

FLORAE MALESIANAE PRECURSORES XXXV
SUPPLEMENTARY NOTES TOWARDS THE KNOWLEDGE
OF THE ERICACEAE IN MALAYSIA

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The amount of both living and herbarium material of *Ericaceae*, which has become accessible to the author in and from Malaysia since his various precursory papers on the family have been published, are the reason for this supplement.

In Borneo, collecting in the last years has increased considerably in its northern part. In Sarawak, J. A. R. Anderson and E. F. W. Brunig collected a large number of *Ericaceae* on various mountains, partly not yet previously visited both within the 'kerangas' and the mossy forest. In N. Borneo it was Mrs Sheila Collenette who in 1960 climbed Mt Trus Madi, with c. 2620 m altitude the highest peak there next to Mt Kinabalu, and found on it a new species of *Rhododendron* besides other species, described from and thought to be limited to Mt Kinabalu up to now. Mt Kinabalu was visited again by W. Meijer in the lower part and the eastern shoulder above Kundasan, by Mrs Collenette in 1960 on a new path, the so-called Mesilau East route, and by the R. Society Expedition in 1961 under E. J. H. Corner (together with W. L. Chew and A. Stainton) on a new trail via the eastern shoulder towards the point, where it meets the Mesilau East route at c. 3440 m.

In the Philippines, Mrs M. L. Steiner, P. van Royen and the author, toured together part of the Mountain Prov. in Luzon in May 1961. On this occasion, about a dozen species of *Rhododendron*, *Gaultheria*, and *Vaccinium* could be collected on Mt Santo Tomas, Mt Data, Mt Polis, and along the road from Bontoc to Banaue.

In New Guinea, the activities of C.S.I.R.O. in the Wabag and Laiagam Distr. of the Western Highlands (R. D. Hoogland & R. Schodde), in the Southern Highlands (R. Schodde) and in the Torricelli Mts (R. D. Hoogland & P. I. Darbyshire), of Father E. Borgmann on Mt Wilhelm and in the Wahgi Valley, and further collections in the NGF series under J. S. Womersley in the Finisterre Mts (with R. F. Thorne), in the Bulolo-Wau area and the Eastern Highlands (partly with the author) resulted in fascinating rich collections within the last 3 years. In the western part of New Guinea, many *Ericaceae* were collected by the botanists and foresters of the former Dutch Forest Service at Manokwari on their visits to the Wissel Lakes area (R. P. Mangold, F. A. W. Schram, W. Vink, J. F. U. Zieck), the Balim R. Valley (Chr. Versteegh), the NE. part of the Arfak Mts (Mt Beribai up to 2120 m, W. Vink & J. F. U. Zieck), the Kebar Valley and its surrounding ranges (Ch. Koster, V. W. Moll, F. A. W. Schram, Chr. Versteegh). The 2nd Expedition to New Guinea of the Rijksherbarium in 1961/62 under P. van Royen and the author gave the latter the great satisfaction to see many *Ericaceae* in the field, to study vast populations and to make extensive collections, notes, and photographs, resulting in c. 40 nrs of *Ericaceae* in the Cycloop Mts and c. 140 nrs in the Vogelkop Peninsula (Kebar Valley, Tohkiri-, Tamrau-, and Nettoti Mts). In the Arfak Mts collecting around the Anggi Lakes by W. Vink and the author resulted in

c. 125 nrs of *Ericaceae*, and on a helicopter trip to the Warjori R. again 15 nrs were collected by the latter. Finally, the author, backed by a grant of several American Rhododendron breeders and amateurs in Seattle and San Francisco, was able to visit the Edie Creek-Mt Kaindi area and Goroka-Marafunga (together with J. S. Womersley), the Upper Chimbu R. Valley and the East slope of Mt Wilhelm in September 1961, and to collect another 65 nrs of *Ericaceae*.

The results of a detailed investigation of these ample and quite recent materials are published in this paper as to new records and the description of the new taxa involved, and for the rest have served to improve the complete version of the family for Malaysia, ready by now to be printed in "Flora Malesiana" in a near future.

The species numbers refer to those given in the author's previous revisions, cited at the genus. An a, b or c number indicates the relationship of a new species.

I. RHODODENDRON

See Reinwardtia 5 (1960) 45; Blumea 11 (1961) 113.

1. *Rhododendron retusum* (Bl.) Benn. var. *retusum*

JAVA. Western part: Mt Pangrango, 3000 m, Hochreutiner 895 (G, *syntype* of var. *macranthum* Hochr.); Mt Salak, 1900 m, Hochreutiner 2057 (G, *lectotype* of var. *macranthum* Hochr.).

4. *Rhododendron nummatum* J.J.S.

NEW GUINEA. Southeastern part: Merri Creek near Wau, Morobe Distr., 1850 m, Sleumer 4126.

5. *Rhododendron gaultheriifolium* J.J.S. var. *gaultheriifolium*

NEW GUINEA. Eastern Highlands: Mt Wilhelm, 3100—3600 m, Borgmann 76, 246; Brass 29829 (US), 29903; Sleumer 4156, 4163.

7. *Rhododendron erosipetalum* J.J.S.

NEW GUINEA. Northwestern part: Tohkiri Mts East, (1300)—1400—1520 m, van Royen & Sleumer 7068, 7288; Tamrau Mts East, between Waumi R. camp and waterdivide, 1900—1950 m, van Royen & Sleumer 7183; Mt Nettoti, S. slope, 1400—1700 m, van Royen & Sleumer 7366; *ibid.*, crest at 2100 m W. of Mt Nettoti, van Royen & Sleumer 7978; top and N. slope of Mt Nettoti, path to Wekari R., 1750—1950 m, van Royen & Sleumer 8028; BW 10380 Versteegh; Arfak Mts, Anggi Gita Lake, Mt Kongremottie, summit area, 2200 m, Sleumer & Vink 4252; Mt Sensenemés above Surerai, Anggi Gigi Lake, 2550—2650 m, Sleumer & Vink 4346; *ibid.*, Mt Gwamongga, 2250—2555 m (top), Sleumer & Vink 4385; Mt Saru-mot near Iray, Anggi Gigi Lake, 2350 m, Sleumer & Vink 4439.

9. *Rhododendron lindaueanum* Koord. var. *lindaueanum* (*incl.* var. *psilacrum* Sleum. & var. *cyclopicum* Sleum.)

NEW GUINEA. Northern part: Cycloop Mts, Mt Rara, 1580—1600 m, van Royen & Sleumer 5938, 6047; also seen on Mt Dafonsero, 1570 m, but not collected there. — Southeastern part: Morobe District, Upper Zaran Creek, Mt Saruwaged area, 3200 m, NGF 16178 van Royen. — Central part: Star Mts, Sibil Valley, 1200—1300 m, Wilde & Vervoort 539. — Western part: Wissel Lakes, between Motito and Munajepa, 1820 m, BW 8732 Vink & Schram; *ibid.*, near Kebo, 1750 m, BW 8899 Vink & Schram. — Northwestern part: Arfak Mts, Mt Antop near Minjambau, 1780 m, BW 12600 Versteegh; Wandammen Peninsula, Wondiwoi Mts, 1800 m, BW 13719, 13748 Koster.

11. Rhododendron saruwagedicum Foerster
var. *saruwagedicum*

NEW GUINEA. Eastern Highlands: Mt Michael, 3300 m, NGF 11488 *Womersley*.

12. Rhododendron invasorium Sleum.

NEW GUINEA. Southeastern part: Morobe Distr., Kaindi (Edie Creek), 2060—2140 m, Brass 29684; NGF 13438 *Womersley*; Merri Creek, 1800—1850 m, Sleumer 4128.

19. Rhododendron ericoides Low ex Hook. f.
var. *ericoides*

BORNEO. N. Borneo: Mt Kinabalu, *Smythies* 10957; *ibid.*, E. slope, 2400—3350 m, Chew, Corner & Stainton 1103, 1128; Collenette 762, 772.

var. *silvicolum* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E slope, 2440—3050 m, Collenette 761 (K).

22a. Rhododendron vinkii Sleum., nov. spec.—Frutex epiphyticus. Rami numerosi, divaricati, ramulis teretibus sat gracilibus 1.5—3 mm diam., apicibus dense lepidibus subrotundis sessilibus vel brevissime peltatis obtectis, haud verruculosis; internodia 2—4(—5) cm longa. *Folia* ad nodos summos 2 vel 3 in pseudoverticillis 3—5-meris disposita, oblonga vel obovato-oblonga, apice late attenuata, obtusa, raro leviter retusa, basi in petiolum angustata et cuneata, subcoriacea, in sicco supra saturate, subtus pallide brunnea, novella utrinque dense lepidota, matura supra glabrescentia, subtus persistenter subdense lepidota (lepidibus crassis, rotundis vel subrotundis, totis paullo impressis, diam. duplo vel triplo inter sese distantibus), integra, (3.5)—4—6(—7.5) cm longa, (1.3)—1.5—2(—2.5) cm lata, margine ipso imprimis laminae basin versus parum revoluta, costa supra leviter immersa, subtus inferne petioli crassitudine valdeque prominente, apicem laminae versus gradatim diminuta, nervis lateralibus utroque latere 6—8 irreguliter a costa abeuntibus, supra leviter insculptis, subtus obscuris, reticulatione supra tantum levissime impressa, haud raro subinconspicua; petioli subteretes, supra canaliculati, dense lepidoti, (5)—6—8 mm longi, c. 1 mm crassi. *Umbellae* 2-vel 3-florae. Perulae exteriores ovatae, interiores obovatae vel spathulatae, tenues, dorso glabrae, caduce lepidoto-fimbriatae, usque ad 1 cm longae. Bracteolae filiformes. Pedicelli graciles, sat dense patenter puberuli et lepidoti, sub anthesi 1.2—1.8 cm longi, postea paullo elongati. *Calyx* oblique patellaris, indistincte obtuse 5-lobus, dorso dense lepidotus, c. 2.5 mm diam. *Corolla* subobliqua tubulosa, rosacea, tota c. 2.5 cm longa, extus ubique subdense lepidibus subcrassis subrotundis adspersa, intus ad tubum taxe pilosa, tubo recto c. 2 cm longo, basi 3—4, ad orem c. 6 mm diam., lobis spathulato-bovatis, c. 5 mm longis et 6—7 mm latis. *Stamina* 10, e corollae tubo paullo exserta; filamenta inferne linearia breviterque pubescentia, in superiore quarto glabrescentia; antherae late oblongae, vix 2 mm longae, basi obtusae. *Discus* dense erecto-pilosus. *Ovarium* cylindricum, cum stylo sat abruptum, 4 mm longum, 2 mm diam., flavid-tomentosum (lepidibus omnino pilis obtectis). *Stylus* crassiusculus, sub anthesi 1.2—1.6 cm longus, basi dense, apicem versus laxius patenter-pilosus, inferne lepidibus caducis paucis indutus, infra stigma capitatum per mm 2 glaber, haud exsertus. *Fructus* ignotus.

NEW GUINEA. Southwestern part: Fak-fak hinterland, bivouac Hambar, 840 m, fl. 26-2-1962, BW 12177 *Vink* (A, CANB; L, type; K, LAE, UC), in primary *Agathis* forest, rather common locally.

Related apparently to *R. meliphagidum* J.J.S. from Ceram and Buru.

23. *Rhododendron ciliolobum* Sleum.

NEW GUINEA. Central part: Balim R. Valley, near Gutelu, 1600 m, fl. fr. 14-9-1962, K. G. Heider 6, rare in secondary forest on limestone.

A form lacking the hairs at the corolla lobes, calyx and pedicels, otherwise practically conspecific with the type-material from the Wissel Lakes.

24. *Rhododendron quadrasianum* Vid. var. *angustissimum* Sleum., nov. var. — Ramuli brevissime pubescentes. *Folia* anguste oblongo-ovata, c. 10 mm longa, 1—1.5 mm lata. Pedicelli pubescentes, c. 5 mm longi. *Corolla* tubulosa, apicem versus sensim dilatata, dense lepidota, sparse pilosa, c. 10 mm longa, 3—4 mm diam. *Stamina* exserta; antherae 0.5 mm longae. *Ovarium* subvillosum.

BORNEO. Sarawak: Mt Mulu, path from Melinau Paku, c. 1300 m, Anderson 4215 (K; SAR, type).

var. *rosmarinifolium* (Vid.) Copel. f.

PHILIPPINES. Luzon: Mountain Prov., Baguio, Mt Santo Tomas, 1900—2100 m, van Royen & Sleumer 5604; Mt Polis, Steiner 2176.

var. *cuneifolium* (Stapf) Copel. f.

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 646, 646 A & B, 677; Mt Kinabalu, above Kundasang, 1525 m, SAN 24171 Meijer; ibid., 2140 m, Smythies 10605, 14421; ibid., E. slope, 1525—2865 m, Chew, Corner & Stainton 2172; Collenette 754, 760.

var. *villosum* J.J.S.

BORNEO. N. Borneo: near Jesselton, in primary forest at 1190 m, Collenette 690. — Brunei: Mt Pagon, 1675 m, Ashton BRUN 2345, 2346.

var. *borneense* J.J.S.

BORNEO. W. Borneo: Bt. Radja, 1900 m, Hans Winkler 1034 (HBG).

26b. *Rhododendron inundatum* Sleum., nov. spec. — Frutex terrestris, c. 1 m altus; ramuli in sicco rubescentes striati, subpruinosi, varie obtuse compressi, laxe ± caduce lepidoti; internodia 2 ultima 6—12 cm longa, 3—4 mm diam. *Folia* erecto-patentia, in pseudoverticillis 4—5-meris ad nodos 3 ultimos disposita, elliptica usque elliptico-ovata, apice latissime attenuata vel saepius rotundata, interdum apiculata, basi late in petiolum cuneata, coriacea, novella haud visa, matura in sicco opaca, supra dilute olivacea, subtus lutescenti-virentia, supra cito glabrescentia, subtus subdense lepidota (lepidibus parvis subrotundis, a sese diam. duplo distantibus, zona marginali tenui, angusta, centro parvo bene impresso), in sicco ad totam marginem leviter revoluta, integra, 3.5—5.5 cm longa, (1.5—)2—3(—3.3) cm lata, costa supra anguste immersa, subtus inferne petioli crassitudine valdeque prominente apicem laminae versus sensim decrescente, nervis lateralibus utroque latere 6—7, intercalaribus brevioribus vel obscurioribus paucis additis, a costa angulo magno abeuntibus, inferne subrectis, distaliter curvatis obscureque anastomosantibus, supra leviter impressis, subtus prominulis vel indistinctis, reticulatione nulla; petioli rugulosi, 6—9 mm longi, 1—1.5 mm crassi. *Umbellae* c. 4-florae. Perulae extiores ovato-acuminatae, apice longius vel brevius protracto submucronulatae, extus basi et dorso medio dense crasseque lepidotae atque brevissime pilosiusculae, marginem versus intusque glabrae, interiores ± spathulatae,

tenuiores, glabrae, margine minute laceratae, usque ad 1 cm longae et 0.6 cm latae. Bracteolae lineares, sparse lepidotae, c. 1.2 cm longae. Pedicelli in vivo rosacei, ± dense lepidibus rotundis crassis obsiti, epilosi, 1—1.2 cm longi, c. 0.5 mm diam. *Calyx* parum obliquus, patelliformis, obscure lobatus, c. 2.5 mm diam. *Corolla* inferne tubulosa, ad lobos parum expansa, alba, tota 4—4.3 cm longa, extus loborum margine excepto subdense lepidota, intus ad tubum laxe pilosa, tubo subrecto ± 3 cm longo, basi 2.5—3 mm diam., orem versus sensim usque ad 5 mm diam. dilatato, lobis erecto-patentibus, obovato-spathulatis, c. 1 cm longis et 7—9 mm latis. *Stamina* 10, c. dimidium loborum aequantia; filamenta per $\frac{1}{4}$ inferiorem partem anguste linearia denseque patenter albido-pilosula, superne filiformia et glabra; antherae oblongae, basi obtusae, 2.2 mm longae. *Discus* parum prominens, glaber. *Ovarium* subcylindricum, dense lepidotum laxeque patenter albo-pilosum, 4—5 mm longum, c. 1.5 mm diam., sensim in stylum abiens. Stylus sat gracilis, tubum subaequans, in inferiore media parte dense lepidotus laxeque patenter pilosulus, ceterum dense lepidotus; stigma subcapitatum. *Fructus* deest.

NEW GUINEA. Central part: Balim R. Valley, Wiligimaan, 1650 m, fl. 26-6-1961, BW 10454 Versteegh (L, type), on temporarily inundated grassplain.

28. *Rhododendron herzogii* Warb.

NEW GUINEA. Western Highlands: Lagaip Valley, Laiagam Subdistr., 2600 m, Hoogland & Schodde 7396; Wabag area, Upper Ambun Valley, 3140 m, Robbins 3079. — Eastern Highlands: Marafunga above Goroka, 2400—2500 m, Anderson JARA 4; NGF 14003 Womersley & Sleumer; Sleumer 4140; Daulo Pass, c. 2500 m, PNH 65836 Quisumbing; Upper Chimbu R. Valley, Engwegl, 2300 m, Borgmann 3944; Keglsugl to Pengatl camp, 2500 m, Sleumer 4183; ascent to Mt Wilhelm, 2700 m, Borgmann 259. — Morobe Distr.: Merri Creek, 1800—1850 m, Sleumer 4125, 4129.

29. *Rhododendron incommodum* Sleum.

NEW GUINEA. Eastern Highlands: Purosa, Okapa area, Brass 31865.

31a. *Rhododendron bullifolium* Sleum., nov. spec. — Frutex erectus, pauceramosus, 3—4 m altus, vel arbuscula distaliter tantum ramosa, 4—6 m alta, trunco 2—3 m longo usque ad 5 cm diam. Ramuli teretes, vetustiores 10, juniores 4—6, ultimi 3 mm diam., diu tomento saturate rufo e lepidibus stellatis subdendroideis formato et detersili obtecti; internodia 6—20(—26) cm longa. *Folia* ad nodos ultimos 2 vel 3 in pseudoverticillis (4)—6-meris disposita, elliptica vel plerumque ovato-elliptica, rarius late elliptica vel ovata, parum inaequilateralia, apice brevissime subacuminata vel obtusata vel rotundata, basi generaliter latissime attenuata vel rotundata, basi ipsa autem haud raro brevissime subcuneato-contracta et in petiolum decurrentia, coriacea, in vivo supra saturate viridia et lucida, subtus pallidiora et opaca, in sicco supra olivaceo-brunnea, subtus rufescens, opaca, novella omnino tomento rufo-stellato-lepidoto tecta, aetate supra cito glabrescentia, subtus diutius praecipue ad costam nervosque lepidota (lepidibus ± dendroideis, in zona marginali ± profunde stellato-incisis vel -laceratis, centro parvo deorsum in pedem brevem extenuato), (8)—10—18(—22) cm longa, 4.5—12(—13) cm lata, etiam in vivo profunde bullata, integra, margine in sicco haud revoluta, costa supra inferne petioli latitudine, vix prominente vel sat plana, superne ± immersa, subtus inferne crasse elevata, apicem laminae versus gradatim decrescente, nervis lateralibus utroque latere 10—14, a costa angulo subrecto abeuntibus, irregularibus, nonnullis profunde divisis, omnibus ante marginem curvato-conjunctis, cum venis supra bene impressis, subtus arcte prominentibus, venuulis in parte marginali laminae tantum conspicuis ibique reticulum sat laxum supra insculptum, subtus prominulum formantibus; petioli certe initio dense

lepidoti, 2.5—5 cm longi, 2.5—3.5 mm crassi, sicut costa longitudinaliter striati. *Gemmae* florigerae immaturaes usque ad 2 cm longae et latae tantum visae, corollas 10—12 continentes; perulae ovatae, exteriore subacuminatae, interiores obtusae, omnes extus et intus substrigoso-sericeae, ultro dorso medio lepidotae. *Corolla* immatura extus ad tubum dense lepidota, ad lobos glabra, quoad cetera parum evoluta. *Pedicelli* fructiferi dense lepidoti, epilosi, ± 2.5 cm longi, 1.5 mm crassi. *Fructus* juvenilis 2.5 cm longus, fusiformis, dense lepidibus stellatis pilisque robustis pallidis prorsus versis ornatus; styli partis inferioris fragmenta c. 3 cm longa, sicut ovarium dense lepidota et pilosa. *Fructus* maturi valvae tortae (3—)4—5.5 cm longae. Cetera desunt.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Saru-mot near Iray, Anggi Gigi Lake, scattered along path from native gardens to the summit, 2050—2100 m, fr. 26-I-1961, Sleumer & Vink 4444 (A; CANB, G, K; L, type; LAE, P, PNH, UC).

31b. *Rhododendron solitarium* Sleum., nov. spec. — Frutex terrestris erectus, 1—1.5 m altus, stirpem unicam vel rarius stirpes paucas praebens, stirpibus supra basin et altius breviter pauceramosis; ramuli initio tomento brevi e lepidibus sessilibus rufis stellatis formato atque ± detersili obtecti itaque cito evanescente, sat robusti, 2—4 mm crassi; internodia ultima viridia 4—7 cm longa. *Folia* erecto-patentia, ad nodos 3(—4) ultimos in pseudoverticillis 4—6-meris disposita, oblongo-elliptica vel ± late elliptica, interdum subobovato-elliptica, apice ± rotundata, haud raro minute retusa, basi late attenuata usque rotundata, in vivo supra saturate viridia et nitida, subtus lutescenti-viridia et opaca, in sicco livido-brunnea, recentissima utrinque densissime rufo-lepidota, matura coriacea, supra ± glabrescentia, subtus diutius praecipue ad costam nervosque lepidota (lepidibus rufescensibus ± dendroideis, in zona marginali varie profunde stellato-incisis, centro minuto depresso deorsum in pedem brevem extenuato, qui tuberculo epidermali lamina discolore insidet), integra, plana, 5—8 cm longa, 3—5 cm lata, bullata, costa supra inferne petoli latitudine, sulcata et parum prominente, apicem laminae versus impressa, subtus inferne crassa, distaliter gradatim diminuta, per totam longitudinem prominente, nervis lateralibus utroque latere 7—9 a costa angulo magno usque recto abeuntibus, irregularibus, brevibus resp. profunde divisis, inferne subrectis, superne curvato-conjunctis, ante marginem quasi in rete venarum dissolutis, cum venis ceteris supra bene reticulato-insculptis, subtus prominentibus, venuulis multo minus conspicuis; petoli initio dense lepidoti, (0.8)—1—1.5 cm longi, 1.5—2.5 mm diam. *Umbellae* 4—6-florae. Perulae nondum satis cognitae. Bracteolae lineares vel subspathulatae, margine caduce lepidotae, ceterum glabrae, 1—1.5 cm longae, usque ad 2 mm latae. *Pedicelli* dense rufo-lepidoti, epilosi, sub anthesi ± 1.5 cm longi, 1 mm crassi. *Calyx* patellaris, obliquus, dorso lepidotus, c. 3 mm diam., lobis brevissimis vel interdum in lacinias elongatis. *Corolla* inferne tubulosa, ad lobos late infundibuliformi-expansa, alba, extus parte marginali loborum excepta dense rufo-stellato-lepidota, intus ad tubum dense pilis retrorsis albidis instructa, tota in sicco 5—5.5 cm longa, tubo parum curvato c. 4 cm longo, inferne c. 4 mm, infra lobos c. 7 mm diam., lobis obovato-spathulatis c. 1.5 cm longis et 1—1.5 cm latis. *Stamina* 10, ± dimidium loborum attingentia; filamenta linearia, per ⅔ inferiorem partem laxe pilosa, superne glabra; antherae brunnescentes, oblongae, basi obtusae, 3—3.5 mm longae. *Discus* inferne glaber, superne tomentosus. *Ovarium* subcylindricum, c. 10 mm longum, 2.5 mm crassum, dense flavescenti-pilosum et lepidotum, stylo continuo per inferiorem ⅔ partem densius vel superne laxius piloso et lepidoto, tubum corollae parum excedente, certe staminibus breviore. *Fructus* deest.

NEW GUINEA. Southeastern part: Morobe Distr., Edie Creek, fl. 6-1960, NGF 12253 Womersley & Thorne (L, type; LAE), growing solitary in eroded gold workings, rare.

Also seen and photographed by the author near Merri Creek, above its mouth with the Edie Creek, at c. 1850 m, in 9—1961, on a slope laxly covered with *Vaccinium molle* var. *mollissimum* and grasses, without flowers at that time.

35. *Rhododendron superbum* Sleum.

NEW GUINEA. Western Highlands: SE. ridge of Yaki Valley, near Poio, 2600 m, Hoogland & Schodde 6987; Mt Sugarloaf area, along Wapu R., 3050 m, Hoogland & Schodde 7200. — Southern Highlands: S. of Tari, Benaria area, 1830 m, Pullen 2826; Mt Giluwe, 2680 m, Schodde 2064. — Eastern Highlands: Marafunga logging area, 2500 m, NGF 13983 Womersley & Sleumer; Sleumer 4139.

36b. *Rhododendron schoddei* Sleum., nov. spec. — Frutex terrestris, c. 2 m altus. Ramuli sat graciles, divaricati, ad internodia ultima tantum dense lepidibus sessilibus rufescensibus obsiti; internodia 2—4.5 cm longa. *Folia* in pseudoverticillis 3—4-meris ad nodos ultimos 1 vel 2 digesta, ovato- vel subovato-oblonga, apice gradatim vel breviter attenuata, apice ipso obtusiuscula, basi ± rotundata, juniora utrinque subdense lepidota, matura coriacea, in sicco supra olivacea, glabrescentia et nitidula, subtus dilutiora et diutius subdense lepidota (lepidibus rufescensibus subdendroideis, in zona marginali varie profunde stellato-dentatis vel -laceratis, centro saepius depresso, centro ipso in pedem brevem vel brevissimum extenuato, tuberculo epidermali humili insidente), integra, inferne ad marginem ipsum parum revoluta, (3—)3.5—5(—6) cm longa, 1.5—2.3 cm lata, costa supra anguste immersa, subtus inferne crasse prominente, superne decrescente, apicem laminae versus ± evanescente, nervis lateralibus utroque latere 6—8 angulo magno a costa abeuntibus, inferne subrectis, superne curvato-conjunctis, supra leviter impressis, subtus prominulis vel obscuris, reticulatione nulla; petioli dense lepidoti, 3—5 mm longi, 1—1.5 mm crassi. *Umbellae* (2—)3-florae. Perulae ovato-acuminatae, dorso appresse lepidotae, pilosae, in gemma florifera nondum bene evoluta tantum visae. Bracteolae haud cognitae. Pedicelli rubescentes, subdense lepidoti, pilosi, 1.5—2 cm longi, fere 1 mm crassi. *Calyx* patelliformis, obliquus, brevissime 5-lobatus, dorso lepidotus, c. 3 mm diam. *Corolla* intense rosacea, inferne late tubulosa, ad lobos expansa, extus ad tubum dense vel subdense lepidota, intus ad tubi inferiorem partem laxe pilosula, tota c. 2.5 cm longa, tubo 1.8—2 cm longo, recto, basi 4—5, ad orem 6—7 mm diam., lobis obovato-spathulatis breviter retusis, 6—8 mm longis et latis. *Stamina* 10, corollam longit. subaequantia; filamenta inferne linearia laxeque pilosula, superne filiformia glabra; antherae oblongae, basi breviter apiculatae, fere 2.5 cm longae. *Discus* crasse prominens, ad marginem superiorem pilosus, ceterum glaber. *Ovarium* subconico-cylindricum, c. 5 mm longum et 2.5 mm crassum, leviter 5-angulatum, dense lepidotum et brevipilosum, ad angulos densius longiusque pilosum, sensim in stylum abiens, stylo sat gracili, c. 1.2 cm longo, ad ½—⅓ inferiorem partem pilosulo vix lepidoto, superne glabro, stigmate subcrasso. *Fructus* incognitus.

NEW GUINEA. Western Highlands: Laigam Subdistr., near Kepilam village, Lagaip Valley, c. 2600 m, fl. 10-8-1960, Hoogland & Schodde 7397 (CANB; L, type), on limestone ridge in heath-like vegetation.

