1\frac{1}{2}$ poll. diam., cærulei. *Antheræ* lineari-oblongæ, basifixæ ; filamenta brevia, basi late et subito dilatata carnosula intus pilosula. *Ovarium* 3-loculare, semisuperum ; stigma 3-lobum, lobis oblongo-ovatis.

Originally described by Mr. Kurz from imperfect material : indeed, fruiting specimens are still a desideratum, as are ripe seeds for cultivation. The deep division of the corolla, which is truly rotate, gives the flower an aspect strange in *Codonopsis*, but it would appear to be nearly as deeply lobed in *C. pedunculosa*, Franchet, which is a larger, much stronger plant than ours, without any evidence of voluble habit. Kurz describes the flowers as axillary ; this is doubtless the case occasionally.—D. Oliver.

Fig. 1. Pistil and stamens. 2. Stamen detached. from inner side. *Enlarged.*



Adina Gaipri, Drc.

Plate 2386.

ADINA GALPINI, *Oliv.*

Rubiaceæ. Tribe Naucleeæ.

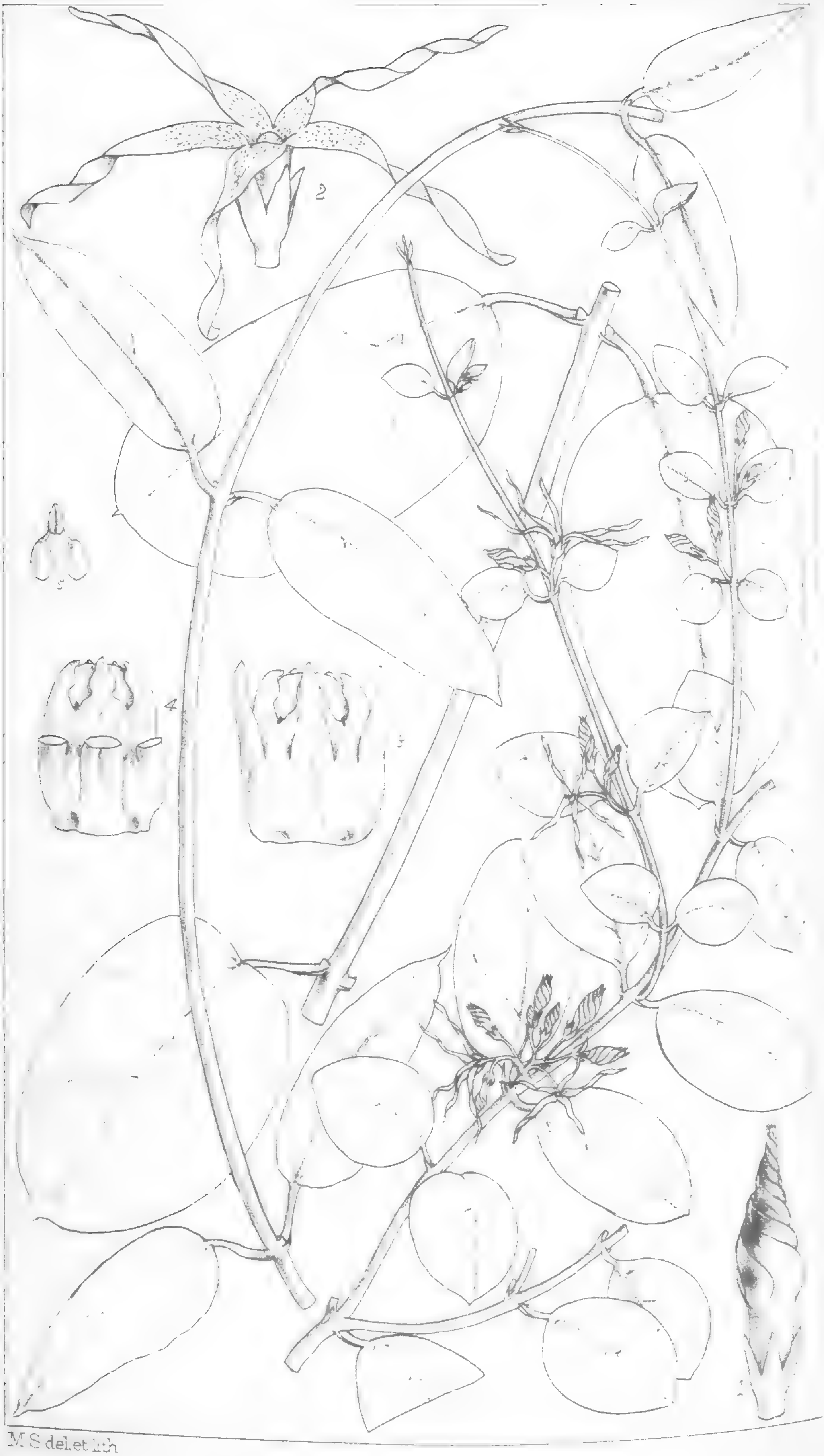
A. Galpini, *Oliver* (*sp. nov.*); arbor glaberrima, foliis 4-natim verticillatis coriaceis elongato- ovali-oblongis obtusiusculis basi in petiolum sensim angustatis, vernatione vernicosis, stipulis deltoideis caducis, pedunculis strictis prope apicem involucratis folio multo brevioribus 1-cephalis, bracteolis anguste spathulato-linearibus calyce sæpius brevioribus, calycis tubo anguste turbinato sericeo, limbo 5-partito segmentis linearibus tubo paulo longioribus, corollæ sericeæ tubo calyce 2-plo longiore segmentis limbi lineari-oblongis quam tubo fere duplo brevioribus, ovula geminata v. ternata oblonga pendula.

