

The Orchids of Ambon

Johannes Jacobus Smith

A translation into English of

Die Orchideen von Ambon

as published by the

Department of Agriculture, Buitenzorg (Bogor), Batavia

1905

with introduction, index, list of localities, and updated list of Smith's interpretation of names used in Rumphius' Herbarium

H J Katz & J T Simmons



**Johannes Jacobus Smith
(1867-1947)**



**Amboina (Ambon) and Ceram (Seram)
Maluku Province, Indonesia**



The Australian Orchid Foundation

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A NOTE ON THE TRANSLATION OF 'ORCHIDS OF AMBON'

While Smith attempted in this volume to include the identity, as far as possible, of the orchids described by Rumphius in his 'Herbarium Amboniense,' his comments in several respects are not always convincing nor conclusive.

The fact that the translators/editors are neither professional nor trained botanists nor taxonomists, has limited the use of the correct botanical terminology in some areas, and where doubt existed, the literal translation has been used to ensure accuracy.

In reading the text, there have been occasions where a temptation arose to include an editorial 'sic' following a Smith statement or conclusion, but constraint has prevailed in most cases, and such action is left to the reader.

The original text contains a disturbing number of errors, not always consistent with type-setting, nor for that matter proof-reading, and where possible and practical, these have been corrected without comment.

Appendices have been added to list the place names mentioned, both within Ambon and adjacent areas, and the list of Rumphius' species with Smith's interpretation as contained in the original text, is shown unchanged as Appendix III. Smith's list of names is not in juxtaposition and some inconsistencies occur in spelling. For example we find Angraecum jambu in the text, which becomes Angraecum jamboe in the appendix.

Finally, the index has been revised and re-compiled to include all generic, section and varietal names used in the text.

H.J. Katz

J.T. Simmons

September, 1985.



THE ORCHIDS OF AMBON

The foundation of the present knowledge of the flora of Ambon was laid, as we know, by Rumphius in his 'Herbarium Amboinense', published in the mid 18th century. In this work a fairly large number of orchids was described and illustrated, but unfortunately not in such a manner as to be recognisable by later investigators.

In Hasskarl's key to these volumes relating to orchids, so many incorrect data and assumptions occur, together with so many unexplained names, that it can hardly be asserted that the knowledge of orchids was thereby promoted.

At a later date the island was visited by several botanists including Lesson, Zippelius, Doleschall, Forbes, etc., but the number of orchids they collected was very modest.

After Rumphius, it was Teysmann who visited Ambon twice (1860 and 1876) and was the first to show a more specific interest in this family. He introduced many species to the Buitenzorg Garden, several of which he and Binnendijk described in 'Nat. Tijdschr. voor Ned.-Indië'. The Botanical Garden also is indebted to Prof. Dr. G. Karsten, who undertook a journey to the Moluccas in 1890, collecting species, which in part are still in cultivation there.

Three years later, Prof. Dr. M. Treub, during his journey to the Moluccas and New Guinea, collected many plants on Ambon, amongst which were many very interesting orchids.

Finally, I was given the opportunity of visiting Ambon in company with Dr. J.G. Boerlage, the then Assistant Director of the Buitenzorg Garden, who passed away on that journey. The large number of orchids I collected there, including several novelties already described in 'Icones Bogorienses', Vol. II, induced me to compile the list published here.

This work in no way presents a complete picture of the orchid flora of Ambon, since in a period of one month it is impossible to thoroughly examine an island such as Ambon which is covered with dense forests, and furthermore, many of the species collected and introduced live to Buitenzorg, had not yet flowered. I trust that this effort will prove useful, particularly since I was able to clarify several of Rumphius' species and expose several discrepancies.

The number of species listed here (including some varieties whose Types do

not occur on Ambon), amounts to 104, plus three doubtful ones. The species which I did not see in flower and which thus could generally be determined only in respect to genus are, with the exception of a very few, not included here. These species which have not been determined closer, belong mainly to genera which are widely distributed in the archipelago, viz. Oberonia, Liparis, Ceratostylis, Dendrobium, Eria, Bulbophyllum, Appendicula, etc.

Of these 104 species, to date no fewer than 36 species and six varieties are endemic to Ambon and it can hardly be doubted that many of them occur on adjacent islands. 23 species were found only in the eastern part of the archipelago. Dendrobium macrophyllum A.Rich., a species of the typical Australian section Dendrocoryne Lindl., occurs as far to the west as western Java; D. superbum Rchb.f., is known in the Moluccas, Borneo and in the Philippines. Phaius amboinensis Bl., apart from occurring in Ambon, is also found in eastern Java; Vandopsis lissochiloides Pfitz., also in the Philippines. Microstylis ventilabrum Rchb.f., probably occurs on Ambon and in Borneo, whilst Habenaria Rumphii is indigenous not only to Ambon, but also to the Celebes and Borneo. The remaining species are distributed more-or-less generally throughout the entire archipelago, with a few occurring also outside the region.

It can be stated generally, that the orchid flora of Ambon is a mixture of Malay and Papuasian forms. The latter are particularly well represented by the genus Dendrobium Sw. in the sections Cadetia Bl., Longicollia J.J. Sm., Dendrocoryne Lindl., Antennata Rchb.f., Biloba J.J. Sm. and by D. foliosum Brongn.

Typically Australian are also Cleisostoma cryptochilum F.v.M. and Sarcochilus Taeniophyllum J.J. Sm., which belongs to the leafless section of this genus. To date only a single endemic [sic] genus, Glossorhyncha Ridl., is known, but this needs further investigation. In the collection of Dr.S.H. Koorders from the Minahassa [region], there is a plant very similar in appearance to G. amboinensis Ridl., but unfortunately it is without flowers.

The occurrence on Ambon of a species from the genus Cryptochilus Wall. (C. bicolor J.J. Sm.) is peculiar, however, this plant differs in some respects from the other two species from the East Indies.

Neuwiedia sp.

Ambon : Between [Mt.] Sirimau and Horiel; [Mt.] Hoetoe Mortetoe; between Alang and [Mt.] Latoea (J.J. Smith).

Since I was unable to find even a solitary flower, I must omit the identification of this plant.

This Neuwiedia was so common in the region between Alang and Mt. Latoea in the higher situated forests, that hundreds of specimens covered the ground with their bright green leaves; some with semi-ripe fruits, the others without any trace of an inflorescence.

The leaves (c. 9) are narrow lanceolate, long and quite pointed, plicate, with many longitudinal veins, a glossy dark green, \pm 73cm long and 5.50cm broad with a \pm 20cm long petiole. The inflorescence is \pm 80cm long, dense and multi-flowered and with many short hairs; the \pm 56cm long peduncle is covered with many leaf-like laminae, the rachis with longitudinal furrows and is densely felted. Bracts lanceolate, concave, many-veined, with dense short hairs on the outside and up to 3.10cm long, the flowers apparently being small. The fruit trigonal; a glossy green, weakly hirsute, the sides \pm 1.60cm long, 0.80cm broad. The ovary stem \pm 0.70cm long.

Paphiopedilum Mastersianum Pfitz.

Engl. Bot. Jahrb. XIX (1894), 40; Pflanzenr. IV, 50 (1903), 84; Hallier Ann. Buit. XIV (1896), 36.

Cypripedium Mastersianum Rchb.f., Gard. Chr. 1879, II, 102; Mast. l.c. 1894, I, 593, t. 74; Veitch, Man. IV, 39; Lindenia IV, t. 159; Rolfe, Orch. Rev. II, 17, f. 4; Curt. Bot. Mag. t. 7629; Krzl. Orch. I, 62; Desbois, Cypr. 333.

Paphiopedilum Mastersianum Kerch. Liv. Orch. 455; Rolfe Orch. Rev. IV (1896), 364.

Ambon : Salhoetoe (Teysm.); [Mt.] Toena (Teysm., Micholitz); [Mt.] Hoetoe Mortetoe (J.J. Smith).

This not particularly beautiful species was introduced about ten years ago in large numbers to England by the firm of Sander, St. Albans, after it had already become known in Europe by lots sent from the Botanical Garden at Buitenzorg.

Platanthera Susannae Lindl.

Gen. et Sp. Orch. 295; Wight Ic. t. 920; Dalz. et Gibs. Bomb. Fl. 269; Miq. Fl. Ind. Bat. III, 714; Krzl. Orch. Gen. et Sp. I, 601; J.J. Sm. Fl. Buit. Orch. 26.

P. gigantea Lindl. Wall. Cat. 7052.

P. robusta Lindl. l.c. 7036; Gen. et Sp. Orch. 295.

Orchis Susannae L. Sp. Pl. n.939.

O. gigantea Sm. Exot. Bot. t.100.

Habenaria Susannae R.Br. Prodr. 312; Bl. Bijdr. 402; Hook.f. Fl. Br. Ind. VI, 137.

H. gigantea Don Prodr. 24; Bot. Mag. t.3374; Grah. Cat. Bomb. Pl. 201.

Flos Susannae Rumph. Herb. Ambon V, 286, t.99.

Ambon : Without locality details (Rumph., Teysm.); Nona; Paso (J.J. Smith), at sunny places; also Boeroe [I.]; Celebes; Timor; Java; Malay Peninsula; China; eastern India.

Peristylus gracilis Bl.

Bijdr. 404; Mus. II, 189; Lindl. Gen. et Sp. Orch. 300; Miq. Fl. Ind. Bat. III, 713; J.J. Sm. Fl. Buit. Orchid. 31.

Habenaria bambusetorum Krz1. Orch. Gen. et Sp. I, 384.

Ambon : Between [Mt.] Sirimau and Horiel (J.J. Smith); also Java; Sumatra.

Peristylus sp.

Orchis amboinica minor II Rumph. Herb. Amb. VI, 118, t.LIV, f.3.

Ambon : Without locality details (Rumph.).

The illustration by Rumphius definately represents a Peristylus, but it is impossible to determine the plant. It can hardly be P. gracilis Bl., since this species has openly spaced, not compressed leaves.

Peristylus candidus J.J. Sm.

Fl. Buit. VI, Orch. 36.

Ambon : Between Alang and Hina Niwel (Boerlage, J.J. Smith); also Java; ? Singapore.

If I am not mistaken, this is the plant cited by Ridley as Habenaria lacertifera Bth. in 'The Orchidaceae and Apostasiaceae of the Malay Peninsula' and in 'The Flora of Singapore!!'

However, I cannot accept that Peristylus candidus J.J. Sm. and P. (Habenaria) Rchb.f.) tentaculatus J.J.Sm. belong to one and the same species. Apart from the colour, the two species differ in the first one having recurved sepals and petals with protruding apices, whilst in the latter they are connate to the apex, or at least facing each other; furthermore P. tenaculatus J.J.Sm. has a large callus at the base of the lip. This is missing in the case of P. candidus J.J.Sm., even though the claw does show a weak longitudinal rib. Also for P. candidus J.J.Sm. the lateral lobes of the lip are appreciably broader than those of the dorsal lobe, which is not so in the case of P. tentaculatus J.J.Sm.

From the fact that specimens from such different regions as western Java and Ambon are completely similar, it is highly probable that the species is not very variable.

Habenaria Rumphii Lindl.

Gen. et Sp. Orch. 320; Miq. Fl. Ind. Bat. III, 713; Krzl. Engl. Bot. Jahrb. XVI, 156; Orch. Gen. et Sp. I, 383.

Platanthera Rumphii Brongn., Coquille 104, t.38 A.

Orchis amboinica minor I Rumph., Herb. Amb. 118, t.54, 2.

Ambon : Common at sunny, grassy places (Rumphius, Lesson, Teysm.); Batoe Gadjia (Boerlage, J.J.Sm.); also Celebes; Borneo.

Pogonia flabelliformis Lindl.

Wall. Cat. n. 7400; Gen. et Sp. Orch. 415; Miq. Fl. Ind. Bat. III, 715; J.J.Sm. Fl. Buit. VI, Orch. 57.

P. Nervilia Bl. Mus. Bot. Lugd. Bat. I, 32; Fl. Jav. Orch. 130, t.56.

Nervilia Aragoana Gaud. It. Freyc. Bot. 422.

Ambon : Between Larike and Alang (J.J.Sm.); also Ternate; Timor; Java; Malay Peninsula; eastern India; Marianas [Is.].

Physurus herpysmoides King et Pantl. var. amboinensis J.J.Sm., nov. var.

(Latin diagnosis)

Stems decumbent, upwards-striving, root-forming, terete \pm 6.0cm long, 0.30cm thick, \pm 4-leaved. Leaves stemmed, protruding, oblique longish, acuminate, pointed, the margin undulate with three veins, furrowed above, keeled below, grey-green \pm 6.50cm long, 2.50cm broad, stem erect, grooved, with the shorter, tubular sheath \pm 1.40cm long, pale grey-green. Inflorescence erect, protruding hairs, \pm 24cm long, lax, up to \pm 12-flowered. Peduncle \pm 15cm long, with several tubular, long-acuminate, appressed, almost glabrous stemmed leaves, pallid brown-green. Rachis pallid brown. Bracts lanceolate, narrow-pointed, concave, appressed glandular hairs, brown, \pm 0.90cm long. Flowers \pm 1.25cm broad, 0.95cm long. Dorsal sepal together with the sepals forming a cap, lanceolate, somewhat blunt, very concave, 0.80cm long, 0.25cm broad. Lateral sepals wing-like, obliquely erect, at an acute angle to the dorsal sepal, oblique, mildly 'S'-shaped, blunt, concave, 0.80cm long, 0.275 cm broad. Sepals tri-veined, on the outside with protruding glandular hairs, green-brownish. Petals adnate to the dorsal sepal, oblique linear-lanceolate, somewhat broader at the apex, pointed, single-veined, pallid brown, white at the apex, 0.70cm long, 0.15cm broad. Labellum vertical, spurred, expanded \pm 0.83cm long, in normal state 0.33cm long; lip-lamina feebly trilobed,

markedly concave, at the base the margins closely appressed to the column, inside with a longitudinal furrow, white, lateral lobules very small, weakly truncated; the middle lobes strongly recurved, roundish, pointed, with a deep longitudinal furrow above, both halves convex, undulate, 0.25cm long and broad; the spur pointing downwards, fairly short, straight, broad, somewhat deeply bilobed at the apex, with slightly pointed lobules, pale brown, \pm 0.25cm long, 0.30cm broad. Gynostemium erect, brownish white, \pm 0.53cm long, below with two longitudinal ribs; clinandrium deep, longish ovate. Extended anther ovate, acute, pale brown, 0.40cm long. Pollinia - 2, separated, narrow clavate, yellowish white with long caudicles and a small viscid mass.

Rostellum large, trigonal, delicately bi-dentate. Stigma similar to the clinandrium, large, ovate. Ovary erect, glandular hairs protruding, brown-green, \pm 0.80cm long.

Ambon : Between Alang and [Mt.] Goenoeng Riboe (J.J.Sm.).

This plant is so similar to P. herpysmoides King et Pantl., that I considered it undesirable to be described as a new species. However, the plant from Ambon is appreciably smaller, has a more open inflorescence, smaller flowers and a relatively shorter spur.

Anoectochilis Reinwardtii Bl.

FL. Jav. Orch. 40, t.12, f.2, t.12b, f.14; Miq. Fl. Ind. Bat. III, 732; J.J.Sm. Fl. Buit. VI, Orch. 96.

Folium petolatum II femina s. vera Rumph. Herb. Amb. VI, 93, t.41, f.3.

Ambon : Without locality details (Rumph.); [Mt.] Toena (J.J.Sm.); also Java; Sumatra; Malay Peninsula.

I have not seen the flowers of this plant. However, the leaves are so similar to those of the plant from Java, that for the time being the determination can be considered correct.

Fig. 2 of the above mentioned plate, Folium petolatum I, mas, represents a different species of the group Physurinae, perhaps Zeuxine amboinensis J.J.Sm.

Zeuxine sulcata Lindl.

Gen. et Sp. Orch. 485; Journ. Linn. Soc. I, 186; Griff. Not. III, 396; Ich. pl. Asiat. t.349; Bl. Fl. Jav. Orch. 55; Miq. Fl. Ind. Bat. III, 723; Hook.f. Fl. Br. Ind. VI, 106; King et Pantl. Ann. Bot. Gard. Calc. VIII, 286, t.381; J.J.Sm. Fl. Buit. VI, Orch. 108.

Z. bracteata, Z. brevifolia, Z. robusta Wght Ic. 1724 bis, 1725, 1726.

Z. membranacea Lindl. Gen. et Sp. Orch. 486; Journ. Linn. Soc. I, 186; Bl. Fl. Jav. Orch. 56, t.22, f.2, t.23a.

Z. Tripleura Lindl. Journ. Linn. Soc. I, 186.

Z. integerrima Lindl. Gen. et Sp. Orch. 486; Bl. Fl. Jav. Orch. 55, t.19, f. 1, t.23c; Miq. Fl. Ind. Bat. III, 723.

Z. emarginata Lindl. Gen. et Sp. Orch. 185.

Z. procumbens Bl. Fl. Jav. Orch. 56, t.22, f.3, t.23b.

Tripleura pallida Lindl. Wall. Cat. 7291; Gen. et Sp. Orch. 452.

Adenostylis emarginata, A. integerrima Bl. Bijdr. 414, t.17.

Pterygodium sulcatum Roxb. Fl. Ind. III, 452.

Ambon : Hila, at the beach between Ipomoea biloba Forsk. and Cassytha filiformis L., etc. (J.J.Sm.); also Java; Philippines; Assam; China; eastern India.

The sepals are white, pale green at the base, the labellum yellow, the lip-lamina with three green longitudinal veins.

Zeuxine amboinensis J.J.Sm.

Ic. Bog. II, 259.

Haplochilus amboinense J.J.Sm. Bull. Inst. Bot. Buit. 7; Ic. Bog. II, 19, t. c v A.

Ambon : Between Alang and [Mt.] Latoea (J.J.Sm.).

var. argentea J.J.Sm. l.c.

H. amboinense J.J.Sm. var. argentea J.J.Sm. ll. cc.

Together with the previous species.

Cystopus muricatus J.J.Sm., sp. nov.

(Latin diagnosis)

Small plant. Stems decumbent, upwards-striving, root-forming, terete, glabrous, pale green, ± 10.0 cm long, ± 0.27 cm thick, leaves ± 6 , protruding, petiolate, ovate, short-acuminate, very pointed, undulate, velvety green, at the apex with three whitish veins, pale below, ± 1.90 cm long, 1.10 cm broad; stem grooved, with a sheath of almost equal length ± 0.90 cm long, glabrous, pale green.

Inflorescence erect, fairly long and with coarse protruding hairs, ± 8.50 cm long. Peduncle terete, pale green, ± 6.0 cm long with several (± 4) laxly appressed, long-acuminate, pallid, stemmed leaves, ciliated apart from at the apex. Bracts much longer than the ovary, appressed, erect, long-acuminate starting as ovate-trigonal at the base, concave, the broad part with fairly long cilia, pallid green, overall 0.90 cm long, 0.35 cm broad, the apex 0.40 cm long. Flowers ± 8 , pointing to one side, partly open, ± 0.37 cm broad, 0.70 cm long. Sepals parallel, lanceolate, pointed, grooved concave, on the outside near the apex with several long, loosely appressed soft bristles, pale green with a white apex; the dorsal sepal ± 0.60 cm long,

0.17cm broad; the lateral ones oblique with a broadened concave base surrounding the lip-pouch, 0.70cm long, 0.23cm broad at the base. Petals slightly adnate to the dorsal sepal, on one side, lanceolate-spathulate, pointed, weakly concave and undulate, single-veined, translucent white, pallid green at the base, 0.53cm long, 0.13cm broad. Overall length of labellum \pm 0.63cm long, white, with the pallid green backwards-facing blunt pouch with two calli inside being surrounded by the lateral sepals; the lip-lamina claw broad, grooved with incurved margins appressed to the column and on each side in front with a small, blunt carnoselobule; the lip-lamina protruding, laterally broadened, insignificantly bilobed, with a short small apex, both halves bent upwards forming a right-angle, 0.17cm long and 0.30cm broad. The gynostemium a pallid green, 0.37cm long; the clinandrium deep. Anther long and narrow, blunt, short-cordate at the base, whitish, 0.25cm long. Pollinia - 2, yellow, composed of two clavate masses, on a broad caudicle with a pointed viscid mass. The rostellum divided deeply, the segments being joined by a thin membrane. Stigma below the column, undivided, similar to the clinandrium. The ovary erect parallel to the rachis, twisted, pale green, coarsely hirsute at the apex only, 0.60cm long.

Ambon : [Mt.] Toena (J.J.Smith).

Provisionally, I have placed this plant in Cystopus, even though the claw is neither dentate nor fimbriate, also I found the column to be without appendages. However, it is possible they may have been overlooked if they were very small.

The fairly long soft bristles at the apex of the sepals are noteworthy.

Corymborchis veratrifolia Bl.

Fl. Jav. Orch. 105, t. 42E, t. 43, f. 1; J.J.Sm. Fl. Buit. VI Orch. 134.

C. assamica Bl. l.c. 106, t. 43, f. 2.

Hysteria veratrifolia Reinw. Cat. Hort. Bog. 99; Bot. Zeit. Syll. Pl. nov.

II, 5; Lindl. Gen. et Sp. 439; Hassk. Cat. Hort. Bog. 47; Pl. Jav. rar. 131;

De Vr. III. Orch. t. VII.

Corymbis veratrifolia Rchb.f. Flora XLVII (1865), 184; Hook.f. Fl. Br. Ind. VI, 91.

C. disticha Lindl. Fol. Orch. 1 (e. p.)

Macrostylis disticha Bred., Kuhl. et v. Hass. Orch. Jav. Fasc. I, t. 2.

Rhynchanthera paniculata Bl. Bijdr. f. 78.

Ambon : [Mt.] Hoetoemoeri (Teysm.); Wai (Teysm., Treub); Hitoe Lama (Treub); also Moluccas; New Guinea; Borneo; Java; Sumatra; Malay Peninsula; eastern India.

Coelogyne Rumphii Lindl.

Fol. Orch. n.35; Miq. Fl. Ind. Bat. III, 668; Ridl. Journ. Bot. XXIV (1886), 353.

C. psittacina Rchb.f. Xen. Orch. II, 141, t.153.

Pleione Rumphii O.K. Rev. Gen. Pl. II, 680.

Angraecum nervosum Rumph. Herb. Amb. VI, 106, t.48.

Ambon : Without locality details (Rumphius, Doleschall); [Mt.] Hoetoemoeri. (Teysm.); Horiel; Nona; [Mt.] Hoetoe Mortetoe; between Roema tiga and Hito; between Alang and [Mt.] Latoea (J.J.Smith); also New Guinea.

This species is very common in Ambon at shady places on trees, however, it is never found at the coast.