36c. *Rhododendron phaeochristum* Sleum., nov. spec. — Frutex terrestris (1—)2—3(—4) m altus, ramis erectis profunde divisus, ramulis gracilibus, internodiis ultimis 1 vel 2 tomento rufo-ferrugineo e lepidibus stellatis formato tectis; internodia (2—)3—6(—10), rarius usque ad 18) cm longa. *Folia* in pseudoverticillis (3—)4—5(—6)-meris ad nodos 2 vel 3 summos digesta, elliptico- usque obovato-oblonga, apice late obtuseque attenuata vel subacuminata, basi angustius vel latius in petiolum cuneata, subcoriacea, in vivo supra saturate viridia et nitidula, subtus lutescenti-viridia, in sicco

supra nigrescenti-castanea, subitus rufescens, juvenilia utrinque dense rufo-stellato-lepidota, maturitatem versus supra cito glabrescentia, subitus diutius praecipue ad costam lepidota (lepidibus rufo-ferrugineis plerumque bene dendroideis, in zona marginali profunde stellato-incisis vel -laceratis, centro minuto cupuliformi-impresso deorsum in pedem gracilem sat longum rarius breviorem extenuatis, tuberculo epidermali incidentibus), integra, ad marginem ipsam parum revoluta, (3-)4-7(-9) cm longa, 2-3(-4) cm lata, costa supra angusta leviterque impressa, subitus inferne crasse prominente, superne gradatim minus elevata, nervis lateralibus utroque latere 6-8(-9) sat irregularibus, ante marginem curvato-anastomosantibus, supra levissime impressis vel plerumque obscuris, subitus prominulis, rete venarum laxo subitus tantum prominulo vel subinconspicuo; petioli 8-12(-15) mm longi, 1.5-2 mm diam., initio dense lepidoti. *Umbellae* 2-3(-4)-florae. Gemmae floriferae subglobosae, 1-1.5 cm diam.; perulae tenues, exteriores ovatae, dorso medio dense stellato-lepidotae, epilosae, margine caduce lepidoto-fimbriatae, c. 1 cm longae, interiores subspathulatae, dorso ± glabrae, usque ad 1.2 cm longae. Bracteolae subspathulato-lineares, glabrae, c. 1 cm longae et 1-1.5 mm latae. Pedicelli rubescentes, subgraciles, dense stellato-lepidoti, sub anthesi ± 1 cm longi. *Calyx* oblique patellaris, minute 5-lobus, dorso lepidotus, c. 2.5 mm diam. *Corolla* curvato-tubulosa, ad lobos expansa, zygomorpha, pallidius vel intensius rubrocarminea, tota in sicco 2.5-3, in vivo 3.5-4 cm longa, tenuiter carnosa, extus lucidula lepidibusque aureo-ferrugineis ± dense obtecta, intus ad tubum tantum laxe pilosula, tubo in sicco 1.5-2 cm longo, basi c. 3, ore c. 5 mm diam., lobis subspathulato-ovobatis ± 1 cm longis et latis. *Stamina* 10, longit. ± dimidium loborum aequantia; filamenta rubescentia, linearia, ad $\frac{2}{3}$ partem infer. densius, vel superne laxius pilosula, ceterum glabra; antherae obovato-oblongae, in vivo saturate purpureae usque subnigrescentes, basi obtusae, 2 mm longae, 1 mm latae. *Discus* prominens, margine superiore breviter pilosulo excepto glaber. *Ovarium* viride, subcylindricum, 5 mm longum, 2.5 mm crassum, dense lepidibus stellatis ferrugineis pilisque pallidioribus ± appressis et prorsus versis indutum. *Stylus* cum ovario continuus, ± 1.2 cm longus, basi ipsa viridis ibique pilis paucis subhorizontalibus obsitus, cetrum glaber et rubicundus, stigmate subclavato. *Fructus* fusiformis, dense lepidotus et pilosus, 2(-2.5) cm longus, 4-5 mm diam.

NEW GUINEA. Northwestern part: Tamrau Mts East, path from Waumi R. camp to open vegetation on waterdivide, Wamsuf area, 1850 m, *van Royen & Sleumer* 7180 A, in dense mossy forest; Nettot R.a., N. slope of Mt Nettot, path to Wekari R., *van Royen & Sleumer* 8057; Arfak Mts, path Iray-Testega, Anggi Gigi Lake, 2050 m, *Sleumer & Vink* 4418; Mt Gwamongga, 2550 m, *Sleumer & Vink* 4375, with epidermal tubercles less distinct than in the other material cited here; ascent to Mt Mesenuk (= Misjuk), Anggi Gita Lake, 1900 m, *Sleumer & Vink* 4210; Mt Saru-mot near Iray, Anggi Gigi Lake, 2050-2250 m, fl. fr. 26-1-1962, *Sleumer & Vink* 4465 (A, CANB, G, K; L, type; LAE, UC); Mt Antop near Minjambau, 1800 m, BW 13845 Koster.

The species is common in the Arfak Mts around the Anggi Lakes, generally in the shadowy understorey of the *Nothofagus* forest, and often sterile.

Rhododendron culminicolum var. angicense × Rhododendron phaeochristum

A natural hybrid corresponding to this formula was found in the Arfak Mts at the edge of the forest, 1900 m, above bivouac 'Noordpool', Anggi Gita Lake (*Sleumer & Vink* 4200). The characters of *R. phaeochristum* are expressed in the general appearance, the star-shaped scales and in the flowers. The wider, more obovate and blunt leaves, the less dense tomentum and the lack of epidermal tubercles on the leaves indicate the influence of *R. culminicolum* var. *angicense* known from practically the same place.

38. *Rhododendron rarum* Schltr.

NEW GUINEA. Western Highlands: Upper Yaki Valley, c. 2300 m, *Hoogland & Schodde* 6992; Lagap Valley, 2440 m, *Hoogland & Schodde* 7266. — Eastern Highlands: Mt Otto, 2300 m, *Brass* 31140; Marafunga, 2400 m, *Sleumer* 4137; Upper Chimbu R. Valley, above Kegsugl, ascent to Mt Wilhelm, 2400–2900 m, *Brass* 30478, 30808; *Borgmann* 138; *Sleumer* 4181.

40. *Rhododendron bryophilum* Sleum.

NEW GUINEA. Northern part: Cycloop Mts, NE slope of Mt Rara, 1640 m, *van Royen & Sleumer* 6054.

Observed several times as epiphyte in the crown of tall trees along path from Ifar to Ormu, S. slope of the Cycloop Mts, between 1060 and 1200 m by the author.

41a. *Rhododendron asperrimum* Sleum., nov. spec. — *Frutex epiphyticus, interdum scandens, divaricato-ramosus. Ramuli sat graciles, internodiis 3—5(—7) cm longis et ± 2 mm diam. Folia in pseudoverticillis 3—4-meris ad nodos 2 vel 3 ultimos disposita, subsessilia, ovata, apice latissime attenuata usque rotundata, basi leviter cordata, coriacea, sat firma, utrinque sicut ramuli et petioli initio tomento e lepidibus stellatis rufis formato obtecta (lepidibus dendroideis fere usque ad centrum minutum stellato-incisis vel -laceratis, centro deorsum extenuato, tuberculo epidermali magno insidente), maturitate supra cito, subtus tardius glabrescentia, tuberculis epidermalibus quam lamina pallidioribus altis persistentibus rugosa, in sicco cinerascente-olivacea et in parte superiore revoluta, (2—)2.5—4(—4.5) cm longa, (1.5—)2—2.8(—3.2) cm lata, integra, costa supra immersa, subtus valde prominente, nervis lateralibus utrinque subinconspicuis, reticulatione nulla; petioli 2 mm longi, 1.5 mm crassi. Umbellae (3—)4—6-florae. Perulae tenues, ovatae usque spathulatae, dorso laxe caduce lepidotae vel glabrae, epilosae, usque ad 1.5 cm longae et 0.7 cm latae. Bracteolae lineares vel filiformes, glabrae, ± 1 cm longae. Pedicelli subgraciles, densissime stellato-lepidoti, epilos, 1.1—1.5 cm longi. Calyx oblique patellaris, breviter vel vix 5-lobatus, dorso dense lepidotus, 2—3 mm diam. Corolla tubulosa, superne zygomorpha, rosea vel purpurascens, tota 2.6—3 cm longa, extus initio dense, demum laxius stellato-lepidota vel ± glabrata, intus ad tubum tantum laxe papilloso-pilosa, tubo curvato ± 2 cm longo, 4—5 mm diam., orem versus parum dilatato, lobis inaequalibus, obovato-spathulatis, ± 1 cm longis et 0.6 cm latis, erecto-patentibus. Stamina 10, corollam subaequantia; filamenta linearia, ad medium inferiorem partem laxe papilloso-pilosa, superne glabra; antherae obovato-ellipticae, basi obtusae, 2 mm longae, 1.3 mm latae. Discus inferne glaber, superne subdense pilosus. Ovarium subcylindricum, 4 mm longum, 1.5 mm crassum, dense rufo-stellato-lepidotum subdenseque pallidius pilosum, cum stylo sat abruptum. Stylus ipsa basi lepidotus et pilosus, per ¼ inferiorem partem laxe patenter pilosus (vel interdum cito glabrescens), superne omnino glaber; stigma subcapitatum. Capsula haud cognita.*

NEW GUINEA. Northwestern part: Wandammen Peninsula, Wondiwoi Mts, c. 1800 m, fl. 3–1962, *BW* 13744 *Koster* (A, CANB, K; L, type; LAE), in primary forest; *ibid.*, 920 m, *BW* 13709 *Koster* (BO, BM, L); *ibid.*, 800 m, *BW* 13356 *Schram* (L).

42. *Rhododendron dielsianum* Schltr.

var. *dielsianum*

NEW GUINEA. Eastern Highlands: Lufa-Goroka road, 1830 m, NGF 11734 *Womersley*; Mt Michael, W. slope, 1940 m, *Brass* 31185.

45. *Rhododendron beyerinckianum* Koord.

NEW GUINEA. Western Highlands: Lagaip Valley, 2600 m, *Hoogland & Schodde* 7398; Mt Sugarloaf complex, 3100 m, *Hoogland & Schodde* 7220. — Southern Highlands: Mt Giluwe, 3140 m, *Schodde* 1715; Anga Valley, near Ebenda, 1980 m, *Schodde* 1648. — Eastern Highlands: Mt Otto, 3040 m, *Brass* 30966 (US); Upper Chimbu R. Valley, Mt Kibiaka, 2600 m, *Borgmann* 357; above Komanemambuno (= Pengagl camp), 2650—3000 m, *Borgmann* 168; *Sleumer* 4151; Mt Wilhelm, E. slope, 3000—3560 m, *Borgmann* 251; *Brass* 29830; *Sleumer* 4165, 4175.

46. *Rhododendron leptanthum* F. v. M.

NEW GUINEA. Morobe Distr.: Mt Kaindi, 2250 m, *Brass* 29587; Edie Creek, 1830 m, *NGF* 12817 *Womersley & Thorne*; Merri Creek, 1800 m, *Sleumer* 4127.

47. *Rhododendron warianum* Schltr.

NEW GUINEA. Western Highlands: Lagaip Valley, Laiagam Subdistr., 2600 m, *Hoogland & Schodde* 7401. — Morobe Distr.: Finisterre Mts, S. slope, near Wantoat, c. 2000 m, *NGF* 12609 *Womersley & Thorne*.

50. *Rhododendron thaumasianthum* Sleum., nom. nov. — *R. magnificum* Sleum., Reinwardtia 5 (1960) 84, non F. K. Ward, J. Bot. 73 (1935) 247.

51. *Rhododendron konori* Becc. — 97. *Rhododendron toverenae* F. v. M.

NEW GUINEA. Northwestern part: Tamrau Mts East, ascent from Waumi R. camp to waterdivide W. of the Wamsus massif, 1900—2000 m, *van Royen & Sleumer* 7194, 7194 A, 7194 B; Ijon R. Valley, near Son village, 750 m, *van Royen & Sleumer* 7830; Nettoti Ra., crest of Mt Nettoti, 1900—2100 m, *van Royen & Sleumer* 7496, 7975; Arfak Mts, Anggi Gita Lake, ascent to Mt Misijnuk, 1950 m, *Sleumer & Vink* 4212; along shore of Anggi Gita Lake, path from 'Noordpool' to Testega, 1850 m, *Sleumer & Vink* 4235; *ibid.*, ascent to Mt Kongremottie, 1900 m, *Sleumer & Vink* 4236; Mt Koëbré ridge above Testega, 2000—2300 m, *Sleumer & Vink* 4260; along Anggi Gigi Lake near Surerci, 1930 m, *Sleumer & Vink* 4298; *ibid.*, Mt Sense-nemés, 2400—2500 m *Sleumer & Vink* 4307; Tidjei ridge near Iray, Anggi Gigi Lake, 2150 m, *Sleumer & Vink* 4412; *ibid.*, Disrebei, 2050 m, *Sleumer & Vink* 4415; Mt Antop near Minjambau, 1790 m, *BW* 13834 *Koster*. — Western part: Mt Genofa near Kaimana, 1100 m, *BW* 10262 *Versteegh*; Wissel Lakes, Borobaida, 1760 m, *BW* 8646 *Vink & Schram*; *ibid.*, Munajepa, 1700 m, *BW* 8749 *Vink & Schram*; Star Mts., Sibil Valley, 1200—1300 m, *Kalkman* 4035. — Southeastern part: Morobe Distr., Mt Kaindi, summit, 2230 m, *NGF* 13915 *Womersley & Sleumer*; Edie Creek area, 1800—1900 m, *M. Galore* s.n. (LAB); *NGF* 12254 *Womersley & Millar*; *NGF* 13495 *Womersley & Sleumer*; *Sleumer* 4130; Sattelberg area, Yunzaing, 1250—1525 m, *Clemens* 2727 (G).

Having seen the variability of *R. konori* and its extreme sizes in leaves, flower buds, perulae, and corollas, the author cannot anymore distinguish *R. toverenae* from *R. konori*. The latter seems to be one of the most wide spread species of the genus in New Guinea, generally occurring above 1800 m, sometimes descending to 750 m in damp places.

Two plants, apparently natural hybrids between *R. konori* and *R. asperum*, were found by *Sleumer & Vink* (4411) on the Tidjei ridge near Iray (Arfak Mts) together with *R. asperum* (5-merous pink corollas, c. 6 cm, 4423, 4424) and *R. konori* (exclusively 7-merous corollas, pure white, 12 cm, 4412). They were intermediate as to the shape of leaves (more ovate than in *R. konori*, and the petioles longer than in *R. asperum*), and in the size of the corollas; both had the short purely lepidote upper zone on the style, so typical for *R. konori*. One specimen (4411, form A) had 6-merous, 8.5 cm long corollas, white with pale pink to the edges of the lobes, another (4411 B) had 7-merous, but only 6.5—7 cm long corollas, white, but with a more distinct pinkish hue. *R. konori* also forms natural hybrids with *R. laetum*. Such a crossing was found at Disrebei

near Iray (*Sleumer & Vink* 4417), a place, where both species are abundant and flower at the same time. The specimen had oblong, shortly acuminate leaves, which are much less rough to the touch than in *R. konori* (the epidermal tubercles being much lower than in *R. konori*), a red midrib (a character found in *R. laetum*), and a short petiole (0.7—1 cm). There were no corollas left, but the fruits — almost ripe and full of seeds — were more densely clad with whitish hairs than in *R. konori*, and no pure upper lepidote zone was found on the style.

56. *Rhododendron asperum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, on top of Mt Kongremottie, Anggi Gita Lake, 2200 m, *Sleumer & Vink* 4250; Mt Koëbré between Anggi Lakes, 2300 m, *Sleumer & Vink* 4286; Mt Koëbré NE. to Mt Tembruk, 2400 m, *Sleumer & Vink* 4479; Mt Sensenemés above Surerei, Anggi Gigi Lake, 2400—2750 m (summit), *Sleumer & Vink* 4303; Tidjei ridge near Iray, Anggi Gigi Lake, *Sleumer & Vink* 4423 (a form with smaller corolla), 4424.

A natural hybrid between *Rhododendron asperum* (4479) and *Rhododendron laetum* (4481) was found together with the parents on the way from Mt Koëbré NE. to Mt Tembruk at 2150 m, in a devastated, rather open and partly scrub- and fern-covered place within the *Nothofagus* forest (*Sleumer & Vink* 4480) in several specimens. The colour of the corolla was pale yellow or greenish-yellow, or different shades of pink at lobes and yellowish at the tube, or partly with a yellowish hue only at the base of the tube. Intermediate between the parents were also the density of the hairs and scales on pedicels and ovary and the size of anthers (4 mm). The anthers were found to be full of normal pollen, and there were several fruits with almost ripe seeds in these apparently hybrid specimens.

62. *Rhododendron phaeopeplum* Sleum.

NEW GUINEA. Western part: Wissel Lakes, Lake Tigi, 1750 m, BW 3277 *Johannes* (formerly published as *R. rappardii*). — Northwestern part: Arfak Mts, on crest above the Warjori R., mouth of Mije R., 1300—1350 m, *Sleumer & Zieck* 4487, 4488, 4494, 4499 A, 4501.

The population found above the Warjori R. has pure white, 6—7-merous, scented corollas and shows a great diversity of leaf characters as to the length of the petiole, the base (cordate to broadly attenuate), length and width of the lamina; the length of the corolla in the fresh state was 6.5—7.5 (in one specimen up to 8) cm, of the anthers 6—7 (in one specimen 8) mm. *R. phaeopeplum* looks like a minor edition of *R. konori*, which, however, in the Arfak Mts is not known below 1850 m altitude.

Plants intermediate between *R. phaeopeplum* and true 5-merous, orange-flowered *R. zoelleri*, both abundant in this place, were rather numerous (*Sleumer & Zieck* 4493, 4498, 4499, 4500, 4501 A). They showed pinkish, not scented, 5- and 6-merous corollas on the same specimen, and longer, more acuminate and thinner, ± glossy leaves, on which the epidermal tubercles were much less distinct than in *R. phaeopeplum*. The pure white or pale yellow-flowered, otherwise typically *R. zoelleri* specimens also found there are probably due to a certain amount of introgression of *R. phaeopeplum*; such white flowered specimens have never been observed in the ample material of *R. zoelleri*, one of the most widely distributed Rhododendrons in New Guinea.

63. *Rhododendron rappardii* Sleum.

NEW GUINEA. Western part: Wissel Lakes, Enarotali, 1760 m, BW 8595, 8596 *Vink & Schram*; Kebo, 1770—1800 m, BW 8894, 8949 *Vink & Schram*; near Munajepa, 2300 m, BW 8841 *Vink & Schram*; Motito-Munajepa, 1820 m, BW 8734 *Vink & Schram*; Borobaida, 1760 m, BW 8650 *Vink & Schram*.

63a. Rhododendron dianthosmum Sleum., nov. sp. — Frutex epiphyticus, 0.5—2 m altus, ramulis divaricatis iterum et iterum ramosis. Ramuli subdense stellato-lepidoti, cito glabri, in sicco pruinosi, sat graciles; internodia (4—)6—15 cm longa. *Folia* ad nodos ultimos 2 vel 3 in pseudoverticillis 3 (—4)-meris disposita, oblonga vel elliptico-oblonga, apice breviter subacuminato-attenuata, subobtusa, basi late attenuata usque rotundata, coriacea, in vivo supra viridia, subtus lutescenti-viridia, in sicco supra livida et pruinosa, subtus brunnescens, matura utrinque dense tuberculis quam lamina pallidioribus obsita, novella vel juniora utrinque dense stellato-lepidota, matura supra citius glabrescentia tactuque rugosula, subtus diutius imprimis secus costam lepidota (lepidibus rufis dendroideis, in zona marginali profunde vel plerumque omnino stellato-incisis, centro parvo in pedem brevem deorsum extenuato), (7—)9—14 cm longa, 3—5.5 cm lata, integra, margine ipso parum recurvata, costa supra inferne parum prominente, superne ± plana, subtus inferne petioli crassitudine valdeque prominente, apicem versus sensim decrescente, nervis lateralibus utroque latere 8—10(—12) sat irregularibus, inter sese curvato-conjunctis, utrinque prominulis, venis rete laxum utrinque parum conspicuum formantibus; petioli 1—1.5 cm longi, 2—2.5 mm crassi, initio dense lepidoti. *Umbellae* 4—6-florae. Perulae in vivo sordide rubescentes, exteriores ovatae, interiores elliptico-ovatae costaque prominente apiculatae, intimae spathulatae obtusae, exteriores pilis scabridis lepidibusque obsitae, interiores dorso dense ± caduce lepidotae partimque brevissime pubescentes, intus sericeae, 1—3.5 cm longae, 1—1.5 cm latae. Bracteolae lineares, glabrae, c. 2 cm longae, 1—2 mm latae. Pedicelli 1—1.5 cm longae, ± 1.5 mm diam., densissime rufo-stellato-lepidotae, epilosae. *Calyx* oblique patellaris, 5—6-lobulatus, c. 3 mm diam. *Corolla* inferne tubulosa, ad lobos ± horizontaliter expansa, puralba, odore dianthi, carnosula, 6—7-mera, in sicco tota 5—6, in vivo ± 7 cm longa, extus glabra, intus ad tubum pilosula, tubo 2.5—3.5 (in vivo 3—4) cm longo, basi 6—7-saccato, et c. 6 (in vivo c. 10) mm diam., lobis spathulatis, 3 vel 4 ceteris minoribus, 2—2.5 (in vivo 3—3.5) cm longis, 1—2 cm latis. *Stamina* 12—14, e tubo corollae per c. 1 cm exserta; filamenta linearia, ad inferiorem ¾ partem densius vel superne laxius pilosula, ceterum glabra; antherae in vivo brunnescentes, elongato-oblongae, 3.5(—4) mm longae, fere 1 mm latae, basi obtuse. *Discus* inferne glaber, superne tomentosus. *Ovarium* subcylindricum, in vivo viridescens, 8—10 mm longum, 2—3 mm crassum, albido-vel flavescenti-tomentosum (pilis prorsus versis lepides tegentibus), sensim in stylum abiens, stylo subgracili c. 3 cm longo, per ¾ partem inferiorem dense vel distaliter laxius piloso, infra stigma capitatum 2.5—3 mm diam. glabro. *Fructus* nondum cognitus.

NEW GUINEA. Northern part: Cycloop Mts, Faita River camp, c. 1000 m, fl. 8-6-1961, van Royen & Sleumer 5736 (A, CANB; L, type); ibid., 1220 m camp along path from Ifar to Ormu, van Royen & Sleumer 5922, 6061.

Loose corollas of this new species were observed (not collected) on the ground at the Pinksterbivak above Hollandia at 500 m, on the W. slope of Mt Dafonsero at c. 1000, and in the Central part of the Cycloop Mts between 800 and 1400 m.

67. *Rhododendron durionifolium* Becc.

BORNEO. Sarawak: S. Baram Distr., Mt Mulu, 1585—2380 m (top), Anderson 4529. — N. Borneo: Bt. Timbucu, Tawau Distr., SAN 23765 Bayles.

68. *Rhododendron fallacinum* Sleum.

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 679; Mt Kinabalu, Tambunan, 1740 m, SAN 21890 Meijer; above Kundasang, 1525—1830 m, SAN 23833 Meijer; E. slope, 1980 m, Chew, Corner & Stainton 1038; Ulu Langani, Sg. Mamut, 1525 m, Chew, Corner & Stainton 1268.

70. Rhododendron malayanum Jack**var. malayanum**

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 672.

var. infrapilosum Sleum.

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 654a.

72. Rhododendron acuminatum Hook. f.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2440—3050 m, Collenette 757, 766, 768, 797.

73. Rhododendron fortunans J.J.S.

BORNEO. Central part: Schwaner Mts, Bt. Radja, 1400 m, Hans Winkler 997 (HBG).

76. Rhododendron variolosum Becc.**var. variolosum**

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 645.

var. andersonii (Ridl.) Sleum.

BORNEO. N. Borneo: Mt Kinabalu, above Kambaranga, 2345 m, Smythies 10618 (L).

81a. Rhododendron proliferum Sleum., nov. spec. — Frutex erectus, 1.5—2 m altus, parum ramosus. Ramuli purpurascentes, obtusanguli, densissime et diutius lepidoti; innovationes saepius ad basin perulis numerosis tenuibus iis gemmarum floriferarum simillimis, diu persistentibus instructae, itaque e gemma principaliter terminali et florifera, in gemmam vegetativam mutatam proliferae; internodia (3—)6—10 cm longa, 4—6 mm diam. *Folia* in pseudoverticillis (8—)10—12-meris ad nodos 2 vel 3 ultimos disposita, erecta, parum patentia, gemmas floriferas modo nidi circumdantia, subspathulato-obovata vel obovato-oblonga, apice subrotundato-attenuata, basi in petiolum cuneata breviterque decurrentia, novella utrinque omnino lepidibus obtecta, matura coriacea, firma, supra glabra, in vivo saturate viridia et lucida, in sicco pallide viridia et opaca, subtus densissime lepidota (lepidibus subaequalibus sese partim obtegentibus, fuscescentibus vel brunnescentibus, nitidis, in sicco paullo pallidioribus, diu persistentibus, in zona marginali tenuis sat lata irregulariter substellato-angulatis vel -lobatis, vel -dentatis, centro parvo obscuriore bene immersis, foveolis lepidum caducarum bene visibilibus), integra, in sicco paullo convexa, (6—)7—10.5 cm longa, (2—)2.5—4.5(—5) cm lata, costa supra sat angusta leviterque impressa, subtus inferne petioli crassitudine obtuseque prominente, sursum gradatim decrescente et prominula, nervis lateralibus 7—9-paribus, inferioribus angulo acuto, superioribus angulo magno a costa abeuntibus, marginem petentibus, obscure anastomosantibus, supra levissime insculptis, subtus sat obscuris, saepius invisibilibus, reticulatione nulla; petioli a dorso compressi, supra canaliculati, densissime lepidoti, in vivo purpurascentes, 1.5—2 cm longi, ± 3 mm lati. *Infructesciae* tantum visae, fructus (4—)6—10 praebentes, basi adhuc perulis numerosis tenuibus purpurascensibus, exterioribus elongato-deltoides usque ovato-acuminatis dorso sat dense lepidotis, glabrescentibus, interioribus elongato-oblongis vel -spathulatis, usque ad 4 cm longis et 2 latis circumdatae. Pedicelli fructiferi purpurei, dense lepidoti, epilosi, 2.5—3.2 cm longi, c. 1 mm crassi. *Calyx* in fructu immaturo parum obliquus, patellaris,

breviter 5-lobus, c. 5 mm diam. *Corolla* in fructibus immaturis desiccata inferne tubulosa, ad lobos expansa, ut videtur, parum zygomorpha et in vivo rubra, tota c. 3 cm longa, extus ad basin adhuc lepidibus nonnullis obsita, ceterum et intus glabra, tubo c. 2 cm longo, 4—5 mm diam., lobis obovatis c. 1 cm longis et latis. *Stamina* 10; filamenta inferne linearia (1 mm), superne angustiora, omnino glabra, c. 2.7 cm longa; antherae subobovato-ellipticae, basi obtusae, c. 3.5 mm longae et 1.5 mm latae. *Discus* prominens glaber. *Ovarium* evolutum (vel fructus valde immaturus) densissime lepidibus substellatis rubiginosis obtectum, cum stylo continuum; stylus sat gracilis, basi lepidotus, ceterum glaber, 2—2.5 cm longus; stigma subpeltatum, 2—2.5 mm diam., lobis 5 depresso-depressis. *Fructus* submaturus crasse fusiformis, 2—2.5 cm longus, 5—6 mm diam., 5-costulatus, maturus usque ad 8 mm diam.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Gwamongga near Surerei, Anggi Gigi Lake, 2550 m, on steep slope just below the summit, fr. 21-I-1962, Sleumer & Vink 4372 (A, CANB, K; L, type; LAE, UC), in dense submossy forest, apparently rare.

83. *Rhododendron yelliotii* Warb.

NEW GUINEA. Eastern Highlands: Dengalagu Mission, 2280 m, Sleumer 4146; Mt Wilhelm, 2800—3400 m, Borgmann 60; Brass 29916, 30741; Sleumer 4167.—Morobe Distr.: Upper Zaran Creek, Mt Saruwaged, 2800—3600 m, NGF 16164 van Royen.

92. *Rhododendron multinervium* Sleum.

NEW GUINEA. Eastern Highlands: Upper Chimbu R. Valley, Engwegl, 2300 m, Borgmann 394; Mt Michael, 1980 m, NGF 11723 Womersley.

95. *Rhododendron stapfianum* Hemsl. ex Prain

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 1220—1600 m, Collenette 814, 817.

96. *Rhododendron chamaepitys* Sleum.

BORNEO. Sarawak: Mt Lambir, 450 m (top), on rocks, fr., Bakar 3043.

