

## ORCHIDACEAE NOVAE MALAYENSES XVII\*)<sup>1)</sup>

by

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(Oegstgeest).

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### *Habenaria baliensis* J. J. S., n. sp.

Planta florens 62—72 cm alta. Caulis inferne vaginatus, ceterum foliatus. Folia c. 8, lineari-lanceolata ad linearia, breviter acuminata ad sensim acutata, acuta, sicco membranacea, 12.5—14 cm longa, 1.8—1.1 cm lata, superiora decrescentia et sensim in bracteas vergentia; vaginae inferiores longe tubulosae, superiores 0. Inflorescentia sublaxe vel subdense multiflora, glabra, rachide 12—18 cm longa. Bracteae majusculae, oblongo-ovatae, sensim longe acuminatae, acutae, concavae, c. 2.4 cm longae, 0.8 cm latae. Flores erecto-patentes, inferiores c. 2.3 cm longi. Sepalum dorsale cum petalis galeiforme, ellipticum, vix ovatum, apice leviter contractum, obtusum, basi vix contractum, concavum, 3-nerviium, costa media dorso prominula, c. 0.8 cm longum, 0.4 cm latum. Sepala lateralia oblique elliptica, leviter sigmoidea, apice contracta obtusa et irregulariter marginata (minute crenulata), basi contracta, concava, 3-nervia, c. 0.85 cm longa, 0.35 cm lata. Petala oblique oblonga, margine interiore leviter sigmoidea, paulo inaequilatera praesertim versus basin, obtusa, 2-nervia, c. 0.75 cm longa, 0.25 cm lata. Labellum 3-partitum, calcaratum, usque ad apicem laciniae intermediae 1 cm longum, lamina reflexa, ungue gynostemio adpresso costulis 3 longitudinalibus convexis instructo bene 0.1 cm longo, laciniis lateralibus patentibus cum lacinia intermedia angulum acutum facientibus bene 0.7 cm longis ex ungue late lineari 0.24 cm longo dilatatis et  $\frac{2}{5}$ — $\frac{2}{3}$  partibus superioribus extus in lacinulas c. 7 inaequales patentes lineares 0.14—0.38 cm longas partitis, lacinia intermedia recta lineari anguste obtusa 0.65 cm longa, 0.075 cm lata; calcar dependens, rectum, clavatum, dimidio superiore inflato, 1.65 cm longum. Gynostemium usque ad apicem processuum stigmaticorum c. 0.53 cm metiens, connectivo hippocrepidiformi, thecis longe remotis subovalibus, canalibus thecas superantibus incurvis linearibus, auriculis parvis. Processus stigmatici porrecti, canales superantes, apice recurvi, oblongi, falcati, subacuti. Ovarium pedicellatum.

Bali: Goenoeng Agoeng, southern slope, 1500—2000 m, grass-fields, common (C. G. J. van Steenis n. 7790, type, in Herb. Buitenz. and Leiden, 6 April 1936; "odour of hyacinths").

\*) XVI in Bull. Jard. Bot. Buit. 3e sér. XIV, 2 (1937), 160.

<sup>1)</sup> This paper was originally intended to be published in the Bulletin of the Government Botanic Garden, Buitenzorg, but the war prevented me from doing so and made me request the hospitality of "Blumea".

Near *H. tosariensis* J. J. S. from Java but with smaller flowers, a hardly ovate dorsal sepal, much broader petals, a relatively longer spur, a broader connective more in the way of *H. multipartita* Bl.

Description from herbarium.

**Odontochilus sumatranus** J. J. S., n. sp.

Caulis elongatus, inferne decumbens et radicans, c. 30 cm longus, parte foliata c. 5.5 cm longa. Folia c. 4, petiolata, oblique ovata, acuminata, acuta, basi late obtusa vel rotundata, brevissime in petiolum acuminata, costa media subtus prominente, 2.4—4.2 cm longa, 1.3—2.3 cm lata; petiolus canaliculatus, cum vagina tubulosa apice valde obliqua 1.3—1.5 cm longus. Inflorescentia folia paulum superans, pauciflora, pedunculo pubescenti, c. 3.5 cm longo, vaginulis 2 tubulosis donato, rachide pubescenti, c. 2 cm longa. Bracteae adpressae, ovatae, sensim acuminatae, acutae, dorso sparse pilosae, ciliatae, concavae, 1-nerviae, c. 0.925 cm longae, absque ciliis 0.375 cm latae. Flores c. 4, patentes, macerati 2 cm longi. Sepalum dorsale erecto-patens, concavum, ellipticum, longius triangulo-acuminatum, obtusum, dorso sparse longius pilosum, 1-nervium, 0.6 cm longum, 0.27 cm latum. Sepala lateralia basi saccum labelli amplectentia, oblique oblonga, superne angustata, acuta, basi unilateraliter sacculato-concava, dorso sparse longius pilosa, 1-nervia, 0.9 cm longa, 0.4—0.425 cm lata. Petala sepalo intermedio agglutinata, oblique anguste oblonga, acuminata, acuta, falcata vel potius subsigmoidea, manifeste inaequilatera, margine exteriori medio rotundato-dilatata, glabra, 1-nervia, 0.65 cm longa, medio 0.225 cm, infra medium 0.175 cm lata. Labellum magnum, basi breviter saccatum, sacco marginibus gynostemio adpresso, alte bilobo, lobis plica introrsa intus glandulam uncinatam gerente munitis, supra saccum unguiculatum, ungue marginibus arcute induplicatis contiguis lineari a dorso compresso utrinque laciniis c. 6 patentissimis obtusis 3 inferioribus abbreviatis 3 superioribus bene longioribus oblongis ad linearibus usque ad 0.225—0.25 cm longis donato, 0.7 cm longo, 0.175 cm ad lacinias longissimas 0.575 cm lato, lamina maxima, bene ultra bipartita, ambitu quadrangula, basi truncata, c. 1.1—1.2 cm longa, 1.1 cm lata, lobis porrectis, ovato-triangularibus, marginibus leviter rotundato-curvatis, margine exteriori denticulato-erosis, obtusis, 0.9—fere 1 cm longis, 0.6 cm latis, denticulo parvo recurvo in sinu inter lobos, subtus longitudinaliter sulcatum, totum 2.15 cm longum. Gynostemium breve. Ovarium sessile, apice leviter incurvulum, glabrum, 1.5 cm longum.

Sumatra: Atjeh, Gajolanden, from bivouac Laoet Tiga Sagi (6) and Pasir Lebar to bivouac 7, 1300—1500 m, moss-grown forest (C. G. G. J. van Steenis n. 10043, type, in Herb. Leiden, 23 March 1937).

A species with manifestly falcate petals and a relatively very large blade of the lip. The lacinae of the claw of the lip are rather unequal, the lowermost being very short, the other ones much longer. The glands in the sac are uncinata like in *O. flavescens* Bl.

Description from a single dried specimen.

**Coelogyne** (sect. *Cristatae*) **kemiriensis** J. J. S., n. sp.

Rhizoma ....., radicibus dense villosis. Pseudobulbi novelli cum basi petiolorum vaginis tubulosis sursum accrescentibus apiculato-acuminatis usque ad 6.75 cm longis inclusi, 2-folii. Folia lanceolata, acute acuminata,

basi sensim petiolato-angustata, nervis c. 5 sicco subtus prominentibus supra minus conspicuis, nervis minoribus intermixtis, 17.5 cm longa, 2.2 cm lata, parte petioliformi canaliculata, c. 4 cm longa. Inflorescentia in pseudobulbo haud plane evoluto, erecta, foliis brevior, pauciflora, pedunculo 9.5 cm longo, rachide flexuosa, 4.5—5 cm longa, internodiis 0.95—1.2 cm longis. Bractee caducae. Flores 5—6, simultanei, majusculi. Sepalum dorsale anguste oblongum, anguste obtusum, apiculatum, 5-nerviium, costa media dorso prominula, 3.8 cm longum, supra medium 1.1 cm latum. Sepala lateralia anguste oblique oblonga, subfalcata, acuta, apiculata, 5-nervia, costa media dorso carinata, 3.7 cm longa, 0.9 cm lata. Petala oblique lanceolata, acuta, 3.6 cm longa, 0.64 cm lata. Labellum 3-lobum, expansum cuneato-obovatum, 3.3 cm, usque ad apicem loborum lateralium 2.8 cm longum, 1.8 cm latum, carinis 3 humilibus tenuibus crenulato-undulatis omnibus supra basin conspicue elevatis rectisque parte elevata antice dente porrecto obliquo obtuso terminata, carina intermedia fere usque apicem producta, carinis 2 sequentibus supra medium bene elevatis undulatis crenatisque medio lobi intermedii circiter evanescentibus, supra basin utrinque costa brevi recta dente obtuso terminata addita, 5-nerviium; loborum lateralium pars libera porrecta, oblique ovata, obtusa, fere 0.6 cm longa, 0.55 cm lata; lobus intermedius laterales superans, late ovatus, rotundato-obtusum, apiculatus, erosulus, undulatus, 1.2 cm longus, 1.1 cm latus. Gynostemium gracile, leviter arcuatum, sursum sensim alatum, ala apice irregulariter angulata, 2.9 cm longum, clinandrio concavo. Anthera cucullata, convexa, ambitu ovata, apice contracta truncata, basi bilobulata, 0.325 cm longa, 0.3 cm lata, connectivo basi conico-gibboso. Pollinia 4, ovali ad obovato-oblonga. Rostellum latum, apice recurvum, convexum. Stigma semilunatum, margine inferiore elevatum. Ovarium acute 6-costatum, c. 1 cm longum; pedicellus 1.2 cm longus.