Hab. So. Africa; Transvaal and Swaziland, *Galpin* (No. 1213).

Arbor 30–90 ped. alta, ramulis strictis obsolete tetragonis. *Folia* in ramulis floriferis $4\frac{1}{2}$–6 poll. longa, $\frac{1}{2}$–$\frac{3}{4}$ poll. lata, novella vernicosa. *Pedunculi* $\frac{3}{4}$–$1\frac{1}{4}$ poll. longi. *Capitula* globosa $\frac{3}{4}$ poll. diam.

Mr. Galpin describes this species as a tree of 30 to 90 feet, attaining the larger dimension by river-banks, and adds that it affords an excellent timber, 'closely resembling teak.' It is 'known as Cape teak.' *A. Galpini* is clearly a congener, and indeed very close ally, of *Cephalanthus spathelliferus*, Baker (*Journ. Bot.* 1882, 137), from Madagascar, which differs in its long peduncles and much broader leaves. As the ovules are not solitary in the Madagascar plant, it must, as the genera now stand, be removed from *Cephalanthus*. Schweinfurth's No. 238 (ser. iii.) from Dar-Fertit is also allied to our plant. M. Baillon, I observe (*Hist. Pl.* vii. 494), sinks *Adina* in *Nauclea*. In this, however, I am unable to follow him; but he retains *Cephalanthus* as generically distinct. I cannot, in the rather advanced state of the flowers in our specimens, speak positively as to the æstivation of the corolla.—D. Oliver.

Fig. 1. Bracteole. 2. Detached flower. 3. Corolla laid open. 4. Vertical section of ovary. *All enlarged.*



M S del et lith

Strobopetalum carnosum, N.E Br.

Plate 2387.

STROBOPETALUM CARNOSUM, *N. E. Br.*

Asclepiadeæ. Tribe Cynancheæ.

S. carnosum, *N. E. Brown in Kew Bullet.* 1894, 390 ; suffrutex prostratus v. laxe scandens, glaber, foliis petiolatis carnosulis ovato- v. oblongo-ellipticis v. fere rotundatis obtusis retusis v. acutis mucronatis basi rotundatis v. in ramis sterilibus macrophyllis plus minus cordatis, floribus axillaribus, in cymis subsessilibus pauci- v. plurifloris dispositis, pedicellatis, corollæ tubo calyce 2-plo longiore tubuloso-campanulato intus argenteo-sericeo segmentis limbi linearibus apice oblique acutatis tubo longioribus, coronæ squamis lanceolatis ad medium gynostegii aduatis apice liberis dorsaliter compressis antheris fere æquilongis.

Hab. South Arabia, El Hami, *Schweinfurth* (*Exped. Riebeck, No.* 180).

Rami sæpe elongati, teretes. *Folia* in ramis sterilibus 1–2¼ poll. longa, ½–1⅓ poll. lata ; in ramulis floriferis sæpius minoribus ½–1¼ poll. longa, ¼–⅔ poll. lata ; petiolus 1–7 lin. longus. *Bracteæ* minutæ, lanceolatæ. *Pedicelli* 1–2 lin. longi. *Flores* viridescentes, expansi ⅔–¾ poll. diam.

The leaves in our dried specimens show their fleshy parenchyma moulded over numerous roundish concretions, which probably form on the drying up of the tissue after soaking in alcohol. Mr. Brown (*l.c.*) points out the near affinity of this genus to *Pentatropis*, in which the coronal lobes are laterally compressed. *Strobopetalum Benti* was published in an earlier number of the Bulletin for 1894 (p. 336) together with the generic diagnosis. I much doubt the specific distinctness of the two species.—D. Oliver.

Fig. 1. Bud. 2. Expanded flower. 3. Gynostege with corona. 4. Same, the coronal lobes removed. 5. Pollen. *All enlarged.*

M. S. del. et lith.

Musaendopsis beccariana, Baill

Plate 2388.

MUSSÆNDOPSIS BECCARIANA, *Baill.*

Rubiaceæ.

