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DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

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IV.  
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THE following pages will give an account of a portion of the plants, collected during the latter part of this year by Signor D'Albertis along the Fly-River, and by Mr. A. Goldie in the country beyond Port Moresby. The remaining portion of the collections, kindly submitted to me by these courageous travellers, will be noted in a subsequent part of the present publication. In the first exploration of an unknown country, the means for elucidating its natural products are never perfect; hence also in this instance some of the plants must be retained until further searches may complete the material needful for accurate investigation, especially as the lowland-jungle plants of New Guinea stand in close relation to those of insular India, the Philippines and Polynesia, a close analytic comparison of the species being therefore needful. The learned Dr. Beccari has commenced to prepare at Florence the descriptions of his Papuan Plants for Caruel's *Giorale Botanico Italiano*; but the portion of that important periodical, relating to the New-Guinean collections, has not appeared or at all events not yet reached Australia. But Dr. Beccari examined the vegetation of some of the north-western portions of the great Papuan Island, whereas Signor D'Albertis

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and Mr. Goldie explored in the south-east, a considerable difference of the vegetation in the two extremes of the large island being not unlikely.

It remains for me to record on this occasion the friendly interest evinced by Dr. G. Bennett, the Rev. S. Macfarlane and the Rev. Dr. Turner in promoting my studies of the Papuan Plants, and I shall gladly continue these researches, to obtain a clear insight into the relation, in which the jungle-plants of New Guinea are standing to those of tropical Australia, where I instituted field-observations in 1855 and 1856, while the comparison of the alpine plants of New Guinea hereafter with the vegetation of the Australian Alps, investigated by me fully in 1853, 1854 and 1857-1861, will have to me a particular charm, inasmuch as the Papuan Alps are the nearest northward to those of Australia.

Melbourne, December 1876.

NEPENTHACEÆ.

NEPENTHES AMPULLARIA.

Jack in Calcutta Journ. of Nat. Hist. iv. n. 13.

Fly-River; D'Albertis.

The only specimen consists of a young plant, with pitchers on leafless stalks. Although leaves, flowers and fruits are unknown yet from New Guinea, there seems to be no reason to doubt the identity of the plant with that of Malacca, Sumatra and Borneo, the species being easily recognized by the proportionately broad peristome of the turgid ascidia and by the narrowness of the operculum.

CAPPARIDEÆ.

CLEOME VISCOSA.

Linné, Spec. Plant. 672.

Port Moresby; Goldie.

OLACINÆ.

OPILIA AMENTACEA.

Roxburgh, Plants of Coromandel, ii. 31, t. 158. O. pentitidis, Blume, Mus. Bot. Lugd. i. 246.

Port Moresby; Goldie.

LASIANATHERA LITORALIS.

Miquel, Flor. Ind. Batav. i. 792.

Fly-River; D'Albertis.

It is supposed, that it is this species, which Blume (Mus. Bot. Lugd. Batav. i. 250) had in view, when he described it, without having flowers or fruits, as a *Stemonurus*. D'Albertis' plant approaches *Lasianthera Australiana* (F. v. M. Fragm. vi. 3 et 253), but the leaves are still larger, the fruit is nearly double the size, and the albumen splits into halves, while in the Queensland species the albumen remains consolidated. Flowers of the New-Guinean plant have not yet been obtained; those of *L. Australiana* show naked anthers with parallel cells.

Blume and Scheffer quote as olacinaceous plants from New Guinea :
Jodes ovalis, Bl. Bijdr. 30.

Cardiopteris lobata, Wall. list, 8033.

Gonocaryon macrocarpum, Scheffer, Annales du Jard. Bot. de Buitenzorg, i. 13.

MELIACEÆ.

TURRÆA PUBESCENS.

Hellenius in Kongl. Svensk Vetenskaps Academiens Handlingar 1788, p. 26, t. 10, f. 3.

Near Port Moresby; Goldie.

A lengthened description of this species was published in 1860 by me in the essay on Fitzalan's plants from the estuary of the Burdekin-River. To that may be added : Seeds sometimes black. Arillus carnulent, orange-colored, clasping the inner side of the seed.

SAPINDACEÆ.

CARDIOSPERMUM HALICACABUM.

Linné, Spec. Plant. 366.

Port Moresby; Goldie.

BIXACEÆ.

COCHLOSPERMUM GILLIVRAYI.

Bentham, Flor. Austral. i. 106.

Near Port Moresby ; Goldie.

It remains doubtful, whether this can specifically be separated from the previously described *C. Gregorii* (F. v. M. Fragm. i. 71); the width of the leaf-segments affords no characteristic, and the extent of the cleavage of the leaves is also subject to considerable variations. Fruits of the New-Guinean plant have not been accessible for comparison; the flowers are rather smaller than in the Australian typical plant. The downy vestiture, less divided leaves and larger flowers distinguish already the Indian *C. Gossypium*.

Flacourtia cataphracta, Roxb. in Willd. Spec. Plant. iv. 830, is mentioned by Dr. Scheffer as a New-Guinean plant.

RUTACEÆ.

MICROMELUM PUBESCENS.

Blume, Bijdragen tot de Flora van Nederlandsch Indie, 137.

EUODIA HORTENSIS.

R. et G. Forster, Char. Generum, 14, t. 7.

Fly-River ; D'Albertis.

GLYCOSMIS PENTAPHYLLA.

Correa in Annales du Musée, vi. 384.

Near Port Moresby ; Goldie.

ANACARDIACEÆ.

SEMELIUM CASSUVIUM.

Roxburgh, Flora Indica, ii. 85.

Fly River ; D'Albertis. Port Moresby ; Goldie.

Only leaves have been obtained.

Miquel and Scheffer add the following Papuan plants as cardinal :

Mangifera Taipan, Hamilt. in Transact. Wern. Soc.*Mangifera mucronulata*, Blume, Mus. Bot. i. 201.*Buchanania macrophylla*, Bl. Mus. Bot. i. 185.

STERCULIACEÆ.

MELHANIA INCANA.

Heyne in Wight et Arnott's Prodr. 68.

Port Moresby; Rev. Dr. Turner.

MELOCHIA CORCHORIFOLIA.

Dillenius, Hort. Elth. 221, f. 217; Linné, Spec. Plant. 675.

Port Moresby; Goldie.

MELOCHIA VITIENSIS.

Asa Gray, Botany of the United States Exploring Expedition, 193.

Fly-River; D'Albertis.

This species is very closely allied to the Indian *M. tiliæfolia* (A. Gr. l. c.; *Riedleya tiliæfolia*, Cand. Prodr. i. 491), a main distinction consisting in the coherence of the stamens only at the suddenly dilated base, the greater part of the filaments being capillary and free. The winged seeds distinguish our plant already from *M. odorata* (L. fl. Suppl. Plant. 302), which occurs in New Caledonia and the New Hebrides. See F. v. M. in Campbell's New Hebrides, Append. p. 9.

MALVACEÆ.

URENA LOBATA.

Linné, Spec. Plant. 692.

Port Moresby; Goldie.

SIDA SPINOSA.

Linné, Spec. Plant. 683.

Port Moresby; Goldie.

ABUTILON AURITUM.

G. Don, Gen. Syst. of Dichlam. Plants, i. 500.

Near Port Moresby; Goldie.

Very closely allied to *A. Indicum*. The shape of the stipules is subject to considerable variation. This species occurs also in New Caledonia, according to Mons. Pancher's collection.

ABUTILON INDICUM.

G. Don, Gen. Syst. of Dichlam. Plants, i. 504.

Port Moresby; Rev. Dr. Turner. Darnley-Island; Reedy.

Collected also in New Ireland by the Rev. G. Brown.

HIBISCUS TILIACEUS.

Linné, Spec. Plant. 694.

Port Moresby ; Goldie.