It is closely related to C. speciosa Lindl., from Java and it can be said to replace the latter species on Ambon.

At Buitenzorg there is one specimen in cultivation which regularly produces bifoliate pseudobulbs and which carries very large flowers. Reichenbach's C. psittacina definitely belongs here; I have seen the plant at the Vienna Herbarium.

Dendrochilum sp.

Ambon : Salahoetoe (Teysmann).

In the Buitenzorg Herbarium there is a species belonging to section Platyclinis, which apparently is a novelty. However, since the flowers are damaged, I will leave it undescribed.

Tainia penangiana Hook.f.

Fl. Br. Ind. V, 820; Ic. Pl. XXI, t.2089; Ridl. Journ. Linn. Soc.Bot. XXXII, 314; J.J.Sm. Fl. Buit. VI, Orch. 183.

Ambon : [Mt.] Toena (J.J.Sm.); also Java; Malay Peninsula.

With the specimens I found in Ambon and Java, the flowers, in cultivation, always remain half-closed; the rostellum is missing and accordingly self-pollination must occur. Several plants obtained from the Singapore Botanical Gardens and treated in exactly the same manner at Buitenzorg, open regularly and have a well-developed rostellum.

Plocoglottis moluccana Bl.

Mus. I, 47; Fl. Jav. Orch. 53, t.16; Miq. Fl. Ind. Bat. III, 676.

Ambon : Without locality details (Zippel).

Blume's assertion that this plant represents Angraecum terrestre alterum of Rumphius definitely is incorrect. The illustration belongs to a Phaius species of the section Limatodis.

Plocoglottis Lowii Rchb.f.

Gard. Chr. (1865), 434; Xen. Orch. II, 142, t.154; Hallier f. Ann. Buit. XIII, 2^e p.318.

P. porphyrophylla Ridl. Trans. Linn. Soc. Ser. II, Bot. III, (1893), 368; Journ. Linn. Soc. Bot. XXXII, 317.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); also Borneo; Malay Peninsula. Ridley's description of P. porphyrophylla matches this plant so precisely, hence without a doubt, that is where it belongs.

The asymmetry of the flower is noteworthy with the one petal facing upwards, the other more-or-less downwards; the lateral sepals being twisted to the left, the column to the right.

Phaius callosus Lindl. var. escalaratus J.J.Sm.

(Latin diagnosis)

Pseudobulbs adjacent, elliptical in cross-section, almost terete, 6 - sectioned, green, \pm 8.0cm long, 2.80cm broad, \pm 4 - leaved, with sheaths at the base. Leaves erect, petiolate, only very slightly bent, lanceolate, long-acuminate, underneath with 5 - 7 protruding veins, convex between the veins, a glossy green; blade up to \pm 82cm long, 9.70 - 11.0cm broad; stem grooved, 3 - ribbed, pale green with darker stripes, \pm 33cm long. Inflorescences at the lower nodes, robust, erect, equal in length to the leaves, lax, multi-flowered. Peduncle oval in cross-section, terete above, green, \pm 53cm long, 1.50cm broad, with several sheaths up to 9.0cm long, becoming larger in the upwards direction, pale green, with 3 - 5 darker veins on the outside. Rachis \pm 72cm long. Bracts large, drooping, longish trigonal, pointed-concave, keeled on the outside, pale green with darker more-or-less protruding veins, up to \pm 8.0cm long and 3.0cm broad. Flowers \pm 20, wide-open \pm 10cm broad, the sepals and petals arranged in a plane at an acute angle to the labellum, becoming dark blue on compression, long-lasting, carnose. Sepals lanceolate, blunt, with a longitudinal groove inside; the lateral ones, in particular, with a central rib protruding on the outside, pure white on the outside, cinnamon-brown inside, indistinct paler and darker longitudinal stripes, with small pale yellow little dots, a narrow, pallid yellow margin and yellowish white apex, \pm 5.20cm long; the dorsal sepal 1.30cm broad; the lateral ones somewhat oval, slightly more pointed than the dorsal one, 1.40cm broad. Petals lanceolate, slightly broader at the apex, blunt, convex, similar to the sepals concave at apex, with a longitudinal groove on the outside and white, cinnamon-brown on the inside, with a narrow pale yellow central line, pale yellow little dots, narrow white margin and white apex, 5.0cm long, 1.25cm broad. The labellum curled

around the column, with a ± 1.25 [cm] long, thick carnose claw, hirsute on the inside, adnate to the column at the base, lacking a spur, with a short rounded-off protruding ridge at the base, not between the lateral sepals; the lip-lamina trilobed, with a longitudinal groove below, inside with two broad, flat, carnose longitudinal ridges separated by a narrow furrow which unite in front to a much narrower longitudinal rib, when expanded overall ± 4.70 cm long, 3.60cm broad, glabrous, white, with wine-red spots at the base, the lobes coloured wine-red outside, also the middle lobes inside for the greater part, the lateral lobes only at the tips; the lateral lobes large, curled around the column, longer than the column, broad, truncated, with an undulate margin bent outwards; the middle lobe protruding, obliquely truncated, quadrangular, furrowed at the apex, both halves convex, undulate at the margin, 1.0cm long, 1.70cm broad. The column almost straight, broadened at the apex in a wing-like manner and crenate there; the part adnate to the lip-claw hirsute below, pallid wine-red, white-margined at the apex and with a wine-red spot on each side, wine-red below, ± 2.60 cm long, at the apex 0.80cm broad; clinandrium very deep. Anther capped, truncated, pointed to form an angular little beak, white, with scattered hairs, 0.35cm broad. Pollinia - 8, wax-like, obtrigonal, oblique, truncated, laterally compressed, matt-yellow. Rostellum large, trigonal, pointed, reflexed. Stigma obovate. Ovary 2.50cm long, bent; pedicel 1.40 cm long, both a glossy white.

Ambon : Horiel (J.J.Smith).

Although this differs appreciably in some respects from P. callosus Lindl., the floral structure of both plants in general is so similar that I can consider it only as a variety. The main differences are in the almost completely unspurred labellum and in the colour which agrees suprisingly well with that of P. Incarvillei O.K. (P. Blumei Lindl.). However, it must be stated that the colour of P. callosus Lindl. in Java also is very variable.

The description of this imposing plant was made from a specimen in cultivation at the Buitenzorg Garden.

Phaius amboinensis Bl.

Mus. II, 180; Fl. Jav. Orch. 8; Miq. Fl. Ind. Bat. III, 672; J.J.Sm. Fl. Buit. VI, Orch. 198.

P. Zollingeri Rchb.f. Xen. Orch. II, 201, t.76 II; Miq. l.c. 740.

Angraecum terrestre alterum Rumph. Herb. Amb. VI, 113, t.LII, f.1.

Ambon : Without locality details (Rumphius, Zippel); between [Mt.] Sirimau and Horiel (J.J.Smith); also Java; Celebes.

The illustration by Rumphius (t. I [50], f. 3), which is reported as belonging here, represents a smaller plant with much more pointed sepals and petals. Apparently this illustration belongs to P. gratus Bl. Blume interpreted Angr. terrestre alterum Rumph. both as Phaius amboinensis Bl., as well as Plocoglottis moluccana Bl. Only the first statement is correct.

Phaius gratus Bl.

Mus. II, 181; Fl. Jav. Orch. II.

Limatodis [? Limatodes] grata Miq., Fl. Ind. Bat. III, 672.

Angreacum terrestre primum album Rumph. Herb. Amb. VI, 113.

Ambon : On [Mt.] Alf (Rumphius, Zippel).

I know nothing about this species.

Apparently t.L, f.3 represents this plant.

Calanthe tunensis J.J.Sm.

Bull. Inst. Buit. no.7; Ic. Bog. II, 69, t.CXIII A.

Ambon : [Mt.] Toena, very abundant at and close to the summit (J.J.Smith).

The plants usually grow terrestrially. However, at times, they are found in the thick layer of moss, fairly high up on trees.

Calanthe saccata J.J.Sm.

Bull. Inst. Buit. no.7; Ic. Bog. II, 70, t.CXIII B.

Ambon : [Mt.] Latoea, at the summit (J.J.Smith).

Of this species, I found only a solitary plant in flower.

Calanthe celebica Rolfe

Kew Bull. 1899, 129.

Ambon : In the vicinity of [Mt.] Latoea in forests (J.J.Smith); also Celebes.

The plant I collected on Ambon definitely is C. celebica Rolfe, which could be considered as a variety of C. emarginata Lindl. The latter generally is larger, the inflorescences relatively shorter and more compact, the flowers larger, the spur longer, recurved and bent upwards at the apex towards the ovary, almost clavate and appreciably longer than the lip-lamina; furthermore, the very small lateral lobes of the lip are bent outwards in a falcate manner and the calli are red-brown. For the plant from Ambon the spur is decidedly clavate, with the lip-lamina of equal length, more-or-less bent forward, and after pollination is appressed to the latter; the lateral lobes are straight and the calli yellow.

It is worth mentioning that with the species grown in the natural state in

Ambon, the ovary of the unopened flowers was already swollen, although with the opened flowers the white pollinia were always found to be dry in their position. The flowers are violet.

Calanthe veratrifolia R.Br.

Bot. Reg. sub t. 573; Lindl. Bot. Reg. t.720; Gen. et Sp. Orch. 249; Fol. Orch. 8, Bot. Mag. t.2615; Griff. Ic. Pl. Asiat. t.283, f.4; Walp. Ann. VI. 917; Hook. f. Fl. Br. Ind. V, 851; J.J.Sm. Fl. Buit. VI, Orch. 211.

C. furcata Bat. Bot. Reg. 1838, Msc. no. 34; Miq. Fl. Ind. Bat. III, 711.

C. sumatrana Bl. ex Boerl. Bijdr. Midd. Sum., 33.

? C. catilligera Rchb.f. Bonpl. 1857, 37.

? C. proboscidea Rchb.f. Gard. Chr. 1884, 476.

C. comosa Rchb.f. Linnaea, XIX, 374.

C. Perrotteti Rich. Ann. Sc. Nat. Ser. 2 XV, 68; Wight. Ic. t.1664; Lindl. Fol. Orch. 7.

Limodorum veratrifolium Wlld. Sp. Pl. IV, 122.

Amblyglottis veratrifolia Bl. Bijdr. 270.

Orchis triplicata Willem. Ust. Ann. 1852.

Alismorchis veratrifolia O.K. Rev. Gen. Pl. II, 650.

A. furcata O.K. l.c.

Flos triplicatus Rumph. Herb. Amb. VI, 115, t.LII, f.2.

Ambon : Without locality details (Rumphius); [Mt.] Hoetoemoeri (Teysm.); [Mt.] Sirimau; Horiel; [Mt.] Toena; between Alang and [Mt.] Latoea; Hina Niwel (J.J.Smith); also Ceram; Lombok; Borneo; Java; Sumatra; Malay Peninsula; Philippines; eastern India; New Guinea; Australia.

I do not understand what Rumphius means by his term 'variation' of the species. Perhaps only a 'form' of this very variable Calanthe.

Acanthephippium sp.

Ambon : Between [Mt.] Sirimau and Horiel (J.J.Smith).

I found this plant out of flower and I have not seen the specimens in cultivation at the Botanical Garden in flower.

Spathoglottis plicata Bl.

Bijdr. 401, t.76; Lindl. Gen. et Sp. Orch. 119; Wall. Cat. 3734; Rchb.f.

Walp. Ann. VI, 455; Hassk. Tijdschr. Nat. Gesch. IX, 139; Pl. Jav. Rar. 126;

De.Vr.III. Orch.; Miq. Fl. Ind. Bat. III, 673; Hook.f. Fl. Br. Ind. V, 813;

J.J.Sm. Fl. Buit. VI, Orch. 219.

S. lilacina Griff. Not. III, 323; Ic. Pl. Asiat. t.311, f.3.

Bletia angustifolia Gaud. Freyc. Vog. Bot. 421, t.32.

Phaius Rumphii Bl. Mus. II, 179; Fl. Jav. Orch. 6.

Angraecum terrestre primum purpureum Rumph. Herb. Amb. VI, 112, (non fig.).

Ambon : At [Mt.] Alf (Rumphius); in the hills near the capital town; Nona; between Roemah tiga and Hitoe; Between Asiloeloe and Larike; between Alang and [Mt.] Latoea (J.J.Smith); also Moluccas; Celebes; Borneo; Java; Sumatra; Singapore; Malay Peninsula; New Guinea; Solomon Islands.

This species is also very abundant in Ambon and occurs with pale and dark violet, as well as white flowers. In the vicinity of Alang I found a very beautiful 'form' with large, pure white flowers, the lip having lemon-yellow markings. The white-flowered 'form' in Java always is less attractive than the violet one; there the flowers are small, usually barely open and the colour is fairly muddy.

Rumphius in describing his Angraecum terrestre primum purpureum, surely meant Spathoglottis. Probably, in error, t. LII, fig. 1 is given as belonging here, the description does not match it in any way. Blume then combined the plate (representing Phaius amboinensis) with his description of P. Rumphii.

Geodorum sp.

Ambon : Batoe Cantoeng; Asiloeloe; Larike; Alang (J.J.Smith), growing amongst grass.

Unfortunately, the plants were all without flowers, so that a precise determination was not possible.

Oberonia lucida J.J.Sm., sp. nov. (section Caulescentes Lindl.)

(Latin diagnosis)

Stems close together, pendulous, \pm 23cm long. Leaves \pm 23, distichous, much compressed laterally, equitant, at an acute angle to the stems, carnosae, lanceolate, triangular, pointed, with a sharp margin, glossy green, the lower ones \pm 4.0cm long, 0.80cm broad, becoming smaller uppermost.

Inflorescence terminal, pendent, \pm 12cm long, multi-flowered. Rachis with longitudinal ribs, pale green. Bracts appressed, small, longish, fairly pointed, somewhat irregular margins, \pm 0.10cm long. Flowers more-or-less in definite \pm 10 - flowered whorls, sometimes in spirals, more separated above, located singly, the uppermost ones flowering first, small, yellow-green, with involute sepals and petals, \pm 0.10cm long, 0.17cm broad. Dorsal sepal longish, weakly ovate, blunt, with broad base, convex, almost 0.10cm long. Petals linear, almost 0.10cm long. Labellum fairly large, tri-lobed, markedly glossy, with a semi-circular, margined depression at the base, lateral lobes erect surrounding the column, broad longish, blunt, markedly convex; middle lobe protruding, almost flat, longish, 0.10cm long, bilobed, the lobules triangular, almost parallel,

serrated. Column very short. Anther obliquely oval, with a protruding connective, thickened, convex, pointed at the apex like a small blunt beak. Pollinia orange. Ovary with pedicel \pm 0.13cm long.

Ambon : In the vicinity of the capital town on trees (J.J.Smith).

the species is related to O. imbricata Lindl. The marked gloss of the lip is very noticeable.

Microstylis moluccana J.J.Sm.

Bull. Inst. Buit. no. 7; Ic. Bog. II, 28. t. CVII B.

Ambon : Without locality details (Teysm.); between Alang and Hina Niwel (J.J. Smith); also Ternate (J.J.Smith).

? Microstylis ventilabrum Rchb.f.

Gard. Chr. XVI (1881), 717; Ridl. Journ. Linn. Soc. Bot. XXIV (1888), 341.

Malaxis ventilabrum O.K. Rev. Gen. Pl. II, 673.

(Latin diagnosis)

Stems decumbent, root-forming, upwards-striving, carnose, dark violet, \pm 11cm tall, leaved. Leaves petiolate, longish-lanceolate, oblique, pointed, plicate, undulate at the margins, with three veins, grooved above, keeled below. The veins above glistening copper-brown, below pale grey-green, \pm 8.0cm long; the stem grooved, three-edged, pallid grey-green and violet; the sheath short, tubular, at times split, violet. Inflorescence erect, long-flowering, drooping at the apex, very floriferous, 10.0cm and over long. Peduncle and rachis fairly thin, winged, violet at the base, towards the top pallid green, the former \pm 3.0 - 4.0cm long. Bracts bent back, lanceolate, pointed, violetish, with a small longitudinal green stripe. Flowers small, \pm 0.4cm broad, 0.50cm long, pallid greenish yellow, becoming red-brown on withering. The sepals reflexed, oval, markedly convex, with a broad base. Petals somewhat shorter, linear-longish, with the apex reflexed. The lip fairly flat, nearly circular in outline, with a pale green depression at the base, surrounding the column having triangular, fairly pointed, parallel, pallid greenish yellow auricles. The gynostemium very short, pallid green, with the auricles overtopping the anther. Anther pale yellow. Pollinia - 4, yellow.

Ambon : Soja (Treub).

This plant agrees fairly well with Reichenbach's description and with the specimens at the Kew Herbarium. It is (apparently) the identical species collected by Hallier and Nieuwenhuis in Borneo.

Microstylis horielensis J.J.Sm., sp. nov.

(Latin diagnosis)

Stem erect, carnose, almost cylindrical, in cross-section almost elliptical, green suffused with violet, \pm 12cm long, 1.20cm broad, 15 to 20-leaved. Leaves distichous, obliquely erect, plicate, petiolate, lanceolate-acuminate, pointed, with four veins, grooved above, markedly keeled below, convex above between the veins, the margin undulate, glossy green, \pm 15.50cm long, 5.20cm broad; the stem broad, grooved, with the short sheath \pm 5.0cm long, markedly tetragonal, green, the margins and keels often dark violet. Inflorescence terminal, erect, lax, multi-flowered, dark red-violet. Peduncle multi-winged and angled, \pm 6.0cm long, 0.35cm broad. Rachis \pm 16cm long. Bracts reflexed, subulate, pointed, \pm 0.75cm long, dark red-violet. Flowers \pm 0.65 cm broad, 0.70cm long, with protruding sepals and petals, dark red-violet. Dorsal sepal longish, blunt, convex, 0.37cm long, 0.17cm broad. Lateral sepals obliquely oval, blunt, convex, 0.30cm long, 0.20cm broad. Petals longish, somewhat spathulate, blunt, convex, 0.36cm long, 0.15cm broad. Labellum horse-shoe-shaped, surrounding the column, having two large triangular, almost parallel, widely-separated, blunt, fairly flat auricles, the lip-lamina trilobed in front with short, blunt side lobes and broad bilobed, markedly forwards bent, concave middle lobe with, on either side, two pointed weakly falcate, appreciably shorter teeth at the base with a large depression surrounded by a horse-shoe-shaped margin, when spread out overall \pm 0.45cm long and broad. The column short, slightly bent, 0.12cm long, with blunt, slightly diamond-shaped auricles. The anther pale yellow. Pollinia yellow. The stigma with a transverse gap below. Ovary \pm 0.25cm long, forming an obtuse angle with the 0.35cm long pedicel.

Ambon : Horiel (J.J.Smith).

This plant is probably the most-leaved species that I know.

It belongs to Blume's [section] *Crepedium* and probably is most closely related to *M. obovata* J.J.Sm. The strongly incurved apex of the lip is characteristic of the species and occurs also for *M. Wallichii* Lindl., but not, as far as I am aware, for other species with a dentate labellum.

Liparis odorata Lindl.

Gen. et Sp. Orch. 26; Thw. Enum. Pl. Ceyl. 295; J.J.Sm. Fl. Buit. Orch. 263. *L. paradoxa* Rehb.f. Walp. Ann. VI, 218; Ridl. Journ. Linn. Soc. Bot. XXXII, 261; Hook.f. Fl. Br. Ind. V, 698; King et Pantl. Ann. Bot. Gard. Calc. VIII, 27, t.34.

Malaxis odorata Wlld. Sp. Pl. IV, 91.

M. lancifolia Smith, Rees' Encycl.

Empusa paradoxa Lindl. Wall. Cat. 1937 A. (p. p.); Bot. Reg. sub. t. 825;

Gen. et Sp. Orch. 17; Miq. Prol. Fl. Jap. 135; Thw. l.c. 426.

Leptorchis odorata O.K. Rev. Gen. Pl. II, 671.

Ambon : Between Alang and Hina Niwel, on grassy plains (J.J.Smith); also Java; Sumatra; Siam; Cambodia; China; Japan; eastern India.

Liparis amboinensis J.J.Sm., sp. nov. (section Mollifoliae Rchb.f.)

(Latin diagnosis)

Terrestrial. Pseudobulbs close, erect, carnose, long-cuneate, pointed, few articulations, in cross-section almost diamond-shaped, \pm 9.0cm long, 2.10cm broad, with tubular, pointed-edged sheaths, \pm 3 - leaved. Leaves protruding with short and broad stems, somewhat obliquely longish, coming to a point with \pm 6 veins markedly keeled below, somewhat convex above between the veins, not undulate, green, up to \pm 19cm long, 8.0cm broad; stem together with sheath, \pm 3.0cm long, angular. Inflorescence erect, few-flowered. Peduncle 5 - winged, pale green, \pm 14cm long, 0.40cm broad. Bracts small, protruding, trigonal, pointed, green, 0.40cm long. Flowers fairly large, \pm 1.90cm broad. Dorsal sepal reflexed, linear-lanceolate, blunt, markedly convex, with reflexed margins and apex, pale green, coloured slightly violet at the base, 1.40cm long, 0.35cm broad. Lateral sepals protruding below the lip, rolled up obliquely to the rear, lanceolate, falcate, blunt, coloured the same as the dorsal one, \pm 1.10cm long, 0.40cm broad. Petals reflexed, linear, with incurled margins, somewhat broader towards the apex, blunt, coloured pallid green and violet, \pm 1.35cm long and 0.15cm broad. Labellum very bent, circular, with a short, broad claw, crenate, above with a longitudinal groove, both halves convex, at the base with two small calli ending in two short ribs, dark violet, suffused with green at the centre, \pm 1.10cm long and broad. Column bent, towards the apex carnose, winged and markedly concave below, violet at the base, pallid green-yellow at the apex, 0.6cm long. Anther more-or-less circular, a bright pale green. Pollinia - 4, pale orange. Rostellum short with a broad apex. Stigma deep, quadrangular. Ovary bent upwards, pale green, together with the violet pedicel \pm 1.40cm long, sharply 6 - ribbed.

Ambon : Hatoe Lalikoel, between Alang and [Mt.] Latoea (J.J.Smith).

This species is closely related to L. bituberculata Lindl.

I have kept it separate on account of the circular labellum and the differently constituted calli.

Liparis cleistogama J.J.Sm., sp. nov. (section Coriifoliae Rchb.f.)

