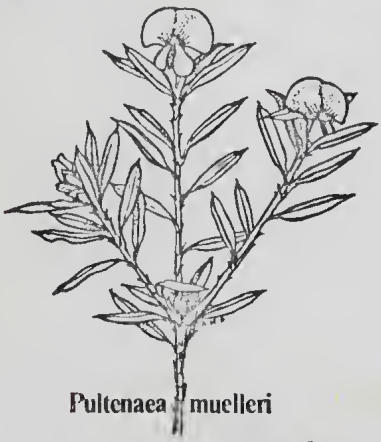
PAPUAN PLANTS.

I.

F. VON MUELLER, M. D.

To Arthur King Esqr.
with regardful re-
membrance
from
the author.



Pultenaea muelleri

DESCRIPTIVE NOTES

ON

PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

"Gold'ne Fruechte seh ich gluehen,
"Winkend zwischen dunk'lem Laub;
"Und die Blumen, die dort bluehen,
"Werden keines Winters Raub."—*Schiller.*

I.

By Authority:
GEORGE SKINNER, ACTING GOVERNMENT PRINTER, MELBOURNE.

M DCCC LXXV.

DEDICATED

TO

HIS EXCELLENCY SIR GEORGE BOWEN,

G.C.M.G., M.A., D.C.L., F.R.G.S.,

GOVERNOR OF THE COLONY OF VICTORIA.

INTRODUCTION.

The great Papuan Island, one of the largest of the globe, and rivalling in extent with Britain, is as yet but very scantily known to us merely along its coast-borders; and even of these litoral tracts we know as yet but very imperfectly the nature of the vegetation, while the plants of the higher regions—amply of alpine elevation—remained hitherto utterly unknown to us. A large island-country, probably rich also in endemic products of plants, situated on lines of Australian, Indian, Chinese and Polynesian maritime intercourses and stretching moreover into close proximity of the Australian Continent, must be to us here of special importance for commerce and colonisation. Hence any new contribution, however scanty, towards the knowledge of the nature and resources of New Guinea cannot but prove opportune, particularly at a time when the settlement along the opposite Australian coast is effected, and when by exploration-enterprises it is endeavoured to withdraw the veil, which so long concealed from us much of the features of this grand and wondrous island. With this view it is intended to devote on this occasion a few pages to the elucidation of some Papuan plants, brought from two previously thus far unexamined localities by Mr. McLeay's enterprising recent expedition, and gathered there by J. Reedy, a horticultural emissary of Sir Will. Macarthur. The latter, who in the autumn of a long laborious life, spent for the pastoral, agricultural and industrial interest of Australia, still preserves

a youthful ardour for scientific and especially horticultural research, has generously placed the material for the present essay at my disposal. Connected records of New Guinean plants do not as yet exist in phytographic literature. The field for special work in this direction is therefore mostly untrodden, though the extensive collections of Dr. Beccari, in whose treasures I am to participate, are likely to give us early an ampler insight into the probably very varied vegetation of New Guinea.

Its mountain flora particularly will likely carry with it the charm of novelty, the true oaks already discovered being likely only one of the numerous objects of promising interest. The blending also of Australian forms, such as the Eucalypts, which now have come to light, with Sundaic types of plants, will render to an Australian naturalist the study of the Papuan vegetation one of great significance, while undoubtedly thereby the means will be suggested of transferring many new plants of economic medicinal or industrial value to Australian shores.

Melbourne, November 1875.

PAPUAN PLANTS.

CAPPARIDEÆ.

Capparis quiniflora.

Cand. Prodr. i. 247; Benth. Flor. Austr. i. 94.

Ratau-River and Sue-Island.

The New Guinea plant eannot be distinguished from the Australian typical speeies, which is now known also from Castlereagh's Bay and Melville's Bay. If C. subcordata (Spanoghe in Schlecht. Linnæa xv. 166) from Timor should prove conspecific, as may be assumed from the short description, then our plant has probably a wide range through the Indian Archipelagus. Habit climbing. The petioles extend sometimes to the length of 1 inch. The stipular spines are rarely present in the upper part of the plant and then very short and recurved; but the lower branches are often strongly thorny. The pedicels occur from 2 to 7 in a cluster. The fruit assumes sometimes an oval shape. Cleome viscosa (L. Sp. Pl. 672, edit. secund. 938), which probably is to be found as commonly in New Guinea as in North Australia and South Asia, has as yet not been recorded specially from New Guinea, so far as I am aware, perhaps because this herb is of wide tropical distribution in the eastern hemisphere. In De Candolle's great leading work and in most other phytographic publications only the second edition of Linné's Species Plantarum, published 1762–1763, is quoted for this and all other earlier Linnéan plants, whereas the first edition of this ever memorable foundation-work of universal phytography was issued already in 1753 with pagings very different to those of the second edition or of the third edition, which latter was published at Vienne in 1764 and is indeed merely a reprint of the second Stockholm issue.

MELIACEÆ.

Aglaia elæagnoidea.

Benth. Flor. Austral. i. 383.

Ratau-River.

Miquel (Annal. Mus. Bot. Lugd. Batav. vol. i. part ii.) adduces the subsequent Meliaceæ from New Guinea:

Dysoxylon caulostachyum, Miq. l. c. 12.

Dysoxylon lasiocarpum, Miq. l. c. 13.

Dysoxylon Kunthianum, Miq. l. c. 13.

Dysoxylon amooroides, Miq. l. c. 16.

Dysoxylon molle, Miq. l. c.

Aglaiopsis glaucescens, Miq. l. c. 58.

Carapa Moluccensis, Lam. Dict. i. 621; Miq. l. c. 62. Besides four species of Aglaia requiring comparison with A. elæagnoidea.

Heritiera litoralis.

Ait. Hort. Kew. iii. 546.

Ratau-River and coast opposite Yule-Island.

TILIACEÆ.

Elæocarpus Arnhemicus.

F. M. Report for the Intercol. Exhib. of 1867, p. 24; E. obovatus var. foveolata, Benth. Flor. Austr. i. 281.

Yule-Island.

Reedy's only flowering specimen is referred here with doubt; the leafstalks are conspicuously longer, and the fruit when obtained would need comparison. The typical E. obovatus has the petioles extremely short, the leaves smaller, particularly narrower and attenuated gradually into a cuneate base, their denticulations are rather less acute and numerous, the fringes of the petals seem fewer and therefore broader, the anthers are slightly downy not smooth, the ovary is glabrous not somewhat silky. The fruits of all three plants may be different; that of E. Arnhemicus is twice or thrice as large as that of E. obovatus. To the latter species belongs unquestionably E. parviflorus (A. Rich. Voy. d'Astrolabe, Botaniq. pp. 67–69, t. 24), although Delile's drawing

exhibits the anthers mucronate, such as are not normal in the genuine plant. I have not recognised the Papuan species among Indian and Polynesian plants known to me, but the nearest allied are Elæocarpus amœnus (Thwait. Enum. of Zeil. Plants, 38), E. longifolius (Blum. Bijdr. p. 120), E. rotundifolius (Brogn. et Gris in Annal. des Scienc. Nat. 1864, p. 356), and E. laurifolius (A. Gray Bot. of Wilk. Exped. 203).

EUPHORBIACEÆ.

Mappa tanaria.

J. Muell. in Cand. Prodr. xv. sect. ii. 997.

Mainland opposite Darnley-Island and Yule-Island.

In Miquel's Annal. Mus. Bot. Lugd. Bat. the two following Euphorbiaceous plants are mentioned from New Guinea:

Mallotus tiliæfolius, J. Muell. in Schlechtend. Linnæa xxxiv. 190.

Alchornea Javensis, J. Muell. l. c. 170.

In the extensive and elaborate disquisition of this great order of plants in De Candolle's Prodromus vol. xv. sect. ii. no special record of any Euphorbiaceous plants from New Guinea seems to occur, though numerous genera and species may be expected to exist there.

RHAMNACEÆ.

Colubrina Asiatica.

L. C. Richard. et Brogniart in Annal. des Scienc. Natur. x. 368, t. 15, f. 3.

Ratau-River and Sue-Island.

LEGUMINOSÆ.

Tephrosia purpurea.

Persoon Synops. Plant. ii. 329.

Mainland opposite Darnley-Island and Yule-Island.

Miquel (Flor. Ind. Batav. vol. i.) enumerates the following plants of this order from New Guinea:

Desmodium dependens, Blume in Miq. Fl. Ind. Bat. i. 248. To this in all probability belongs D. pendulum, Tyesm. sec. F. M. in Campb. New. Hebrid. p. 9.

Abrus precatorius, L. Syst. Veg. ed. xii. 472.
Pongamia volubilis, Zoll. et Mor. Verzeichn. p. 3.
Derris uliginosa, Benth. in Plant. Junghuhn. i. 252.
Derris Timorensis, Blume in Miq. Flor. Ind. Batav. i. 138.
Dalbergia monosperma, Dalz. in Hook. Kew Miscell. ii. 36.
Dalbergia densa, Benth. in Hook. Lond. Journ. of Bot. ii. 237.
Guilandina Bonduc, L. Sp. Pl. 381.
Cassia mimosoides, L. Sp. Pl. 379.
Cassia Sophera, L. Sp. Pl. 379.
Afzelia Amboinensis, Benth. et J. Hook. Gener. Plant. i. 580.
Bauhinia ferruginea, Roxb. Flor. Indic. ii. 331.
Albizzia rotundata, Blume in Miq. Flor. Ind. Batav. i. 20.
Albizzia saponaria, Blume in Miq. Flor. Ind. Batav. i. 19.

Plants of almost universal range through the intratropical regions of the eastern hemisphere, such as species of Crotalaria, Indigofera, Æschynomene, Zornia, Desmodium, Uraria, Flemingia, Lespedeza, Sesbania, Canavallia, Phaseolus, Rhynchosia, Sophora, are not specially mentioned in Miquel's work from New Guinea, as their wide distribution would not call for annotations of localities.

MYRTACEÆ.

Eucalyptus Papuana.

(Sect. Leiophloiæ.)

Branchlets towards the summit slightly angular; leaves scattered, short-petioled, chartaceous, oblong-lanceolar, dull green, hardly oblique; their lateral veins fine, numerous, very patent; their longitudinal vein close to the margin; the oildots exceedingly minute, almost obliterated; peduncles axillary, short, slender, bearing an umbel or a cymous corymb of but few flowers; *calyx rather small, pearshaped,* without angules, borne on a slender pedicel of nearly the same length; *the lid patellar, several times shorter than the tube,* almost membranous, not pointed; anthers narrow-oblong, their parallel cells opening longitudinally throughout; *fruit hemiellipsoid, its margin thin, long surpassing the valves;* style only by its summit exserted; stigma not dilated; vertex of the capsule flat; seeds wingless.

On the mainland of New Guinea opposite to Yule-Island, about twelve miles distant from the shores.

Branchlets thin. Petioles $\frac{1}{2}$–$\frac{2}{3}''$ long. Leaves 3–5″ long, not shining. Umbels deflexed. Whole calyx 3–4‴ long. Fruit nearly $\frac{1}{2}''$ long, about $\frac{1}{3}''$ wide.

The species seems distinct from E. clavigera in longer and narrower leaves with less prominent veins, in thinner petioles, in less numerous flowers on shorter pedicels, and perhaps in the form of the fruit. The discrimination of the likewise closely allied E. tesselaris is less difficult.

The occasion is afforded of alluding here to the characteristics of the very few congeners properly known from beyond Australia. E. alba has the leaves nearly æquilateral, the almost hemisphærical calyx-lid protracted into an umbonate apex, the capsules 3–4 celled, the valves barely semiexserted and the seeds wingless. The identity of E. tectifica with E. alba is not yet established beyond doubt.

E. Decaisneana, according to Timor specimens kindly sent by Dr. Scheffer, the Director of the Botanic Garden of Java, belongs to the series Normales, not to the Renantheræ; its leaves are more or less conspicuously inæquilateral; the margin of the calyx-tube is somewhat protruding beyond the vertex of the capsule at least in a young state.

The collection transmitted by Sir Will. Macarthur contains the leaves of another Papuan species found along with E. Papuana, to all appearance belonging to this genus, and in foliage similar to E. platyphylla. This would indicate another extra-australian Eucalypt irrespective of E. moluccana and E. multiflora, if these should really prove congeners.

Barringtonia speciosa.

R. and G. Forster Char. Genr. 76, t. 38.

Ratau-River.

Of this the fruit only occurs in the collection, but doubtless it belongs to this species.

Among Myrtaceæ the following are specially recorded from New Guinea:

Melaleuca Leucadendron, L. Mantissa Plant. 105.

Eugenia Blumei (Jambosa ovalifolia, Blume Mus. Bot. Lugd. 98).

Eugenia lancifolia, Miq. Annal. Ind. i. 17. (Jambosa auriculata, Bl. l. c. 104).

Eugenia Benthami (Syzygium nitidum, Benth. in Hook. Lond. Journ. of Bot. ii. 221).

Eugenia litoralis, Benth. et J. Hook. Gen. Plant. 719. (Jossinia litoralis, Bl. Mus. Bot. Lugd. i. 124).

Myrtus laxiflora (Nelitris laxiflora, Bl. l. c. 74).

Myrtus Coriandri (Nelitris Coriandri, Bl. l. c. 74).

Rhodamnia glauca, Bl. l. c. 79.

Vast additions to the plants of this order may be expeeted from the forest-mountains of New Guinea.

SANTALACEÆ.

Exocarpus latifolia.

R. Br. Prodr. Flor. Nov. Holl. 356.

Ratau-River and Yule-Island.

RUBIACEÆ.

Scyphiphora hydrophylacea.

Gærtn. de Fruct. iii. 91, t. 196.

Ratau-River.

The collection eontains also the leaves of a Morinda, probably M. citrifolia, of Myrmecodia echinata, Hydnophytum formiearum and several other rubiaceous plants. Miquel (Flora Ind. Batav. vol. ii. et Annal. vol. iv.) noticed from Papua:

Saprosma arborea, Bl. Bijdr. 957.

Uncaria appendiculata, Benth. in Hook. Lond. Journ. of Bot. ii. 222.

Morinda gemella, Miq. Flor. Ind. Bat. ii. 247.

Morinda glomerata, Miq. l. c. 247.

Cœlospermum seandens, Bl. Bijdr. 994.

Pavetta Rothiana, Cand. Prodr. iv. 491.

Pavetta Zippeliana, Miq. Annal. Mus. Bot. Lugd. iv. 201.

Coffea Novo-Guineensis, Miq. l. e. iv. 259.

COMPOSITÆ.

Pluchea Indica.

Lessing in Schlechtend. Linnæa, 1831, p. 150.

Ratau-River. A new Australian locality for this plant is Port Darwin.

PEDALINEÆ.

Josephinia grandiflora.

R. Br. Prodr. Fl. Nov. Holl. p. 520.

Ratau-River, Yule-Island and other islands close to New Guinea.

ASPERIFOLIÆ.

Tournefortia argentea.

Linn. Fil. Suppl. Plant. 133.

Ratau-River, Yule-Island and on some of the Straits-Islands.

Tournefortia sarmentosa.

Lam. Illustr. 1877.

Mainland opposite Yule-Island and Darnley-Island.

OLEACEÆ.

Jasminum didymum.

G. Forst. Florul. Insul. Austr. Prodr. 3.

Mainland abreast of Yule-Island.

J. rupestre, Blume Mus. Bot. Lugd. i. 280, from New Guinea may be perhaps a form of Forster's plant, as far as from description can be judged, the var. contracta mediating the transit.

Visiania undulata, Miq. Flor. Ind. Bat. ii. 548, recorded from New Guinea, may be referable to Olea; its fruit seems unknown.

VERBENACEÆ.

Clerodendron inerme.

R. Br. Prodr. 511, et in W. T. Ait. Hort. Kew, sec. edit. vol. iv. 65.

Ratau-River.

Vitex trifolia.

L. fil. Suppl. Pl. 293.

Ratau-River; the unifoliolate variety; also on various of the smaller islands.

PREMNA INTEGRIFOLIA.

Linné Mantiss. Plant. 252.

Ratau-River and Straits-Islands.

The leaves of a Callicarpa are also contained in the collection.

ASCLEPIADEÆ.

DISCHIDIA NUMMULARIA.

R. Br. Prodr. Fl. Nov. Holl. 461.

The specimens from New Guinea are flowerless, but appear to pertain to this species.

DISCHIDIA TIMORENSIS.

Decaisne in Nouv. Annal du Mus. 377, t. 17.

To this seems to belong a species with ascidia from New Guinea and which extends to North-East Australia, but of which the flowers have on neither place as yet been obtained.

Asclepiadeæ specially mentioned already from New Guinea are:

Dischidia ovata, Benth. in Hook. Lond. Journ. of Bot. 1843, p. 226.

Dischidia peltata, Blume Mus. Bot. Lugd. i. 148.

Gymnema recurvifolium, Bl. l. c. 150.

Pterostelma albiflorum, Bl. in Rumphia, iv. 33, t. 188.

Hoya purpurea, Bl. in Rumph. iv. 30, t. 182.

Hoya globulifera, Bl. Mus. Bot. Lugd. i. 44.

Hoya pruinosa, Miq. Fl. Ind. Bat. ii. 525.

ACANTHACEÆ.

ACANTHUS ILICIFOLIUS.

L. Sp. Pl. 639.

Ratau-River.

CASUARINEÆ.

CASUARINA EQUISETIFOLIA.

