DESCRIPTIVE NOTES ON PAPUAN PLANTS,

BY

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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 Scheffer of Java the first portion of the yet unpublished "Annales du Jardin Botanique de Buitenzorg," a periodical thoughtfully commenced this year, and such one as each great phytologic institution for the records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 missionary 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. 420), 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 1½–3 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, ⅓ 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.