M. beccariana, *Baill. in Adansonia*, xii. 282; arbor inflorescentiis exceptis glaberrima, foliis late vel latissime ellipticis brevissime acuminatis integris coriaceis nervis lateralibus 6-7 cum costa prominulis venis inconspicuis, pedunculo semicylindrico, stipulis interfoliaribus oblongis gemmam terminalem includentibus mox deciduis, cymis laxe paniculatis ramis ramulisque patulis, pedicellis florum alarium longiusculis cæterorum brevibus vel subnullis, calycis turbinati tomentelli lobis 5 subrotundatis vel uno amplo foliaceo pallido rotundato abrupte unguiculato e basi 5-nervi, corollæ extus tomentellæ tubo brevissimo vel subnullo lobis 5 oblongis crassiusculis superne imprimis marginem versus papillosis in alabastro sinistrorsum (ab observatore) tortis, staminibus 5 sub disco insertis, antheris curvatis lineari-oblongis, disco breviter conico crasso, stylo brevi crassiusculo post anthesin mox deciduo lobis stigmatis brevibus rotundatis crassis intus excavatis, ovario biloculari, placentis secundum septum medium ortis, ovulis numerosis dense coarctatis applanatis, fructu capsulari polyspermo septicido, seminibus parvis utrinque in alam productis, embryone carnoso parce albuminoso.—Creaghia fagræaopsis, *Scortechini in Journ. of Bot.* 1884, p. 370.

Hab. Malacca, *Maingay* (Nos. 835, 1692); Merlimau, Malacca, *R. Derry* (No. 1044); Larut, Perak, *Scortechini*; Sarawak, Borneo, *Beccari* (Nos. 358, 1176, 2651).

Folia 4–7 poll. longa, 3–5½ poll. lata: *pedunculus* ¾–1¼ poll. longus. *Panicula* ad 8 poll. longa lataque. *Calyx* 1½–2 lin. longus: lobus foliaceus 1–1¼ longus latusque. *Corollæ* segmenta 1½–2 lin. longa, 1 lin. lata. *Capsula* 3 lin. longa.

As Baillon and Scortechini have already pointed out, the genus *Mussændopsis* represents the New World genus *Calycophyllum* in the Old World. Since Baillon's publication, however, a new genus from Hupeh, China, has been described by Professor D. Oliver (in Hooker, 'Ic. Plant.' 1823) under the name of *Emmenopterys*, which seems to come at least as near to *Mussændopsis* as to *Calycophyllum*, although the corolla-tube is more developed than in *Calycophyllum*, and the æstivation of the corolla-lobes is apparently not contorted but imbricate.—O. Stapf.

Fig. 1. Cymule with one expanded flower, bearing foliaceous segment. 2. Corolla, 3. Ovary and style. 4. Petal. 5. Stamen, back and front view. 6. Ovary, longitudinal, and 7, same, transverse section. *All enlarged.*

Siemona crenata Mr

Plate 2389.

STEMONA ERECTA, *Wright.*

ROXBURGHIACEÆ.

S. erecta, *C. H. Wright in Kew Bullet.* 1895, *ined.*; herba erecta 1–2-pedalis glabra, caule angulato v. valide costato, foliis verticillatis ellipticis cuspidatis v. breviter et subito acuminatis basi in petiolum brevem angustatis trinerviis v. cum nervis arcte marginalibus 5-nerviis, venulis approximatis transversis, floribus in axillis cataphyllorum pedunculis flori subæquilongis basi decurvis prope apicem recurvis floribus hinc erectis, perianthii segmentis anguste lanceolatis acutatis 2 exterioribus 7-nerviis 2 interioribus 9-nervosis, staminibus leviter perigynis perianthio paullo brevioribus, filamento basi dilatato, anthera lineari cum connectivo in appendicem anthera longiorem producto, ovulis 6 e basi ovarii cavitatis erectis.

HAB. China; Nanking, *C. Schmidt* (No. 1541, *Hb. Faber.*).

Folia 2–2½ poll. longa, 1 poll. lata. *Perianthii* segmenta 6–7 lin. longa.

This plant is evidently a near ally of *S. sessilifolia*, Miq., of Japan, figured in 'Somoku Zusetsu,' vol. ii. Tab. 55 (in the copy in Kew Library). In the latter species the peduncles are longer, and from the axils of developed foliage-leaves.—D. OLIVER.

Fig. 1. Perianth, laid open. 2. Stamen, back and front view. 3. Ovary. 4. Same, vertical section. *All enlarged.*

M. S. del. et lith.

M[illegible] utilis, Baker.

Plate 2390.

MASCARENHASIA UTILIS, *Baker.*

Apocynaceæ. Tribe Echitideæ.