R. et G. Forst. Charact. Gen 103, t. 52.

Cocoa-nut Island.

SCITAMINEÆ.

Tapeinocheilos pungens.

Miq. Annal. Mus. Lugd. iv. 101–102, t. 4.

Ratau-River. The Rev. Mr. Macfarlane observed it on the Baxter's River, lately explored in the *Ellen Gowan*. Mr. Fitzalan found recently this magnificent plant on the Daintree-River, and furthermore it has now also become known from the vicinity of Cape York. It was first for Australia identified in the Fragm. Phytogr. Austr. viii. 26, where also a short note on the fruit was given.

Reedy's collection contains also plants of the genera Cupania, Calophyllum, Semecarpus, Dysoxylon, Pittosporum, Acacia (phyllodineous), Panax, Gardenia, Scævola, Achras, Ficus, Cycas, Licuala, but not in a state to determine their precise specific position. To facilitate a preliminary insight into the vegetation of New Guinea, as far as hitherto known, it may be added, chiefly from Blume's and Miquel's writings, that there the following genera have representatives:

Wormia, Nymphæa, Anamirta, Chlænandra, Stephania, Pyrnarrhena, Myristica, Polyalthia, Popowia, Orophea, Goniothalamus, Artabotrys, Opilia, Cardiopteris, Lasianthera, Triphasia, Melanococca, Aneistrocladus, Anisoptera, Sapindus, Nephelium, Jægera, Harpullia, Allophylus, Dodonæa, Odina, Mangifera, Canarium, Ganophyllum, Polygala, Sauranja, Tristellateia, Leea, Vitis, Kleinhovia, Melochia, Sponia, Celtis, Gironniera, Fleurya, Procris, Boehmeria, Cyphophus, Erioenide, Streblus, Nepenthes, Chavica, Polygonum, Cyathula, Gomphrena, Liquidambar, Rhizophora, Kandelia, Ceriops, Lumnitzera, Osbeckia, Medinilla, Memecylon, Cinnamomum, Tetranthera, Litsæa, Salacia, Hippocratea, Casearia, Trevesia, Heptapleurum, Tetraplasandra, Gastonia, Osmoxylon, Lonicera, Viscum, Geniostoma, Fagræa, Chætosus, Neuburgia, Kopsia, Pseudochrosia, Tecoma, Ægiceras, Chrysophyllum, Maba, Gnetum, Podocarpus, Areca, Kentia, Orania, Ptychosperma, Caryota, Licuala, Cocos, Korthalsia, Calamus, Dæmonorops, Metroxylon, Nipa, Musa, Freycinetia, Forrestia, Disocorea, Alpinia, Cadetia, Sarcopodium, Podochilus, Appendicula, Cheirostylis, Hetæria (Blume Bijdr. p. 410, but not Hetæria, Endl. Gen. Plant. p. 133, which I have changed to Pritzelia), Apostasia, Xenophya, Rhaphidophora, Pothos, Cryptocoryne, Amorphophallus, Centhotheca, Oleandra, Grammitis, Vittaria.

ORCHIDEÆ.

Dendrobium antennatum.

Lindley in Hooker's London Journal of Botany 1843, p. 236 ; Bentham Botany of the voyage of H.M. Ship *Sulphur*, 1844, t. 59.

Glabrous; leaves alternate, coriaceous, lanceolate, not keeled; flowers several in the raceme, greenish yellow; *inner sepals twice as long as the outer ones narrow lanceolate-linear;* lateral sepals broadly falcate-semilanceolar, several times longer than the conical-cylindric spur; *labellum as long as the outer sepals; its terminal lobe roundish-rhomboid* short-acuminate or simply acute, about half as long as the rest of the labellum; the lateral lobes blunt or rather acute, the whole greenish-yellow and streaked with purple veins, the thickened axis towards the base and towards the junction of the upper lobe raised into two thin plates; the two outer of the three streaks of the upper lobe laminar towards the base; column several times shorter than the labellum; *capsule fusiform-ovate, large,* the three outer valves forming broad longitudinal bands free and overlapping at their margins.

New Guinea; Hinds.

This orchid, though not contained in Sir Will. Macarthur's sending, is here inserted, as the writer had an opportunity of examining a living plant brought from the Duke of York's Island (between New Ireland and New Britain) by Mr. C. Walter, who while under engagements of the young ornithologist, Baron A. von Hugel, accompanied the Rev. Mr. Brown, of the Wesleyan missions, in his recent voyage, and obtained also on York's Island the rare Bæa Commersoni (R. Br. in Horsf. Plant. Jav. Rar. p. 120) and Coccoloba platyclada (F. M. in Hook. Bot. Magaz. 5382).

The leaves and particularly the flowers of our specimen are rather smaller than those of D. Tokai; the sepals are much more unequal, not of a pure yellow; the labellum is not white and the spur much thinner, while the upper not the lower portion of the labellum is the shortest. D. macranthum from Vanicoro is still more distant. The extension of the inner beyond the outer sepals occurs however in D. Mirbelianum, (Gaudichaud Botanique, Freycenet Voyage autour du Monde, pl. 38), which together with D. veratrifolium, D. bilobum, Saccolabium fasciculatum and Vanda Hindsii was noticed by Lindley from Hinds's New Guinea collection. Dendrobium tridentiferum and D. bifalce and Sacco-

labium quinquefidum (Lindl. in Hook. Lond. Journ. ii. 236 and 237) recorded also from Hinds's gatherings but without locality, may also have come from New Guinea. Miquel (Fl. Ind. Bat. iii. 644 et 645) after Blume mentions from thence D. atropurpureum and D. spectabile. Neither Australian nor Papuan specimens of D. Johannis (G. Reichenb. in the Gardn. Chronicle 1865, p. 890; Xenia Orch. ii. 165; Hook. Bot. Mag. 5540; Benth. Flor. Austr. vi. 279) have been seen by the writer, but Sir Will. Macarthur transmits now this plant from Hammond's Island of the Solomon-Group.

FILICES.

Polypodium punctatum.

Thunberg Flor. Japon. 337.

Mainland of New Guinea.

P. ferrugineum (Baker in Hooker's Synops. Filic. 318) occurs in Zippelius's Collection of New Guinea Plants. P. stigmosum (Swartz Synops. Filic. 29 et 226) is likewise mentioned specially as a Papuan fern by Baker.

Aspidium molle.

Swartz Synops. Filic. 49.

Mainland of New Guinea.

A. Menyanthidis (Presl. Reliquiæ Hænk. i. 28; A. pachyphyllum, Kunze in der Bot. Zeitung vi. 259) is recorded from New Guinea by Sir Will. Hooker (Spec. Filic. iv. 56).

Adiantum Æthiopicum.

L. Sp. Plant. edit. secund. 1560.

Mainland of New Guinea.

This species was not distinguished by Linné when he wrote the first edition of his famous foundation-work for species.

Asplenium laserpitifolium.

Lam. Encycl. Méthodiq. i. 310 (1783).

Ratau-River and coast opposite Yule-Island. Dr. Hinds brought from New Guinea A. scandens (J. Sm. in Hook. Spec. Filic. iii. 216).

ASPLENIUM FALCATUM.

Lam. Encycl. Méth. i. 306.

Ratau-River.

PTERIS LONGIFOLIA.

L. Sp. Pl. 1074 (edit. prim. anno 1753).

Yule-Island.

PTERIS TRIPARTITA.

Swartz Synops. Filic. 100 et 293.

Darnley-Island.

In the damp jungles of New Guinea numerous species of this and other large genera of ferns must occur, the commoner species of which would not always be recorded in general works from any particular regions such as those of Papua.

DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

II.

THE main material for this second publication on New Guinean plants was placed disinterestedly at my disposal by the Reverend S. Macfarlane, who some months ago explored the Baxter- and Fly-River, with a view of carrying the blessings of Christianity gradually to the heathens in the recesses of the great Papuan Island. While these pages were under preparation I received also from Dr. Scheffer of Java the first portion of the yet unpublished "Annales du Jardin Botanique de Buitenzorg," a periodical thoughtfully commenced this year, and such one as each great phytologic institution for the records of its reasearches ought to possess. Dr. Scheffer's first essay in these promising annals dwells on Mr. Teysmann's plants gathered on the north-west coast of New Guinea, from which part also some records—though hitherto much overlooked—are extant already in the volume published by Achille Richard, from 1832 to 1834, on the botanic collections secured during the discovery-voyages of Admiral Jules Dumont d'Urville, in the corvette *Astrolabe*. So far as cursorily the opportunity was afforded me in the

present pages, I have alluded to this scattered material with a desire, to facilitate thereby reference to the literature concerning New Guinea plants. As far as yet can be judged from the rather limited collections, which hitherto could be formed by collateral unaided exertions of the missionaries, the vegetation in the south-eastern part of the great island assumes a very different aspect to that of the north-west, as there revealed by the French and particularly by the Dutch naturalist. Sundaic forms seem to predominate in the regions facing the Moluccas and Philippine-Islands almost to the exclusion of others, though the very recent discovery of an Araucaria on Mount Arfak by the illustrious Dr. Beccari introduces also there already a partly Australian type into the almost Moluccan vegetation. The case in the south-east of New Guinea appears to be decidedly different; there pure Australian forms are at least to a small degree mixed into the Malayan vegetation, which latter flourishes also extensively in Northern and in tropical Eastern Australia. The occurrence of a Banksia and phyllodinous Acacia, together with Eucalypts, establishes clearly a close alliance of one portion of the plants of the south-eastern regions with that of Australian physiognomy. How far this somewhat enigmatic distribution of genera and even of species—thought to be endemically Australian —can be explained perhaps by geologic considerations, we have as yet no means of ascertaining. Of still higher interest than this question remains the investigation of the sub-alpine and glacier-flora throughout the wide chains of the lofty Papuan mountains. We are utterly unacquainted yet with any plants from the Snowy Mountains there, though their comparison with the alpine forms of vegetable life occurring in the icy highlands of Australia explored by myself, of Tasmania and New Zealand mainly described by Dr. Hooker, as well as their collation on the other hand with the largely peculiar vegetation of the higher zones of the Himalaian ranges and of any alpine mountains of the large islands in the Indian Archipelagus, will likely lead to manifold

philosophic contemplations, far more important for a comprehensive history of our globe, than the absolute specific elucidation of the vegetative forms themselves. In my concluding these introductory words it is but just to express my gratitude to the Hon. Sir Jam. McCulloch, the Premier of the Victorian Ministry, and to the Hon. J. A. MacPherson, the Chief Secretary, for permitting the issue of these records on the Papuan plants as official documents in connection with our phytographic museum.

It is also gratifying to add, that the reverend gentleman, who generously contributed the material for this second treatise, has declared his intention, to secure likewise during his future missiouary voyages and travels, with the aid of his reverend brethren, new material for the progressive elucidation of the Papuan Flora; while the distinguished zoologist, Signor d'Albertis, through the friendly mediation of the learned physician and naturalist, Dr. G. Bennett, has expressed his willingness, to devote during his most promising new traversings in the east of Papua also some of his precious time there to the formation of phytologic collections with a view of rendering such accessible to myself; and thus we may trust, that Australia may share in the honor of shedding extensively light on the vegetable products—some perhaps of undreamed value—which emanate solely from the secluded main-haunts of the Birds of Paradise.

Melbourne, 7th April 1876.

DILLENIACEÆ.

Wormia alata.

R. Br. in Cand. Regn. Veget. Syst. Nat. i. 434.

Baxter's River; Rev. S. Macfarlane.

In Australia this noble tree extends southward at least as far as Rockingham's Bay. Height up to 60 feet. The bark is outside thinly lamellar, inside red; the wood rather soft. The leaves attain a length over 1 foot. The petals are yellow.

The only other Dilleniaceous plant as yet on record from New Guinea is Wormia castaneifolia, Miq. Annal. Mus. Bot. Lugd. iv. 78.

NEPENTHACEÆ.

Nepenthes Kennedyi.

F. M. Fragm. Phytogr. Austr. v. 154.

Baxter's River; Rev. S. Macfarlane.

The identification of the Papuan with the Australian plant remains uncertain, as of neither flowers or fruit are as yet known. The Papuan specimens, like some gathered by Mr. C. Moore at Cape Sidmouth, are slightly downy. The fact however that also in New Guinea this pitcher-plant is associated with Tapeinocheilos pungens, seems to speak for the correctness of the identification.

N. phyllamphora, Willd. Sp. Pl. iv. ii. 874, to which our plant seems allied, has been gathered by Mr. Teysmann in New Guinea, according to Blume; it is thus quoted by Dr. Hooker in his masterly review of the Nepenthaceæ for De Candolle's Prodr. vol. xvii. 90–105. Most likely the Papuan Mountains will furnish yet many kinds of pitcher-plants.

STERCULIACEÆ.

Helicteres angustifolia.

Linné Spec. Plant. 963.

Baxter's River; Rev. S. Macfarlane.

The section Methorium, to which this species belongs, might well again be raised to generic rank. H. semiglabra, from tropical East Australia, seems merely a variety with shorter and woolly fruits.

Other Sterculiaceæ known from New Guinea are:
Commersonia echinata, R. et G. Forst. Charact. Gener. 43, t. 22.
Abroma fastuosa, Gærtn. de Fructib. t. 64.
Kleinhovia hospita, Linn. Spec. Plant. edit. sec. 1365.
Melochia Indica, A. Gray in Wilk. Unit. Stat. Explor. Exped. 93 (Visenia Indica, Houtt. Syst. 287, t. 46).

SAPINDACEÆ.

Dodonæa viscosa.

Linné Mantissa Plantarum 238.

Baxter's River; Rev. S. Macfarlane.
The form, specifically distinguished by De Candolle (Prodr. i. 616) as D. Burmanniana.

Nephelium ferrugineum.

Spanoghea ferruginea, Blume in Rumphia, iii. 173.

Fly-River; Rev. S. Macfarlane.
The desirability of uniting Spanoghea with Nephelium has been pointed out already in 1859, on the occasion when I described some Australian species, in the transactions of the Phil. Institute of Victoria, iii. 25 and 26.
Other Sapindaceæ, already recorded from New Guinea, are:
Sapindus cuspidatus, Bl. Rumphia, iii. 97.
Nephelium Diplocardia (Irina Diplocardia, Bl. Rumphia, iii. 115).
Jægera speciosa, Bl. Rumphia, iii. 155.
Cupania Zippeliana, Bl. Rumphia, iii. 160.
Cupania obtusa, Miq. Fl. Ind. Batav. i. part ii. 567.
Harpulia rupestris, Bl. Rumphia, iii. 175.
Harpulia cupanoides, Roxb. Hort. Bengal, 86.
Allophylus Sundanus, Miq. Fl. Ind. Bat. i. part ii. 575.
Allophylus Cobbe, Bl. Rumph. iii. 131.

EUPHORBIACEÆ.

Macaranga aleuritoides.

Stipules very long, connate into a cylinder, gradually pointed, as well as the branchlets tomentellous and besides covered with soft appressed

hair; *leaves large, fixed at the basal extremity, cordate-orbiculate, cleft to one-third or less into three lobes,* above almost glabrous, beneath short-pubescent and conspersed with very minute glands, the three primary nerves arising from the base of the leaves; capsules three-celled, glandular-pulverulent and beset with rather long hardly rigid echinular excrescences.

On the Fly-River; Rev. S. Macfarlane.

Branchlets thick, distantly marked by the annular scars left by the stipules. The latter nearly 3 inches long, reminding of those of many Ficus-species, consisting of a single piece, membranous in texture. Leaves on rather long cylindrical strong petioles, so far as seen from a span to a foot long and nearly as broad, irrespective of the two anterior incisions only minutely denticulate, above shining, beneath opaque; their primary as well as the pinnately disposed secondary nerves very prominent beneath; their primary veins parallel, transverse and beneath also prominulous; the secondary veins parallel-longitudinal, connected by reticulating veinlets, thus the main-venation rendered almost cancellate. Flowers unknown. Fruits with turgid cells, nearly half an inch high; the endocarp seceding. Seeds roundish, somewhat verrucular, without any arillus; testa crustaceous; embryo and albumen not observable in the obtained seeds.

The large stipules place this species near M. stipulosa, M. hispida and M. longistipulata. From the first of these three our plant differs already in the basifixed therefore not peltate leaves; from M. hispida, according to a typic specimen kindly sent by Mr. S. Kurz, M. aleuritoides is easily separated by the closely downy and hairy branchlets petioles and peduncles, by the beneath pale and not almost glabrous but lobed leaves, with more prominent veins, yet without any very visible and copious glandular impressions, and with a far less waved margin, also by the more hairy fruit with thicker excrescences. Again from M. longistipulata the new Papuan species recedes on account of its stout branchlets, its long stalked not strictly penni-nerved but rather palmati-nerved leaves, which moreover so far as known are never lobeless, nor ovate-lanceolar, nor beneath densely impressed with glands, and further in capsules much larger than those described of M. longistipulata. The structure of the flowers, when they become known, will likely reveal further diagnostic differences yet, to distinguish this from the several allied species.

Phyllanthus buxifolius.

Reinwardt in Blume's Catalogus van eenige gewassen in's Lands Plantentuin te Buitenzorg, 1823, p. 106.

On Baxter's River; Rev. S. Macfarlane.