Recorded also by Achilles Richard from Port Doreh.

HIBISCUS FICULNEUS.

Linné, Spec. Plant. 695.

Port Moresby ; Goldie.

HIBISCUS ABELMOSCHUS.

Linné, Spec. Plant. 696.

Fly-River ; D'Albertis. Port Moresby ; Goldie.

HIBISCUS NOTHO-MANIHOT.

F. v. M. Fragm. Phytogr. Austr. v. 57.

Port Moresby ; Goldie.

The Papuan plant differs slightly from that of Queensland in the spathaceous not bilabiate coherence of the sepals. The ripe capsule is about $1\frac{1}{2}$ inch long, ovata, 5-angular, soft-hairy, narrowly contracted at the summit ; seeds numerous, oblique ovate-globular, short-downy.

To this species is perhaps referable *H. angulosus* (Masters in J. Hooker's Flora of British India, 341 ; *Abelmoschus angulosus*, Wallich in Wight et Arnott's Prodr. Fl. Penins. Ind. Orient. 53). The Indian plant according to Wight's illustration 951 is far more hispid, but seems to agree with ours in other respects. Thwaites (Enum. Plant. Zeil. 23) distinguishes varieties with yellow and purple petals. The real *Hibiscus Manihot* (L. Sp. 696) has longer and less acuminate lobes of the leaves, with lesser and larger indentations and deflexed pedicels ; but the value of all these characteristics has by reiterated examination of copious specimens again to be tested. Roxburgh (Flora Indica, iii. 212) describes the capsules of *H. Manihot* (his *H. pentaphyllus*) as 5-seeded, but probably had 5-seeded fruit-cells in view.

HIBISCUS VITIFOLIUS.

Linné, Spec. Plant. 696.

Port Moresby ; Goldie.

HIBISCUS D'ALBERTISII.

(Sect. *Ketmia*.)

Woody, minutely star-hairy ; leaves large, cordate-roundish, without lobes and teeth ; stipules broad, early deciduous ; pedicels solitary, much

shorter than the flower; involucl consisting of five cordate-lanceolar segments; calyx nearly twice as long as the involucl; its lobes longer than the tube, ovate-lanceolar, overlapping at the margin, faintly three-nerved; petals large, beset with scattered star-hair at the outer side; staminal tube to near the middle without filaments and densely star-hairy; filaments considerably longer than the dark anthers; styles short-exserted.

Fly-River; D'Albertis.

Likely a tall plant. Branches robust. Leaves measuring from 3 to 7 inches, paler beneath, almost glabrous above. Petioles 1-4 inches long. Stipules oval-lanceolar or at the base cordate, 4-6 lines long. Pedicels axillary, about 1 inch or less long. Involucl persistent, folded at the base. Calyx nearly $1\frac{1}{2}$ inch long. Petals measuring nearly 3 inches in length. Staminal column almost as long. Styles to the extent of 2 or 3 lines exserted. Fruit unknown.

This grand species comes in its affinity nearest to *H. tulipiflorus* (Hook. Icon. t. 707) from Dominica and Guadeloupe; the leaves are however not obviously crenated, nor form a deep basal sinus; the flower-stalks are very much shorter; the involucl consists only of 5 (not 7 or 8) segments, which are not narrowed at the base; the petals are not silky-velvety at the back. Probably the comparison of the fruit may offer further distinctions. Our new Papuan species bears also some resemblance to the Javan *H. venustus* (Blume's Bijdrag. 71); the leaves are however lobeless and toothless and not densely tomentose beneath; the flowers so far as seen are not corymbose. *H. micans* (Cav. Dissert. 167, t. lx.) differs already in its angular serrated leaves, shining-downy on both sides, and in somewhat narrower segments of the involucl. *H. fragrans* (Roxb. Fl. Indic. iii. 195) is distinguished also by serrated leaves, paniculate flowers, segments of the involucl ovate and towards the base connate. *H. platycalyx* (Masters in Oliver's Flora of Tropical Africa, i. 202) differs in sinuous denticulated leaves, persistent very narrow stipules and anthers only towards the summit of the column.

HIBISCUS ROSA SINENSIS.

Linné, Spec. Plant. 694.

Fly-River; D'Albertis. Port Moresby; Goldie.

It seems truly indigenous.

TILIACEÆ.

GREWIA PLEIOSTIGMA.

F. v. M. *Fragm. Phytogr. Austr.* viii. 4.

Fly-River; D'Albertis.

The specimens from New Guinea, which precisely accord with those of North-Queensland, are also without fruit; hence the generic position of this plant remains still unsettled.

Dr. Scheffer gives as a coordinal Papuan plant:

Elæocarpus edulis, Teijsm. et Binn. in *Nat. Tijdschr. Nederl. Ind.* xxvii. 25.

AMARANTACEÆ.

ACHYRANTHES ASPERA.

Linné, *Spec. Plant.* 204.

Port Moresby; Goldie.

ALTERNANTHERA SESSILIS.

R. Brown, *Prodr. Fl. Nov. Holl.* 417.

Port Moresby; Goldie.

PLUMBAGINEÆ.

PLUMBAGO ZEILANICA.

Linné, *Spec. Plant.* 151.

Port Moresby; Goldie.

In distributing the monochlamydeous orders among the Thalamifloræ and Calycifloræ, as I have done in many recent writings, it was deemed expedient also to place the Plumbagineæ, usually regarded as synpetalous or monopetalous, along with the other orders, recognized by their amyloseous albumen. The petals are free in many species of *Statice* and *Armeria*, while the straight embryo (leaving *Dianthus* and *Pisonia* out of consideration) places the Plumbagineæ near to the *Frankeniaceæ* among orders with mealy albumen, these two ordinal groups being also in other respects closely allied.

NYCTAGINEÆ.

BERHAAVIA DIFFUSA.

Linné, *Spec. Plant.* 3.

Port Moresby; Goldie.

Nyctagineæ are also best left along with the curvembryonate orders, producing amyloseous seeds and a tubular calyx.

B. diffusa is a plant of the widest distribution within the tropic circles, except in America, reaching in Australia far beyond the tropics to the south-coast, but advancing neither to Tasmania nor New Zealand. Thus it is one of the very few plants, occurring in the small coral-islands of the Union- Gilbert- and Ellice-Groups, from whence collections of plants are placed at my disposal by the Rev. S. T. Whitmee, who with a most enlightened zeal sent specially an emissary, Mr. Jensen, to gather all the plants of these isolated specs in the wide Pacific Ocean. Inasmuch as the vegetation of Polynesia has manifold bearings on that of New Guinea, I avail myself of this opportunity to record briefly the result of my examination of Mr. Jensen's collection.

Plants of the Gilbert- (or Kingmills-) Group: *Triumfetta procumbens* Forst., *Berberhaavia diffusa* L., a *Pisonia*, a *Ficus*, a *Sida*, *Pemphis acidula* Forst., *Guettarda speciosa* L., *Tournefortia argentea* Forst., *Scævola Koenigii* Vahl, *Fimbristylis glomerata* Nees, *Lepturus repens* R. Br., *Polypodium phymatodes* L.

In the Tokelau- or Union-Group (comprising the Fakaofu- and Atahu-Islands) occur besides all the above-mentioned plants, also: *Cardamine sarmentosa* Soland., *Achyranthes aspera* L., *Morinda citrifolia* L., *Cordia subcordata* Lam. and *Asplenium Nidus* L. Mr. Jensen noted besides a *Portulaca* and a *Pandanus*. The Ellice-Group (comprising Nukulææ, Funafuti, Vaitupu, Nui, Nanume and Nanumanga) contains all the plants of the two other groups, also besides: *Suriana maritima* L., *Hibiscus tiliaceus* L., a *Terminalia*, *Rhizophora mucronata* Lam., *Lumnitzera coccinea* W. et A., *Cassythia filiformis* L., an *Acalypha*, *Pipturus velutinus* Wedd., *Fleurya ruderalis* Gaudich., *Canavallia obtusifolia* D.C., *Gardenia Tahitensis* D.C., *Premna obtusifolia* R. Br., an *Ochrosia*, *Psilotum triquetrum* Sw., *Pteris tripartita* Sw., *Aspidium exaltatum* Sw., *Lindsaya lanuginosa* Wall. and a seemingly new rubiaceous plant.