M. utilis, *Baker (sp. nov.)*: fruticosa, glabra, foliis breviter petiolatis oblongis obtusis subcoriaceis nitidis basi cuneatis, floribus in nodo solitariis geminatisve pedunculatis, calycis lobis oblongis obtusis foliaceis, corollæ tubo cylindrico supra basin dilatato ventricoso, limbi rosei lobis oblique ovatis obovatisve acutatis flore expanso patulis, genitalibus in tubo inclusis, folliculis cylindricis lævibus.

Hab. North Madagascar, *Rev. R. Baron* (6370).

Folia 2–2½ poll. longa. *Calyx* 3 lin. longus. *Corolla* tubus infra medium abrupte constrictus 10–11 lin. longus; limbus expansus 2¼–2½ poll. diam. *Fructus* immaturus 3–3½-pollicaris.

Nearly allied to *M. cornuviana*, Hemsley in 'Bot. Mag.' Tab. 6612. The native name is Ramiranja, and Mr. Baron says: 'It is one of the important plants from which indiarubber is obtained. It is a tall, not widely-spreading, erect shrub found in the open country.'—J. G. Baker.

Fig. 1. Calyx, laid open, and pistil. 2. Corolla-tube, laid open. 3. Anther, back and front view. *All enlarged.*

Plate 2391.

GMELINA UNIFLORA, *Stapf.*

Verbenaceæ. Tribe Viticeæ.

G. uniflora, *Stapf.* (*n. sp.*) ; arbor parva ramulis apicem versus parce fulvo-furfuraceis cæterum glabris, foliis late ellipticis vel obovato-ellipticis obtusis vel brevissime acuminatis basi rotundatis abrupte in petiolum contractis membranaceis supra glabris subtus glandulis numerosissimis albis dense vestitis ideoque albidis nervis secundariis utrinque 4 pare infimo subbasali venis transversalibus distinctis, floribus axillaribus solitariis nutantibus, calyce campanulato post anthesin ampliato ad $\frac{1}{3}$ 5-lobato extus albo-glanduloso et sparse rufo-pilosulo, lobis ovatis acutis, corolla bilabiata luteo-albida extus albo-glandulosa atque pilosula tubo a basi sensim dilatato labio supero bilobo quam inferum multo breviore, labii inferi lobo intermedio lateralibus multo longiore, ovario apice pilosulo 4-loculari, ovulis in loculis solitariis fere ab apice pendulis, stigmate simplice acuto.

Hab. South Borneo, Banjermassing, *J. Motley* (No. 1204).

Folia 4–6 poll. longa, 3–4 poll. lata ; petiolus fulvo-puberulus, glabrescens, ad 1 poll. longus. *Pedicellus* fulvo-puberulus, $\frac{1}{2}$ poll. longus, apice bibracteatus ; bracteæ ovatæ, acutæ, extus fulvo-velutinæ, 4 lin. longæ. *Calyx* sub anthesi circiter 8–9 lin. longus. *Corollæ* tubus 1 poll. longus, labium inferum 4 lin. longus.

This is a very remarkable species of *Gmelina*. It differs from all its congeners in its solitary flowers. The calyx is also larger than in any other species except *G. hainanensis*, Oliv. The ovary of the single flower which I dissected was completely 4-celled, but it was already far advanced, buds not being at my disposal. There are two large black glands at the base of each of the basal nerves of the leaf ; they are visible on both faces, but more especially below. Our figure of the flower is from a single one, rather imperfect and glued down.—O. Stapf.

Fig. 1. Calyx and bracteoles. 2. Pistil. 3. Vertical section of ovary. 4. Transverse section of same. *All enlarged.*

M.S del et lith

Tæniochlæna Griffithii Hk. f.

Plate 2392.

TÆNIOCHLÆNA GRIFFITHII, *Hook. f.*

Connaraceæ. Tribe Cnestideæ.

T. Griffithii, *Hook. fil. in Benth. et Hook. Gen. Plant.* i. 434 : frutex subscandens, ramis teretibus glabratis v. novellis obsolete hirtis, foliis imparipinnatis 5- v. 3-foliolatis, foliolis subcoriaceis glabris ellipticis oblongo- v. ovato-ellipticis v. lateralibus inferioribus minoribus ovatis basi late rotundatis v. subcordatis apice plus minus obtusis sæpe emarginatis subtus reticulatis nervis primariis utrinque 3–5 incurvis, paniculis fulvo-hirtis axillaribus e basi ramosis folio multo brevioribus, calycis 5-partiti segmentis oblongo-lanceolatis apice anguste imbricatis marginibus facieque exteriore plus minus hirtis tandem reflexis, petalis elongatis lineari lanceolatis apicem versus attenuatis basi breviter et abrupte angustatis glabris calyce duplo longioribus, staminibus brevibus filamentis subulatis glabris complanatis basi vix coalitis, antheris ovoideis basifixis mucronulatis, carpellis 5 liberis parvis sessilibus hirtis, stigmate capitellato, ovulis geminatis, carpellis fructiferis oblique ovoideis v. ellipsoideis apice sæpe rostratis fusco-tomentellis intus glabris. — *Flora Brit. Ind.* ii. 55.