The specimens from this large stream as well as others, gathered by Mr. Fitzalan in Lieut. Smith's exploration of the æstuary of the River Burdekin, are not in fruit, but otherwise accord fully with Javanese specimens, marked as a new species of Scepasma in Zollinger's collection. Miquel already (Flora Indiæ Batavæ i. p. ii. 379) gives the measurement of the leaves as ranging from $\frac{1}{3}$ to 1 inch.

Dr. Scheffer (Annal. Hort. Bot. Buitenzorg, 1876, p. 48) adds the two following Euphorbiaceæ for New Guinea:

Alchornea Javensis, J. Müll. in Linnæa xxxiv. 170.

Mallotus tiliifolius, J. Müll. l. c. 190.

Ach. Richard records: Euphorbia pilulifera, L. amœn. acad. iii. 114.

LEGUMINOSÆ.

Cassia Javanica.

Linné Spec. Plant. 379.

On the Fly-River; Rev. S. Macfarlane.

For the identification of this Papuan Cassia I have relied on Wight's drawing, published in the Icones Plant. Indiæ, t. 252, in the absence of original specimens. The plant, brought by the zealous missionary, was not in fruit; leaves and flowers however agree with the illustration quoted, but the more decidedly renate stipules point towards C. megalantha (Decaisn. Annal. du Mus. 136). The range of variability of these Cassiæ, known to be very wide in some Australian species, is as yet not sufficiently ascertained. Bentham, in his full monography of this large genus (Transact. of the Linnéan Society of London xxvii. 517), lays stress on veinless petals for the diagnosis of C. Javanica in contrast to some species from tropical Africa; but in the delineation quoted above, and seemingly emanating from Roxburgh, the petals are strongly veined, and so they are also in our Papuan plant. The color of the flowers distinguish this magnificent Cassia from all hitherto-known Australian species; still perhaps this, like so many other Malayan and Papuan plants, may also stretch across to the little explored jungles of North-East Australia.

Dr. Scheffer enumerates additionally the following plants of this order as inhabitants of New Guinea:

Phylacium bracteosum, Bennett in Horsfield's Plant. Javan. Rarior. p. 159, t. 23.

Mucuna Novo-Guineensis, Scheff. Annal. Hort. Buitenzorg, 1876, p. 9. Remarkable for brilliantly orange-colored flowers.

Derris scandens, Benth. Synops. Dalberg. p. 103.

Cæsalpinia (Guilandina) Bonducella, Fleming in Asiat. Res. 11, 159.

Bauhinia Teysmanniana, Scheff. l. c. p. 10. This may be the species recorded by Bentham as B. ferruginea.

Afzelia bijuga, A. Gray, Bot. of Wilk. Unit. Stat. Explor. Exped. 467, t. 51. Identified by Dr. Scheffer with Intsia Amboinensis, thus widely a representative of the tropic maritime vegetation in the eastern hemisphere and as such extending also, as now for the first time shown, to the northern parts of Queensland.

Maniltoa grandiflora, Scheff. l. c. 20. Regarded as closely allied to Cynometra grandiflora, A. Gr. l. c. 470, t. 52.

Albizzia sessilis (Pithecolobium sessile, Scheff. l. c. p. 22).

Albizzia Papuana (Pithecolobium Papuanum, Scheff. l. c. p. 22).

Acacia pseudo-arabica, Blume in Miq. Flor. Ind. Bat. i. 8. The distinctive characters, by which this can be separated from A. Arabica or perhaps A. Seyal, need yet to be pointed out more clearly.

Acacia Simsii.

All. Cunningham in Hook. Lond. Journ. of Bot. i. 368.

On the Baxter's River; Rev. S. Macfarlane.

No differences could be discerned between specimens in young fruit, brought from New Guinea, and the Australian plant. Among known extra-Australian congeners it bears some resemblance to A. Richii (A. Gr. in Wilk. Exped. Bot. i. 482, t. 53); the phyllodia of the latter however are broader and often falcate, with more nerves and somewhat reticular veins, the peduncles of the flower-heads are not placed solitary, the fruit is much broader and the seeds are placed transversely, not as in A. Simsii longitudinally. The foliage of A. spirorbis (Labill. Sert. Austro-Caled. t. 69) is not dissimilar, but the arrangement of the flowers and the form of the fruits are very different.

A. Richard noted from Doreh already:

Cæsalpinia pulcherrima, Swartz Observ. 165.

Clitoria ternatea, L. Sp. Pl. 753.

Inocarpus edulis, R. and G. Forster Charact. Gener. 65, t. 33, was among the plants found by Lesson at Port Doreh. Seemann (Flor. Vitiens. p. 70) was inclined to refer this, the Tahitian Chesnut-tree, rather to Chrysobalaneæ than to Leguminosæ.

Canavalia obtusifolia, Cand. Prodr. ii. 404, was found according to Prof. Oliver at Geelvink's Bay by Dr. Meyer.

MYRTACEÆ.

Leptospermum Amboinense.

Reinwardt in Blume's Bijdragen tot de Flora van Nederlandsch Indie, p. 1100.

On the Baxter-River; Rev. S. Macfarlane.

The plant from this locality is here drawn to Reinwardt's not without doubt, as flowers and fruits have not been seen; the branchlets moreover are less angular, while the leaves are smaller and of thicker consistence; but in these respects the Australian species vary much. L. Amboinense extends to Borneo according to Korthals's collections, and has therefore a comparatively wide geographic range.

RUBIACEÆ.

Randia densiflora.

Bentham, Flora Hongkongens, 155.

Katau-River; J. Reedy. The great watercourse, just mentioned, was incorrectly written in the first portion of this enumeration. This plant, with those enumerated in the first part of the present publication, I owe as a Papuan one to the generous liberality of Sir Will. Macarthur, whose collector gathered it in Mr. W. McLeay's pioneer-expedition for science-research in South Eastern Papua.

Additional species of Papuan Rubiaceæ, recorded from Mr. Teysmann's collections by Dr. Scheffer in the first volume of the "Annales du Jardin Botanique de Buitenzorg," 1876, pp. 28–32, are:

Ophiorrhiza Mungos, Linn. Amœn. Acad. ii. 127.

Mussænda frondosa, Linn. Sp. Pl. 177.

Randia Zippeliana (Gynopachys Zippeliana, Scheff, l. c. p. 28). This seems to differ from R. densiflora according to Dr. Scheffer's description in always extra-axillary inflorescence and more numerous nerves of the leaves.

Timonius rigidus (Polyphragmon rigidum, Miq. Annal. Mus. Bot. Lugd. iv. 243).

Timonius pseudo-capitatus (Polyphragmon pseudo-capitatum, Scheff. l. c. p. 29).

Plectronia Moluccana, J. Hook. in Benth. and Hook. Gen. ii. 110, (Canthium Moluccanum, Roxb. Fl. Ind. ed. Wall. ii. 172).

Pavetta Doreensis, Scheff. l. c. 31.

Hydnophytum lanceolatum, Miq. Annal. Mus. Bot. Lugd. iv. 257.

Hydnophytum montanum, Bl. Bijdr. 956.

Hedyotis carnosa.

Korthals in Nederl. Kruidk. Archief. ii. 161.

On the Baxter-River; Rev. S. Macfarlane.

Our plant seems quite identical with the Sumatra plant, of which I possess specimens distributed by Dr. Korthals. The cilia on the calyx lobes are however not developed. The corolla is only $1\frac{1}{2}$–$2'''$ long and imbearded; the seeds are angular and black. H. prostrata (Korth. l. c. 160) seems conspecific. Khasyan specimens of H. cephalaphora, distributed in Kew from Dr. Hooker's collection, have the leaves stronger ribbed and calyx-lobes as well as the corolla considerably longer. Bentham (Flor. Hongkong, 149), in uniting H. cephalophora with H. uncinella (Hook. et Arn. Bot. Beech. 192) and with H. borreroides (Champ. in Kew Miscell. iv. 171) describes the corolla only two lines long; this discrepancy may perhaps be explainable by dimorphism. The numerous allied species need all careful and extensive study yet on places of their natural growth, before the diagnosis of any can be safely defined. H. Lapérousii (Cand. Prodr. iv. 426), from near the ominous death-place of the unfortunate Admiral Count Lapérouse and his poor companions, according to the illustration in the Atlas of the Voyage de l'Astrolabe, Pl. 23., differs mainly in longer flowers and more strongly nerved leaves from our plant. H. membranacea (Thwait. Enum. Plant. Ceylon. 143), H. macrophylla (Wall. in Wight et Arn. Prodr. Flor. Pœnins. Ind. 408), H. inamœna (Thwait. l. c. 143), H. nodulosa (Arnott. Pugill. 22), H. hispida (Retz. Observ. iv. 23), H. jodoneura (Miq. Flor. Ind. Batav. ii. 181) and other allied species I have compared on this occasion, all appearing clearly distinct from H. carnosa.

Spermacoce Papuana.

Leaves linear, acute, as well as the stems almost glabrous; stipules divided into a few setaceous segments; flowers in the axillary and terminal somewhat verticillar clusters rather numerous; lobes of the calyx four, linear-setaceous, longer than the tube; *lobes of the corolla exceeded three or four times by the length of the tube*, semilanceolar, not auriculate; faux unbearded; stamens hardly longer than the limb of the corolla; both valves of the capsule separating from the membranous septum.

On the Baxter-River; Rev. S. Macfarlane.

Root not obtained. Leaves 1–2 inches long and as many lines broad, slightly revolute, but not much thickened at the margin. Stipular setæ about 2 lines long; nearly of their size and form also the lobes of the calyx. Tube of the corolla about of 3 lines length, gradually narrowed downwards; the lobes outside beset with minute hair. Filaments adnate up to the summit of the tube; the free part not much longer than the narrow anthers. Style smooth, 3–4 lines long. Valves of the capsule about $1\frac{1}{2}$ lines long. Seeds narrow-oblong, black.

This species stands in near relationship to S. lævigata (F. M. Fragm. Phytogr. Austr. iv. 41); the leaves are however not strongly nerved nor mucronulate, the stipular setæ are shorter, the flowers mostly axillary, the limb of the corolla rather shorter in proportion to the tube. The examination of ampler material may reveal hereafter further differences. A plant very similar to the Papuan species was obtained by Mr. Dæmel at Cape York, but its stipules are generally undivided and the corolla is shorter and outside glabrous.

COMPOSITÆ.

Vernonia cinerea.

Lessing in Linnæa 1829, p. 291.

Baxter's River; Rev. S. Macfarlane.

Wedelia biflora, Cand. in Wight's Contribut. p. 18, was gathered at Geelvink's Bay by Dr. Meyer.

Adenostemma viscosum, R. et G. Forst. Charact. Gen. t. 45, was found at the same place by Mr. Teysmann according to Dr. Scheffer.

Emilia purpurea, Cassini Diction. xxxiv. 393, was noted by Lesson at Port Doreh.

APOCYNEÆ.

Alyxia ruscifolia.

R. Brown, Prodrom. Flor. Nov. Holland. 470.

Baxter's River; Rev. S. Macfarlane.

The plant was not obtained in flower or fruit, but otherwise it accords with the East-Australian species.

Chætosus volubilis, Benth. in Hook. Lond. Journ. of Bot. ii. 226, is known from New Guinea among plants of this order, as also the following:

Neuburgia musculiformis, Miq. Flor. Ind. Batav. ii. 403.

Kopsia flavida, Blume Rumphia, p. 28, t. 181.

Pseudochrosia glomerata, Blume Mus. Bot. i. 158.

Cerbera Odollam, Gærtn. de Fructib. ii. 193, t. 124. The last mentioned plant was recently recorded by Prof. Oliver from Dr. A. B. Meyer's small collection formed at Geelvink's Bay, in the Journ. of the Linnéan Society, 1875, p. 29. Dr. Meyer found there also Pentaphragma macrophylla (Oliv.), Scævola Kœnigi, recorded previously by A. Richard, and a species of Hedychium allied to H. angustifolium.

Dr. Scheffer in his "Enumeration des Plantes de la Nouvelle Guinée" in the new periodical mentioned adds the following apocynaceous plants:

Tabernæmontana pentasticta, Scheff. Obs. Phyt. i. 22.

Tabernæmontana Novo-Guineensis, Scheff. Annal. i. 36.

Plumiera Papuana, Scheff. Annal. i. 36.

Among the plants, transmitted by the Rev. S. Baxter, occurs also a Carissa, but without flowers and fruits.

PROTEACEÆ.

Banksia dentata.

Linn. fil. Suppl. Plant. 127.

Baxter's River; Rev. S. Macfarlane.

The flowers and fruits do not occur in the collection, but the leaves agree with the plant described by the younger Linné from Sir Joseph Banks's specimens secured at Endeavour-River. As this one is the only species known to extend along the coast-tracts of North Australia, it may fairly be assumed, that the Papuan plant will prove identical with

ours. The isolation of a Banksia beyond Australia, while plants of this genus reach neither New Caledonia nor New Zealand, remains remarkable.

ORCHIDEÆ.

Dendrobium Macfarlanei.

(Sect. Aporum.)

Glabrous; *stems strongly compressed; leaves distichous, broad- or lanceolate-linear, straight, acute, with an equitant base*, their edge directed towards the stem; peduncles none or exceedingly short; pedicels solitary or two together; flowers small, pale; *outer sepals about half as long as the pouch and the lip*, semilanceolar, broader and longer than the inner sepals; labellum with short lateral lobes and a larger papillous-thickened end-lobe.

On the Baxter-River; Rev. S. Macfarlane.

Stems, so far as known, about one foot high, leafy to the summit, attenuated at the base, and probably not from pseudo-bulbs, each portion between the dark-brownish joints about an inch long and two lines wide, shining, smooth, yellowish, almost concealed by the vaginal persistent portion of a leaf; blade of the leaves when well developed $1\frac{1}{2}$–3 inches long and as many lines broad, acute, thickly chartaceous, finely streaked, by basal diagonal fracture deciduous. Bracts short, crowded around the base of the pedicel; their rigid nerves resisting decay. Pedicels almost capillary, $\frac{1}{3}$ of an inch or less long. Flowers in a dry state pale yellow, in a fresh state probably white. Outer sepals about $2'''$ long; the upper one slightly narrower than the lower ones; the inner sepals much narrower; spurlike portion of the flowers nearly $4'''$ long; labellum seen only in a shrivelled state; its lower portion seemingly not very broad. Pollinia 4, cuneate-ovate, longitudinal, coherent in two pairs. Fruit unknown. The leaves are longer than those of D. micranthum (Lindl. Contrib. Orchid. 3) and the inner sepals not several times shorter than the outer ones. Unlike D. Serra (Miq. Fl. Ind. Bat. iii. 629; Aporum Serra, Lindl. in Wall. Catalog. 2021), the stems are towards the summit not bare of leaves. Again, in D. sinuatum (G. Reichenb. in Walp. Annal. Bot. Syst. vi. 280) the leaves are broader, more approximate, and their persistent basal part leaves tooth-like prominences; the same distinctive notes hold good for D. anceps (Roxb. Flor. Indic. iii. 487), besides the shortness of the leaves of the latter species.

The worthy missionary's collection contains another Dendrobium of the section Aporum; in this the leaves are about as long as those of D. incrassatum (Miq. Fl. Ind. Batav. iii. 631; Aporum incrassatum, Bl. Bijdr. 334; Brogn. Bot. Voy. Coquill. t. 42), but only about half their width, still in the same manner closely approximate and rendering the stem by their lapse serrate. In one specimen occurs the remnant of a solitary axillary naked peduncle, which is about $\frac{1}{2}''$ long and beset with very short glandular hair. Whether the Papuan plant actually belongs to D. incrassatum or to D. anceps or to some other allied species, future researches must decide. Beyond the orchideous plants, already alluded to cursorily in the first fascicle of this publication, we know from New Guinea:

Dendrobium macrophyllum, A. Rich. Bot. Voy. de l'Astrolabe 22, t. 9.

Dendrobium hispidum, A. Rich. l. c. 13, t. 5 (D. umbellatum, G. Reichenb. in Walp. Annal. vi. 303; Cadetia umbellata, Gaudich. Bot. Voy. Freycen. t. 33; C. similis, Blume. Mus. Bot. Lugd. i. 29).

Dendrobium funiforme, Blume Rumphia iv. 40, t. 193 et 198.

Dendrobium heteroideum, Blume Rumphia iv. 40, t. 193.

Dendrobium trichostomum, G. Reichenb. in Journ. Linn. Soc. 1875, p. 30.

Dendrobium insigne, G. Reichenb. in Hook. Lond. Journ. of Bot. ii. 237.

Bolbophyllum grandiflorum, Blume Rumphia iv. 42.

Podochilus densiflorus, Bl. Rumph. iv. 44, t. 192.

Podochilus scalpelliformis, Bl. Rumph. iv. 45, t. 194.

Appendicula penicillata, Bl. Rumph. iv. 46, t. 195 et 200.

Cheirostylis grandiflora, Bl. Fl. Javæ, 45, t. 13 et 17.

Hetæria obscura, Miq. Fl. Ind. Bat. iii. 726.

Hetæria elongata, Miq. l. c.

Apostasia Wallichii, R. Br. in Wall. Plant. Asiat. Rarior, i. 75, t. 84.

LILIACEÆ.

Cordyline terminalis.

Kunth. in Act. Acad. Berol. 1820, p. 30.

Fly-River; Rev. S. Macfarlane.

Scheffer records Dracæna Draco from Humboldt's Bay; but if it really was the Linnéan plant, which Mr. Teysmann saw, then it must have found its way, like into India, so into New Guinea, by cultural introduction.

GRAMINEÆ.