Sumatra: Atjeh, Gajolanden, G. Kemiri, eastern slope, bivouac 2 to summit, 2900—3314 m, ridge in forest and plateau (*C. G. G. J. van Steenis n. 9636*, type, in Herb. Leiden, 7 March 1937; "terrestrial; flowers white with some brown markings on the keels"). Summit of the Goh Lemboeh, 3000 m, moss-grown forest (*C. G. G. J. van Steenis n. 9054*, in Herb. Buitenz., 20 February 1937; "flowers white with a brown blotch in the throat").

In n. 9054 the 3 median nerves are not noticeably elevated and wrinkly. The difference is perhaps due to the method of treatment of the material. In this specimen the dry pseudobulbs are oblong-ovoid, somewhat flask-shaped and measure 3.5 cm in length.

Easily distinguishable from the other species of the *Cristatae*-group with caducous bracts especially by the relatively narrow, cuneate obovate lip.

Description from herbarium.

**Pholidota Sigmatochilus** J. J. S., comb. nov. — *Sigmatochilus kinabaluensis* Rolfe in Journ. Linn. Soc. Bot. XLII (1914), 155, pl. 3.

Planta parva, pseudobulbis approximatis, ovoideis, versus apicem attenuatis, sicco c. 1.75—2.5 cm longis, 1-foliis, initio vaginis imbricatis inferne tubulosis acuminatis acutis sicco prominenter nervosis superioribus accrescentibus usque ad 4—6 cm longis inclusis. Folium petiolatum, lanceolatum, subacutum, basi acute in petiolum angustatum, costa media sicco supra canaliculata subtus prominente, sicco rigide coriaceum, c. 5.75—6.5 cm longum, 1.15—1.25 cm latum; petiolus tenuiusculus, canaliculatus, c. 2.2 cm

longus. Inflorescentia folio immaturo synantha, erecta, folio subaequilonga vel paulo longior, pauciflora, pedunculo 6.25—7.5 cm longo, rachide 1.7—2.8 cm longa, internodiis c. 0.4—0.7 cm longis. Bractae persistentes, concavae, ovatae, sensim acuminatae vel angustatae, acutae, sicco dorso prominenter nervosae, usque ad c. 1.4 cm longae. Flores c. 5—6, haud plane apertae, 1 cm longae. Sepalum dorsale concavum, apice vix recurvulum, subovatum, obtusum, 5-nervium, fere 1.1 cm longum, 0.55 cm latum. Sepala lateralia oblique ovata, versus apicem angustata, obtusiusecula, leviter concava, 5-nervia, costa media dorso prominente, c. 1.1 cm longa, bene 0.6 cm lata. Petala late linearia, subspathulata vel leviter dilatata, obtusa, 3-nervia, c. 1 cm longa, basi 0.15 cm, superne c. 0.25 cm lata. Labellum porrectum, gynostemium conspicue superans, cum gynostemio angulum acutum cum ovario angulum obtusum faciens, sigmoideum, concavum, costis 2 brevibus longitudinalibus fasciam incrassatam satis latam canaliculatam in basi epichilii abrupte terminantem breviter in hypochilium decurrentem formantibus, 5-nervium, inexplanatum 0.8 cm longum; hypochilium oblongo-saccatum, subtus rotundato-angulatum, inexplanatum extus 0.44 cm longum, superne c. 0.2 cm latum; epichilium aeutangule recurvum, apice recurvum, marginibus basi erectis rotundatisque, expansum ovato-quinquangulare, apice breviter triangulo-producto subtrilobulatum, obtusum, 0.58 cm longum, basi 0.375 cm, infra apicem 0.3 cm latum. Gynostemium breve, clavatum, clinandrio oblique truncato, marginibus utrinque 4-crenato, apice breviter triangulo obtuso. Anthera cucullata, ambitu rotundato-quadrangula, apice rotundato-excisa, basi 0.12 cm lata, connectivo valde gibboso. Rostellum latum, rotundato-excisum, 2-dentatum. Stigma semilunare. Ovarium 6-sulcatum, 0.5 cm longum; pedicellus 0.64 cm longus.

British North Borneo: Kinabalu, below Paka Paka, 3000 m, terrestrial in open scrub on serpentine (*L. S. Gibbs n. 4260*, Febr. 1910; "flowers white"). Above Paka Paka, 3800 m, on rocks (*J. and M. S. Clemens n. 27153*, 14 Nov. 1931). Upper Kinabalu, 2000—4500 m (*J. and M. S. Clemens n. 27866*, 8 Jan. 1932). Main spur between Kamborangah and Paka Paka, terrestrial on rocks, under scattered dwarfed *Leptospermum*, 3200 m (*C. E. Carr n. 3524*, June 1933; "young leaves reddish, inflorescence and bracts red, pedicel and ovary red or olive suffused red, sepals and petals creamy white, lip white, column bright yellow-green").

When examining Clemens n. 27866 (which number was enumerated by C. E. Carr in *The Gard. Bull. Str. Settl. VIII*, 1935, 228, as *Dendrochilus grandiflorum* J. J. S.) of the Leiden set, it proved to be *Sigmatochilus kinabaluensis* Rolfe. However, in my opinion the plant belongs to the genus *Pholidota*. Transferring the species to that genus I could not use the name *kinabaluensis* on account of the fact that Oakes Ames described already in 1920 a *Ph. kinabaluensis*.

In the structure of the lip it somewhat resembles *Ph. camelostaliæ* Rehb.f. and *Ph. Clemensii* Ames, but I do not know a near ally.

Description from Clemens n. 27866.

*Pholidota* (sect. *Crinonia*) *rupestris* J. J. S., n. sp.

Rhizoma breve, vaginis acuminatis acutis usque ad 2—2.75 cm (sub pseudobulbis) longis. Pseudobulbi approximati, sicco oblongi vel plus minusve ovoidei vel plus minusve angulati, rugulosi, 1.5—2.5 cm longi, 2-folii. Folia lanceolata, apice deficiente, basi subpetiolato-angustata, ner-

vis c. 7 majoribus pluribusque minoribus supra subtusque prominulis, 4—5.75 cm longa, 0.7—0.65 cm lata, parte petioliformi canaliculata. Inflorescentia e pseudobulbo novello submaturo, laxe pauci-pluriflora, pedunculo filiformi, 1.3—3.5 cm longo, rachide flexuosa, angulata, 2.75—5.5 cm longa, internodiis 0.35—0.45 cm longis. Bractee caducae, alternatim bifariae, nonnullae inferiores subpersistentes, adpressae, concavae, oblongo-quadrangulae, brevissime abrupte acuminatae, stramineae, ad 0.75 cm longae, 0.35 cm latae, circiter 5-nerviae. Flores ad c. 12, parvuli, carnosuli. Sepalum dorsale oblongo-ovatum, obtusum vel obtusiusculum, concavum, 3-nerviium, costa media dorso convexo-prominente, 0.55—0.57 cm longum, 0.28 cm latum. Sepala lateralia oblique oblongo-ovata, obtusa, apiculata, oblique cymbiformi-concava, 3-nervia, costa media dorso crasse carinata, 0.6 cm longa, 0.28—0.3 cm lata. Petala suboblique oblongo-ovata, acutiuscula vel obtusiuscula, dorso medio incrassata cum sulco longitudinali, marginibus tenuiora, 3-nervia, 0.54—0.55 cm longa, 0.225—0.24 cm lata. Labelium concavum, basi distincte rotundato-saccatum, sacci pariete postico intus convexo-incrassato, marginibus erectis inconspicue rotundato-dilatatis, epichilio oblongo, obtuso, supra saccum leviter constricto, superne infra apicem marginibus dilatatis incurvisque, subirregulariter marginatis, costis 2 longitudinalibus in medio labelli, superne medio incrassatione convexa longitudinali ante costas, subtus sulco tenui longitudinali, totum 0.5—fere 0.6 cm longum, ad saccum 0.14 cm, supra saccum 0.1 cm, superne 0.15 cm latum. Gynostemium breve, submalleiforme, usque ad apicem rostellii c. 0.2 cm longum, clinandrio apice postice producto, aequilateraliter trapeziformi, retuso. Anthera cucullata, orbicularis, apice truncata, connectivo crasse gibboso, 0.1 cm lata. Rostellum cum stigmatibus cupulam obliquam prominentem faciens. Ovarium obconicum, 6-sulcatum, 0.15 cm longum; pedicellus brevis, tenuis, 0.1 cm longus.