(Latin diagnosis)

Epiphyte. Pseudobulbs bunched together, ovate, elliptical in cross-section, green, \pm 1.70 - 2.10cm long, 0.80 - 1.20cm broad, single leaved. Leaf narrow, lanceolate, pointed, narrower at the base, the central vein grooved

above, sharply keeled below, \pm 5 - veined, glossy green, matt below, \pm 7.0 - 13.5cm long, 1.55 - 2.0cm broad. Inflorescences on the young shoots, erect, longer than the leaves, lax, relatively few-flowered. Peduncle compressed, ensiform, sharp margined, green, \pm 5.20cm or more long, 0.20cm broad, without petiolate leaves. Zig-zag rachis, 4 - winged, 7.0cm or more long. Bracts distichous, protruding obliquely, subulate, with a broad base, concave, keeled, \pm 0.80cm long. Flowers non-opening, never fruiting, pale green. Buds longish, 3 - sided, 0.475cm long, 0.20cm broad. Sepals longish, narrowed at the apex, bluntish, concave, the middle rib much thickened, the dorsal one \pm 0.50cm long, 0.20cm broad; the laterals weakly falcate, 0.45cm long, 0.20cm broad. Petals linear, weakly falcate, blunt, somewhat convex, 0.475cm long, 0.05cm broad. Lip broad-obovate, marginate in front and with a short, broad, blunt tip in the hollow, concave, a blunt tooth on the margin on each side, about mid-height, and at the base two carnosse, glossy calli extending forwards into two longitudinal little ribs, \pm 0.43cm long, 0.40cm broad. The column bent, with a broad tip, white, pallid green at the apex, on each side next to the stigma a large, trigonal, pointed winglet, 0.35cm long. Anther ovate with a broad tip, fairly large. Pollinia yellowish white. Rostellum bent upwards, short, broad. Stigma large, blunted. Ovary with pedicel \pm 0.95cm long, markedly 6 - ribbed, pale green. Ambon : Between [Mt.] Riboe and [Mt.] Latoea (J.J.Smith).

I cultivated this species for a period at Buitenzorg and often saw it in bloom, however, the flowers never opened.

In contrast to most of the other cleistogamic plants, this one never appeared to set fruit; in cultivation, at least, the flowers always dropped off after a certain time and had not been pollinated.

Liparis cleistogama J.J.Sm. belongs to those species with a compressed, ensiform peduncle and usually with green flowers, such as L. caespitosa Lindl., L. viridiflora Lindl., L. Forbesii Ridl., etc. The very sharp, blunt keels of the sepals are peculiar, so are the large trigonal winglets each side of the column; similar winglets occur, e.g. with L. bootanensis Griff.

Liparis tunensis J.J.Sm.

Ic. Bog. II, 44, t.CIX B.

Ambon : [Mt.] Toena (J.J.Smith).

This is one of the few species belonging to the *Coriifoliae* group that grow terrestrially.

Liparis confusa J.J.Sm. var. amboinensis J.J.Sm., var. nov.

(Latin diagnosis)

Pseudobulbs long and narrow, extended from the ovate base, elliptical in cross-section, pale green, \pm 12cm long, at the base \pm 2.30cm broad, 0.60cm at the apex, bifoliate. Leaves small lanceolate, somewhat pointed, plicate at the base with the mid-rib grooved above and keeled below, fairly soft, pale green, \pm 21cm long, \pm 2.70 - 3.10cm broad. The inflorescences at the base with a sharply plicate, pointed \pm 2.0cm long sheath, delicately pendent, almost stemless, floriferous, \pm 31cm long. Bracts lanceolate, three-sided, pointed, concave, \pm 0.50cm long. Flowers far apart, very small, slightly fragrant, very pallid translucent green. Sepals reflexed, longish, markedly convex. Petals reflexed, linear, blunt, convex. Labellum erect, reclinate approximately in the middle, broad longish, pallid brownish yellow, the lower part grooved, with two pointed, carinose teeth facing each other, the upper half slightly convex, with short cilia, bilobed, the lobules blunt, weak, crenate. Gynostemium slender, bent, erect, pallid green, 0.15cm long. Anther roundish, pale green. Pollinia - 4, yellow. Stigma small. Ovary bent upwards, barely 0.10cm long, forming a right or obtuse angle with the far protruding 0.65cm long pedicel.

Ambon : Hila (Treub).

The variety differs from the Type in the thicker pseudobulbs, elliptical in cross-section; broader leaves and in the longer, more lax inflorescence. It agrees fairly well with a plant collected by Nieuwenhuis in Borneo.

L. confusa J.J.Sm. occurs also in Java and Sumatra and is often mistaken for L. longipes Lindl., which, as far as I am aware, has not yet been collected in the Malayan Archipelago. Both species show much similarity in habit.

L. longipes Lindl., however, is readily distinguished by the labellum, which is not lobed at the apex. The variety could also be confused with

L. parviflora Lindl. (L. flaccida Rchb.f.); the latter, however, has far laxer, markedly pendent and usually appreciably longer, more open inflorescences, the flowers with livelier colours, and, in particular, the calli at the base of the lip are differently shaped.

Cryptochilus bicolor J.J.Sm.

Ic. Bog. II, 65. t. CXII A.

Mediocalcar bicolor J.J.Sm., Bull. Inst. Bot. Buit. no. 7.

Ambon : Summit of [Mt.] Toena, on trees covered with a thick layer of moss (J.J.Smith).

Agrostophyllum longifolium Rchb.f.

Bonpl. V, 41; J.J.Sm. Fl. Buit. VI, Orch. 290.

A. majus Hook.f. Ic. Pl. t. 2096; Fl. Br. Ind. V, 824.

Appendicula longifolia Bl. Bijdr. 304; Lindl. Gen. et Sp. Orch. 240; Miq. Fl. Ind. Bat. III, 704.

Several specimens collected by Karsten in Ambon are being cultivated in the Buitenzorg Garden. Further occurrences are Celebes ?; Borneo; Java; Sumatra; Perak.

Agrostophyllum atrovirens J.J.Sm.

Ic. Bog. II, 59, t. CXI A.

Ambon : [Mt.] Latoea (J.J.Smith).

Agrostophyllum amboinense J.J.Sm.

Ic. Bog. II, 60, t. CXI B.

Ambon : [Mt.] Latoea (J.J.Smith).

Glomera erythrosma Bl.

Bijdr. 372, f. LXVIII; Lindl. Gen. et Sp. Orch. 253; Hassk. Cat. Bog. 46; Fl. Bot. Zeit. 1842, Beibl. II; Miq. Fl. Ind. Bat. III, 705; Rchb.f. Xen. Orch. II, 94, t. 128; J.J.Sm. Fl. Buit. Orch. 293.

Ambon : Summit of [Mt.] Toena (J.J.Smith); also Java.

Ceratostylis latuensis J.J.Sm., sp. nov. (section Caulescentes Rchb.f.)

(Latin diagnosis)

Rhizome pendent, branched, \pm 7.0cm long, 0.10cm thick, completely covered with dark brown sheaths. Stemlets \pm 1.0cm apart, very small, thin, pale green, \pm 0.50cm long, single-leaved. Leaves almost linear, thick carnose, rigid, convex below, above almost flat with a longitudinal groove, the apex being thorn-shaped, narrowed at the base in a stem-like manner, glossy green, \pm 4.0cm long, 0.40cm broad; sheath stem-like, grooved above, \pm 0.90cm long. Inflorescences single, or a few together, terminal. Peduncle thin, greenish white, with long hairs, \pm 0.90cm long. Bract tubular, pointed, translucent, pale green-brown, \pm 0.30cm long. Flowers white, \pm 0.70cm broad. Sepals lanceolate, pointed, concave; on a few occasions hairs on the outside; the dorsal one \pm 0.60cm long, 0.20cm broad; the lateral ones following the column-foot downwards to form a blunt mentum, protruding, slightly falcate, with a broad base, 0.67cm long, 0.27cm broad. Petals protruding, linear, single-veined, 0.55cm long, 0.075cm broad. Labellum protruding, clawed; the claw fairly broad, grooved, 0.15cm long; lip-lamina ovate, pointed, carnose, concave at the base and with two short, fairly thick, pallid violet longitudinal ribs, 0.35cm long, 0.25cm broad following down to the claw, and with short hairs. Gynostemium very short, much widened, white, 0.13cm long,

0.15cm broad. Anther capped, almost square. Pollinia - 8, clavate, yellowish white. Armllets of the stigma barely longer than those of the anther, somewhat divergent, broad, strongly rounded-off on the outside. Rostellum with a deep margin. Column-foot directed towards the rear, forming an acute angle with the ovary, 0.07cm long. Ovary grey, with long hairs, \pm 0.35cm long.

Ambon : Summit of [Mt.] Latoea (J.J.Smith).

A species of the section *Caulescentes*, with extended rhizome and short stemlets.

Glossorhyncha amboinensis Ridl.

Journ. Linn. Soc. Bot. XXVIII, 341, t. XLIV.

Ambon : Salhoetoe (Teysm.).

Unfortunately, I never found this interesting plant again.

Dendrobium utile J.J.Sm. (section *Longicollia* J.J.Sm.)

Ic. Bog. II, 77, t. CXIV A.

Ambon : Without locality details (Teysm., M. Weber)

Dendrobium Dendrocolla J.J.Sm. (section *Longicollia* J.J.Sm.)

Ic. Bog. II, 78, t. CXIV B.

Ambon : Without information on locality (Karsten); between [Mt.] Riboe and [Mt.] Latoea (J.J.Smith).

Dendrobium ecolle J.J.Sm. (section *Longicollia* J.J.Sm.)

Ic. Bog. II, 82, t. CXV A.

Ambon : [Mt.] Toena (J.J.Smith).

Dendrobium umbellatum Rchb.f. (section *Cadetia*)

Walp. Ann. VI, 303.

Cadetia umbellata Gaud. Freyc. Voy. Bot. 422, t. 33; Miq. Fl. Ind. Bat. III, 628.

(Latin diagnosis)

Stems close, monostichous, thin, slightly thickened at the apex, with 4 - 5 fairly deep longitudinal grooves, green, \pm 3.50cm long, 0.20cm broad at the apex, single-leaved, initially with tubular sheaths at the base. Leaf erect, thick carnose, rigid, linear-lanceolate, at the apex with two irregular and pointed teeth, narrowed at the base, convex, with the protruding mid-rib grooved above, blunt below, matt green, with pallid dots below.

Inflorescences pseudo-terminal, bunched, very short, single-flowered,

surrounded by dry scales, flowering in sequence. Peduncle \pm 0.20cm long. Bract diminutive, trigonal. Flowers \pm 0.47cm broad, 0.60cm long, yellowish white. Dorsal sepal erect, broad-longish, pointed, with broad base, convex, 0.35cm long, 0.23cm broad. Lateral sepals, with a band adnate to the front margins, following the column-foot downwards, forming a blunt, non-emarginate, reflexed, parallel to the ovary, spur-shaped, 0.25cm long mentum, the free parts being almost as broad as long, concave, 0.30cm broad. Petals linear, inwards bent, obliquely pointed, single-veined, 0.30cm long, 0.05cm broad. Labellum cuneate spathulate, grooved, trilobed, 0.40cm long, when spread out, at the height of the lateral lobes 0.30cm broad; claw thin, somewhat broadened in a cuneate manner; hirsute inside; lateral lobes erect next to the column, small, trigonal, pointed; middle lobe much broadened, short, obtuse longish, slightly compressed at the apex, both corners bent upwards and blunt, carnose, 0.125cm long, 0.40cm broad. Gynostemium short, broad, compressed at the rear, yellowish white with carmine-red dots; clinandrium little-developed, hence the pollinia drooping onto the stigma; auricles large, broad, irregularly dentate. Anther capped, rounded-off square, the broad tip hirsute and dotted carmine-red. Pollinia - 4, yellowish white. Rostellum small, trigonal, stigma semi-circular, shallow. Column-foot appressed to the ovary, hirsute inside, \pm 0.20cm long. Ovary yellowish white, with long, carnose, soft bristles directed downwards, \pm 0.20cm long; pedicel glabrous, greenish white, \pm 0.20cm long. Fruit pendent, obovate globose, 3 - grooved, pale grey-green, with strong cuneate, protruding soft bristles, in each groove a pectinate longitudinal ridge formed by similar soft bristles, \pm 0.70cm long, overall 0.60cm broad; pedicel bent over, pale green.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); also Rawak (Freycinet).

This plant is so similar to Cadetia umbellata Gaud., that I considered it as belonging to Gaudichaud's species. However, in several respects it differs from his description and illustration. The dorsal sepal is convex, not concave, for the plant from Ambon, the mentum is not emarginate and the soft bristles of the ovary are longer and directed downwards; only at a later stage do they protrude.

Dendrobium crumenatum Swartz.

Act. Holm. 1800, 246; Lindl. Gen. et Sp. Orch. 88; Bot. Reg. 1839, t.22; Trans. Hort. Soc. VII, 70; Griff. Not. III, 315; Bot. Mag. t. 4013; Choix de Pl. t. 22; Rchb.f. Walp. Ann. VI, 291; Hook.f. Fl. Br. Ind. V, 729; J.J.Sm. Fl. Buit. VI, Orch. 330.

Onychium crumenatum Bl. Bijdr. 326.

Callista crumenata O.K. Rev. Gen. Pl. 653.

Ambon : Without locality details (Karsten, J.J.Smith); also Borneo; Java; Sumatra; Singapore; Malay Peninsula; Indochina; Siam; Andaman Islands; Tenasserim.

Dendrobium papilioniferum J.J.Sm., sp. nov. (section Crumenata Pfitz.)

D. crumenatum Sw. fl. lilac. Miq. Choix, t. XXII, f. 1.

Angraecum crumenatum Rumph. Herb. Amb. VI, t. XLVII, f. 2.

A. angustis crumenis Rumph. l.c. 107.

(Latin diagnosis)

Has the habit of D. crumenatum Lindl. [Swartz]. Stems extended up to 1.10m and over, thin at the base, then swollen to a fusiform, \pm 8 - sided, later deeply furrowed, \pm 15cm long, 1.25cm thick pseudobulb with sheaths that soon wither, the upper part then thin again, elliptical in cross-section, \pm 0.43 cm broad, leaved, the uppermost part with rudimentary leaves only; internodes \pm 2.50 - 3.50cm long, glossy green, later on brown. The leaves protruding, thick leathery, rigid, lanceolate, surrounding the stem, blunt, short and more-or-less irregularly bilobed, with a small tip, the veins protruding slightly above, glossy green, \pm 10cm long, 2.60cm broad, becoming smaller towards above; the sheaths tubular, elliptical in cross-section, pale green. Inflorescences at the nodes of the upper part of the stem beset with rudimentary leaves, very short, surrounded by a few scales which soon wither, a few flowers developing at intervals, petiolate leaves translucent, with red-violet veins. Flowers large, \pm 4.0cm broad, fragrant, lasting for a few days. The dorsal sepal longish, pointed, with a small tip, \pm 2.85cm long, 1.0cm broad. Lateral sepals follow the column-foot downwards to form a large reflexed, cuneate, blunt mentum, the front margins completely free, longish, trigonal, \pm 2.70cm long the base 1.85cm broad. Petals longish, the upper part somewhat lacerated and undulate, narrowed at the base. Sepals and petals with the tip bent outwards, pointed, white, the apex coloured pale violet-red. Labelum at the base of the column-foot adnate to a \pm 0.55cm long, blunt spur, somewhat compressed from behind, cuneate, trilobed in front, concave, somewhat pouch-ed below, on the inside with three closely adjacent yellow or greenish yellow longitudinal ridges terminating on the lacerated middle lobe at the base of the spur entrance, when pressed flat \pm 3.55cm long, 2.55cm broad; the lateral lobes large, erect, trigonal, blunt, concave, crenate in front, white, violet-red veined on the inside; middle lobe protruding, roundish, grooved, undulate, strongly crenate, violet-red, with a whitish margin at the base, \pm 1.10cm long, 1.30cm broad. Gynostemium short, broad, white, \pm 0.40cm long, 0.57cm broad; auricles large, broad and blunt. Anther capped, blunt, violet-red or white. Pollinia - 4, narrow, yellow. Rostellum broad. Stigma shallow, with two lobules on the

upper margin. Column-foot forming an obtuse angle with the ovary, slightly bent, narrowed towards the apex, blunt, with a longitudinal rib near the apex and a yellow callus inside the spur, \pm 1.40cm long. Ovary short, greenish white, \pm 0.30cm long; pedicel white, 2.10cm long.

Ambon : Without locality details (Rumph.); between Asiloeloe and Larike (J.J.Smith); also Kei [Islands].

A plant originating from Kei [Islands], and cultivated at Buitenzorg has smaller flowers and a labellum more emarginate at the apex than those from Ambon. In general they are very similar to each other.

The plant described by Rumphius as Angraecum angustis crumenis appears to be the same species as that illustrated under the name of A. crumenatum, which was accepted by Hasskarl in his 'Key.' However, the illustration does not represent the typical flowers of Dendrobium crumenatum Sw., rather that of D. papilioniferum J.J.Sm.

Dendrobium papilioniferum J.J.Sm. var. ephemerum J.J.Sm., var. nov.

Angraecum album minus Rumph. Herb. Amb. VI, 99, t. XLIV, f. 1.

(Latin diagnosis)

Has the habit of D. crumenatum Sw. Stem extended, 1.20m and more long, thin and terete at the base, then swollen to a fusiform, markedly longitudinally furrowed, \pm 13.50cm long, 2.0cm thick bulb, beset only with sheaths, later on again thin, oval in cross-section, leaved, the stem apex beset only with rudimentary leaves. The leaves surrounding the stem are thick carnose, leathery, lanceolate, blunt, emarginate, irregularly bilobed with the mid-rib weakly grooved above, below not protruding, \pm 11cm long, 3.50cm broad, the uppermost ones becoming smaller. Inflorescences at the nodes of the upper part of the stem which are beset with rudimentary leaves, very short, surrounded by dry scales, a few flowers developing in the intervening spaces. Petiolate leaves tubular, pouched, pointed, translucent pallid green, with somewhat darker protruding veins, becoming violet-brown uppermost. Flowers large, \pm 4.0cm broad, lasting only a day, odorous, milk-white. Dorsal sepal longish, with broad base, narrowed towards the apex, with a blunt tip, convex, the upper part reflexed and with forward-bent margins, \pm 3.0cm long, 1.10cm broad. Lateral sepals follow the column-foot downwards, protruding, the upper part folded together and with incurved margins, pointed, longish trigonal, \pm 3.0cm long, at the base 2.0cm broad. Petals longish, the upper two-fifths reflexed, slightly pointed, slightly undulate, narrowed at the base, \pm 3.0cm long, the base 1.40cm broad. The base of the labellum adnate to the column-foot to form a \pm 0.50cm long spur, large, trilobed, the middle part concave below, convex inside and with three

closely adjacent, deep yellow longitudinal ridges, more noticeable on the middle lobe and crenate (in the case of one plant flat, carnosose and warty), the two exterior ones bent away sideways at the base to block the entrance to the spur, when spread out \pm 3.85cm long, 2.55cm broad; the lateral lobes erect, loosely surrounding the column, broad, blunt, broadly undulate, white, inside with violet-red forked veins; the middle lobe large, protruding, markedly grooved in front and in front with strongly reflexed lateral margins, irregularly crenate, violet-red veined at the base, when spread out \pm 1.40cm long, 1.65cm broad. Column short, broad, white, 0.40cm long, 0.60 cm broad; auricles broad, crenate (entire in the case of one plant). Anther capped, blunt, white, at the base with two narrow protruding lobes. Pollinia - 4, narrow, yellow. Stigma shallow. Column-foot forming an acute angle with the ovary, somewhat bent, concave, with swollen margins and towards the apex with a longitudinal rib, white, inside the spur a large, deep yellow callus, \pm 1.70cm long. Ovary short, pallid green, 0.35cm long, pedicel white, \pm 1.80cm long.

Ambon : Without locality details (Rumphius); Hila (Treub); between Asiloeloe and Larike (J.J.Smith).

The variety differs from the Type mainly in colour, the less pleasant odour and with the sepals and petals recurved further. However, it is peculiar that the flowers, also those of D. crumenatum Sw., last only for one day, even if they are not pollinated, whilst those of the Type stay fresh for several days.

D. crumenatum Sw. occurs in the same regions as D. papilioniferum J.J.Sm. Could D. papilioniferum var. ephemerum J.J.Sm. perhaps be a hybrid of the two species?

Angraecum album minus of Rumphius, Herb. Amb. VI, 100, t. XLIV, f. 1, and probably also t. XLVII, f. 2, which is not described, are most likely related to this plant.

D. bursigerum Lindl., the name given to this plant by Hasskarl is something different.

The 'form' of this plant described by Rumphius is probably a different Dendrobium species; definitely not Hysteria veratrifolia Rnwdt., as Hasskarl suggests, which could not belong to Rumphius' plant having 'thick, rigid small leaves.'

The Type and variety are so similar to D. crumenatum Sw., that, without flowers, they cannot be distinguished; hence they have been mistaken for this plant, or considered as a rose-red variety.

The description of D. Papilio Loher fits it to a degree, but a confusion of the two species appears to me, however, to be out of the question. Loher's

description of the lip: 'labellum longe unguiculatum, stipite canaliculato flavo, limbo rotundato crenulato undulato, striis 3 et nervis lateralibus purpureis' does, at least, not fit my plant.

Dendrobium lobulatum Rolfe et J.J.Sm.

Fl. Buit. VI, Orch. 336.

Ambon : Without locality details (Karsten); also Borneo; Java.

Karsten collected this plant in Ambon and introduced it live to Buitenzorg. I could not find a description of this fairly widely distributed plant, and since also Rolfe after receiving a sketch, wrote me that the species was unknown to him, but nevertheless he considered it should be given a name; so we are forced to regard it as a novelty.

Dendrobium calceolum Roxb.

Hort. Beng. 63; Fl. Ind. III, 488; Miq. Fl. Ind. Bat. III, 630.

D. Roxburghii Lindl. Journ. Linn. Soc. III, 4.

Aporum Roxburghii Griff. Calc. Journ. N. Hist. V, 370.

Callista calceola O.K. Rev. Gen. Pl. II, 654.

Herba supplex quinta Rumph. Herb. Amb. VI, 111, t. LI, f. 2.

Ambon : Common on trees, near the coast (Rumph., Teysm.); Ambon (capital township); Galela; Wai; Asiloeloe; etc. (J.J.Smith); New Guinea?

The plant is not Herba supplex femina Rumph. VI, 110, t. LI, f. 1, as often stated, but is the above cited Herba supplex quinta Rumph.

The stems reach a length of 1.25m, or more, are compressed and not swollen at the base. The flowers are \pm 1.45cm broad and 2.40cm long.

A plant introduced from Dutch New Guinea is very similar to D. calceolum Roxb., but is distinguished by the smaller (\pm 1.0cm broad, 1.40cm long) flowers with a decidedly more bent column-foot and the much branched stems (as well as branches) swollen above the base. This plant is perhaps

D. Goldfinchii F.v.M.

Dendrobium concavum J.J.Sm., sp. nov. (section Aporum Bl.)