Coix Lacryma Jobi.

Linné Spec. Plant. 972.

On the Upper Fly-River; d'Albertis.

Specimens from the above locality were sent me by Dr. G. Bennett, who for nearly half a century has advanced researches in natural sciences among us, and who has taken a vivid interest in the important exploits of the Italian Naturalist in New Guinea.

Ach. Richard noted from Port Doreh:

Centotheca lappacea, Beauv. Agrostogr. t. 14, f. 7.

Panicum compositum, L. Sp. Pl. 57.

Panicum multinode, Lam. Encycl. iv. 747, which seems referable to P. repens, L. Sp. Pl. edit. sec. 87.

CYPERACEÆ.

Cyperus diffusus.

Vahl Enumerat. Plantar. ii. 321.

On the Baxter-River; Rev. S. Macfarlane.

This stately Galingale must have a wide range through the Papuan Island, as it has been met also on the north-west coast near Port Doreh, from whence already Lesson brought it in 1827, according to the record by Achille Richard, who inserted the plant as C. longifolius (Poir. Encycl. Methodique x. 270) into the botanical volume of the voyage de l'Astrolabe. Kunth (Enum. ii. 30) was inclined to unite Poiret's with Vahl's plant, in which conjecture of their identity he seems to have been fully justified, although more recently Bœckeler (in Linnæa 1868, p. 534 et 535) holds yet both distinct. I find that C. diffusus extends to Ceylon (Thwaites 3931). As well shown by Bœckeler and as also seen by myself, C. Lagorensis (Steud. Glumac. ii. 36) and C. pubisquama (Steud. l. c. 20) are clearly referable to C. diffusus. Of this order of plants are on record as Papuan:

Kyllingia monocephala, Rottboell. Plant. Nov. 13, t. iv.

Carex cryptostachya, Brogn. Bot. Voy. Duperr. 152, t. 25 (Boott. Illustr. Caric. 103, t. 310); also a species of Scleria and another plant, distinguished generically as Cyclocampe, both requiring identification.

FILICES.

Schizæa dichotoma.

Willd. Act. Academ. Erford. 1802, p. 30, t. 3, f. 2.

Baxter's River; Rev. S. Macfarlane.

S. Forsteri, Spreng. Anleitung iii. 175, is known from Waighion-Island, accord. to Miq. Annal. iv. 299.

Adiantum hispidulum.

Swartz Synops. Filic. 124 et 321.

Baxter's River; Rev. S. Macfarlane.

A. caudatum, Linn. Mantiss. 308, is recorded by Mettenius as a Papuan species in Miquel's Annales Musei Bot. Lugd. Batav. iv. 280.

Grammitis pinnata.

F. M. Fragm. Phytogr. Austr. vi. 124.

Baxter's River; Rev. S. Macfarlane.

In justice to Swartz I prefer to maintain his Grammitis as a genus instead of Gymnogramma of Desvaux (in Berlin Magaz. 1811, p. 304), especially as Bernhardi, R. Brown and Willdenow acknowledged Swartz's genus before the first definition of Gymnogramma by Desvaux did appear, although a portion of Swartz's original species of Grammitis required to be transferred to Asplenium and mainly Polypodium. Four species however of those, admitted by Swartz, remain thus unaltered in name typical for Grammitis, including the widely diffused G. leptophylla, described already as a doubtful Polypodium by Linné (Sp. Pl. edit. sec. 1553). Otherwise almost for the same cause numerous other genera might be abolished, among ferns even Polypodium itself, simply because by subsequent closer limitation of the genera it became necessary to transfer of the original species of Polypodium, described in Linné's Sp. Plant., more than half to other chiefly later established genera, not less than 14 belonging to Aspidium and many to Cystopteris, Asplenium, Adiantum, Grammitis, Meniscium, Cheilanthes, Pteris, Davallia, Dicksonia and Cyathea.

DAVALLIA FLACCIDA.

R. Br. Prodr. 157.

On the Baxter-River; Rev. S. Macfarlane.

The near relationship of this fern to Dicksonia davallioides was pointed out already ten years ago in my Fragmenta, v. 118. R. Brown's name will probably have to give way to the older of D. multifida (Sw. Syn. Fil. 137).

Ach. Richard records as occurring at Port Doreh:

Vittaria elongata, Sw. Syn. Filic. 199.

Aspidium unitum, Sw. l. c. 47.

Lygodium circinnatum, Sw. l. c. 153.

Acrostichum aureum, L. Sp. Pl. 1069.

Besides, Richard mentions several species of Asplenium and Aspidium, some of which were then regarded as new, all requiring yet final identification, being overlooked by the principal writers on ferns.

Trichomanes Filicula, Bory in Bot. Voy. Duperr. i. 283. This little and delicate fern was found at Geelvink-Bay by Dr. Meyer.

Beyond the plants, alluded to already in this and the previous publication, we are now acquainted mainly through Dr. Scheffer's important writings also with representatives of the following genera from within the limits of New Guinea: Clematis, Uvaria, Phænanthus, Flacourtia, Garcinia, Eurya, Gordonia, Rhyssopterys, Gonocaryum, Jodes, Euodia (the Euodia suaveolens, just described by Dr. Scheffer, may perhaps prove to be a form of E. longifolia, A. Rich. Voy. de l'Astrolabe 61, t. 22), Soulamea, Hibiscus, Impatiens, Begonia, Celosea, Achyranthes, Smythea, Buchanania, Semecarpus, Sonneratia, Melastoma, Astronia, Rubus, Melothria, Pisonia, Loranthus, Hernandia, Beilschmiedia, Piper, Phaleria, Viburnum, Polyscias, Bidens, Scævola, Mæsa, Myrsine, Payenia, Jasminum, Visiania, Chionanthus, Thylophora, Ipomœa, Lepistemon, Solanum, Ocimum, Cyrtandra, Ruellia, Justicia, Peristrophe, Callicarpa, Clerodendron, Gmelina, Tectona, Faradaya, Avicennia, Quercus, Araucaria, Cycas, Pandanus, Heliconopsis, Maranta, Hedychium, Phrynium, Arum, Sagus, Commelyna, Pollia, Flagellaria, Scleria, Carex, Aristida, Rottbœllia, Cenchrus and Saccharum.

Dr. Bennett has drawn my attention to some notes on Dr. Odoardo Beccari's Papuan Plants in Guido Cora's Cosmos, 1875, p. 94, a copy of which work was obligingly placed at my disposal by the Chevalier

Marinucci, Consul General for Italy at Melbourne. These phytologic data have reference to Mount Arfak and occur in a letter, written by Beccari last year after his ascent of that mountain. He speaks of finding there an Araucaria, a Gunnera, an Epilobium and a Balanophora, of which genera no species from any part of Papua were known before. In the same volume of Cora's journal several passages (at pp. 104, 105 and 107) are contained from Signor D'Albertis's letters, pointing to the occurrence of two Eucalypts at Epa on the Ethrel- or Nicura-River and towards Mount Yule. A representative of the genus Rhododendron seems also to have been found by the Italian sicientific travellers.

DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

III.

The collections for this third publication on Papuan Plants were mainly obtained by the Rev. S. Macfarlane of the London Mission-Society, and by Mr. Andrew Goldie (an emissary of the great Horticulturist S. B. Williams of London), who had the favor conceded of sharing in the last mission-voyage, which shed so much geographic glory also on the toilsome and perilous enterprises of the devoted divines in the South-East of the Papuan Island. Lastly the celebrated Signor D'Albertis through Dr. G. Bennett's kind mediation contributed also to the material for these pages. And more—it is delightful to add, that from all these investigators of the Papua-land further and grand additions to our knowledge of its plants also may early be expected; because in the now forthcoming explorations almost certainly the alpine heights will be attained; these with the middle and perhaps also lower regions of the mountain-tiers must produce large numbers of endemic species among plants also, when the animal creation, while sending many of its forms from the mountains to the coast-lines, exhibited already such a startling display of peculiar types.

Melbourne, 30th June 1876.

GUTTIFERÆ.

Calophyllum inophyllum.

Linné, Species Plantarum, 513.

South-East part of New Guinea; D'Albertis. Fruit not seen.

STERCULIACEÆ.

Abroma augusta.

Linné fil. Supplement. Plant. 341.

Port Moresby; Rev. S. Macfarlane. Darnley's Island; Goldie.

Melochia pyramidata.

Linné, Spec. Plant. 774.

Port Moresby; Rev. S. Macfarlane.

MALVACEÆ.

Thespesia populnea.

Solander, according to Correa in Annal. Mus. Paris. ix. 290, t. 8, f. 2.

Darnley's Island; A. Goldie.

MALPIGHIACEÆ.

Ryssopterys Timorensis.

Blume in Adr. de Juss. Monographie des Malpighiacées, 133.

Port Moresby; Macfarlane and Goldie.

Fruits from this locality not yet obtained. The only other coordinal plant on record from New Guinea is Tristellateia Australasica, A. Rich. Sert. Astrolab. 38, t. 15.

VINIFERÆ.

Leea sambucina.

Willdenow, Spec. Plant. i. 1177.

Darnley's Island; A. Goldie.

Vitis cordata.

Wallich, Numerical List, 6008.

South-Eastern parts of New Guinea; D'Albertis.

Besides we know through Miquel's writings the following plants of this order from New Guinea:

Vitis Papuana, Miq. Annal. i. 74.

Vitis pubiflora, Miq. l. c. 74.
Vitis pisocarpa, Miq. l. c. 79.
Vitis diffusa, Miq. l. c. 83.
Vitis rostrata, Miq. l. c. 85.
Leea Zippeliana, Miq. l. c. 101.
Leea Sundaica, Miq. Fl. Ind. Bat. I. pars. ii. 610.

The moist jungles of the Papuan Mountains will likely prove to be teeming with plants of the viniferous order. Since many years I have rejected the term Ampelideæ, though nearly universal in recent phytographic works, as quite the same word is in full use by Ornithologists, having been adopted in 1831 already by Prince Bonaparte for that group of the Clamatores, of which Ampelis (Linné Syst. Nat. anno 1748) is the type. Surely in any system of nature ought not to re-occur precisely the same names for genera or orders both in the animal and plant-divisions; and for this reasonable principle Reichenbach and a few others have contended, though only with very scanty success. Moreover Jaume de Saint Hilaire established his original group of Viniferæ with its also very expressive name in 1805 already (Expos. Famil. ii. 48, t. 79) according to Pfeiffer's great and really most accurate work; whereas the term Ampelideæ occurs first in Humb. Boupl. et Kunth, Nova Genera et Species Plantar. v. 222, as late as 1821. The less significant name Sarmentosæ, adopted already in 1799 by Ventenat (Tableau du Règne Vegetale, iii. 167) in the limitation of Viniferæ, was restricted from Linné's Philosophia Botanica 32 anno 1751, where however it included both Mono- and Dicotyledonous plants. Sprengel in 1817 (Anleitung zur Kenntniss der Gewaechse, zweite Ausgabe, i. 219) restricts the Sarmentaceæ to some liliaceous groups; hence the appellation has become utterly ambiguous.

ZYGOPHYLLEÆ.

Tribulus terrestris.

Linné, Spec. Plant. 387.

Darnley's Island; Macfarlane and Goldie.

De l'Obel (Plantarum seu Stirpium Icones ii. 84) already in 1581 bestowed precisely the same generic and specific name on this well known plant without any further designation. There seems thus really no reason, as Sprengel and others long since have pointed out, why for this and numerous other plants the ancient authorities should not be

restored. Could the great Linné have foreseen, how much stress in later times with increasing material would be laid necessarily on the precise chronologic authority for all genera and species as well of plants as of animals, then with his strong sense of justice he would doubtless have maintained also the names for species, established by his predecessors, in all those cases certainly when one single specific word only was chosen for the designation. The question therefore arises, whether as the merest act of right the oldest species-names, limited to one apt word and applied correctly to a genus, should be restored. A number of meritorious and toiling men, whose literary labors have sunk gradually into undeserved oblivion, would then share anew in the honor of sponsorship for the specific surnames of plants and animals, originally given by them. At all events wherever Linné himself adopted the very specific appellations from writers before him, no difficulty ought to exist to return to the original authorities, as this would not involve any undesirable change whatever of names maintained by the usages of more than a century. I find that already in the first edition of Linné's Species Plantarum not less than 286 plants are adduced with only one specific name from previous literature, so far as they are correctly placed in their genus. Although to hardly any of these the least exception could rightly be taken at the present day, yet it might perhaps be too much to ask to restore them all, inasmuch as in the majority of cases a change of the specific word would become needful. But there remain still 114 species to be considered, the ancient names of which both generic and specific were left unchanged by the great Swedish naturalist. A list of these is given below from Linné's own quotations, although I am aware that not in every instance modern critical research coincides in the views held by Linné, to what particular species, as now defined, these oldest names should be drawn. Linné himself must have been led by De l'Obel, de l'Ecluse, Casp. Bauhin and others to recognize the necessity of confining the specific appellations throughout to one word, by which principle he at once gained such glorious clearness for all his specific designations, obtaining thus also brevity for the systematic record of all the organic beings, as well zoological as phytological, known at his time, and this in a manner to call forth the imitation and admiration of all ages, and to stamp Linné's name for ever on every square mile of the inhabitable portion of the globe through the organic creation.

Ranunculus aquatilis, Dodon. Stirp. Hist. Pempt. 387; R. bulbosus, Lobel. Plant. seu Stirp. Icon. 666; Anemone trifolia, Dod. Pempt. 436; Caltha palustris,

C. Bauhin Pinax, 276; Thalictrum minus, Dod. Pempt. 58; Nymphæa alba, J. Camer. de Plant. Epitom. Util. 634; Lepidium latifolium, C. Bauh. Pin. 97; Thlaspi montanum, Clus. Rar. Stirp. Hist. ii. 131; Dentaria pentaphyllos, C. Bauh. Pin. 322; Chelidonium majus, Fuchs de Hist. Stirp. Comment. 865; Viola odorata, Reucalm Specim. Hist. Pl. 141, t. 140; V. tricolor, Ren. Specim. 144, t. 140; Geranium uodosum, C. Bauh. Pin. 318; Malva crispa, Dod. Pempt. 653; Vitis vinifera, C. Bauh. Pin. 229; Rhus coriaria, Dod. Pempt. 779; Platanus occidentalis, Catesb. Nat. Hist. of Carolina, i. 56, t. 56; Populus alba, Dod. Pempt. 835; P. tremula, C. Bauh. Pin. 429; P. nigra, C. Bauh. Pin. 429; Cannabis sativa, C. Bauh. Pin. 320; Amarantus tricolor, Lob. Icon. 252; Atriplex hortensis, Dod. Pempt. 615; Chorispermum hyssopifolium, Ant. de Jussieu in Act. Acad. Paris, 1712, p. 244; Mesembrianthemum calamiforme, Dillen. Hort. Elthamens. 239, t. 186; M. bellidiflorum, Dill. Hort. Elth. 244, t. 189; M. loreum, Dill. Hort. Elth. 264, t. 200; Reseda lutea, J. Bauhin et Cherler. Histor. Plant. Univ. iii. 467; Ebenus Cretica, Alpin. de Plant. Exotic. 279, t. 278; Astragalus Bætieus, Clus. Hist. ii. 234; A. Syriacus, Lob. Icon. 79; A. Monspessulanus, J. Bauh. et Cherl. Hist. iii. 338; Cicer arietinum, Dod. Pempt. 525; Melilotus Italica, J. Camerar. Hort. Med. et Phil. 99, t. 29; Trifolium repens, Rivin. Ord. Plant. Fl. Tetrapet. 17; T. pratense, J. Camer. de Pl Epit. 582; T. stellatum, C. Bauh. Pin. 329; T. fragiferum, Vaillant. Botanic. Paris, 195, t. 22; T. agrarium, Dod. Pempt 576; Medicago sativa, Morison Pl. Hist. Uuivers. ii. 150, t. 16; M. marina, Clus. Hist. ii. 243; M. scutellata, J. Bauh. et Cherl. Hist. iii. 384; M. Arabica, J. Camer. Hort. Med. 97, t. 27; Phascolus vulgaris, Lobel. Icon. 59; Lathyrus silvestris, Clus. Hist. ii. 129; L. latifolius, C. Bauh. Pin. 344; Vicia sepium, Rivin. Ord. Pl. Fl. Tetrap. 56; V. Narbonuensis, Riv. Ord. Pl. Fl. Tetrap. 56; Anagyris fœtida, C. Bauh. Pin. 391; Rubus odoratus, Cornut. Canad. Pl. Hist. 149, t. 150; Rosa eglanteria, Tabern. Eicon. Plant. 1087; Alchemilla vulgaris, C. Bauh. Pin. 319; Rhamnus catharticus, C. Bauh. Pin. 478; Asarum Canadense, Cornut. Canad. Pl. Hist. 24, t. 25; Aristolochia rotunda, Clus. Hist. ii. 70; A. longa, Clus. Hist. ii. 70; Cucurbita verrucosa, J. Bauh. et Cherl. Hist. ii. 222; Sium latifolium, C. Bauh. Pin. 154; Angelica silvestris, Dod. Pempt. 318; Laserpitium Gallicum, C. Bauh. Pin. 156; Ammi majus, C. Bauh. Pin. 159; Eryngium maritimum, Clus. Hist. ii. 169; Galium rubrum, C. Bauh. Pin. 355; Santalum album, C. Bauh. Pin. 392; Scabiosa arvensis, Tabernæmont. Kræuterbuch, 442; Eupatorium canuabinum, C. Bauh. Pin. 320; Artemisia vulgaris, J. Bauh. et Cherl. Hist. iii. 184; Helichrysum orientale, C. Bauh. Pin. 264; Chrysanthemum segetum, Clus. Hist. ii. 70; Ambrosia maritima, C. Bauh. Pin. 138; Carduus nutans, J. Bauh. et Cherl. Hist. iii. 56; C. acanthoides, J. Bauh. et Cherl. Hist. iii. 59; Cichorium spinosum, C. Bauh. Pin. 126; Chondrilla juncea, Tabernæm. Kræuterb. 487; Lactuca sativa, C. Bauh. Pin. 122; Pyrola minor, Rivin. Ord. Pl. Fl. Pentapet. 149; Gentiana cruciata, Bauh. Pin. 188; Glaux maritima, Bauh. Pin. 215; Soldanella alpina, J. Camer. de Pl. Epitom. 254; Globularia spinosa, Tournefort Iustit. rei herbar. 476; Plantago major, J. Camer. de Pl. Epitom. 261; Cuscuta major, C. Bauh. Pin. 219; Digitalis purpurea, Dod. Pempt. 168; Orobanche ramosa, C. Bauh. Pin. 491; Fraxinus excelsior, C. Bauh. Pin. 416; Phillyrea angustifolia, C. Bauh. Pin. 476; Echium Creticum, Clus. Hist. ii. 143; Cerinthe minor, C. Bauh. Pin. 258; Satureja