98a. *Rhododendron leucogigas* Sleum., nov. spec. — Frutex in trunko arborum elatiorum epiphyticus, 1—2(—3) m altus, caule erecto parce ramoso, radicibus crassis saepius elongatis. Ramuli vel caulis summa pars subteretes, ad apices turionum tantum stellato-lepidoti, cito glabri, cortice tenui irregulariter fiso; internodia foliigera (3—)6—12(—20) cm longa, (5—)8—12 mm diam. *Folia* in pseudoverticillis (3—)5—6 (—7)-meris ad nodos 3 vel 4 ultimos disposita, foliis paucis haud bene evolutis haud raro additis, ampla, horizontaliter patentia, oblonga vel subelliptico- vel subobovato-oblonga, apice sensim attenuata vel subacuminata, apice ipso subacuta, basin versus cuneata vel late attenuata, basi ipsa rotundata vel saepius leviter cordata, coriacea, novella utrinque rufo-stellato-tomentella, matura supra glabrescentia, in vivo saturate viridia et lucidula, in sicco cinerascenti-viridia et opaca, subtus in vivo pallidiora, in sicco brunnescentia, diutius lepidota, denique omnino glabrescentia (lepidibus in foliis juvenilibus biformibus, his rufis, in zona marginali fere omnino stellato-dentatis vel -laceratis, cum centro minuto cupuliformi-impressis, centro deorsum producto subdendroideis, citissime caducis, illis minoribus, pallidioribus, planis, sessilibus, minus profunde varieque dentatis, multo tardius caducis, ± in epidermide foliorum impressis), integra, plana, (18—)20—28 cm longa, 6—10.5 cm lata, costa supra inferne petioli latitudine, parum prominente, sursum plana et gradatim angustiore, apicem versus paullo insculpta, subtus

inferne petioli crassitudine valdeque elevata, sursum sensim decrescente, nervis lateralibus utroque latere (9—)10—11(—12), intercalaribus brevioribus vel minus distinctis paucis additis, angulo semirecto a costa subcurvato-ascendentibus, ante marginem inter sese arcuato-conjunctis, supra parum prominentibus, linea media saepius levissime insculptis, subtus prominulis, rete venarum venularumque laxo supra bene visibili, subtus sat inconspicuo; petioli 7—18(—20) mm longi, (3—)4—5 mm crassi, paullo applanati. *Umbellae* 5—6-florae, floribus in gemma florifera perulis adhuc circumdata tantum visis. Gemma florifera sordide carminia, ovoidea; perulae exteriore ovatae, apiculatae, interiores obovatae usque spathulatae, intimae elongato-spathulatae, omnes toto dorso pilis albidis scabriusculis appressis brevibus lepidibusque stellatis, intus pilis longioribus mollioribus subtomentosae, exteriore usque ad 2, interiores usque ad 6 cm longae, usque ad 3 cm latae. Bracteolae lineares, glabrae, 2—2.5 cm longae, c. 2 mm latae. Pedicelli immaturi crassi, dense lepidoti, pilosi. *Calyx* immaturus brevissime cupularis. *Corolla* immatura 7-mera, alba, in gemma florifera nondum aperta iam 4 cm longa, extus subdense stellato-lepidota, intus ad tubum sat dense pilosa, matura probabiliter anguste tubuloso-infundibuliformis et 16—20 cm longa. *Stamina* 14; filamenta pilosa; antherae nondum bene evolutae elongato-oblongae, basi obtusae, usque ad 1 cm visae. *Infructescencia* ovaria valde evoluta vel fructus submaturos 5 praebens; pedicelli subglabri, 2.5 cm longi, 4—5 mm crassi; discus albido-tomentosus. *Capsula* submatura obfusiformis, 14—16 cm longa, in vivo 1.8 cm, in secco 1.4 cm diam., dense pilosa et lepidota; stylus continuus, 10—11 cm longus, 2—3 mm diam., ad infer. $\frac{3}{4}$ partem dense usque sursum versus laxis pilosus et lepidotus, supra per 5—6 mm subdense lepidotus haud pilosus, ceterum glaber; stigma initio depresso-capitatum, c. 6 mm diam., demum lobos 7 crasse clavatos divergentes praebens.

New GUINEA. Northern part: Cycloop Mts, S. slope of the central part along path Ifar-Ormu, camp site at 1220 m, fr. 24-6-1961, van Royen & Sleumer 5981 (A, CANB, G, K; L, type; LAE, UC), on tree trunks in riverine forest.

Seedlings of this were observed in *Nothofagus* forest up to 1350 m NE. of the camp site. Introduced by cuttings into horticulture.

103. *Rhododendron pleianthum* Sieum.

New GUINEA. Eastern Highlands: near Keglsugl, 2600 m, Borgmann 268. — Southern Highlands: Mt Giluwe, 2680 m, Schodde 2066.

111a. *Rhododendron retrorsipilum* Sleum.

New GUINEA. Morobe Distr.: above Markham point near Lae, NGF 13686 Henty.

113. *Rhododendron cinerascens* Sleum.

New GUINEA. Western part: Wissel Lakes, Kebo, 1750 m, BW 8902 Vink & Schram.

113a. *Rhododendron brachypodarium* Sleum., nov. spec. — Frutex epiphyticus vel terrestris, 1—2(—3) m altus, ramulis in secco cinerascenti-pruinosis, apicibus dense lepidotis; internodia 2 vel 3 ultima (2—)3—10 cm longa, 2—3 mm crassa. *Folia* ± reflexa, in pseudoverticillis 4(—5)-meris ad nodos 2—3(—4) ultimos disposita, elliptica vel saepius obovato-elliptica, rarius obovata, apice late attenuata, obtusa vel rotundata, basi latius vel angustius cuneata, coriacea, in vivo viridia usque lutescenti-viridia, in secco opaca, supra sordide cinereo-virentia, subtus brunnescentia, novella utrinque

subdense lepidota, matura supra \pm cito glabrescentia, subtus diutius lepidota (lepidibus \pm planis, in zona marginali varie angulatis vel dentatis, centro sat parvo parum impressis), integra, vix vel haud revoluta, (4—)5—7(—8) cm longa, 2—3.5(—4) cm lata, costa supra inferne crassa et canaliculata, superne gradatim plana et impressiuscula vel evanescente, subtus inferne petioli crassitudine, superne sensim decrescente, apice prominula, nervis lateralibus utroque latere 7—10, supra levissime impressis vel obscuris, subtus prominulis, obscure arcuato-conjunctis, venularum rete subinconspicuo; petioli in sicco sicut costa pruinosi, initio densissime lepidoti, tarde glabrescentes, 6—10(—12) mm longi, 1.5—2 mm crassi. *Umbellae* (8—)10—12(—14)—florae. Perulae in vivo virescentes, exteriores ovatae, firmae, apice et margine lepidotae resp. fimbriatae, interiores multo tenuiores, late spatulatae, usque ad 2 cm longae et 1.3 cm latae, basi et intus laxissime pilosae, ceterum glabrae. Bracteolae filiformes, laxe pilosae, usque ad 1.8 cm longae. Pedicelli in vivo rubescentes, sat graciles, dense stellato-lepidoti, epilosii, 4—8 mm longi, 0.5 mm crassi. *Calyx* valde obliquus, obscure lobatus, dorso lepidotus, \pm 2 mm diam. *Corolla* anguste tubulosa, puralba, odorata, tota 4—5.5(—6) cm longa, extus \pm dense substellato-lepidota, intus ad tubum breviter pilosa, tubo recto 3.5—4(—5) cm longo, 2—2.5 mm diam., distaliter vix dilatato, lobis patentibus vel parum reflexis, obovato-oblongis, \pm 1 cm longis, 4—5 mm latis. *Stamina* 10, lobis reflexis c. 1 cm e tubo exserta; filamenta per $\frac{2}{3}$ partem infer. anguste linearia denseque pilosula, sursum graciliora et glabra; antherae rubro-brunneae, anguste oblongae, basi obtusae, (3—)4 mm longae. *Discus* parum prominens, laxe breviter pilosus. *Ovarium* anguste cylindricum, c. 8 mm longum, 1.3 mm crassum, albido- vel flavidoto-momentosum (pilis lepides tegentibus), cum stylo continuum. *Stylus* gracilis, e tubo per c. 5 mm exsertus, inferne in $\frac{2}{3}$ parte dense pilosus, superne laxius pilosus denseque lepidotus, in ultimo tertio dense substellato-lepidotus; stigma viride, obcuneatum, glabrum. *Capsula* ignota.

NEW GUINEA. Northwestern part: Tohkiri Mts East, crest at 1400 m on path Surerem-Chaquai, fl. 26-10-1961, van Royen & Sleumer 7065 (A, CANB, G, K; L, type; LAE, UC); *ibid.*, below top opposite Waumi R., 1400 m, van Royen & Sleumer 7250; Tamrau Mts, eastern part, above Waumi R. camp, 1200—2000 m, van Royen & Sleumer 7143, 7180; *ditto*, central part, Mt Kusemuni, 1400 m, van Royen & Sleumer 7786; Nettoti Ra., S. slope of Mt Nettoti, path Andjai-Wekari R., 1400 m, van Royen & Sleumer 7463, in mossy forest; Mt Nettoti top, 1900 m, van Royen & Sleumer 8063; N. slope of Mt Nettoti, Wekari R. camp, 1550 m, van Royen & Sleumer 8105.

115a. *Rhododendron syringoideum* Sleum., nov. spec. — Frutex terrestris rarius epiphyticus, c. 2 m altus, valde ramosus, ramis validis erecto-patentibus. Ramuli robusti, obtusanguli vel lateraliter compressi, in sicco saepius pruinosi; internodia ultima et penultima laxe stellato-lepidota, (5—)8—12 cm longa, 3—5(—6) mm diam. *Folia* in pseudoverticillis 5—6-meris ad nodos vel saepius in summa tertia parte internodiorum 3—6 ultimorum laxe vel parum a se distanter disposita, late elliptica vel subovato-vel subobovato-elliptica, apice latissime attenuata vel rotundata, interdum brevissime emarginata, basi valde late attenuata, saepius rotundata, raro subcordata, matura coriacea et firma, novella utrinque laxe rufesceni-lepidota, matura supra cito, subtus tardius glabrescentia (lepidibus parvulis, angulatis vel in zona marginali irregulariter dentatis, centro minuto parum impressis), in vivo supra saturate viridia, subtus pallidiora, in sicco opaca, supra virescentia vel cinerascentia, subtus brunnescientia, integra, 6—9 cm longa, 4—5.5(—6) cm lata, margine ipso parum, imprimis basin laminae versus revoluta, costa supra inferne crassa et elevata, canaliculata, superne gradatim applanata, subtus inferne petioli crassitudine, superne sensim decrescente, apice leviter prominente, nervis lateralibus subirregularibus, utroque altere 7—8, pro parte profunde divisus, omnibus ante marginem sat indistincte conjunctis, supra etiam in vivo minute impressis, subtus

prominulis, rete venarum sat laxo subtus tantum parce conspicuo; petioli 1—2 cm longi, \pm 2 mm crassi. *Umbellae* 8—12(—14)-florae. Perulae exteriore ovatae usque rotundae, c. 2 cm longae et latae, interiores spathulatae, usque ad 3.5 cm longae et 1.8 cm latae, intimae elongato-spathulatae usque ad 5 cm longae et 1 cm latae, omnes dorso laxe et brevissime pilosae usque glabrescentes, intus longius et densius appresse substrigoso-pilosae. Bracteolae subspathulato-lineares, imprimis secus marginem pilosae, 4—5 cm longae, 2—5 mm latae. Pedicelli laxe lepidoti, pilosi, 5—7 mm longi, 1.5—2 mm crassi. *Calyx* valde oblique patellaris vel annulum angustum praebens, obscure lobatus, c. 5 mm diam. *Corolla* syringoidea, in sicco tantum visa, probabiliter carnosula et alba, tota (8.5—)9—10(—10.5) cm longa, ad lobos \pm expansa, leviter zygomorpha, extus laxissime lepidota vel glabra, intus ad $\frac{1}{4}$ infer. partem tubi subdense pilosa, tubo parum curvato, basi in sicco 5—6 mm diam., orem versus sensim ad 6—8 mm diam. dilatato, lobis \pm patentibus, oblongo-obovatis, 1—1.5 cm longis, c. 0.8 cm latis. *Stamina* 10, corollam subaequantia; filamenta inferne linearia et ad $\frac{1}{4}$ partem inferiorem pilosa, superne angustiora et glabra; antherae anguste oblongae, 5—6 mm longae, 1—1.3 mm latae, apicem versus paullo crassiores, thecis basi in apiculum subacutum 0.3—0.4 mm longum extenuatis. *Discus* parum prominens, glaber. *Ovarium* elongato-cylindricum, paullo curvatum, dense albido-flavido-tomentosum, pilis appressis lepides tegentibus, in statu evoluto 12—15 mm longum et 3 mm diam., sensim in stylum abiens. Stylus subgracilis, corollam subaequans, inferne dense piloso laxeque lepidoto, superne ad tertiam medium partem laxe lepidoto parceque vel haud piloso, c. 1 cm infra stigma glaber, stigmate 5-lobo, c. 1.5 mm diam. *Fructus* in reliquiis tantum visus, ut videtur usque ad 5 cm longus et 7 mm crassus.

NEW GUINEA. Northwestern part: Arfak Mts, summit of Mt Saru-mot near Iray, Anggi Gigi Lake, at 2350 m, defl. 26-1-1962, Sleumer & Vink 4442. Also seen there at 2200 m as epiphyte shrub on dead tree trunk.

120a. *Rhododendron subpacificum* Sleum., nov. spec. — Frutex epiphyticus. Ramuli tenues, caduce lepidoti, in sicco pruinosi; internodia (1—)2—6 cm longa. *Folia* in pseudoverticillis 3—4-meris ad nodos 2 vel 3 ultimos disposita, oblongo-obovata, apice late obtuse attenuata usque rotundata, basi in petiolum cuneata, subcoriacea, in sicco supra cinerascenti-olivacea, subtus brunnescentia, opaca, integra, margine vix revoluta, supra maturitate glabra, subtus laxe lepidota (lepidibus tenuibus planis sat parvis, in zona marginali varie angulatis vel dentatis, centro parvo parum impresso), (3.5—)4—5.5 cm longa, 1.5—2.3 cm lata, costa supra anguste impressa, subtus prominente, nervis lateralibus utroque latere 3—4 arcuato-conjunctis, supra subobscuris, subtus prominulis, reticulatione nulla; petioli (2—)3(—4) mm longi, c. 1 mm crassi. *Umbellae* 3-florae. Perulae haud visae. Bracteolae lineares, glabrae, usque ad 6 mm longae. Pedicelli graciles, laxissime caduce lepidoti vel iam sub anthesi glabri, pilosi, 10—12 mm longi. *Calyx* patellaris, c. 2 mm diam., breviter 5-lobus et undulatus, reflexus. *Corolla* hypocrateriformis, alba, tenera, odorata, tota \pm 4 cm longa, tubo \pm 3.5 cm longo, recto, aequaliter \pm 3 mm diam., extus laxe substellato-lepidoto, intus in tertio inferiore papilloso-piloso, lobis subhorizontaliter patentibus, oblongo-obovatis, 6—8 mm longis, \pm 4 mm latis, extus laxe lepidotis. *Stamina* 10, corollam subaequantia; filamenta filiformia, in inferiore media parte laxe papilloso-pilosa, ceterum glabra; antherae oblongae, 1.5 mm longae, basi obtusae. *Discus* inferne glaber, superne dense pilosus. *Ovarium* cylindricum, c. 6 mm longum, 1.5 mm diam., subdense pilis prorsus versis lepidibusque indutum, sensim in stylum abiens; stylus inferne per c. 5 mm pilosus et lepidotus, superne usque fere ad apicum laxe lepidibus subrotundatis adspersus; stigma parum incrassatum. *Fructus* deest.

SOLOMON ISL. New Georgia group: Vangunu I., crater rim at c. 600 m, inland of Merusu, fl. 9-12-1962, T. Whitmore 986 (BSIP; L, type), on narrow ridge with stunted forest.

121. **Rhododendron anagalliflorum** Wernh.

NEW GUINEA. Western Highlands: Upper Ambum Valley, 3050 m, Robbins 3069.

122. **Rhododendron womersleyi** Sleum.

NEW GUINEA. Southern Highlands: Mt Giluwe, 3350—3500 m, Schodde 1720, 1919. — Western Highlands: Wabag Subdistr., N. slope of Mt Sugarloaf complex, 3100 m, Hoogland & Schodde 7222. — Eastern Highlands: Mt Michael, 3300 m, NGF 11492 Womersley; Mt Wilhelm, 3500—3650 m, Anderson JARA 22; Borgmann 27; Sleumer 4155, 4178.

132. **Rhododendron saxifragoides** J.J.S.

NEW GUINEA. Southern Highlands: Mt Giluwe, 3350—3800 m, Schodde 1778, 1949. — Western Highlands: Wabag Subdistr., Mt Sugarloaf summit area, c. 3650 m, Hoogland & Schodde 7131.

134. **Rhododendron stenophyllum** Hook. f.

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 668; Mt Kinabalu, E. slope, 2400—2750 m, Chew, Corner & Stainton 200, 1096; Kumu Rengis, Jesselton, KEP 71636 Sow; Crocker Ra., Mt Alab, SAN 21894 Meijer.

142. **Rhododendron vidalii** Rolfe

Collecting on Mt Polis (Luzon) in May 1961, the author looked in vain for specimens of this species with red corollas ('*R. whiteheadii*'); all specimens observed there (and further numerous specimens along the road from Banaue to Bontoc) showed pure white corollas.

144. **Rhododendron hatamense** Becc.

NEW GUINEA. Northwestern part; Tamrau Mts East, path from Waumi R. camp to waterdivide, Wamsuf area, 1600 m, van Royen & Sleumer 7160, in heavy mossy forest (form with glabrous corolla); Nettoti Mts, N. slope of Mt Nettoti, path Andjai-Wekari R., 1550—1800 m, van Royen & Sleumer 8061; Mt Nettoti, BW 10364 Versteegh; Arfak Mts N., Mt Beribai, 1900 m, BW 11495 Vink; Mt Lensemoi near Minjambau, 1890 m, BW 13898 Koster.

The species has been recollected several times during the 2nd New Guinea Expedition of the Rijksherbarium. It has become clear, that *R. hatamense* is a proper species near to *R. culminicolum* sensu lato, and that the two synonyms cited in the authors previous work, viz. *R. coenenii* J.J.S. and *R. gibbsiae* J.J.S., are small-leaved forms of *R. culminicolum* F. v. M.

146. **Rhododendron bagobonum** Copel. f.

BORNEO. Sarawak: Mt Penrisen near Kuching, Paie S 16384.

146a. **Rhododendron abietifolium** Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, from col just below Mayerbau mountain, also found sterile and in seed from the small crest just short of the col leading down to camp 5, Collenette 767.

This collection number comprises two specimens, one sterile with the very narrow linear leaves, revolute up to the midrib, as described originally, and another specimen with flowers and broader and longer, more linear-oblong though equally very revolute leaves.

Specimens similar to the latter, but with the leaves still wider (up to 1.5 cm) and in part much less revolute, and with flowers and fruits, were collected by Mrs Collenette on the same eastern shoulder of Mt Kinabalu; it is doubtful, if these too still belong to *R. abietifolium* (shadow form?) or if they are of hybrid origin, either due to an ingress of *R. sheilae*, or even of *R. rugosum*, both equally found plentiful on this eastern shoulder:

BORNEO. N. Borneo: Mt Kinabalu, eastern shoulder, summit of Mt Mayerbau, c. 3655 m, fl. fr. 2-8-1961, Collenette 776; *ibid.*, from crest of ridge above 'padang areas' near camp 4, between camp 5 and 6, growing as an undershrub in light shade at c. 3050 m, fl. 6-8-1961, Collenette 796, fairly common 3 ft bush.

147. *Rhododendron nieuwennhuisii* J.J.S.

BORNEO. W. Borneo: Upper Serawai R., 400 m, *Hans Winkler* 829 (HBG).

148a. *Rhododendron sheilae* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, growing by large flat rock at junction of Royal Society 1961 Expedition and Mesilau East routes, c. 3440 m, Collenette 798; *ibid.*, small plateau just below pinnacles of main massif, at junction of Mesilau East route and link up route with the Royal Society 1961 Expedition route, c. 3440 m, Collenette 799.

148b. *Rhododendron coriifolium* Sleum., nov. spec. — Frutex vel arbuscula, 3—6 m. Ramuli sat robusti, ad internodia ultima ± dense stellato-lepidoti, ceterum cito griseo-corticati; internodia 1.5—4(—7) cm longa. Folia ad internodia ultima 2 vel 3 in pseudoverticillis 4—5-meris digesta, elliptica vel oblongo-elliptica, apice late attenuata, obtusa, haud raro breviter retusa, basi late attenuata usque rotundata, coriacea, rigida, supra in sicco olivacea vel brunnea, subtus pallidiora, brunnescentia, utrinque initio subdense lepidota (lepidibus rufidulis sat parvis, sessilibus vel subdendroideis, in zona marginali sat profunde varieque stellato-lobatis, centro minuto persistenter impresso), margine manifeste regulariter crenulata et plerumque revoluta, (2)—2.5—4(—5.5) cm longa, 1.5—2(—2.6) cm lata, costa supra anguste impressa, subtus inferne petioli crassitudine, superne gradatim decrescente et per totam longitudinem valde prominentem, nervis lateralibus irregularibus utroque latere 5—7 a costa angulo lato abeuntibus, supra anguste immersis ibique ante marginem divisis et anastomosantibus, subtus obtuse prominentibus, venis supra tantum laxe reticulato-impressis, subtus ± evanidis; petioli paullo applanati, 3—4(—5) mm longi, 2(—3) mm crassi. Umbellae (5—)7—12-florae. Perulae exteriores haud visae, interiores spathulatae, dorso lepidotae, epilosae, 2—2.5 cm longae. Bracteolae lineares, margine pubescentes, 1.5—2 cm longae. Pedicelli dense lepidoti breviterque pilosi, sub anthesi 2—2.5 cm longi, 0.5 mm crassi. Calyx oblique patellaris, breviter obtuse 5-lobus, dorso pubescens et lepidotus, c. 3 mm diam. Corolla tubuloso-infundibuliformis, parum obliqua, saturate rubra, extus ad tubum laxe pilosa et lepidota, sursum ad loborum partem inferiorem lepidota, superne glabra, intus inferne per 3—4 mm laxissime pilosula, superne glabra, tota in sicco 3—3.5 cm longa, tubo basi 5-saccato, ± 2 cm longo, ipsa basi 4—5, ad loborum basin c. 10 mm diam., lobis suberectis parum expansis, obovatis, 1—1.5 cm longis, c. 1 cm latis. Stamina 10, corollae tubum paullo excedentia; filamenta linearia, inferne laxe brevissime pubescentia; antherae oblongae, 2.5 mm longae, thecis basi breviter apiculatis. Discus prominens, in superiore parte puberulus. Ovarium subconicum, cum stylo ± abruptum, dense lepidotum breviterque patent-pilosum, c. 4 mm longum, basi 2 mm diam., stylo glabro (1—)1.3—1.5 cm longo, stigmate subcapitato magno 5-lobato. Capsula matura subcylindrica, apice basique paullo attenuata, lepidota et pilosula, c. 1.5 cm longa, 0.4 cm diam.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, camp 4, in dwarf forest at 3200 m, fl. fr. 5-7-1961, Chew, Corner & Stainton 1137 (K; L, type); *ibid.*, between camps 4 and 5, fl. 9-7-1961, Smythies 14410; *ibid.*, about 1 mile beyond view point along ridge, 20 ft from path, at c. 3050 m, fl. 7-8-1961, Collenette 802.

A new species in the *Buxifolium* series close to *R. abietifolium* and *R. sheilae*, and maybe to *R. rugosum*. *R. sheilae* with its fluctuant leaf-characters might be a local hybrid between *R. abietifolium* and the new species.

153a. *Rhododendron vandeursenii* Sleum.

NEW GUINEA. Eastern Highlands: from Keglsugl airstrip to Pengatl R. camp, 2500 m, Sleumer 4182; *ibid.*, ascent to Mt Wilhelm, 2650 m, Brass 30656, 30657; Borgmann 260.

158. *Rhododendron commonae* Foerster

NEW GUINEA. Southern Highlands: Dibibi R. Valley, Nipa patrol post area, 2380 m, Pullen 2845; Mt Giluwe, 3050—3140 m, Schodde 1738, 1877. — Western Highlands: Laiagam Subdistr., Yobobos grassland area, 2600 m, Hoogland & Schodde 7452; Wabag Subdistr., Mt Sugarloaf complex, 2900 m, Hoogland & Schodde 7024. — Eastern Highlands: Mt Wilhelm, E. slope, at and around the Lakes, up to 3600 m, Borgmann 368; Sleumer 4162, 4166. — Morobe Distr.: SW. slope of Mt Enggom, Saruwaged area, 3100—3600 m, NGF 16177, 16179, 16211 van Royen.

159. *Rhododendron papuanum* Becc.

NEW GUINEA. Northwestern part: Tamrau Mts East, above Waumi R. camp to waterdivide, Wamsuf area, 1950—2000 m, van Royen & Sleumer 7181, 7232; Nettoti Mts, S. and N. slopes of Mt Nettoti, 1800—2100 m, van Royen & Sleumer 7410, 7945, 7980, 8052; Arfak Mts, Mt Gwamongga near Surerei, Anggi Gigi Lake, 2550 m, summit area, Sleumer & Vink 4371.

165. *Rhododendron luteosquamatum* Sleum.

NEW GUINEA. Morobe Distr.: Kaindi (Edie Creek), 2000 m, Brass 29512; Merri Creek near Wau, 1850 m, Sleumer 4131.

166. *Rhododendron inconspicuum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, Koëbré ridge between Anggi Lakes, 2300 m, Sleumer & Vink 4261; Mt Sensenemés above Surerei, Anggi Gigi Lake, 2400(—2750) m, Sleumer & Vink 4301; shore of Anggi Gita Lake near bivouac 'Noordpool', 1840—1850 m, Sleumer & Vink 4192, 4233. — Eastern Highlands: Dengalagu Mission, 2280 m, Sleumer 4145; ascent to Mt Wilhelm via Pengatl Creek, 2700—2800 m, Borgmann 242a, 261, 264; Brass 30359; Sleumer 4190; Mt Wilhelm, E. slope, 3400 m, Brass 29916. — Western Highlands: Wabag Subdistr., Yaki R. Valley, 2285 m, Hoogland & Schodde 6793; Lai Valley, 2140 m, Robbins 2932; Laiagam Subdistr., Lagaip Valley, 2600 m, Hoogland & Schodde 7399.

167a. *Rhododendron porphyranthes* Sleum., nov. spec. — Frutex terrestris debilis, erectus, caules 1—3 praebens, 30—50 cm altus, imprimis distaliter paucet breviterque ramosus; ramuli gracilis, in partibus vetustioribus pruinosi vel cortice tenui longitudinaliter fissi instructi, novelli in vivo purpurascentes, in sicco rubesceni-brunnescentes, laxe lepidoti; internodia 3—9 cm longa et 1—2 mm crassa. *Folia* in superiore tertio internodiorum summorum 2 vel 3, id est in quoque internodio 3—4 distanter, summa 1 vel 2 plerumque prope vel ad nodum digesta, obovata vel elongato-obovata, apice rotundata, interdum paullo retusa, basi in petiolum cuneata, novella utrinque subdense vel laxius lepidota, matura tenuiter coriacea utraque facie nitidula, in vivo supra saturate viridia, subtus pallidiora, in sicco supra olivaceo-viridia, subtus brunnescentia, aetate supra cito glabrescentia, subtus diutius lepidota (lepidibus sat parvis, planis, in zona marginali varie angulatis vel ± obtuse substellato-dentatis, centro minuto impressis), margine

paullo revoluta lepidibusque impressis subcrenulata, 3—4.5(—5) cm longa, 1.5—2 (—2.3) cm lata, costa supra inferne leviter sulcata, superne plana, subtus inferne petioli crassitudine, sursum sensim decrescente, distaliter plana vel parum impressa, nervis lateralibus utroque latere 3—4 utrinque subobscurus, venis invisibilibus; petioli in superiori parte lamina decurrente alati, ceterum subteretes, (6—)7—10 mm longi, ± 1 mm crassi, laxe lepidoti. *Umbellae* 2-florae. Gemmae floriferae bene evolutae oblongoideae, c. 2 cm longae, 0.8 cm diam. Perulac exteriores ovatae, manifeste carinatae, interiores obovatae usque spathulatae, omnes dorso nitidulae sparseque lepidotae, margine caduce lepidoto-fimbriatae, usque ad 1.2 cm longae et 0.7 cm latae. Bracteolae haud visae. Pedicelli rubescentes, graciles, subdense substellato-lepidoti, pilosi, 1 cm longi. *Calyx* obliquus, patellaris, margine undulatus, c. 2 mm diam. *Corolla* subcampanulato-tubulosa, ± obliqua, nutans, ceracea, etiam in vivo atrescenti-porphyrea, nitida, utrinque glabra, venatione reticulata colore saturatiore bene distinguenda, tota ± 2.3 cm longa, tubo subrecto, 1.5—1.8 cm longo, basi c. 3 mm diam. manifesteque 5-saccato, orem versus usque ad c. 6 mm diam. dilatato, lobis erectis, late obovato-spathulatis, 6—8 mm diam., apice subdenticulato-erosis. *Stamina* 10, loborum dimidium aequantia; filamenta linearia, glabra; antherae in vivo atrorubrae, subobovato-ellipticae, basi obtusae, c. 2 mm longae et 1.5 mm latae. *Discus* prominens, glaber. *Ovarium* viride, subcylindricum, 2.5 mm longum, 1.2 mm diam., densissime stellato-lepidotum, pilosum, cum stylo continuum. *Stylus* subgracilis, glaber, 7—8 mm longus, stigmate clavato. *Fructus* deest.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Saru-mot near Iray, Anggi Gigi Lake, 2320 m, fl. 26-1-1962, Sleumer & Vink 4452 (A; L, type), in Nothofagus forest, rare.