POLYGONEÆ.

POLYGONUM BARBATUM.

Linné, Spec. Plant. 362.

Near Port Moresby; Goldie.

Other Papuan plants of this order:

Polygonum pubescens, Blume, Bijdr. 532.

Polygonum Zippelii, Meissn. in Miq. Annal. i. 64.

Polygonum polyanthum, Bruyn in Plant. Junghuhnian 304.

MUEHLENBECKIA GRACILLIMA.

Meissner in Cand. Prodr. xiv. 145.

On the Fly-River; D'Albertis.

The specimens brought are females without ripe fruit, but so far accord precisely with the East-Australian plant.

This is an apt opportunity to notice, that *M. platyclada* (F. v. M. in Hook. Bot. Magaz. t. 5382) has recently been found in New Ireland by the Rev. G. Brown.

URTICEÆ.

FICUS OPPOSITA.

Miquel in Hooker's London Journal of Botany, vii. 426.

Near Port Moresby; Goldie.

I have seen no receptacles, but the leaves are precisely like the deeply trilobed variety of the above-mentioned Australian species.

PIPTURUS VELUTINUS.

Weddell in Annales des Scienc. Natur. quatr. série i. 196.

Port Moresby; Goldie. Fly-River; D. Albertis.

A small-leaved variety with a very thin vestiture and unbranched peduncles.

EUPHORBIACEÆ.

CODIÆUM CHRYSOSTICTUM.

Rumphius, Herbar. Amboin. iv. 66.

Port Moresby; Rev. Dr. Turner.

HALORAGEÆ.

CERATOPHYLLUM DEMERSUM.

Linné, Sp. Plant. 992.

Near Port Moresby; Goldie.

ONAGREÆ.

JUSSLÆA REPENS.

Linné, Sp. Plant. 388.

Near Port Moresby; Goldie.

JUSSLÆA SUFFRUTICOSA.

Linné, Sp. Plant. 388.

Near Port Moresby; Goldie.

LEGUMINOSÆ.

INDIGOFERA VISCOSA.

Lamarck, Encyclopéd. Méthodiq. iii. 247.

Near Port Moresby ; Goldie.

INDIGOFERA ENNEAPHYLLA.

Linné, Mantiss. 272.

Near Port Moresby ; Goldie.

CROTALARIA JUNCEA.

Linné, Spec. Plant. 714.

Near Port Moresby ; Goldie.

Yields the well known Sunn-Hemp.

CROTALARIA VERRUCOSA.

Linné, Spec. Plant. 715.

Port Moresby ; Goldie.

BAUHINIA WILLIAMSII.

(Sect. Phanera.)

Climbing ; *tendrils circinate, simple ; leaves cordate, glabrous*, quite entire or at the apex bilobed, 5-7-nerved from the base ; racemes densely many-flowered, brown-silky ; *bracts linear-subulate*, recurved ; flowers small ; *calyx with five blunt very short teeth, finally bilabiate ; petals oval-spatular ; fertile stamens three* ; staminodia minute, tooth-like ; stigma hardly broader than the style ; ovary brown-silky.

Near Port Moresby ; Goldie.

Leaves measuring $2\frac{1}{2}$ -4 inches, shining above, on rather long slightly hairy soon glabrescent petioles. Cirrhi short. Racemes almost paniculate. Bracts nearly $1\frac{1}{2}$ line long. Pedicels about as long as the calyx, beset with minute narrow bracteoles towards the middle. Calyx about 3 lines long, articulated at the pedicel ; its tube as long as the lips and invested by the disk. Petals scarcely above 3 lines long, silky outside, purplish inside and there almost glabrous. Stamens glabrous. Fertile filaments hardly longer than the petals. Anthers dorsifixed. Style less than 2 lines long. Ovary with few ovules, gibbous at the base ; ovules imbedded along the middle of the cavity. Stipes of the ovary very short, inserted near the upper end of the calyx-tube. Ripe fruit as yet unknown.

This showy species is dedicated to the gentleman, under whose auspices the important travels of Mr. Goldie originated. It is closely allied to *B. scandens* (Willd. Sp. Plant. ii. 508); the tendrils are shorter, the vestiture darker, the bracts narrower, the teeth of the calyx much smaller, the petals not roundish, nor with suddenly narrowed base, nor silky inside, the fertile stamens less elongated. Comparison of the fruit is needed.

The only other species, which among those known to me bears any close resemblance to ours, is one distributed under the name *Phanera rufa* Benth. from the Khasian collections of Drs. Hooker and Thomson; its leaves are larger and strongly nine-nerved, the tendrils are longer, the bracts broader, while the buds of the calyx are slightly acute not rounded-blunt.

I cannot carry further the comparisons, having not seen any well-developed flowers of the Khasian and Assam plant. The specific name of the latter cannot be maintained, inasmuch as a Brazilian species was described as *B. rufa* by Bongard (Memoir de l'Academ. Imper. des Scienc. de St. Petersburg, ser. vi. vol. iv. 116).

B. piperifolia (Roxb. Flor. Ind. ii. 327) has the leaves more cleft at the summit, the flowers corymbose and on much longer pedicels, their indument paler, the ovary glabrous.

B. ferruginea (Roxb. Fl. Ind. ii. 331) differs in its leaves not quite glabrous, cleft at the base and summit and narrower, in the paler and scantier silk of the racemes, the larger flowers, the broader stigma and probably in other respects.

The foliage of *B. Williamsii* has considerable similarity to that of *Barklya syringifolia* (F. v. M. Fragm. Phytogr. Austral. i. 109, t. iii.), which plant might readily be transferred to the tribe of *Bauhinieæ*, more particularly as *Oligostemon* (Benth. et Hook. Gen. Pl. i. 570) among *Cassieæ* has also the upper petal placed exteriorly.

SESBANIA ACULEATA.

Persoon, Synops. Plant. ii. 316.

Port Moresby; Goldie.

ABRUS PRECATORIUS.

Linné, Syst. Veg. ed. xii. 472.

Near Port Moresby; Goldie.

FLEMINGIA LINEATA.

Roxburgh, Hort. Beng. 56.

Port Moresby; Goldie.

MUCUNA BENNETTI.

Leaflets lanceolar-oval, glabrous; *racemes short, almost sessile*, few-flowered; calyx densely beset with very short hair and very scantily hispid; *upper lip of the calyx as long as the tube*, as well as the lobes of the lower lip narrow and acuminate; upper petal almost deltoid above the middle, two-toothed at the apex, as well as the lateral petals not bearded at the edge; *lower petals very long*, arched and upwards very narrow; lateral petals gradually much narrowed upwards; anthers of the upper stamen and of the four interjacent lower filaments much shorter than the rest and bearded; style almost glabrous; ovary silky.

At the Fly-River; D'Alberty.

Branches soon glabrous. Petioles up to the pair of leaflets 1-2 inches long; lateral petiolules very short. Leaflets 3-4 inches long, about $1\frac{1}{2}$ inch broad. Peduncles, together with the rachis, only about 1 inch long, together with the pedicels almost silky; the latter crowded, nearly 1 inch long. Bracts early dropping. Tube of the calyx about $\frac{1}{3}$ of an inch high; the lowest lobe attaining $\frac{1}{2}$ an inch in length, the lateral lobes about half as long. Upper petal about $1\frac{1}{2}$ inch long; lowest petals nearly 3 inches long, their greatest width not over 3 or 4 lines, of firmer consistence at the summit; lateral petals not much shorter, but considerably broader. Nine of the stamens united to nearly $\frac{2}{3}$ of their length. Five of the anthers oblong-linear, nearly 1 line long. Stigma short-bearded. Fruit unknown.