Sumatra: Atjeh, Gajolanden, G. Leuser, central peak, bivouac 6, 3300—3500 m, stony places and rocks on summit (C. G. G. J. van Steenis nrs. 8578 and 8579, both type, in Herb. Leiden, 2 February 1937).

This is to be reckoned to a small group of species to which *Ph. carnea* Lndl. and *Ph. globosa* Lndl. belong.

One of the specimens, n. 8578, shows a monstrosity in the vegetative parts, which will be described in one of the next series of Dr. S. J. van Oostroom.

The description was drawn up from both numbers, each of which consists of a small portion of a plant.

**Dendrochilum** (sect. *Monochlamys*) **kabense** J. J. S., n. sp.

Rhizoma elongatum, dependens, valde ramosum, teres, sicco rugosum, praesertim basi radicans, c. 60 cm longum, internodiis 0.5—1.8 cm longis, initio vaginis tubulosis dense sicco prominenter nervosis fuscis novellis leviter obscurius punctatis opacis sursum accrescentibus usque ad 3.5—3.75 cm longis tectum. Pseudobulbi dissiti, rhizoma continui, teretes, obtusi, sicco longitudinaliter rugosi, 1.5—3 cm longi, sicco 0.25 cm, interdum 0.4—0.6 cm crassi, unifolii. Foliolum ovato-oblongum ad lanceolatum, plerumque contracto-acuminatum, breviter acutum, plerumque apiculatum, basi breviter acute in petiololum acuminatum, nervis 7—9 majoribus pluribus minoribus sicco supra subtusque prominentibus, reticulato-venosum, papyra-

ceum, c. 5.5—12.5 cm longum, 1.2—5 cm latum; petiolus canaliculatus, 0.4—1 cm longus. Inflorescentia in pseudobulbis maturis, folium longe superans, laxe multiflora, pedunculo filiformi, 3.25—5 cm longo, rachide quadrangula, haud vel vix flexuosa, 12—14 cm longa, internodiis 0.2—0.25 cm longis. Bractee convolutae, abbreviato-ovatae, apiculatae, c. 0.25 cm longae, 0.28 cm latae. Flores alternato-bifarii. Sepalum dorsale lanceolatum, acutum, convexum cum canalicula longitudinali, 3-nervium, c. 0.45 cm longum, 0.15 cm latum. Sepala lateralia divergentia, apice subrecurvula, canaliculata, oblique ovato-lanceolata, apicem versus angustata, acutiuscula, 3-nervia, c. 0.46 cm longa, bene 0.15 cm lata. Petala ovata, acutiuscula, celluloso-erosula, 3-nervia, c. 0.36 cm longa, 0.18 cm lata. Labellum adscendens, 3-lobum, 3-nervium, expansum 0.33 cm longum; lobi laterales breves, recurvuli, convexi, angulo antico obtusi vel acuti, irregulariter plus minusve 2-crenulati, papilloso, hypochilium concavum extus longitudinaliter 3-costulatum intus lamellis 2 longitudinalibus conspicuis antice magis elevatis truncatisque supra basin labelli rectangule incurvis margine postico contiguus cavitatem formantibus donatum expansum trapeziforme fere 0.1 cm longum 0.17 cm latum facientes; lobus intermedius recurvus, canaliculatus, ovatus, apicem versus angustatus, vix acuminatus, acutus, crassiusculus, dense papillosus, expansus 0.23 cm longus, 0.18 cm latus. Gynostemium brevissimum, dorso sigmoideum convexumque cum costa longitudinali, parte inferiore contractum, fere 0.1 cm longum, ala apicali concava, lata obtuse 3-lobulata, alis lateralibus paululum infra medium ortis ala apicali vix brevioribus linearibus obtusis concavis. Anthera sub ala apicali abscondita, cordato-triangula, apice recurvulo truncata, basi bilobulata, connectivo costato-incrassato. Rostellum conspicuum, porrectum, supra concavum, subtus convexum, apice incurvum. Stigma conspicuum, margine valde elevatum, cum rostello oblique cupuliforme. Ovarium 6-sulcatum, 0.1 cm longum; pedicellus ovario paulo tenuior, bene 0.1 cm longus.

**Sumatra:** Bengkoeloe, Kaba, 1600 m, old forest, rather common (*C. N. A. de Voogd n. 1470, type*, in Herb. Buitenz. and Leiden, 10 November 1931; "flowers greenish white").

Nearly related to *D. decipiens* J. J. S. but differing by the smaller differently coloured flowers, more conspicuously erose petals, strongly recurved midlobe of the lip, relatively shorter lateral wings of the column, a broader stigma and rostellum. The sheaths of the rhizome are slightly punctate light brown when young.

Description from herbarium.

**Dendrochilum** (sect. *Platyclinis*) **atjehense** J. J. S., n. sp.

Rhizoma breve, radicibus crassiusculis, vaginis sursum accrescentibus pseudobulbum novellum includentibus acutis siccis prominenter nervosis brunnee punctatis deinde fatiscentibus et interdum fibras relinquentibus usque ad 3.25—5.5 cm longis tectum. Pseudobulbi approximati, siccis tenues, subteretes, rugulosi, 2—4.25 cm longi. Folium lineare, brevissime acutum, apiculatum, saepe in 1.75—3.75 cm infra apicem plus minusve contractum, basi sensim subpetiolato-angustatum, nervis 5 subtus prominentibus, rigidulum, totum 9.5—22 cm longum, 0.9—0.6 cm latum, parte petioli-formi canaliculata 0.7—2 cm longa. Inflorescentia in pseudobulbo novello nondum plane evoluto, erecta, satis dense multiflora, disticha, plerumque

folium plus minusve excedens, pedunculo filiformi, 8.5—17 cm longo, rachide inconspicue flexuosa, compressa in lateribus angustis sulcata, 5—8 cm longa, internodiis c. 0.25 cm longis. Bracteae alternatim bifariae, patentes, ovarium amplectentes, cymbiformes, late triangulae, acutae, membranaceo-marginatae, 7-nerviae, 0.36 cm longae, 0.38 cm latae. Flores erecto-patentes, rachidi subadpressi. Sepalum dorsale oblongo-triangulum, subacuminatum, acutum, 3-nervium, 0.47 cm longum, bene 0.15 cm latum. Sepala lateralia oblique oblongo-ovata, acuta, apiculata, dorso carinata, 3-nervia, 0.5 cm longa, 0.18 cm lata. Petala oblongo-ovalia vel -elliptica, acuminata, acutiuscula, concava, 3-nervia, fere 0.4 cm longa, 0.17 cm lata. Labellum parvum, porrectum, 3-lobum, basi concavum, 3-nervium, nervis in flore macerato brunneis, lamellis 2 satis altis lobos laterales aequantibus antice abrupte rotundatis basi U-formiter conjunctis supra basin in nervis exterioribus, expansum bene 0.8 cm longum, ad lobos laterales 0.17 cm latum; lobi laterales erecti, concavi, apice libero porrecti, rotundati, integerrimi; lobus intermedius multo longior, anguste triangulus, apicem versus angustatus, acutus, 0.225 cm longus, 0.075—0.08 cm latus. Gynostemium brevissimum, dorso convexum, 0.125 cm longum, alis lateralibus apicalem fere aequantibus, brevissimis, late rotundatis, ala apicali suggrundiformi, irregulariter 3-lobulata vel 3-dentata, subtus concava. Anthera cucullata, connectivo alte gibboso. Stigma cupuliforme. Ovarium 6-sulcatum, 0.125—0.15 cm longum.

Sumatra: Atjeh, Gajolanden, G. Leuser, bivouac 4 to 5, 2700—2800 m, watershed (C. G. G. J. van Steenis n. 8540, type, in Herb. Buitenz. and Leiden, 31 January 1937).

A species well characterized by the narrowly triangular midlobe of the lip, and the small column. I do not know a species with which it can be confused.

Description from herbarium.