(Latin diagnosis)

Stems close together, thin, compressed, weakly zig-zagged, \pm 33cm long, the lower part having normal leaves, the upper part rudimentary ones. Leaves \pm 7, distichous, strongly compressed laterally, lanceolate, pointed, carnosae, \pm 3.0cm long; sheaths tubular, laterally strongly compressed, \pm 1.0cm long. Inflorescences on the upper part of the stem, very short, bushy, developing several flowers at intervals, surrounded by scales. Flowers lasting several days, white, \pm 0.87cm broad, 1.15cm long. Dorsal sepal facing to the front,

ovate, with a very small tip, decidedly convex, \pm 0.50cm long and 0.40cm broad. Lateral sepals follow the column-foot downwards to form a large, cuneate, blunt mentum, the fronts somewhat raised forming ridges, triangular, slightly pointed, with the midrib protruding outwards, 0.60cm long, the base \pm 0.70cm broad. Petals lanceolate, widened at the base, blunt, convex, 0.60cm long, 0.20cm broad. Labellum inserted at the front margin of the apex of the spur-shaped column-foot, erect, trilobed, clawed, on the inside swollen in front with a three-ribbed longitudinal stripe, pallid yellowish and pale reddish coloured, terminating at the base of the middle lobe in 3 teeth, when spread out \pm 0.95cm long and 1.30cm broad; lateral lobes erect, bent over the column, linear-falcate, blunt, concave; the middle lobe bent forwards, markedly concave, much broader than long, 0.40cm long, 0.85cm broad, bilobed, the lobes rounded-off, slightly marginate, slightly undulate. Gynostemium short, 0.20cm long; auricles triangular. Anther capped, white with truncated tip. Pollinia - 4, yellow. Stigma rounded off. Column-foot forming a right-angle with the ovary, almost straight, concave, at the apex short cuneate, spur-shaped, and with a yellow callus, 0.70cm long. Ovary \pm 0.25cm long, pale yellow, fine red dots; pedicel yellowish white, 0.40cm long.

Ambon : Without locality details (Karsten).

The description of this plant was made from a specimen in cultivation at Buitenzorg. It should not be confused with other species of section Aporum and has delicate flowers which, however, last for several days, as often found in section Crumenata.

Noteworthy is the column-foot which is spur-shaped at the apex and has a callus, also the labellum which is inserted at the front margin of this spur.

Dendrobium salicornioides T. et B. (section Strongyle Lindl.)

Nat. Tijdschr. Ned. Ind. XXIV (1862), 315.

(Latin diagnosis)

Stems close together, tortuous, somewhat branched, \pm 30 - 40cm long; the internodes \pm 2.0cm long, thickened from the base towards the apex. Leaves carnose, oval in cross-section, slightly bent, narrowed towards the apex, pointed, green, \pm 3.0cm long, 0.30 and 0.35cm thick. Flowers individual or in two's at the apices of the stems, pendent, delicate, white, frequently slightly suffused with violet on the outside, odourous, \pm 1.60 - 1.90cm broad. Dorsal sepal longish, ovate, pointed, convex, \pm 0.90cm long, 0.50cm broad. Lateral sepals follow the column-foot downwards to form a large, bent, conical, blunt mentum, triangular, 0.90cm long. Petals longish, narrowed at the base, slightly convex, on the outside with a longitudinal swelling,

0.85cm long, 0.35cm broad. Labellum erect, parallel to the column-foot, bent, with large longish-cuneate, broadly grooved claw, widened in front to a relatively short, forwards bent, weakly trilobed, crenate in the middle, \pm 1.40cm broad lip-lamina, marked with a yellow spot in the sinus, and inside with two closely adjacent ridges, somewhat pointed at the apex, \pm 2.40cm long when spread out. Gynostemium \pm 0.25cm long, 0.50cm broad; auricles carnosae. Anther capped, white. Pollinia - 4, yellow. Column-foot forming an acute or right-angle with the ovary, long, bent, with slightly thickened margins, with a pallid yellow, small spot at the apex, \pm 1.80cm long. Ovary pale green, 0.40cm long; pedicel white, fairly limp, 1.50cm long.

Ambon : Without locality details (Teysm., in Herb. Bog.); also Celebes; Krakataoe; Pinang.

The description is made from specimens collected by Dr. Koorders in the Minahassa [region] and cultivated at Buitenzorg. A plant designated D. salcornioides T. et B., Krakatau, Tsm., which has been in cultivation at Buitenzorg for a very long time, is completely identical with it, also with several received from Pinang under the incorrect name of D. terminale Par. et Rchb.f. The description in Nat. Tijdschr. agrees fairly well with the species, except that the length of the leaves is given as appreciably shorter (1.0cm), but this difference may be ascribed to the plants at Buitenzorg having been cultivated in strong shade. Teysmann and Binnendijk definitely state : 'labello calloso trilineato,' whilst I have been able to show only two ribs.

The species of the section Strongyle show little of character in the flowers, so that very precise and comprehensive descriptions are needed to be able to define them.

D. albicolor Ridl. appears to be very similar to this species, but Ridley states : 'mentum cum sepalis aequilongum,' whilst in the species I have described, it is twice as long as the sepals.

Dendrobium atropurpureum Miq.

Fl. Ind. Bat. III, 644.

Oxystophyllum atropurpureum Bl. Rumphia IV, 41, t. 193, f. 4, t. 198G.

Herba supplex minor Rumph. Herb. Amb. VI, 110, t. 1, f. 2.

Ambon : On trees at the coast (Rumph., Teysm.); Ambon; Galela; Wai; Asiloeloe; etc. (J.J. Smith); also New Guinea.

Although Blume's illustrations of Oxystophyllum carnosum and O. atropurpureum are very similar to each other, I am not yet completely convinced that they represent only one species. The fact that the former grows in Java in the mountains and the latter in Ambon and New Guinea, only at the coast, makes

this fairly doubtful.

Dendrobium amboinense Hook. [Hook.f.]

Bot. Mag. t. 4937; Miq. Fl. Ind. Bat. III, 634.

Callista amboinensis O.K. Rev. Gen. Pl. II, 654.

Ambon : Without locality details (Karsten); [Mt.] Hoetoe Mortetoe and [Mt.] Toena (J.J.Smith).

This interesting plant has single, or 2-, seldom 3-flowered inflorescences in hollows of the clavate stems, which are diamond-shaped in cross-section and usually bifoliate at the apex. The large, but delicate flowers, which last barely a day and have a peculiar odour, have \pm 10cm long, linear sepals and similar petals. The lip is much shorter, movable, trilobed, with a carnose callus on the inside and having two short, tall longitudinal little laminae; the colour is predominately pallid yellow, lemon-yellow between the lateral lobes and with an ovate, dark brown dotted mark; the delicately subulate-pointed mid lobe is whitish with yellow margins and apex, whilst the margins in the hollows between the lobes are black-brown.

The species flowers regularly in the Botanical Garden at Buitenzorg.

Dendrobium macrophyllum A. Rich.

Sert. Astrol. 22, t. 6; Ill. Hort. 1888, 59, t. LVII; Rchb.f. Walp. Ann. VI, 30; J.J.Sm. Fl. Buit. VI, Orch. 347.

D. macrophyllum var. Veitchianum Lindl. Bot. Mag. 1867, t. 5649.

D. Veitchianum Lindl. Bot. Reg. 1847, sub. t. 25; De Vriese Ill. t. 5; t. 11, fig. 3; Miq. Fl. Ind. Bat. III, 632.

D. ferox Hassk. Retzia I, 1.

Callista Veitchiana O.K. Rev. Gen. Pl. II, 655.

Ambon : [Mt.] Sirimau (J.J.Smith); also Ternate; New Guinea; Java.

I found an immense specimen of this plant with \pm 55cm long stems, leaves up to 33cm long and 12cm broad, with \pm 52cm long inflorescences, having 35-40 flowers. The flowers were 6.0cm broad with black-violet dotted sepals and petals, the latter, however, only for two-thirds.

Dendrobium Mirbelianum Gaud.

Voy. Freyc. Bot. 423, t. XXXVIII.

D. Rosenbergii T. et B. Nat. Tijdschr. Ned. Ind. XXIV (1862), 317.

D. calophyllum Rchb.f. Xen. Orch. II, 167.

Callista Mirbeliana O.K. Rev. Gen. Pl. II, 655.

Dendrobium calophylla O.K. l.c.

Angraecum flavum septimum Rumph. Herb. Amb. VI, 102, t. XLV; ? t. XLVI, f. 2.

Ambon : Without locality details (Rumphius, Rosenberg, Teysm.); between

Toelehoe and Soeli; Hila; Asiloeloe; between Alang and Hina Niwel, etc. (J.J. Smith); New Guinea.

A very common species on Ambon, where it grows mostly on solitary trees. Rumphius' plate XLVI, f. 2 of Angraecum flavum nonum can really not be distinguished from his t. XLV. Apparently also one or several of Reichenbach's species belong here: viz. D. polycarpum Rchb.f. appears to me to be very similar. Furthermore, the name polycarpum suits this species admirably, since the flowers always set fruit very regularly. The flowers are a fairly muddy yellow, more-or-less violet-brown; the labellum is a pallid yellow with brown-violet veins. The petals are not much longer than the sepals, slightly twisted, and glossy.

Dendrobium Rumphianum T.et B.

Nat. Tijdschr. Ned. Ind. XXIV (1862), 317.

D. minax Rchb.f. Xen. Orch. II, 129, t. 145.

Angraecum flavum sextum moschatum sive odoratum Rumph. Herb. Amb. VI, 102.

Ambon : Without locality details (Rumphius, Doleschall, Teysm.); Hila (Treub); also Moluccas; Celebes.

The inflorescences are fairly short and very sparsely flowered. The sepals and appreciably longer petals are more-or-less pallid green and violet; the labellum greenish white with red-violet veins.

D. Burbidgei Rchb.f. may also be the same species.

Dendrobium taurinum Lindl. var. amboinense Rolfe.

Orch. Rev. (1897), 304.

Ambon : Without locality details [or collector].

Dendrobium pruinosum T.et B. (section Grastidium Bl.)

Nat. Tijdschr. Ned. Ind. XXIV (1862), 314.

Angraecum jambu Rumph. l.c. 108.

(Latin diagnosis)

Stems robust, pendent, extended, oval-elliptical in cross-section, glossy green, ± 1.25 cm long, ± 0.80 cm broad; internodes 2.5 - 3.0cm long, the uppermost ones smaller. Leaves protruding, distichous, thick, leathery, rigid, longish, surrounding half the stem, at the apex somewhat unevenly bilobed, with a longitudinal groove above, ± 10.0 cm long, 4.30cm broad, becoming smaller in the upwards direction. Inflorescences numerous, piercing two sheaths, bent downwards, hidden under the leaves, very short, 2 - flowered. At the base short, tubular, strong laterally compressed, obtuse, petiolate leaves, some surrounding the others, the outer ones of which

soon dry up. Peduncle 1.0cm long [sic.], compressed. Flowers delicate, lasting one day, pallid yellow, \pm 2.80cm broad. Sepals linear-lanceolate, pointed, concave, the dorsal one \pm 2.30cm long, 0.55cm broad; the lateral ones inclined together at the apices, falcate, keeled on the outside, forming together with the column-foot a very short bilobed mentum. The petals protruding, linear-lanceolate, somewhat widened at the apex and concave, with outwardly prominent central vein, 2.0cm long, 0.50cm broad. Labellum small, movable, trilobed, on the inside with a granular, pale red-lead coloured longitudinal rib, when spread out \pm 1.0cm long and broad; lateral lobes erect, longish triangular, crenate at the apex, the lower half inside with pale pink warts; middle lobe ovate-triangular, pointed, revolute, convex, irregularly crenate and undulate with brown warts, in the middle with close protruding hairs, 0.50cm long and broad. Gynostemium white, \pm 0.55cm long; auricles obtuse. Anther capped. Pollinia - 4, longish, yellow. Stigma 5 - sided, deep. Column-foot forming almost a right-angle with the ovary, short, yellowish white, with a small red-lead coloured mark, 0.40cm long at the apex. Ovary \pm 0.70cm. Pedicel \pm 0.80cm long, greenish white.

Ambon : Hila (Treub); between Asiloeloe and Alang (J.J.Smith); also Moluccas; Kei [Islands].

The plant flowers about only once every year, the flowers lasting only one day, hence it is only by chance that one can see it in flower. The description is made from vigorously growing specimens in cultivation at Buitenzorg.

D. pruinsum T. et B. is perhaps the largest of the known species belonging to the section Grastidium. The inflorescences are all directed downwards, hence are located below the leaves. The flowering plant gains much attention on account of the floral opulence, but only if one observes the stems from below.

Dendrobium angustipetalum J.J.Sm., sp. nov. (section Distichophylla)

(Latin diagnosis)

Roots warty, brown, with bright green apices. Stems close together, pendulous, elliptical in cross-section, thinner towards the apex, latter deeply grooved, glossy green, with a yellow transverse stripe at the nodes, leaved, \pm 90cm long, \pm 0.90cm broad; internodes \pm 2.0 - 2.5cm long. Leaves lanceolate, narrowed towards the apex, very irregularly bilobed, with the middle vein weakly prominent below, margin reflexed, both sides very glossy green, thin leathery, \pm 10.0cm long, 2.20cm broad; sheaths tubular, shorter than the internodes, weakly keeled, pale green. Inflorescences at the nodes, numerous, protruding, piercing through the sheaths at the base, lax, 7-

flowered, \pm 5.0 - 6.0cm long. Peduncle green, 1.40 - 2.50cm long. Rachis fractiflex. Bracts small, appressed, trigonal, \pm 0.22cm long. Flowers open wide, \pm 1.45cm broad, greenish white. Dorsal sepal ovate-oval, slightly pointed, blunt, with broad base and reflexed margins, 5 - veined, 0.60cm long, 0.50cm broad. Lateral sepals following the column-foot downwards, trigonal, pointed, with apex bent back, broad-undulate, 5 - veined, dark violet-brown at the apex, \pm 0.60cm long, 0.87cm broad. Petals lanceolate, acute, with oblique base partially following downwards to the base, convex, single-veined, 0.55cm long, 0.20cm broad. Lip with very short and narrow, grooved claw attached to the front margin of the spur-shaped, column-foot, erect parallel to the column-foot, trilobed, white, when laid flat \pm 1.0cm long, at the level of the lateral lobes 0.60cm broad, and 0.85cm broad at the apex, inside with two closely adjacent, tall longitudinal, violet-dotted and margined ridges, terminating in a pair of pointed, irregular, upwards-striving teeth and, furthermore, on each side a much weaker irregularly margined ridge, terminating in several irregular teeth; the lateral lobes at the base of the lip, very small, protruding, dentate, triangular, pointed; the middle lobe large, erect, almost square in the lower part and somewhat convex below, the upper part appreciably widened, margined, bilobed, reflexed, with a longitudinal groove, both halves markedly convex, above with prominent veins, the margin small crenate and pallid yellow, the whole middle lobe \pm 0.80cm long. Gynostemium very short, broad, dark violet, 0.20cm long. The anther capped, broader than tall, pallid green. Pollinia - 4, narrow, fairly dark yellow. Rostellum broad, triangular, pallid green. Stigma very large, 5 - sided, pointed below, pallid green. The column-foot forming a right-angle with the ovary, large, straight, 0.85cm long, the lower 0.55cm [section] broad, concave, greenish white, dotted dark violet and margined, dark violet cilia at the margin, 0.35cm broad, the upper 0.35cm [section] narrowed, conical spur-shaped, laterally compressed, blunt, swollen at the entrance, hirsute inside and at the entrance. Ovary green, 0.30cm long; pedicel bent over at a right angle, pallid greenish, 1.20cm long.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); Ternate : Peik (J.J.Smith).

This interesting species most likely belongs to section *Distichophylla*, which comprises only very characteristic species.

The lip, which for the greater part consists only of the strongly developed middle lobe, is attached to the front margin of the spur-shaped column-foot by means of a very small, grooved little claw. This spur-shaped part is contracted at the entrance by a thickening of the wall and, furthermore, is hirsute inside. A similar spur-formation of the column-foot occurs in Chrysoglossum Bl., apart from in several other Dendrobiinae.

Dendrobium bifarium Lindl. 1830.

Wall. Cat. 2002; Gen. et Sp. Orch. 81; Miq. Fl. Ind. Bat. III, 640.

Callista bifaria O.K. Rev. Gen. Pl. II, 654.

Angraecum purpureum I litoreum s. nudum Rumph. l.c. 109, t. XL, f. 2.

Ambon : At the coast (Rumph.).

Lindley determined this plant as D. bifarium Lindl. without having seen the flowers. Some doubt on the correctness of the determination does not appear to me to be superfluous.

The habit of the plants is reminiscent of Appendicula Bl.

Dendrobium purpureum Roxb.

Fl. Ind. III, 484; Miq. Fl. Ind. Bat. III, 640.

D. viridiroseum Rchb.f. Bonpl. III, 226; Walp. Ann. VI, 295.

Callista purpurea O.K. Rev. Gen. Pl. II, 655.

Angraecum purpureum II silvestre Rumph. Herb. Amb. VI, 109, t. L, f. 1.

Ambon : Without locality details (Rumph.); Hila (Treub); also Ternate.

Dendrobium gemellum Lindl. (p. p., non Ridl.)

Gen. et Sp. Orch. 81; J.J.Sm. Fl. Buit. VI, Orch. 362.

Pedilonium biflorum Bl. Bijdr. 322.

Callista biflora O.K. Rev. Gen. Pl. II, 653.

Ambon ? (Karsten); also Java; Sumatra.

The only specimen from Ambon that I have seen is in cultivation at the Botanical Garden at Buitenzorg; I am, however, not completely sure that it has not been mixed up. It would appear to me that this species has frequently been confused with D. salaccense Lindl.

The inflorescences are short, 2 - 3 flowered. The flowers last several days, are yellowish white with a pallid red mark on the lip, and \pm 3.30cm broad. The petals are somewhat broader than the sepals. The lip is attached to the column-foot with a \pm 0.60cm long claw to form a thin spur; the lip-lamina is weakly trilobed, ovate-triangular, pointed with an undulate margin, inside with a convex longitudinal swelling, \pm 2.15cm long, 1.47cm broad. The column-foot forms an acute angle with the ovary, it is narrow and 0.90cm long.

Dendrobium lancifolium A. Rich.

Sert. Astrol. 20, t. 8; Bot. Reg. 1844, misc. 59.

D. lilacinum T. et B. Nat. Tijdschr. Ned. Ind. XXVII (1864), 18.

Callista lancifolia O.K. Rev. Gen. Pl. II, 655.

Ambon : Batoe Gantoeng; probably also [Mt.] Sirimau; [Mt.] Hoetoe Mortetoe;

[Mt.] Toena; [Mt.] Latoea (J.J.Smith); also Boeroe [I.] (d'Urville).

A specimen originating from Batoe Gantoeng was received from the Chinese lieutenant at Ambon, it flowered later on at Buitenzorg and was then easily determined as D. lancifolium A. Rich.

Amongst the plants which I collected at very different localities and which probably belonged to this species, unfortunately, there was not a single one in flower and likewise the plants introduced to Buitenzorg have also not yet flowered.

This plant is very common in Ambon and climbs with an extended, thin rhizome high up into the trees; the protruding thin stems carry lanceolate vine-like leaves.

D. lilacinum T. et B. is, as shown by the Type in the Leiden Herbarium, nothing else than D. lancifolium A. Rich. The assertion that the plant originated from Java is most probably due to a mistake.

Dendrobium Treubii J.J.Sm., sp. nov. (section Eudendrobium Lindl.)

(Latin diagnosis)

Stem thin at the base, elliptical in cross-section and beset only with sheaths, appreciably widened at the upper end and compressed, ensiform, slightly fractiflex, with weak longitudinal ribs, leaved, acute, overall \pm 45cm long, up to 3.50cm broad, glossy green, later on brown-red; internodes \pm 3.0 - 4.0cm long. Leaves deciduous, longish, broadly undulate, with 7 - 9 veins, the middle rib grooved above, with a narrow keel below, fairly pale green, \pm 5.0cm broad; the sheaths short, broad, splitting open in front, pale green with paler veins. Inflorescences at the terminal nodes, pendent, lax, 5 - 6 flowered, \pm 6.0cm long. Bracts triangular, green-yellowish, 0.30 cm long. Flowers open wide, \pm 6.0cm broad, lasting several days. Dorsal sepal ovate-lanceolate, weakly convex, \pm 2.90cm long, 1.0cm broad. Lateral sepals follow the column-foot downwards, the front margins somewhat deformed to make a large narrow-conical, blunt mentum, compressed from the rear, obtuse-angled triangular, pointed, keeled on the outside, and 3.10cm long. Sepals yellowish white, glossy on both sides. Petals lanceolate, fairly pointed, white, glossy at the base, \pm 2.90cm long, 0.90cm broad, with a longitudinal groove on the outside. Lip parallel to the column-foot, erect, bent forwards, clawed, trilobed, broadly grooved, violet-red between the lateral lobes with 7 - 9, weak, darker-coloured longitudinal ribs, when spread out \pm 4.50cm long, 2.10cm broad, with a longitudinal groove below; claw divergent from the column-foot, concave, yellowish white, broad-linear, 0.55cm broad; lateral lobes erect, broad-triangular, blunt, concave, white, coloured more-or-less violet-red on the inside; middle lobe longish, with

parallel margins, blunt, undulate, white, pallid yellow at the base, \pm 1.70 cm long, 1.10cm broad. Column short, thick, glossy white, \pm 0.40cm long; auricles large, blunt, somewhat irregularly marginate. Anther capped, white; filament long. Pollinia - 4, longish, yellow. Rostellum broad. Stigma obtuse, 4 - sided. Column-foot forming a right angle with the ovary, long, almost straight, weakly concave, blunt, at the apex with a yellowish longitudinal rib slightly adnate to the labellum claw, yellowish white with pallid violet markings, \pm 2.60cm long, 0.55cm broad. Ovary pallid greenish, glossy, 0.90cm long; pedicel yellowish white, 2.0cm long.

Ambon : Without locality details (Warburg); on [Mt.] Hoetoe Mortetoe (J.J. Smith); Ceram; Wahaai (Treub).

An easily recognised species with the habit of D. lamellatum Lindl., but much larger. The flowers are fairly large and beautifully coloured. The plant was first introduced to Buitenzorg by Prof. Treub from the island of Ceram in 1893. I collected this species in 1900 on Ambon and saw specimens from the latter island at Prof. Warburg's herbarium in Berlin. It grows and flowers very well at Buitenzorg.

Dendrobium superbum Rchb.f.