montana, C. Bauh. Pin. 218; S. hortensis, C. Bauh. Pin. 218; Lavandula latifolia, C. Bauh. Pin. 216; L. angustifolia, C. Bauh. Pin. 216; Ocimum minimum, C. Bauh. Pin. 226; Marrubium vulgare, Clus. Hist. ii. 34; Prunella hyssopifolia, C. Bauh. Pin. 261; Pinus silvestris, C. Bauh. Pin. 491; Juniperus Bermudiana, Hermann Hort. Acad. Lugd. Bat. 345, t. 347; Sparganium ramosum, C. Bauh. Pin. 15; Colchicum montanum, Clus. Rar. Stirp. Hisp. Hist. 266; Crocus sativus, C. Bauh. Pin. 65; Narcissus serotinus, Clus. Hist. i. 162; Allium sativum, Bauh. Pin. 73; A. ursinum, Fuchs de Hist. Stirp. Comment. 739; Fritillaria Pyrenaica, Clus. Hist. ii. 256; Ornithogalum Pyrenaicum, Clus. Cur. Postr. 21; O. Arabicum, Clus. Hist. 189; Hyacinthus Orientalis, Bauh. Pin. 44; Hordeum distichum, C. Bauh. Pin. 22; Equisetum silvaticum, Tabernæm. Kræuterb. 562; Ophioglossum vulgatum, C. Bauh. Pin. 364; O. palmatum, Plumier Filicet. American. 139, t. 163; Polypodium vulgare, C. Bauh. Pin. 359.

Linné himself made already in 1737 exceptionally use of the merely dual appellation of plants in his Flora Lapponica.

EUPHORBIACEÆ.

Securinega Abyssinica.

A. Richard, Teutam. Fl. Abyssin. ii. 256.

Darnley's Island; A. Goldie.

Euphorbia Atoto.

G. Forster, Florul. Insul. Austr. Prodr. 36.

Darnley's Island; Macfarlane and Goldie.

URTICEÆ.

Trema cannabina.

Loureiro, Flora Cochinchinensis, edit. Willd. 689.

Port Moresby; A. Goldie.

Fleurya interrupta.

Gaudichaud, Voyage de l'Uranie, Bot. 497.

Darnley's Island.

Pouzolzia quinquenervis.

Bennett in Horsfield. Plant. Javan. Rarior. 66.

Yule's Island; A. Goldie.

Blume and Miquel have recorded already from New Guinea the following Urticeæ:

Celtis paniculata, Planchon in Annales des Scienc. Nat. 1848, p. 305.

Celtis Zippelii, Planch. l. c.

Celtis latifolia, Planch. l. c.

Gironniera rhamnifolia, Bl. Mus. Bot. Lugd. ii. 74.

Fleurya ruderalis, Gaud. Voy. Uran. 497.

Villebrunia murina, Blume Mus. Bot. Lugd. 160.

Villebrunia rufescens, Bl. l. c.

Villebrunia rhodopleura, Bl. l. c. All three doubtful, so far as generic position is concerned, and transferred by Miquel to Oreocnide.

Cypholophus latifolius, Wedd. in Cand. Prodr. xvi. 235.

Cypholophus vestitus, Miq. Fl. Ind. Bat. i. pars. alt. 263.

Cypholophus prostratus, Wedd. l. c.

Cypholophus melanocarpus, Miq. l. c.

Streblus asper, Lour. Fl. Cochin. ii. 615.

Ficus pilosa, Reinw. in Miq. Annal. iii. 260.

Ficus cuspidata, Reinw. in Bl. Bijdr. 464.

Ficus obscura, Bl. Bijdr. 474.

Ficus angulidens, Miq. Fl. Ind. Bat. i. pars. alt. p. 310.

Ficus parietalis, Bl. Bijdr. 462.

Miquel (Annal. iii. 274) mentions that 30 species of Ficus were already gathered in New Guinea by Zippelius, who however did not preserve specimens of them, but wrote their descriptions on the spots of discovery.

Weddell (in Cand. Prodr. xvi. p. i. 169) mentions further from New Guinea:

Pellionia elatostemoides, Gaudichaud, Botaniq. Voy. Freycen. t. 119.

AMARANTACEÆ.

Deeringia celosioides.

R. Br. Prodr. Fl. Nov. Holl. 413.

Port Moresby; A. Goldie.

Moquin-Tandon (in Candolle's Prodr. xiii. tom. ii. pag. 326) gives as Papuan:

Cyathula geniculata, Loureiro, Flora Cochinchinensis, i. 101.

LEGUMINOSÆ.

Psoralea Archeri.

F. M. Fragm. Phytogr. Austr. iv. 21.

Port Moresby; Rev. S. Macfarlane.

DESMODIUM UMBELLATUM.

Cand. Prodr. ii. 325.

Port Moresby; Macfarlane and Goldie. Sent also by Signor D'Albertis.

INDIGOFERA LINIFOLIA.

Retzius, Observation. Botan. iv. 29.

Port Moresby; Rev. S. Macfarlane. Yule's Island; A. Goldie.

INDIGOFERA TRIFOLIATA.

Linné, Amœn. Acad. iv. 327.

Yule's Island; Macfarlane and Goldie.

PYCNOSPORA HEDYSAROIDES.

R. Brown in Wight et Arnott Prodr. Flor. Penins. Ind. 197.

Yule's Island; A. Goldie.

CROTALARIA LINIFOLIA.

Linné fil. Supplem. Plantar. 328.

Yule's Island; A. Goldie.

CANAVALIA OBTUSIFOLIA.

Candolle, Prodrom. Syst. Nat. Regn. Veg. ii. 404.

Port Moresby; Rev. S. Macfarlane.

GALACTIA TENUIFLORA.

Wight et Arnott, Prodr. 206.

Yule's Island; A. Goldie.

URARIA CERCIFOLIA.

Desvaux, Journal de Botanique, iii. 122, t. 5, f. 19.

Yule's Island; A. Goldie.

SOPHORA TOMENTOSA.

Linné, Spec. Plant. 373.

Darnley's Island; A. Goldie.

Cæsalpinia Bonducella.

Fleming, Asiatic Researches, xi. 159.

Darnley's Island; Macfarlane and Goldie. Fruit not seen.

LYTHRACEÆ.

Pemphis acidula.

R. et G. Forster, Characteres Generum, 67, t. 34.

Darnley's Island; A. Goldie.

RUBIACEÆ.

Knoxia corymbosa.

Willdenow, Spec. Plant. i. 582.

Yule's Island; Macfarlane and Goldie.

Guettarda speciosa.

Linné, Spec. Plant. 991.

Darnley's Island; Macfarlane and Goldie.

COMPOSITÆ.

Bidens pilosus.

Linné, Spec. Plantar. 832.

Port Moresby and Darnley's Island; Macfarlane and Goldie.

Pterocaulon Billardieri.

Monenteles spicatus, Labillard. Sert. Austr. Caled. 43, t. 43.

Port Moresby; A. Goldie.

Bentham (J. H. et B. Gen. Plant. ii. 294) has reduced Monenteles to Pterocaulon; in the latter Labillardière's species-appellation is already preoccupied by a Brazilian plant.

Wedelia biflora.

Candolle in Wight's Contributions, 18.

Darnley's Island; Macfarlane and Goldie.

ERIGERON LINIFOLIUS.

Willdenow, Spec. Plant. iii. 1955.

China-Straits; Rev. S. Macfarlane.

ASPERIFOLIÆ.

CORDIA SUBCORDATA.

Lamarck, Illustrat. des Genr. 1899.

Yule's Island; A. Goldie.

SOLANACEÆ.

SOLANUM VERBASCIFOLIUM.

Linné, Spec. Plantar. 184.

Port Moresby; A. Goldie. Found at Port Doreh already during the explorations of the French corvette *Astrolabe*.

Other Solanaceæ, known as Papuans:

Solanum Schefferi (S. incanum, Scheff. in Annal. du Jardin Botaniq. de Buitenz. 1876, p. 39, non Linné).

Near Andaj; Teysmann.

Solanum lasiocarpum (Dunal, Histoire des Solan. 222).

Near Port Doreh, according to Botanique de l'Astrolabe, 1832, p. xxi.

Solanum pulvinare (Scheff. l. c.).

Ajambori, Teysmann. The cushion-like appearance, which the specific name would imply, is quite exceptional among the many hundred species of Solanum hitherto described.

CONVOLVULACEÆ.

IPOMŒA QUINATA.

R. Brown, Prodr. Fl. Nov. Holl. 486.

Yule's Island; Macfarlane and Goldie.

LABIATÆ.

ANISOMELES SALVIFOLIA.

R. Brown, Prodr. Flor. Nov. Holl. 503.

Darnley's Island; Macfarlane and Goldie.

ORTHOSIPHON STAMINEUS.

Bentham in Wallich's Plant. Asiatic. Rarior. ii. 15.

Yule's Island; A. Goldie.

A variety with toothless leaves. Neither Miquel nor Scheffer (Annales du Jardin Botanique de Buitenzorg, 1876) have any plant of the Labiatæ in their lists of New Guinean plants. The missionaries have sent a Plectranthus also, but not in flower for exact naming.

XEROTIDEÆ.

XEROTES BANKSII.

R. Brown, Prodr. Fl. Nov. Holl. 263.

On Baxter's River; Jam. Orkney.

The specimens are without flowers and fruits; but there seems no doubt, that they belong to the genuine Banksian plant, which the writer has also ascertained to extend to New Caledonia. Mr. Orkney gathered several other plants, all communicated to me by R. Br. Smyth, Esq.; but they are identical with the species previously recorded in these pages.

HYDROCHARIDEÆ.

ENHALUS ACOROIDES.

L. C. Richard in Memoir. de l'Institute, 1811, tom. ii. p. 64.

Frequent on some parts of the New Guinean coast; Dr. F. Naumann.

Observed during the voyage of the Imperial German corvette *Gazelle*, according to Dr. Ascherson, the able monographer of the oceanic Monocotyledoneæ. See Annalen der Hydrographie und Maritimen Meteorologie, March 1876.

COMMELYNEÆ.

COMMELYNA ENSIFOLIA.

R. Brown, Prodrom. Fl. Nov. Holl. 269.

Port Moresby and Darnley's Island; Rev. S. Macfarlane and A. Goldie.

CYPERACEÆ.

CYPERUS MONOCEPHALUS.

F. M. Fragm. Phytogr. Austr. viii. 271.

Darnley's Island; Goldie.

ISOLEPIS BARBATA.

R. Brown, Prodr. Fl. Nov. Holl. 222.

Port Moresby; Macfarlane and Goldie.

GRAMINEÆ.

SACCHARUM SPONTANEUM.

Linné, Mantissa Plantarum, 183.

Yule's Island; Macfarlane and Goldie.

Recorded already by Ach. Richard from Port Doreh.

APLUDA MUTICA.

Linné, Spec. Plant. 82.

Port Moresby; Rev. S. Macfarlane.

ANDROPOGON ROTTBŒLLIOIDES.

Steudel, Glumac. i. 382.

Darnley's Island; A. Goldie.

Cœlorachis muricata (Brogn. in Duperrey's Voy. Bot. 65, t. 14), which undoubtedly represents the Ischæmum rottbœllioides (R. Br. Pr. 205) is by Steudel adduced to Ischæmum pectinatum (Trin. Act. Petropol. 296).

ANDROPOGON ANNULATUS.

Forskæl, Flor. Ægypt. Arabic. 173.

Port Moresby; Rev. S. Macfarlane.

The form with long-bearded bracts and elongated awns, described by R. Brown as A. sericeus.

ANDROPOGON CONTORTUS.

Linné, Spec. Plantar. 1045.

Port Moresby; Rev. S. Macfarlane. Yule's Island; A. Goldie.

The Eucalyptus-country inland also is densely covered with this grass, except low swampy localities, according to Mr. Goldie's note.

ANDROPOGON HALEPPENSIS.

Sibthorp et Smith, Flora Græca, t. 68.

Port Moresby; Rev. S. Macfarlane. Yule's Island; A. Goldie.

The variety with smaller spikelets, considered by some to have claims as a species, namely A. tropicus (Spreng. Syst. Veg. i. 287).

ANTHISTIRIA CILIATA.

Linné fil. Dissertat. de Nov. Gramin. Gener. 35.

Yule's Island; A. Goldie.

PANICUM VIRGATUM.

Linné, Spec. Plant. 59.

Port Moresby; Rev. S. Macfarlane.

PANICUM SANGUINALE.

Linné, Spec. Plant. 57.

Port Moresby; Macfarlane and Goldie.

The form with elongated spikes, superposed on an extended axis. See Fragm. Phytogr. Austr. viii. 154.

ELEUSINE CRUCIATA.

Lamarck, Encycl. Méthodiq. t. 48, f. 2.

Darnley's Island; A. Goldie.

PEROTIS RARA.

R. Brown, Prodr. Fl. Nov. Holl. 172.

Port Moresby; Rev. S. Macfarlane.

LEPTASPIS BANKSII.

R. Brown, Prodr. Fl. Nov. Holl. 211.

Port Moresby; Rev. S. Macfarlane. Yule's Island; A. Goldie.

Miquel records as Papuan grasses:

Aristida ramosa, R. Br. Pr. 173.

Centotheca lappacea, Desv. Journ. de Bot. 1813, p. 70.

Saccharum macilentum, Chauv. in Steud. Glum. 406.

FILICES.

Cheilanthes tenuifolia.

Swartz. Synops. Filic. 129.

Yule's Island; Goldie.

Polypodium irioides.

Poiret in Lam. Encycl. Meth. v. 513.

Yule's Island; A. Goldie.

Polypodium phymatodes.

Linné, Mantiss. Plant. 360.

Darnley's Island; A. Goldie.

Mettenius (in Miq. Annal. iii.) gives the following species from Papuan collections:

P. sinuosum, Wall. Catal. 2231.
P. linguiforme, Mett. Fil. Ind. 225.
P. quercifolium, Linné, Sp. Pl. 1087.
P. Linnæi, Bory in Annal des Sc. Nat. v. 464, t. 12.
P. rigidulum, Sw. Syn. Fil. 38.
P. ferrugineum, Bak. in H. et B. Syn. Fil. 318.
P. acrostichoides, G. Forst. Florul. Insul. Austr. Prodr. 81.

Baker (in Hooker's Synops. Fil. sec. edit. p. 350) notes as Papuan:

P. stigmosum, Swartz. Synops. Fil. 29.

Aspidium ramosum.

Beauvois, Flore d'Oware, 91.

South-East Papua; D'Albertis.

Mettenius has shown, that the following congeners exist also in New Guinea:

A. immersum, Bl. Enum. Fil. Jav. 156.
A. truncatum, Gaudich. in Freyc. Voy. t. 10.
A. Pica, Desv. in Berl. Mag. v. 319.
A. acutum, Schkuhr Kryptog. Gewæchs. 32, t. 31.
A. exaltatum, Swartz Syn. Fil. 45.

If Oleandra becomes reduced to Aspidium, as well might be done, then O. neriiformis (Cavanill. Præl. 1801, n. 623) requires to be recorded on

this occasion as an additional Papuan Aspidium (A. neriiforme, Sw. Syn. Fil. 42), according to Hook. et Bak. Syn. Fil. second edit. 302.

O. musæfolia, Kunze in Metten. Filic. Ind. 240, stands also on record from New Guinea, according to Miq. Annal. i. 240.

ADIANTUM LUNULATUM.

Burmann, Flor. Indic. 235.

Darnley's Island; Rev. S. Macfarlane.

DAVALLIA ELEGANS.

Swartz Synops. Felic. 132.

China-Straits; Rev. S. Macfarlane.

ASPLENIUM SCOLOPENDROPSIS.

Entirely glabrous; stems creeping and rooting; fronds simple, thinly chartaceous or almost membranous, elongate narrow-lanceolar, more or less sinuate-denticulate, gradually narrowed into a long wingless stipes; veins simple or consisting of two branches, prominent, extending in almost parallel lines to the edge; sori broad, in pairs, traversing the whole width of the frond from the stout midrib to the margin; the indusia of each pair touching each other with their edge, but disunited from the commencement; sporangia of each indusium separated from those of the other in each pair by an ample empty interstice.