173. *Rhododendron atropurpureum* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 3400—3600 m, Borgmann 32; Sleumer 4160, flowers red-carmine when fresh, becoming magenta when dry.

174. *Rhododendron buxifolium* Low ex Hook. f.

var. *buxifolium*

BORNEO. N. Borneo: Mt Kinabalu, Smythies 10620, 10643; ibid., Mesilau East route, 3025 m, Collenette 601 A; ibid., E. slope, 3600—3650 m, Collenette 783; Chew, Corner & Stainton 1445; ibid., South Peak, 3650 m, SAN 24212 Meijer.

var. *robustum* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 3025—3600 m, Collenette 601 B, 610, 774, 784.

175. *Rhododendron wrightianum* Koord.

var. *cyclopense* J.J.S.

NEW GUINEA. Northern part: Cycloop Mts, Mt Rara, 1580—1600 m, van Royen & Sleumer 5945, 6048; ibid., ridge W. of pass between Ifar and Ormu, 1480 m, van Royen & Sleumer 6115; Mt Dafonsero, 1550 m (top), van Royen & Sleumer 6437.

179. *Rhododendron rugosum* Low ex Hook. f.

BORNEO. N. Borneo: Mt Trus Madi, 2600 m, Collenette 647, 671, 673, 674, 675; Mt Kinabalu, 2140—2870 m, Smythies 10617, 14414, 14418; ibid., E. slope, 2440—3650 m, Collenette 758, 773, 775, 778, 801, 802, 803, 804; Chew, Corner & Stainton 1068, 1132, 1139.

179a. *Rhododendron keditii* Sleum.

BORNEO. Sarawak: Baram Distr., Mt Mulu, 2010 m, Anderson 4531.

180. *Rhododendron christi* Foerster

NEW GUINEA. Southern Highlands: near Hoibu grassland between Homa and Benaria, Kutubu-Tari track, 2050 m, *Pullen* 2822; Mt Giluwe, 2680 m, *Schodde* 2039. — Morobe Distr.: SW. slope of Mt Enggom, Saruwaged Ra., 1650 m, NGF 16132 *van Royen*.

184. *Rhododendron pachycarpon* Sleum.

NEW GUINEA. Morobe Distr.: Mt Enggom, SW. slope, 3300 m, NGF 16181 *van Royen*.

187a. *Rhododendron pachystigma* Sleum., nov. spec. — Frutex c. 1.5 m altus, ramulis subteretibus, in sicco impresso-striatis et pruinosis, apicibus subdense lepidotis; internodia 2 ultima tantum collecta, 4—10(—13) cm longa, 3—5 mm crassa. *Folia* 4 vel 5 in ultimis centimetris internodiorum summorum 2 vel 3 collecta, partim ad vel fere ad nodos ipsos, partim infra nodos instructa, obovata vel elliptico-obovata, apice rotundata, interdum minute retusa, basi ± late in petiolum cuneata, novella utrinque dense lepidota, matura coriacea, firma, utrinque mox ± glabrata (lepidibus parvis, rufescensibus, sessilibus et ± planis, detersilibus, in zona marginali irregulariter substellato-dentatis, centro minuto vix vel haud impressis), integra, (5—)6—8.5(—9) cm longa, (2.5—)3—4.5(—5) cm lata, in sicco basin versus subrevoluta, costa supra inferne crassa et sulcata, superne sensim angustiore et minus profunde impressa, subtus inferne petioli crassitudine valdeque elevata, sursum gradatim decrescente, apice plana vel evanescente, nervis lateralibus utroque latere 8—9, a costa angulo semirecto abeuntibus, inferne rectis interque sese subparallelis, pro parte profunde divisis, ante marginem sat obscure curvato-anastomosantibus, supra levissime impressis, subtus prominulis, reticulatione nulla; petioli initio dense lepidoti, 1—2(—2.5) cm longi, ± 2 mm crassi. *Umbellae* 2—3-florae. Perulae in gemma florifera nondum evoluta tantum visae, dorso laxe lepidotae, epilosae. Bracteolae filiformes, glabrae, usque ad 1.5 cm tantum visae. Pedicelli dense minuteque ferrugineo-lepidoti, ultro inferne pilis brevissimis, superne longioribus subdense obsiti, (8—)11—14 mm longi, 1.5—2 mm crassi. *Calyx* ex coll. aurantiacus, oblique patellaris, 6—7 mm diam., dorso subdense pilosus, lobis subpatentibus irregularibus deltoideis vel elongato-deltoideis, 2—3(—4) mm longis, margine piloso-fimbriatis et caduce lepidotis. *Corolla* infundibuliformis, valde profunde (6—)7-loba, ex coll. extus ad tubum pallide aurantiaca, ad lobos albida, ut videtur carnosa, in sicco tota (7—)7.5—8 cm longa, extus sparse lepidota vel glabra, intus ad inferiorem tubi partem tantum dense albido-pilosa, tubo recto (2.5—)3 cm longo, basi 6—7-saccato et 8—9 mm diam., orem versus sensim usque ad 2—2.5 cm diam. dilatato, lobis obovato-spathulatis, patentibus 4.5—5 cm longis, (2.5—)3—3.5 cm latis. *Stamina* 12—14, inaequilonga, e tubo bene exserta; filamenta inferne linearia, c. 1 mm lata, in inferiore dimidio basi densissime, sursum laxius patenter albido-pilosa, ceterum filiformia et glabra; antherae versatiles, elongato-oblongae, basi obtusae, c. 8 mm longae, 1—1.2 mm latae. Discus crassus, inferne parce, ad marginem superiorem dense albido-pilosus. *Ovarium* crasse cylindricum, 8—9 mm longum, c. 4 mm diam., omnino lepidibus stellatis rubiginosis tectum, epilosum, sensim in stylum glabrum ± 4 cm longum et 1—1.5 mm diam. abiens; stigma viride, subpeltatum, 6—8(—9) mm diam., lobos 6 od 7 subglobosos crassos praebens. *Fructus* adhuc incognitus.

NEW GUINEA. Central part: Balim R. Valley, Wiligimaan, c. 1800 m, fl. 25-6-1961, BW 10464 Versteegh (CANB; L, type), in secondary forest.

191. *Rhododendron hirtolepidotum* J.J.S.

NEW GUINEA. Northwestern part: Nettoti Mts, crest of Mt Nettoti, 1900—2000 m, *van Royen & Sleumer* 7979; *ibid.*, N. slope, 1750—1800 m, *van Royen & Sleumer* 8051, 8062, 8171; Kebar Valley, Watjetoni Mts, SE. of Ibunari, 1200 m, BW 10303 Versteegh.

204. Rhododendron javanicum (Bl.) Benn.

var. javanicum

JAVA. Western part: Mt Salak, 2000 m, *Hochreutiner 1982* (G, type of var. *gymnocarpum* Hochr.).

var. teysmannii (Miq.) K. & G.

JAVA. Western part: Mt Salak, *Hochreutiner 1965* (G, type of var. *typicum* Hochr.).

206. Rhododendron crassifolium Stapf

BORNEO. Sarawak: Baram Distr., Mt Mulu, 1300 m, *Anderson 4208*. — N. Borneo: Mt Kinabalu, *Smythies 10606*; *ibid.*, Mesilau East route, *Collenette 627, 642*; *ibid.*, E. slope, 1525—2440 m, *Chew, Corner & Stainton 1274, 1320, 1322*; *Collenette 805, 818*.

208a. Rhododendron polyanthemum Sleum., nov. spec. — Arbor ex coll. 6—15 m alta, trunco gracili vel crassiore. Ramulorum internodia 1 vel 2 ultima tantum collecta, in partibus apicalibus juvenilibus tomento e lepidibus stellatis rufis formato tecta, inferne cito glabrescentia, subteretia, c. 11 cm longa, 0.5—0.8 cm diam. *Folia* in pseudoverticillis 5—7-meris ad nodos ultimos 2 visa, elliptico-oblonga vel elliptica, apice sensim late attenuata vel subacuminata, apice extremo subobtusa, basi late attenuato-rotundata, basi ipsa breviter cordata et complicata, juvenilia in utraque facie et ad petiolum sicut apices ramulorum fusco-lepidoto-tomentosa vel -tomentella (lepidibus subdendroideis, usque ad centrum minutum anguste stellato-divisis, fugacibus), maturitatem versus costa excepta glabrescentia, denique glabra, in statu sicco supra viridia et nitidula, subtus brunnescens et opaca, integra, (7)—8—15 cm longa, (3)—4—8(—9) cm lata, costa basi c. 2 mm lata, apicem laminae versus sensim angustiore vel angustissima, per totam longitudinem leviter impressa, subtus inferne petioli crassitudine, sursum angustiore minusque profunde elevata, nervis lateralibus utroque latere 9—11 subregularibus, parum curvatis, pro parte profunde furcatis, ante marginem anastomosantibus, supra parum, sed in foliis maturis distincte immersis, subtus prominulis vel saepius inconspicuis, reticulatione nulla; petioli paullo applanati, supra sulcati, 2—4 cm longi, 4—5 mm crassi. *Umbellae* (18)—20—24-florae. Perulæ exteriore haud visae, interiores tenues, ± spathulatae, in utraque facie glabrae, caduce lepidoto-fimbriatae, usque ad 2.5 cm longae et 1.2 cm latae cognitae. Bracteolæ lineares usque filiformes, glabrae, ± 2 cm longae. Pedicelli laxe stellato-lepidoti, pilosi, sub anthesi 6—8 cm longi, c. 1.5 mm diam. *Calyx* ± obliquus, patellaris, obtuse breviter 5-lobulatus vel -undulatus, 4—5 mm diam., dorso dense lepidotus. *Corolla* infundibuliformis, tenuis, coccinea, odorata, extus ad tubum subdense, ad lobos laxius stellato-lepidota, intus inferne ad tubum laxe pilosa, tota ± 4 cm longa, limbo c. 3.5 cm diam., tubo recto, ± 2 cm longo, basi 5—6 mm diam. et 5-saccato, orem versus ad 1.5—2 cm diam. dilatato, lobis suberecto-patentibus, late obovato-spathulatis, ± 2 cm longis et 1.5—1.8 cm latis, leviter retusis. *Stamina* 10, inaequilonga, c. dimidium loborum attingentia; filamenta inferne linearia et per $\frac{1}{2}$ long. subdense usque laxius pilosa, superne angustiora et glabra; antheræ ellipticae, basi obtusæ, 2.7—3 mm longæ, 1.2 mm latae. *Discus* crassus, ad costas prominentes glaber, inter eas albopilosus. *Ovarium* subconicum, 5-costatum, pilis albidis prorsus versis lepides tegentibus tomentosum, 5—6 mm longum, 3 mm diam., cum stylo sat abruptum; stylus crassiusculus, 1.6—2 cm longus, in inferiore dimidia parte dense usque laxius subpatenter albido-pilosus, haud lepidotus, ceterum glaber; stigma crasse depresso-capitatum, lobis 5 brevibus clavatis. *Fructus* deest.

BORNEO. N. Borneo: Mt Trus Madi, crest of main ridge, 2135—2285 m, fl. 7-1-1961, Sh. Collenette 644 (K, type; L); *ibid.*, fl. 10-1-1961, Sh. Collenette 669, in dense mossy forest.

210. *Rhododendron baenitzianum* Laut.

NEW GUINEA. Sepik Distr.: Torricelli Mts near Wantipi village, 215 m, *Darbyshire & Hoogland* 8395, with almost ripe fruit.

219. *Rhododendron macgregoriae* F. v. M.

var. *macgregoriae*

NEW GUINEA. Northwestern part: Ajamaru, 240 m, *BW* 15235 *Vink*; Tohkiri Mts East, 1250—1520 m, *van Royen & Sleumer* 6895, 7280; Aifat R. Valley, 750 m, path Surerem-Son, *van Royen & Sleumer* 7502, 7838; Isjon R. Valley, 650 m, *van Royen & Sleumer* 6944; Nettoti Mts, S. slope of Mt Nettoti, 1650—1850 m, *van Royen & Sleumer* 7415, 8050; *BW* 10365 *Versteegh*; Kebar Valley, Mt Watjetoni SE. of Andjai, 1200 m, *BW* 10309 *Versteegh*; Arfak Mts, Mt Lensemoi near Minjambau, 1850 m, *BW* 12652 *Versteegh*; Anggi Gigi Lake, near Iray, 2050 m, *Sleumer & Vink* 4419. — Western part: Wissel Lakes area, 1750—2100 m, *BW* 8609, 8614, 8653, 8755, 8808, 8879, 8905 *Vink & Schram*. — Central part: Balim R. Valley, 1650 m, *BW* 10452 *Versteegh*. — Northern part: Cycloop Mts, Mt Rara, 1700 m, *van Royen & Sleumer* 6150, fl. yellow; Sepik Distr.: Lumi Subdistr., Torricelli Mts near Wigote, 1400—1550 m, *Darbyshire* 334, 447, 467; Maprik Subdistr., Ulupu, 120 m, K. Stopp s.n. — Western Highlands: Laigam Subdistr., Lagap Valley, 2400—2600 m, *Hoogland & Schodde* 7403, 7421; Kenaki, 2140 m, PNH 65833 *Quisumbing*. — Eastern Highlands: Mt Wilhelm, E. slope, 2500—2700 m, *Brass* 30810; *Borgmann* 265; Kundiauwa, 1650—2000 m, *Sleumer* 4141. — Southern Highlands: near Mendi, 1585 m, *Schodde* 1326. — Central Distr.: Woitape, NGF 12930 *Corner & Gray*.

var. *glabrifilum* (J.J.S.) Sleum.

NEW GUINEA. Northwestern part: Tamrau Mts, Ije R. Valley, path Sudjak-Mt Kusemun, *van Royen & Sleumer* 7743, 7745; Mt Kusemun, 1400 m, *van Royen & Sleumer* 7786 A; Isjon R. Valley, 750 m, *van Royen & Sleumer* 7837; Aifat R. Valley, 1100 m, *BW* 12916 *Moll*.

220. *Rhododendron orbiculatum* Ridl.—118. *Rhododendron suaveolens* Sleum.

BORNEO. Sarawak: Mt Penrisen near Kuching, *Pae S* 16311; Lawas Distr., Bumbong Rumah, 900 m, *Brunig S* 12368. — N. Borneo: Mt Kinabalu, E. slope, 1220—1830 m, *Collenette* 806, 811.

225. *Rhododendron longiflorum* Lindl.

var. *longiflorum*

BORNEO. Sarawak: Lawas Distr., Bumbong Rumah, 760 m, *Brunig S* 9973. — N. Borneo: Mt Kinabalu, E. slope, 1590 m, *Collenette* 813; Mt Andrassy, Tawau Distr., 600 m, SAN 29439 *Meijer*.

227. *Rhododendron laetum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, Anggi Gita Lake, bivouac 'Noordpool', 1840 m, in swamp, *Sleumer & Vink* 4191; Mt Koëbré ridge above Testega, 2300 m, *Sleumer & Vink* 4264; Iray, Anggi Gigi Lake, in swamp of the Dwons and Iray R., 1930 m, *Sleumer & Vink* 4389; *BW* 614 *Versteegh*; Disrebei ridge near Iray, 2050 m, *Sleumer & Vink* 4416; Mt Koëbré ridge NE. to Mt Tembruk, 2400 m, *Sleumer & Vink* 4481; Mt Lensemoi near Minjambau, 1750 m, *BW* 13915 *Koster*.

230. *Rhododendron aurigeranum* Sleum.

NEW GUINEA. Morobe Distr.: Zenag Mill near Bulolo, 1200 m, *Hoogland & Schodde* 6659; Patep Creek, *Hoogland* 6469; Mumeng Plateau, 1000 m, *Sleumer* 4135.

231. *Rhododendron scabridibracteum* Sleum.

NEW GUINEA. Southern Highlands: Enep, N. of Mendi, 2165 m, *Schodde* 2131; above Kiburu, Mendi Valley, 2070 m, *Schodde* 1443. — Western Highlands: Wabag Subdistr., Merimanta forest, 2440 m, NGF 12585 *Womersley & Vink*.

232. *Rhododendron zoelleri* Warb.

NEW GUINEA. Northwestern part: Kebar Valley, *BW 10343, 10346 Versteegh*; *ibid.*, Nertoi to Mt Tobi, 600—700 m, *van Royen & Sleumer 6850*; between Senop and bivouac Ambuaki, 700 m, *van Royen & Sleumer 7308*; above Sulphur Spring 'Aer Panas' opposite Andjai, 700 m, *van Royen & Sleumer 7331*; path Andjai-Mt Nettoti, 1440 m, *van Royen & Sleumer 8231*; Watjetoni Mts SE. of Andjai, 1000—1200 m, *BW 10325, 10343, 10346 Versteegh*; Arfak Mts, above Warjori R., mouth of Mije R., 1300—1350 m, *Sleumer & Zieck 4495, 4496, 4497*; Mt Beribai, 1000—1050 m, *BW 11469, 11490, 11492 Vink*. — Western part: Japen I., Aisao, 125 m, *BW 11279 Vink*; Wissel Lakes, 1750—1800 m, *BW 2397 Long*; *BW 8598, 8649, 8895 Vink & Schram*. — Central part, Balim Valley, *BW 12540 Versteegh*. — Northern part: Cycloop Mts, near Ormu village, about sealevel, *van Royen & Sleumer 6067* (collected by porter); Baimungun Creek, N. of Dozai village, 450 m, *van Royen & Sleumer 6335*; Tanahmerah Bay, Tablasufa, 10 m, *van Royen & Sleumer 6330*; Torricelli Mts, near Miwanté village, 685 m, *Darbyshire 267*; *ibid.*, along Bliri R. near Wantipi village, 200 m, *Darbyshire & Hoogland 8326, 8336*. — Western Highlands: Wabag Subdistr., NW. of Kompiaam, 1220 m, *Robbins 2981*. — Eastern Highlands: Ayura-Arona, 1650, m, *Brass 31882*. — Southern Highlands: near Gesigi, Lake Kutubu, 760 m, *Schodde 2360*. — Morobe Distr.: Wantoat, S. slope of Finisterre Mts, 1525—1830 m, *NGF 12698 Womersley & Thorne*.

233. *Rhododendron maxwellii* Gibbs

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2440—3050 m, *Chew, Corner & Stainton 1107*; *Collenette 759, 800*.

234. *Rhododendron nervulosum* Sleum.

var. *nervulosum*

BORNEO. W. Borneo: Bt Radja, Schwaner Mts, 1900 m, (top), *Hans Winkler 993* (HBG).

var. *exuberans* Sleum., nov. var. — Foliis maioribus, (7—)9—11 cm longis, (2—)2.5—3.7 cm latis corollaque paullo minore, c. 2.5 cm tantum longa recedit.

BORNEO. Sarawak: Baram Distr., Mt Mulu, path from Sg. Melinau Paku, 1430 m, *Anderson 4596* (K; L, type; SAR), epiphyte in submontane forest, corolla scarlet red.

238. *Rhododendron arfakianum* Becc.

NEW GUINEA. Northwestern part: Nettoti Mts, Mt Nettoti, S. slope, 1600—1650 m, in secondary forest, *BW 10364 Versteegh*; *van Royen & Sleumer 7368*; Arfak Mts, Anggi Gita Lake, near bivouac 'Noordpool', c. 1900 m, *Sleumer & Vink 4227*.

247. *Rhododendron culminicolum* F. v. M.

var. *culminicolum*

NEW GUINEA. Western part: Mt Carstensz, Northwall, 3700 m, *Cooper 12*. — Western Highlands: Kubor Ra., 3410 m, *Saunders 737*. — Eastern Highlands: Marafunga logging area, Upper Asaro Valley, 2400—2500 m, *NGF 14027 Womersley & Sleumer*; Mt Wilhelm, E. slope, at and above the Lakes, 3350—3650 m, *Brass 29860, 29863; Borgmann 39, 370; Sleumer 4158, 4164, 4170*. — Southern Highlands: Mt Giluwe, 3500 m, *Pullen 2879*. — Morobe Distr.: SW. slope of Mt Enggom, Saruwaged, 3100 m, *NGF 16230 van Royen*.

var. *nubicola* (Wernh.) Sleum., *Reinwardtia* 5 (1960) 221. — *R. coenenii* J.J.S., *Nova Guinea* 12, 2 (1914) 132, t. 30 A; *l.c.* 12, 5 (1918) 506; Sleum., *Reinwardtia* 5 (1960) 153 pro syn. *R. hatamense*. — *R. nubicola* Wernh., *Trans. Linn. Soc. Bot.* 9 (1916) 98. — *R. acrocline* Sleum., *Reinwardtia* 5 (1960) 158. — *R. hatamense* (*non* Becc.) Sleum., *l.c.* 153 p.p.

NEW GUINEA. Western part: Wissel Lakes, bivouac Voorrug-Voortop, (1800—)2900 m, *Eyma 5017* (*l.c.* sub *R. hatamense*); Mt Carstensz, (2530—)3200 m, *B. Kloss s.n.* (BM, type of *R. nubicola*); *ibid.*, near

Ertsberg, 3200—3600 m, *Wissel* 182; Oranje Mts, Mt Hellwig, 2500—3600 m, *Pulle* 892, 931; Mt Wilhelmina, Lake Habbema, 3225 m, *Brass* 9141 (A, type of *R. acrocline*; L), 9569; Noordwest R., 2500 m, *Coenen* 28 (BO, type of *R. coenenii*); Mt Goliath, *de Kock* s.n. (cit. J. J. Smith, not seen).

Very similar to the alpine forms of *R. culminicolum* var. *culminicolum* in leaf-shape and -size, but filaments very laxly hairy to glabrous, and the style hairy in the lower half to $\frac{3}{4}$ part.

var. angicense (J.J.S.) Sleum., *nov. stat.* — *R. angicense* J.J.S. Nova Guinea 12, 2 (1914) 133, t. 30 B; in Gibbs, Arfak (1917) 169; Kanchura & Hatusima, Bot. Mag. Tokyo 56 (1942) 478; Sleum. Reinwardtia 5 (1960) 220; Blumea 11 (1961) 128 *pro syn.* *R. culminicolum* var. *culminicolum*. — *R. gibbsiae* J.J.S. in Gibbs, Arfak (1917) 169; Sleum., Reinwardtia 5 (1960) 153, *pro syn. sub R. hatamense*.

NEW GUINEA. Northwestern part: Tohkiri Mts East, path Sururem-Timtum, *van Royen & Sleumer* 6896; Kebar Valley, Adjär, 1100 m, *BW* 6875 *Koster*; between Amomi and Sururem, 900—1200 m, *BW* 6872 *Koster*; Nettoti Mts, summit area of Mt Nettoti, 1940—1980 m, *van Royen* 3883; *BW* 10367 *Versteegh*; *van Royen & Sleumer* 7492; Mt Nettoti, N. slope, path to Wekari R., 1850—1950 m, *van Royen & Sleumer* 8164; Arfak Mts, Anggi Lakes, 1900 m, *Gjellerup* 1039 (BO, L), 1217 (BO, type of *R. angicense*); Anggi Gita Lake, 1850 m, *Gibbs* 5535 (BM, type of *R. gibbsiae*); *ibid.*, 2200 m, *Kostermans* 2069; *ibid.*, Mt Mesenuk (Misinuk), 2150 m, *Sleumer & Vink* 4218; *ibid.*, Mt Kongremotie, 1900—2200 m, *Sleumer & Vink* 4253; Mt Koëbré ridge between Anggi Lakes, 2300 m, *Sleumer & Vink* 4269; between Mt Koëbré and Surerei, Anggi Gigi Lake, 2100 m, *Sleumer & Vink* 4283; between Surerei and Ikeremot village, 2150 m, *Sleumer & Vink* 4397.

252. *Rhododendron retivenium* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, *Smythies* 10623; *ibid.*, Mesilau East route, *Collenette* 599, 626.

253. *Rhododendron lowii* Hook. f.

BORNEO. N. Borneo: Mt Trus Madi, 2440 m, *Collenette* 680; Mt Kinabalu, Mesilau East route, 3235 m, *Collenette* 605, 625; *ibid.*, E. slope, 2745—3350 m, Chew, Corner & Stainton 759, 872, 1101; *Collenette* 771.

253a. *Rhododendron intranervatum* Sleum.

BORNEO. Sarawak: Mt Penrisen near Kuching, *Paie S* 16360.

255. *Rhododendron brookeanum* Low ex Lindl.

var. *brookeanum*

BORNEO. W. Borneo: Upper Serawai R., 140 m, *Hans Winkler* 1232 (HBG). — N. Borneo: Mt Kinabalu, Liwagu R., *Collenette* 644; Mt Trus Madi, 2620 m, *Collenette* 667.

259. *Rhododendron subsessile* Rendl.

PHILIPPINES. Luzon: Mountain Prov., road Baguio-Bontoc, *van Royen & Sleumer* 5613; *PNH* 41588, 41601 *Steiner*; Mt Pulog, 2700—2900 m, *Steiner* 1992; Mt Abbocot, W. of Mt Pulog, 1500 m, *PNH* 40927 *Mendoza*.

2. GAULTHERIA

See Reinwardtia 4 (1957) 163; Blumea 11 (1961) 1.

I. *Gaultheria borneensis* Stapf

BORNEO. N. Borneo: Mt Kinabalu, 3350 m, *SAN* 29284 *Bogle*; *ibid.*, Mesilau East route, 2440 m, fl. fr. 6-8-1960, *Collenette* 565 (K), on exposed crest of spur among bracken, scrub, and grasses; *ibid.*, 2750 m, fl. 16-12-1960, *Collenette* 633, on fairly open, scrub and moss covered ridge.

The Collenette collections represent a special form of *G. borneensis*, a species which never before has been collected on Mt Kinabalu on such a relatively low altitude, the 'alpine' form being exclusively known, up to now, from 3350—4000 m. In the above mentioned collections the branches are more robust and stiff, many-branched, the leaves vary from 1.5—4 by 0.7—1.2 cm, the inflorescences are richer due to the fact, that more numerous upper axils bear a raceme, which results in a panicle when the pertaining leaves are reduced to a bract-like, sometimes early caducous organ. The fruits are reported to be purple. Further collections between 2750 and 3300 m must show, if on Mt Kinabalu two distinct varieties of *G. borneensis* exist.

11. *Gaultheria mundula* F. v. M.

var. *mundula*

NEW GUINEA. Western Highlands: Laiagam Subdistr., Yobobos grassland area, 2600 m, Hoogland & Schodde 7634; Wabag Subdistr., N. slope and summit area of Mt Sugarloaf, 2900—3600 m, Hoogland & Schodde 7118, 7162. — Southern Highlands: Mt Giluwe, 3200—3650 m, Pullen 2881; Schodde 1714, 1943. — Morobe Distr.: Saruwaged Ra., Mt Enggom, 3700 m, NGF 16214 van Royen.

16. *Gaultheria arfakana* Sleum.

NEW GUINEA. Northwestern part: Arfak Mts, Anggi Gita Lake, ascent to Mt Kongremottie, 1950 m, Sleumer & Vink 4248; Nettoti Mts, Mt Nettoti crest, 1900—2000 m, van Royen & Sleumer 7440, 7901, 8067.

16a. *Gaultheria berberidifolia* Sleum., nov. spec. — Frutex terrestris, ramis pendentibus paucis, interdum subprostratis, 0.5—0.8 m longis, apice divaricato-pauceramosis. Rami ramulique teretes, in vivo siccoque rubescentes, dense setis glanduliferis patentibus, ± 2 mm longis, pilisque ceteris tenuibus distaliter tantum obiecti, dense foliati. *Folia* ovata, apice late vel angustius acuminata, glandula parva instructa, basi bene cordata, subsessilia, coriacea, matura in vivo saturate viridia, juniora glaucescentia, in siccō brunnea, utrinque opaca, supra ad costam et petiolum brevissime pilosa, ceterum glabra, subtus initio per faciem laxe glanduloso-setosa, resp. denique rubro-atrescenti-punctata, (2—)2.5—3.5 cm longa, (1.5—)2—3 cm lata, saepius apicem basinque ramulorum versus decrementa, ut maxima in medio ramuli inveniuntur, margine sat anguste serrata (serraturis in setam glanduliferam 1—2 mm longam diutius persistentem abeuntibus, subregularibus, c. 1 mm distantibus et (0.5—)1 mm altis), costa nervisque supra parum vel haud, subtus distinctius prominulis, reticulatione densa utrinque imprimis subtus prominula, rarius supra subimpressa; petioli crassi, c. 1 mm longi. *Paniculae* terminales, erectae, ± coarctatae, multiflorae, e racemis ex axillis foliorum summorum valde vel saepius omnino reductorum ortis, 2—5 cm longis formatae, racemis ex axillis foliorum inferiorum sequentium 1—3 minus vel haud reductorum additis. Rhaches sicut pedicelli pube grisea brevi crispula indutae, haud setosae vel setulosae, sat robustae, dense florigerae. Pedicelli 2—3 mm longi, basi bractea ovato-lanceolata ciliata, apice infra calycem bracteolis 2 ovatis acutis ciliatis 2 mm longis instructi. *Calyx* glaber, lobis anguste ovatis, apice ciliatis, 2 mm longis. *Corolla* anguste urceolata, tenera, albida, glabra, c. 4.5 mm longa, 2 mm diam., lobis 1 mm tantum longis. *Stamina* 10; filamenta linearia, papillosa, 1.5 mm longa; antherae ovato-oblongae, c. 1 mm longae, thecis apice 2-aristatis. *Ovarium* dense pubescens. *Stylus* glaber, c. 2.5 mm longus. *Fructus* maturitate atro-caeruleus, c. 4 mm diam.