**Dendrochilum** (sect. *Platyclinis*) **fimbrilobum** J. J. S., n. sp.

Rhizoma breve, vaginis imbricatis obtusiusculis vel obtusis apiculatis dense prominenter nervosis (sicco) praesertim costa media obscure punctatis superioribus pseudobulbum et basin folii arcte includentibus usque ad 5—6 cm longis. Pseudobulbi approximati, recti vel saepe curvati, sicco teretes, anguste ovoidei vel oblongo-ovoides, rugulosi, 2.2—1.5 cm longi, 0.3—0.43 cm diam. Folium anguste lineare, apice plus minusve conduplicatum, obtusum vel obtusiusculum, basi sensim petiolato-angustatum, nervis validioribus subtus prominentibus tenuioribus intermixtis, rigidule coriaceum, 21—25 cm longum, 0.3 cm latum, parte petioliformi tenui, canaliculata. Inflorescentia e pseudobulbo novello fere evoluta, erecta, folium quodammodo superans, multiflora, pedunculo tenui, subtereti, laxo punctulato, 16—17.5 cm longo, rachide angulata, anguste alata, 10—13 cm longa. Bracteae alternatim bifariae, florescentia patentissimae, ovato-triangulae, acutae, marginibus involutis, costa media dorso prominente, 0.35 cm longae. Flores mediocres. Sepalum dorsale anguste lanceolatum, versus apicem angustatum, acutum, apiculatum, concavum, 3-nervium, 0.6 cm longum, fere 0.15 cm latum. Sepala lateralia oblique lanceolata, versus apicem sensim angustata, canaliculato-acuta, 3-nervia, costa media dorso incrassata, 0.63 cm longa, 0.15 cm lata, acuminata, acuta, basi contracta, basi exapta erosula, 3-nervia, costa media incrassata, 0.5 cm longa, 0.1 cm lata.

Labellum 3-lobum, 3-nerviūm, nervis exterioribus incrassatis, expansum ambitu ellipticum, 0.36 cm, usque ad apicem loborum lateralium 0.16 cm longum, ad lobos laterales 0.15 cm latum; lobi laterales satis lati, antice breviter producti, margine irregulariter fimbriati; lobus intermedius rhombeus vel potius quinquangulārī-rhombeus, satis acutus, parte inferiore excepta serrulato-erosulus, fere 0.2 cm longus, infra medium 0.16 cm latus. Gynostemium breve, fere 0.2 cm longum, alis lateralibus cum ala apicali angulum acutum facientibus, infra medium insertis, ala apicali brevioribus, lineari-subulatis, acutis, falcatis, ala apicali porrecta, lata, bifida, lobulis triangulis. Anthera cucullata, apice obtusangula, connectivo gibboso. Ovarium pedicellatum 0.2 cm longum.

**Su ma tra:** Atjeh, Gajolanden, from the summit of the Goh Lemboeh to bivouac Halfweg, 2400 m, ridge in forest (C. G. J. van Steenis n. 9159, type, in Herb. Buitenz. and Leiden, 23 February 1937).

The lip of this species much resembles that of some of the forms of *D. linearifolium* Hook. f. as depicted in his *Icones* XIX, t. 1859, but in other respects it is quite different.

Description from herbarium.

**Dendrochilum** (sect. *Platyclinis*) **rhombeum** J. J. S., n. sp.

Planta parva. Rhizoma breve, radicans, vaginis sursum accrescentibus pseudobulbum novellum includentibus acutis vel apiculatis obscurius punctatis sicco dense prominenter nervosis usque ad 2—2.5 cm longis tectum. Pseudobulbi approximati, oblongo-ovales vel leviter ovoidei, apice attenuati, rugulosi, 1.4—2 cm longi, 1-folii. Folium distincte petiolatum, lanceolatum, apice angustatum, obtusum vel breviter acutum, basi acutum, nervis c. 5 majoribus pluribusque tenuibus subtus et etiam supra prominulis, papyraceo-coriaceum, 5.75—7 cm longum, 0.8—1.3 cm latum; petiolus tenuis, canaliculatus, 1.5—2 cm longus. Inflorescentia e pseudobulbo novello nondum plane evoluto, folium superans, laxe pluriflora, pedunculo tenuiter filiformi, nigrescente hirtello, 5.5 cm longo, rachide curvata, angulata angustissime alata, hirtella, 5.5—6.8 cm longa, internodiis 0.35—0.4 cm longis. Bractee persistentes, nonnullis inferioribus adpressis sterilibus, ovatae, acutae, c. 0.325 cm longae, fere 0.25 cm latae. Flores c. 14—16, macerati bene 1 cm diam. Sepalum dorsale ovato-lanceolatum, obtusum, minute apiculatum, concavum, 3-nerviūm, 0.6 cm longum, 0.18 cm latum. Sepala lateralia suboblique ovato-lanceolata, oblique acutiuscula, 3-nervia, costa media dorso carinata, bene 0.6 cm longa, 0.2 cm lata. Petala triangulo-lanceolata, versus apicem angustata, acuta vel breviter apiculata, erosula, 3-nervia, 0.56 cm longa, 0.175 cm lata. Labellum 3-lobum, basi breviter transverse rectangule unguiculatum, nervis 3 incrassatis usque prope apicem, nervis exterioribus in lobo medio exterius ramosis, expansum 0.57 cm, usque ad apicem loborum lateralium 0.175 cm longum, ad lobos laterales bene 0.2 cm latum, ungue 0.05 cm longo, 0.1 cm lato; lobi laterales parvi, aliformes, trapezioides, interdum apiculati, margine exteriori erosuli; lobus intermedius multo major, porrectus, rhombeus, acutus, utroque latere rotundatus, 0.4 cm longus, medio fere 0.35 cm, basi fere 0.1 cm latus. Gynostemium satis gracile, leviter arcuatum, 0.3 cm longum, alis lateralibus e basi ortis, porrectis, elongatis, gynostemium aequantibus, linearibus, ala apicali conspicua, porrecta, quadrata, apice truncato circiter 5-dentata.



Anthera cucullata, ovato-triangulari, leviter acuminata, acutiuscula, lobulis 2 parvis ad basin, fere 0.05 cm lata. Rostellum porrectum, triangulum. Ovarium pedicellatum 0.1 cm longum.

Sumatra: Atjeh, Gajolanden, Poetjoek Angasan, forest slope above Penosan, 1500 m (C. G. G. J. van Steenis n. 8320, type, in Herb. Leiden, 27 January 1937).

The variation in the genus *Dendrochilum* is endless but the species are in general well characterized. The new species can be recognized easily by the shape of the lip. In the column it closely resembles *D. longipes* J. J. S. and a few others.

The indumentum of the inflorescence recalls the hairlike covering of some Orchids in the mountains of New Guinea, which is caused by *Clasterosporium Glomeratae* v. Overeem.

Description from herbarium.

*Dendrochilum* (sect. *Platyclinis*) *quinquangulare* J. J. S., n. sp.

Rhizoma repens, radicibus crassiusculis, vaginis versus pseudobulbos accrescentibus acutis dorso carinatis dense dorso prominenter nervosis initio leviter obscurius punctatis fatiscentibus temporarie fibras relinquentibus usque ad 3.5—4.25 cm longis. Pseudobulbi approximati, cum rhizomate angulum acutum facientes, sicco anguste ovoidei, valde rugulosi, straminei, 1.2—2.5 cm longi. Folium petiolatum, lanceolato-lineare, obtusum vel conduplicato-acutum, apiculatum, basi acutum, nervis majoribus 5—7 dorso prominentibus (praesertim costa media), numerosis tenuibus intermixtis, rigidulum, tenuiter coriaceum, totum 6.75—8.25 cm longum, 0.6—0.8 cm latum; petiolus satis distinctus, canaliculatus, 1—1.2 cm longus. Inflorescentia e pseudobulbo novello non plane evoluto, erecta, folium longe superans, laxe satis multiflora, pedunculo filiformi, 5—11 cm longo, rachide superne flexuosa, lateraliter compressa, anguste 4-alata, 3—7.5 cm longa, internodiis 0.35—0.9 cm longis. Bractee patentissimae, cymbiformes, lanceolatae, apicem versus angustatae, acutae, apiculatae, 3-nerviae, 0.6 cm longae, 0.15 cm latae. Flores e. 9—18, in specimine supra-axillares. Sepalum dorsale oblongo-quinquangulare, circiter a medio vel paululum infra medium versus apicem angustatum, acutum, apiculatum, concavum, 3-nervium, 0.64 cm longum, 0.26 cm latum. Sepala lateralia oblique ovato-triangulari, subfalcata, leviter acuminata, acuta, 3-nervia, 0.64 cm longa, 0.3 cm lata. Petala lata, oblique ovato-rhombea, acuta, 3-nervia, 0.55 cm longa, 0.34 cm lata. Labellum latissimum, subsimplex, inconspicue 3-lobum, ambitu late quinquangulare, circiter  $\frac{1}{3}$  superiore (lobo intermedio) leviter contractum, apice late obtusangulum, basi latum, truncatum, brevissime unguiculato-contractum, hypochilio (lobis lateralibus) basi excepta minute crenulato-erosulo, 3-nervium, nervis exterioribus praesertim in medio labelli carinatis, omnibus basi incrassatis callum transversum formantibus, totum 0.45 cm longum, basi 0.475 cm latum, ungue 0.05 cm longo, lobo intermedio 0.13 cm longo, 0.4 cm lato. Gynostemium gracile, leviter curvatum, clavatum, subtile concavum, 0.375 cm longum, alis lateralibus circiter e medio ortis, gynostemio multo brevioribus, leviter falcatis, triangularibus, acutis, e. 0.05 cm longis; clinandrium concavum, ala apicali brevissima, apice breviter 2- vel plus minusve 4-lobulata, pede subdistincto, fere 0.1 cm longo. Anthera cucullata, obtusa, basi bilobulata, connectivo gibboso. Rostellum porrectum, triangulum. Ovarium 6-sulcatum, cum pedicello 0.3—0.4 cm longum.