In the South-East part of New Guinea; D'Albertis.

Rootlets, so far as seen, distant and not much branched, either very short or extending to simple wiry fibres sometimes over a span long. Fronds $\frac{2}{3}$–$1\frac{1}{2}$ foot long, to about 1 inch broad, very gradually acuminated; the margin often wavy and with rather distant and irregular denticulations; veins very spreading. The paired sori somewhat distant from each other; the very tender indusia of each pair covering a width of about one line or rather more.

This remarkable Asplenium invalidates still more the limits of Scolopendrium as a genus, the reunion of the latter with the former becoming almost unavoidable. The sori of the typic Scolopendrium vulgare (Smith in Memoir. Acad. Roy. des Scienc. Turin, v. 421, t. 9, f. 2) are however at the early state of growth covered by indusia, which overlap each other, the sporangia within forming a crowded uninterrupted mass. Specific distinctions to separate this new species from the ordinary Scolopendrium are further easily derived from the total absence of a scaly

covering of the stipes and midrib, the long creeping stems, the generally more tender consistence of the fronds, their narrowness, acute base, long acumen and often manifest denticulations, the very conspicuous not almost concealed veins, and the sori approaching as well to the edge as to the midrib. There is on record an evidently allied Scolopendrium from the Philippine-Islands, namely S. longifolium (Presl. Reliquiæ Hænkean. 48, t. 9, f. 1), which Sir Will. Hooker united with the later described S. pinnatum (J. Smith in Hook. Journ. of Bot. iii. 406). This I have here been unable to compare; but also Baker (in Hook. et Bak. Syn. Fil. 247) describes the fronds as subcoriaceous; nor is there any tendency in Signor D'Albertis's plant, of which we have several specimens, to any division pinnate or otherwise of the fronds. Mettenius however keeps the simple-fronded plant distinct as Micropodium longifolium (Filic. Ind. ii. 233).

Other species of this genus, known as New Guinean, according to Hooker, Mettenius and Baker:

A. scandens, J. Sm. in Hook. Journ. of Bot. iii. 408.
A. cyathæfolium, Bory in Rich. Voy. d'Astrol. Bot. 19.
A. vulcanicum, Bl. Enum. Fil. Jav. 176.
A. Nidus, Linné Sp. Pl. 1079.
A. decussatum, Sw. Syn. Fil. 76.
A. tenerum, G. Forst. Prodr. 80.

A. LATIFOLIUM.

D. Don., Prodrom. Fl. Nepalens. 8.

About 15 miles inland from Port Moresby; A. Goldie.

The sender found the stem three feet high, hence mentions this as a small treefern. It is still necessary, that from living plants the full characteristics of A. latifolium, A. Schkuhrii and A. silvaticum should be more clearly set forth. A. decussatum, which also bears much resemblance, has simply pinnate fronds and anastomosing veins.

ACROSTICHUM SCANDENS.

J. Smith in Hooker's Journal, iv. 149.

China-Straits; Rev. S. Macfarlane.

Mettenius in Miq. Annal. iv. 294 notes his Lomariopsis spectabilis, which according to Baker (Hook. et Bak. Syn. Fil. sec. edit. 412) must be regarded as one of the many forms of A. sorbifolium, L. Sp. Pl. 1069.

DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

IV.

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

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.

Lasianthera 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. Swensk 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.

Semecarpus 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 coordinal:

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. fil. 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 Diehlam. 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 1½ 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. 26) distinguishes varieties with yellow and purple petals. The real Hibiscus Manihot (L. Sp. 696) has longer and less acuminated 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; *involucel consisting of five cordate-lanceolar segments;* calyx nearly twice as long as the involucel; 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. Involucel persistent, folded at the base. Calyx nearly 1½ 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 involucel 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 teethless 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 involucel. H. fragrans (Roxb. Fl. Indic. iii. 195) is distinguished also by serrated leaves, paniculate flowers, segments of the involucel 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 amylaceous 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.

Bœrhaavia diffusa.

Linné, Spec. Plant. 3.

Port Moresby; Goldie.

Nyctagineæ are also best left along with the curvembryonate orders, producing amylaceous 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., Bœrhaavia diffusa L., a Pisonia, a Ficus, a Sida, Pemphis acidula Forst., Guettarda speciosa L., Tournefortia argentea Forst., Scævola Kœnigii Vahl, Fimbristylis glomerata Nees, Lepturus repens R. Br., Polypodium phymatodes L.

In the Tokelau- or Union-Group (comprising the Fakaofo- 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 Nukulælæ, 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., Cassytha 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.

JUSSIÆA REPENS.

Linné, Sp. Plant. 388.

Near Port Moresby; Goldie.

JUSSIÆA 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-teethed 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'Albertis.

Branches soon glabrous. Petioles up to the pair of leaflets 1–2 inches long; lateral petiolules very short. Leaflets 3–4 inches long, about 1½ 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 ⅓ of an inch high; the lowest lobe attaining ½ an inch in length, the lateral lobes about half as long. Upper petal about 1½ 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 ⅔ 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'Albertis' 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-downy 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 acuminated. 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 $\frac{2}{3}$ 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 acuminated, 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-anguled.

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 $\frac{1}{3}$ 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 exserted 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; peduncules 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 fas 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 acuminated 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'Albertis.

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, Prodrom. 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 teethless 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'Albertis.

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'Albertis.

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.

AMARYLLIDEÆ.

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 fil. 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 Dorch 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.

OPHIOGLOSSEÆ.

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 Gewæchse, 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 pinnæ.

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 ; pinnæ 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. Mauritiana (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'Albertis.

Indusium almost nephroid.

Lindsaya lobata.

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

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

Recorded from New Guinea is already by Hooker from Dr. Hinds' collection: L. cordata, Gaudichaud, 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'Albertis.

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'Albertis.

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. Gewæchse, 32, t. 31.

Fly-River; D'Albertis.

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'Albertis.

POLYPODIUM ACROSTICHOIDES.

R. Brown, Prodr. 146.

Fly-River; D'Albertis.

POLYPODIUM IRREGULARE.

Presl, Reliq. Hænk. i. 25, t. 4.

Fly-River; D'Albertis.

POLYPODIUM LINNÆI.

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

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

This was collected also at Mākado (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'Albertis.

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'Albertis.

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'Albertis.

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'Albertis.

Polypodium decorum.

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

Fly-River; D'Albertis.

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'Albertis.

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'Albertis.

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 ferntrees.

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).

ASPLENIUN 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 pinnæ 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.

DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

V

This fifth contribution towards a list of Papuan plants contains the rest of the species, gathered last year by Messrs. D'Albertis and Goldie, except some which were not found in a state of development sufficient for exact examination. Among their yet omitted plants are species of the genera Wormia, Myristica, Pittosporum, Dysoxylon, Harpullia, Vitis, Gomphrena, Acalypha, Piper, Quercus, Connarus, Cynometra, Albizzia, Eugenia, Psychotria, Ixora, Tournefortia, Coleus, Ipomœa, Sideroxylon, Costus, Pothos, Calamus, Hypælyptum, Scleria, Cyperus; besides some representatives of other genera belonging to Anonaceæ, Menispermeæ, Rutaceæ, Anacardiaceæ, Urticeæ, Euphorbiaceæ, Laurineæ, Melastomeæ, Myrtaceæ, Acanthaceæ, Gesneriaceæ, Orchideæ, Scitamineæ and Palms.

Melbourne, February 1877.

MELIACEÆ.

Flindersia Papuana.

Fly-River; D'Albertis.

Only a solitary fruit without well developed seeds has been as yet obtained. It is not dissimilar to that of F. Bennettiana and F. Oxleyana in tubercular roughness, while the seeds, like those of the latter, are also winged on both ends. It differs from F. Schottiana in fruits of only half the size. The only hitherto recorded Extra-Australian species is F. Amboinensis (Poiret, Encycl. Methodiq. Suppl. iv. 650); it differs from the Papuan Flindersia according to Rumphius's illustration (Amboinsch Kruid-Boek, iii. 201, t. cxxix.) in smaller and therefore more numerous and also more acute tubercles of the fruit-valves; it belongs to that series of species, which have their leaflets provided with conspicuous stalklets. Our Papuan plant received a temporary specific appellation, to place it on record, until foliage and flowers can be compared with that of its congeners. The Amboina Flindersia is described as producing fruits 5–6 inches long, though the plate represents them only about half that size; the leaflets are glabrous.

TILIACEÆ.

Sloanea paradisearum.

(Sect. Echinocarpus.)

Branchlets glabrous; leaves oblong-oval, narrow-acuminate, quite entire, on very short petioles; *fruit very large*, broadly oval, four-valved, red outside, thick-woody, densely invested by short closely set setaceous prickles; *seeds numerous in each cell;* cotyledons much thinner than the albumen.

Upper Fly-River; D'Albertis.

A tree, attaining a height of 40 feet. Petioles 2–3 lines long. Leaves scattered, 4–6 inches long, $1\frac{1}{2}$–$2\frac{1}{2}$ inches broad, blunt at the base, glabrous. Flowers unknown. Fruit nearly 4 inches long; the innumerable bristles 1–$1\frac{1}{2}$ lines long. Seeds forming two rows and numbering about 16 in each cell, sessile, descending, oval-elliptical, angular from mutual pressure, entirely included in a yellow or orange-colored arillus, thus rather above $\frac{1}{2}$ an inch long. Cotyledons almost as long as the albumen; radicle extremely short.

This notable species approaches in size of the fruit closely to S. Jamaicensis (Hook. Icon. 693–696), thus far excelling any of the Sloaneas of the eastern hemisphere, so far as they are known, in the magnitude of the fruit. The petioles are much shorter than those of S. Jamaicensis, the covering bristles are finer and of less length, while the seeds are more numerous, closely packed along the whole cavity and not of almond-size.

Bentham and J. Hooker (Gener. Plant. i. 239) ascribe to the genus a 1–4-seeded capsule; but Sir Will. Hooker found already 8 or more seeds in S. Jamaicensis, and he figures also a 5-valved fruit. The nature of the wood of the Papuan species should be tested, that of the Jamaica Sloanea being so hard as to have given rise to the name Brake-Axetree. The seeds of the Papuan plant are probably also of agreeable taste. I have given this plant its particular specific name, because it comes from the forest-haunts of the birds of Paradise.

The Rev. Dr. Turner has brought a Corchorus from Port Moresby, but the plant is not in fruit for specific determination.

GUTTIFERÆ.

Garcinia subtilinervis.

Glabrous; branchlets quadrangular; leaves coriaceous, oval-lanceolate, with a short and blunt acumen; *nerves and veins of the leaves extremely subtle,* almost concealed; petioles short; sepals four, very unequal; *stigma undivided, depressed,* sessile, orbicular; berry globular, eight-celled.

Fly-River; D'Albertis.

Leaves 3–5 inches long, 1–1½ inch broad. Petioles of ½ an inch or less length. Flowers unknown, except the persistent sepals, the two larger of which measuring ¼ an inch, the two others about half the size. Stigma flat, rough, of about ⅓ of an inch diameter. Fruit measuring about 1½ inch. Seeds brown, much compressed.

Foliage and fruit are not unlike G. Cowa (Roxb. Fl. Indic. ii. 622), but the stigma places the Papuan species near to G. anomala (Planch. et Trian. mem. Guttif. 174) and G. Maingayi (J. Hook. Flor. of British Ind. i. 267), both of which have fewer-celled fruits. Ours has also some resemblance to G. multiflora (Champ. in Hook. Kew Miscell. iii. 310), but the leaves are not so conspicuously veined, the sepals are not equal in size, and the fruit of the Hongkong plant remained hitherto unknown.

Full comparisons with the imperfectly described G. rostrata (Benth. and Hook. Gen. i. 174; Discostigma rostratum, Hassk. Cat. Hort. Bogor. 212) require yet to be instituted; but the bicelled ovary removes it already from our new plant. Another evidently allied species is G. rigida (Miq. Prodr. Flor. Sumatran. 493), the leaves of which are described as rounded at the base, and the internal structure of its fruit is unknown.

Other Papuan Guttiferæ are:

Garcinia picrorrhiza, Miq. Annal. Mus. Bot. Lugd. i. 209.

Garcinia Teysmanniana, Scheff. Annal. du Jard. Bot. de Buitenz. 7.

VINIFERÆ.

Vitis trifolia.

Linné, Spec. Plant. 203.

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

CARYOPHYLLEÆ.

Drymaria diandra.

Blume, Bijdr. tot de Fl. van Nederl. Indie, 63.

Leaves glabrous, rhomboid- or cordate-orbicular, conspicuously stalked; stipules fringy-cleft; cymes paniculate, with elongated glandular-powdery peduncles; flowers small; *sepals only slightly scarious, their middle nerve forming a narrow pulverulent keel;* petals deeply cleft into two segments; stamens usually two; style almost none; stigmas two; *fruit valveless or imperfectly two-valved; seeds large, one* rarely two, closely filling the cavity of the pericarp, black, opaque, granular-scabrous.

Near Port Moresby; Goldie.

From inspection of original material I find this to be the D. cordata of Thwaites's Enum. Pl. Zeilan. 25, and of J. Hooker's Flora of British India, i. 244; to this may also belong the plants of Bentham's Flora Hongk. 22, and of Oliver's Flora of Tropic Africa, 143; yet it is not specifically combinable with the real D. cordata (Willd. in Roem. and Schult. Syst. Veg. v. 406), which is frequent in the warm regions of the western hemisphere, but rare and perhaps introduced only in the eastern. That typic plant has a tendency to hairyness, has broader very scarious calyces, not distinctly keeled along the sepals, has longer stigmas and a deeply three-valved capsule with several minute pale-brown seeds.

The Javanic plant was cautiously distinguished by Miquel (Plant. Junghuhn. i. 391) as var. Indica. The specific name, given by Blume, would become ambiguous unless it coincides with the homonymous appellation, bestowed by Macfadyen on an Antillan plant, the Holosteum diandrum (Swartz Prodr. Deser. Veget. Ind. Occid. 27), which however is reduced as a variety to D. cordata by Grisebach (Fl. of the British West Indian Islands, 56). Should further researches prove Blume's and Macfadyen's plants distinct, then I would propose the species-name *D. gerontogea* for the former. Our species verges in structure of calyx somewhat to Polycarpon; its wide dispersion through the tropic zone of the eastern half of the globe leads to anticipate, that this species will yet be found in North Queensland. A thorough systematic revision of all congeners is needed.

AMARANTACEÆ.

Euxolus interruptus.

Moquin, in Cand. Prodr. xiii. Part ii. 272.

Port Moresby; Rev. Dr. Turner.

EUPHORBIACEÆ.

Phyllanthus Urinaria.

Linné, Spec. Plant. 982.

Port Moresby; Goldie.

Phyllanthus Niruri.

Linné, Spec. Plant. 981.

Darnley's Island; Reedy. Port Moresby; Goldie.

Mallotus ricinoides.

J. Mueller, in Linnæa xxxiv. 187.

Port Moresby; Goldie.

Mallotus Philippinensis.

J. Mueller, in Linnæa xxxiv. 196.

Port Moresby; Goldie.

LEGUMINOSÆ.

Desmodium Gangeticum.

Candolle, Prodr. ii. 327.

Port Moresby; Goldie.

It was also found in New Britain by Mr. C. Walter, while collecting there for Baron Anthole von Huegel.

Desmodium dependens.

Blume, in Miq. Flor. Ind. Batav. i. 248.

Port Moresby; Goldie.

This also was found in New Britain.

Phaseolus Max.

Linné, Spec. Plant. 725.

Port Moresby; Rev. Dr. Turner.

Also in New Britain. The specific name here adopted is the oldest.

Dolichos Lablab.

Linné, Spec. Plant. 725.

Port Moresby; Goldie.

A variety with small pods, not conspicuously rough at their edge.

MYRTACEÆ.

Melaleuca Leucadendron.

Fly-River; D'Albertis.

ARALIACEÆ.

Cissodendron Australianum.

Seemann, Journal of Botany, iii. 201.

Var. disperma; fruits two-celled and two-seeded.

Fly-River; D'Albertis.

The specimens are all in fruit, but so far show no differences to distinguish them from the Queensland species, except in the number of the cells and seeds of the fruit.

By this variety or perhaps new species an approach to the genus Sciadopanax is established. The albumen is rather sinuous and wrinkled than really ruminate, whereby a clearer distinction of Cissodendron from Hedera can be drawn. The testa also is of bony hardness not thin as in the last mentioned genus. The minute embryo lodges at the summit of the albumen and is proportionately much shorter than that of Hedera.

The following araliaceous plants are from New Guinea on record:

Brassaia macrostachya, Seem. Revis. of the Hederac. 10.

Tetraplasandra paucidens, Miq. Annal. Mus. Bot. Lugd. Bat. i. 4.

Polyscias Papuana, Seem. Revis. 56.

Osmoxylon Amboinense, Miq. Annal. Mus. Lugd. Bat. i. 5.

Panax Zippelianum, Miq. l. c. 15.

Arthrophyllum pinnatum, Seem. l. c. 102.

Trevesia insignis, Miq. l. c. i. 220.

Trevesia Novo-Guineensis, Scheff. Annal. du Jard. Bot. de Buitenz. i. 26.