NEW GUINEA. Northwestern part: Arfak Mts, Anggi Gigi Lake, summit area of Mt Sensenemes above Surerei, 2550—2600 m, fl. fr. 18—1962, Sleumer & Vink 4311 (A, CANB, G, K; L, type; LAE, P, UC), scattered in open heath-like vegetation on ridge; photographed by the author (but not collected) on ridge just below the summit of Mt Gwamongga, SW. of Surerei, at 2500 m. — Seeds distributed to several Botanic Gardens.

21. *Gaultheria pullei* J.J.S.

var. *pullei*

NEW GUINEA. Eastern Highlands: Pengal Creek in the ascent to Mt Wilhelm, 2660 m, *Sleumer* 4188; Mt Wilhelm, E. slope, 3100 m, *Borgmann* 247. — Southern Highlands: Mt Giluwe, W. summit grassland, 3050 m, *Schodde* 1792. — Morobe Distr.: Edie Creek, 1830—2140 m, NGF 12821 *Womersley & Thorne*,

3. DIPLYCOSIA

See *Reinwardtia* 4 (1957) 119; *Blumea* 11 (1961) 4.

1. *Diplycosia rufa* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2285 m, *Chew, Corner & Stainton* 1058.

2. *Diplycosia chrysothrix* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 1980 m, *Chew, Corner & Stainton* 162.

4a. *Diplycosia abscondita* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 3200 m, *Chew, Corner & Stainton* 776 A.

5a. *Diplycosia schramii* Sleum., nov. spec. — Frutex epiphyticus, ramis elongatis paucis 1—2 m longis apice pauceramosis pendens; ramuli 4—5 mm diam., in partibus novellis densissime, in partibus vetustioribus dense setis rufis brevioribus gracilibus ± crispulis longioribusque robustioribus rectis 2—4 mm longis subappressis eglanduliferis obtecti. *Folia* laxe disposita, late elliptica usque subrotundata, apice breviter attenuata usque subrotundato-obtusa, glandula, terminali prorumpente crassa apiculata, basi late in petiolum attenuata rarius subrotundata, coriacea, in vivo supra saturate viridia, subtus pallidiora, in sicco supra sordide olivacea, subtus rufescens, initio utrinque per faciem et imprimis ad costam nervosque sat dense setis mollibus rufis subappressis instructa, maturitate supra tantum ± glabrescentia, integra, in sicco ad marginem parum revoluta, (4—)4.5—6.5 cm longa, (2.5—)3—4.5(—5) cm lata, costa sicut nervi supra anguste immersa, subtus crasse obtuse prominente, nervis lateralibus utroque latere 2(—3) alte curvato-ascendentibus, pare inferiore e laminae basi, superiore (vel medio) a costa c. 1 cm supra basin oriente, summo minus curvato multoque breviore saepius parum distincto, reticulatione nulla; petioli (4—)5—8 mm longi, 2—3 mm crassi. *Floris* axillares singuli, rarius bini, rarissime terni, corolla glabra excepta omnino indumento ramulorum vel foliorum densissime obtecti. Pedicelli crassi, sub anthesi 5, in fructu usque ad 10 mm longi. Bracteolae ovatae, c. 2 mm longae. *Calyx* cupulatus, tubo brevissimo, lobis ovato-deltoides c. 2.5 mm longis. *Corolla* urceolato-campanulata, tenera, alba c. 4 mm longa, unica in vivo visa in materiis siccis haud conservata. *Stamina* haud cognita. *Ovarium* glabrum; stylus crassiusculus glaber, 2.5 mm longus. *Fructus* initio albido-virescens, maturitate pallide caeruleo-purpurascens, 5—6 mm diam.

NEW GUINEA. Northwestern part: Nettoti Ra., Mt Nettoti, along path on crest and on N. slope (descent to Wekari R.), 1950—1850 m, fl. fr. 29-11 & 3-12-1961, *van Royen, Sleumer & Schram* 7499, 8058 (A, CANB; L, type; LAE) in dense mossy forest, rare.

6. *Diplycosia clementium* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2900 m, *Chew, Corner & Stainton* 902.

8. *Diplycosia lilianae* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, Anggi Gita Lake, Mt Mesenuk (Misjruk), 2150 m, Sleumer & Vink 4219; Mt Koëbré ridge above Testega, between Anggi Lakes, 2300 m, Sleumer & Vink 4265.

Gibbs 5518, the lectotype of *D. lilianae*, was collected on "ridge running up to Angi Lakes, 7500—8000 ft", which corresponds to 2285—2440 m. This altitude is much too high for Mt Mesenuk, which is apparently the place where Miss Gibbs collected her nr. 5518. Comparing the altitudes Miss Gibbs gives for her various collecting places along her Arfak route with those nowadays known with much greater accuracy, it is clear that all altitudes given by her must be reduced considerably. Miss Gibbs says in her book, that she found the altitudes given by Gjellerup from the same places to be too low, but in that point she was certainly wrong. *Diplycosia lilianae* was found by Mr Vink and the author on the way from the Anggi Gita Lake to the top of Mt Mesenuk along the well known 'Lulofspad' from 1900 m on to the summit plateau, the same path Miss Gibbs went down to the Anggi Gita Lake in 1913.

13. *Diplycosia penduliflora* Stapf

BORNEO. N. Borneo: Mt Kinabalu, Pinosuk Plateau, Sg. Bembangan, 1675 m, Chew, Corner & Stainton 1329.

14. *Diplycosia ciliolata* Hook. f.

BORNEO. N. Borneo: Mt Trus Madi, crest of main ridge at 2440 m, Collenette 678 (K); Mt Kinabalu, 1830—2130 m, SAN 21055 Meijer; ibid., Mesilau East route, 3650 m, Collenette 611; ibid., E. slope, 2750—3200 m, Chew, Corner & Stainton 777, 1104, 1118.

21. *Diplycosia rosea* Sleum.

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, 1800 m, van Royen & Sleumer 7438; ibid., top W. of Mt Nettoti, 2100 m, van Royen & Sleumer 7984; N. slope of Mt Nettoti, path to Wekari R., 1750—1900 m, van Royen & Sleumer 8029.

22. *Diplycosia setosa* J.J.S.

NEW GUINEA. Northern part: Cycloop Mts, S. slope, from saddle in the path Ifar-Ormu to Mt Rara and Mt Raveni, 1480—1600 m, van Royen & Sleumer 5953, 6045, 6116; top of Mt Dafonsero, 1500—1570 m, van Royen & Sleumer 6433.

22a. *Diplycosia kosteri* Sleum., nov. spec. — Frutex scandens epiphyticus, divaricato-ramosus. Ramuli subgraciles, in partibus junioribus dense setulis rufescens vel pallidioribus prorsus versis parum patentibus, ± 2 mm longis, in partibus vetustioribus cito cortice longitudinaliter fisso obtecti, laxe foliati. Folia elliptica, rarius subobovato-elliptica, apice late vel latissime attenuata vel rotundata, glandula crassa prorumpente apiculata, basi late vel latissime cuneata, interdum subrotundata, coriacea, in sicco supra olivaceo-brunnea, subtus rufescens, matura supra glabra et lucidula, subtus opaca et per totam faciem dense pilis setulosis suberectis basi nigrescenti-incrassatis iis ramulorum brevioribus induita, margine parum revoluta denseque crenulata, (2.5—)2.8—4.5(—5.5) cm longa, (1.5—)2—3(—3.2) cm lata, e basi et paullo supra basin 5-plinervia, costa nervisque supra leviter anguste impressis, subtus obtuse prominulis, vel saepius subobscuris; petioli 3—5(—6) mm longi, 1.5(—2) mm crassi. Flores axillares singuli vel bini. Pedicelli subgraciles, dense pilis strigosis vel setiformibus, crispis vel parum patentibus ± 1.5 mm longis eglandulosis instructi, sub anthesi 6—7 mm longi. Bracteolae ovatae, c. 1 mm

longae, pilis glandulosis brevibus paucis pilisque tenuissimis brevibus fimbriatae. *Calyx* ad superiore tubi partem et ad lobos subdense pilis rufescens setosis valde appressis ornatus, inferne ad partem valde contractum glaber, tubo 2 mm longo, lobis anguste deltoideis erecto-patentibus acutis, ciliolatis 2.5—3 mm longis. *Corolla* urceolata, basin versus paullo attenuata, rubra vel rosea, interdum lutescens, tenuis, glabra, c. 6 mm longa, inferne 2, superne c. 3 mm diam., lobis c. 1 mm longis reflexis. *Stamina* 10; filamenta filiformia, glabra, 3.5 mm longa; antherae anguste oblongae, tubulis inclusis c. 1.8 mm longae. *Ovarium* glabrum; stylus gracilis, glaber, 4 mm longus. *Fructus* submaturus 1ubesces.

NEW GUINEA. Northwestern part: Wandammen Peninsula, Wondiwoi Mts, 1800 m, fl. 6/8-3-1962, BW 13746 Ch. Koster (L, type), BW 13372 Schram (A, BM, CANB, L); *ibid.*, 800 m, fl. 5-3-1962, BW 13353 Schram (A, BO, CANB, K, L, LAE).

23. *Diplycosia pseudorufescens* Sleum.

var. *elliptifolia* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, Collenette 819.

26. *Diplycosia soror* Becc.

var. *soror*

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, 1650—1700 m, *van Royen & Sleumer* 7363, 7486, 7943; Mt Nettoti top, 1980 m, *van Royen & Sleumer* 8165; N. slope of Mt Nettoti, path to Wekari R., 1750—1950 m, *van Royen & Sleumer* 8072, 8170; Wekari R. camp, 1550 m, *van Royen & Sleumer* 8106, in riverine forest; Arfak Mts, Anggi Gita Lake, Mt Kongremottie, 2200 m, *Sleumer & Vink* 4251; *ibid.*, Mt Koëbré ridge above Testega, 2150—2300 m, *Sleumer & Vink* 4263; *ibid.*, Mt Ukedhot-mamot, 2150 m, *Sleumer & Vink* 4295; Mt Sensenémé above Surerei, Anggi Gigi Lake, 2650 m, *Sleumer & Vink* 4347; Mt Gwamongga, 2300—2550 m, *Sleumer & Vink* 4377, 4381; Mt Saru-mot near Iray, 2320 m, *Sleumer & Vink* 4453; Faksak hinterland, 840 m, BW 12175 Vink.

var. *nuda* Sleum., var. nov. — Ramuli etiam recentissimi glabri, hic inde glandulis sessilibus ornati. *Folia* ut in var. *soror*, sed esetulosa et partim paullo maiora. Flores in statu juvenili tantum visi, ut videtur, ab iis var. *soror* haud diversi.

NEW GUINEA. Northwestern part: Tohkiri Mts East, on crest along path Surerem-Chaquai, 1400 m, 26-10-1961, *van Royen & Sleumer* 7076 (A, CANB; L, type; LAE, US), epiphyte in mossy *Nothofagus* forest; Tamrau Mts East, path from Waumi R. camp to waterdivide, 1400 m, *van Royen & Sleumer* 7142, in primary *Castanopsis-Nothofagus* forest (leaves up to 4.5 by 2.8 cm).

A *Diplycosia*, in leaves very similar to *D. soror*, in bud only, was found in the Cycloop Mts:

NEW GUINEA. Northern part: Cycloop Mts, in forest along, resp. E. of pass between Ifar and Ormu, S. slope, 1220—1340 m, *van Royen & Sleumer* 5921, 6103, epiphytic shrub on *Nothofagus*.

30a. *Diplycosia muscicola* Sleum., nov. spec. — Fruticulus debilis, prostratus, musciculus, ramis ramulisque gracilibus 1—2 mm tantum diam., in partibus novellis sicut petioli dense pilis rufis molliter setulosis (2—)3—4 mm longis et ± patentibus initio subcapitato-glanduliferis obsitis, in partibus vetustioribus cinerascentibus et ± glabrescentibus, subdistiche laxeque foliatis. *Folia* elliptica vel subovato-elliptica, apice breviter acuminata atque glandula sat parva terminata, basi ± late attenuata, subcoriacea, in vivo supra saturate viridia et nitidula, subtus pallidiora, in sicco supra olivacea, subtus brunnea, novella utrinque sat dense ± appresse longe setulosa, maturitatem versus supra glabres-

centia, subitus et ad marginem persistenter setulosa, margine vix revoluto basibus in-crassatis setularum caducarum pseudocrenulata, re vera integra, (2.5—)3—4 cm longa, (1.2—)1.5—2.3 cm lata, supra ± obscure impresse trinervia, ceterum evenia; petioli (4—)5—6 mm longi. *Flores* axillares singuli, rarius bini. Pedicelli gracillimi, (2—)3—4 (—5) mm longi, glabri. Bracteolae ovatae, 1 mm longae, margine pilis glandulosis cristato-fimbriatae. *Calyx* infundibuliformis, viridis, totus 3 mm longus, usque ad medium 5-lobus, glaber, tubo deorsum valde attenuato, lobis ovato-acuminatis, margine ut bracteolae fimbriatis apiceque ipso ciliolatis vel barbulatis. *Corolla* urceolata, in vivo pallide viridis, tenuis, glabra, in sicco 4—4.5 mm longae. *Stamina* 10; filamenta linearia, undata, glabra, 3 mm longa; antherae ovato-oblongae, basi obtusae, cum tubulis 1.5 mm longae. *Ovarium* glabrum; stylus 3—3.5 mm longus, in vivo purpurascens. *Fructus* matus haud cognitus.

NEW GUINEA. Northwestern part: Tamrau Mts East, hunters path from Waumi River to waterdivide W. of Wamsuf top, 1900—1950 m, fl. 2—11—1961, van Royen & Sleumer 7187 (A, BM, CANB; L, type; UC), in dense, ± stunted mossy *Nothofagus*-*Myrtac.*-*Myrsin.*-forest.

34. *Diplycosia morobeensis* Sleum.

var. *morobeensis*

NEW GUINEA. Eastern Highlands: Upper Asaro Valley, Marafunga, 2500 m, NGF 13982 Womersley & Sleumer. — Morobe Distr.: Mt Kaindi, 2140 m, NGF 13916 Womersley & Sleumer; from Edie Creek c. 1½ miles on Bulldog road, 1950 m, NGF 13943 Womersley & Sleumer.

35. *Diplycosia rupicola* Sleum.

NEW GUINEA. Western Highlands: Wabag Subdistr., Upper Ambum Valley, 3140 m, Robbins 3081; Mt Sugarloaf area, 2985 m, Robbins 2881. — Southern Highlands: Mt Giluwe, 2600—3650 m, Pullen 2880; Schodde 1688, 1788, 1944. — Eastern Highlands: Mt Otto, 2750—3540 m, Brass 30987, 31040 (formerly published sub *D. morobeensis* var. *ovatifolia*); Mt Michael, 3560 m, Brass 31423.

35a. *Diplycosia pendens* Sleum., nov. spec. — Fruticulus epiphyticus, a truncu arborum ramis paucis (0.3—)0.5—1 m longis pendens. Ramuli gracilenti, in partibus recentissimis dense, in partibus paullo vetustioribus dense vel laxius pilis setosis rufescentibus eglandulosis ± appressis tantum obteci, deorsum cito glabrescentes, nigrescentes, longitudinaliter striati, 2—3 mm diam., subdensius vel laxe foliati. *Folia* lanceolata, rarium subovato-vel subelliptico-lanceolata, apice breviter attenuata vel subacuminata glandulaque minuta vix prorumpente instructa, basi in petiolum attenuata vel cuneata, subcoriacea, in vivo sordide olivacea, in sicco brunneo-nigrescentia, adulta supra glabra, subtus in facie et secus marginem laxe nigrescenti-setulosa, resp. denique -punctulata, minute crenulata vel subintegra, (1—)1.3—2(—2.2) cm longa, (0.5—)0.6—0.8(—1) cm lata, costa supra angustissime immersa, subtus parum prominente, nervis lateralibus utroque latere 1(—2) alte curvato-ascendentibus, subtus tantum prominulis, vel saepius subobscuris, reticulatione nulla; petioli graciles, c. 1 mm longi. *Flores* axillares singuli, raro bini. Pedicelli 1—2 mm longi, crassiusculi, subdense vel laxius muriculati et pilosiusculi. Bracteolae ovato-acutae, 1 mm longae, ciliolatae, dorso glabrae. *Calyx* campanulatus in vivo viridis, in sicco nigrescens et corrugatus, glaber, totus 2 mm longus, per ¾ long. 5-lobatus, lobis deltoideis subacutis in toto margine ciliolatis, inferne laxe caduce vel haud glandulosi-fimbriatis. *Corolla* urceolata, in vivo pallide viridis, ad lobos purpurascens, glabra, c. 3 mm longa, bene evoluta in vivo tantum visa, cum staminibus citissime caduca, in typi materialibus siccis haud conservata. *Stamina* (ex 8122) 10; filamenta linearia, glabra, 1.3 mm longa; antherae oblongae, basi obtusae, 1 mm longae.

Ovarium in vertice pilis paucis obsitum, ceterum glabrum; stylus gracilis, c. 1.8 mm longus. *Fructus* matus pallide caeruleus, pruinosus, c. 3 mm diam.

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, along path Andjai-Wekari R., 1600—1700 m, fl. fr. 22/30-II-1961, *van Royen, Sleumer & Schram* 7364, 7921 (A, CANB; L, type), pendent from tree trunks 2—3 m above the ground, not rare; *ibid.*, N. slope of Mt Nettoti, Wekari R. camp, 1550 m, fl. 4-12-1961, *van Royen & Sleumer* 8122; Tamrau Mts East, Wamsuf area, above Waumi River in the ascent to the waterdivide, 1900 m, *van Royen & Sleumer* 7182 A, in mossy forest on crest; Tohkiri Mts, eastern part, 1400 resp. 1520 m, *van Royen & Sleumer* 7236, 7295, in mossy forest on crest.

37. *Diplycosia kinabaluensis* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 3200—3650 m, *Collenette* 609; *Chew, Corner & Stainton* 859; near Paka Cave, 3000 m, *SAN* 29282 *Meijer*.

43. *Diplycosia luzonica* (A. Gray) Merr.

var. *luzonica*

PHILIPPINES. Luzon: Mountain Prov., Mt Data, 2000—2140 m, *Steiner* 2139, 2170; Mt Polis, 1900 m, *van Royen & Sleumer* 5619.

var. *calelanensis* (Elm.) Sleum.

PHILIPPINES. Luzon: Mountain Prov., Mt Data-Baguio road, 2000 m, *Steiner* 2214.

47a. *Diplycosia fimbriata* Sleum., nov. spec. — Frutex 3—4.5 m altus, ramulis sat crassis varie obtusangulis, in partibus vetustioribus cortice cinereo basibus setularum punctulatis, in partibus novellis laxe pilis setiformibus glanduloso-capitatis patentibus obtectis. *Folia* elliptica, apice rotundata vel levissime latissimeque retusa, glandula terminali prorumpente apiculata, basi late breviterque in petiolum contracta et decurrentia, coriacea, in sicco supra lucida et punctulata, subtus opaca et subdense per faciem caduce glanduloso-setulosa resp. -punctata, 4—5 cm longa, 2.5—4 cm lata, ad marginem parum revolutum caduce setulosa et subcrenulata, costa supra immersa, subtus bene obtuse prominente, nervis lateralibus pinnatis utroque latere 4(—5) inter sese subparallelis, ascendentibus, ante marginem curvato-anastomosantibus, supra leviter impressis, subtus inferioribus prominulis, superioribus parum visibilibus, reticulatione obscura; petioli crassi, applanati, 1—1.5 cm longi, 1.5—2 mm diam., supra canaliculati, laxe patenter glanduloso-setulosi. *Fasciculi* 3—5(—6)-flori, perulis ovato-acuminatis 1—2 mm longis. Pedicelli graciles, sub plena anthesi 1—1.3 cm longi, subdense patenter glanduloso-setulosi. Bracteolae parvae, dorso glandulis crassis subsessilibus adpersae. *Calycis* tubus cupuliformis, totus 2.5 mm longus, ipsa basi tantum constrictus, lucidus, in sicco corrugatus, glaber; lobi calycini deltoidei, c. 2 mm longi, per totum marginem glandulis crassis sessilibus vel subsessilibus fimbriati. *Corolla* anguste campanulata, tenera, roseo-alba, glabra, tota c. 8 mm longa, basi 2.5, limbo 5—6 mm diam., lobis deltoideis 2 mm longis. *Stamina* 10, aequalia, conniventia, 8 mm longa; filamenta parum undulata, linearia, glabra; antherae elongato-ovatae, parum cordatae, totae 2.5 mm longae, thecis granulatis, tubulis apicem versus angustatis. Disci lobi crassi, 0.5 mm longi, cum filamentis alternantes. *Ovarium* glabrum. Stylus glaber, sat gracilis. *Fructus* ignotus.

BORNEO. Sarawak: Baram Distr., Mt Mulu, path to summit, at c. 2010 m, fl. 29-6-1961, *Anderson* 4533 (K; L, type; SAR), in montane forest on exposed ridge, observed from 1980 m on to the summit at 2380 m.

48. *Diplycosia acuminata* Becc.

BORNEO. Sarawak: Baram Distr., Mt Mulu, 1310 m, *Anderson* 4593.

50. *Diplycosia elliptica* Ridl.

MALAY PENINSULA. Pahang/Selangor border: summit of Pine Tree Hill, 1450 m, Burkhill 2387.
BORNEO. Sarawak: Baram Distr., Mt Mulu, path to summit, 2010 m, Anderson 4532.

53a. *Diplycosia setiloba* Sleum., nov. spec. — Fruticulus epiphyticus, ramis paucis suberectis vel decumbentibus rarius pendentibus (0.3—)0.5—0.8(—1.5) m longis, radicibus crassis carnosus. Ramuli dense setis 2—4(—5) mm longis gracilibus rufis eglandulosis et ± patentibus laxiusque pilis brevissimis albido-cinerascentibus patentissimis (in partibus vetustioribus ramulorum evanescentibus) induti, laxe foliati, 1(—2) mm diam. *Folia elliptica* rarius subovato-elliptica, apice breviter subacuminato-attenuata, glandula minuta paullo prorumpente apiculata, basi late attenuata rarius subrotundata, subcoriacea, in vivo viridia, in sicco characteristice flavescenti-brunnea vel -brunnescentia, initio in utraque facie et secus marginem setulosa (1—2 mm), tarde margine ± excepto glabrescentia resp. subtus denique punctulata, 1.5—2.5 (raro usque ad 3) cm longa, 0.8—1.5(—1.8) cm lata, integra vel apicem versus subcrenulata, triplinervia, maturitate costa pareque nervorum principalium paullo supra basin enascentium supra leviter impressa, subtus subinconspicua, reticulatione nulla; petioli ± 2 mm longae; pseudostipulae nullae vel subnullae. *Flores* exillares solitarii rarius bini. Pedicelli sub anthesi 1(—1.5) mm longi, interdum subnulli, etiam sub fructu vix accrescentes, setulis paucis brevibus glanduliferis pilisque nonnullis muriculatis crispulis tenuioribus obsiti. Bracteolae ovatae, 1 mm longae, margine laxe setulosa et/vel dense piloso-fimbriatae. *Calyx* in vivo viridis, late breviter campanulatus, basi abrupte quasi in pedem contractus, usque ad medium 5-lobus, dorso pilis paucis muriculatis exceptis glaber, lobis 1.3 mm longis, ad marginem inferne setulis initio glanduligeris 0.5—0.8 mm longis cristato-fimbriatis, ultro in superiore marginis parte ciliolatis. *Corolla* subcampanulato-urceolata, in vivo pallide viridescens vel viridescenti-cremea, in vivo 5 mm longa, 3—4 mm diam., in sicco 4 mm longa, glabra, tenuis, lobis reflexis c. 1 mm longis. *Stamina* 10; filamenta linearia, glabra, undata, 2 mm longa; antherae oblongae, basi subsagittatae vel retusae, c. 1.8 mm longae, thecis papillosis vel brevissime pubescentibus. *Ovarium* in vertice pilis paucis longis ornatum, ceterum glabrum; stylus gracilis, glaber, 3 mm longus. *Fructus* maturus ad calycis lobos accrescentes violascens vel caerulescens (capsula sepalis pallidiore), c. 5 mm diam.

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, path Andjai-Wekari R., c. 1650 m, fl. 30-11-1961, van Royen, Sleumer & Schram 7923 (A, CANB; L, type), epiphytic shrublet; Tohki Mts, path Sururem-Chaquai, on crest at 1400 m, fl. fr. 26-10-1961, van Royen & Sleumer 7075, in mossy *Nothofagus* forest; Tamrau Mts East, path from Waumi E. to waterdivide W. of Wamsuf, 1900 m, fl. fr. 2-11-1961, van Royen & Sleumer 7182, in dense *Nothofagus-Podocarpus-Rapanea*-forest; Arfak Mts, Mt Saru-mot near Iray, 2050 m, fl. 26-1-1962, Sleumer & Vink 4449, in submossy *Nothofagus* forest.

55. *Diplycosia pinifolia* Stapf

BORNEO. N. Borneo: Mt Kinabalu, 1525—1830 m, SAN 23498 Meijer.

55a. *Diplycosia lavandulifolia* Sleum., nov. spec. — Frutex terrestris, interdum scandens, ut videtur parvus. Ramuli in partibus recentissimis pilis patentibus puberuli laxeque longe setosi, ultro pilis laxis apice glanduloso-incrassatis ornati, in partibus paullo vetustioribus glabri, basibus setarum et/vel pilorum glandulosorum tantum instructi, cito cortice tenuissimo mox caduco obtecti, in partibus vetustis striato-corticati et omnino glabri. *Folia* linearia, sat laxe disposita et ± patentia, vel paullo reflexa, subcoriacea, apice breviter vel sensim subacute attenuata vel acuminata, glandula minuta terminata,

basi breviter in petiolum attenuata, recentissima tantum secus marginem distanter longe setulosa, matura glabra, sed subtus laxe brunneo-punctulata, integra, ± plana, 4—7(—8) cm longa, 1.5—2.5(—3) mm lata, costa supra bene immersa, subtus parum vel haud visibili, nervis venisque nullis; petioli 1—1.5 mm longi. *Flores* axillares, singuli vel bini. Pedicelli crassiusculi, glabri, 1.5—2 mm longi. Bracteolae graciliter glandulosofimbriatae. *Calyx* glaber, cum lobis c. 3 mm longus, tubo in sicco ruguloso, basi sat breviter abrupteque contracto, lobis ovato-deltoides, obtusis, c. 1.2 mm longis, per totum marginem subdense glandulis sat crassis (haud pilis) fimbriatis. *Corolla* urceolata, ample aperta, tenera, in vivo albida vel cremeo-viridescens, glabra, c. 4 mm longa, 2.5 mm diam., lobis fere 1 mm longis. *Stamina* 10; filamenta linearia, glabra, 2 mm longa; thecae ovato-acuminatae, granulatae, c. 1.8 mm longae, basi obtusae. *Ovarium* glabrum; stylus gracilis, glaber, sub anthesi fructuque immaturo c. 2.5 mm longus. *Fructus* matus haud visus, immaturus ex coll. cremeo-albidus.

BORNEO. Sarawak: Baram Distr., Melinau Terraces, N. of Mt Benarat, 120 m, fl. 14-7-1961, Anderson 4611 (K; L, type; SAR), abundant in padang in centre of peat swamp forest; Ulu Melinau, 180 m, fl. 8-1958, Brunig S 1045, low climber in padang forest on terrace; Limbang Distr., Ulu Medalam, flat terrace at S. Terikan, 60 m, fl. 27-4-1958, Brunig S 10511, in kerangas forest.

62. *Diplycosia memecyloides* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, Chew, Corner & Stainton 901, 1291.

73. *Diplycosia edulis* Schltr.

NEW GUINEA. Northwestern part: Nettoti Mts, crest of Mt Nettoti, 1900—2100 m, van Royen & Sleumer 7459, 7983, 8208; ibid., N. slope, Wekari R. camp, 1550 m, van Royen & Sleumer 8112, in riverine forest; Arfak Mts, Mt Saru-mot near Iray, Anggi Gigi Lake, 2320 m, Sleumer & Vink 4451; Mt Tembruk between Anggi Lakes, summit area at 2510 m, Sleumer & Vink 4482.