The flowers of this new species—which is dedicated to the main promoter of Signor D'Alberty's last expedition, Dr. G. Bennett of Sydney—are nearly as long as those of *M. macrobotrya* (Hance in Walp. Annal. ii. 422); the leaflets of that species are however much larger and conspicuously acuminate, the racemes are elongated, the upper lip of the calyx is much shorter than the tube, the lower lip is also proportionately shorter and its teeth are broader; the lower petal is doubly as broad and much less curved; the other petals are also broader, but almost rounded-blunt at their summit and bearded at the edge, while the stamens are to a greater extent disconnected. Likely also the color of the fresh petals and the form of the pods will afford further marks of discrimination.

Except the bearded petals all the above-mentioned characteristics distinguish also *M. macrocarpa* (Wall. Plant. Asiat. rarior, i. 43, t. 47).

Mucuna monosperma (Cand. Prodr. ii. 406) is easily separated by broader leaflets on longer stalks, by more expanded corymbs, short lobes of the calyx, straighter lower petals and perhaps its fruit. *M. Novo-Guineensis* (Scheff. Annal. du Jard. Bot. de Buitenz. i. 18) is also described as producing only short teeth of the calyx, with an inflorescence of 5 inches in length and comparatively large leaflets; but in respect to the latter characteristics *M. Bennetti* may be subject to variations. The petals of Mr. Tijesmann's plants are brilliantly orange. Baker (in J. D. Hooker's Flora of British India, ii. 185) mentions as perhaps allied to *M. imbricata* (Cand. Prodr. ii. 406) the as yet undescribed *M. acuminata* (Grah. in Wall. list, 5621); this seems allied to our plant in respect to the lobes of the calyx, but the petals are shorter according to Baker's note.

MUCUNA ALBERTISI.

Branchlets and petioles rusty-tomentose; lateral leaflets oblique rhomboid-orbicular, the terminal roundish, all slightly pubescent and scantily hispid above, almost brown velvet-donny beneath; panicle consisting of several short racemes; pedicels shorter than the calyces or hardly as long, with them velvet-downy and partially hispid; teeth of the calyx shorter than the tube; lateral and lower petals almost of equal length, upper petal about one-third shorter, the lower petals very narrow, gradually falcate; the five shorter anthers woolly-bearded; the five longer anthers somewhat hairy; style and ovary beset with appressed hair.

On the Fly-River; D'Albertis.

Stem probably woody. Length of the petiole up to the lateral leaflets usually about 3 inches, rarely much shorter. Stipules early deciduous or inconspicuous. Stipellæ subulate, hardly exceeding 1 line. Leaflets of firm consistence; their length mostly from $3\frac{1}{2}$ to 5 inches; the lateral nerves and also the veins beneath prominent; the apex of the leaflets often slightly acuminate. General peduncle a span long or variously shorter. Racemes few-flowered or branched, forming almost corymbose or cymose clusters or bunches. Bracts lanceolar, acuminate, 3-4 lines long, early dropping. Calyx $\frac{1}{2}$ - $\frac{2}{3}$ inch long; the upper lip deltoid, usually about 2 lines long; the lateral lobes of the lower lip hardly above 1 line long, lanceolar-deltoid; the lowest lobe nearly 3 lines long, narrowly semilanceolar. Upper petal orbicular-ovate; lateral

petals about $1\frac{3}{4}$ inch long, falcate-lanceolar, towards the middle $\frac{1}{3}$ of an inch broad, short-stalked at the outward auricular base; lowest petals at the middle scarcely 3 lines broad, gently not suddenly curved; all petals slightly hairy outside towards the base. Nine of the stamens to $\frac{3}{8}$ or more of their length united. Style towards the summit glabrous. Stigma minute, capitellate, very finely bearded. Fruit unknown.

So far as can be judged in the absence of the pods this species approaches nearest *M. monosperma* (Cand. Prodr. ii. 406; *M. anguina*, Wall. Pl. Asiat. rarior, iii. 19, t. 236), which has however shorter peduncles, a more bristly hairiness, the flowers less distinctly racemose and the upper part of the carinal petals suddenly ascending. *M. macrocarpa* (Wall. Pl. Asiat. rar. 41, t. 47) shows not the dense indument, its leaflets are almost glabrous, the flower-clusters are less ramified, the free portion of the peduncle is shorter, the calyces are larger on longer pedicels, the petals are considerably broader and of a different color, the five shorter of the anthers much less bearded.

M. macrophylla (Miq. Flor. Ind. Bat. i. 213) is quite unknown as far as flowers and fruits are concerned.

I have without result endeavored to trace out in the very much scattered recent literature of tropical Asiatic plants any other species, closely allied to this one from New Guinea. Dr. Bennett informs me, that the distinguished Italian traveller saw a third leguminous climber, supposed to belong to this genus, on the Fly-River. I have discerned only two species in the collection. It is probably the very rare species, found in latitude 6° S., bearing blue flowers, which I have not before me. *M. Bennetti* has red petals according to Signor D'Albertis, thus differing from *M. pruriens* and *M. monosperma* in this respect; therefore this, if I rightly understand, is the one, about which the discoverer expresses himself in rapture, "as it was one of the most gorgeous sights there in the whole floral kingdom." He describes the red color of the flowers as similar to that of *Methonica* or *Gloriosa*, and adds, "that the plant grew in the greatest abundance on the banks of the Fly-River," and "that to see the pendulous masses of such flowers, covering the trees from the base to the summit even of the most lofty was one of the most beautiful sights to behold." *M. Albertisi*, so I learn, has yellow flowers.

The collection contains also two phyllodinous *Acaciæ* from the Fly-River, both distinct from *A. Simsii*, but neither bearing flowers or fruit at the time of gathering.

COMBRETACEÆ.

COMBRETUM GOLDIEANUM.

Leaves large, oval, almost blunt or but slightly acuminate, quite glabrous; spikes axillary, solitary, one-sided; flowers large; calyx imperfectly grey-silky, with 5 very short teeth; petals 5, silky-downy outside; *stamens ten, long, crimson*; anthers ellipsoid; young fruit slender, 5-angled.

Near Port Moresby; Goldie.

Branchlets very soon glabrous, hardly angular or quite terete. Leaves opposite, 4-6 inches long, 2-3 inches broad, prominently ribbed, finely veined, minutely and transparently dotted. Petioles $\frac{1}{2}$ -1 inch long. Spikes on very short stalks, 2-4 inches long, with numerous flowers. Calyx at the time of flowering about $\frac{1}{2}$ an inch long, above the ovary gradually dilated, the deciduous portion inside towards the middle silky-bearded. Petals oblong-lanceolar, scarcely exceeding one line in length. Filaments about $\frac{2}{3}$ of an inch long. Anthers dark-red, $\frac{1}{2}$ a line long. Style crimson, measuring nearly an inch in length. Ripe fruit as yet unknown.

The leaves of this elegant species are much like those of *C. latifolium* (Bl. Bijdr. 641), while the color of the stamens is that of *C. coccineum* (Lam. Diction. i. p. 734) and the length of the filaments that of *C. micropetalum* (Cand. Prodr. iii. 19).