Heptapleurum fimbriatum.

Leaves simply digitate; *stipules dissected into copious narrow fringes; leaflets chartaceous,* 5–6, on long stalklets, glabrous, broadly lanceolate, acuminate, quite entire, at the base acutely narrowed; *racemes spike-like, the rachis rigidly tomentose;* fruits verging from an oval to a roundish form, 5-seeded, the vertex conspicuously emersed.

On the Fly-River; D'Albertis.

Petioles attaining a length of $1\frac{1}{2}$ feet. Stipules dry, long-persistent, broadly expanded, $\frac{1}{3}$ inch long. Leaflets 5–8 inches long, $1\frac{1}{2}$–$2\frac{1}{2}$ inches broad, with ascending conspicuous lateral nerves, finely net-veined, slightly rough from minute dots; their stalklets 1–$2\frac{1}{2}$ inches long. Flowers unknown. Spikes about a span long. Pedicels less than a line long or almost obliterated. Fruits about 2 lines long, crowded at intervals along the rachis, terminated by a very short thin style. Pyrenæ obliquely narrow-elliptical, slightly turgid, smooth, hardly longer than 1 line.

I am not acquainted with any other Heptapleurum, which is provided with similar stipular fringes, except Trevesia Novo-Guineensis, which with all other Trevesias is transferable to Heptapleurum. D'Albertis collected a second species of this genus, but without fruit.

RUBIACEÆ.

Myrmecodia echinata.

Gaudichaud, Voy. Freycinet. t. 96.

Fly-River; D'Albertis.

In Mr. Goldie's collection from Port Moresby are fragments of an Uncaria.

COMPOSITÆ.

Blumea hieracifolia.

Candollc, Prodr. v. 442.

Port Moresby; Goldie.

SCROPHULARINÆ.

Vandellia crustacea.

Bentham, Scrophularin. Indic. 35.

Fly-River; D'Albertis.

Vandellia pedunculata.

Bentham, Scrophularin. Indic. 37.

Port Moresby; Goldie.

LABIATÆ.

Ocimum sanctum.

Linné, Mantiss. Plantar. 85.

Port Moresby; Rev. Dr. Turner.

The same species I have seen from New Britain, where also O. Basilicum (L. Sp. 597) occurs.

Plectranthus parviflorus.

Henckel von Donnersmarck, Adumbrat. Plant. Hort. Halens. 1806.

Fly-River; D'Albertis.

VERBENACEÆ.

Clerodendron floribundum.

R. Brown, Prodr. Flor. Nov. Holl. 511.

Port Moresby; Goldie.

The specimens are in fruit only, but so far agree with the broad-leaved form of the Australian plant.

CLERODENDRON TRACYANUM.

F. v. Mueller, in Benth. Flor. Austr. v. 62.

Fly-River; D'Albertis.

Flowers could not be obtained, but otherwise it seems not to differ from the Queensland typical plant.

Miquel and Scheffer mention as Papuan Verbenaceæ:

Clerodendron Papuanum, Scheff. Annal. du Jardin de Buitenz. 41.

Callicarpa erioclona, J. C. Schauer in Cand. Prodr. xi. 643.

Gmelina lepidota, Scheff. l. c. 41.

Faradaya Papuana, Scheff. l. c. 42.

Avicennia officinalis, L. Sp. Pl. 110.

SOLANACEÆ.

SOLANUM REPANDUM.

G. Forster, Florul. Insul. Austr. Prodrom. 18.

Fly-River; D'Albertis.

Differences between the Papuan plant and that figured by Seemann (Flor. Vitiens. xxxviii.) are not observable, except that the branchlets are minutely aculeolate.

CONVOLVULACEÆ.

IPOMŒA PES CAPRÆ.

Roth, Nov. Plantar. Spec. 109.

Port Moresby; Goldie.

Signor D'Albertis brought from the Fly-River an Ipomœa, allied to I. cymosa (Roem. et Schult. Syst. Veget. iv. 241), but differing in its broadly cordate leaves and entirely glabrous corolla; the fruit is as yet unknown.

APOCYNEÆ.

TABERNÆMONTANA PUBESCENS.

R. Brown, Prodrom. Fl. Nov. Holl. 468.

Fly-River; D'Albertis.

A variety with leaves protracted into a long acumen. Fruit not yet seen.

ALSTONIA LONGISSIMA.

Glabrous; *leaves* large 3–4 in a whorl, decurrent into a very short petiole, lanceolar-oval, with very spreading nerves, *hardly paler beneath; fruits very long;* cilia longer than the seeds.

Fly-River; D'Albertis.

Leaves about a span long, 2–3 inches broad, of chartaceous consistence, distantly ribbed, almost equally green on both sides. Flowers unknown. Fruits about 1½ foot long, ¼ inch thick. Seeds scarcely 3 lines long, very slightly downy, rounded-blunt at the base, narrow-acuminate at the apex, on both extremities softly bearded.

I failed to identify this among Indian species, but it seems nearest to A. spectabilis (R. Brown in the Mem. of the Wernerian Society, i. 75).

MYRSINEÆ.

Mæsa haplobotrys.

F. v. Mueller, Fragm. Phytogr. Austr. v. 161.

Fly-River; D'Albertis.

The Papuan and Australian plants seem identical. The width of the leaves is particularly variable. The inflorescence is almost spicate.

Mæsa protracta.

Glabrous, *leaves lanceolate, gradually long-acuminate, slightly wavy* at the margin, decurrent into the petiole; *racemes simple,* axillary and terminal, shorter than the leaves, solitary or 2 or more together; pedicels as long as the flowers or somewhat longer, twice or thrice as long as the bracts; corolla hardly half exserted, as well as the calyx 5-cleft; fruit ovate-globular, about as long as the pedicel.

Fly-River; D'Albertis.

Leaves 4–7 inches long, 1–2 inches broad, chartaceous, on a petiole of less than one inch length; their dots extremely minute; pellucid lines almost absent. Racemes 3 inches long or variously shorter. Corolla hardly above one line long; its roundish lobes nearly equalling the tube in length. Fruit scarcely two lines long.

This Mæsa verges towards M. acuminata (A. de Candolle, Prodr. viii. 77) from Nepal, but the leaves are longer and not quite entire; besides there are likely other differences between them, which D. Don's diagnosis (Prodr. Flor. Nepal 149) does not admit of pointing out. It comes also very near M. Novo-Guineensis (Scheff. Annal. du Jardin Bot. de Buitenz. 32); the leaves of the latter are considerably larger, and the flowers are described as three times as long as the calyx. Other Myrsineæ of Papua are:

Mæsa verrucosa, Scheff. Commentat. de Myrsinac. Archip. Indic. 16.

Mæsa lævigata, Scheff. l. c. 17.

Mæsa mollissima, A. de Cand. in the Transact. of the Linn. Soc. xvii. 134.

Myrsine densiflora, Scheff. Comm. 70.

EBENACEÆ.

Maba elliptica.

R. and G. Forster, Charact. Generum, 122, t. 61.

Fly-River; D'Albertis.

The plant from this locality has its fruits covered by a rust-colored velvet. It is on the authority of Hiern (Transact. of the Cambridge Philos. Society, xii. 122), that I place D'Albertis' plant in this specific position, that able monographer regarding the presence or absence of the vestiture of the fruit of no avail for specific characteristic. Our specimens are without flowers. Plants of this order, producing Ebony-wood, occur doubtless in New Guinea.

CONIFERÆ.

Nageia Rumphii.

Podocarpus Rumphii; Blume, Rumphia iii. 214.

New Guinea; Zippelius.

This is mentioned on the present occasion to refer to another Nageia, the fruits of which were brought from the Fly-River by Signor D'Albertis, to whom the species may be dedicated, should it prove new. The nut is globular like that of N. Blumei (Gordon, Pinet. 135, Podocarpus agathifolia; Blume, Rumphia iii. 217, t. 173), but slightly larger, the receptacle a good deal thicker and the embryo rather more like that of N. bracteata (Podocarpus bracteata, Blume Enumerat. Plant. Javæ, 88). I see no reason why the genus Nageia should be discarded in favor of Podocarpus; the former was fully established by Gærtner already in 1788 (de Fructib. et Seminib. i. t. 39) on N. Japonica, whereas L'Heritier's genus Podocarpus seems really to have been published only in 1806 (Labillardière, Novæ Holl. Plant. Specimen ii. 71, t. 221). "Suum cuique."

As yet no other Coniferæ are on record from New Guinea, except Nageia thevetiæfolia (Podocarpus thevetiæfolius, Bl. Rumphia ii. 213) and the Araucaria mentioned by Dr. Beccari; but it may be expected

that this order of plants is well represented in the colder altitudes of the island. Of the allied Gnetaceæ we know as Papuan: Gnetum Gnemum, L. Mantiss. 125 and Gnetum latifolium, Blume Nov. Plant. Famil. 30.

The occurrence of Nagaias within the tropics indicates usually an approach to elevated regions. From such probably came also the acorns of two species of Quercus, brought by Signor D'Albertis, and which may have been washed by mountain-torrents to the upper waters of the Fly-River, or may perhaps have been carried as articles of food by the natives down from the mountains.

PANDANEÆ.

Freycinetia Gaudichaudi.

R. Brown, in Horsfield's Plantæ Javan. Rarior. 31, t. ix.

Fly-River; D'Albertis.

Blume and Miquel record from New Guinea:

Freycinetia scandens, Gaudich. Voy. Freycenet. Bot. 432, t. 42.

Freycinetia marginata, Blume, Rumphia i. 159.

The specific position of the Papuan Pandani remained hitherto unascertained.

DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

BARON FERD. VON MUELLER, C.M.G., M. & PH.D., F.R.S.

APPENDIX.

Papuan Plants, recorded by Blume, Miquel and Scheffer, not yet mentioned specifically in the foregoing pages.

Nymphæaceæ.

Nymphæa gigantea, Hook. Bot. Magaz. 4647.

Anonaceæ.

Polyalthia hirta, Benth. et Hook. Gen. Pl. i. 956; Monoon hirtum, Miq. Annal. ii. 16.

Polyalthia macropoda, Benth. et Hook. l. c.; Monoon macropodum, Miq. l. c.

Polyalthia chloroxantha, Benth. et Hook. l. c.; Monoon chloroxanthum, Miq. l. c.

Polyalthia glauca, Benth. et Hook. l. c.; Monoon glaucum, Miq. l. c.

Uvaria Rosenbergiana, Scheff. Ann. Jard. Buit. 2.

Popowia Novo-Guineensis, Miq. Ann. ii. 21.

Orophea ovata, Scheff. Ann. Jard. Buitz. i. 3.

Orophea aurantiaca, Miq. Ann. ii. 25.

Goniothalamus longirostris, Scheff. Jard. Buitz. 4.

Goniothalamus caloneurus, Miq. Ann. ii. 34.

Artabotrys inodora, Zipp. in Miq. Ann. ii. 41.

Phænanthus nutans, J. Hook. et Thoms. Flor. Ind. i. 147.

MYRISTICEÆ.

Myristica subcordata, Bl. Rumph. 186.
Myristica fatua, Houtt. Nat. Hist. ii. 337.
Myristica tubiflora, Bl. Rumph. 182, t. 56.
Myristica subalulata, Miq. Ann. ii. 47.
Myristica lepidota, Bl. Rumph. 183, 57.
Myristica morindifolia, Bl. l. c. 186.
Myristica nesophila, Miq. Ann. ii. 49.
Myristica pinnæformis, Zipp. in Miq. Annal. ii. 49.
Myristica Aruana, Bl. l. c. 191.
Myristica Zippeliana, Miq. l. c. 50.
Myristica subtilis, Miq. l. c. 50.
Myristica Papuana, Scheff. Annal. du Jard. Bot. de Buitenz. 46.

MENISPERMEÆ.

Stephania Zippeliana, Miq. Annal. iv. 86.
Pycnarrhena Novo-Guineensis, Miq. l. c. iv. 88
Chlænandra ovata, Miq. l. c. iv. 84.
Anamirta paniculata, Colebr. in Transact. Linn. Soc. xiii. 52.

LAURACEÆ.

Hernandia Sonora, L. Sp. Pl. 981.
Cinnamomum xanthoneurum, Bl. in Tijdschr. vor Naturgesch. i. 66.
Beilschmiedia caloneura, Scheff. Annal. du Jardin. Bot. de Buit. 47.
Tetranthera obscura, Bl. Mus. Bot. i. 386.
Tetranthera macrophylla, F. v. M.; Cylicodaphne macrophylla, Bl. Mus. Bot. Lugd. ii. 14.
Tetranthera amara, Nees Syst. Laur. 551.
Litsæa latifolia, Bl. Mus. Bot. i. 349.

CAPPARIDEÆ.

Capparis Zippeliana, Miq. Illustr. de Flor. de l'Archip. Ind. 25 xiv.

PITTOSPOREÆ.

Pittosporum chelidospermum, Bl. Mus. Bot. Lugd. i. 160, fig. 33
Pittosporum Novo-Guineense, Miq. Illustr. 79.
Pittosporum sinuatum, Bl. l. c.
Pittosporum Rumphii, Putterl. Synops. Pittospor. 7.

POLYGALACEÆ.

Polygala hyalina, Benth. et Hook. Gen. Plant. i. 974.

TERNSTRŒMIACEÆ.

Saurauja brevirostris, Zipp. in Miq. Annal. iv. 106.
Saurauja altissima, Zipp. in Miq. Annal. iv. 108.
Saurauja tristyla, Cand. Memoir. Soc. Genev. i. 420.
Saurauja Novo-Guineensis, Scheff. Annal. du Jard. Buit. i. 7.
Saurauja monadelpha, Scheff. l. c. 8.
Eurya triehocarpa, Korthals in Verh. Nat. Gesch. Bot. 114.

DIPTEROCARPEÆ.

Anisoptera polyandra, Bl. Mus. ii. 42.

GERANIACEÆ.

Impatiens latifolia, L. Sp. Pl. 937.
Impatiens Zippelii, Miq. Illustr. de Flore de l'Archipel Indien, 94.

TILIACEÆ.

Elæocarpus edulis, Teysm. et Binn. Nat. Tijdschr. Ned. Ind. xxvii. 25.

CELASTRINÆ.

Salaeia prinoides, Cand. Prodr. i. 571.
Salacia sororia, Miq. Annal. iv. 151.
Hippocratea pauciflora, Miq. Ann. iv. 154.
Hippocratea Zippeliana, Miq. Ann. iv. 153.

RUTACEÆ.

Melanococca tomentosa, Bl. Mus. i. 236.

SIMARUBEÆ.

Soulamea amara, Lam. Dict. i. 449.

ANACARDIACEÆ.

Semecarpus Cassuvium, Spreng. Syst. i. 936.
Odina speciosa, Miq. Ann. iv. 623.

Mangifera Tuipan, Hamilt. in Transact. Wern. Soc.
Mangifera mucronulata, Bl. Mus. Bot. i. 201.

Burseraceæ.

Canarium rigidum, Zipp. in Miq. Fl. Ind. Batav. i. part ii. 648.
Canarium asperum, Benth. in Hook. Lond. Journ. ii. 215.
Canarium angustifolium, Bl. Mus. Bot. Lugd. i. 226.
Ganophyllum falcatum, Bl. Mus. Bot. i. 230.

Thymeleæ.

Drymispermum urens, Reinw. Sylloge in der Regensb. Bot. Zeit. 1828, 15, t. 2.
Drymispermum macrocarpum, Scheff. Annal. du Jard. de Buit. 46.

Rhamnaceæ.

Smythea Novo-Guineensis, Scheff. Annal. du Jard. Bot. de Buitenzorg, i. 14.

Nyctagineæ.

Pisonia Brunoniana, Endl. Prodr. Flor. Insul. Norfolk, 43.
Pisonia cauliflora, Scheff. Observ. Phytogr. iii. 95.

Casuarineæ.

Casuarina equisetifolia, R. et G. Forst. Char. Gen. Plant 103, t. 52.

Piperaceæ.

Piper fragile, Benth. in Hook. Journ. ii. 234.
Piper Barclayanum, Cas. de Cand. Prodr. xvi. 336.
Piper caninum, Blume in Verh. der Bot. Genootsch. xi. 214.
Piper Forstenii, Cas. de Cand, Prodr. xvi. 348.
Piper methysticum, G. Forst. Plant. Escul. 76.

Rosaceæ.

Rubus Moluccanus, L. Sp. Pl. ed. sec. 707.

MELASTOMACEÆ.

Osbeckia Australiana, Naud. in Annal. des Scienc. Nat. ser. trois. xiv. 59.
Melastoma Malabathricum, L. Sp. Pl. 390.
Medinilla bracteata, Bl. Bijdr. 219.
Medinilla Papuana, Scheff. Ann. du Jard. Bot. de Buitenz. 24.
Astronia macrophylla, Bl. Bijdr. 1080.
Memecylon pauciflorum, Bl. Mus. Bot. 257.

RHIZOPHOREÆ.

Ceriops Candolleana; Arnott in Annals of Nat. Hist. i. 363.
Kandelia Rheedei, Wight et Arn. Prodr. i. 310.
Rhizophora conjugata, L. Sp. Pl. 443.
Rhizophora mucronata, Lam. Dict. vi. 169.

HAMAMELIDEÆ.

Liquidambar Altingia, Bl. Fl. Javæ, 8, t. 1–2.

SAMYDACEÆ.