Hab. Malacca, *Griffith, Maingay.*

Folia, 5–10 poll. longa ; foliola terminalia 3–6 poll. longa, $1\frac{3}{4}$–$2\frac{3}{4}$ poll. lata ; foliola inferiora $1\frac{1}{3}$–$3\frac{1}{2}$ poll. longa, cum petiolulis brevibus lineam vix excedentibus. *Paniculæ* $\frac{1}{4}$–2 poll. longæ ; bracteis parvis, oblongo-lanceolatis, cymbiformibus, pedicello multo brevioribus. *Carpella* fructifera $\frac{2}{3}$–1 poll. longa.

I find the segments of the calyx are slightly imbricate, confirming a note in MS. of Dr. Maingay's. 'Calyx . . . very slightly, but still quite distinctly, imbricated at the tips of the sepals.' The genus, as yet monotypic, has not been hitherto figured, to my knowledge.
D. Oliver.

Fig. 1. Detached flower, pedicel and bract. 2. Stamen. 3. Pistil. 4. Carpel. longitudinal section. 5. Seed. *Except No. 5, all enlarged.*

Plate 2393.

ORYZOPSIS OBTUSA, *Stapf.*

Gramineæ. Tribe Agrostideæ.

O. obtusa, *Stapf* (*sp. nov.*); stricta, foliis rigidis erectis anguste linearibus sursum versus graciliter angustatis planis v. marginibus sæpe leviter involutis vaginisque plus minus scabriusculis, ligula rigida obtusissima v. truncata sæpius fissa, panicula stricte erecta anguste racemiformi rhachi pedunculisque scabridis pedunculis strictis sæpius geminis breviore uni- altero pauci-(2–5) spiculato, glumis vacuis subæquilongis late obovato-ellipticis v. superiore paullo angustiore papyraceis cymbiformibus inferiore 5- superiore 3-nervi, gluma florifera aristata castaneo-brunnea nitente coriacea ecarinata palea et genitalia arcte involvente, arista gluma 2–4-plo longiore, lodiculis 3 v. 2 hyalinis ovatis acutiusculis.

Hab. China; Prov. Hupeh, near Ichang (No. 3507), and Nanto and mountains to northward (No. 3896), *Dr. A. Henry.*

Gramen $1\frac{1}{2}$–2 ped. altum. *Folia* supra longitudinaliter valide striata, 2–$3\frac{1}{2}$ lin. lata. *Paniculæ* 4–8 poll. longæ. *Spiculæ* 2–$2\frac{1}{2}$ lin. longæ; glumæ vacuæ gl. floriferæ fere æquilongæ, obsolete reticulatæ.

An elegant grass, of strict habit, allied to the North American *O. asperifolia*, Michx.—D. Oliver.

Fig. 1. Ligule. 2. Spikelet, showing awn of flowering glume. 3. Flowering-glume and base of awn. 4. Palea. 5. Stamen. 6. Pistil and lodicules. *All enlarged.*

M. Stapf ad nat.

Imp. Typ. R. Oldenbourg, München.

Plate 2394.

TRICHOPTERYX ELEGANTULA, *Stapf.*

Gramineæ. Tribe Aveneæ.

T. elegantula, *Stapf*; annua pumila debilis basi ramosa, foliorum vaginis striatis laxe pilosis ore barbatis, laminis ovatis vel lanceolatis acutis pilosis pilis interdum laxis longisque—patentibus vel falcatim recurvis marginibus incurvis, panicula ovata, spiculæ gluma I. ovata acuta 3-nervi longe laxeque subsetulosa pilis tuberculo insidentibus, gluma II. ei consimili sed subduplo longiore magis acuminata, gluma III. quam gluma II. paulo longiore longius acuminata subaristulata 1-nervi vel sub-3-nervi juxta marginem laxe seriatim subsetulosa cum palea paucisetulosa florem masculum (?) subtendente, gluma IV. oblonga tenuiter hyalina involuta, antheris brevibus oblongis, ovario cylindrico, stylis a basi liberis tenuissimis ovario subæquilongis stigmatibus plumosis, caryopsi obovato-oblonga gluma rigescente paleaque laxe inclusa —Arundinella elegantula, *Hook. f. in Journ. Linn. Soc.* vii. (1864), 233.

Hab. W. Tropical Africa, Cameroons Mountains, alt. 6000–7000 ft., *G. Mann* (No. 2092).