76. *Diplycosia urceolata* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2750 m, Chew, Corner & Stainton 916.

81. *Diplycosia punctulata* Stapf

BORNEO. N. Borneo: Mt Kinabalu, 1220—1525 m, SAN 21049 Meijer; ibid., E. slope, 1680 m, Chew, Corner & Stainton 1864.

82. *Diplycosia cinnamomifolia* Stapf

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2895—3600 m, Collenette 789; Chew, Corner & Stainton 831, 864, 1124.

83a. *Diplycosia salicifolia* Sleum., nov. spec. — Frutex. Ramuli subteretes, longitudinale striati, glabri, ± pruinosi. *Folia* lanceolata, apicem versus longe gradatim vel plerumque ± caudatim attenuata, acuta, glandula apicali minuta instructa, basi in petiolum cuneata, subcordacea, in sicco supra pallide sordide olivacea, subtus brunnescens, utrinque opaca, subtus laxe punctulata, ceterum omnino glabra, margine ipso parum revoluta, primo visu integra, sed vero remote minuteque subserrato-crenulata, 7—12 cm longa, 1.2—2 cm lata, infra medium lastissima, costa supra per totam longitudinem impressa, subtus bene obtuse prominente, nervis lateralibus utroque latere unicis a costa paulo supra laminae basin orientibus, praeter marginem alte curvato-ascendentibus, apicem

laminae versus excurrentibus, supra parum immersis, subtus inferne prominulis, ceterum ± obscuris, nervis vel venis ceteris numerosioribus pinnatis interque sese subparallelis supra levissime impressis vel obscuris, subtus invisibilis; petioli supra canaliculati, 0.6—1 cm longi, c. 1.5 mm crassi. *Fasciculi* (2—)3—6-flori. Pedicelli subgraciles, brevissime subappressed pilosi pilisque crassioribus brunnescentibus subglandulosis paucis infra calycem induti, 7—10 mm longi. Bracteolae bene carinatae, dorso breviter pilosae. *Calyxis tubus* obconicus, c. 2 mm longus, usque ad medium bracteolis obtectus; lobi calycini deltoidei, obtusi, 2 mm longi, breviter subglanduloso-fimbriati, dorso glabri. *Corolla* campanulata, valde aperta, virescenti-albida, tenera, c. 7 mm longa, limbo 5—6 mm diam., glabra, lobis 5 reflexis c. 1 mm longis. *Stamina* 10; filamenta linearia, glabra, c. 3 mm longa, subundulata; antherae 2.5 mm longae, elongato-ovatae, basi breviter cordatae, apice acuminato-attenuatae, valde granulatae. *Ovarium* glabrum vel circa stylum pilis nonnullis obsitum; stylus glaber, gracilis, sub anthesi per c. 2 mm exsertus, totus 5.5 mm longus. *Fructus* ignotus.

BORNEO. Sarawak: Baram Distr., Mt Mulu, path to summit, fl. 2-7-1961, *Anderson* 4537 (K, type; SAR), in montane forest on exposed ridge at 2010 m, said to occur up to 2200 m, rather rare.

84. *Diplycosia heterophylla* Bl. var. *latifolia* (Bl.) Sleum.

BORNEO. Sarawak: Baram Distr., Mt Mulu, 1160—2010 m, *Anderson* 4534, 4564; Mt Api, 885—1190 m, *Anderson* 4288, 4739.

4. VACCINIUM

See *Blumea* 11 (1961) 9.

2. *Vaccinium ingens* Sleum.

NEW GUINEA. Morobe Distr.: Edie Creek near Wau, 1980 m, NGF 13488 *Womersley & Sleumer*; *ibid.*, on road to Bulldog, 1950 m, NGF 13942 *Womersley & Sleumer*.

3. *Vaccinium fissiflorum* Sleum.

NEW GUINEA. Eastern Highlands: Marafunga, Upper Asaro R. Valley, 2500 m, NGF 14009 *Womersley & Sleumer*. — Western Highlands: Wabag Subdistr., Yaki R. Valley, 2440 m, Hoogland & Schodde 6886.

4. *Vaccinium keysseri* Schltr. ex Diels var. *keysseri*

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 3350—3500 m, Borgmann 43; Sleumer 4153; Mt Michael, c. 3300 m, NGF 11471 *Womersley*. — Western Highlands: Mt Sugarloaf complex, 3100 m, Hoogland & Schodde 7223. — Southern Highlands: Mt Giluwe, 2985 m, Schodde 1805.

5. *Vaccinium amplifolium* F. v. M. var. *stabipes* (Sleum.) Sleum.

NEW GUINEA. Eastern Highlands: Marafunga, Upper Asaro R. Valley, 2500 m, Sleumer 4138.

var. *oblongum* Sleum.

NEW GUINEA. Eastern Highlands: Mt Otto, 3460 m, Brass & Collins 31031.

10. *Vaccinium monanthum* Ridl.

BORNEO. Sarawak: Baram Distr., Mt Api, 855—915 m, *Anderson* 4291, 4746.

14. *Vaccinium kemulense* J.J.S.

BORNEO. Sarawak: Baram Distr., Mt Mulu, 1065 m, *Anderson* 4567.

16. *Vaccinium sulcatum* Ridl.

BORNEO. Sarawak: Serian Distr., Simanggang road, 53d mile, *Beg & Jara* 12715.

19. *Vaccinium uroglossum* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 1615 m, *Chew, Corner & Stainton* 1781.

21. *Vaccinium bigibbum* J.J.S.

BORNEO. W. Borneo: Lebang Hara, 150 m, *Hans Winkler* 1171 (HBG). — Sarawak: Sibu Distr., Lassa, 3 m, *Anderson R 16*; Kapit Distr., Bt Raya, 180 m, *Anderson* 14739.

24. *Vaccinium moultonii* Merr.

BORNEO. W. Borneo: Bt Raja, 1250 m, *Hans Winkler* 889 (HBG). — N. Borneo: Ranau, above Hot Springs, 600—750 m, *SAN 26455 Meijer*.

25a. *Vaccinium andersonii* Sleum., nov. spec. — Frutex epiphyticus. Ramuli subteretes, cinerascentes vel rubescentes, glabri, hic inde lenticellis subrotundis minutis obsiti. *Folia* laxius vel densius disposita, subovato- usque oblongo-elliptica, apice \pm 1 cm longe acuminata, apice ipso obtusiuscula, basi subtruncato-rotundata rarius subcordata, coriacea, firma, in sicco supra pallide olivacea et nitidula, subtus brunnescentia et opaca, supra parum convexa secusque costam bene impressa, integra, glabra, setulis glandulosis subtus vix visibilibus, utroque latere basi ipsa iuxta petiolum glandula impressa parum conspicua praedita, integra, (5—)6—10 cm longa, 3—4.5 cm lata, 7— usque sub-9-plinervia, costa supra parum, subtus valde elevata, nervis utroque latere 3 (vel 4) e basi et 1—2 cm supra basin a costa abeuntibus (pare altiore interdum addito), supra levissime, subtus parum prominentibus, rete venarum venularumque subdenso supra sat inconspicuo, subtus bene visibiliter prominulo; petioli 4—5 mm longi, 1.5—2 mm lati. *Racemi* axillares suberecti, laxe multiflori, perulis subulatis paucis brevibus; rhachis gracilis, sicut bracteolae, pedicelli, calyces et corolla laxe pilis albidis brevissimis glandulisque muriculatis brunnescentibus brevibus obsita, 4—7 cm longa. Pedicelli graciles, sub anthesi 2—4 mm longi, medio vel supra medium bibracteolati. *Calyx* campanulatus, tubo basi subtruncato, vix 1 mm alto, lobis acute deltoideis c. 0.6 mm longis, margine glanduloso-fimbriatis et ciliolatis. *Corolla* urceolata, cremea, extus imprimis ad angulos laxe pilosula et muriculata, intus glabra, c. 4 mm longa, 2.5 mm diam., lobis vix 1 mm longis. *Stamina* 10, alternatim paullo longiora; filamenta linearia, ipsa basi glabra, ceterum omnino albido-villosula, \pm 1.5 mm longa; thecae ovatae, echinulatae, 0.4 mm longae, dorso biaristatae; tubuli angusti, 1 mm longi. *Discus* subdense brevipilosus. *Stylus* gracilis, ad inferiorem $\frac{1}{2}$ partem laxe patent-pilosulus, c. 3 mm longus. *Bacca* subglobosa, glabra, ad apicem truncatum disco puberulo ornata, c. 5 mm diam.

BORNEO. Sarawak: Baram Distr., Mt Api, 915 m, fl. 11-7-1961, *J. A. R. Anderson* 4704 (L, fragm.; SAR, type); *ibid.*, 1220 m, fl. 12-7-1961, *Anderson* 4733.

26. *Vaccinium leptanthum* Miq.***f. leptanthum***

MALAY PENINSULA. Johore: near Kota Tinggi-Mersing road, *Sinclair* 10627.

BORNEO. Sarawak: Miri Distr., Mt Subis, 120 m, *Anderson* S 16048.

29. *Vaccinium villosiflorum* J.J.S. — 30. *Vaccinium pilosiflorum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Mesenuk, Anggi Gita Lake, 2150 m, *Sleumer & Vink* 4223; Mt Kongremottie, 2000—2200 m, *Sleumer & Vink* 4242, 4243, 4244; Mt Koëbré ridge above Testega, Anggi Gita Lake, 2100—2300 m, *Sleumer & Vink* 4262, 4279; Mt Sensenemés above Surerei, Anggi Gigi Lake, 2450—2600 m, *Sleumer & Vink* 4315, 4325; *ibid.*, Mt Gwamongga, 2250—2570 m, *Sleumer & Vink* 4368, 4387; Tidjei ridge near Iray, Anggi Gigi Lake, 2150 m, *Sleumer & Vink* 4421; *ibid.*, Mt Saru-mot, 2300—2350 m, *Sleumer & Vink* 4441, 4450, 4456, 4457.

The above cited collections comprise the compact terrestrial form with numerous erect branches and elliptic to ovate-elliptic leaves, the slender, few-stemmed terrestrial form with pendent branches and ± ovate leaves, both in ± open places or forest edges, furthermore terrestrial erect and epiphytic pendent forms within the dense mossy forest with more ovate and caudate-acuminate leaves. It cannot be doubted, that all these belong to one species, though they may be constant forms, adapted to their respective habitats.

31. *Vaccinium finisterrae* Schltr.

NEW GUINEA. Southern Highlands: Ebenda, Anga Valley, 1980—2135 m, *Schodde* 1630, 1649. — Morobe Distr.: Upper Zaran Creek, Mt Saruwaged area, 3000 m, *NGF* 16159 *van Royen*.

33. *Vaccinium hatamense* Becc.

NEW GUINEA. Northwestern part: Arfak Mts, near Surerei, Anggi Gigi Lake, 2050—2150 m, *Sleumer & Vink* 4396; Mt Beribai, 1900 m, *BW* 11466 *Vink*.

A specimen very similar in leaves, flowers galled, was found in the central part of the Cycloop Mts, on the NE. slope of Mt Rara, 1580 m, *van Royen & Sleumer* 6044.

36. *Vaccinium versteegii* Koord.

NEW GUINEA. Northwestern part: Tohkiri Mts East, summit area, 1520 m, *van Royen & Sleumer* 7286; Tamrau Mts, central part, Ije R. Valley, path from Sudjak village to Mt Kusemun, 840 m, *van Royen & Sleumer* 7744.

44. *Vaccinium cyclopense* J.J.S.***f. cyclopense***

NEW GUINEA. Northern part: Cycloop Mts, S. slope, path Ifar-Ormu, 1220 m camp, *van Royen & Sleumer* 5889; *ibid.*, ascent to Mt Riveni, 1600 m, *van Royen & Sleumer* 5951; Mt Rara, top, 1700 m, *van Royen & Sleumer* 6151; Mt Dafonsero, 1550 m (top), *van Royen & Sleumer* 6434. — Northwestern part: Tohkiri Mts East, summit area, 1520 m, *van Royen & Sleumer* 7296 A; Nettoti Mts, crest of Mt Nettoti, 2000 m, *van Royen* 3871; *van Royen & Sleumer* 7458; *ibid.*, S. slope at 1650 m, *van Royen & Sleumer* 7922; *ibid.*, top W. of Mt Nettoti, 2100 m, *van Royen & Sleumer* 7982; *ibid.*, Wekari R. camp, 1550 m, *van Royen & Sleumer* 8107; Arfak Mts, Mt Kongremottie, Anggi Gita Lake, 2200 m, *Sleumer & Vink* 4255; Mt Saru-mot near Iray, Anggi Gigi Lake, 2050—2320 m, *Sleumer & Vink* 4454; Mt Antop near Minjambau, 1800—1850 m, *BW* 13847, 13952 *Koster*. — Morobe Distr.: Edie Creek near Wau, 1830—2135 m, *NGF* 10451 *Womersley*; *NGF* 11051 *Womersley*; *NGF* 12247 *Womersley & Millar*. — Sepik Distr.: Lumi Subdistr., Torricelli Mts, Mt Somoro, 1370—1400 m, *Darbyshire* 309, 330.

***f. glabrum* Sleum.**

NEW GUINEA. Northwestern part: Tohkiri Mts East, summit area, 1520 m, *van Royen & Sleumer* 7296; Tamrau Mts East, above Waumi R. near waterdivide, 1900 m, *van Royen & Sleumer* 7186; Nettoti Mts,

S. slope of Mt Nettoti, 1650 m, *van Royen & Sleumer* 7351; *ibid.*, crest W. of Mt Nettoti top, 2100 m, *van Royen & Sleumer* 7982 A; Arfak Mts, above bivouac 'Noordpool', Anggi Gita Lake, c. 1950 m, *Sleumer & Vink* 4226; Wandammen Peninsula, Wasior hinterland, 1800 m, *BW* 13766 *Koster*; *ibid.*, Wondiwoi Mts, 1800 m, *BW* 13373, 13413 *Schram*; *BW* 13718 *Koster*.

52. *Vaccinium whiteanum* Sleum.

SOLOMON Is. Bougainville: Crown Prince Mts, 1525 m, *NGF* 13704 *Corner*.

56a. *Vaccinium haematochroum* Sleum., nov. spec. — *Fruticulus semi-prostratus vel decumbens, parce ramosus, usque ad 35 cm altus. Ramuli tenues, dense foliati, recentissimi sicut petioli hic inde pilo longo albido induiti, maturitate glaberrimi. Folia elliptica, apice basique late subrotundato-attenuata, utroque latere parum supra basin glandula marginali parva impressa instructa, subcoriacea, in sicco supra cinerascentia, subtus dilute brunnescentia, 5—7 mm longa, 3—4 mm lata, integra, subtus laxe pilis tenuibus glandulosis adspersa ceterum glabra, costa nervisque utroque latere 2 basalibus et dimidio costae enascentibus supra subobscuris, subtus prominulis; petioli 1—1.5 mm longi. Flores axillares singuli, pedunculo nullo. Pedicelli nutantes, graciles, glabri vel apice pilis glandulosis paucis patentibus induiti, 2—3 mm longi. Calyx glaber, tubo subcylindrico, basi truncato, c. 0.6 mm longo, lobis deltoideis glandula apicali minuta instructis, eciliatis, 0.8 mm longis. Corolla ovoidea-urceolata, apicem versus bene attenuata, sanguinea, carnosula, extus glabra, intus ad orem tantum pilosula, c. 5 mm longa, inferne 2.5—3 mm diam., lobis vix 1 mm longis. Stamina 10; filamenta linearia, inferne laxe subpatenter longeque albido-pilosa, c. 2.5 mm longa; thecae late oblongae, echinulatae, c. 1.4 mm longae; tubuli thecis aequilati, brevissimi, ore subrotundo aperti. Discus crassus glaber. Stylus graciliter columnaris, glaber, 3.5 mm longus. Fructus ignotus.*

NEW GUINEA. Western part: Wessel Lakes, between Motito and Munajepa, 1820 m, fl. 19-5-1960, *BW* 8736 *Vink & Schram* (L, type).

61. *Vaccinium globosum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Mesenuk, Anggi Gita Lake, 2150 m, *Sleumer & Vink* 4220; *ibid.*, Mt Kongremottie, 1950—2200 m, *Sleumer & Vink* 4241; Mt Sensenemés above Surerei, Anggi Gita Lake, 2500 m, *Sleumer & Vink* 4313; *ibid.*, Mt Gwamongga, 2300 m, *Sleumer & Vink* 4382. — Western part: Wessel Lakes, N. of Kebo, 1800 m, *BW* 8819 *Vink & Schram*; Wandammen Peninsula, Wondiwoi Mts, 1800 m, *BW* 13402 *Schram*.

62. *Vaccinium leptospermoides* J.J.S. f. *leptospermoides*. — 46. *V. urnigerum* Sleum.

NEW GUINEA. Northwestern part: Nettoti Mts, Mt Nettoti, 1940 m, *BW* 10373 *Versteegh*; *ibid.*, crest of the Nettoti Mts, 1900—2100 m, *van Royen & Sleumer* 7441, 7912, 7981; Tamrau Mts East, Wamsuf area, waterdivide above Waumi R., 2000—2080 m, *van Royen & Sleumer* 7203; Arfak Mts, ascent to Mt Tembruk from Iray, between Anggi Lakes, 2450 m, *Sleumer & Vink* 4485.

A close investigation on Mt Nettoti, from where *V. urnigerum* was described on base of its ± elliptic leaves, has shown, that there occur also forms with more oblong-obovate leaves which cannot be separated from *V. leptospermoides* f. *leptospermoides*. Furthermore, the same glabrescence of calyx and disk can be found within the populations on open ground in full sun or in more shadowy places and in epiphytic specimens of this species which had been observed in the Arfak Mts before.

f. *glabrum* J.J.Sm.

NEW GUINEA. Northwestern part: Tamrau Mts East, path from Waumi R. camp to waterdivide, in moss forest at 1850—1950 m, *van Royen & Sleumer* 7185 (only this form found here); *ibid.*, in open vege-

tation near and on the waterdivide, 2000—2080 m, *van Royen & Sleumer 7203 A* (found together with *f. leptospermoides*); Nettoti Mts, in crest W. of Mt Nettoti, 2100 m, *van Royen & Sleumer 7981 A* (together with *f. leptospermoides*); Arfak Mts, ascent to Mt Mesenuk, 1900—2150 m, *Sleumer & Vink 4213*; Mt Kongremottie, Anggi Gita Lake, 2200 m, *Sleumer & Vink 4240*; descent from Mt Koëbré to Anggi Gigi Lake, 2300 m, *Sleumer & Vink 4288*; Mt Sensenemés, Anggi Gigi Lake, 2430 m, *Sleumer & Vink 4354*.

68. *Vaccinium pullei* J.J.S.

NEW GUINEA. Western part: Wissel Lakes, 1750—2300 m, *BW 8606, 8845, 8918 Vink & Schram*; Arfak Mts, Mt Antop near Minjambau, 1800 m, *BW 13855 Koster*.

70. *Vaccinium amblyandrum* F. v. M.

var. *amblyandrum*

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 3350—4100 m, *Borgmann 53; Brass 29899 (US)*; Mt Michael, upper NE. slopes, 3050—3650 m, *NGF 11484 Womersley; Brass 31427 (US)*. — Southern Highlands: Mt Giluwe, 3650 m, *Schodde 1942*.

var. *pungens* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 3000—3400 m, *Brass 30546; Sleumer 4161; Borgmann 22*. — Western Highlands: Wabag Subdistr., Mt Sugarloaf, 2900 m, *Hoogland & Schodde 7155*; SW. of Laiagam patrol post, 2440 m, *Robbins 3293*. — Southern Highlands: Mt Giluwe, 3200 m, *Schodde 1717*; near Kobilinye, Ialibu patrol post, 2040 m, *Pullen 2729*.

73. *Vaccinium prostratum* Sleum.

NEW GUINEA. Morobe Distr.: Upper Zaran Creek, Mt Saruwaged, 3000 m, *NGF 16147, 16160 van Royen*.

76. *Vaccinium kostermansii* Sleum.

NEW GUINEA. Northwestern part: Tohkiri Mts East, crest at 1250—1400 m, *van Royen & Sleumer 6910, 7079*; Tamrau Mts East, path from Waumi R. camp to waterdivide, 1800 m, *van Royen & Sleumer 7179*; Arfak Mts, Anggi Gita Lake, ascent to Mt Kongremottie, 1950—2100 m, *Sleumer & Vink 4249*.

85. *Vaccinium spaniotrichum* Sleum.

NEW GUINEA. Western part: Wissel Lakes, Monauglito, S. of Munajepa, 2300 m, *BW 8834 Vink & Schram*.

95. *Vaccinium ampullaceum* Sleum.

NEW GUINEA. Eastern Highlands: above Kegsugl, path to Pengatl Creek, 2550—2700, *Borgmann 267; Sleumer 4184*.

98. *Vaccinium wisselianum* Sleum.

NEW GUINEA. Western part: Wissel Lakes, 1750 m, *BW 8900, 8950 Vink & Schram*.

99. *Vaccinium thibaudifolium* Wernh.

NEW GUINEA. Sepik Distr.: Telefomin, 1370 m, *NGF 9099, 9329 Womersley*.

113. *Vaccinium myrtoides* (Bl.) Miq.

PHILIPPINES. Luzon: Mountain Prov., Baguio, 1220 m, *Hoogland 4073*; Mt Pulog, 2200 m, *Steiner 1953*; Mt Data, 2000 m, *Steiner, van Royen & Sleumer 2216*.

122. *Vaccinium minuticalcaratum* J.J.S.**f. *minuticalcaratum***

NEW GUINEA. Western part: Wissel Lakes, near Kebo, 1770 m, *BW 8921 Vink & Schram.*

f. *glabrum* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, crest above Warjori R., mouth of Mijei R., c. 1350 m, *Sleumer & Zieck 4491*; Mt Lensemoi near Minjambau, 1750 m, *BW 13913 Koster.*

125. *Vaccinium paradisearum* Becc.

NEW GUINEA. Northwestern part: Arfak Mts, Anggi Gita Lake, ascent to Mt Kongremottie, 1950 m, *Sleumer & Vink 4239*; Mt Sensenemés above Surerei, Anggi Gigi Lake, 2550—2650 m, *Sleumer & Vink 4314*; Mt Saru-mot near Iray, Anggi Gigi Lake, summit at 2350 m, *Sleumer & Vink 4440.*

126. *Vaccinium megalophyes* Sleum.

NEW GUINEA. Central part: Balim R. Valley, near Wiligimaan, 2000 m, *BW 12553 Versteegh.*

134. *Vaccinium muriculatum* J.J.S.

NEW GUINEA. Northwestern part: Tamrau Mts East, above Waumi R. camp, 1850 m, *van Royen & Sleumer 7175*; Nettoti Mts, S. slope of Mt Nettoti, 1650—1750 m, *van Royen & Sleumer 7367, 7480*; Arfak Mts, Mt Gwamongga, Anggi Gigi Lake, 2250 m, *Sleumer & Vink 4384.*

139a. *Vaccinium aitapense* Sleum., nov. spec. — Arbuscula, in omnibus partibus exterioribus glabra. Ramuli subteretes, graciles, laxe foliati. *Folia* lanceolato-oblonga, saepius parum infra medium latissima, apice per 2—3 cm caudato-acuminata, acumine ipso haud raro leviter falcato, subacuto, basi in petiolum cuneata, in parte basali per 2—3 mm contracta paulloque revoluta, basi ipsa utroque latere glandula crassiuscula prominula instructa, subcoriacea, in sicco dilute brunnea supraque nitidula, integra, plana, 5—8 cm longa, (1.5)—1.8—2.5(—3) cm lata, e basi et usque ad 1.3 cm supra basin 5—7-plinervia, costa supra plana vel levissime impressa, subtus imprimis inferne obtuse prominente, nervis basalibus et subbasalibus alte curvato-ascendentibus, alteris superioribus vel venis a costa abeuntibus brevioribus minus curvatis, nervis omnibus anastomosantibus et supra parum vel haud, subtus bene visibiliter prominulis, reticulatione in foliis maturis supra subobscura, subtus sat densa et prominula; petioli rubescentes, 4—5 mm longi, c. 1 mm crassi. *Racemi* ex axillis superioribus foliigeris et inferioribus iam defoliatis nonnullis orti, oblique patentes, sat densiflori; rhachis gracilis, 2.5—4 cm longa, perulis haud visis. Pedicelli graciles, 3—4(—5) mm longi, bracteis bracteolisque sub anthesi iam caducis, haud cognitis. *Calycis tubus* late cupulatus, vix 1 mm altus, limbus patens, lobis deltoideo-ovatis, ciliolatis, 0.5 mm longis, glandula apicali parentibus. *Corolla* urceolato-tubulosa, tenera, rosacea, sub anthesi in sicco (3.5)—4 mm longa, fere 2 mm diam., utrinque glabra, lobis reflexis 0.5 mm longis. *Stamina* 10; filamenta subulata, in inferiore tertio villosa, ceterum glabra, 2 mm longa; thecae anguste oblongae, papilloae, 0.5—0.6 mm longae; tubuli thecis fere aequilati, ± divergentes, valde oblique scissi, poro oblongo apicem versus attenuato pollen demittentes, pariete postico in dentem c. 0.5 mm longum extenuati, toti ± 1 mm longi, ad dentes vel ad orem hic inde glandula stipitata tenuissima instructi. *Discus* glaber, valde crassus, 0.5 mm altus. *Stylus* gracilis, glaber, 4 mm longus, denique parum exsertus. *Fructus* ignotus.

NEW GUINEA. Sepik Distr.: Aitape Subdistr., near Wantipi village, on Bliri R., 245 m, *Darbyshire & Hoogland 8370* (A, BO, BRI; CANB, type; K, L, LAE, PNH, US), in tall forest.

142. *Vaccinium albicans* Sleum.**var. *albicans***

NEW GUINEA. Eastern Highlands: above Kundiawa, 1600—2100 m, *Sleumer* 4142; Keglsugl, Upper Chimbu R. Valley, 2600 m, *Borgmann* 294; *ibid.*, Goglime, 2200 m, *Borgmann* 420. — Morobe Distr.: Finisterre Mts, near Wantoat, 1525 m, NGF 11894 *Womersley & Thorne*; Mt Kaindi summit, 2200 m, NGF 13921 *Womersley & Sleumer*. — Western Highlands: between Wapenamanda and Wabag, 1980 m, *Robbins* 2889.

var. *pubens* Sleum.

NEW GUINEA. Morobe Distr.: Edie Creek near Wau, 1525 m, NGF 11032 *Womersley*.

143. *Vaccinium daphniphyllum* Schlr.

NEW GUINEA. Northern part: Torricelli Mts, Mt Somoro, Lumi Subdistr., 1370 m, *Darbyshire* 322.

146. *Vaccinium simulans* Sleum.**var. *simulans***

BORNEO. N. Borneo: Crocker Ra., Mt Alab, 1680 m, SAN 21896 *Meijer*.

148. *Vaccinium pachydermum* Stapf

BORNEO. Sarawak: Baram Distr., Mt Mulu, 1310—2000 m, *Anderson* 4228, 4530; *Parsons* S 15087. — N. Borneo: Mt Kinabalu, 2750—3050 m, *Smythies* 14411; SAN 22022 *Meijer*; *ibid.*, E. slope, Chew, Corner & Stanton 1060, 1105; *Colletette* 763.

149. *Vaccinium elliptifolium* Merr.

BORNEO. N. Borneo: Mt Kinabalu, 2285 m, *Smythies* 14420.

152. *Vaccinium clementis* Merr.

BORNEO. W. Borneo: Bt Raja, *Hans Winkler* 1055 (HBG). — Sarawak: Kuching Distr., Bako Nat. Park, *Brunig* S 10410; Mt Santubong, 600 m, *Bujang* 12997; Lundy Distr., Mt Berumput, 1430 m, *Smythies* 13151; Sebuyau Distr., Laukau lori, 100 m, *Brunig* S 4670; Baram Distr., Mt Api, 915 m, *Anderson* 4708; Mt Mulu, 2000 m, *Anderson* 4538, 4541. — N. Borneo: Mt Kinabalu, Sg. Letong, 1830 m, SAN 24125 *Meijer*.