Casearia salacioides, Bl. Mus. Bot. Lugd. i. 252.
Casearia clutiæfolia, Bl. l. c. 255.

CUCURBITACEÆ.

Melothria Rumphiana, Scheff. Ann. du Jard. Bot. de Buitenz. 25.

LORANTHACEÆ.

Viscum orientale, Willd. Sp. Pl. iv. 737.
Loranthus verticillatus; Dendrophtoe verticillata, Scheff. l. c. 27.

CAPRIFOLIACEÆ.

Lonicera Chinensis, Wats. Dendr. Brit. t. 117.
Viburnum Zippelii, Miq. Flor. Ind. Bat. ii. 122.

LOGANIACEÆ.

Geniostoma Lasiostemon, Bl. Mus. Bot. i. 239, fig. XXXV.
Fagræa volubilis, Jack. in Roxb. Fl. Ind. ii. 36.

Fagræa coarctata, Bl. Rumph. ii. 33.
Fagræa rostrata, Bl. Mus. Bot. i. 168.
Fagræa cuspidata, Bl. Mus. Bot. i. 170.

BIGNONIACEÆ.

Tecoma dendrophila, Blume Rumphia, iv. 35, t. 190.
Tecoma leptophylla, Bl. l. c.
Tecoma Ceramensis, Teysm. et Binn. in Miq. Annal. i. 197.

CONVOLVULACEÆ.

Ipomœa dissecta, Willd. Sp. Pl. i. 880.
Lepistemon flavescens, Bl. Bijdr. 722.

ACANTHACEÆ.

Ruellia repanda, L. Sp. Pl. ed. sec. 886.
Peristrophe tinctoria, Nees in Wall. Plant. Asiat. Rarior, iii. 103.

MYRSINEÆ.

Ægiceras floridum, Rœm. et Schult. Syst. Veg. iv. 512.

SAPOTACEÆ.

Chrysophyllum Javanicum, Steud. Nomencl. Bot. ed. secund. 359.
Payenia Banun, Scheff. Annal. du Jard. de Buit. 33.
Lucuma Cocco; Bassia Cocco, Scheff. l. c. 34.

OLEACEÆ.

Chionanthus ramiflorus, Roxb. Fl. Indica, i. 107.

ASCLEPIADEÆ.

Tylophora cuspidata, Zipp. in Annal. des Scienc. Nat. ix. 274, t. 10.
Hoya Ariadna, Decaisne in Cand. Prodr. viii. 635.
Hoya apiculata, Scheff. Annal. du Jard. de Buitenz. 37.

PANDANACEÆ.

Nipa fruticans, Wurmb in Verh. Batav. Genootsch. i. 349.

Aroideæ.

Cryptocoryne ciliata, Fisch. in Schott. Melet. 16.
Amorphophallus campanulatus, Bl. in Annal. du Mus. iii. 366.
Xenophya brancifolia, Schott. in Miq. Annal. i. 124.
Rhaphidophora amplissima, Schott. l. c. 129.
Rhaphidophora Zippeliana, Schott. l. c.
Pothos Zippelii, Schott. l. c. 131.

Scitamineæ.

Heliconopsis Amboinensis, Miq. Fl. Ind. Batav. iii. 590.
Alpinia pubiflora, Benth.; Hellenia pubiflora; Benth. in Hook. Lond. Journ. ii. 235.
Alpinia macrantha, Scheff. Annal. du Jard. Bot. de Buit. 56.
Alpinia Papuana, Scheff. l. c.
Hedychium lanatum, Scheff. l. c. 57.
Phrynium maximum, Bl. Enum. i. 37.
Phrynium capitatum, Willd. Sp. Pl. i. 17.
Phrynium giganteum, Scheff. l. c. 58.

Dioscorideæ.

Dioscorea vulgaris, Miq. Fl. Ind. Batav. iii. 572.

Amaryllideæ.

Crinum Asiaticum, L. Sp. Pl. 292.

Commelynaceæ.

Forrestia hispida, Ach. Rich. Voy. D'Astrol. Bot. ii. 2, t. 1.
Pollia thyrsiflora, Endl. Gen. Plant. 125.

Palmaceæ.

Areca macrocalyx, Zipp. Bijdr. Nat. Wetens. v. 178.
Kentia procera, Bl. Rumph. ii. 94, tab. 106, 160.
Orania regalis, Zipp. in Alg. Kunst-en Letterb. 1829, p. 285.
Ptychosperma angustifolia, Bl. Rumphia, l. c.
Ptychosperma oliciformis, Mart. l. c. ii. 122, t. 156.
Ptychosperma appendiculata, Bl. Rumphia, ii. 122, t. 84 et 119.
Ptychosperma communis, Miq. Fl. Ind. Bat. iii. 31.

Caryota furfuracea, Bl. in Mart. Palm. 195.
Licuala pendentiflora, Zipp. in Bijdr. Nat. Wet. v. 178.
Licuala Rumphii, Bl. Rumph. ii. 41, t. 89.
Cocos nucifera, L. Sp. Plant. 1188.
Korthalsia Zippelii, Bl. Rumph. 171, t. 130.
Calamus barbatus, Zipp. in Bijdr. Nat. Wet. v. 178.
Calamus heteracanthus, Zipp. l. c.
Metroxylon Rumphii, Mart. Palm. 214 et 313, tab. 102 et 159.
Metroxylon filare, Mart. Palm. 216 et 343.

Equisetaceæ.

Equisetum debile, Roxb. in Vauch. Monograph. des Presles, 1822.
Equisetum diffusum, D. Don, Prodr. Fl. Nepal. 19.

Filices.

Aspidium invisum, Swartz Synops. Filic. 48. Port Moresby; Rev. Dr. Turner.

Aspidium Leuzeanum; Kunze in der Bot. Zeit. xiv. 474. Fly-River; D'Albertis.

Both these ferns have been named by Mr. Baker at Kew, who had access to authentic material.

Lichenastra.

Plagiochila Novæ Guineæ, Lacoste in Miq. Annal. i. 292.
Plagiochila Zippelii, Lacoste, l. c. 293.
Chiloscyphus Zollingeri, Gottsche in Natuurk. Tijdschr. v. Nederl. Indie, 1853, 576.
Thysananthus comosus, Lindenb. in Lehm. Pugill. viii. 25.
Phragmicoma polymorpha, Lacoste in Nederland. Kruidk. Arch. iii. 420.
Frullania Billardieriana, Nees et Mont. in Annal. des Scienc. Nat. 1843, 256.
Frullania Zippelii, Lacoste in Miq. Annal. i. 313.

ADDITION.

LEGUMINOSÆ.

Acacia holosericea.

All. Cunn. in G. Don's Gen. Syst. of Dichlam. Pl. ii. 407.

Geelvink-Bay, Beccari ; Fly-River, D'Albertis ; Baxter's River, Reedy.

This Papuan acacia is here drawn doubtfully to Cunningham's tropical Australian plant, as the spikes have been seen only in a very young state and no fruits have as yet been gathered in New Guinea. Moreover the Papuan plant is almost glabrous, its phyllodia are towards the summit more narrowed, and the lower confluence of their nerves is not usually at or near but somewhat remote from the edge ; it shows however the same short peduncles and manifest petioles as those of A. holosericea, by which means it is removed from A. latifolia. The fact, that Dr. Beccari gathered A. Simsii also at Humboldt's Bay, proves that more than one Australian acacia extends to the north coast of New Guinea. But another question arises, whether the Papuan plant is combinable with A. Mangium (W. Sp. Pl. iv. 1053) as Bentham (Transact. Linn. Soc. xxx. 495) and also Beccari suppose. Rumph (Herbar. Amboin. iii. 123) describes the phyllodia 5 inches long and $1\frac{1}{2}$ inches (by miswriting $1\frac{1}{2}$ foot) broad, which accords with the Papuan plant, although he gives the size of the seeds smaller than flax-seeds ; his seemingly reduced figure leaves the question in doubts, which only can be solved by researching for the typical plant at the little islands close to Amboina. The short distance from thence to New Guinea speaks for the identity.

A third phyllodineus acacia occurs on the Fly-River and Baxter's River, with foliage not unlike that of A. polystachya, A. tumida, A. crassocarpa and A. auriculiformis, but neither flowers nor fruits have been obtained.

Mr. Allan Hughan gathered A. spirorbis (Labill. Sert. Austro-Caled. t. 69) or an allied species in the Loyalty-Islands, but in foliage only.

MYRTACEÆ.

Tristania macrosperma.

Leaves scattered or few of the upper opposite, oval-lanceolar, soon glabrous; cymes paniculate; peduncles, pedicels and petioles as well as the young branchlets finely tomentose; lobes of the calyx deltoid, hardly half as long as the tube, the latter almost glabrous; *base of the petals and the short connate portions of the stamens finely downy;* filaments in each bundle 11–13; stigma hardly broader than the style; *valves of the capsule half exserted; fertile seeds winged at one end* as well as the sterile ones large and flat.

Geelvink-Bay; Dr. Beccari.

Well developed leaves 2–3 inches long, unless the upper ones smaller, attenuated into a slender petiole of $\frac{1}{2}$ an inch or less length; pellucid punctures hardly visible. Panicles trichotomous, terminal. Pedicels mostly shorter than the calyx; tube of the latter while petal-bearing about $1\frac{1}{2}$ line long. Petals scarcely above 1 line broad, their color probably white or pale. Stamens longer than the petals; their united portion shorter than the filaments; anthers roundish-oval, versatile, opening by anterior longitudinal slits. Style capillary, about 2 lines long. Fruit three-valved, 3–4 lines high. Seeds forming one circular row, 11 or less in each cell, pendent from the placentas which terminate the finally seceding central column, filling the cavity to the bottom, both fertile and sterile of about equal size, brown, oval-semiorbicular, $1\frac{1}{2}$–$2\frac{1}{2}$ lines long.

In external appearance the Papuan species resembles much T. suaveolens (Sm. in Rees's Cycl. 1817); but the base of the petals and stamens is not unbearded, the number of filaments in each bundle is less, the stigma is not peltate-dilated, the fruit-valves are not remaining in height equal with the calyx tube, while the seeds are much less numerous, much larger and neither spreading nor very slender, but the fertile ones provided with a membranous appendage. Whether considerable distinctions exist in bark and wood, remains to be ascertained. In some respects the approach of this new plant is nearer to T. exiliflora (F. v. M. Fragm. v. 11), notwithstanding the narrower leaves, the minute flowers, paucity of stamens and turgid and shorter seeds of the latter. Among Indian congeners the Papuan one differs from T. obovata (Bennett in Horsf. Pl. Javan. Rarior, 127, t. xxvii.) in acute leaves, longer petioles, larger

flowers, more numerous stamens, broader capsule and much broader seeds, which latter however are arranged like those of T. macrosperma. T. rufescens (Hance in Trimen's Journal of Bot. 1876, p. 259) from Camboja is easily distinguished by its vestiture and fewer stamens. The New Caledonian species, as far as known to me, namely T. Guillamii (Veill. Coll. 2221), T. Callobuxus (Benth. et Hook. Gen. Pl. i. 709), T. glauca (Brogn. et Gris; Panch. n. 70, Veill. n. 907), T. capitulata (Panch. in Annal. des Scienc. Nat. ser. cinq. ii. 130) and T. Veillardii (Brogn. et Gris; Veill. 2179) are all except the one last mentioned very distinct from the Papuan species; T. Veillardii differs however in blunt leaves somewhat decurrent into the petiole, in smaller flowers, obtuse lobes of the calyx, stamens not exceeding the petals and perhaps its fruit, which I have not seen. T. Burmanica (Griff. Plant. Cantor, 49) is not available to me for comparison.

It may be here incidentally remarked, that the Melaleuca pungens of Brogn. et Gris, l. c. 139, has to change its specific name, which is pre-occupied by a West-Australian plant (Schauer in Lehm. Pl. Preiss. i. 138); the New Caledonian species might be named *M. Brogniartii* in memory of the great savant, who recently passed away from his luminous career, and who so largely elucidated the New Caledonian vegetation.

That the length of the stamens is not of absolute generic value in Myrtaceæ became demonstrated by the extreme shortness of the filaments of some species of Tristania and also of Eucalyptus and other cognate genera; hence it is advisable to transfer all the Clœzias to Metrosideros. In the latter genus occur species with a five-celled ovary.

Myrtella.

Lobes of the calyx 5, *almost valvate before expansion*, not scarious, as long or somewhat shorter than the petals. *Stamens uniseriate, free*, about 30, scarcely longer than the lobes of the calyx. Cells of the anthers slit longitudinally. Style short. Stigma very minute. *Ovary three-celled; ovules few or several* in each cell, affixed to the axillary placentas. Fruit unknown. Papuan shrubs with small opposite leaves, axillary solitary small flowers and long-persistent bracteoles. The absence of ripe fruits renders it impossible to designate even the tribe of Myrtaceæ, into which this genus should be placed, whether Bæckeaceæ or Myrteæ; meanwhile the characteristics of the genus rest mainly on the nearly valvular præfloresccnce of the calyx.

Myrtella Beccarii.

Young branchlets slightly downy; *leaves oblong-elliptical, glabrous* except their very obtuse base, on exceedingly short stalks, slightly recurved at the margin; flower-stalklets several times shorter than the leaves; bracteoles seated at the base of the calyx, linear; tube of the calyx shorter than the bracteoles and hardly as long as the lobes; petals scarcely longer than the calyx-lobes; *ovary with few ovules in each cell.*

Humboldt's Bay; Dr. Beccari.

Shrub with the habit of a Bæckea or a Thryptomene. Branchlets numerous and spreading. Leaves chartaceous, hardly 3 lines long, shining above, paler beneath, copiously dotted, spreading. Pedicels about 1 line long. Bracteoles measuring $1\frac{1}{2}$–2 lines in length. Lobes of the calyx semilanceolar, 1 line long or little longer, ciliolate; tube comparatively broad, quite smooth, turgid. Petals subtle-downy, oval. Filaments capillary; anthers roundish, with a conspicuous connective. Style about 1 line long. Stigma hardly dilated. Young fruit semiovate.

Myrtella hirsutula.

Leaves oval-lanceolar, at the lower page as well as the branchlets and calyces densely hairy, their surface beset with scattered hair; petals nearly twice as long as the calyx-lobes, ovules several or many in each cell.

On Mount Arfak, at a height of 5–6,000 feet; Dr. Beccari.

A shrub with the habit of a small Myrtus. Indument of branchlets and underside of the leaves almost brownish-tomentose. Leaves $\frac{1}{3}$–$\frac{1}{2}$ inch long, thinly coriaceous. Flowers described from a sketch of Dr. Beccari, who found the anthers cordate and the ovules adscendent and anatropal.

Dr. Beccari's collection contains another remarkable myrtaceous plant, with the habit of a Psidium, probably referable to the genus Eugenia, but of which the fruit remains unknown. The only flower available for examination showed 8 petals, being double the number of the calyx-lobes. Unless this augmentation arose from monstrous growth, we obtain a species abnormal not only in the genus Eugenia (and to which the name E. pleiopetala might be given), but also in the whole order of Myrtaceæ, except Gustavia. The leaves are oval and 2–3 inches long; the flowers are solitary, axillary and placed on very short peduncles; the

four lobes of the calyx are almost renate and much overlapping; the petals are oval or oblong and nearly 1 inch long; the stamens number about 30, and the rather narrow ovary reminds of that of Myrtus (Rhodomyrtus) macrocarpa.

Bæckea frutescens.

Linné Sp. Pl. 358.

Geelvink-Bay; Beccari.

CRASSULACEÆ.

Bryophyllum calycinum.

Salisb. Paradis. Londin. t. 3.

A cultivated plant, obtained in New Guinea during Capt. Moresby's discovery-voyage was sent to me by Richard Merricks, Esq., of the Naval Depot of Auckland.

CUCURBITACEÆ.

Alsomitra Hookeri.

F. v. M. Fragm. vi. 188.

Audai; Dr. Beccari.

The staminate plant, which alone I have seen, accords with Queensland specimens. The tendrils are often bifid. The uniformly three-lobed calyx, exceptional in the order of Cucurbitaceæ, distinguishes mainly, if not solely, Alsomitra from Zanonia, inasmuch as simple and compound leaves occur also in Momordica, Anguria, Trianosperma and Cyclanthera.

EPACRIDEÆ.

Styphelia trochocarpoides.

Mount Arfak, at a height of about 6,000 feet; Dr. Beccari.

This is the first epacrideous plant, rendered known from New Guinea, though in all likelihood others will yet be detected there in the higher mountain-regions. The finder obtained neither flowers nor fruit, but the foliage leaves no doubt about the ordinal position of the plant, although its generic place remains thus uncertain. The leaves are scattered, lanceolar, gradually long-acuminated, flat, shining on both sides but paler

beneath, 5–7-nerved, conspicuously stalked and as well as the branchlets glabrous, not pungent-pointed; their length varies from $1\frac{1}{4}$–$1\frac{3}{4}$ inches, the width is about $\frac{1}{2}$ an inch. They are not dissimilar to those of the smaller form of Trochocarpa laurina. Among extra-australian species the plant bears comparison to Styphelia dammarifolia (Leucopogon dammarifolius, Brogn. et Gris Fragm. d'une Flore de la Nouv. Calcdonie 1864, p. 83) but the leaves are thinly petioled, much shorter, much more acute and more prominently nerved. The Papuan plant differs also from Styphelia Pancheri (Brogn. et Gris l. c.) in leaves not blunt nor only very finely streaked.

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