**S u m a t r a:** Atjeh, Gajolanden, G. Leuser, 2700—2800 m, bivouac 4 to 5, watershed, brook-valley (*C. G. G. J. van Steenis n. 8492*, type, in Herb. Buitenz. and Leiden, 31 January 1937). G. Leuser, central top, bivouac 6, 3300—3500 m, rocks of the summit (*C. G. G. J. van Steenis n. 8580*, in Herb. Buitenz., 2 February 1937). Summit Goh Lemboeh, 3000 m, blang, on the rocks (*C. G. G. J. van Steenis n. 9080*, in Herb. Buitenz., 21—22 February 1937).

A well-marked species with a very broad, nearly simple lip.

In the type specimens the flowers are distinctly supra-axillary, which is not so obvious in the other numbers. I suppose that n. 8492 was collected in a more shadowy spot.

Description\* from herbarium.

**Tainia** (sect. *Ascotainia*) **Steenisii** J. J. S., n. sp.

Rhizoma teres, vaginis verticillos fibrarum relinquendis, radicibus crassiusculis valde villosis. Pseudobulbi sicco conici, 2.25 cm longi, 0.6 cm diam., 1-folii, vagina acuta c. 10 cm longa ad basin. Folium longe petiolatum, lanceolatum, apice deficiente, basi acutum, nervis subtus prominentibus, papyraceum; parte adest 13 cm longa; petiolus apice canaliculatus, c. 24 cm longus. Inflorescentia laxa pauciflora, pedunculo 39 cm longo, vaginulis c. 7 tubulosis acutis superne laxioribus ad c. 2.7 cm longis donatae, rachide c. 17 cm longa. Bractee lanceolatae, versus apicem angustatae, acutae, 0.8 cm longae, superiores minores. Flores c. 6. Sepalum dorsale anguste lanceolatum, apice brevissime recurvum canaliculatumque, acutum, 5(—7)-nerviis, 1.65 cm longum, 0.34 cm latum. Sepala lateralia manifesta ad pedem gynostemii decurrentia, anguste oblique lanceolata, falcata, superne revoluta, apice brevissime recurva canaliculataque, apiculato-acuta, 7-nervia, 1.75 cm longa, fere 0.4 cm lata. Petala oblique lineari-lanceolata, falcata vel subsigmoidea, acute acuminata, 3(—5)-nervia, 1.75 cm longa, 0.28 cm lata. Labellum apici pedis gynostemii insertum, gynostemio parallelum et longius, concavum, 3-lobum, calcaratum, costis 5 longitudinalibus humilibus superne bene elevatis undulatis et irregulariter marginatis apicem labelli non attingentibus, expansum ambitu oblongo-obovatum, basi angustatum, absque calcaribus 1.45 cm, usque apicem loborum lateralium 1.2 cm longum, ad lobos laterales 0.76 cm latum; lobi laterales parvi, trianguli, obtusi; lobus intermedius multo major, valde recurvus, undulatus, late triangulus, acutus, 0.4 cm longus, 0.55 cm latus; calcar reversum, cum ovario angulum acutum faciens, breve, oblongum, maceratum lateraliter compressum cum sulco longitudinali, obtusum, 0.225 cm longum. Gynostemium fere rectum, dorso convexum, subtus concavum, bene 1 cm longum, clinandrium excavatum, margine dentato, filamento lato, transverso, aequalateraliter trapeziformi, pede recurvo, fere 0.2 cm longo. Anthera cucullata, 4-angula vel potius ambitu quinquangularis, basi bilobula, apice in rostrum parvum recurvum supra convexum subtus concavum retusum producta, 0.2 cm longa, thecis suborbicularibus convexis, connectivo medio gibberis 2 subglobosis postice in dentem productis donato. Pollinia 8, lateraliter compressa, breviter obovata ad semiobovata, c. 0.06—0.1 cm longa. Ovarium pedicellatum tenue, 6-sulcatum, 1.5 cm longum.

**S u m a t r a:** Atjeh, Gajolanden, G. Goh Lemboeh, from bivouac Aer Poetih waterfall to bivouac Halfweg, 1400 m, forest ridge (*C. G. G. J. van Steenis n. 8960*, type, in Herb. Leiden, 18 February 1937).

Among the species of this affinity with a three-lobed lip only *T. viridi-*

*fusca* Bth. has been described, so far I know, with 5 ridges on the lip. From this species *T. Steenisii* differs in the smaller dimensions, smaller side-lobes, and a triangular, not suborbicular midlobe of the lip.

The material consists in 2 specimens, which, I think, belong to the same species. The one described possesses a distinctly conic pseudobulb with a much damaged leaf. It is not quite clear from where the inflorescence arises. The other specimen I take to be a young one; it is much weaker. The dry pseudobulbs are terete and equally thick as the rhizome. They are placed about 4 cm apart. The leaf is lanceolate, long acuminate, about 13 cm long and 1.75 cm broad, with a petiole of 15 cm. The inflorescence appears to arise 0.8—1 cm above the base of the pseudobulb in the way of *T. elongata* J. J. S. There is only one (defective) flower in this specimen.

Description only from the strongest specimen.

**Ceratostylis** (sect. *Pleuranthemum*) **Steenisii** J. J. S., n. sp.

Planta conspicua, rhizomate elongato, dependente, ramoso, apicibus incurvo, vaginis adpressis imbricatis acutis vel acuminatis superioribus accrescentibus usque ad c. 4 cm longis, deinde reticulatis, radicibus tenuibus pubescentibus. Caules (vel pseudobulbi) parvi, c. 6—8 cm dissiti, cum rhizomate angulum acutum facientes, 0.6—0.7 cm longi, 1-folii. Folium articulatum, lanceolatum, acutum vel apice conduplicato-acuminatum, basi conduplicata contractum, costa media supra sulcata, sicco firmiter rigide coriaceum vel crasse coriaceum, 9—15 cm longum, 1.3—1.7 cm latum. Inflorescentia fascicularis, pedunculis paucis, 1-floris, pubescentibus, 1.3—2.2 cm longis. Bractea erecta, valde concava, ovato-triangulari, conduplicato-apiculata, acuta, basi lata, glabra, 3-nervia, 0.85 cm longa. Flos majusculus. Sepalum dorsale oblongo-ovale, marginibus fere parallelis, apice obtusangulum fere rectangulum, leviter concavum, dorso ad basin parce pubescens, 5-nervium, carnosulum, 0.825 cm longum, 0.44 cm latum. Sepala lateralia lacinia brevi lata valde concava ad pedem gynostemii decurrentia, mentum subglobosum ovario adpressum 0.45 cm longum formantia, praesertim superne carnosula, dorso praesertim versus basin pubescentia, 5-nervia, 1.2 cm longa, parte antica oblique triangulari, subfalcatula, obtusa, concava, 0.8 cm longa, 0.56 cm lata. Petala lanceolato-oblonga, obtusa, apice carnosulo leviter contracta, 3-nervia, bene 0.7 cm longa, 0.25 cm lata. Labellum late spathulatum, sigmoideum, expansum 1 cm longum, ungue oblongo, 0.3 cm longo, lobulo parvo in utraque parte insertionis; lamina magna, late ovata, subtriloba, carinis 2 longitudinalibus inter lobos laterales, 0.675 cm longa, 0.6 cm lata; lobi laterales erecti, concavi, tenues, superne parce papillato-ciliati; lobus intermedius sinibus inconspicuis a lobis lateralibus sejunctus, abbreviato-ovato-triangulus, obtuso-rotundatus, carnosus, 0.24 cm longus, bene 0.4 cm latus. Gynostemium bipartitum, fere 0.3 cm longum, brachiis oblongo-quadrangulis, subtruncatis, ut videtur subretusis. Anthera cucullata, basi lata quadrilobulata, connectivo gibboso, 0.2 cm lata. Pollinia compressa, pyriformia. Pes gynostemii linearis, apice incurvo et a sepalis lateralibus libero, c. 0.3 cm longus. Ovarium pedicellatum arachnoideo-pubescentis, 0.9 cm longum.