Among red-flowered species this new one differs from *C. coccineum* already by broader leaves, not glabrous spikes, longer not suddenly campanulate calyx, smaller petals, longer stamens and not obcordate anthers; from *C. grandiflorum* (G. Don in Edinb. Phil. Journ. 1824, p. 347) in longer leafstalks, smaller and fugacious bracts, elongated spikes with smaller flowers, long exerted stamens, narrow not yellow anthers; from *C. comosum* (G. Don in the Transact. of the Linnéan Society, xv. 433) in larger leaves, disposition of flowers, slender limb of calyx and smaller petals.

The only other combretaceous plant, as yet known from New Guinea, is *Lumnitzera racemosa*, Willdenow in den Verhandlungen der naturforschenden Freunde zu Berlin, iv. 186.

The flowers bring to our recollection both *Metrosideros* and *Callistemon*, whereas the very copious minute dots of the leaves point also to some affinity of Combretaceæ to Myrtaceæ.

LYTHRACEÆ.

AMMANNIA SENEGALENSIS.

Lamarck, Encyclopédie, t. 77, f. 2.

Port Moresby ; Goldie. For synonymy see Hiern in Oliver's Flora of Trop. Africa, ii. 477. Closely allied to *A. latifolia* (L. Sp. 119), which also as an Indian plant is mentioned by Grisebach (Flora of British West India, 270).

AMMANNIA BACCIFERA.

Linné, Spec. Plant. 120.

Port Moresby ; Goldie.

BEGONIACEÆ.

BEGONIA MALABARICA.

Lamarck, Encycl. Méthod. i. 393.

Fly-River ; D'Albertis.

The almost glabrous less denticulated leaves, the smallness of the flowers and the truncate wings of the fruit separate this species from *B. dipetala* (Grah. in Hook. Bot. Magaz. t. 2849), as well pointed out by Alph. de Candolle (Prodr. xv. 391-392). The placentas of our plant are however consisting of two plates, and this character would bring the Papuan species to *B. fallax* (A. de Cand. Prodr. xv. 329), if the flowers were petaliferous and the base of the fruit more acute.

BEGONIA SPILOTOPHYLLA.

Leaves from a semicordate base oblique oblong-lanceolate, long-acuminate, minutely denticulate, glabrous, white- or *pale-spotted*; stipules subulate-linear; peduncles few-flowered; sepals 2, small, orbicular; *petals none*; stamens arising from the depressed torus; anthers about as long as the filaments, their connective not produced beyond the cells; *fruit-wings three, shorter than the axis*, not extending to the pyramidal summit of the fruit; placentas bilaminate; seeds furrowed.

Near the Fly-River ; D'Albertis.

Leaves 5-9 inches long, mostly (so far as known) from $1\frac{1}{2}$ -3 inches broad. Petioles 1- $1\frac{1}{2}$ inch long. Stipules 3-4 lines long. Peduncles of the only flowering specimen seen by me about 1 inch long. Secondary peduncles and pedicels nearly as long. Sepals measuring about $\frac{1}{4}$ of an inch. Anthers at the summit rounded-blunt. Styles not seen. Cap-

sule (an only one obtained) $\frac{2}{3}$ of an inch long, thickened along the middle of the valves; the wings roundish-semirhomboid, of firm consistence, not membranous. Seeds pale-brown, ovate, prominently few-streaked.

This elegant species bears in its spotted foliage much resemblance to the Brazilian *B. maculata* (Raddi Quaranta Plante Nuove del Brasile, p. 27), but should systematically be placed into the section *Haagea*, although the fruit-wings are not surrounding the basis and apex of the capsule.

PASSIFLOREÆ.

PASSIFLORA AURANTIA.

G. Forster, *Florul. Insul. Austr. Prodr.* 62.

Port Moresby; Goldie.

Forster's plant came from New Caledonia, from whence Labillardière (*Sert. Austr. Caled.* 78) calls the petals purplish. Some notes on this and allied species are offered in *Fragm. Phytogr. Austr.* ix. 68-69.

CUCURBITACEÆ.

MUKIA SCABRELLA.

Arnott in *Hooker's Journ.* iii. 276.

Port Moresby; Goldie.

LUFFA ÆGYPTIACA.

Miller, from *Luffa arabum*, *Alpinus et Vesting de Plantis Ægypti*, 199, t. 58 et 59.
Var. *leiocarpa*.

Port Moresby; Goldie.

RUBIACEÆ.

RANDIA MACARTHURI.

Thornless, *glabrous*; leaves large, on short petioles, lanceolar-obovate, slightly acuminate, acutely attenuated at the base; stipules long, connate into one of ovate-lanceolar form, free at their acuminate apex; peduncles short, few-flowered; calyx truncate; tube of the corolla somewhat turgid, nearly thrice as long as the calyx, unbearded inside, almost as long as the five narrow-lanceolar lobes; anthers enclosed, long, linear, blunt; berry large, globular, almost sessile; pericarp hard.

On the Fly-River; D'Alberty.

Branchlets thick. Leaves 5-9 inches long, seldom shorter, usually between 2-4 inches broad, thinly chartaceous. Pedicels a few lines long.

Tube of the calyx 3-4 lines in length. Tube of the corolla about $\frac{2}{3}$ of an inch long, 3-4 lines wide. Anthers about 4 lines long. Berry measuring nearly two inches, completely two-celled by a membranous septum. Ripe seeds as yet unknown.

The nearest approach of this species is to *R. Fitzalani* (F. v. M., Report on the Plants from the Æstuary of the River Burdekin, 12); but the leaves are larger, of a thinner consistence, their surface shows not the same oily lustre, the nerves are more numerous, the veins more conspicuous, the stipules much larger, the flowers nearly double as long, the lobes of the corolla proportionately narrower, the anthers also twice as long, the fruitstalks on an only specimen almost absent. *R. stipularis* (*R. stipulosa*, F. v. M. Fragm. vii. 47, ix. 70 et 180, non Miq. Fl. Ind. Batav. ii. 228) differs with exception of the stipules in similar notes, besides the proportionately broader leaves and longer petioles.

I have dedicated this noble species to the Hon. Sir. Will. Macarthur, from whom I experienced many acts of kindness in my scientific career, and to whose disinterested friendliness the plants of Mr. McLeay's New-Guinean Expedition, the first which I saw from that island, were placed at my disposal.

IXORA PAVETTA.

Roxburgh, Flora Indica, i. 385.

Port Moresby; Goldie.

COMPOSITÆ.

ADENOSTEMMA VISCOSUM.

R. et G. Forster, Charact. Generum 89, t. 45.

Port Moresby; Goldie.

GENTIANEÆ.

LIMNANTHEMUM INDICUM.

Thwaites, Enum. Pl. Zeil. 205.

Fly-River; D'Albertis.

COTYLANThERA TENUIS.

Blume, Bijdr. 707.

Fly-River; D'Albertis.

I am not certain, whether the Papuan plant is identical with the typic species from Java, which is only briefly defined by Blume, his description being merely copied by Endlicher (Gen. Pl. 668), Dunal (Cand.

Prodr. xiii. 674) and Miquel (Fl. Ind. Batav. ii. 735). Asa Gray's diagnosis (Journ. of the Linnéan Soc. 1869, p. 23) is also very short. The Papuan plant is quite glabrous. Fibres of the perhaps annual root few. Leaves in distant pairs, scalelike, membranous, deltoid, 1-1½ line long. Flower only one, terminal. Calyx about 2 lines long, to less than half its length divided into semi-lanceolar lobes. Corolla 4-5 lines long, cleft beyond the middle into four lanceolar segments, which are not narrowed at their base; their position in bud contorted-imbricate. Filaments hardly a line long. Anthers from a broad and obtuse base linear-cylindrical, basifixed. Pollen-grains when moist tetrahedro-globular, smooth, opening at the extremity of the angles. Style 2 lines long, thinly filiform. Stigma minute, capitellate. Ovary free, globular. Ripe fruit unknown.

MYRSINEÆ.