Walp. Ann. VI, 282.

D. macrophyllum Lindl. Bot. Reg. 1834, misc. 46; Sert. Orch. t. 35; Hook. Cent. Orch. t. 12.

D. macranthum Miq. Fl. Ind. Bat. III, 642.

D. anosmum Lindl. Bot. Reg. XXI (1844), misc. 41.

? D. Scortechinii Hook.f. Fl. Br. Ind. V, 741.

Callista anosma O.K. Rev. Gen. Pl. II, 653.

? C. Scortechinii O.K. Rev. l.c. 655.

Angraecum caninum sive undecimum Rumph. Herb. Amb. VI, 105, t. XLVII, f. 1.

Ambon : Without locality details (Rumph.); Hila (Treub); between Toelehoe and Soeli (J.J. Smith); also Ceram; Boeroe [I.]; Borneo; Philippines.

A very variable species. The specimens from Ambon have strong, thick stems and 2 - 4 flowered inflorescences.

Dendrobium Koordersii J.J.Sm., sp. nov. (section Biloba J.J.Sm.)

(Latin diagnosis)

Stems numerous, close-together, thin, elliptical in cross-section, glossy green, \pm 30cm long, 0.10cm broad, multi-leaved; internodes \pm 2.50cm long. Leaves linear, more-or-less unevenly bilobed at the apex, with a longitudinal groove above, glossy green, \pm 8.0cm long, 0.40cm broad; sheaths

tubular, longer than the internodes, elliptical in cross-section, delicately wrinkled, dark grey-violet, 0.15cm broad. Inflorescences not very numerous, penetrating two sheaths, very short, single-flowered. Peduncle \pm 0.20cm long. Bracts small, triangular. Flowers lasting several days, \pm 1.0cm broad and long. Dorsal sepal longish-ovate, slightly pointed, slightly convex, 5 - veined, 0.55cm long, 0.33cm broad. Lateral sepals follow the column-foot downwards to form a large, blunt, somewhat margined mentum, obtuse-angled triangular, blunt, 0.60cm long and equally broad at the base. Petals lanceolate, obtuse, 0.55cm long, 0.175cm broad. Sepals and petals pallid green, glossy, somewhat carnose. Labellum carnose, weakly bent, longish, trilobed with broad grooves, highly glossy \pm 0.67cm long, 0.375cm broad; with a broad, somewhat swollen, dark red, glossy longitudinal stripe on the inside; lateral lobes very short, obtuse, separated from the middle lobe by depressions, translucent whitish with a dark red margin, slightly red-spotted; middle lobe roundish, thick carnose, convex, indistinctly dark red-spotted, fairly matt, \pm 0.20cm long, 0.25cm broad. Gynostemium short, pallid green, 0.20cm long; auricles triangular, dentate. Anther capped, blunt, red with a darker apex. Pollinia - 4, yellow. Rostellum broad, marginate. Stigma oblique-longish, dark red margined. Column-foot slightly bent, 0.40cm long, pallid green, dark red at the apex. Ovary with pedicel, \pm 0.33cm long, pale green.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); also Celebes (S.H.Koorders).

This species is closely related to D. bilobum Lindl., but here the petals are reported to be appreciably smaller, the lip more distinctly trilobed and its middle lobe warty.

D. Koordersii J.J.Sm., together with D. bilobum Lindl. and a few other species, form a well-characterised section, which perhaps can be distinguished under the name Biloba. It is characterised by the extended, thin, glossy, multi-leaved stems, the linear, more-or-less dissimilar bilobed, thin, paper-like leaves and the very short, single-flowered inflorescences, not surrounded at the base by short, blunt, laterally compressed scales.

They are very similar to several species of the section Grastidium in appearance, but are easily distinguished by the inflorescences.

D. Koordersii J.J.Sm. grows very well at Buitenzorg, but the small, hardly impressive flowers, furthermore, are not very numerous.

Dendrobium orientale J.J.Sm., sp. nov. (? section Biloba J.J.Sm.)

(Latin diagnosis)

Short rhizome. Roots thicker than the stems. Stems thin, hard, elliptical in cross-section, leaved, glossy green, \pm 1.0m long, 0.30cm broad; internodes \pm 2.0 - 2.5cm long, the upper ones shorter. Leaves distichous, broad-linear, narrowing towards the apex, very unevenly truncate, bilobed, the top barely plicate, underneath a slightly prominent mid-rib, thin leathery, glossy green, \pm 11cm long,

1.20cm broad; sheaths tubular, longer than the internodes. Inflorescences at the nodes, numerous, penetrating two sheaths, very short. Bracts very small, triangular. Flowers pallid yellow, \pm 1.40cm broad. Dorsal sepal ovate, acute, with a broad base, slightly convex, 7 - veined, \pm 0.85cm long, 0.45cm broad.

Lateral sepals follow the column-foot downwards, protruding, triangular, with a carnose, small conical tip, keeled on the outside and like the dorsal one, slightly warty, \pm 0.85cm long, at the base 0.60cm broad. Petals longish, slightly spathulate, blunt, 3 - veined, \pm 0.70cm long, 0.30cm broad. Labellum attached movably to the column-foot, bent, trilobed, broadly grooved, with a simple longitudinal rib on the inside, pale green, with a greenish white margin, when spread out \pm 0.70 long, 0.40cm broad; lateral lobes protruding obliquely, fairly small, triangular, fairly blunt, the apex facing forwards, convex; middle lobe extended, widened, slightly bilobed, with a short, blunt lobule at the front in the depression, angular, 0.50cm broad, both lobules convex. Gynostemium relatively long, straight, pale green, \pm 0.47cm long, with a broader slightly marginate apex and short, blunt auricles. Anther capped, broader than long, the margin bent outwards, pale green. Stigma fairly large, pyriform, pointed. Column-foot forming an acute or almost right-angle with the ovary, the lower straight part adnate to the lateral sepals, 0.35cm long with a longitudinal rib, greenish white, the 0.20cm long tip is free standing, is bent forwards at a right-angle, truncated, dark flesh-coloured. The ovary obconical, sea-green, 0.30cm long, pedicel pallid green, 1.40cm long.

Ambon : [no collection details given].

I obtained this species from the lieutenant of the Chinese in Ambon, without specific locality details. I should like to bring it into section *Grastidium*, were not the typical, laterally compressed sheaths at the base of the inflorescences lacking (?). On account of its habit characteristics it perhaps belongs best in the affinity of *D. bilobum* Lindl.

Dendrobium foliosum Brongn.

Voy. Coq. 203, t. XLI.

D. spinescens Lindl. Journ. Linn. Soc. III (1859), 14; Miq. Fl. Ind. Bat. III, 638.

Eria foliosa Ridl. Journ. of Bot. XXIV (1886), 326.

Callista foliosa O.K. Rev. Gen. Pl. II, 654.

C. spinescens O.K. l.c. 655.

Ambon : [Mt.] Hoetoemoeri (Teysm.); [Mt.] Toena (Teysm., Treub); Soja (Treub); also New Guinea.

This interesting plant, which can hardly be included any longer in

Dendrobium, has a decumbent, thin, branched rhizome and numerous erect, thin, somewhat branched, multi-leaved stems. The leaves are lanceolate, acute, undulate, leathery, 5 - veined, \pm 9.50cm long, 2.30cm broad and are especially peculiar with their convolute bud arrangement. The numerous inflorescences appear at the nodes, are short and 2 - 4 flowered. The flowers are \pm 1.50cm broad, pale yellow. The narrow sepals are spread out in one plane, the lateral ones being markedly falcate. The petals, lip and column are parallel to each other in the centre of the flower. The lip is attached movably to the only 0.10cm long column-foot, is markedly bent, longish, undivided, with two smooth longitudinal ribs joined in front and short, densely hirsute towards the apex. The column is slender and much bent, \pm 0.70cm long. The connective of the capped anther is expanded into a large compressed ridge and ends at the apex in a pointed tooth. Pollinia - 4, linear, without appendages. The ripe fruit is surmounted by the slightly enlarged green flower, which does not in any way lose its shape.

Dendrobium glaucum T.et B.

Cat. Hort. Bog. 43.

Dendrobium rorulentum T.et B.

Cat. Hort. Bog. 44.

The names only of these two species have been published.

Eria rugosa Lindl.

Gen. et Sp. Orch. 66; Miq. Fl. Ind. Bat. III, 661; J.J.Sm. Fl. Buit. VI, Orch. 378.

E. stellata Lindl. l.c. 67; Bot. Reg. t. 904; Bot. Mag. t. 3605; Miq. l.c.

E. striolata Rchb. f. Ill. Hort. 1888, 35, t. 48.

E. vaginata Bth. Journ. Linn. Soc. XVIII, (1881), 303.

Dendrolirium rugosum Bl. Bijdr. 345.

? Dendrobium javanicum Sw. Act. Holm. 1800, 247.

Octomeria stellata Spr. Syst. IV, 2, 310.

O. vaginata Breda, Orch. t. 5.

Pinalia rugosa O.K. Rev. Gen. Pl. II, 679.

P. stellata O.K. l.c.

P. striolata O.K. l.c.

Ambon : Without locality details (Doleschall); [Mt.] Hoetoe Mortetoe (J.J. Smith); also Ceram; Noesa laoet [I.]; Celebes; Borneo; Java; Sumatra; Singapore; Malay Peninsula; Philippines.

A widely distributed species with yellowish white or more-or-less beetroot-red striped flowers. The plant is peculiar on account of its convolute

leaves.

Eria bractescens Lindl.

Bot. Reg. 1841, Misc. 18; [l.c.] 1844, t. 29; Rchb.f. Walp. Ann. VI, 277; Hook.f. Fl. Br. Ind. V, 796; King et Pantl. Ann. Bot. Gard. Calc. VIII, 120, t. 166.

E. Dillwynii Hook. Bot. All. 4163; Bot. Reg. 1845, Misc. 67.

E. littoralis T. et B. Nat. Tijdschr. Ned. Ind. XXIV (1862), 312.

Pinalia bractescens O.K. Rev. Gen. Pl. II, 679.

Ambon : Very common on trees at the coast (Teysm., Treub, J.J. Smith); also Kei [Is.]; Singapore; Tenasserim; eastern India.

The flowers are white or yellowish, the lateral lobes of the lip a paler or darker brown-red, the bracts pale yellow.

Eria moluccana Schltr. et J.J. Sm., sp. nov. (section Hymenaria Lindl.)

(Latin diagnosis)

Pseudobulbs adjacent, large, longish, thick, few-jointed and oval in cross-section, \pm 15cm long (for a feeble specimen), \pm 4.0 and 3.40cm thick, with large, triangular, quickly-drying sheaths, at the apex \pm 5-leaved. Leaves obliquely erect, carnosely leathery, narrow lanceolate, pointed, at the base narrowed like pedicels, grooved, with incurved margin, above with a longitudinal groove, the stronger veins below prominent, faintly glossy, green, \pm 32 - 48cm long, 3.80 - 5.60cm broad. Inflorescences at terminal nodes, erect, the leaves of equal length, very multi-flowered, with short woolly hairs. Peduncle up to \pm 14cm long, pale green, terete, with many lanceolate, pointed, \pm 1.0cm long, petiolate leaves. Bracts folded back, longish, concave, pallid green, hirsute outside, \pm 0.70cm long. The flowers protruding, small, \pm 0.60cm broad, odourless, pallid yellow, the sepals partly protruding and with short hairs on the outside. Dorsal sepal longish, blunt, concave, \pm 0.60cm long, \pm 0.40cm broad. Lateral sepals following down to the column-foot to form a large, blunt mentum, triangular, blunt, 5-veined, \pm 0.55cm long, the base 0.50cm broad. Petals longish, blunt, \pm 0.47cm long, 0.27cm broad. Labellum erect, trilobed with a broad concave, pallid yellow claw; lateral sepals erect, triangular, blunt, pointed in front, strongly convex, with a glossy swelling, pallid yellow; middle lobe unbent, obtuse, convex, carnosely, with a carnosely longitudinal ridge, cadmium-yellow. Gynostemium short, yellowish white, 0.25cm long; auricles blunt. Anther broader than long, marginate, pallid yellow, more-or-less brown-red in colour. Pollinia - 8, short clavate, white. Stigma large. Column-foot forming an acute angle with the ovary, bent slightly forwards at the apex, whitish, \pm 0.50cm long. Ovary with pedicel, \pm 1.0cm long, pale green, with

short woolly hairs.

Ambon : Very common; Hila (Treub); between Toelehoe and Soeli; Larike; Alang; etc. (J.J.Smith); also Ceram; Kei [Is.] ; Celebes.

The description is made from a not very strong specimen from Ambon, in cultivation at Buitenzorg; the additional larger dimensions relate to a specimen from Ceram in the Leiden Herbarium, which further differs in the appreciably shorter, only 0.30cm long column-foot.

Eria quinquangularis J.J.Sm., sp. nov. (section Hymenaria Lindl.)

(Latin diagnosis)

Thin roots, brown, close protruding hairs, with a dark purple apex. Rhizome not decumbent, protruding, robust, branched, terete, \pm 0.70cm thick. Pseudobulbs at the extension of the rhizome, 2.0 - 4.0cm apart, fusiform, carnose, few-sectioned, pale green, \pm 7.0 - 9.0cm long, 1.6cm broad, 6 to 7 leaved at the apex. Leaves protruding, linear-lanceolate, pointed, \pm 13-veined, with the middle vein grooved above and predominant below (except for the lower leaves), thin, leathery, faintly glossy above, up to \pm 17.50cm long, 2.40cm broad; sheaths short, surrounding the bulb, soon withering in front. Inflorescences close to the apices of the stems, in small depressions, shorter than the leaves, lax, multi-flowered, with pale brown woolly hairs. Peduncle \pm 2.0cm long, with several protruding, petiolate leaves, longish, more-or-less ovate, acuminate, acute, weakly convex, pale green, 0.50cm long. The rachis \pm 6.50cm long. Bracts protruding, longish, acuminate, acute, slightly concave, pale green, \pm 0.40cm long, 0.20cm broad. Flowers \pm 0.63cm broad, translucent yellowish white, faint odour. Dorsal sepal lanceolate, acute, 3 - veined, 0.56cm long, 0.175cm broad. Lateral sepals follow the column-foot downwards, protruding, longish triangular, falcate, acute, slightly concave, 3 - veined, \pm 0.50cm long, 0.23cm broad, just like the dorsal sepal on the outside, particularly at the base, with some pale brown woolly hairs. Petals lanceolate, acute, weakly concave, single-veined, 0.50cm long, 0.13cm broad. Lip almost undivided, deeply grooved at the base, with slightly outwards bent margins, fairly flat in front, slightly convex, pointed, when pressed flat five-cornered, 0.26cm long, 0.25cm broad, broad at the base and weakly crenate, on the inside with 3 indistinct swellings, dark red with pallid margins and a pallid yellow apex. Gynostemium slender, weakly bent, pallid at the base, dark red at the apex, 0.10cm long. Pollinia - 8, pyriform, pallid yellow. Rostellum short. Stigma with a shallow transverse groove with predominant lower margin. Column-foot forming a right-angle with the ovary, straight, white, 0.175cm long. Ovary with pedicel, 0.40cm long, dark red, with pale brown woolly hairs.

Ambon : Between the capital township and Paso; Wai (J.J.Smith).

A small flowered species which at first sight one would like to include in section *Urostachya*, even though it belongs to section *Hymenaria*.

Noticeable are the widely separated rhizome branches and pseudobulbs. The non-lobed, flattened 5 - cornered labellum, which has 3 swellings, looks in its normal position, very like that of a *Bulbophyllum*, the lower part is folded into deep grooves, whilst the upper part is slightly bent and convex.

Bulbophyllum infundibuliforme J.J.Sm.

Ic. Bog. II, 103, t. CXX A.

Ambon : Without locality details (J.J.Smith); also Misool [I.] (Teysm.).

I am not quite sure whether this plant occurs on Ambon, since the specimen has been lost.

Bulbophyllum crassinervium J.J.Sm.

Ic. Bog. II, 95, t. CXVIII A.

Ambon : [Mt.] Toena (J.J.Smith).

Bulbophyllum recurviflorum J.J.Sm.

Ic. Bog. II, 96, t. CXVIII B.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith).

Bulbophyllum Epicrianthes Hook.f.

Fl. Br. Ind. V, 753; J.J.Sm. Fl. Buit. VI, Orch. 447.

Epicrianthes javanica Bl. Bijdr. 306, f. VIII; Fl. Jav. Praef. VI; Lindl.

Gen. et Sp. Orch. 61; Miq. Fl. Ind. Bat. III, 654.

Phyllorchis javanica O.K. Rev. Gen. Pl. II, 676.

Ambon : Without locality details (Karsten); also Java; Tenasserim.

Bulbophyllum Teysmannii J.J.Sm., sp. nov. (section *Oxysepalum* Wight).

(Latin diagnosis)

Rhizome long, pendent, branched, geniculate, terete, pale green, \pm 40cm long, 0.15cm thick, with appressed roots and dry, yellow-brown sheaths; branches protruding; internodes \pm 0.50cm long. Pseudobulbs \pm 4.0cm apart, resting on the rhizome, almost cylindrical, green, \pm 1.10cm long, 0.275cm thick, single-leaved. Leaf thick carnose, lanceolate, narrowed towards the apex, blunt, with a small tip, at the base narrowed in a terete manner, above with a longitudinal groove, both halves convex, each side a strong glossy green, \pm 8.0cm long, 2.50cm broad; stem grooved, 1.20cm long. Inflorescences at the nodes of the rhizome, very numerous, single-flowered, very short.

Peduncle short, white, $\pm 0.20\text{cm}$ long, with few long, skinny, translucent sheaths. Sepals longish, triangular, concave, 3 - veined, very long and finely bearded, yellow ochre coloured, paler at the base, overall $\pm 1.20 - 1.30\text{cm}$ long, the widened part $\pm 0.35\text{cm}$ long, $0.15 - 0.20\text{cm}$ broad; the lateral ones following down to the column-foot. Petals small, longish, crenate at the tip, translucent yellow, glossy, 0.20cm long, 0.70cm broad. The lip attached movably to the column-foot, triangular, ligulate, bent, grooved at the base and suddenly contracted, pallid yellow, 0.275cm long, 0.075cm broad. Column short, yellowish white, 0.10cm long; auricles fairly short. Anther capped, with a much thickened connective and acute, bent apex. Pollinia - 2, pallid yellow. Column-foot forming an obtuse angle with the ovary, blunt, convex, pale yellow, 0.13cm long. Ovary white, 0.15cm long.

Ambon : (Teysmann).

This species is very closely related to B. sessile J.J.Sm. (B. clandestinum Lindl.), however, it is easily distinguished by the much larger dimensions and the very long-bearded sepals. The petals of all the flowers I have seen were crenate at the tip and 2 - toothed.

As for several other species with pendent rhizomes, the plant appears to bear roots only at the base. A closer inspection, however, shows that the pendent branches also form roots; however, the latter creep along underneath the sheaths and are firmly appressed to the rhizome. Such examples are :

B. sessile J.J.Sm., B. mutabile Lindl., B. capitatum Lindl., B. angustifolium Lindl., etc. This peculiarity occurs also with other genera such as : Ceratostylis Bl., section Caulescentes, Pholidota gibbosa Lindl.

Bulbophyllum macranthum Lindl. var. albescens J.J.Sm., var. nov.

(Latin diagnosis)

Rhizome long, decumbent, $\pm 0.40\text{cm}$ thick, at the nodes with funnel-forming [sic] fibres from the soon withering sheaths. Pseudobulbs $\pm 4.0 - 5.0\text{cm}$ apart, more-or-less ovate, blunt-edged, with a broad longitudinal groove in front, matt green, $\pm 2.0\text{cm}$ long, 1.5cm thick, single-leaved. Leaf thick, carnose, rigid, longish, crenate at the tip and reflexed, narrowed to a terete shape at the base, sharp-margined, with a longitudinal groove above, fairly glossy green, $\pm 16.5\text{cm}$ long, 6.5cm broad; petiole deeply grooved, $\pm 1.5\text{cm}$ long. Inflorescences at the nodes of the rhizome, erect, short, single-flowered. Peduncle very short, with some fairly broad tubular pallid yellow-greenish, violet-grey-dotted sheaths, and terminating in an incurved tip. Flowers erect, fairly large, barely open, carnose, glossy, yellowish white, odourous. Dorsal sepal erect, longish, with broad base, very pointed, concave, multi-veined, with several dark violet dots at the base, $\pm 2.50\text{cm}$ long, 0.85cm

broad. Lateral sepals follow the short column-foot downwards, erect, longish, with broad base, very pointed, concave, the adjacent margins appressed, except at the base, coloured a dark red at the middle, spotted towards the tip, at the base those margins facing the dorsal sepal are dark red-violet-dotted in a scattered manner, 2.50cm long, 0.90cm broad. Petals erect, lanceolate, acute, concave, dark violet spotted, \pm 2.20cm long, 0.55cm broad. The lip attached to the column-foot in a very movable manner, small, protruding with its apex between the lateral sepals, carnose, trilobed, grooved at the base, bent, matt pale yellow, violet-dotted in front, \pm 0.70 cm long, 0.55cm broad; lateral lobes obliquely protruding, obtuse, convex; middle lobe strongly compressed laterally, bent in a falcate manner, very pointed, with two longitudinal ribs at the base, \pm 0.10cm broad. Column straight, laterally compressed, glossy pale yellow; auricles blunt. Anther slightly domed, with strong pectinate swollen connective, dark brown-violet. Pollinia - 4, longish, yellow. Stigma large, concave. Column-foot forming an obtuse angle with the ovary, short, bent forwards, with free apex, blunt, glossy pale yellow, 0.60cm long. Ovary pallid grey-yellow, 1.0cm long; pedicel pallid yellow, 3.50cm long.

Ambon : (Karsten); [Mt.] Hoetoe Mortetoe (J.J.Smith).

I initially considered this plant as a separate species. Both in the vegetative parts and flowers it is, however, so similar to B. macranthum Lindl., that on closer investigation, this opinion could not be confirmed. The variety differs from the Type only in colour and in the erect, not widely separated sepals and petals. In the vicinity of Alang I found a Bulbophyllum, unfortunately not in flower, which perhaps could have been the plant described. It is very similar to B. macranthoides Krzl.

Bulbophyllum viriscens J.J.Sm.

Bull. Inst. Buit. no. 7; Ic. Bog. II, 99, t. CXIX A.

Ambon : Summit of [Mt.] Toena (J.J.Smith).

This plant appears to be very similar to Cirrhopetalum maximum Ridl., also in regard to colour, the latter, however, has appreciably larger flowers (sepals 12.50cm long).

Bulbophyllum elegans J.J.Sm. [comb. nov.]