Sumatra: Atjeh, Gajolanden, G. Kemiri, east side, from bivouac Aloer to bivouac 1, 2800—3000 m, moss grown forest on the ridge (C. G. G. J. van Steenis n. 9742, type, in Herb. Buitenz. and Leiden, 11 March 1937; "flowers white").

Allied to *C. robusta* Hook. f., *C. Jacobsonii* J. J. S., *C. baliensis* J. J. S. etc., but with a very broad lip especially the midlobe. The length of the stems is unknown only fragments being collected.

Description from herbarium.

var. *latipetala* J. J. S., n. var.

Differt a typo petalis oblongo-subquingularibus, obtusiuscule vel acutiuscule acuminatis, medio apiceque incrassatis, basi semicordatis, 0.7 cm longis, 0.3 cm latis.

Sumatra: Atjeh, Gajolanden, summit Goh Lemboeh, 3000 m (*C. G. G. J. van Steenis* n. 9077, type in Herb. Leiden, 20 February 1937; "flowers white").

*Calanthe* (sect. *Styloglossum*) *atjehensis* J. J. S., n. sp.

Folia lanceolata, sensim longe angustissime acuminata, basi sensim longe in petiolum angustata, glabra, nervis majoribus 5 subtus prominentibus, tota 55—60 cm longa, sicco 3.3—5.1 cm lata, petiolo c. 17 cm longo. Inflorescentia foliis brevior, apice dense multiflora, glabra, pedunculo c. 29 cm longo, vaginulis c. 5 donato, 2 superioribus caducis, rachide 5 cm longa. Bracteae caducae. Flores quaquaversi. Sepalum dorsale concavum, ima apice recurvulo, ellipticum, brevissime canaliculato-apiculato-acuminatum, acutiusculum, 3-nervium, nervis exterioribus ramosis, 1.1 cm longum, 0.56 cm latum. Sepala lateralia oblique oblonga, breviter apiculato-acuminata, 1.2 cm longa, 0.425 cm lata. Petala elliptica, obtusa apiculata vel acuta vix apiculata, basi cuneato-unguiculato-contracta, 3-nervia, 1.1 cm longa, 0.45 cm lata. Labellum calcaratum, cum calcar 1.5 cm longum, longitudine c. 0.5 cm gynostemio adnatum, 3-lobum, lamina tota 0.9 cm longa, ad lobos laterales fere 0.4 cm lata; lobi laterales trianguli fere quadranguli, obtusi, margine antico recti, cum lobo intermedio angulos subrectos facientes; lobus intermedius porrectus, unguiculatus, totus fere 0.3 cm longus, ungue quadrato, fere 0.1 cm longo et lato, lamina ovata, breviter acuminata, fere 0.2 cm longa, 0.175 cm lata; calcar cum ovario angulum acutum cum labelli ungue angulum obtusum faciens, clavatum, subrectum, apice leviter recurvulum, obtusum, fere 1 cm longum. Gynostemium 0.44 cm longum, apice utrinque lobulum oblique quadrangulum versus apicem angustatum apice in denticulos 2 divergentes exeuns gerens. Anthera cucullata, apice lobulo triangulo obtuso donata. Pollinia 8, clavata. Ovarium 0.6 cm longum; pedicellus paulo tenuior, 1.1 cm longus.

Sumatra: Atjeh, Gajolanden, from bivouac Laoet Tiga Sagi (6) and Pasir Lebar to bivouac 7, 1300—1500 m, narrow ridge in moss-forest (*C. G. G. J. van Steenis* n. 10057, type, in Herb. Leiden, 23 March 1937; "flowers orange, a very fine plant").

One of the many *Styloglossum*-species, which is characterized by the shape of the lip, especially of the midlobe. The material was not good enough to get an idea of the callosities of the lip.

Description from a single dried specimen.

*Dendrobium* (sect. *Calcarifera*) *Rappardii* J. J. S., n. sp.

Caules (partes adsunt) 72—88 cm longi, internodiis 3.7—4.7 cm longis. Folia decidua, patentia, lanceolata, acuminata, acuta, basi contracta, nervis 5 majoribus sicco subtus tenuiter prominentibus, sicco rigide papyraceae, ad c. 16 cm longa, 3.7 cm lata, superiora decrescentia; vaginae tubulosae, apice truncate, sicco prominenter nervosae, internodia subaequantur. Inflorescentiae e nodis caulium defoliorum, c. 6—9-florae, pedunculo 5 cm

longo, vaginulis c. 3 donato, rachide 3—5 cm longa. Bractee triangulae, acutae, concavae, ad c. 0.6 cm longae. Flores conspicui, macerati c. 5.75 cm longi. Sepalum dorsale lanceolatum, obtusum, c. 2.7 cm longum, non plane expansum 0.66 cm latum. Sepala lateralia cum pede gynostemii mentum conspicuum cum ovario angulum rectum faciens dorso sigmoideum apice attenuatum calcariforme obtusum totum 3.3 cm longum formantia, apice attenuato c. 0.7 cm longo, margine antico c. 1.2 cm connata, lacinia decurrente apicem menti versus angustata, parte antica oblongo-triangulari marginibus curvatis, versus apicem angustata, anguste obtusa (vel acutiuscula), 7-nervia, 2.2 cm longa, basi 3.6 cm metientia, ab apice usque ad apicem menti 3.6 cm longa, parte antica bene 1.1 cm lata, lacinia decurrente curvata, fere 1 cm lata. Petala oblique cuneato-obovata, retusa, dimidio superiore apice retuso excepto eroso-denticulata, 3-nervia, nervis exterioribus ramosis, c. 2.7 cm longa, 1.6 cm lata. Labellum erectum, in c. 2.2 cm supra basin recurvum, gynostemium longe superans, subsimplex, spathulatum, angustum, expansum 4.5 cm longum, ungue lineari, 1.6 cm longo, circiter in medio lamellis 2 longitudinalibus parallelis basi dilatatis patentissimis supra basin connatis calcar decurvum a dorso compressum anguste triangulum acutum pedi gynostemii adpressum donato, lamina oblonga, apice ut videtur breviter truncato-triloba, basi acuta in unguem angustata, basi excepta eroso-denticulata, nonnullis (5?) nervis approximatis incrassatis donata (macerata), 2.7 cm longa, 1.1 cm lata. Gynostemium breve, 0.4 cm longum, auriculis triangulis obtusis apiculatis. Anthera cucullata, apice truncata papillosaque. Pes gynostemii conspicuus, cum ovario angulum rectum faciens, sigmoideus, linearis, 3.4 cm longus. Ovarium obovatum, 6-suleatum, cum pedicello 2.7 cm longum (inexplanatum), sigmoideum.

Sumatra: Bengkoeloe, Aer Seblat Lebong, 650 m, primeval forest (F. W. Eppard n. 172, type, in Herb. Leiden, 8 September 1937; "flowers white, somewhat suffused with violet, a magnificent Orchid, stem up to 1.5 m").

The species is perhaps best compared with *D. O'Brienianum* Krzl. from the Philippines, a striped form of which seems also to occur in Celebes. The shape of the mentum and lip are very similar in both species, although they differ in every part. Also *D. corallorhizon* J. J. S. has a similar narrow lip.

Description from a single dried specimen, the flowers of which apparently were somewhat withered when collected.

**Bulbophyllum** (sect. *Aphanobulbon*) *gajoense* J. J. S., n. sp.

Rhizoma elongatum, repens, ad nodos radicans, initio vaginis tubulosis sicco flavo-brunneis novellis vix obscurius maculatis tectum, vagina summa pseudobulbum petiolumque includente ad c. 3 cm longa, radicibus sicco verruculosus. Pseudobulbi minuti, c. 9—10 cm dissiti. Folium ovato-lanceolatum, versus apicem sensim angustatum, satis anguste obtusum, basi abrupte in petiolum contractum, costa media sicco subtus prominente, nervis sicco supra prominulis c. 5 utrinque, sicco supra verruculosorugulosum nitidulumque, subtus rugulosum minus nitidum, sicco rigide coriaceum, 9—10 cm longum, 1.75—2.3 cm latum, petiolo canaliculato, 3—4 cm longo. Inflorescentia 1 ad basin pseudobulborum maturum, erectum, folium bene superans, laxe multiflora, pedunculo 9—12 cm longo, vaginulis c. 7—8 tubulosis superioribus laxioribus longioribusque ad

c. 0.9—1.45 cm longis donato, vaginula summa interdum bracteiformi, rachide 11—12 cm longa, 17—28-flora. Bractee triangulo-lanceolatae, sensim acutatae, acutae, c. 0.45 cm longae, 0.15 cm latae. Flores parvuli. Sepalum dorsale horizontale, concavum, oblongum, versus apicem angustatum, breviter apiculato-acuminatum, 3-nervium, nervis exterioribus inconspicuis, 0.47 cm longum, basi 0.17 cm latum. Sepala lateralia cum pede gynostemii mentum breve rotundatum faciens, divergentia, oblique oblongo-triangulara, margine antico basi paululum dilatato rotundatoque, versus apicem angustata, apice recurvo canaliculato apiculata, 3-nervia, 0.475 cm longa, 0.275 cm lata. Petala gynostemio parallela porrecta, suboblique spathulato-lanceolata, obtusiuscula, parte superiore intus papillosa, 1-nervia, 0.25 cm longa, fere 0.1 cm lata. Labellum mobile, recurvum, parte inferiore lateribus erectis canaliculatum, marginibus in  $\frac{1}{3}$  supra basin recurvis parte antica convexa, apice angustatum, acutiusculum, linguiforme, carnosulum, maceratum inexpansumque bene 0.3 cm longum. Gynostemium breve, crassum, bene 0.1 cm longum, clinandrio excavato, pariete postico producto lato, auriculis incurvulis subulatis valde acutis antheram aequantibus. Anthera cucullata, apice triangulo-producta. Pes gynostemii cum ovario angulum subrectum faciens, apice incurvo a sepalis libero, callo majusculo lateraliter compresso in dimidio inferiore, 0.17 cm longus. Ovarium pedicellatum 0.24 cm longum; ovarium obconicum, 0.07 cm longum.