ÆGICERAS FRAGRANS.

Kœnig, in Annals of Botany, i. 131, t. 3.

Port Moresby; Goldie.

CONVOLVULACEÆ.

CONVOLVULUS PARVIFLORUS.

Vahl, Symbol. iii. 29.

Port Moresby; Goldie.

The velvet-downy variety from thence.

IPOMŒA ANGUSTIFOLIA.

Jacquin, Collectan. ii. 367.

Port Moresby; Goldie.

IPOMŒA ERIOCARPA.

R. Brown, Prodrum. Fl. Nov. Holl. 484.

Port Moresby; Goldie.

IPOMŒA HEDERACEA.

Jacquin, Collectan. i. 124.

Port Moresby; Goldie.

APOCYNEÆ.

ALSTONIA SCHOLARIS.

R. Brown, Memoirs of the Wernerian Natural History Society, i. 75.

Port Moresby; Goldie.

ACANTHACEÆ.

DICLIPTERA SPICATA.

Decaisne in *Annal. du Mus.* 1834, tom. iii. 56.

Port Moresby; Goldie.

HYPOESTIS FLORIBUNDA.

R. Brown, *Prodr. Fl. Nov. Holl.* 474.

Port Moresby; Goldie.

LABIATÆ.

MOSCHOSMA POLYSTACHYA.

Bentham in *Wallich's Plantæ Asiaticæ Rariores*, ii. 13.

Port Moresby; Goldie.

LEUCAS FLACCIDA.

R. Brown, *Prodr. Fl. Nov. Holl.* 506.

Port Moresby; Goldie.

JASMINEÆ.

JASMINUM ÆMULUM.

R. Brown, *Prodr. Fl. Nov. Holl.* 521.

Near Port Moresby; Goldie.

ASPERIFOLIÆ.

TOURNEFORTIA MOLLIS.

F. v. M. *Fragm. Phytogr. Austr.* i. 59.

Near Port Moresby; Goldie.

CYCADEÆ.

CYCAS PAPUANA.

Petioles unarmed; segments of the leaves rather short and narrow, flat, glabrous, opaque beneath, not pungent, sessile with broad slightly decurrent base; fruit-rachis velvet-downy, long-stalked; its *terminating lamina hard, rhomboid, acuminate*, toward the summit toothed, at the apex short-laciniated, on the upper side finally glabrescent; fruits several, ovate-globular, from the commencement glabrous.

On the Fly-River; D'Albertis.

This species agrees in its toothless petioles with *C. inermis* (Lour. Flor. Cochinchin. ii. 776); in the width and the beneath not shining leaflets with *C. media* and *C. angulata*, (R. Br. Prodr. 348) and with the latter also in the form of the lamina of the female rachis. It differs from the two last-mentioned species in the absence of teeth on the petioles, in shorter perfectly flat and less rigid segments of the leaves; from *C. circinalis* (L. Sp. Pl. 1188) in paler, shorter and narrower leaf-segments, which are not very conspicuously narrowed at the base, also in a less elongated and less incised plate of the female rachis. The male inflorescence, as yet unknown, may offer other distinctive notes. *C. pectinata* of Griffith seems only known by name. Ach. Richard (Voyage de l'Astrolabe, Botanique, xxiii) mentions *C. circinalis* from Port Doreh.

HYDROCHARIDEÆ.

HYDROCHARIS MORSUS RANÆ.

Linné, Spec. Plant. 1036.

Fly-River; D'Albortis.

The specimens, secured in New Guinea, are devoid of flowers and fruit, but the anatomic structure of the leaves leads readily to the recognition of the species, which otherwise from foliage alone might be confounded with some *Limnanthemums*.

Like Australian specimens, which were obtained at Moreton's Bay by Mr. Walt. Hill and at Rockhampton by Mons. A. Thozet, so the Papuan plant also shows only a shallow sinus of the base of the leaves; but this characteristic proves not absolute. The plant at the Fly-River is accompanied by *Ceratophyllum demersum*. Griffith found *H. Morsus ranæ* in India according to his posthumous papers, t. 57. *H. Asiatica* (Miq. Fl. Ind. Batav. iii. 239), if really referable to this genus, is at once distinguished by its oval leaves. Bentham (Fl. Austr. vi. 256) expresses some doubts, whether the Australian plant is really indigenous; but as it is associated with *Drosera Aldrovandi* and *Cabomba peltata*, neither of which was here ever cultivated, we have no reason to assume any of these plants to be introduced.

ORCHIDEÆ.

DENDROBIUM UNDULATUM.

R. Brown, Prodr. 332.

On the Fly-River; D'Albortis.

The Papuan plant, known from a solitary specimen, constitutes a variety (var. *Albertisiana*), remarkable for the shortness and form of the end-lobe of the labellum; this lobe is renate-obcordate, neither pointed nor crisped; the outer sepals are also much more undulated. Extended observations on ampler material may possibly raise this variety to specific rank.

CALANTHE VERATRIFOLIA.

R. Brown in Edw. Bot. Regist. t. 720.

Fly-River; D'Albertis.

A large form with leaves fully a span broad and with an unusually long spur of the flowers.

AMARYLLIDÆ.

EURYCLES SILVESTRIS.

Salisbury in the Transact. of the Hort. Soc. of London, i. 337.

Fly-River; D'Albertis.

LILIACEÆ.

DRACÆNA ANGUSTIFOLIA.

Roxburgh, Flor. Indic. ii. 155.

On the Fly-River; D'Albertis.

SCHELHAMMERA MULTIFLORA.

R. Brown, Prodr. 274.

On the Fly-River; D'Albertis.

A full account of this rare plant has been given in the *Fragm. Phytogr. Austr.* vii. 71, where the close affinity of the genus to *Disporum* was also demonstrated. As many as 17 pedicels occur on Papuan specimens.

FLAGELLARIA INDICA.

Linné, Spec. Plant. 333.

Port Moresby; Goldie.

CYPERACEÆ.

CYPERUS DISTANS.

Linné fl. Suppl. Plant. 103.

Fly-River; D'Albertis.

Found also in New Ireland by the Rev. G. Brown.

The variety with less remote florets, mentioned in the Appendix to Campbell's *New Hebrides*, p. 25.

RHYNCHOSPORA AUREA.

Vahl, Enum. Plant. ii. 291.

Port Moresby; Goldie.

GRAMINEÆ.

PHRAGMITES COMMUNIS.

Trinius, Fundam. Agrostogr. 134.

Fly-River; D'Albertis.

ERIOCHLOA PUNCTATA.

Hamilton, Prodr. Plant. Ind. Occ. 5.

Port Moresby; Goldie.

PANICUM COMPOSITUM.

Linné, Spec. Plant. 57.

Fly-River; D'Albertis.

At Port Moresby occurs a Panicum, closely related to *P. foliosum* (R. Br. Pr. 191).

PASPALUM LONGIFOLIUM.

Roxburgh, Flor. Indic. i. 280.

Fly-River; D'Albertis.

CENCHRUS ECHINATUS.

Linné, Spec. Plant. 1050.

Port Moresby; Goldie.

This is probably the *C. spinifex*, mentioned as doubtful from Port Doreh by Achilles Richard.

LYCOPODIACEÆ.

LYCOPODIUM PHLEGMARIA.

Linné, Spec. Plant. 1101.

Fly-River; D'Albertis.

LYCOPODIUM SQUARROSUM.

G. Forster, Florul. Insul. Austr. Prodr. 86.

Fly-River; D'Albertis.

LYCOPODIUM CERNUUM.

Linné, Spec. Plant. 1103.

Fly-River; D'Albertis.

Brought also from New Ireland by the Rev. G. Brown, like the following.

SELAGINELLA FLABELLATA.

Spring, Monogr. Lycopod. ii. 174.