152a. *Vaccinium stenanthum* Sleum., nov. spec. — Frutex vel arbor parva, usque ad 5 m alta. Ramuli obtusanguli, graciles, glabri, in partibus recentioribus siccis brunnecenti-cinerascentes. *Folia* obovata, apice latissime attenuata et obtusa, plerumque rotundata, haud retusa, glandula apicali nulla, basin versus late cuneata, ipsa basi breviter rotundata, glandulis basalibus subinconspicuis, coriacea, firma, in sicco pallide olivacea vel brunnescentia, opaca, subtus laxe minutissime adpresso glanduloso-setulosa, ceterum glabra, integra, plana, 3.5—6(—6.5) cm longa, (1.5—)2—4.5(—5) cm lata, e basi 5-nervia, pare altero nervorum 1—3 cm supra basin a costa abeunte similiterque alte curvato-ascendente addito, nervis aliis brevioribus seu venis cum costa nervisque supra leviter vel haud, subtus semper bene prominulis, rete venarum manifesto, sat denso; petioli rugulosi, 2—3 mm longi, ± 1 mm crassi; gemmae axillares steriles subdeltoideae vel crasse subulatae, 0.5—1 (raro usque ad 1.5) mm longae, parum conspicuae. *Racemi* erecto-patentes, axillares, laxe florigeri, in omnibus partibus exterioribus glabri; rhachis gracilis 3—4 cm longa. *Pedicelli* sub anthesi graciles, 2—3 mm longi. *Calyx* viridis,

subturbinatus, tubo c. 2 mm longo, lobis ovatis, obtusis, 1 mm longis, apice glandula subcrassa, margine utroque latere glandulis minoribus crassis nonnullis brunneis adspersis et ciliolato-fimbriatis. *Corolla* anguste tubulosa, apicem versus sensim angustata, aperta haud visa, colore haud cognita, carnosula, c. 8 mm longa, inferne 2—2.5 mm diam., etiam intus glabra, lobis vix 1 mm longis. *Stamina* 10; filamenta inferne linearia, sursum angustiora, usque fere ad apicem albo-villosula, c. 4 mm longa; thecae oblongae, echinulatae, dorso apice bicalcaratae, 1 mm longae, tubuli thecis angustiores, ore rotundo paullo dilatati, c. 0.5 mm longi, glandulis nonnullis stipitatis obsiti. *Discus* crassus, 10-lobus, inferne glaber, superne dense albo-pilosus. *Stylus* columnaris, ad inferiorem $\frac{1}{3}$ partem dense subappressed pilosus, superne glaber, 7 mm longus. *Infructescentiae* (*Brunig S 7634, 7650*) laxae, 3—6(—8) cm longae; pedicelli fructiferi 0.7—1.3(—1.5) cm longi, crassiusculi. *Bacca* submatura globosa, 5—6 mm diam.

BORNEO. Sarawak: Kuching Distr., Mt Bungoh, 1065 m, fr. 9-10-1957, *Brunig S 7634, 7650*; Bintulu Distr., Batu Eklap, Merurong plateau, 1035 m, *Brunig SK 331, 332*, in open moss forest. — Brunei: Batu Ketam, Ulu Ingei, c. 260 m, fl. 19-6-1959, *Ashton BRUN 5603* (L, type; SAR), in extreme 'kerangas' heath forest on hard sandstone ridge; flowers (especially anthers) possibly galled and not fully developed.

156. *Vaccinium coriaceum* Hook. f.

BORNEO. N. Borneo: Mt Kinabalu, 2600 m, *SAN 22044 Meijer*.

157. *Vaccinium staphianum* Sleum.

var. *staphianum*

BORNEO. N. Borneo: Mt Kinabalu, E. slope, 2895—3600 m, *Chew, Corner & Stainton 1117; Collenette 785*.

var. *minus* Sleum.

BORNEO. N. Borneo: Mt Kinabalu, 1525—1830 m, *SAN 23837, 24118 Meijer*.

158. *Vaccinium horizontale* Sleum.

NEW GUINEA. Morobe Distr.: Edie Creek road near Wau, 1980 m, *NGF 13486 Womersley & Sleumer*.

159. *Vaccinium bancanum* Miq.

var. *bancanum*

BORNEO. W. Borneo: Upper Serawai R., 140 m, *Hans Winkler 1230* (HBG). — N. Borneo: Tambunan, *SAN 19860 Meijer*; Buli Simsims, 60 m, *SAN 19180 Meijer*.

161. *Vaccinium tenuipes* Merr.

PHILIPPINES. Luzon: Mountain Prov., Mt Pulog, 2600 m, *Steiner 2006*.

164. *Vaccinium molle* J.J.S.

var. *molle*

NEW GUINEA. Northwestern part: Nettoti Mts, crest of Mt Nettoti, 1950 m, *van Royen & Sleumer 7443*; Kebar Valley, Watjetoni Mts SE. of Andjai, 1200 m, *BW 10308 Versteegh*; Arfak Mts, Bivouac 'Noordpool', Anggi Gita Lake, 1850 m, *Sleumer & Vink 4196*; along shore of Anggi Gita Lake, path to Testega, 1850 m, *Sleumer & Vink 4234*; descent from Mt Koébré to Anggi Gigi Lake, path to Surerei, 2200 m, *Sleumer & Vink 4284*; Mt Sensenemés above Surerei, Anggi Gigi Lake, 2600 m, *Sleumer & Vink 4310*; *ibid.*, Mt Gwamongga, 2350 m, *Sleumer & Vink 4378*; crest above Warjori R., mouth of Mije R., 1350 m, *Sleumer & Zieck 4503*.

var. *mollissimum* (Sleum.) Sleum., nov. stat. — 163. *V. mollissimum* Sleum., Bot. Jahrb. 72 (1942) 266.

NEW GUINEA. Western part: Wissel Lakes, 1820 m, BW 8738 Vink & Schram. — Western Highlands: Wabag area, Upper Ambum Valley, 2600 m, Robbins 3097. — Eastern Highlands: Pengatl Creek to Mt Wilhelm, 2700—2800 m, Brass 30416; Borgmann 234. — Morobe Distr.: Mt Kaindi, 2000 m, Brass 29510; Edie Creek, 1980—2000 m, Brass 29142; Sleumer 4133.

164a. *Vaccinium auriculifolium* Sleum., nov. spec. — Frutex 1.2—3 m altus, interdum scandens, ramis distaliter breviter ramosis, ramulis dense molliter et patenter brevipilosus, innovationibus rosaceis. *Folia imbricata*, ovata vel elliptico-ovata, apice late breviter attenuata vel saepius subacuminata, apice ipso obtusa vel subacuta, basi profunde auriculato-cordata, auriculis caulem haud amplectentibus, coriacea, utroque latere prope petiolum glandula marginali parva instructa, juniora sicut inflorescentiae et infructescientiae dense molliterque brevipilosa, tarde in utraque facie praecipue supra glabrata et nitidula, etiam plane matura subtus ad basalem costae partem et ad petiolum adhuc pilosula, in secco virescenti-brunnescentia, integra, plana, (2.5—) 3—6 cm longa, (2—)2.5—4.5(—5) cm lata, magnitudine irregularia, superiora generaliter decrescentia, auriculis 1—1.5 cm diam., 7—9-plinervia, nervis ceteris superioribus a costa abeuntibus 3—4, nervis omnibus inter sese curvato-conjunctis utrinque ut costa prominentibus, venis venulisque utrinque dense reticulato-prominentibus; petioli parum applanati, 1.5—3 mm longi, 1.5—2 mm crassi. *Racemi* ex axillis superioribus 1—2 orti, (3—)4—8(—12)-flori, subumbellato-congesti; rhachis brevis, raro usque ad 1 cm longa. Pedicelli robusti, 3—5 mm longi, bractea basali foliacea, persistente, ovata, ovato-elliptica vel -lanceolata, 0.5—1 cm longa et lata fulti. *Calycis tubus* campanulatus, 1—1.5 mm altus, lobii erecti deltoidei 1—1.5 mm longi, glandula apicali parva glabra instructi. *Corolla* subgloboso-urceolata, depressa, c. 4 mm alta, 5—6 mm diam., ore vix 2 mm diam. aperta, carnosa, pallide vel intensius rosacea, extus omnino, intus in superiore parte tantum albido-pilosula, lobis reflexis 0.7 mm longis. *Stamina* 10; filamenta subulata, villosa, 1.5 mm longa; thecae late oblongae, sublaeves, 1—1.2 mm longae; tubuli thecis aequilati, poro obliquo hiantes, 0.3—0.4 mm longi. *Discus* crassus, laxe brevipilosus. *Stylus* 3 mm longus, c. 1 mm crassus, glaber. *Fructus* maturus subglobosus, 7—8 mm diam., nigrescenti-purpureus, apice truncatus discoque crasso lobos calycinios haud accrescentes denique superante coronatus, pedicello fructifero 5—7 mm longo.

NEW GUINEA. Western Highlands: Range S. of Wabag, 2285 m, fl. fr. 8-7-1960, R. G. Robbins 2912 (CANB, type); Porget logging area, Merimanta, Wabag Subdistr., 2140 m, NGF 11090 Womersley. — Southern Highlands: near Ebenda, Anga Valley, 1980 m, fr., Schodde 1647 (A, CANB, K, L, LAE); near Kombeni, W. of Lalibu, 2010 m, Pullen 2692; ibid., near Onim, 2135 m, Pullen 2721.

165a. *Vaccinium adenotrichum* Sleum., nov. spec. — Frutex scandens epiphyticus. Ramuli in partibus junioribus obtuse triquetri, in partibus vetustioribus obtusanguli 3—6 mm diam., glabri, laxe foliati. *Folia* obovata vel oblongo-ovata, apice ± rotundata, basi in petiolum cuneata breviterque decurrentia, utroque latere glandula basali crassa instructa, coriacea, in secco supra cinerascenti-viridia, subtus brunnescentia, subdenseque glanduloso-muriculata vel -punctulata, ceterum glabra, integra, margine parum, basin versus magis breviter revoluta, 6—8.5 cm longa, 2.5—5 cm lata, costa supra sat plana, subtus inferne petioli crassitudine valdeque obtuse prominente, sursum gradatim angustiore minusque elevata, apice fere obsolete, nervis basalibus utroque latere 1 vel 2, alte praeter marginem curvato-ascendentibus apice laminae conjunctis, superioribus pinnatim a costa ortis 6—8 inter sese subparallelis, subrectis, marginem petentibus ibique cum nervis basalibus anastomosantibus, nervis omnibus utrinque

parum prominentibus, rete venarum sat denso subtus tantum distinctius prominulo, supra saepius \pm obscurio; petioli applanati, 5—6 mm longi, \pm 2 mm crassi. *Racemi* ex axillis superioribus nonnullis arti, abbreviati, 5—8-flori; rhachis 0.5—1 cm longa, subdense vel laxius glanduloso-muriculata; perulae ovatae usqua oblongae, membranaceae, ciliolatae, 3—8 mm longae, 3—5 mm latae, cito caducae. Pedicelli crassiusculi, sub anthesi ebracteati, inferne laxe, superne densius glanduloso-muriculati, ultro superne laxe pilosi, 8—12 mm longi. *Calyx* omnino dense glanduloso-muriculatus breviterque pilosus, tubo late campanulato, basi rotundato, 1.5 mm longo, lobis deltoideis, subacutis, \pm patentibus, 1.5 mm longis, glandula apicali parentibus. *Corolla* urceolata, carnosa, purpurea, 7—8 mm longa, inferne 3—4, infra lobos 2—3 mm diam., extus infima basi glabra, ceterum \pm dense glanduloso-muriculata et supra medium simul breviter pilosa, ore glabrescens, intus in inferiore dimidia parte \pm glabra, superne dense longepilosa, ad lobos glabrescens, lobis ovato-oblongis vel oblongis 1.5—2 mm longis, \pm erectis. *Stamina* 10; filamenta subulata, dense pilis patentibus subsetulosis brunneis instructa, c. 1.3 mm longa; thecae oblongae, manifeste echinulatae, 1.5 mm longae; tubuli thecis paullo angustiores, 0.7 mm longi, poro obliquo magno hiantes. *Discus* prominens glaber. *Stylus* crasse columnaris, 4 mm tantum longus. *Fructus* haud visus.

NEW GUINEA. Northwestern part: Central Tamrau Mts, S. slope, path from Sudjak village to Mt Kuse-mun, Ije R. Valley, near Aiwa R., 840 m, fl. 7-11-1961, van Royen & Sleumer 7729 (A, CANB; L, type), in riverine forest.

169a. *Vaccinium ambivalens* Sleum. nov. spec. — Frutex 3—4(—5) m altus. Ramuli obtusanguli, glabri, laxe foliati. *Folia* elliptica rarius pro parte in eodem specimine elliptico-oblonga, apice breviter vel longius (1—2 cm) obtuse vel saepius subacute acuminata, basi in petiolum cuneata breviterque decurrentia, glandula marginali utroque latere parva, impressa, basali vel a petiolo paullo remota, coriacea, in vivo supra saturate viridia et lucida, subtus pallidiora, in siccо cinerascenti-viridescentia, subtus laxe pilis glandulosis brevissimis appressis induita, ceterum glabra, integra, plana, 6—9(—12) cm longa, (2—)3—5(—5.5) cm lata, e basi et parum supra basin 9—11-plinervia, costa in siccо supra leviter impressa, subtus prominente, nervis alte curvato-ascendentibus et ante marginem anastomosantibus, utrinque parum, sed bene visibiliter elevatis, reticulatione valde manifesta, densa, in vivo levissime impressa, in siccо utrinque, imprimis supra, prominula; petioli a dorso compressi, supra sulcati, 5—8(—9) mm longi, 1—1.5 mm crassi. *Racemi* ex axillis penultimis solitarii, abbreviati, laxe (4—)5—8-flori, subsecundi; rhachis subgracilis, 1.5—3(—4) cm longa, laxe glanduloso-muriculata, denique glabrescens; perulae ovatae vel elliptico-ovatae, apiculatae, membranaceae, glabrae, 0.7—1 cm longae, 0.5—0.7 cm latae. Pedicelli virides, \pm curvati, robusti, laxe vel laxissime glanduloso-muriculati, 6—10 mm longi, bracteis crasse membranaceis, lanceolato-oblongis c. 1 cm longis citissime caducis, bracteolis haud visis. *Calyx* viridis, tubo campanulato, basi rotundato, 2—2.5 mm alto, dense pilis brevissimis glandulisque muriculatis rufescientibus obsito, lobis erecto-patentibus, late subacute ovatis, ciliolatis, dorso multo laxius pilosis et muriculatis, vel distaliter glabrescentibus, 1.5 mm longis, glandula apicali nulla. *Corolla* urceolato-cylindrica, carnosa, albida vel rosea, utrinque glabra, in vivo 9 mm longa et c. 6 mm diam., in siccо c. 7 mm longa et \pm 4 mm diam., lobis 1 mm longis denique reflexis. *Stamina* 10; filamenta linearia, initio inferne laxe brevissime patenti-pilosula, superne glabra, vel sub plena anthesi omnino glabra, 2—2.5 mm longa; thecae oblongae, papillosae, 1.5 mm longae, tubuli thecis fere dimidio angustiores, 0.8 mm longi, apice poro obliquo hiantes. *Discus* pallide viridis, glaber. *Stylus* albescens, graciliter columnaris, glaber vel laxe usque subdense patenter brevipilosus, 5—6 mm

longus. *Bacca* submatura globosa, apice truncata, laxe glanduloso-muriculata et pilosa, c. 7 mm diam., pedicello robusto ± 1 cm longo.

NEW GUINEA. Northwestern part: Tohkiri Mts East, on crest in path from Sururem to Timtum, 1250 m, fl. fr. 21-10-1961, van Royen & Sleumer 6888 (A, CANB, K, G; L, type; LAE, UC); Wandammen Peninsula, Wondiwoi Mts, 1100—1800 m, BW 13317, 13426 Schram; ibid., Wasior hinterland, 920 m, BW 13699, 13701 Koster.

173a. *Vaccinium crenatifolium* Sleum., nov. spec. — Frutex laxe ramosus, (1.5)—2—4 m altus, in omnibus partibus exterioribus glaber; ramuli rubescentes, angulati, sat graciles laxeque foliati; gemmae axillares florigerae subglobosae, perulis ovatis. *Folia* anguste elliptica vel oblonga, apice breviter obtusiuscule acuminata, basi in petiolum cuneata breviterque decurrentia, in sicco supra olivacea, subtus sordide brunnea, juvenilia praecipue subtus nitida, per totam marginem parum revolutam regulariter crenulata, crenaturis margini impressis, 2—3 mm inter se distans, in sicco nigrescentibus itaque valde distinctis, subtus laxe glanduloso-muriculata vel -punctata, 3—5(—5.5) cm longa, 1.5—2(—2.7) cm lata, costa supra ± distincte impressa, subtus obtuse prominente, nervis lateralibus utroque latere 2—3 e basi et parum supra basin enascentibus, alte curvato-ascendentibus, ceteris 1 vel 2 brevioribus minus distinctis a costa orientibus additis, omnibus utrinque prominulis, vel haud raro supra sat obscuris, reticulatione laxa, subtus ± distincte prominula, interdum inconspicua; petioli rubescentes, rugosuli, supra canaliculati, 4—5(—6) mm longi, 1—1.5 mm lati. *Racemi* ex axillis superioribus 1—3 orti, oblique erecti, subsecundi, floribus nutantibus, normaliter numerosioribus; rhachis angulata, subgracilis, (1.5)—2—3 cm longa, perulis sub anthesi nullis. Pedicelli sat robusti, ± curvati, sub anthesi 3—5 mm longi, bracteis basalibus vel bracteolis nullis. *Calyx* viridis, tubo campanulato, basi subtruncato, 1—1.3 mm alto, lobis ovato-triangularibus, ciliolatis, c. 1 mm longis, apice glandula glabra in vivo viridescente crassa instructis. *Corolla* urceolato-cylindrica, sordide rubescens vel virescens vel virescenti-cremea, interdum rosacea, haud raro rubescenti-suffusa, in vivo 7(—8) mm longa, in sicco ± 5 mm longa, 2 mm diam., nondum bene matura extus laxe brevissimeque glanduloso-muriculata, matura extus intusque glabra, lobis pallidioribus vel albidis, reflexis, vix 1 mm longis. *Stamina* 10; filamenta subulata, basi ipsa angustata et glabra, supra basin paullo dilatata et usque fere ad apicem villosa, 1.5 mm longa; thecae oblongae, angulatae, echinulatae, 0.7 mm longae; tubuli thecis paullo angustiores, 0.5 mm longi, apice obliqui scissi. *Discus* in vivo lutescens, glaber. *Stylus* sat gracilis, glaber, 4—5 mm longus. *Fructus* matus globosus, c. 4 mm diam., denique saturate azureo-purpureus.

NEW GUINEA. Northwestern part: Nettoti Mts, crest of range incl. top of Mt Nettoti, path Andjai-Wekari R., 1750—1960 m (top), fl. fr. Nov. & Dec. 1961, van Royen & Sleumer 7448, 7493, 7494 (A, CANB, G, K; L, type; LAE, UC), 8053, 8054, 8172; BW 10371 Versteegh.

187. *Vaccinium retivenium* Sleum.

BORNEO. N. Borneo: Crocker R.a., Mt Alab, 1740 m, SAN 21889 Meijer; Mt Kinabalu, above Kundasan, 1525—1830 m, SAN 24124, 24189 Meijer; ibid., Pinosuk plateau, 1525 m, Chew, Corner & Stainton 2178.

189. *Vaccinium angicense* Kaneh. & Hatus.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Koëbré, E. slope, 1950 m, Sleumer & Vink 4258; Mt Koëbré ridge between Anggi Lakes, 2200—2250 m, Sleumer & Vink 4267, 4292; Mt Gwamongga, Anggi Gigi Lake, 2230 m, Sleumer & Vink 4379; near Iray, Anggi Gigi Lake, 2050—2100 m, BW 612 Versteegh; Sleumer & Vink 4420.

190. *Vaccinium cruentum* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 2800—3560 m, *Brass* 29817, 30710 (US); *Borgmann* 85; *Sleumer* 4154, 4176; Mt Otto, S. slope, 3040 m, *Brass* 30948 (US), with glabrous calyx tube. — Southern Highlands: W. summit grasslands of Mt. Giluwe, 3350—3655 m, *Schodde* 1791, 1933.

192. *Vaccinium cavendishoides* Sleum.

NEW GUINEA. Northwestern part: Kebar Valley, Watjetoni Mts SE. of Andjai, 1200 m, *BW* 10302 *Versteegh*; Nerto opposite Andjai, 700 m, *van Royen & Sleumer* 6849; between Senop village and bivouac Ambuaki, open place on white sand, 700 m, *van Royen & Sleumer* 7301; above Sulphur Spring 'Aer Panas' opposite Andjai, 700—750 m (= type locality: *van Royen* 5014), *van Royen & Sleumer* 7342, 8247 A; above Areini village, 800 m, *van Royen & Sleumer* 8247; Ajamaru, 240—260 m, *BW* 15232, 15246, 15364 *Vink*; Arfak Mts, Mt Beribai, 740 m, *BW* 11491 *Vink*; Mt Genofa near Kaimana, 1100 m, *BW* 10269 *Versteegh*.

195. *Vaccinium clooxylon* J.J.S.

BORNEO. Sarawak: Lundu Distr., Mt Berumput, 1220 m, *Smythies* 13167; Baram Distr., Mt Mulu, 1340—1550 m, *K. Anderson & Keng*; *Anderson* 4216. — N. Borneo: Mt Kinabalu, 1220—1525 m, *SAN* 21048 *Meijer*; *ibid.*, E. slope, 2440—3050 m, *Colenette* 765; *Chew, Corner & Stainton* 925, 1122.

196a. *Vaccinium xerampelinum* Sleum., nov. spec. — *Arbuscula* vel *frutex*, 3—4 m altus. Ramuli in partibus recentissimis obtusanguli subdenseque patenter puberuli, ceterum sicut in omnibus plantae partibus alteris glabri, laxe foliati; gemmae axillares subglobulares, 1—1.5 mm diam. *Folia* elliptico-oblonga, apice late attenuata, obtusata, basi in petiolum cuneata breviterque decurrentia, glandula basali utroque latere parum prominente instructa, coriacea, in vivo supra saturate viridia et lucida, subtus pallidiora, in sicco supra sordide viridia, subtus atrescenti-brunnea, opaca, subtus passim impresse glanduloso-atropunctata, integra, margine parum vel haud revoluta, 3—5.5 cm longa, 1.5—2.5 cm lata, costa supra in sicco leviter immersa, subtus prominente, nervis lateralibus utroque latere basalibus et parum suprabasalibus 2—3(—4) alte curvato-ascendentibus, nervis ceteris vel venis a costa abeuntibus brevioribus nonnullis irregularibus, omnibus supra leviter vel vix, subtus distinctius prominulis, rete venularum sat denso subtus tantum ± prominulo; petioli applanati, 3—5 mm longi, 1.5—2 mm crassi. *Racemi* ex axillis superioribus 1—3 orti, erecti, sat densiflori, subsecundi; rhachis angulata, nitida, 3—8 cm longa; perulae haud visae. Pedicelli sicut calyces in vivo virides vel rubescens-suffusi, sat robusti, saepius leviter curvati, sub anthesi (5—)6—8(—10) mm longi, bracteis bracteolisque nullis. *Calycis tubus* subcampanulatus, basi ± truncatus, 1.5—2 mm altus, lobi subpatentes, ovati, obtusi, ciliolati, 1.5 mm longi, glandula apicali nulla. *Corolla* cylindrico-urceolata, ceraceo-carnosa, purpurea, tenuiter pruinosa, in vivo 12 mm longa, 6—8 mm diam., in sicco 7—8 mm longa, c. 3 mm diam., utrinque glabra, lobis ovatis, reflexis, tubo pallidioribus, c. 1 mm longis. *Stamina* 10; filamenta purpurascens, supra basin valde subrotundato-dilatata et villosa, sursum anguste linearia sensimque glabrata, 2.5 mm longa; thecae late oblongae, angulatae, echinulatae, 1.2 mm longae; tubuli thecis aequilati, 0.6 mm longi, apice oblique scissi, pariete posteriore utriusque tubuli in dentem brevem vel in dentes 2 breves acutos extenuato; pollen *xerampelinum*. *Discus* prominens glaber, in vivo cremeus. *Stylus* pallide viridis, graciliter columnaris, inferne glaber vel laxe pilosus, in superiore ½ vel ⅔ parte laxius usque densius pilis brevibus vel longioribus albidis obsitus, in sicco 6—7 mm longus, breviter exsertus. *Fructus* deest.

NEW GUINEA. Northwestern part: Nettoti Mts, top W. of Mt Nettoti crest, 2100 m, fl. 1-12-1961, *van Royen & Sleumer* 7985 (A, CANB, G, K; L, type; LAE, P, UC), in low mossy forest.

199. *Vaccinium phillyreoides* Sleum.

BORNEO. N. Borneo: Crocker R.a., Mt Alab, 1220—1850 m, SAN 21934 Meijer.

201a. *Vaccinium schoddei* Sleum., nov. spec. — Arbuscula laxa vel frutex, interdum scandens, in omnibus partibus exterioribus glaber, caulis, ut videtur, paucis, gracilibus, teretibus, distaliter breviter ramosis. *Folia* subdense disposita, pro parte subimbricata, generaliter sursum decrescentia, ovata, apicem versus breviter attenuata vel subacuminata, apice ipso subacuta vel saepius obtusata, basi auriculata, lobis caulem ± amplectentibus c. 1 cm diam., pare glandularum marginalium prope petiolum inserto sat inconspicuo, coriacea, in sicco supra cinerascenti-virescentia, subtus saepius brunnescentia, (3—) 4—8 cm longa, (2—)2.5—4(—5) cm lata, integra, vix revoluta, 7—9-plinervia, nervis ceteris superioribus a costa pinnatim abeuntibus irregularibus utroque latere 3—4, omnibus curvatis et ante marginem conjunctis, supra in sicco cum costa levissime impressis, subtus prominentibus, rete venarum venularumque denso utrinque vel subtus tantum prominulo; petioli sicut costa rubescentes, 2—4(—5) mm longi, 1.5—2 mm crassi. *Racemi* ex axillis summis 1—3 orti, subsecundi, pauci- usque multiflori, in sicco rubescentes; rhachis angulata, (1—)2—4(—5) cm longa; perulae haud visae. Pedicelli curvati, robusti, 0.8—1.3(—1.5) cm longi, infra calycem incrassati. *Calycis tubus* obconicus, basi truncatus, nitidus, in sicco ut corolla purpureus et pruinosis, 2—2.5 mm longus, lobi erecto-patentes, deltoidei, ciliolati, 2—2.5 mm longi, glandula apicali carentes. *Corolla* urceolato-cylindrica, carnosa, in vivo viridis et rubescenti-suffusa vel purpurascens, 11—12 mm longa, inferne 4—5 mm diam., intus inferne laxe pilosula, ceterum glabra, lobi 1 mm tantum longis. *Stamina* 10; filamenta basi ipsa glabra et dilatata, sursum gradatim angustiora et villosa, c. 3.5 mm longa; thecae oblongae, fere leaves, 1.2 mm longae; tubuli thecis subaequilati, 0.8 mm longi, poro magno obliquo scissi. *Discus* pulvinaris glaber. *Stylus* graciliter columnaris, 1 cm longus. *Fructus* submaturus globosus, 5—6 mm diam., lobis calycinis erectis haud accrescentibus coronatus.

NEW GUINEA. Southern Highlands: Mt Giluwe summit grasslands, 3050—3150 m, fl. 16—8—1961, R. Schodde 1741, 1862 (CANB, type; L, LAE). — Western Highlands: Wabag Subdistr., N. slopes of Mt Sugarloaf, 2900 m, Hoogland & Schodde 7192; Hagen Subdistr., Mt Hagen, 3350 m, Robbins 1051.

210. *Vaccinium capillatum* Sleum.

NEW GUINEA. Central part: Balim R. Valley, near Wiligimaan, 1800 m, BW 10472 Versteegh.

211. *Vaccinium reticulato-venosum* Sleum.

NEW GUINEA. Eastern Highlands: Arau, 1400 m, Brass 31952. — Morobe Distr.: Edie Creek (Kaindi) near Wau, 1830—2135 m, NGF 12244 Womersley & Millar; NGF 12839 Womersley & Thorne; Brass 29518.

213. *Vaccinium apiculatum* Sleum.

NEW GUINEA. Southern Highlands: W. summit grasslands of Mt Giluwe, 3140 m, Schodde 1709. — Western Highlands: summit area of Mt Sugarloaf, 3650 m, Hoogland & Schodde 7120.

218. *Vaccinium acrobracteatum* K. Schum. — 109. *Vaccinium papuanum* J.J.S.