Cirrhopetalum elegans T.et B. Nat. Tijdschr. Ned. Ind. XXIV (1862), 310.

Ambon : Hila (Treub); also Moluccas (Teysm.); Bangka [I.].

The plants with collection locality 'Bangka' in cultivation at the Buitenzorg Garden for a long time already are completely alike to those collected by Treub at Hila. The description by Teysmann and Binnendijk is very good.

The rhizome is very long; the pseudobulbs are 5.0 - 10.0cm apart. The flowers although fairly large, are not beautiful, the base colour is pallid yellow, more-or-less violet-brown-spotted and dotted. Furthermore, they have a weak, but fairly unpleasant fish-like odour. The dorsal sepal is not ciliated, but extended into a \pm 0.60cm long, erect, thin, black-violet filament, thickened at the tip. The lateral sepals are straight and protruding, not bent. The petals at the tip have several large, translucent, warty, swollen dots. The column auricles are very long, thin and geniculate at the middle and have a tooth. The anther is dentate at the apex.

Bulbophyllum psittacoides J.J.Sm. [comb. nov.]

Cirrhopetalum psittacoides Ridl. Journ. Linn. Soc. Bot. XXXII, 280.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); also Biliton [I.]; Malay Peninsula. As seen from the above localities, this delicate and easily recognised species has a fairly large area of distribution.

Grammatophyllum scriptum Bl.

Mus. I, 47; Rumphia IV, 48; Miq. Fl. Ind. Bat. III, 708; T.et B. Nat. Tijdschr. Ned. Ind. XXVII (1864), 21.

G. Rumphianum Miq. Ann. Mus. Bot. Lugd. Bat. IV, 219, t. 819; Rolfe Orch. Rev. III (1895); Bot. Mag. LII (1896), t. 7507.

G. speciosum Lindl. Gen. et Sp. Orch. 173 (p.p.).

G. Fenzlianum Rchb.f. Xen. Orch. II. 16.

G. leopardinum Rchb.f. Flora, 1888, 151.

G. Guilelmi II Krzl. Gartenfl. XLIII (1894), 114.

Gabertia scripta Gaud. Freyc. Voy. Bot. 425.

Vanda scripta Spr. Syst. Veg. III, 719, 2.

Cymbidium scriptum Sw. Schrad. Journ. 1799, 218; Willd. Sp. Pl. IV, 100; Pers. Syn. Pl. II, 515.

Epidendrum scriptum L. Sp. Pl. 1351; Lam. Enc. Bot. I, 185.

Angraecum scriptum Rumph. Herb. Amb. VI, 95, t. 42.

Ambon : Without locality details (Rumph.); Wai (J.J.Smith); also Boeroe [I.]; Ternate; New Guinea; Minahassa (Celebes).

Specimens of this attractive plant originating from different regions are in cultivation at the Buitenzorg Garden, but neither from the living plants nor from the descriptions and illustrations can differences be found to justify the setting-up of several species. I would not be surprised if G. multiflorum Lindl. from the Philippines also were not only a form of G. scriptum Bl. It is very peculiar that this plant is so undemanding for its robust development. In the orchid section of the Buitenzorg Garden, one specimen grows on a 2.0m tall and only a few cm thick little stem of Plumiera acutifolia Poir. It has formed a dense fabric of tentacle roots, but the Sundanese [local] attempts, for cleanliness sake,

to remove the leaves, etc. falling on them. Nonetheless, the plant grows strongly and for each new bulb, produces at least two strong inflorescences Rumphius, furthermore, cites two forms, but from the descriptions I do not consider these as specific. Hasskarl names them as : Cymbidium Wallichii Lindl. ?? and Arachnitis moschifera Bl.

Dipodium sp.

Ambon : Nona; [Mt.] Hoetoe Mortetoe; [Mt.] Toena; [Mt.] Riboe (between Alang and [Mt.] Latoea) (J.J.Smith).

Unfortunately, I have not seen this plant, which is widely distributed on Ambon. The specimens introduced to Buitenzorg, although growing well, likewise have never flowered.

Thelasis elongata Bl. var. amboinensis J.J.Sm., var. nov.

(Latin diagnosis)

Caespitose. Rhizome very branched. Pseudobulbs small, strongly and obliquely compressed downwards, carnose, pale green, \pm 1.0cm broad, 0.40cm tall, single-leaved at the apex, at the base with several carnose, pale green sheaths, one or two of which carry a small lamina with the uppermost one closely surrounding the whole bulb and leaf base, hence it is strongly narrowed at the apex. Leaf erect, carnose, linear-lanceolate, somewhat incurved at the apex, slightly unevenly blunt and with a little tip, narrowed at the base, and folded together, with a longitudinal groove, both halves slightly convex, \pm 4.0cm long, 0.70cm broad; sheath carnose, oval in cross-section, \pm 0.35cm long. Inflorescences erect, very dense and multi-flowered. Peduncle terete, warty, \pm 2.30cm long, with a few tubular sheath-leaves. Rachis up to \pm 3.0cm long, long-flowering, the flowering apex erect, pyramidal, \pm 0.60 - 0.70cm long. Bracts protruding, triangular, somewhat acuminate, acute, soon withering, 0.15cm long. Flowers widely separated, small, barely open, horizontally compressed, not resupinate, pallid green with whitish tips, together with the ovary, \pm 0.35cm long, 0.20cm broad. Dorsal sepal longish, acute, concave, parallel to the lateral ones, 0.20cm long, 0.075cm broad. Lateral sepals much broader, sharply folded along the middle vein, sharply keeled, acute, 0.20cm long. Petals longish, only the apex protruding between the sepals, blunt, 0.15cm long, 0.075cm broad. Labellum strongly concave, the margins incurved at the base, ovate, white, pallid green at the base, only 0.13cm long. Gynostemium very short; clinandrium ovate, acute. Anther with broad, transverse oval base, having two short lobules, suddenly becoming long and sharply acuminate, warty, pale green. Pollinia - 8, pyriform, yellow, on a long, thin, yellow caudicle

with a long, narrow viscid mass. Rostellum overtopping the anther, very pointed, 2 - toothed; ovary 3 - edged, horizontally compressed, with sharp lateral margins, pale green, \pm 0.17cm long.

Ambon : Hila (Treub).

A strongly-growing plant forming a dense carpet, differing from T. elongata Bl. in smaller dimensions, relatively broader flowers, less-pointed, not reflexed bracts. With equal rights one could consider this plant, either as a variety of T. capitata Bl., or a new species.

Phreatia sp.

Ambon : Without locality details (Karsten).

A small species with a short stem, linear, carnose leaves and small greenish flowers, which needs to be investigated closer.

Podochilus appendiculatus J.J.Sm.

Bull. Inst. Buit. no. 7; Ic. Bog. II, 50, t. CIX F.

Ambon : [Mt.] Latoea (J.J.Smith).

Appendicula reflexa Bl.

Bijdr. 301; Lindl. Gen. et Sp. Orch. 229; Miq. Fl. Ind. Bat. III, 703; Ridl. Journ. Linn. Soc. Bot. XXXII, 390; J.J.Sm. Fl. Buit. VI, Orch. 523.

A. cordata Hook.f. Fl. Br. Ind. VI, 83; Ic. Pl. XXII, t. 2148.

A. viridiflora T.et B. Nat. Tijdschr. Ned. Ind. XXIV, 321.

Podochilus reflexus Schltr. Mém. Herb. Boiss. 1900, no. 21, 31.

Ambon : [Mt.] Latoea (J.J.Smith); also New Guinea; Celebes; Borneo; Java; Malay Archipelago.

One of the most widely distributed species of this genus, with lateral, very short, dense, \pm 6 - 12 flowered, reflexed inflorescences of small, pallid green flowers.

Appendicula latilabium J.J.Sm., sp. nov.

(Latin diagnosis)

Stems close together, terete at the base, elliptical towards the top, pale green, \pm 50cm long, 0.30cm thick; internodes \pm 1.60cm long. Leaves thin, twisted at the base, lanceolate, acute, two-toothed and with an equally long small apex, the middle vein grooved above, keeled below and with several, only weakly protruding veins, glossy green, matt below, \pm 8.0cm long, 1.60 cm broad; sheaths tubular, shorter than the internodes, more-or-less violet in colour. Inflorescences close to the apex of the stem, slightly branched at the base and bent downwards, multi-flowered, dense. Bracts reflexed,

longish, slightly ovate, acute, concave, outside with 5 protruding, warty veins, grey-green, \pm 0.65cm long, 0.35cm broad. Flowers fairly large, \pm 0.80cm broad. Dorsal sepal longish-ovate, blunt, with a short, thick, tiny apex, very concave, with three veins protruding on the outside, dark violet, greenish at the base, \pm 0.75cm long, 0.35cm broad. Lateral sepals follow the column-foot downwards to form a short, very broad, blunt, \pm 0.30 cm long, 0.40cm broad mentum; triangular, somewhat pointed with a short, blunt, little tip with five veins protruding on the outside, violet, pallid green at the base, \pm 0.70cm long. Petals parallel to the dorsal sepal, longish-spathulate, blunt, very pallid green, \pm 0.60cm long, 0.27cm broad. The base of the lip parallel to the column-foot and appressed, one third the distance from the base bent forwards at a right-angle and at two thirds the distance bent downwards at a right-angle, very broad longish, narrowed at the base, broadly obtuse at the apex, on the inside with two carnose, longitudinal ridges, separated by a longitudinal groove, which join at the claw to form a short, blunt appendage, and at the apex with a small longitudinal little rib, when flattened, \pm 0.70cm long, 0.55cm broad. Column short, thick, green, with violet margin, 0.27cm long, trilobed at the apex; the auricles truncated. Anther capped, cordate, dark violet, with pale margin and apex. Pollinia - 6, clavate, yellow. Rostellum short with two acute teeth, dark violet. Stigma semi-circular. Column-foot bent, concave, with two deep longitudinal grooves, green at the base with two violet longitudinal stripes, whitish at the apex, \pm 0.30cm long. Ovary green and violet, \pm 0.70cm long.

Ambon : Between [Mt.] Latoea and [Mt.] Riboe, growing on trees and stones (J.J.Smith).

A species from the affinity of A. pendula Bl. and A. philippinensis J.J.Sm. (Schltr.), from which it is distinguished by the appreciably larger flowers, the broad labellum and especially by the carnose, non-concave appendage, narrowed towards its apex.

Acriopsis sp.

Ambon : Between Toelehoe and Soeli, in a small [Melaleuca] leucadendron forest. Apparently this species is A. javanica Reinw., but, unfortunately, I have not seen any flowers.

Luisia teretifolia Gaud.

Bot. Freyc. Voy. 427, t. 37; Bl. Rumphia, IV, t. 194, f. 3; t. 197 D; Mus. Bot. I, 63; Lindl. Fol. Orch. 2 (excl. syn. Epidendrum triste); Miq. Fl. Ind. Bat. III, 683; Hook. f. Fl. Br. Ind. VI, 22; King et Pantl. Ann. Bot. Gard. Calc. VIII, 203, t. 271; J.J.Sm. Fl. Buit. VI, Orch. 545.

L. brachystachys Bl. var. flaveola Par. et Rchb.f., Trans. Linn. Soc. XXX, 144.

L. burmanica Lindl. Fol. Orch. 3.

L. platyglossa Rchb.f. Walp. Ann. VI, 622.

L. zeylanica Lindl. l.c.

Cymbidium triste Roxb. Fl. Ind. III, 461; Bot. Mag. t. 3648; Wight Ic. 911 (excl. Fig.); Griff. Not. III, 340.

C. tenuifolium Wight, l.c. t. 1689 (excl. Text).

Angraecum flavum decimum sive angustifolium Rumph. Herb. Amb. VI, 104.

Ambon : Without locality details (Rumphius); Galela; Wai (J.J. Smith); also Moluccas; Marianas Is. ; New Caledonia; Java; eastern India; Ceylon.

Phalaenopsis amabilis Bl.

Bijdr. 294, f. XLIV; Rumphia IV, 52, t. 194, 199 A; Lindl. Gen. et Sp. Orch. 213; Horsf. Pl. Jav. rar. 28, t. 8; Bot. Mag. t. 4297; Miq. Fl. Ind. Bat. III, 690; J.J. Sm. Fl. Buit. VI, Orch. 549.

P. grandiflora Lindl. Gard. Chr. 1848, 39; Bot. Mag. t. 5184; Miq. l.c.

Epidendrum amabile L. Spec. Pl. 1351.

Cymbidium amabile Roxb. Fl. Ind. III, 457.

Angraecum album majus Rumph. Herb. Amb. VI, 99, t. 33.

Ambon : Without locality details (Rumphius, Teysm.); between Toelehoe and Soeli; Hila; Larike; between Alang and [Mt.] Latoea; Hina Niwel (J.J. Smith); also Boeroe [I.]; Celebes; Borneo; Java; Philippines.

Rumphius reports two forms, which probably could be increased. Hasskarl's opinion that one of these could be P. violacea T. et B. is quite in error.

Sarcochilus pallidus Rchb.f.

Walp. Ann. VI, 500; J.J. Sm. Fl. Buit. VI, Orch. 559.

S. unguiculatus Lindl. Bot. Reg. 1840, Misc. 67.

S. aureus Hook.f. Fl. Br. Ind. VI, 35; Ann. Bot. Gard. Calc. V, 42, t. 64.

S. cladostachys Hook.f. l.l.c.c. 35 et 43, t. 65.

Dendrocolla pallida Bl. Bijdr. 290.

Aerides pallidum Lindl. Gen. et Sp. Orch. 241; Miq. Fl. Ind. Bat. III, 697.

A. diurnum T. et B. Nat. Tijdschr. Ned. Ind. XXVII (1864), 19.

Thrixspermum pallidum Rchb.f. Xen. Orch. II, 122.

T. unguiculatum Rchb.f. l.c.

T. aureum O.K. Rev. Gen. Pl. II, 682.

T. cladostachyum O.K. l.c.

Phalaenopsis fugax Krzl. Gard. Chr. 1893, II, 360.

Ambon : Without locality details (Karsten); also Celebes; Borneo; Java;

Malay Archipelago; Philippines.

A widely distributed and hence fairly variable species with longer/shorter, thicker/thinner, green or grey and violet-coloured leaves and longer/shorter inflorescences. The flowers, which for a Sarcochilus are fairly large, show only small variations in shape; the sepals and petals are more-or-less acute, the callus-like middle lobe of the lip is completely, or more-or-less margined, the colour varies from white to pallid yellow and the markings on the lip are paler/darker violet or violet-brown.

Blume was the first to describe the species; the Type is at the Leiden Herbarium.

Sarcochilus Taeniophyllum J.J.Sm., sp. nov.

(Latin diagnosis)

Stem very short, leafless. Roots strongly developed, flat, with sharp dots above, \pm 20cm long, 0.65cm broad. Inflorescences erect, extended, lax, multi-flowered (\pm 15). Peduncle thin, terete, \pm 13cm long, 0.075cm thick, with several (\pm 8) short, acuminate petiolate leaves. Rachis thin, \pm 8.0cm long. Bracts small, triangular, acute, concave, 0.175cm long. Flowers point in all directions, at intervals apparently, several flowering at the same time, apparently lasting one day. Sepals longish, blunt, 3 - veined, the dorsal one \pm 0.65cm long, 0.25cm broad, the lateral ones somewhat oblique, not following the column-foot downwards, 0.70cm long, 0.27cm broad. Petals longish, blunt, narrowed at the base, 3 - veined, 0.65cm long, 0.25cm broad. Lip attached to the apex of the column-foot, small, overall 0.30cm long, spurred, trilobed; lateral lobes erect, directed obliquely to the rear, relatively large, longish, blunt, somewhat incurved, convex, 0.17cm long; middle lobe small, bent downwards, thick, cushioned, blunt, convex, with protruding hairs; spur directed obliquely forwards, short and thick clavate, with narrower, blunter, more-or-less reflexed apex, thick-walled and with a callus inside on the rear surface. Gynostemium very short, thick. Column-foot protruding, straight, linear, thin, 0.175cm long.

? Ambon : Without locality details (Teysmann); Banda [I.] (Treub).

This species is very closely related to S. phyllorhizus F.v.M. from Queensland and to a new species from [the] Aroe [Is.], the former, however, has smaller flowers and small, narrow, longish, clavate lateral lobes to the lip. They all look very similar to Taeniophyllum Bl., but according to the flowers are, however, all true Sarcochilus species. The likewise (at least almost) leafless genus Chiloschista differs in the longer lasting flowers, developing gradually and not at intervals; in the lateral sepals inserted on the apex of the column-foot, and in the petals following down to the column-foot.

Prof. Dr. M. Treub collected this plant on the island of Banda in 1898 and kindly placed the alcohol-preserved material at my disposal. Teysmann probably collected the same plant on Ambon, according to a label at the Buitenzorg Herbarium, however his specimens, unfortunately, are without flowers.

Sarcochilus Zollingeri Rchb.f.

Walp. Ann. VI, 500; J.J.Sm. Fl. Buit. VI, Orch. 563.

Dendrocolla Zollingeri Rchb.f. Bonpl. 1857, 40; Xen. Orch. II, 213, t. 86, I; Miq. Fl. Ind. Bat. III, 743.

Grossourdyia Zollingeri Rchb.f. Xen. Orch. I, 123.

Ambon : Halong and [Mt.] Toena (J.J.Smith); also Java.

This plant belongs to the few Sarcochilus species with soft-bristled inflorescences, which Ridley, apparently without reason, separated under the name Ascochilus. Ascochilus Ridl. could, however, be retained as a section of Sarcochilus. Other differences than those named are not present.

The lateral sepals of S. appendiculatus J.J.Sm. (Dendrocolla Bl. and perhaps identical with S. hirtulus Hook.f.) and S. emarginatus Rchb.f., both belonging to section Ascochilus, are not appreciably shorter than the dorsal one; on the other hand, for example, in the case of S. Teysmannii J.J.Sm. (Aerides Miq.) and also S. compressus Rchb.f. with glabrous inflorescences, they are clearly broader. Not only with S. appendiculatus J.J.Sm. and S. Zollingeri Rchb.f. (section Ascochilus), but also with S. Teysmannii J.J.Sm. and S. sigmoideus Ridl. (syn. S. stenoglottis Hook.f.) for example, the column is extended. On the other hand, it is very short for S. emarginatus Rchb.f.

Furthermore, in considering the development of the inflorescence, Ridley's data do not agree with my findings. As with other species of the genus, the three species with hirsute inflorescences, growing and observed live for three years at the Buitenzorg Botanical Garden, have one or few flowers at the same time, which is repeated after a definite rest period.

Thrixspermum amplexicaule Rchb.f.

Xen. Orch. II, 121; J.J.Sm. Fl. Buit. VI, Orch. 573.

T. lilacinum Rchb.f. l.c.

Dendrocolla amplexicaulis Bl. Bijdr. 288.

Aerides amplexicaule Lindl. Gen. et Sp. Orch. 239; Miq. Fl. Ind. Bat. III, 696.

Sarcochilus amplexicaulis Rchb.f. Walp. Ann. VI, 499.

S. lilacinus Griff. Not. III, 334; Ic. Pl. Asiat. t. 320, f. 11; Rchb.f. Walp. Ann. l.c.; Hook.f. Fl. Br. Ind. VI, 40.

Orsidice [? Orsydice] amplexicaule Rchb.f. Bonpl. II, 93.

Ambon : Ema (Teysm.); capital township; Nona (J.J.Smith), usually in grass fields; also Banda [I.]; Celebes; Borneo; Java; Sumatra; Singapore; Malay Archipelago.

Thrixspermum subteres J.J.Sm.

Bull. Inst. Buit. no. 7; Ic. Bog. II, 119, t. CXXIII C.

Ambon : [Mt.] Hoetoe Mortetoe and [Mt.] Toena (J.J.Smith).

Thrixspermum subulatum Rchb.f.

Xenia Orch. II, 122; J.J.Sm. Fl. Buit. VI, Orch. 578.

Dendrocolla subulata Bl. Bijdr. 291.

Aerides subulatum Lindl. Gen. et Sp. Orch. 241; Miq. Fl. Ind. Bat. III, 698.

Sarcochilus subulatus Rchb.f. Walp. Ann. VI, 500.

Ambon : Hila (Treub); also Tanimbar Islands; Java; Sumatra.

A very distinct species with long, lax, pendent, strongly compressed, branched stems, leaves linear-lanceolate, suddenly acuminate, and with very short, few-flowered inflorescences. The flowers are delicate, 1.60cm broad, fragrant, more-or-less yellowish white, the erect, falcate-trigonal, acute lateral lobes of the lip are marked with orange-coloured spots; the middle lobe is short and callus-shaped.

Renanthera moluccana Bl.

Rumphia IV, 54, t. 193, f. 2; t. 197 E; Mus. I, 60; Miq. Fl. Ind. Bat. III, 699.

Angraecum rubrum Rumph. Herb. Amb. VI, 101, t. 44, f. 2.

Ambon : Without locality details (Rumph.); [Mt.] Hoetoe Moeri (Teysm.); Paso.

A species closely related to R. elongata Lindl., however, easily distinguished by the appreciably larger flowers. I do not understand what Rumphius means with his 'variation' of this species.

Vanda furva Lindl. (non Bl.)

Gen. et Sp. Orch. 215.

Cymbidium furvum Wlld. Spec. Pl. IV, 103.

Epidendrum furvum L. Spec. Pl. 1348.

Angraecum furvum Rumph. Herb. Amb. VI, 104, t. XLVI, f. 1.

(Latin diagnosis)

Stems usually branched at the base. Leaves numerous, lorate, irregular at the apex, with a tooth-shaped little tip, the longest half blunt, not dentate, with a longitudinal groove above, sharply keeled below, fairly pale green,

much less rigid than for V. tricolor Lindl., \pm 32cm long, 3.20cm broad. Inflorescences \pm 20cm long, lax, \pm 11 - flowered. Peduncle \pm 5.0cm long, pallid green, with some red spots, just as for the angular rachis. Bracts triangular, blunt, 0.45cm long. Flowers open wide, 3.50cm broad. Sepals and petals carnose, spathulate, with a markedly convex claw and irregular, roundish, broadly undulate lip-lamina, a glossy brown inside, slightly red at the base, the claw with pallid yellow stripes, with pallid yellow margin, pallid yellow outside, the sepals with a brown longitudinal stripe, respectively 1.70cm and 1.83cm long, 1.25 and 1.13cm broad. The labellum extended, spurred, trilobed; the spur reflexed, short, laterally strongly compressed, blunt, yellowish white, 0.40cm long, with two cushion-like, yellow, hirsute calli at the entrance, separated by a longitudinal groove; lateral lobes small, vertical, protruding between the column and middle lobe, much shorter than the column, blunt, slightly concave, the upper margins divergent, pallid yellow; middle lobe protruding, straight, broad-pandurate, convex, fairly pale yellow, with three longitudinal ribs and six little brown stripes, \pm 1.40cm long, 1.0cm broad, the little basal lobes small, blunt, convex, the little middle lobes much larger, roundish, with broad, blunt, not crenate apex. Gynostemium short, much broadened at the base, yellowish white, 0.50cm long, \pm 0.80cm broad. Anther roundish with a broad, blunt little beak, white. Pollinia - 4, compressed, yellow, with a moderate, broad, white caudicle and larger, oblique oval viscid mass. Rostellum blunt, 2 - toothed. The stigma has a broad transverse groove close to the apex of the column. Ovary + pedicel \pm 4.70cm long, yellowish white, above markedly 6 - ribbed.