Fly-River; D'Albertis.

This, according to Grisebach's definition (*Flora of the Brit. West Ind. Isl.* 646) is the original *Lycopodium flabellatum* (L. Sp. Pl. 1105). The cilia and serratures are absent in our as in many conspecific plants from other localities.

SELAGINELLA CAUDATA.

Spring, Monogr. Lycopod. ii. 139.

Fly-River; D'Albertis.

The secondary ramification is less regularly pinnate than in the preceding species, the leaves are larger and those of the anterior series mucronate. I draw to this species *Lycopodium D'Urvillei* (Bory, Voy. de la Coquille, Bot. 247, t. 25) although analytic details in the illustrative plate are wanting.

SELAGINELLA CAULESCENS.

Spring, Monogr. Lycopod. ii. 158.

Fly-River; D'Albertis.

OPHIOGLOSSÆ.

HELMINTHOSTACHYS ZEILANICA.

Kaulfuss, Enum. Fil. Chamiss. 28, t. 1.

Fly-River; D'Albertis. Port Moresby; Goldie.

SCHIZÆACEÆ.

LYGODIUM JAPONICUM.

Swartz, Synops. Filic. 154.

Fly-River; D'Albertis.

Imperfect specimens of an other *Lygodium* occur in Signor D'Albertis' collection. These may belong to one of the numerous forms of *L. dichotomum* (Sw. l. c.).

SCHIZÆA FORSTERI.

Sprengel, Anleitung zur Kenntniss der Gewächse, iii. 175.

Fly-River; D. Albertis.

GLEICHENIACEÆ.

GLEICHENIA HERMANNI.

R. Brown, Prodr. Fl. Nov. Holl. 161.

Fly-River ; D'Albertis.

FILICES.

ACROSTICHUM AUREUM.

Linné, Spec. Plant. 1069.

Port Moresby ; Goldie.

ACROSTICHUM DRYNAROIDES.

Hooker, Spec. Filic. v. 282 ; var. sessilis.

Fly-River ; D. Albertis.

I have not ventured to describe this as a new species, not having the advantage of comparing the typical plant. From that as described ours seems to differ in somewhat smaller size, and more particularly in having the lowest portion of the frond cleft only into short and blunt lobes, the fronds with their very dilated base being almost sessile, thus far resembling the sterile frondlets of *Polypodium quercifolium* and *P. rigidulum* in manner of growth and reminding also of the mode of attachment of the *Platyceriums*. The rachis of the Papuan plant furthermore does not secede with great readiness from the frond. Unless the frond narrows into an attenuated winged base under changed circumstances or perhaps in older plants, then ours can be raised to a separate specific position under the variety-name meanwhile adopted. The frond is occasionally destitute of terminal fertile pinnae.

Platycerium grande (J. Smith in Hook. Journ. iii, 402) was found in New Guinea by Zippelius.

DICKSONIA PAPUANA.

(Sect. *Dennstædia*.)

Rachis and racheoles along the upper side somewhat tomentose ; pinnae numerous, protracted into a serrated long acumen ; *pinnules oblong-lanceolar, serrulated, slightly falcate, at the base truncate, chartaceous, shining and glabrous on both sides, vividly green beneath ; sori minute, exserted ; involucre almost cupshaped ; inner valve very short or obliterated.*

Fly-River ; D'Albertis.

Fronds about 4 feet long. Rachis unarmed. Middle pinnæ hardly above a span long. Well developed pinnules nearly an inch long and about $\frac{1}{4}$ inch broad; the fertile and sterile pinnules or segments of nearly the same width. Veins simple or branched into two, except the lowest, which are generally divided into three or four branches. Veinlets none. Outer valve of the indusium in texture and color similar to the frond, unless towards the margin; inner valve rudimentary, membranous. Sporangia partly protruding.

The definition of this species rests on two fronds, and it remains to be recorded, whether this is an arborescent or stemless species. Base of rachis yet unknown. This Papuan *Dicksonia* verges to the section *Deparia*, the sori forming teethlike lobules along the pinnules. The nearest approach to our new species seems to be formed by *D. Smithii* (Hook. Sp. Filic. i. 80, t. 28), from which ours is easily distinguished by larger and glabrous ultimate pinnules, with only minute serratures and a free truncate not attenuated base, while the sori are terminating minute lobules and are not seated in a sinus.

It is possible, that what I have regarded as a whole frond may be only a primary pinna of a three-pinnate frond; in such a case the supposed pinnules are ultimate segments, and then this must be a magnificently fronded gigantic fern.

Another *Dicksonia*, verging fully to the section *Microlepia* of *Davallia*, occurs among the plants from the Fly-River. To this the name *D. delicata* might be given. From *D. davallioides* (R. Br. Pr. 158), which I have lately found as far south as the Cape Otway ranges, and to which perhaps *Cheilanthes dicksonioides* (Endl. Prodr. Fl. Norfolk, 15) belongs, it differs much in outline, the fronds being less compound, but the pinnæ and pinnules longer, while the secondary pinnules are larger and generally deeper dissected, with lobules less cleft and more distant. From *D. cuneata* (Hook. Sp. Filic. 80, t. 28) it differs in a similar mode, besides in more membranous fronds and as well as from *D. Samoensis* (Bak. Synops. 462) in the deeper cleavage of the ultimate pinnules. To arrive at a final decision in reference to the distinctions of these species it is still needful to observe their manner of growth and also the nature of their rhizome.

DAVALLIA BLUMEANA.

Hooker, Spec. Filic. i. 177, t. liv A.

Fly-River; D'Albertis.

This lovely and delicate fern occurs also in New Ireland, according to the collection formed by the Rev. G. Brown. Java and Leyte I see only mentioned as its known native places.

Mettenius (in Miq. Annal. iv. 277) mentions as occurring in Papua: *D. triquetra*, Baker in H. et B. Syn. Fil. 93, which may be a simply pinnate state of *D. Blumeana*.

D. elata (Sw. Syn. Fil. 131) occurs also on the Fly-River, and I have it likewise from Timor.

D. Fijensis (Hook. Sp. Fil. 166, t. 55) has been brought with less divided fronds from New Ireland. It approaches closely to *D. Mauritiania* (Hook. l. c. 164) according to specimens of the latter, sent by Lady Barkly. Its precise relation to *D. solida* (Sw. Syn. Fil. 132) needs yet to be further traced.

LINDSAYA PECTINATA.

Blume, Flor. Jav. Filic. 217.

Fly-River; D'Albortis.

Indusium almost nephroid.

LINDSAYA LOBATA.

Poiret, accord. to Hook. et Bak. Syn. Filic. 111.

Fly-River; D'Albortis. Also in New Ireland (Rev. G. Brown).

Recorded from New Guinea is already by Hooker from Dr. Hinds' collection: *L. cordata*, Gaudichand, Bot. Voy. Freyc. 379, t. 16.

L. acutifolia, Desv. and *L. lanceolata*, Labill. Nov. Holl. Plant. Specim. ii. 98, t. 248, are also traced to New Guinea.

L. Amboinensis, Metten. l. c. iv 278, occurs at Waighiou.

PTERIS SEMIPINNATA.

Linné, Spec. Plant. 1076.

Fly-River; D'Albortis.

P. Zippelii (Baker, Synops. 477; *Allosorus Zippelii*, Miq. Annal. iv. 98) is also an inhabitant of New Guinea, as are the following:

Pteris longipes, D. Don, Prodr. Fl. Nepal. 15.

Pteris excelsa, Gaudich. Bot. Voy. Freycen. 388.

LOMARIA EUPHLEBIA.

Kunze in der Bot. Zeitung, vi. 52'

Fly-River; D'Albortis.

ASPIDIUM PTEROIDES.

Nephrodium pteroides, J. Smith in Hook. et Bak. Syn. Fil. 289.