Planta 3 4 poll. alta; culmis gracilibus ad medium vaginatis, plerumque violascentibus, sparse pilosulis v. glabratis. *Folia* 3–6 lin. longa, ad 2 lin. lata; ligula ad lineam longe ciliatam reducta. *Panicula* (ramis inferne additis exclusis) circiter 1 poll. longa, plerumque ramis nonnullis ex folii summi axilla ortis additis aucta, ramulis capillaribus, flexuosis, glabris, ramis ad 6 lin. longis, pedicellis 2–3 lin. longis. *Spiculæ* straminea, vix 2 lin. longæ; gluma IV. basi utrinque pilis albis nitentibus barbata pilosula tenuiter 3-nervia apice bifida inter dentes in setas longas producta et basi penicillo pilorum alborum nitentium ornata, arista geniculata infra genu torta adpresse scabrido-puberula cum palea oblongo-lanceolata puberula prætereaque pauce setulosa florem ♂ subtendente, 1 lin. longa, arista ad 4 lin. longa. *Caryopsis* $\frac{1}{2}$–$\frac{3}{4}$ lin. longa.

The structure of the spikelets and florets of this very graceful little grass is exactly that of a typical *Trichopteryx*, although the general habit is more that of some of the smaller South African species of *Danthonia* (sect. *Pentaschista*). I always found the palea belonging to glume III. empty, whilst Sir Joseph Hooker describes it as supporting a male flower; but the spikelets which I examined may have been too old.—O. Stapf.

Fig. 1. Leaf and vagina. 2. Spikelet. 3. Third glume. 4. Flowering glume. 5. Palea. 6. Stamen. 7. Pistil and lodicules. *All enlarged.*

Cyathopus sikkimensis, Stapf.

Plate 2395.

CYATHOPUS SIKKIMENSIS, *Stapf.*

Gramineæ. Tribe Agrostideæ.

Cyathopus, *Stapf* (*gen. nov.*). Spiculæ 1-floræ, secus ramulos inarticulatos paniculæ solitariæ, cum pedicello articulatæ, flore hermaphrodito. Glumæ 3, 2 exteriores vacuæ 3-nerves subæquales caudiculatæ ; tertia florens brevior tenuior mutica 5-nervis nervis sub apice evanidis ; palea hyalina. Stamina 3. Styli distincti, stigmatibus plumosis. Caryopsis ignota.—Gramen *perenne, elatum, foliis planis.* Panicula *terminalis, pedunculata, elongata, flaccidula, ramis filiformibus ramulosis.* Spiculæ *basi nudæ cum pedicello apice in cupulam minutam dilatato articulatæ.*

Cyathopus sikkimensis, *Stapf* (*n. sp.*) ; culmis tota longitudine vaginatis, foliorum vaginis ampliusculis asperulis, laminis linearibus setaceo-attenuatis asperulis, ligula elongata dorso puberula, paniculæ semiverticillis distantibus multiramulosis, ramis flexuosis oblique erectis ut ramuli asperis, spiculis pallide viridibus plerumque breviter vel brevissime pedicellatis, gluma I. et II. oblongis acuminatis inter nervos firmos prominentes tenuibus asperulis, gluma III. fere hyalina superne parce et minutissime asperula nervis tenuibus, lodiculis oblique ovato-lanceolatis, antheris oblongis brevibus.—Milium Treutleri, *O. Kuntze* (*in parte*).

Hab. North Sikkim, Lachoong valley in woods, 11000 ft., *J. D. Hooker.*

Gramen 3 4 ped. altum. *Foliorum* laminæ pedales ad 4 lin. latæ. *Panicula* 9 poll. longa. *Spiculæ* 1½ lin. longæ.

This plant was distributed in the 'Herb. Ind. Or. Hook. fil. et Thomson,' as '*Hymenachne* (3).' Munro suggested in a manuscript note attached to one of the specimens that it might be a new genus allied to *Hymenachne*. Kuntze identified it with his *Milium Treutleri* (see following plate). It is, however, very distinct from *Hymenachne* as well as from *Milium*, and comes nearest to *Garnotia*, with which it has very much in common, amongst other characters the peculiar cup-shaped widening of the tops of the pedicels where they are articulated with the spikelet. Glumes I. and II. are very much like those of *Garnotia*, particularly in texture and nervation. Glume III. is also very like that of *Garnotia*, but the nerves become obliterated towards the apex whilst they are very faint near the base in *Garnotia* and more distinct towards the apex where they collect and pass into the awn, or, in awnless forms, into a very short but distinctly thickened tip. The name *Cyathopus* refers to the cup-shaped top of the pedicels.—O. Stapf.

Fig. 1. Cupuliform top of pedicel. 2. Same, more enlarged. 3. Diagram showing arrangement of glumes. 4. Spikelet. 5 Third glume, side view. 6. Same, laid open. 7. Palea. 8. Stamen. 9. Pistil and lodicules. *All enlarged.*

Plate 2396.

DEYEUXIA TREUTLERI, *Stapf.*

Gramineae. Tribe Agrostideae.