Ambon : Without locality details (Rumphius); Hatiwi ketjil and Toelehoe (J.J.Smith).

This species appears often to have been confused with others. Blume's illustration in Rumphia represents a different species, at least regarding the colour and shape of the lip.

Vanda crassiloba T.et B.

Cat. Hort. Bog. 48.

? V.hastifera Rchb.f. Linnaea, 1876, 30; Gard. Chr. 1883, II, 556

? Angraecum saxatile Rumph. Herb. Amb. VI, 107, t. XLIX, f. 1.

(Latin diagnosis)

Stems extended, terete, \pm 0.65cm thick. Leaves distichous, lorate, bent-over, grooved at the base, with mid-rib grooved above, below keeled towards the apex, at the apex unequally bilobed with angular lobules, dentate on the inner margin, and with a little tip in between, thick leathery, fairly pale green, \pm 23cm long, 2.0cm broad; sheaths tubular, longer than the internodes,

lacerated in front. Inflorescences much shorter than the leaves, few-flowered (± 2), erect. Peduncle pallid green, ± 2.50 cm long, with several short, tubular, keeled, pallid green petiolate little leaves. Rachis angular, pallid green. Bracts small, trigonal. Flowers open wide, carnose, ± 3.70 cm broad, mildly fragrant, long-lasting. Sepals longish, fairly weakly spathulate, blunt, somewhat broad-undulate, pallid greenish yellow, with irregular brown spots; the dorsal one bent forwards, ± 2.30 cm long, 1.0cm broad; the lateral ones facing backwards obliquely, strongly keeled on the outside and a pallid yellow, ± 2.20 cm long, 1.10cm broad. Petals facing backwards obliquely, longish-spathulate, blunt, somewhat broadly undulate, with a longitudinal rib on the outside, coloured as for the sepals, ± 2.20 cm long, 0.90cm broad. Labellum small, spurred, trilobed; spur facing backwards, slightly conical, laterally compressed, blunt, straight, a glossy pale yellow-brown, ± 0.85 cm long, 0.40cm tall at the base, on the inside with long white protruding hairs, at the entrance with a cushion-shaped swelling and with a longitudinal groove; the lateral lobes protruding vertically, diamond-shaped, blunt, very concave, white, slightly brown-dotted at the base, shorter than the column; middle lobe protruding, very thick carnose, fusiform, yellowish white above, the tip with short protruding hairs on the outside and with three longitudinal ribs, glossy pallid greenish below, with a longitudinal groove and a depression at the base, ± 0.95 cm long, 1.15cm broad at the base; the foot-lobules protruding at right-angles, narrow triangular, acute, the terminal lobule narrowed towards the apex, and the apex with two short lobes, 0.75cm long, and 0.50cm broad. Column fairly slender, weakly bent, constricted at the centre, much widened at the base and six-sided, yellowish white, brown below at the base, 0.90cm long, 0.675cm broad at the base. Anther slightly arched, roundish, not spurred. Pollinia - 4, compressed from the rear, of unequal size, on a short broad, white caudicle with large, roundish viscid mass. Rostellum bidentate. Stigma obliquely oval. Ovary with pedicel ± 6.50 cm long, trigonal, yellowish white, the faces each with two narrow longitudinal grooves.

Ambon : (Teysmann).

Herb. Lugd. Bat. no. 903, 16 - 2859.

The description is made from a specimen growing in fairly deep shade at the Botanical Garden of Buitenzorg, which agrees in nearly all segments with the excellent specimens at the Leiden Herbarium, collected by Teysmann in Ambon. However, the solitary leaf at Leiden is appreciably smaller (1.13cm) and the inflorescence carries 6 - 7 flowers, whilst the middle lobe of the dried specimen is relatively smaller.

Prof. M. Treub and I collected several specimens of a Vanda in Ambon, which

are in cultivation at Buitenzorg, but have not yet flowered and which probably belong to this species. The Angraecum saxatile of Rumphius presumably represents this species and not a Cymbidium as Hasskarl surmises. Reichenbach's V. hastifera Rchb.f. is, if not identical, at any rate a very closely related species.

Vandopsis lissochiloides Pfitz.

Orch. 210, f. 229.

Fieldia lissochiloides Gaud. Voy. Freyc. 424, t. 36; Bl. Rumphia IV, t. 194, f. 2; Rchb.f. Xen. Orch. II, 38.

Vanda lissochiloides Lindl. Gen. et Sp. Orch. 216; Bl. Rumphia IV, 49; Miq. Fl. Ind. Bat. III, 680.

V. Batemannii Lindl. Bot. Reg. 1846, t. 59; Fol. Orch. no. 1.

Stauropsis lissochiloides Pfitz. Vergl. Morph. Orch. 14.

Angraecum quintum Rumph. Herb. Amb. VI, 102.

Ambon : Without locality details (Rumphius); also Philippines.

Sarcanthus subulatus Rchb.f.

Bonpl. 1857, 41; J.J.Sm. Fl. Buit. VI, Orch. 604.

S. secundus Griff. Not. III, 362; Ic. Pl. As. 336; Hook.f. Fl. Br. Ind. VI, 67; Ann. Bot. Gard. Calc. V, 51, t. 77; King et Pantl. Ann. Bot. Gard. Calc. VIII, 241, t. 321.

Cleisostoma subulatum Bl. Bijdr. 363; Lindl. Gen. et Sp. Orch. 226; Miq. Fl. Ind. Bat. III, 682.

Micropera pallida Lindl. Wall. Cat. no. 7321 (p.p.).

(?) Angraecum pungens Rumph. l.c. 106.

Ambon : Between Soeli and Paso (J.J.Smith); also Borneo; Java; Riouw [Is.]; Malay Peninsula; Assam; eastern India.

I consider it highly probable that Rumphius intended his Angraecum pungens to be this plant. According to the description it cannot be Schoenorchis juncifolia Bl., as Hasskarl stipulated.

Cleisostoma cryptochilum F.v.M.

Wing's South.Sc. Rec. I, (n. ser.) 1885.

Saccolabium purpureum J.J.Sm. Bull. Inst. Buit. no. 7; Ic. Bog. II, 115, t. CXXIII A.

Ambon : [Mt.] Hoetoe Mortetoe (J.J.Smith); also S.E. New Guinea.

According to the specimen in the British Museum, my Saccolabium purpureum J.J.Sm. is identical with this species. With the present interpretation of the genus Saccolabium, the plant fits in better here than to Cleisostoma,

but for the time being I shall refrain from re-naming it, until the genus Saccolabium has been thoroughly revised.

The closest related species is Saccolabium calopterum Rchb.f. (synonym Saccolabium Schleinitzianum Krzl.) which, using Reichenbach's description (identical with the specimen in the Berlin Herbarium), is distinguished by the longer lateral lobes of the lip. But, perhaps, both species should be considered only as varieties, in which case Reichenbach's name would be the oldest.

Cleisostoma Koordersii Rolfe

Kew Bull. 1899, 131.

(Latin diagnosis)

Stems rigid, root-forming, terete. Leaves distichous, fairly close together, far-protruding, lorate, unequally bilobed, the midrib grooved above and prominent below, thick leathery, green, with pallid dots below, \pm 28cm long, 3.0cm broad; sheath tubular, the upper part protruding and grooved, \pm 4.50cm long. Inflorescences rigidly erect, \pm 80cm long, split into several short, obliquely erect, multi-flowered branches. Peduncle \pm 57cm long, terete, 0.50 cm thick, dark grey-violet and green-grained, with several short tubular, petiolate leaves. Bracts short, broadly triangular, blunt, concave, protruding. Flowers closely bunched, not resupinate, \pm 0.90cm broad, carnose. Sepals and petals protruding with slightly inflexed tip, obovate-longish, blunt, pale green, dotted brown-violet, particularly outside at the base; the dorsal sepal slightly concave, 0.75cm long, 0.35cm broad; lateral sepals oblique, slightly acuminate, with the middle rib prominent on the outside, 0.70cm long, 0.25cm broad. Petals rather falcate, 0.65cm long, 0.25cm broad. Labellum directed upwards, trilobed, spurred, pale yellow; spur obovate-pouched, compressed from the rear, blunt, 0.60cm long, 0.43cm broad, narrowed to 0.30cm at the entrance, with a longish bidentate, skinny, whitish, 0.25cm long lamella inside on the rear face; lateral lobes vertical at the entrance to the spur, the front margins slightly inclined together, triangular-rectangular, short, dark violet at the base; middle lobe bent forwards, short, triangular, acute, carnose, pallid yellow, 0.15cm long, 0.20cm broad. Gynostemium short with a somewhat hollow back, pale green, 0.20cm long, 0.25cm broad. Anther capped, obliquely-oval, with a small weak beak. Pollinia - 4, united to two globular masses, yellow, on a linear caudicle, with a longish viscid mass. Rostellum longish, bidentate, pale yellowish green.

Ambon : Without locality details (Teysm.); Hila (Treub); [Mt.] Hoetoe Mortetoe (J.J.Smith); also Obi [I.] (Ham); Minahassa (Koorders).

The species collected by Koorders in the Minahassa region and described by

Rolfe as Cleisostoma Koordersii is probably identical with the species found by Treub on Ambon and introduced to Buitenzorg in the living state. My description has been made from that plant.

A plant I collected on Boeroe [I.] is, in general, similar to the plant from Ambon. However, the flowers are somewhat smaller; the sepals and petals broader and coloured a dark violet-brown, whilst the lip is yellow and its middle lobe is grooved; the column-back is less hollow. The stem of this plant was 1.0m long. Initially the plant is best considered as var. buruense J.J.Sm.; an examination of several plants will establish whether we are dealing here with a separate species.

In the Kew Herbarium there is, likewise, a quite similar plant coming from Boeroe under the name of Saccolabium Riedelii Rchb.f. which, as far as I am aware, has never been published.

Trichoglottis geminata J.J.Sm. [nom nov.]

T. oblongifolia Rolfe, Kew Bull. 1899, 132.

Sarcanthus geminatus T.et B. Nat. Tijdschr. Ned. Ind. XXIX, (1867), 243.

Ambon : Without locality details (Teysm.); also Saparoea; Celebes; Borneo; ? Sumatra.

Saccolabium amboinense J.J.Sm., sp. nov.

(Latin diagnosis)

Stem extended, pendent, with upwards bent apex, strong, rigid, compressed, fractiflex, \pm 40cm long, the internodes \pm 2.0 - 2.50cm long. Leaves distichous, twisted at the base, protruding, broadly lorate, broad at the apex and unequally bilobed, with obtuse lobules, broadly sinuate, with a very small tip, the middle vein grooved above and somewhat bluntly protruding below, the two halves convex, fairly thick carnose, green, \pm 21cm long, 4.0 cm broad; sheaths tubular, compressed, with a longitudinal ridge limited at the front and rear, each by two grooves. Inflorescences penetrating the sheaths from behind at the base, directed downwards, closely multi-flowered, \pm 17.5cm long. Peduncle pale green, \pm 6.0cm long, 0.30cm thick, with few short sheaths. Rachis with longitudinal grooves, pallid green, with small black little scales. Bracts reflexed, lanceolate, acute, concave, \pm 0.50cm long. Flowers face all directions, obliquely erect, pallid yellow, \pm 1.37cm long, with small black scales on the outside. Sepals longish, blunt, with pale reddish spots on the inside; the dorsal one markedly concave, 0.65cm long, 0.35cm broad; the lateral ones oblique, slightly concave, 0.70cm long, 0.30cm broad. Petals longish, somewhat broader towards the apex, slightly pointed, concave, swollen at the apex, the same colour as the sepals, 0.47cm

long, 0.23cm broad. Labellum laterally compressed, spurred, trilobed, somewhat adnate at the base of the column (column-foot), 1.35cm long; lateral lobes small, triangular, acute, markedly convex, the apex reflexed, the inner surfaces appressed at the base, so that the entrance to the spur is much narrowed, reddish-flushed inside; the middle lobe protruding, carnose, laterally compressed, very narrow, the upper side convex and at the apex with a small, blunt, thin, prominent lobule, 0.40cm long, 0.15cm broad; the spur large, reflexed, in its natural position, \pm 0.95cm long, the lower part laterally compressed to a funnel-shape and inside with red longitudinal stripes, the upper part bent downwards, slightly clavate, blunt, with a carnose longitudinal ridge at the front in the hollow. Gynostemium short, slightly compressed laterally, with broad, blunt apex and carnose, blunt auricles. Anther with broad base tapering to a large, triangular, pointed little beak, 0.27cm long. Pollinia - 2, small, grooved, almost globose, pallid yellow on a long, narrow caudicle and longish viscid mass. Rostellum facing downwards, bidentate. Stigma small. Ovary with pedicel, \pm 1.0cm long, yellowish white, with little black scales.

Ambon : Between Alang and Hina Niwel (J.J.Smith).

This species is closely related to S. ascendens Gaud. and S. Mooreanum Rolfe, but differs from both, however, in the strongly bent spur and the longer, triangular, pointed, convex, reflexed lateral lobes of the lip. All three species, and perhaps several other, belong closest to the affinity of Cleisostoma spatulatum Bl., a plant which, as earlier commented on by Ridley, really is a Sarcanthus.

Saccolabium insectiferum J.J.Sm.

Fl. Buit. VI, Orch. 641.

? Ambon : also Java.

I collected this plant on my journey to Ambon. Unfortunately, the specimen got lost; so that I cannot state with certainty whether it was collected actually on Ambon, or on some of the other islands visited.

The specimen from Java and in cultivation at Buitenzorg differs mainly in the somewhat smaller leaves and flowers, and in the spur which is more constricted at the centre.

The closest relatives are S. Witteanum Rchb.f. and S. undulatum Ridl.

Saccolabium rhopalorrhachis J.J.Sm.

Fl. Buit. VI, Orch. 644.

Dendrocolla rhopalorrhachis Rchb.f. Xen. Orch. I, 214, t. 86, III.

Thrixspermum rhopalorrhachis Rchb.f. l.c. II, 121.

T. brachyglottis O.K. Rev. Gen. Pl. II, 682.

Sarcochilus brachyglottis Hook.f. Ann. Bot. Gard. Calc. V, 42, t. 63.

Ambon : Without locality details (Teysm.); on trees in the capital township (Boerlage, J.J.Smith); also Java; Perak.

This plant, together with another Javanese species, S. pusillum Bl., is closely related to the Type of the genus. Together they form a group which shows very little relationship to the above Saccolabium species, and rather belongs closer to Sarcochilus. The form from Ambon differs on the one hand than those from Java and Perak, and on the other in the longer, slightly falcate, upwards-bent, acute middle lobe of the lip.

ADDENDUM

The following species have recently flowered in the Buitenzorg Garden; but I found only Phreatia sulcata J.J.Sm. in the Herbarium.

Dendrobium scalpelliforme T.et B.

Nat. Tijdschr. Ned. Ind. XXVII, 17.

Ambon : Hila (Treub); Moluccas (Teysm.).

The stems are extended, compressed and the third internode above the base is swollen to a narrow pseudobulb which is diamond-shaped in cross-section; the upper part of the stem has only rudimentary leaves, whilst the inflorescences develop usually from this area. The flowers are small, yellow, ± 1.0 cm broad. The mentum (column-foot) is bent and at the rear has two longitudinal grooves. The petals are smaller than the sepals, lanceolate, acute, convex, 0.40cm long, 0.15cm broad. The labellum is longish-obovate in contour, 0.90 cm long, trilobed at the apex, with short, blunt, lateral lobes and a broad, widely crenate, almost trilobed middle lobe; and with a broad, swollen longitudinal stripe which is trilobed below. The column-foot is concave, with a longitudinal rib inside, 0.55cm long.

Dendrobium orientale J.J.Sm.

The description of this species is prepared from notes made during the journey. This will explain why the description of the inflorescence is fairly incomplete.

In the Botanical Garden of Buitenzorg there is a plant in cultivation which doubtless belongs to this species. It recently started to flower, but unfortunately the buds dropped off when they had barely reached a length of 2cm. However, I could establish that the inflorescence was two-flowered and

surrounded at the base by compressed bracts. There is no doubt that it belongs to section *Grastidium*.

Dendrobium Koordersii J.J.Sm.

Regarding this species, I should like to note that it is very closely related to *D. bilobum* Lindl. and *D. isochiloides* Krzl. The former differs in the relatively much shorter petals and a warty middle lobe and the latter in keeled leaves, appreciably smaller flowers (0.60cm), the lip inside with several longitudinal ribs, and in the middle lobe with involute margins.

Bulbophyllum odoratum Lindl. var. *niveum* J.J.Sm., var. nov.

(Latin diagnosis)

Pseudobulbs fairly close together, small, round disc-shaped, c. 0.70cm broad, 0.50cm tall. Leaf lanceolate, blunt, with sunken grooved midrib above, thick, carnose, glossy green, below matt pale green, c. 16cm long, 3.50cm broad, narrowed to a folded, grooved, 3.0cm long petiole. Inflorescences erect, openly multi-flowered, c. 27cm long. Peduncle very short. Rachis with longitudinal grooves, pale green. Bracts subulate, concave, white, 0.80cm long. Flowers protruding, pure white, 0.80cm broad, practically odourless. Sepals protruding, lanceolate, concave, narrowed towards the apex and carnose, conical, acute; the dorsal sepal, 0.47cm long, 0.13cm broad; the lateral sepals slightly larger, following the column-foot downwards, triangular, weakly falcate. Petals very small, longish, somewhat pointed, transparent, 0.10cm long. Lip very small, movable, trilobed, 0.10cm long; lateral lobes erect, triangular; middle lobes triangular, inflexed, convex below; between the lateral lobes and continuing towards the middle lobe is an irregular, blunt callus with the apex protruding slightly free. Column very short; auricles equal in length to the anther, broad, very short acute. Column-foot very short, forming a right-angle with the ovary, much thinner than the column, 0.07cm long. The ovary together with the pedicel, 0.30cm long, pure white.

Ambon : (Karsten).

The description is made from a specimen in cultivation at Buitenzorg.

The plant is smaller than the typical *B. odoratum* Lindl., the flowers are larger, pure white and almost odourless. The floral construction is the same for both; characteristic are the conically swollen sepals, and the labellum. The profusely-flowered inflorescences are very delicate.

Bulbophyllum amplebracteatum T.et B.

Nat. Tijdschr. Ned. Ind. XXIV, 307.

(Latin diagnosis)

Pseudobulbs bunched, irregularly ovate, fairly pale green, c. 3.30cm long, 2.80cm broad, single leaved, initially surrounded by large, broad-tubular, strongly keeled sheaths. Leaf erect, petiolate, longish, with blunt slightly reflexed tip, and midrib deeply grooved above and bluntly keeled below, glossy green, matt pale green below, c. 15.50cm long, 5.30cm broad; petiole robust, folded and grooved, c. 3.0cm long. Inflorescences at the base of the pseudobulbs, erect, later on more-or-less hanging over, several flowers developing at intervals, lax. Peduncle oval in cross-section, black-grey, glossy, c. 27cm long, 0.27cm broad, swollen to 0.55cm towards the apex and green, with several tubular, acute, sharply keeled sheaths. Rachis continues to grow for a long time, internodes swollen towards their apex, flattened on the side of the flower, green, c. 2.0cm long. Bracts distichous, large, broad and obliquely tubular-conical, acute, laterally compressed, sharply keeled, weakly transparent, pale green, c. 2.50cm long, persistent. Flowers large, carnose, striking, with delicate little black dots. Dorsal sepal erect, ovate-lanceolate, the upper part folded together and on the outside sharply keeled, acute, the lower part with a longitudinal groove on the inside and the two halves convex, 13 - veined, greenish yellow, c. 3.60cm long, 1.15cm broad. Lateral sepals partly following the column-foot downwards, protruding parallel to each other, with downwards-bent tip, not connate, lanceolate, the sides not alike, acute, vertical and concave at the base, sharply folded towards the front in the longitudinal direction, very strongly keeled and twisted, so that the broader halves facing the dorsal sepal are directed upwards and are partly superimposed at the centre; the narrower half with inflexed margin, facing outwards towards the keel, yellow, brownish at the base with pale green keel; on each side with dispersed little black dots, c. 4.50cm long, the wider half 0.95cm broad. Petals much smaller, protruding vertically, divergent, obliquely longish-triangular, acute, outside with a longitudinal swelling, weakly translucent, pale yellow-green with 7 veins coloured brown-red, particularly at the base, c. 1.90cm long, 0.75cm broad. Labellum attached to the column-foot in a very movable manner, carnose, trilobed, the lower part laterally compressed with hollow sides, convex above, blunt at the base, broadly grooved and with two strong longitudinal ribs, for the most part dark purple-red, 1.90cm long; lateral lobes erect at the base of the lip, broad linear, weakly falcate, blunt, the inside of the tip and the margin with fairly long, pointed teeth, dotted dark red, c. 0.40cm long, 0.14cm broad; middle lobe strongly bent downwards, extended to a linear, acute, c. 0.80cm long appendage, hanging down between the lateral sepals, convex, concave below, warty, covered with a sticky

liquid, black-red, with a golden-yellow apex. Gynostemium becoming thinner towards the apex, pallid yellow-green, glossy, overall c. 1.20cm long; auricles extended into long filaments, at the base of the upper margin with a large tooth, c. 0.65cm long. Anther capped with a conically swollen connective, golden-yellow. Pollinia - 4, recumbent, longish pyriform, laterally compressed, yellow, without viscid mass. Stigma large. Column-foot forming an acute angle with the ovary, bent forwards, with a swelling at the base, the upper part free, bilobed at the apex, very glossy, dotted dark red, 1.0cm long. Ovary with six deep grooves, green, 1.0cm long; pedicel paler, 2.50cm long.

Ambon : Without locality details (Karsten); [Mt.] Sirimau (J.J.Smith); probably also Hatoe Lalikoel (J.J.Smith); Ceram, at the coast (Teysm.); Celebes (Sarasin, in the Berlin Herbarium, as B. macrochilum Krzl.); Sepoetan Range in Minahassa Province (Koorders no. 29565b).