Sumatra: Atjeh, Gajolanden, from summit Goh Lemboeh to bivouac Halfweg, 2200 m, ridge in forest (C. G. G. J. van Steenis n. 9160, type, in Herb. Buitenz. and Leiden, 23 February 1937; "flowers light yellow"). Leuser complex, great watershed, 2250—2750 m, epiphytical in scrub (C. G. G. J. van Steenis n. 8483, in Herb. Buitenz., 30 Jan. 1937).

Among the allied species with distinctly petioled leaves this new one differs from *B. citricolor* J. J. S. in the much longer rhizome, the gradually tapering leaves, the longer and laxer raceme, smaller flowers with the sepals and petals not long acuminate; from *B. petiolatum* J. J. S. in the smaller, narrower, more tapering leaves, a longer and laxer inflorescence, smaller flowers. It is a much slenderer plant than *B. hamatifolium* J. J. S. with narrower, more tapering, acuter, thinner leaves, laxer racemes and much shorter flowers.

In the section *Aphanobulbon* the characteristics of the vegetative parts are very important for distinguishing the species.

Description from herbarium.

*Sarcochilus* (sect. *Ascochilus*) *spathibrachiatus* J. J. S., n. sp.

Planta pusilla. Caulis abbreviatus, c. 0.6 cm longus, radicans, c. 4-folius. Folia oblique lanceolata, falcata, apice valde oblique acute bidentata, ut videtur carnosae, sicco rigide coriacea, costa media dorso plus minusve prominente, 2.4—2.8 cm longa, 0.47—0.6 cm lata. Inflorescentiae foliis breviores, laxae pauci(?) florum, pedunculo tenui, muriculato, c. 1.1 cm longo, rachide muriculata, haud plane evoluta 0.5 cm longa, internodiis c. 0.2 cm longis. Bractee reflexae, triangulae, concavae, muriculatae. Flores ? 4, sepalis petalisque dorso sparse patentissime muriculatis. Sepalum dorsale oblongo-ellipticum, subacutum, basin versus angustatum, concavum, 3-nervium, 0.55 cm longum, supra medium 0.2 cm latum. Sepala lateralia valde oblique elliptica, obtusa, basi breviter contracta, leviter concava, 3-nervia, 0.5 cm longa, 0.35 cm, basi 0.16 cm lata. Petala oblique

subspathulato-oblonga, obtusa, apice nonnullis dentibus inaequalibus obtusis donata, basin versus angustata, muricibus tantum dorso secundum costam mediam, 3-nervia, fere 0.5 cm longa, 0.175 cm, basi 0.1 cm lata. Labellum apici pedis gynostemii insertum, 3-lobum, calcaratum, totum c. 0.6—0.7 cm, a basi usque ad apicem calcaris 0.45 cm longum; lobi laterales porrecti, gynostemium paululum superantes, leviter oblique spathulati, lineares, apicem versus cuneato-dilatati, apice leviter rotundato-truncati, c. 0.2—0.25 cm longi, apice c. 0.1 cm lati; lobus medius parvus, porrectus, lobis lateralibus bene brevior, rectus, carnosulo-subulatus, obtusiusculus, 0.075 cm longus, callo conspicuo crasso postice laciniis 2 erectis subulatis acutis donato ad basin lobi intermedii inter lobos laterales, laciniis 2 similibus sed minoribus ad basin labelli; calcar dependens, lateraliter compressum (maceratum), oblongum, apice subrotundatum, dorso leviter sigmoideum, antice subrectum, parte superiore subinflatum. Gynostemium arcuatum, clavatum, apice absque anthera truncatum, dorso convexum, subtus concavum, absque anthera bene 0.3 cm longum, clinandrio concavo, pede cum gynostemio angulum obtusum faciente, recto, satis lato, c. 0.2 cm longo. Anthera cucullata, subovata, e basi transverse ovali thecis convexa in rostrum latum triangulum acutum producta, 0.15 cm longa, bene 0.1 cm lata. Stipes pollinarii obovato-oblongus. Rostellum bipartitum, laciniis subulatis. Stigma conspicuum, profunde excavatum, elliptico-obovatum. Ovarium cum gynostemio et pede gynostemii angulos obtusos faciens, patentissime muriculatum, 0.35 cm longum.

British North Borneo: Kinabalu, Penibukan ridge, Upper Pani Taki river, 1700 m (*J. and M. S. Clemens, without number, 1931-'32, type, "rare, single; petals purple, tongue all cream"*).

A distinct species of this small section. The plant was sent to me by the Buitenzorg Herbarium for study.

Description from a dried specimen with one flower.

*Luisia Jonesii* J. J. S., n. sp.

Caulis elongatus, teres, parte adest 12.5 cm longa, sicco 0.35 cm diam., internodiis 2.4—2.8 cm longis. Folia remota, teretia, esulcata, apice breviter acuta cum apiculo parvo reverso obtuso, 16—22 cm longa, 0.3 cm diam.; vaginae tubulosae, internodia paululum superantes, sicco nervis prominentibus. Inflorescentiae axillares, vaginam dorso ad basin perforantes, vaginam inferiorem apice antice rumpentes, abbreviatae, pluriflorae, quaquaversae, c. 2.2 cm longae, rachide valida. Bractee adpressae, brevissimae, late triangulae, concavae, crassae. Flores c. 10, in genere inter majores, inclinati, c. 2—3 simultanee expansi, carnosi, 3.4 cm longi. Sepalum dorsale gynostemio parallelum, oblongum, obtusum, valde concavum, 5-nerviium, nervo medio dorso angulato, 1.4 cm longum, 0.8 cm latum. Sepala lateralia labello parallela, divergentia, inter se angulum acutum facientia, valde cymbiformia, obliqua, dorso bene carinata, carina apice in dentem excurrente, 5-(—sub 7-)nervia, fere 1.4 cm longa. Petala porrecta, apicem ovarii incurvum continua, divergentia, inter se angulum acutum facientia, leviter incurvula, sepala longe superantia, oblique lineari-spathulata, superne vix falcata, apice breviter contracta, obtusa, intus leviter convexa, dorso praeter costam leviter incrassata, 3-nervia, 3.25 cm longa, basi 0.23 cm, superne 0.5 cm lata. Labellum ovario parallelum,

porrectum, 3-lobum, 1.7 cm longum, ad lobos laterales bene 0.7 cm, expansum 0.775 cm latum; lobi laterales remoti, parvi, leviter divergentes, rotundati, basi in lobulum parvum reversum obtusum producti, fere 0.3 cm lati; lobus intermedius multo major, late cordato-ovatus, basi sulco semi-orbiculari instructus, ante sulcum valde convexus, medio a sulco semi-orbiculari sulcis 4 longitudinalibus tenuibus, nonnullis sulcis subobsoletis ad marginem, margine irregularis, apice rotundatus, lobulis basilaribus rotundato-triangulis, 1.6 cm longus, 1.35 cm latus. Gynostemium breve, cras-sum, rectum, bene semiteres, dorso convexus, subtus planum, basi sub-contractum, 0.5 cm longum, clinandrio concavo cum costula longitudinali, apice paululum producto obtuso. Anthera cucullata, transverse rotundato-quadrangula, versus apicem leviter dilatata, paululum producta truncatave, connectivo convexo-costiformi, 0.35 cm lata. Pollinia 2, ovalia, dorso pro-funde sulcata, cum stipite lato pollinia aequante subovato obtuso et glandula conspicua lata 0.4 cm longa. Stigma magnum, faciem inferiorem gynostemii magnam partem occupans, transverse ovale, alte concavum. Ovarium pedi-cellatum triquetrum, costa lata convexa in lateribus, 6-sulcatum, basin versus attenuatum et tortum, apice obtusangule incurvum, 2 cm longum.