Deyeuxia Treutleri, *Stapf*; perennis, foliorum vaginis inferioribus laxiusculis minutissime asperulis, laminis lanceolato-linearibus vel linearibus tenuiter attenuatis flaccidis subtus asperulis, ligula oblonga, panicula ovata primum flaccidula deinde rigida patula semiverticillis distantibus ramis ramulisque asperis, spiculis anguste ovatis pallidis rhachillæ processu brevi asperulo, gluma I. ovato-lanceolata acuta 1-nervi, gluma II. $\frac{1}{3}$–$\frac{1}{2}$ longior magis oblonga obtusiuscula, gluma III. quam II. paululo longior lateraliter compressa lanceolato-ovata carinata firma asperula una basi pilis brevissimis cincta 5-nervi nervis demum prominulis, palea glumæ III. subæquilonga, caryopsi oblonga lateraliter compressa.—Milium Treutleri, *O. Kuntze* (*in parte*), *Rev. Gen. Plant.* 780.

Hab. Sikkim, Shimong, 7500 feet, *O. Kuntze*; at 10000 feet, *Treutler* (No. 486); from 7000 to 9000 feet, *J. D. Hooker*: Jongri, 12000 feet, *C. B. Clarke* (No. 26044): Tonglo, 8000–9000 feet, *C. B. Clarke* (No. 27438); *G. King* (No. 3101).

Culmi ad 3 ped. alti, ad $\frac{3}{4}$ vel fere ad paniculam vaginati, superne asperuli, internodiis 5–7 sursum sensim accrescentibus. *Foliorum* vaginæ summæ ad 9 poll. longæ, laminæ ad 10 poll. longæ, ad 3 $3\frac{1}{2}$ lin. latæ. *Panicula* ad 10 poll. longa, ad 8 poll. lata. *Spicula* 1 $1\frac{1}{4}$ lin. longa.

This species belongs technically to *Deyeuxia*, although its place in this genus is difficult to point out and rather unsatisfactory. The structure of the spikelet is not unlike that of *Deyeuxia epileuca*, Stapf, from Kinabalu, but the habit is entirely different. It has, however, nothing whatever to do with *Milium*. O. Kuntze referred to it also a plant, which was distributed as *Hymenachne* in 'Herb. Ind. Or. Hook. fil. et Thomson,' and which is extremely like it in habit. But this plant which is figured in our previous plate, has spikelets with a very different structure, and is the type of a new genus.—*O.* Stapf.

Fig. 1. Spikelet. 2. Flowering glume and rachilla. 3. Flowering glume, laid open. 4. Palea. 5. Stamen. 6. Pistil and lodicules. 7. Caryopsis, lateral, and 8. dorsal view.—*All enlarged.*

Tabernæmontana anguinea Hemsl.

Plate 2397.

TABERNÆMONTANA ANGUINEA, *Hemsl.*

Apocynaceæ.

T. anguinea, *Hemsl.* (*sp. nov.*); arbor ad 20 ped. alta (*Comins*) undique glaberrima, ramulis floriferis crassiusculis, foliis longe petiolatis oblongo-lanceolatis abrupte acuminatis basi cuneatis, venis primariis lateralibus utrinque 6–8 arcuatis excurrentibus, cymis parvis paucifloris axillaribus vel pseudo-terminalibus, floribus albis mediocribus breviter pedicellatis, calyce parvo breviter 5-dentato, dentibus deltoideis vix acutis, corollæ hypocraterimorphæ lobis valde obliquis sinistrorsum obtegentibus dextrorsum tortis undulato-crispatis, folliculis rubro-aurantiacis (*Comins*) elongatis cylindrico-clavatis supra medium seminiferis bis dextrorsum tortis seminibus oblongis compressis rugosis.

Hab. Solomon Islands; San Cristoval, *R. B. Comins* (No. 83).

Arbor 20-pedalis. *Folia* ramorum floriferorum cum petiolo 5–7 poll. longa et usque ad 2 poll. lata, petiolo 1–1½ poll. longo. *Cymæ* 2–3 poll. longæ, pedicellis circiter 3 lin. longis. *Flores* 10–12 lin. longi et lati. *Folliculi* 6–8 poll. longi, et supra medium siccitate 6 lin. diametro. *Semina* circiter semipollicaria.

Much elongated twisted follicles are characteristic of this species, and from what Mr. Comins says about them, this is their normal form. —W. B. Hemsley.

Fig. 1. Flower. 2. Calyx, laid open, and pistil. 3. Anther, back and front view. 5. Seed. 6. Same.—*Except No. 5, all enlarged.*

STEMONURUS ? MEGACARPUS. *Hemsl.*

Olacaceæ. Tribe Icacineæ.