Description is made from plants originating in Ambon and in cultivation at Buitenzorg, and agreeing very well with the description by Teysmann and Binnendijk.

The plant collected by Koorders in the Celebes was larger in all segments, as was likewise Teysmann and Binnendijk's plant and also the specimen I collected near Hatoe Lalikoel on Ambon.

In the case of the plant from Celebes the pseudobulbs were 7.5cm long, the leaves 25 - 30cm long, 6.5cm broad, the inflorescence 30 - 40cm long, c. 9 - flowered, the flowers greenish yellow with a golden-yellow lip, the dorsal sepal 4.20cm long, the lip 2.40cm long.

The species belongs to Ridley's section Intervallata, which is identical with Kränzlin's Imbricantia.

Noteworthy are the large, funnel-shaped, strongly compressed and keeled bracts, the twisted, sharply plicate and keeled sepals, the trilobed labellum with extended, pendent middle lobe, as occurs for example in the case of B. megalanthum Griff. and B. Blumei J.J.Sm.

Phreatia densiflora Lindl.

Gen. et Sp. Orch. 64; Miq. Fl. Ind. Bat. III, 655; J.J.Sm. Fl. Buit. VI, Orch. 502.

P. Myosurus Lindl. Journ. Linn. Soc. Bot. III, 1859, 61; Miq. l.c.; Hook.f. Fl. Br. Ind. V, 810.

Dendrolirium densiflorum Bl. Bijdr. 350.

Eria Myosurus Rchb.f. Bonpl. 1857, 54.

Ambon : Hatoe Lalikoel (J.J.Smith); also Java; Sumatra; Perak.

Phreatia sulcata J.J.Sm.

Fl. Buit. VI, Orch. 505.

Dendrolirium sulcatum Bl. Bijdr. 347.

Eria sulcata Lindl. Gen. et Sp. Orch. 69; Miq. Fl. Ind. Bat. III, 664.

Ambon : Salhoetoe (Teysm.); also Java and Sumatra.

I found this species still at the Buitenzorg Herbarium.

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Bulbophyllum Thou.*macranthum* Lindl. 43var. *albescens* J.J.Sm. 42*macrochilum* Krzl. 61*megalanthum* Griff. 61*mutabile* Lindl. 42*odoratum* Lindl. 59var. *niveum* J.J.Sm. 59*psittacoides* J.J.Sm. 44*recurviflorum* J.J.Sm. 41*sessile* J.J.Sm. 42*Teysmannii* J.J.Sm. 41*viriscens* J.J.Sm. 43§ *Cadetia* 21*Cadetia* Caud.*umbellata* Gaud. 21, 22*Calanthe* R.Br.*catilligera* Rchb.f. 13*celebica* Rolfe 12*comosa* Rchb.f. 13*emarginata* Lindl. 12*furcata* Bat. 13*Perrotteti* A.Rich. 13*proboscidea* Rchb.f. 13*saccata* J.J.Sm. 12*sumatrana* Bl.ex Boerl. 13*tunensis* J.J.Sm 12*veratrifolia* R.Br. 13*Callista* Lour.*amboinensis* O.K. 29*anosma* O.K. 35*bifaria* O.K. 33*bifloram* O.K. 33*calceola* O.K. 26*crumenata* O.K. 23*foliosa* O.K. 37*lancifolia* O.K. 33*Mirbeliana* O.K. 29*purpurea* O.K. 33

Callista Lour.

Scortechinii O.K. 35

spinescens O.K. 37

Veitchiana O.K. 29

§ Caulescentes 14, 20, 21, 42

Ceratostylis Bl. 42

latuensis J.J.Sm. 20

Chiloschista 49

Chrysoglossum Bl. 32

Cirrhopetalum Lindl.

elegans T.et B. 43

maximum Ridl. 43

psittacoides Ridl. 44

Cleisostoma Bl. 54

cryptochilum F.v. M. 2, 54

Koordersii Rolfe 55, 56

var. buruense J.J.Sm. 56

spatulatum Bl. 57

subulatum Bl. 54

Coelogyne Lindl.

psittacina Rchb.f. 9

Rumphii Lindl. 9

speciosa Lindl. 9

§ Coriifoliae 17, 18

Corymbis Thou.

disticha Lindl. 8

veratrifolia Rchb.f. 8

Corymborchis Thou.

assamica Bl. 8

veratrifolia Bl. 8

§ Crepidium 16

§ Crumenata 23, 27

Cryptochilus Wall.

bicolor J.J.Sm. 2, 19

Cymbidium Sw. 54

amabile Roxb. 48

furvum Wlld. 51

scriptum Sw. 44

tenuifolium Wight 48

triste Roxb. 48

Cymbidium Sw.

Wallichii Lindl. 45

Cypripedium L.

Mastersianum Rchb. f. 3

Cystopus Bl.

muricatus J.J.Sm 7

Dendrobiinae 32

Dendrobium Sw.

albicolor Ridl. 28

amboinense Hook. [Hook.f.] 29

angustipetalum J.J.Sm. 31

anosmum Lindl. 35

atropurpureum Miq. 28

bifarum Lindl. 33

bilobum Lindl. 36, 37, 59

Burbidgei Rchb.f. 30

bursigerum Lindl. 25

calceolum Roxb. 26

calophylla O.K. 29

calophyllum Rchb.f. 29

concavum J.J.Sm. 26

crumenatum Sw. 22, 23, 24, 25

fl. lilac. Miq. 23

Dendrocolla J.J.Sm. 21

ecolle J.J.Sm. 21

ferox Hassk. 29

foliosum Brongn. 2, 37

gemellum Lindl. 33

glaucum T.et B. 38

Goldfinchii F.v.M. 26

isochiloides Krzl. 59

javanicum Sw. 38

Koordersii J.J.Sm. 35, 36, 59

lamellatum Lindl. 35

lancifolium A.Rich. 33, 34

lilacinum T.et B. 33, 34

lobulatum Rolfe et J.J.Sm. 26

macranthum Miq. 35

macrophyllum Lindl. 35

Dendrobium Sw.

- macrophyllum A.Rich. 2, 29
 - var. Veitchianum Lindl. 29
- minax Rchb.f. 30
- Mirbelianum Gaud. 29
- orientale J.J.Sm. 36, 58
- Papilio Loher 25
- papilioniferum J.J.Sm. 23, 24, 25
 - var. ephemerum J.J.Sm. 24, 25
- polycarpum Rchb.f. 30
- pruinatum T.et B. 30, 31
- purpureum Roxb. 33
- rorulentum T.et B. 38
- Rosenbergii T.et B. 29
- Roxburghii Lindl. 26
- Rumphianum T.et B. 30
- salaccense Lindl. 33
- salicornioides T.et B. 27, 28
- scalpelliforme T.et B. 58
- Scortechinii Hook.f. 35
- spinescens Lindl. 37
- superbum Rchb.f. 2, 35
- taurinum Lindl.
 - var. amboinense Rolfe 30
- terminale Par.et Rchb.f. 28
- Treubii J.J.Sm. 34
- umbellatum Rchb.f. 21
- utile J.J.Sm. 21
- Veitchianum Lindl. 29
- viridiroseum Rchb.f. 33

Dendrochilum Bl.

- sp. 9

Dendrocolla Bl. 50

- amplexicaulis Bl. 50
- pallida Bl. 48
- rhopalorrhachis Rchb.f. 57
- subulata Bl. 51
- Zollingeri Rchb.f. 50

Dendrolirium Bl.

- densiflorum Bl. 61

Dendrolirium Bl.

rugosum Bl. 38

sulcatum Bl. 62

Dipodium R.Br.

sp. 45

§ Distichophylla 31, 32

Empusa Lindl.

paradoxa Lindl. 16

Epicrianthes Bl.

javanica Bl. 41

Epidendrum L.

amabile L. 48

furvum L. 51

scriptum L. 44

triste [Lindl.] 47

Eria Lindl.

bractescens Lindl. 39

Dillwynii Hook. [? Hook.f.] 39

foliosa Ridl. 37

littoralis T.et B. 39

moluccana Schltr.et J.J.Sm. 39

Myosurus Rchb.f. 61

quinguangularis J.J.Sm. 40

rugosa Lindl. 38

stellata Lindl. 38

striolata Rchb.f. 38

sulcata Lindl. 62

vaginata Bth. 38

§ Eudendrobium 34

Fieldia Gaud.

lissochiloides Gaud. 54

Flos

Susannae Rumph. 4

triplicatus Rumph. 13

Folium

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petolatum I mas [Rumph.] 6

Gabertia

scripta Gaud. 44

Geodorum Jacks.

sp. 14

Glomera Bl.

erythrosma Bl. 20

Glossorhyncha Ridl.

amboinensis Ridl. 2, 21

Grammatophyllum Bl.

Fenzlianum Rchb.f. 44

Guilelmi II Krzl. 44

leopardinum Rchb.f. 44

multiflorum Lindl. 44

Rumphianum Miq. 44

scriptum Bl. 44

speciosum Lindl. 44

§ Grastidium 30, 31, 37, 59

Grossourdia Rchb.f.

Zollingeri Rchb.f. 50

Habenaria Willd.

bambusetorum Krzl. 4

gigantea Don 4

lacertifera Bth. 4

Rumphii Lindl. 3, 5

Susannae R.Br. 4

tentaculatus Rchb.f. 4

Haplochilus

amboinense J.J.Sm. 7

var. argentea J.J.Sm. 7

Herba

supplex femina Rumph. 26

supplex minor Rumph. 28

supplex quinta Rumph. 26

§ Hymenaria 39, 40, 41

Hysteria Reinw.

veratrifolia Reinw. 8, 25

§ Imbricantia 61

§ Intervallata 61

Leptorchis Thou.

odorata O.K. 17

Limatodis [? Limatodes] Lindl.

grata Miq. 12

§ Limatodis 9

Limodorum L.C.Rich.

veratrifolium Wlld. 13

Liparis L.C.Rich.

amboinensis J.J.Sm. 17

bituberculata Lindl. 17

bootanensis Griff. 18

caespitosa Lindl. 18

cleistogama J.J.Sm. 17, 18

confusa J.J.Sm. 18, 19

var. amboinensis J.J.Sm. 18

flaccida Rchb.f. 19

Forbesii Ridl. 18

longipes Lindl. 19

odorata Lindl. 16

paradoxa Rchb.f. 16

parviflora Lindl. 19

tunensis J.J.Sm. 18

viridiflora Lindl. 18

§ Longicollia 21

Luisia Gaud.

brachystachys Bl.

var. flaveola Par.et Rchb.f. 48

burmanica Lindl. 48

platyglossa Rchb.f. 48

teretifolia Gaud. 47

zeylanica Lindl. 48

Macrostylis Bred.

disticha Bred. 8

Malaxis Sw.

lancifolia Smith 16

odorata Wlld. 16

ventilabrum O.K. 15

Mediocalcar J.J.Sm.

bicolor J.J.Sm. 19

Micropera Dalz.

pallida Lindl. 54

Microstylis Nutt.

horielensis J.J.Sm. 15

moluccana J.J.Sm. 15

obovata J.J.Sm. 16

ventilabrum Rchb.f. 2, 15

Wallichii Lindl. 16

§ Mollifoliae 17

Nervilia Commers

Aragoana Gaud. 5

Neuwiedia Bl. 3

Oberonia Lindl.

imbricata Lindl. 15

lucida J.J.Sm. 14

Octomeria R.Br.

stellata Spr. 38

vaginata Bred. 38

Onychium Bl.

crumenatum Bl. 22

Orchis L.

amboinica minor I Rumph. 5

amboinica minor II Rumph. 4

gigantea Sm. 4

triplicata Willem. 13

Orsidice [? Orsydice] Rchb.f.

amplexicaule Rchb.f. 51

§ Oxysepalum 41

Oxystophyllum Bl.

atropurpureum Bl. 28

carnosum [? Bl.] 28

Paphiopedilum Pfitz.

Mastersianum Pfitz. 3

Paphiopedium Rolfe

Mastersianum Kerch. 3

Pedilonium Bl.

biflorum Bl. 33

Peristylus Bl.

- candidus* J.J.Sm. 4
- gracilis* Bl. 4
- sp.* 4
- tentaculatus* J.J.Sm. 4

Phaius Lour.

- amboinensis* Bl. 2, 11, 12, 14
- Blumei* Lindl. 11
- callosus* Lindl. 10, 11
- var. ecalcaratus* Lindl. 10
- gratus* Bl. 12
- Incarvillei* O.K. 11
- Rumphii* Bl. 14
- Zollingeri* Rchb.f. 11

Phalaenopsis Bl.

- amabilis* Bl. 48
- fugax* Krzl. 48
- grandiflora* Lindl. 48
- violacea* T.et B. 48

Pholidota Lindl.

- gibbosa* Lindl. 42

Phreatia Lindl.

- densiflora* Lindl. 61
- Myosurus* Lindl. 61
- sp.* 46
- sulcata* J.J.Sm. 58, 62

Phyllorchis Thou.

- javanica* O.K. 41

Physurinae 6*Physurus* L.C.Rich.

- herpysmoides* King et Pantl. 5, 6
- var. amboinensis* J.J.Sm. 5

Pinalia Ham.

- bractescens* O.K. 39
- rugosa* O.K. 38
- stellata* O.K. 38
- striolata* O.K. 38

Platanthera L.C.Rich.

- gigantea* Lindl. 3
- robusta* Lindl. 3
- Rumphii* Brongn. 5
- Susannae* Lindl. 3

§ *Platyclinis* 9*Pleione* Don*Rumphii* O.K. 9*Plocoglottis* Bl.*Lowii* Rchb.f. 10*moluccana* Bl. 9, 12*porphyrophylla* Ridl. 10*Podochilus* Bl.*appendiculatus* J.J.Sm. 46*reflexus* Schltr. 46*Pogonia* Juss.*flabelliformis* Lindl. 5*Nervilia* Bl. 5*Pterygodium* Sw.*sulcatum* Roxb. 7*Renanthera* Lour.*elongata* Lindl. 51*moluccana* Bl. 51*Rhynchanthera* Bl.*paniculata* Bl. 8*Saccolabium* Bl. 54, 55, 58*amboinense* J.J.Sm. 56*ascendens* Gaud. 57*calopterum* Rchb.f. 55*insectiferum* J.J.Sm. 57*Mooreanum* Rolfe 57*purpureum* J.J.Sm. 54*pusillum* Bl. 58*rhopalorrhachis* J.J.Sm. 57*Riedelii* Rchb.f. 56*Schleinitzianum* Krzl. 55*undulatum* Ridl. 57*Witteanum* Rchb.f. 57*Sarcanthus* Lindl. 57*geminatus* T. et B. 56*secundus* Griff. 54*subulatus* Rchb.f. 54*Sarcochilus* R.Br. 49, 50, 58*amplexicaulis* Rchb.f. 50

Sarcochilus R.Br.

- appendiculatus* J.J.Sm. 50
- aureus* Hook.f. 48
- brachyglottis* Hook.f. 58
- cladostachys* Hook.f. 48
- compressus* Rchb.f. 50
- emarginatus* Rchb.f. 50
- hirtulus* Hook.f. 50
- lilacinus* Griff. 50
- pallidus* Rchb.f. 48
- phyllorhizus* F.v.M. 49
- sigmoideus* Ridl. 50
- stenoglottis* Hook.f. 50
- subulatus* Rchb.f. 51
- Taeniophyllum* J.J.Sm. 2, 49
- Teysmannii* J.J.Sm. 50
- unguiculatus* Lindl. 48
- Zollingeri* Rchb.f. 50

Schoenorchis Bl.

- juncifolia* Bl. 54

Spathoglottis Bl.

- lilacina* Griff. 13
- plicata* Bl. 13
- Rumphii* Bl. 14

Stauroopsis Rchb.f.

- lissochiloides* Pfitz. 54

§ *Strongyle* 27, 28*Taeniophyllum* Bl. 49*Tainia* Bl.

- penangiana* Hook.f. 9

Thelasis Bl.

- capitata* Bl. 46
- elongata* Bl. 46
- var. *amboinensis* J.J.Sm. 45

Thrixspermum Lour.

- amplexicaule* Rchb.f. 50
- aureum* O.K. 48
- brachyglottis* O.K. 58
- cladostachyum* O.K. 48
- lilacinum* Rchb.f. 50

Thrixspermum Lour.

- pallidum* Rchb.f. 48
- rhopalorrhachis* Rchb.f. 57
- subteres* J.J.Sm. 51
- subulatum* Rchb.f. 51
- unguiculatum* Rchb.f. 48

Trichoglottis Bl.

- geminata* J.J.Sm. 56
- oblongifolia* Rolfe 56

Tripleura Lindl.

- pallida* Lindl. 7

§ *Urostachya* 41*Vanda* R.Br.

- Batemannii* Lindl. 54
- crassiloba* T.et B. 52
- furva* Lindl. 51
- hastifera* Rchb.f. 52, 54
- lissochiloides* Lindl. 54
- scripta* Spr. 44
- tricolor* Lindl. 52

Vandopsis Pfitz.

- lissochiloides* Pfitz. 2, 54

Zeuxine Lindl.

- amboinensis* J.J.Sm. 6, 7
 - var. *argentea* J.J.Sm. 7
 - bracteata* Wght 6
 - brevifolia* Wght 6
 - emarginata* Lindl. 7
 - integerrima* Lindl. 7
 - membranacea* Lindl. 6
 - procumbens* Bl. 7
 - robusta* Wght 6
 - sulcata* Lindl. 6
 - Tripleura* Lindl. 7
-



LOCALITIES IN AMBON : 'THE ORCHIDS OF AMBON' J.J. SMITH (1905).

Alang, village.

Alf, Mt.

Ambon, capital township

Asiloeloe, village, near Alang

Batoe Gadjaja, village

Batoe Gantoeng, village

Ema, village

Galela, village, later Galala

Halong, village

Hatiwi ketjil, village, near Toelehoe

Hatoe Lalikoel, village

Hila, village

Hina Niwel, village, near Alang

Hitoe, Hitoe Lama, village, later Hitu

Hoetoe Mortetoe, Mt.

Hoetoe Moeri, Hoetoemoeri, Mt.

Horiel, village

Larike, village, near Alang

Latoe, Latoea, Mt., near Alang

Nona, village

Paso, village, later Passo

Riboe, Mt., near Alang

Roema tiga, Roemah tiga, village, near Hitoe

Salhoetoe, Salahhoetoe, village

Sirimau, Mt.

Soeli, village, near Toelehoe

Soja, village, later Soya

Toelehoe, village, later Tulehu

Toena, Mt.

Wai, Wahaai, village, later Waai

Note : Prefix Goenoeng = Mt., has been omitted.

LOCALITIES OUTSIDE AMBON : 'THE ORCHIDS OF AMBON' J.J.SMITH (1905).

Andaman Is. - Bay of Bengal
Aroe Is. = Aru Is.
Banda Is. - Banda Sea
Bangka Is. - off Sumatra
Boeroe I., later Buru I.
Borneo, later Kalimantan
Biliton I. - near Sumatra
Ceram, later Seram
Celebes, later Sulawesi
Cochinchina = Indo-China
Kei Is. - Banda Sea
Krakataoe, Krakatan [Mt. & I.] between Java and Sumatra
Lombok I. - near Bali
Minahassa Province - Celebes
Misool I. = Misol I.
Moluccas
Noesa laoet = Nusa laut I., near Ambon
Obi I., Moluccas
Perak - Malay Peninsula
Piek - Ternate, Moluccas
Pinang = Penang I.
Rawak
Riouw Is., off Sumatra
Saparoea
Sepoetan Ra. = Sopoetan Mt., Minahassa, N. Celebes
Sumatra
Tanimbar Is.
Tenasserim - Burma/Thailand border area
Ternate, Moluccas

J.J. SMITH'S INTERPRETATION OF NAMES USED IN RUMPHIUS' HERBARIUM

Angraecum album majus	= Phalaenopsis amabilis Bl.
Angraecum album minus	= Dendrobium papilioniferum J.J.Sm. var. ephemerum J.J.Sm.
Angraecum angustis crumenis	= Dendrobium papilioniferum J.J.Sm.
Angraecum caninum	= Dendrobium superbum Rchb.f.
Angraecum crumenatum	= Dendrobium papilioniferum J.J.Sm.
Angraecum flavum sextum moschatum s. odoratum	= Dendrobium Rumphianum T.et B.
Angraecum flavum septimum	= Dendrobium Mirbelianum Gaud.
Angraecum flavum octavum s. furvum	= Vanda furva Lindl.
Angraecum flavum nonum	= Dendrobium ? Rumphianum T.et B.
Angraecum flavum decimum s. angustifolium	= Luisia teretifolia Gaud.
Angraecum gajang	= Liparis sp.
Angraecum jamboe	= Dendrobium pruinatum T.et B.
Angraecum lanuginosum	= Eria sp. (sect. Trichotosia)
Angraecum nervosum	= Coelogyne Rumphii Lindl.
Angraecum pungens	= ? Sarcanthus subulatus Rchb.f.
Angraecum purpureum I	= Dendrobium ? bifarium Lindl.
Angraecum purpureum II	= Dendrobium purpureum Rxb.
Angraecum quintum	= Vandopsis lissochiloides Pfitz.
Angraecum rubrum	= Renanthera moluccana Bl.
Angraecum saxatile	= Vanda ? crassiloba T.et B.
Angraecum scriptum	= Grammatophyllum scriptum Bl.
Angraecum sediforme	= ?
Angraecum taeniosum	= ?
Angraecum terrestre primum purpureum	= Spathoglottis plicata Bl.
Angraecum terrestre primum album	= ? Phaius gratus Bl.
Angraecum terrestre alterum	= Phaius amboinensis Bl.
Angraecum uniflorum	= Bulbophyllum sp.
Flos Susannae	= Platanthera Susannae Lindl.
Flos triplicatus	= Calanthe veratrifolia R.Br.
Folium petiolatum I mas	= ? Zeuxine amboinensis J.J.Sm.
Folium petiolatum II femina	= Anoectochilus Reinwardtii Bl.
Herba supplex major prima	= ? Dendrobium sp.
Herba supplex major secunda	= Dendrobium sp.

Herba supplex major tertia	= ? Dendrobium sp.
Herba supplex major quarta	= ? Dendrobium sp.
Herba supplex quinta	= Dendrobium calceolum Roxb.
Herba supplex minor	= Dendrobium atropurpureum Miq.
Orchis amboinica major radice digitata	= ?
Orchis amboinica major radice raphanoide	= Orchidaceae ?
Orchis amboinica minor I	= Habenaria Rumphii Lindl.
Orchis amboinica minor II	= Peristylus sp.
Orchis Susannae	= Platanthera Susannae Lindl.

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Sm)

Smith, J J

The orchids of Ambon