NEW GUINEA. Northwestern part: Kebar Valley, Mt Tobi SE. of Andjai, 840 m, BW 7961 Schram; Nerto to Mt Tobi, 600—700 m, van Royen & Sleumer 6851; Neentjepaki near Andjai, 1100 m, BW 6386 Kalkman; Nettoti Mts, crest of Mt Nettoti, 1950 m, van Royen & Sleumer 7498; ibid., S. slope, path Andjai-Wekari R., 1650—1750 m, van Royen & Sleumer 7900 (glabrescent form), 8055, 8056; Wekari R. camp, 1550 m, van Royen & Sleumer 8109; Tamrau Mts, Central part, Mt Kusemun near

Sudjak, 1400 m, *van Royen & Sleumer 7806*; Isjon R. Valley, hills E. of Son village, 750 m, *van Royen & Sleumer 7833*. — Northern part: Sarmi Subdistr., Sidoarsi Mts, 660 m, *BW 9050 Iwanggin*; Cycloop Mts, ridge E. of pass between Ifar and Ormu, 1340 m, *van Royen & Sleumer 6104*; NE. slope of Mt Rara, 1580 m, *van Royen & Sleumer 6043*; Torricelli Mts, Lumi Subdistr., peaks c. 4 miles N. of Wigote village, 1550 m, *Darbyshire 474*. — Central part: Balim R. Valley, Hokoligi, 1600 m, *Heider 4*. — Morobe Distr.: Mt Kaindi near Wau, 2250 m, *Brass 2958*; Edie Creek near Wau, 1830 m, *NGF 12824 Womersley & Thorne*; *ibid.*, road to Bulldog, 1950 m, *NGF 13939 Womersley & Sleumer*.

222. *Vaccinium gjellerupii* J.J.S.

NEW GUINEA. Northwestern part: Arfak Mts, along shore of Anggi Gita Lake, near bivouac 'Noord-pool', 1850 m, *Sleumer & Vink 4238*; *ibid.*, Mt Kongremottie, 1900—2000 m, *Sleumer & Vink 4245, 4246*; *ibid.*, descent to Testega, 1920 m, *Sleumer & Vink 4247*; Mt Koëbré, between Anggi Lakes, 2100 m, *Sleumer & Vink 4291*; above Iray, path to Testega, Anggi Gigi Lake, 2140 m, *Sleumer & Vink 4422*.

222a. *Vaccinium dictyoneuron* Sleum., nov. sp.

var. *dictyoneuron*

Frutex erectus, 2—4 m altus, in omnibus partibus exterioribus glaber; ramuli apicibus rubescentes, nitiduli; gemmae axillares ovoideae, subacute, c. 2 mm longae. *Folia* subdense disposita, elliptica, apice breviter, haud raro subabrupte obtuse acuminata, basi late in petiolum attenuata paullumque decurrentia, coriacea, firma, in vivo supra saturate viridia, subtus pallidiora, in siccо cinereo-olivacea vel -brunnescentia, subtus brunnea, saepius nitida, utroque latere ad basin vel in apice petioli glandula minuta instructa, *integra*, (4—)4.5—7.5 cm longa, 2.5—4(—5) cm lata, e basi et paullum supra basin (7—)9—11-nervia, nervis primariis ceteris superioribus a costa abeuntibus brevibus 1 vel 2 additis, supra etiam in vivo aliquot impressis, subtus prominentibus, venis venulisque rete sat densum supra in siccо saepius, subtus semper bene prominulum formantibus; petioli in siccо nigrescentes, parum applanati, supra sulcati, 5—8 mm longi, 1.5—2 mm lati. *Racemi* ex axillis superioribus paucis orti, oblique suberecti, basi perulis numerosis ovatis usque oblongis 6—10 mm longis et ± 4 mm latis cito caducis fulti; rhachis 3—4.5 cm longa, subcrassa. Pedicelli robusti, sub anthesi 0.8—1, sub fructu 1—1.5 cm longi, bracteis basalibus lanceolatis citissime caducis. *Calycis tubus* obconicus, in vivo viridis vel rubescenti-suffusus, basi ± truncatus, infra lobos denique constrictus, 2 mm longus, lobi ovato-deltoides, 1—1.5 mm longi, ciliolati, glandula apicali carentes. *Corolla* urceolato-cylindrica, carnosa, rosacea usque dilute carminea, etiam intus glabra, tota 8(—9) mm longa, inferne ± 3 mm diam., lobis 1.5 mm longis, denique reflexis. *Stamina* 10, c. 5.5 mm longa; filamenta linearia, ipsa basi paullo dilatata et glabra, ceterum usque fere ad apicem dense breviter pilosa, 3.5—4 mm longa; thecae oblongae, leviter echinulatae, 1.9—2.2 mm longae; tubuli thecis paullo angustiores, 0.7—0.9 longae, obliquely truncatae. *Discus* pulvinaris glaber. *Stylus* tenuiter columnaris, glaber, (7—)8—9 mm longus. *Fructus* subglobosus, apice ± truncatus, submaturus 6—7 mm diam., purpurascens, lobis calycinis inflexis.

NEW GUINEA. Northwestern part: Arfak Mts, on 'Lulofspad', from the shore of Lake Anggi Gita to Mt Mesenuk (Misjnuk), c. 1900 m, fl. fr. 10-1-1962, *Sleumer & Vink 4211* (A, CANB, K; L, type; LAE); *ibid.*, 2000 m, fl. fr. 10-1948, *Kostermans 2359*.

var. *oreophilum* Sleum., nov. var. — A var. *dictyoneuron* foliis minoribus 2.5—3.5(—4) cm longis, 1—2(—3) cm latis, petiolis ± 5 mm longis, inflorescentiis paullo brevioribus minusque densifloris distinctum. *Calycis* lobi saepius glandula apicali praediti. Floribus haud diversum. Frutex (1—)2—3 mm altus, compactus, dense ramosus.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Sensenemés above Surerei, Anggi Gigi Lake, c. 2400 m, fl. fr 18-1-1962, Sleumer & Vink 4300 (A, CANB, K; L, type; LAE), in ± open heath-like vegetation; Mt Gwamongga near Surerei, 2200 m, Sleumer & Vink 4386.

var. *koëbrense* Sleum., nov. var. — A var. *oreophilum* calyce brevissime pubescente laxaque, vel saepius basin versus densius glanduloso-muriculato tantum diversum. Frutex 0.4—3 m altus.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Koëbré between Anggi Lakes, E. slope, ascent from Testega, 2100 m, fl. fr. 16-1-1962, Sleumer & Vink 4289 (A, CANB, K; L, type; LAB); *ibid.*, summit plateau at c. 2300 m, Sleumer & Vink 4290; descent from Mt Koëbré to Anggi Gigi Lake, path Testega to Surerei, 2300 m, Sleumer & Vink 4287; Mt Mundi, 1900 m, BW 2252 Mangold.

223. *Vaccinium laurifolium* (Bl.) Miq.

var. *glanduligerum* Sleum.

BORNEO. Sarawak: Bintulu Distr., Bt Krang, 12 m, Brunig S 8693; *ibid.*, Niah-Jelagong, 300 m, Brunig S 12379.

224. *Vaccinium turfosum* Sleum.

NEW GUINEA. Western part: Wissel Lakes, 1750—2300 m, BW 8612, 8753, 8827, 8943 Vink & Schram; BW 2398 Long.

228. *Vaccinium caudatum* Warb.

PHILIPPINES. Mindanao: Agusan prov., Tungao, S. Mateo, 350 m, PNH 41898 Mendoza.

231. *Vaccinium sparsum* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, ascent via Pengagl Creek, 2650—2770 m, Brass 30432 (flowers galled), 30636.

232. *Vaccinium striicaule* Sleum.

var. *adenodes* Sleum.

NEW GUINEA. Western Highlands: Wabag Subdistr., Yaki R. Valley, 2440 m, Hoogland & Schodde 6892. — Eastern Highlands: Mt Michael, 3300—3600 m, Brass & Collins 31283; NGF 11496 Womersley. — Southern Highlands: Mt Giluwe, 2600—3050 m, Schodde 1674, 1694, 1859 (with pubescent rhachis and calyx, influence of *V. cruentum*?); Pullen 2863; near Onim, 2140 m, Pullen 2720.

5. DIMORPHANTHERA

See Nova Guinea Bot., nr. 7 (1961) 73.

3a. *Dimorphantha declinata* Sleum., nov. spec. — Frutex scandens, in omnibus partibus exterioribus glaber. Ramuli teretes, in sicco purpurascenti-brunnei, laxe foliati, cortice tenui longitudinaliter fisso. *Folia* elliptico-oblonga, apice breviter (c. 1 cm) subabrupte acuminata, subacuta vel obtusa, basi late attenuata usque subrotundata, coriacea, in sicco pallide lutescenti-viridia, subtus passim appresse glanduloso-muriculata, coriacea, per totam marginem regulariter minute crenulata (crenaturis glandulis marginalibus paullo impressis formatis, 2—5 mm inter sese distantibus, in superiore lamina parte distinctioribus) 8—13 cm longa, 4—6 cm lata, e basi et usque ad 3 cm supra basin (5—)7-plinervia, costa nervisque supra immersis, subtus prominentibus, pare nervorum extremo interdum minus distincto, reticulatione nulla; petioli in sicco rubescentes,

applanati, 4—6 mm longi, ± 2 mm lati. *Racemi* ex axillis numerosioribus orti, 8—10-flori, in sicco omnino purpurascentes; rhachis angulata, 2.5—3 cm longa, basi 1.5—2 mm diam. Pedicelli 10—20 mm longi, c. 1 mm crassi, basi usque ad 0.5 cm supra basin bibracteolati. *Calycis tubus* cupulatus, basi subrotundatus, 2—3 mm altus, limbus patens, 2—2.5 mm altus, fere usque ad basin 5-lobus, lobis ovato-acuminatis, apiculatis. *Corolla* ample campanulata, carnosula, utrinque glabra, rosea, c. 2 cm longa, limbo 2—2.5 cm diam., lobis late deltoideis obtusis c. 5 mm longis. *Stamina* 10, alternatim 7 et 6 mm longa. *Stamina maiora*: filamenta late linearia, basi glabra, deorsum cinereo-pubescentia, ± 4 mm longa; thecae obovato-oblongae, basi angustatae, cum tubulis 5 mm longae, tubulis ipsis anguste auriculatis c. 1.5 mm longis; connectivi processus hirsutuli, ± connati, thecas longitudine aequantes interque eas dispositi. *Discus* prominens glaber. *Stylus* subgracilis, glaber, c. 2.5 cm longus.

NEW GUINEA. Western Highlands: hillside near Ruanda in Lai Valley near Wapenamanda, 1980 m, fl. 7-7-1960, R. G. Robbins 2887 (CANB, type; L, phot.).

5. *Dimorphanthera breviflos* Sleum.

NEW GUINEA. Northern part: Cycloop Mts, S. slope, path Ifar-Ormu, 1220 m, *van Royen & Sleumer* 5908; Mt Dafonsero, 1100—1250 m, *van Royen & Sleumer* 6418.

6. *Dimorphanthera kempteriana* Schlr.

NEW GUINEA. Western part: Wandammen Peninsula, Wondiwoi Mts, 600—900 m, *BW* 13450, 13465 *Schram*; Wissel Lakes, Borobaida, 1760 m, *BW* 8652 *Vink & Schram*. — Southeastern part: Morobe Distr., Edie Creek, *NGF* 12801 *Womersley & Thorne*.

10. *Dimorphanthera amblyornidis* (Becc.) F. v. M.

var. *amblyornidis*

NEW GUINEA. Northwestern part: Tamrau Mts, Central part, Mt Kusemun, Ije R. Valley, 1400 m, *van Royen, Sleumer & Schram* 7785; Tohkiri Mts East, N. slope and crest, 1100—1400 m, *van Royen & Sleumer* 7090, 7091; Nettoti Mts, S. slope of Mt Nettoti, path Andjai-Wekari R., 1250—1750 m, *van Royen & Sleumer* 7365, 7412, 7477; Wekari R. camp, 1550 m, *van Royen & Sleumer* 8117; Arfak Mts, Minjambau, 1750 m, *BW* 12612 *Versteegh*. — Morobe Distr.: range above Markham Point near Lae, 605 m, *NGF* 11907 *Henry*.

var. *moorhousiana* (F. v. M.) Sleum.

NEW GUINEA. Southwestern part: Faf-fak hinterland, 840 m, *BW* 12176 *Vink*.

11. *Dimorphanthera decockii* J.J.S.

var. *decockii*

NEW GUINEA. Northern part: Cycloop Mts, Mt Rara, 1600 m, *van Royen & Sleumer* 5936; Mt Dafonsero, 1560 m (top), *van Royen & Sleumer* 6430. — Western Highlands: Laiagam Subdistr., Lagap Valley, near Kepilam village, 2450 m, *Hoogland & Schodde* 7370. — Eastern Highlands: Mt Otto, 3100—3300 m, *Brass* 30970 (US).

var. *chlorocarpa* (Sleum.) Sleum.

NEW GUINEA. Western Highlands: Wabag Subdistr., summit area of Mt Sugarloaf, c. 3650 m, *Hoogland & Schodde* 7114; Yaki R. Valley, near Poio, 2290 m, *Hoogland & Schodde* 6810. — Southern Highlands: near Ebenda, Anga Valley, 1920 m, *Schodde* 1608; Mt Giluwe, 3140—3500 m, *Schodde* 1740; *Pullen* 2884 (alpine form with smaller and obtuse leaves).

13. Dimorphanthera steinii Sleum.

NEW GUINEA. Western part: Balim R. Valley, Wiligimaan, 1800 m, BW 10469 Versteegh.

16. Dimorphanthera amoena Sleum.

NEW GUINEA. Eastern Highlands: Marafunga, Upper Asaro R. Valley, 2400—2500 m, NGF 14001 Womersley & Sleumer; Sleumer 4136; E. of Goroka, NGF 12432 Vink; above Keglsugl airstrip, 2500 m, Sleumer 4180. — Morobe Distr.: Edie Creek, 1950 m, NGF 13944, 13961 Womersley & Sleumer.

19. Dimorphanthera brassii Sleum.

NEW GUINEA. Morobe Distr.: Edie Creek road, 1980 m, NGF 13487 Womersley & Sleumer; Sleumer 4134; Merri Creek, 1680 m, NGF 8750 Womersley (formerly published as *D. clemensiae*); Kaindi (Edie Creek area), 2060 m, Brass 29608 (formerly published as *D. clemensiae*).

23. Dimorphanthera cornuta J.J.S.**var. cornuta**

NEW GUINEA. Western Highlands: Upper Ambum Valley, 3050 m, Robbins 3065; Laiagam Subdistr., Yobobos grassland area, c. 2600 m, Hoogland & Schodde 7587.

var. tenuiflora Sleum.

NEW GUINEA. Western Highlands: Laiagam Subdistr., Lagaip Valley near Kepilam village, 2450 m, Hoogland & Schodde 7315. — Southern Highlands: Mt Giluwe, Schodde 2062.

25. Dimorphanthera brachyantha Sleum.

NEW GUINEA. Eastern Highlands: Purosa, 1950 m, Brass 31854.

29a. Dimorphanthera nigropunctata Sleum., nov. spec. — Frutex epiphyticus, pendens, 2—4 m altus. Ramuli obtusanguli, glabri, laxe foliati. *Folia* elliptico-oblonga, apice c. 1 cm longe subabrupte acuminata, subacuta, rarius late acuminato-attenuata, coriacea, glabra, subtus disperse nigropunctata, in sicco margine undulata, vel integra, 10—15 (—20) cm longa, (3—)3.5—6(—7) cm lata, e basi usque ad 3.5 cm supra basin 7—9-plinervia, costa supra inferne prominente, superne sicut nervi parum impressa, subtus bene prominente, nervis ad costam longe decurrentibus, venis venuisque reticulatis supra subobscuris, subtus prominulis; petioli in sicco nigrescentes, transverse rugosi, (0.8—)1—1.2 cm longi, 2—3 mm crassi. *Racemi* abbreviati axillares, 5—8(—10)-flori; rhachis 0.5—1, raro usque ad 1.5 cm longa, glabra. Bracteolae oblongo-ovatae, basales, 22 mm longae. Pedicelli sub anthesi 7—10 mm longi, fere 1 mm diam., post anthesin paullo incrassati, laxe imprimis apicem versus puberuli. *Calyx* viridis, cupulatus, quam pedicelli densius breviter pubescens, tubo ± 2.5 mm longo et 3—4 mm diam., limbo expanso 5-denticulato c. 1 mm alto. *Corolla* tubulosa, carnosula, rubra, extus sat dense breviter pilosa, intus glabra, in sicco tota ± 1.5 cm longa, c. 5 mm diam., lobis 2 mm longis. *Stamina* 10, alternatim 9—10 et 7—8 mm longa. *Stamina maiora*: filamenta 3 mm longa, inferne glabra, superne cum connectivo hirsutula; thecae basi rostratae, c. 8 mm longae; connectivi processus ± connati et inter thecas dispositi iisque paullo breviores. *Discus* glaber. *Stylus* gracilis, c. 2 cm longus. *Bacca* matura subglobosa, nigrescenti-purpurea, c. 9 mm diam.

NEW GUINEA. Northwestern part: Nettoti Mts, N. slope, Wekari R. camp, 1550 m, fl. fr 4-12-1961, van Royen & Sleumer 8110 (A, CANB; L, type); Mt Nettoti, S. slope, path Andjai-Wekari R., 1750 m, van Royen & Sleumer 7379.

29b. *Dimorphanthera thibaudifolia* Sleum., nov. spec. — Frutex terrestris, 2—3 m altus, ramis divaricatis, ramulis obtusangulis breviter pubescentibus denseque foliatis. *Folia* anguste oblonga, apice breviter acutius vel plerumque sat obtuse acuminata vel attenuata, basi in petiolum cuneata, in statu sicco coriacea et firma, integra, vel obscure crenulata, marginata, 4—7 cm longa 1.2—2.5(—3) cm lata, superiora decrescentia, glabra, in sicco imprimis subtus brunnescens, supra in vivo lucida, subtus opaca, subtus laxe glanduloso-nigropunctulata, costa nervisque supra parum distinctis, subtus prominentibus, nervis utroque latere 2 vel 3 e basi et supra in inferiore laminae $\frac{1}{3}$ parte a costa alte subcurvato-ascendentibus, ceteris vel venis irregularibus a costa angulo maiore orientibus nonnullis minusque conspicuis, rete venarum subobscuro; petioli (5)—6—9 mm longi, 1 mm crassi, pubescentes, in sicco nigrescentes. *Fasciculi* ex axillis foliatis et defoliatis orti, (2—)3—4(—5)—flori; rhachis 0—0.5 cm longa. Pedicelli sicut calyces subdense breviter pubescentes, post anthesin (1.5—)1.8—2(—2.5) cm longi et 1 mm crassi; bracteolae 0.6—1 cm supra pedicelli basin insertae, ovato-acuminatae, 2 mm longae. *Calyx* post anthesin subsemiglobosus, tubo basi ipsa paullo contractus, c. 4 mm longus et diam., limbo erecto-patenti, fere usque ad basin 5-dentato, 2 mm alto. *Corolla* tubulosa, probabiliter rubra, in statu desiccato tantum collecta et tunc 1.8 cm longa, c. 5 mm diam., extus dense breviter pilosa, intus laxe pilis longioribus obsita, lobis c. 2 mm longis. *Stamina* 10, alternatim 9 et 7 mm longa. *Stamina* maiora; filamenta linearia, ipsa basi tantum glabra, ceterum sicut connectivum subdense pilosa, c. 3 mm longa; thecae antice ad lineam medianam pilosae, 7 mm longae; connectivi processus dorso auricularum insertae, subdense sat longe pilosae, thecis paullo breviores. *Discus* subdense et ± appresse pilosus. *Stylus* gracilis, glaber, ± 2.3 cm longus. *Fructus* immaturus subglobosus, ad calycis limbum contractus, maturus haud visus.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Gwamongga, above Surerei, Anggi Gigi Lake, c. 2200 m, defl. & fr. 21-1-1962, Sleumer & Vink 4388 (A, CANB; L, type; LAE).

30. *Dimorphanthera robbinsii* Sleum.

NEW GUINEA. Eastern Highlands: Mt Otto, 3100—3300 m, Brass 30969.

32. *Dimorphanthera anchorifera* J.J.S.

NEW GUINEA. Northern part: Cycloop Mts, S. slope, path Ifar-Ormu, c. 1200 m, van Royen & Sleumer 5771, 5901. — Western part: Fak-fak, Kowap, BW 12154 Vink; Vogelkop Peninsula: Ajamaru, 240—260 m, BW 15231, 15363 Vink. — Sepik Distr.: near Kaiye village on Bliri R., 75 m, Darbyshire & Hoogland 8242. — Southern Highlands: road to Wiru, S. of Jalibu, 2040 m, Pullen 2740; near Ebenda, Anga Valley, 2000 m, Schodde 1549.

34. *Dimorphanthera forbesii* (F. v. M.) F. v. M.

NEW GUINEA. Southeastern part: Centr. Distr., Woitape, 1525 m, NGF 12924 Corner & Gray.

35. *Dimorphanthera splendens* Sleum.

NEW GUINEA. Eastern Highlands: Arau, 1400 m, Brass 31985; Kini Creek, NE. slope of Mt Michael, c. 2000 m, NGF 11370 Womersley.

36. *Dimorphanthera alpina* J.J.S.

var. *alpina*

NEW GUINEA. Western Highlands: Wabag Subdistr., N. slopes of Mt Sugarloaf, 2900 m, Hoogland & Schodde 7082. — Southern Highlands: Mt Giluwe, 2600—3170 m, Schodde 1707, 1756.

37. *Dimorphanthera denticulifera* Sleum.

var. *denticulifera*

NEW GUINEA. Morobe Distr.: Mt Saruwaged, 1830 m, NGF s.n. *Ardley* (LAE); S. slopes of the Finisterre Mts, near Wantoat, 1525 m, NGF 11870 *Womersley & Thorne*; Edie Creek near Wau, 2135 m, NGF 13439 *Womersley*. — Western Highlands: Upper Yaki Valley, Wabag Subdistr., 2290 m, *Hoogland & Schodde* 6990; Tomba-Wapenamanda road, 2440 m, *Robbins* 237. — Southern Highlands: Mendi Valley above Kiburu, 1920 m, *Schodde* 1388; Mt Lu, Kuare R. Valley, 1700 m, *Pullen* 2784; SW. slope of Mt Giluwe, 2600 m, *Schodde* 1677.

var. *pubens* Sleum.

NEW GUINEA. Eastern Highlands: ascent to Mt Wilhelm, above Keglsugl-Pengagl Creek, 2600—2650 m, *Brass* 30573; *Borgmann* 296; *Sleumer* 4185; Mt Michael, 3100—3290 m, *Brass & Collins* 31304. — Morobe Distr.: Edie Creek road near Wau, 1830—2070 m, NGF 12818 *Womersley & Thorne*; NGF 13498 *Womersley & Sleumer*.

38. *Dimorphanthera leucostoma* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope around the Lakes, 3350—3500 m, *Sleumer* 4148, 4169.

40. *Dimorphanthera doctersii* J.J.S.

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, 1800 m, *BW* 10389 *Versteegh; van Royen & Sleumer* 7416.

46. *Dimorphanthera collinsii* Sleum.

var. *collinsii*

NEW GUINEA. Eastern Highlands: Mt Otto, S. slope, 3260 m, *Brass* 30974.

var. *montis-wilhelmi* Sleum.

NEW GUINEA. Eastern Highlands: Pengagl Creek, 2630—2800 m, *Sleumer* 4157, 4172, 4173, 4186; Mt Wilhelm, E. slope, 3350—3500 m, *Walker ANU* 12; *Barrett* 3; *Borgmann* 52; *Sleumer* 4149, 4168.

49a. *Dimorphanthera lancifolia* Sleum., *nov. spec.* — Frutex epiphyticus, in omnibus partibus externis glaber. Ramuli graciles, obtusanguli, laxe foliati. *Folia* lanceolata, apice per c. 2 cm subcaudato-acuminata, subfalcata et acuta, basi ± anguste in petiolum attenuata, subcoriacea, in sicco cinerascenti-virescentia et opaca, per totam marginem subregulariter glandulis setiformibus, paullo impressis et brevissimis, ± caducis crenulata, crenaturis 3—5 mm distantibus, 7—9.5 cm longa, 1.5—2 cm lata, medio latissima, e basi et ± 1 cm supra basin 5-plinervia, pare exteriore nervorum saepius obscuriore, costa nervisque supra leviter immersis vel planis, subtus prominentibus, venis subtus tantum prominulis, reticulatione ± obscura; petioli 4—6(—7) mm longi, 1—1.5 mm crassi. *Fasciculi* ex axillis foliatis ramulorum recentium sat brevium vel defoliatis partium vetustiorum orti, 3—6(—8)-flori; rhachis subnulla. *Pedicelli* 8—12 mm longi, c. 1 mm crassi, basi et paullo supra basin bibracteolati, bracteolis subulatis 2—3 mm longis longe glanduloso-fimbriatis. *Calycis tubus* subcylindricus, basi truncatus, 1.5—2 mm altus, limbus erecto-patens, 2—2.5 mm altus, lobis valde depresso-ovatis, apiculatis vel obtusis, c. 0.5 mm longis. *Corolla* tubulosa, carnosa, albida, extus intusque glabra, in sicco ± 1.4 cm longa, inferne 4, ore c. 6 mm diam., lobis acutis 2 mm longis. *Stamina* 10, alternatim 9 resp. 7 mm longa. *Stamina maiora*: filamenta linearia, inferne glabra,

superne appresse-pilosa, c. 4 mm longa; thecae anguste oblongae, cum tubulis 7 mm longae, basi rostratae, tubulis 2.5 mm longis; connectivi processus ± connati, hirsutuli, inter thecas positi easque c. 1 mm superantes. *Discus* glaber. *Stylus* gracilis, glaber, c. 2 cm longus.

NEW GUINEA. Sepik Distr.: Lumi Subdistr., Torricelli Mts, peaks c. 4 miles N. of Wigote village, c. 1525 m, fl. 16-9-1961, P. J. Derbyshire 441 (A, BH, BO, BRI; CANB, type; E, G. K, L, LAE, PNH).

51. *Dimorphanthera prainiana* (Koord.) J.J.S.

NEW GUINEA. Northwestern part: Nettoti Mts, S. slope of Mt Nettoti, 1750 m, van Royen & Sleumer 7401.

53a. *Dimorphanthera vaccinoides* Sleum., nov. sp. — Frutex scandens; ramuli teretes, graciles, glabri, sat laxe foliati. *Folia* subovato-vel oblongo-elliptica, apice latius vel angustius acuminata, interdum subcaudata, apice extremo semper obtusa, basi in petiolum cuneata, subcoriacea, in sicco brunnescens et opaca, glabra, primo visu integra, re vera sat remote brevissime subserrato-crenulata (crenaturis glandulis cito caducis terminatis), 5-7(-7.5) cm longa, (2-)2.5-3.5(-4) cm lata, costa nervisque supra vix, subtus distinctius prominentibus, nervis lateralibus e laminae basi vel paullo supra basin orientibus utroque latere 2(-3), alte curvato-conjunctis, aliis seu venis a costa ± horizontaliter abeuntibus pluribus cum reticulo venarum quam basales minus distinctis; petioli 4-6(-7) mm longi, ± 1 mm crassi. *Fasciculi* axillares (1-) 2-3-flori. Perulae minutae. Pedicelli graciles, inferne glabri, supra medium sicut calyx et corolla subdense puberuli, rubescentes, 1.5-2 cm longi, infra calycem incrassati. *Calycis* *tubus* viridis, cupulatus, 1.5-2 mm longus, c. 3 mm diam., limbus 1-1.5 mm altus, 5-denticulatus. *Corolla* tubulosa, tenera, dilute rubra, tota ± 2.2 cm longa, c. 4 mm diam., intus glabra, lobis erectis 1.5 mm longis. *Stamina* 10, alternatim 6.5 et 5 mm longa. *Stamina* maiora: filamenta c. 3 mm longa, inferne glabra, superne ad connectivum laxe pilosa; thecae cum tubulis 5 mm longae, tubulis approximatis, connectivo ad partem dorsalem tubulorum vix visibili, pilis paucis indicato. *Stylus* gracillimus, c. 1.5 cm longus. *Discus* glaber. *Fructus* ignotus.

NEW GUINEA. Western part: Motito, Wissel Lakes, 1800 m, fl. 18-5-1960, BW 8682 Vink & Schram (A, BM, CANB; L, type; LAE, UC); *ibid.*, biv. Voorrug — Voortop biv., 1800-2900 m, fl. 1-8-1939, Eyma 5032 (BO).

57. *Dimorphanthera myzomelae* (Becc.) F. v. M.

NEW GUINEA. Northwestern part: Arfak Mts, Mt Antop near Minjambau, 1800 m, BW 12717 Versteegh; *ibid.*, Mt Lensemoi, 1750-1800 m, BW 12671 Versteegh; BW 13905 Koster; Wandammen Peninsula, Wondiwoi Mts, 800-1800 m, BW 13745, 13905 Koster.

58. *Dimorphanthera microphylla* Sleum.

NEW GUINEA. Eastern Highlands: Mt Wilhelm, E. slope, 3350-3400 m, Borgmann 31; Sleumer 4152.

59. *Dimorphanthera wrightiana* (Koord.) J.J.S.

NEW GUINEA. Central part: Balim R. Valley, BW 12555 Versteegh.

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Synonyms in *italics*. Numbers refer to the species numbers. New names and epithets are in bold type.

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