S. ? megacarpus. *Hemsl. (sp. nov.)*; arbor magna (*Comins*) foliis alternis breviter petiolatis subcoriaceis leviter obliquis ovato-oblongis obtusis vel acutis glabris, venis primariis lateralibus utrinque 8-10 subtus prominentibus, costa crassa, floribus purpureis (*Comins*) parvis anguste cymoso paniculatis ramulis crassis subcarnosis, pedicellis brevibus calyce cupulari inaqualiter 4–5 lobato lobis rotundatis, petalis 4–5 valvatis oblongo lanceolatis obtusis intus leviter carinatis, filamentis brevissimis dilatatis, connectivo incrassato ultra loculos antherarum producto inappendiculato, loculis discretis, ovario 1-loculari, ovulis 2 collateralibus pendulis, fructu drupoideo magno ovoideo monospermo, endocarpio crasso denso suberoso, semine anguste ovoideo compresso, raphe lata prominente per totam seminis longitudinem extensa.

Hab. Solomon Islands: San Cristoval, *R. B. Comins* (No. 89).

Folia 8–12 poll. longa et 4–5 poll. lata. *Panicula* 4–5 poll. longa (imperfecta?). *Pedicelli* 2–3 lin. longi. *Flores* circiter 3 lin. diametro. *Fructus* absque epicarpio carnoso 3 poll. longus, endocarpio 3–6 lin. crasso. *Semen* 2–2¼ poll. longum.

The genera of the Icacineæ, especially those to which the plant described is most nearly allied, have been so differently limited by different botanists that it is difficult to decide to which to refer a plant combining some of the characteristics of *Stemonurus* and *Gomphandra* as defined by certain botanists. In the ovary and fruit *S. ? megacarpus* strongly resembles *S. scorpioides*, Becc. (*Malesia*, i. p. 113 t. 6), but the inflorescence and stamens are very different, and nearer those of some of his species of *Gomphandra*. Having to deal with only one species, the question of the genus must therefore remain uncertain.—W. B. Hemsley.

Fig. 1. Flower. 2. Stamen, back and front. 3. Ovary. 4. Vertical section of ovary. 5. Fruit. 6. Seed. *Excepting figs. 5 and 6, all enlarged.*

Oxymitra macrantha Hemsl. (fr.)

Plate 2399 (flower); 2400 (fruit).

OXYMITRA MACRANTHA, *Hemsl.*

Anonaceæ.

O. (§ **Goniothalamus**) **macrantha,** *Hemsl.* (*sp. nov.*); arbor usque ad 30 ped. alta apice tantum ramosa (*Comins*) ramulis primum parce ferrugineo-puberulis, internodiis brevibus, foliis mediocribus petiolatis vix coriaceis ovato-oblongis apice obtusis vel rotundatis glabrescentibus, venis primariis lateralibus utrinque circiter 12 curvatis prope marginem inter se conjunctis, floribus lateritiis in trunco productis (*Comins*) breviter pedunculatis pendulis ex adumbratione Cominsiana solitariis coriaceis glabris, calyce obscure trilobato lobis obtusis, petalis 3 exterioribus valde elongatis angustis caudatis vix acutis, petalis 3 interioribus brevibus supra medium connatis breviter unguiculatis corollam fenestratam formantibus, connectivo ultra loculos antherarum capitato, stylis filiformibus elongatis, carpellis numerosissimis magnis arcte confertis brevissime stipitatis pyriformibus vel ovoideis apiculatis glabris minute verrucosis, seminibus in quaque carpella 5–6 orbicularibus compressis tomentosis.

Hab. Solomon Islands; Florida, *R. B. Comins* (No. 293).

Folia 4–6 poll. longa. *Calyx* circiter 1 poll. diametro. *Petala* exteriora usque ad 7 poll. longa, interiora circiter 6 lin. longa. *Torus* maturus 1–1¼ poll. diametro. *Carpella* 2 poll. longa. *Semina* 9–10 lin. diametro.

Baillon and other writers who combine *Oxymitra*, *Goniothalamus*, and the Fijian genus *Richella* have been followed here, as there is no character of importance to separate them. The present is a somewhat anomalous species, the carpels being 5–6-ovulate and, sometimes at least, all the ovules mature into seeds. *Goniothalamus uvarioides*, King (*Ann. Calc. Bot. Gard.* iv. t. 143), is also exceptional in having 4-seeded carpels.

Mr. Comins describes this as a river-side tree, attaining a height of 30 feet, and having a naked trunk on which the long pendent brick-red flowers are borne down to within 2 feet of the ground, and at intervals of about a foot.—W. B. Hemsley.

Plate 2399.—Fig. 1. Flower, the petals removed. 2. Inner petals. 3. Stamen, back and front view. 4. Carpel. 5. Longitudinal section of ovary.

Plate 2400.—Fig. 1. Longitudinal section of 6-seeded fruit-carpel. 2. Seed. 3. Section of same. 4. Embryo. *Figs.* 3 *and* 4 (*Plate* 2400) *enlarged.*

INDEX OF SPECIES AND SYNONYMS.

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