Malay Peninsula: Kedah (*J. W. Jones, type* in Herb. Leiden).

Materials of this interesting *Luisia* I received for determination from the Director of the Botanic Gardens, Singapore, where the only plant, found by Mr. Jones, is now cultivated.

The species belongs to those which produce the biggest flowers in the genus. The nearest ally is probably *L. taurina* J. J. S. from Java, from which it differs in the larger flowers with relatively narrower petals. The lip has smaller sidelobes, and the much less rugose midlobe is distinctly wider than the hypochile.

I am indebted to Mr. R. E. Holttum for the following notes:

"Inflorescences about 10-flowered of which 2—3 flowers are open at one time. Sepals upper surface cream, lower surface pale greenish with small scattered purple spots. Petals basal  $\frac{2}{3}$  cream, as sepals; distal  $\frac{1}{3}$  dull yellow. Lip entirely dark purple, except for cream margins of side-lobes, and narrow irregular cream line dividing the semicircular basal part from the rest. Semi-circular basal part with dull surface; remainder shining."

Description from herbarium and materials in spirit.

*Taeniophyllum Jensenianum* J. J. S., nom. nov. — *T. amboinense* J. J. S. in Bull. Jard. Bot. Buit. 3e sér. VIII (1926), 68.

The name *T. amboinense*, having been used previously (Ic. Orch. Mal. t. 139, VI), had to be changed.

#### NEW LOCALITIES.

*Herminium angustifolium* Bth. ex Hook. f., Fl. Br. Ind. VI (1890), 129; etc.

Bali: Goenoeng Agoeng, southern slope, 1500—2000 m, very common in grass-fields (*C. G. G. J. van Steenis n. 7849*, in Herb. Buitenz., 6 April 1936).

*Habenaria multipartita* Bl. ex Krztl. in Engl., Bot. Jahrb. XVI (1893), 193; etc.



Bali: Goenoeng Agoeng, southern slope, 1800—2000 m, grass-fields, common (C. G. G. J. van Steenis n. 7789, in Herb. Buitenz., 6 April 1936).

• **Thelymitra javanica** Bl., Bijdr. (1825), 419; etc.

Lombok: Goenoeng Bindjani, northern slope, 1800—2600 m, rather common (R. van der Veen n. 11, in Herb. Buitenz., July 1936). Same locality, 1300 m, dry grass-field (C. N. A. de Voogd n. 1701, in Herb. Buitenz., 25 June 1933; "flowers light violet").

**Microtis unifolia** Rehb. f., Beitr. Syst. Pflanzenk. (1871), 62; etc.

Bali: Goenoeng Abang, 1300—1550 m, grass-fields and road sides, with *Herminium* (C. G. G. J. van Steenis n. 8005, in Herb. Buitenz., etc., 9 April 1936).

**Caladenia carnea** R. Br., Prodr. (1820), 324; etc.

Bali: Goenoeng Abang, 1400—1550 m, grass-fields and berms along the path (C. G. G. J. van Steenis n. 8003, in Herb. Buitenz. and Leiden, 9 April 1936).

**Myrmecis gracilis** Bl., Fl. Jav. n. ser. I, Orch. (1858), 64, t. 21, fig. 2; etc.

Bali: Goenoeng Agoeng, southern slope, 1800 m, damp ravine (C. G. G. J. van Steenis n. 7924, in Herb. Buitenz., etc., April 1936).

**Goodyera rubicunda** Lndl. in Bot. Reg. XXV (1839), Misc. 61; etc.

Lombok: Goenoeng Bindjani, Sapit, 800 m, old forest (C. N. A. de Voogd n. 2588, in Herb. Buitenz., 13 June 1936).

**Goodyera procera** Hook., Exot. Fl. I (1823), t. 39; etc.

Flores: Manggarai, 300 m, in a ravine (C. N. A. de Voogd n. 2857, in Herb. Buitenz. and Leiden, 18 September 1936).

**Goodyera bifida** Bl., Fl. Jav. n. ser. I, Orch. (1858), 33, t. 9 C, fig. 1; etc.

Bali: Goenoeng Abang, 1800 m, edge of the forest (C. N. A. de Voogd n. 2763, in Herb. Buitenz., 24 March 1936; C. G. G. J. van Steenis n. 8067, in Herb. Buitenz., 9 April 1936).

**Goodyera reticulata** Bl., Fl. Jav. n. ser. I, Orch. (1858), 30, t. 9 B, fig. 1; etc.

Bali: G. Batoe Kae and G. Patas (R. Maier, Sarip n. 393, in Herb. Buitenz., 1918). North of the Bratan lake, 1250 m, damp old forest (C. G. G. J. van Steenis n. 8155, in Herb. Buitenz., 12 April 1936; 2 week specimens).

**Coelogyne miniata** Lndl., Gen. et Sp. Orch. (1830), 42; etc.

Bali: Goenoeng Abang, 1700—2000 m, damp forest, common (C. G. G. J. van Steenis n. 8040, in Herb. Buitenz., 9 April 1936; C. N. A. de Voogd n. 2770, in Herb. Buitenz., 24 March 1936).

**Dendrochilum cornutum** Bl., Bijdr. (1825), 339; etc.

Bali: Goenoeng Abang, 1700—2000 m, epiphytical in forest, also in *Casuarina* forest, common (C. G. G. J. van Steenis n. 8070, in Herb. Buitenz., 9 April 1936). G. Batoe Kae, 1750 m (R. Maier, Sarip n. 429, in Herb. Buitenz., October 1918).

**Tainia Maingayi** Hook. f., Fl. Brit. Ind. V (1890), 822; Ic. t. 2094; etc.

Sumatra: West coast, Ngatau Oere, 600 m (S. M. Latif s. n., in Herb. Leiden, 17 July 1939).

**Liparis purpureo-viridis** Burk. ex Ridl., Fl. Mal. Penins. IV (1924), 21.

Sumatra: West coast, Ngatau Oere, 600 m (S. M. Latif. n. I, in Herb. Leiden, 17 July 1939).

**Pachystoma pubescens** Bl., Bijdr. (1825), 376; Tab. fig. 29; etc.

Flores: Manggarai, 500 m, in *Imperata*-fields (C. N. A. de Voogd n. 2856, in Herb. Buitenz., dupl. in Herb. Leiden, 18 September 1936).

**Eria javanica** Bl., Rumphia II (1836), 23; etc.

Flores: Manggarai (C. N. A. de Voogd n. 2844, in Herb. Buitenz., 16 Sept. 1936).

**Dendrobium** (sect. *Diplocaulobium*) **longicolle** Lndl. in Bot. Reg. XXVI (1840), Misc. 74; Rehb. f. in Walp. Ann. VI (1861), 302; Ridl. in Mat.

Fl. Mal. Penins. I (1907), 34. — *Diplocaulobium longicolle* Krzl. in Pflanz. IV. 50. II. B. 21 (1910), 340; Ridl., Fl. Mal. Penins. IV (1924), 27. — *Callista longicollis* O. K., Rev. Gen. Pl. II (1891), 654.

Sumatra: Palembang, Pladjoe (*P. van Hemert*, cult. in Hort. Bog. sub n. 930. VII. 52).

Geogr. distribution: Singapore, Borneo.

The species is new for Sumatra. It is the most western representative of the section.

**Dendrobium faciferum** J. J. S. in Bull. Dép. Agric. Ind. Néerl. XV (1908), 10.

Lesser Soenda Islands: Komodo, 300 m, marshy forest (*C. N. A. de Voogd* n. 2871, in Herb. Buitenz., 20 September 1936).

**Bulbophyllum gracile** Lndl., Gen. et Sp. Orch. (1830), 50; etc.

Bali: Goenoeng Abang, southern slope, 1800 m, dampy underwood in a ravine (*C. G. G. J. van Steenis* n. 7927, in Herb. Buitenz., 7 April 1936).

**Eulophia squalida** Lndl. in Bot. Reg. XXVII (1841), Misc. 77; etc.

Lesser Soenda Islands: West Soemba, 400 m, *Imperata*-fields (*C. N. A. de Voogd* n. 2229, in Herb. Buitenz., 5 November 1935).

**Eulophia exaltata** Rehb. f. in Bonpl. V (1857), 38; etc.

Flores: Endeh, 1000 m, marshy *Imperata*-land, in full sunshine (*Mrs. E. H. Winkel—Sweep*, in Herb. Buitenz., January 1939).

According to Oakes Ames this plant should be identical with *Eu. stricta* (Presl) Ames.

**Vanda tricuspidata** J. J. S. in Bull. Jard. Bot. Buit. 2e sér. XIII (1914), 48; etc.

Flores: Endeh, 50 m, hot, barren plain (*Mrs. E. H. Winkel—Sweep*, in Herb. Buitenz., January 1939).

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