Baxter's River; Rev. S. Macfarlane.

This has been identified by Mr. Baker, who through the direct facilities afforded him by the vast collections of ferns, brought together in more than half a century by Sir Will. Hooker, has become the most experienced among the present pterilogist.

ASPIDIUM ACUTUM.

Schkuhr, Cryptog. Gewächse, 32, t. 31.

Fly-River; D'Alberris.

Sent also from New Ireland by the Rev. G. Brown. An allied larger species or perhaps merely variety with exauriculated pinnæ and with sori remote from the edge inhabits also the banks of the Fly-River.

ASPIDIUM RAMOSUM.

Beauvois, Flore d'Oware, t. 91.

Fly-River; D'Alberris.

POLYPODIUM ACROSTICHOIDES.

R. Brown, Prodr. 146.

Fly-River; D'Alberris.

POLYPODIUM IRREGULARE.

Presl, Reliq. Hænk. i. 25, t. 4.

Fly-River; D'Alberris.

POLYPODIUM LINNÆI.

Bory in Annal. des Scienc. Nat. v. 464, t. 12.

Port Moresby; Goldie. Fly-River; D'Alberris.

This was collected also at Makado (Duke of York's Island) by the Rev. G. Brown. The segments of the fronds secede readily from the rachis like those of *Acrostichum drynaroides*, with which species to some extent this also agrees in habit. Not always easily separated from *P. quercifolium* (L. Sp. 1087).

POLYPODIUM HERACLEUM.

Kunze in der Bot. Zeitung, vi. 117.

Fly-River; D'Alberris.

The Papuan plant is slightly hairy on the under-page of the frond.

POLYPODIUM NIGRESCENS.

Blume, Flora Javæ Filic. 101, t. 70.

Fly-River; D'Alberty.

Also in the collection formed by the Rev. G. Brown in New Ireland. It requires some caution to distinguish this species from some forms of *P. phymatodes*.

POLYPODIUM LINGUIFORME.

Mettenius in Miq. Annal. Mus. Lugd. Batav. ii. 228.

Fly-River; D'Alberty.

This might passingly be very easily confused with *P. musæfolium* (Bl. Fl. Javæ Filic. 171, t. 79), which has also been brought by Signor D'Alberty.

POLYPODIUM DECORUM.

Brakenridge in Unit. Stat. Explor. Exped. Filic. 7, t. 2.

Fly-River; D'Alberty.

Like in specimens from Ceylon, so in those from New Guinea the well developed sori are not much immersed in the frond, but become conspicuously exserted. The same species was found by the unfortunate Bishop Patteson in Erromanga. This fern differs mainly from *P. nutans* (Blume, Flora Javæ, 182, t. lxxxvi. A) in the almost complete absence of a distinct stipes. To Blume's plant seems also to belong *P. contiguum* (Brakenr. l. c. 6, t. 2, f. 1; *P. blechnoides*, Hook. Sp. Fil. iv. 180).

POLYPODIUM ALBO-SQUAMATUM.

Blume, Flora Javæ Filic. 137, t. lvii.

Fly-River; D'Alberty.

A small form, some specimens altogether only a span high, the pinnæ not half as broad as in the narrowest variety, figured as *P. varians* by Blume on t. lviii., also not caudate-acuminate.

POLYPODIUM PROLIFERUM.

Roxburgh in Wallich's list, 312.

Fly-River; D'Alberty.

On the same place occur also an *Alsophila* and a *Cyathea*, but without means of studying the structure of the stem, it is difficult to determine the name of these and most other fern-trees.

The collections contain still two other species; one of these, gathered at Port Moresby by the Rev. Dr. Turner, is allied to *P. barbatum* (Hook.

Spec. Fil. v. 11), differing in smaller pinnæ, in the soft-downy rachis and in the sori occupying extensively the lower page of the pinnæ. The same fern occurs in the New Hebrides, where it was found by Capt. Fraser; but I do not find it included in the elaborate list of 132 ferns given by Dr. M. Kuhn (in den Verhandlungen der K. K. Bot. Gesellschaft in Wien 1869) as occurring in these islands. The second additional species came from the Fly-River; it touches in its affinity *P. appendiculatum* (Wall. list, 349), receding chiefly on account of the position of the sori, not close to the midribs of the lobes.

ANTROPHYUM RETICULATUM.

Kaulfuss, Enum. Filic. 198.

Fly-River; D'Albertis.

A. plantagineum (Kaulf. l. c.) has been brought by the Rev. G. Brown from New Ireland. Mettenius (in Miq. Annal. Mus. Bot. Lugd. Bat. iv. 171) mentions as Papuan species: *A. pumilum* (Kaulf. l. c.) and *A. strictum* (Mett. l. c.).

BLECHNUM ORIENTALE.

Linné, Spec. Plant. 1077.

Fly-River; D'Albertis.

In the first edition of Linné's *Species Plantarum* the names of *B. orientale* and *B. occidentale* are transposed, a typographic error, corrected in the second edition. The form with narrow pinnæ approaches to *B. serrulatum* (Richard in Actes de la Société d'Hist. Nat. de Paris 1792, p. 114; *B. striatum*, R. Br. Pr. 152).

VITTARIA ELONGATA.

Swartz, Synops. Filic. 109.

Fly-River; D'Albertis.

V. scolopendrina (Schkuhr, accord. to Hook. et Bak. Synops. 396) is recorded from New Guinea. This is readily transferrable to the genus *Tænitis*, although the veins are longitudinal and not united in meshes.

ASPLENIUM SCOLOPENDROIDES.

J. Smith in Hooker's Journal of Bot. iii. 408.

Fly-River; D'Albertis.

Our specimens accord with the illustration of Cuming's plant from the Philippine Islands (Hook. Icon. 930). The shortness of the stipes distinguishes it mainly from *A. Amboinense* (Willd. Spec. Plant. v. 303); the want of an intramarginal vein from *A. Phyllitidis* (D. Don, Prodr.

Fl. Nepal. 7); the not almost horizontal indusia from *A. simplicifrons* (F. v. M. Fragm. v. 74).

ASPLENIUM MYRIOPHYLLUM.

Sprengel, Syst. Veg. iv. 90.

Fly-River; D'Albertis.

The Papuan plant belongs to this species, if Sprengel's is adopted in the meaning of Grisebach (Fl. of Brit. West. Ind. 684). Nevertheless it may prove only a form of *A. cicutarium* (Sw. Prodr. 130).

ASPLENIUM SPECIOSUM.

Mettenius, Asplen. p. 185, t. 5, f. 5.

Fly-River; D'Albertis.

Our plant agrees with Java specimens distributed from the Bot. Museum of Leyden; but the Javanic plant also is destitute of the scaly vestiture of the rachis, described by Blume, nor are the sori diplazoid.

From the same river we have a variety singular for its segments serrated only at the summit, and with the basal segments often much and suddenly reduced in size.

ASPLENIUM ESCULENTUM.

Presl, Reliq. Hænk. i. 45.

Port Moresby; Goldie. Fly-River; D'Albertis.

Sometimes the indusium is so obliterated, that this plant might be taken for a Grammitis.

ASPLENIUM LUNULATUM.

Swartz, Synops. Filic. 80.

Fly-River; D'Albertis.

The specific name, adopted as the oldest, does by no means well apply. The pinnae attain a length of 3 inches.

FUNGI.

CAPNODIUM FULIGO.

Thuemen in Litteris.

Acervules epiphyllous, forming large black indetermined spots; spores elongate- or clavate-oval, straight or rarely somewhat curved, 4- or rarely 3-septate, not constricted at the dissepiments, fuliginous; paraphyses absent.

On the Katau-River, occupying the leaves of fig-trees; communicated by the Hon. Sir Will. Macarthur.

