

Citation: Stauffer, H.U. 1969. Santalales-Studien X. Amphorogyneae eine Neue Tribus der Santalaceae. Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich 114: 49-76.
Translation of original German to English by Daniel L. Nickrent. Pagination different than original. Latin to English translations (in red font) not in original manuscript.

Mitteilungen aus dem Botanischen Museum der Universität Zürich
Nr. 242

Amphorogyneae, a new tribe of Santalaceae **Santalales-Studies X**

By

H. U. STAUFFER †

Untersuchung und Druck mit Unterstützung des Schweizerischen Nationalfonds zur
Förderung der wissenschaftlichen Forschung

with a map and 5 tables

The systematics of Santalaceae is provisional and not yet by any means clarified. Recently the subdivision of the family suggested by the Indian school (JOHRI and others *) is totally onesidedly based on embryological criteria and does not sufficiently consider the external morphology nor wood anatomy, pollen and chemistry. Also geographical criteria were ignored.

If I choose to make a new tribe in the family, it is because it is a unit which has many features clearly delineated from any other Santalaceae, and we gave a first indication of this in 1957 (STAUFFER and HÜRLIMANN In Vierteljahrsschr. Naturf. Ges Zurich 102 [1957] 337-349). Of special interest it was also claimed that stem parasitism only occurs in this tribe, existing nowhere else in the Santalaceae (with the sole exception being *Exocarpos Pullei* PILGER).

When drawing up a new subunit of the family the question of their rank is raised. I have formed a Subtribe the Tribe Santaleae Osyrideae. The new descriptive subunit corresponds in its value to Tribe Anthoboleae (STAUFFER, Revisio Anthobolearum, Aarau 1959); therefore I decided to likewise evaluate it as a Tribe. In the meantime I had the opportunity to study more exactly the monographic treatment of several of the genera of the former genus *Henslowia* (Mus. Lugd. Bat. 1 [1850] 242, non LOWE in DC. Prodr. 8 [1844] 288 nec WALL., Pl. As. Rar. 3 [1832] 13). On my research trip of 1963/64 it was possible for me to observe the relationships of seven genera in nature; besides I became acquainted with a further genus *Spirogardnera* (STAUFFER in Vierteljahrsschr. Naturf. Ges. Zürich 113 [1968] 305-309), which belongs within the same relationship group. Later with a revision of the overall system of the family it will become necessary to introduce subfamilies; then in such will the tribe Amphorogyneae find its place.

* Cf. MAHESHWARI and KAPIL in Phytomorphology 16 (1966) 244.

Provisionally I set up Tribe Amphorogyneae Tribus nova.
Type genus: *Amphorogyne* STAUFFER and HÜRLIMANN.

Morphological Characteristics of the Tribe:

Woody plants (with the exception of the parasitically reduced *Phacellaria*).
Sympodial branching
Phyllotaxy 2/5.
Inflorescences mostly racemose.
Flowers small to extremely small.
Tepals connected firmly to the receptacle, not articulated.
Stamens usually with 2 locules per theca, standing one above the other.
Poststaminal hairs usually present.
Ovary completely inferior.
Style short or missing.
Stigma lobes and ovules equal in number to the tepals and opposite them.
Placenta always rounded off above, not stalked, embedded closely in the tissue.
Epigynous disk present
Fruit a drupe.
Endocarp (and seeds) usually many sided structured.
Tepals, stamens, disk, style and stigmas lasting up to mature fruit stage.
Wood with diffuse vessel arrangement; vessels small, separate, wood parenchyma weakly apotracheal, diffusely distributed, rays heterogeneous.

In addition comes the restricted geographical distribution in tropical Asia and Australia (see the map) and the already mentioned stem parasitism.

Tendencies of the Tribe:

Tendency towards stem parasitism.
Tendency towards holoparasitism.
With increasing parasitism a tendency towards leaf reduction (general parasite tendency).
Tendency towards red coloration of the flowers (general Santalaceae tendency).
Tendency towards leaf reduction in arid Australia (general tendency).
Tendency towards host specificity (Fagaceae, Loranthaceae, Santalaceae as the usually preferred hosts)
With increasing parasitism a tendency towards unisexuality.

Regular Key to the Genera of Amphorogyneae

(for *Dendrotrophe*, *Dendromyza*, *Cladomyza*, *Dufrenoya*, fruits are necessary)

- 1. Leaves well-developed, pinnately nerved, ± whorled 9. *Amphorogyne*
- Leaves reduced to scales or usually then alternate and bent nerved 2
- 2. Stigma lobes and ovules 2-3, flowers bisexual or pseudo-bisexual 10. *Daenikera*
- Stigma lobes and ovules (4-) 5 (-6), flowers bisexual or unisexual 3
- 3. Root parasites with small, reduced to scales, mostly deciduous leaves without clear leaf veins 4
- Stem parasites; if root parasitic, then usually with bent nerved leaves 6
- 4. Three or more bracts under each flower 1. *Choretrum*
- Only a single bract under each flower 5
- 5. Inflorescence a simply racemose 3. *Leptomeria*
- Inflorescence a few-flowered cluster or a compound spike 2. *Spirogardnera*
- 6. All flowers reduced to triangular scales at the most 1.5 mm long 7
- At least some of the leaves with developed lamina of at least 3 mm in length 8
- 7. Axes short, straight, without secondary haustoria 8. *Phacellaria*
- Axes twining, with secondary haustoria 5. *Dendromyza*
- 8. Stem parasite, only attached to the host axis by a primary haustorium (*Viscum album*-Type) 11
- Stem parasite with secondary haustoria on its axes, or root parasite 9
- 9. Terrestrial or epiphytic root parasite, rarely a stem parasite 4. *Dendrotrophe*
- Stem parasite with secondary haustoria on its axes 10
- 10. Endocarp and seed with a round cross section 5. *Dendromyza*
- Endocarp and seed with a star-shaped cross section, or basally divided into lobes 8. *Cladomyza*
- 11. Surface of the endocarp and seeds generally with lobes 4. *Dendrotrophe*
- Endocarp smooth, seed surface lobed basally or basally and apically 12
- 12. Seed with basal lobes 6. *Cladomyza*
- Seed with basal and apical lobes 7. *Dufrenoya*

Remarks on Parasitism, the Distribution and the Taxonomy of the Genera

1. *Choretrum* R. BR.

Terrestrial hemiparasites of 40 cm or small trees of 5 m height. About host specificity nothing is known. Limited to the Australian mainland including Kangaroo Island, where an endemic variety exists. The genus requires revision. 7 species and a variety: *Ch. Candollei* F. V. MÜLL. (100 to 500 cm high) – *Ch. chrysanthum* F. V. MÜLL. (220 cm high) – *Ch. glomeratum* R. BR. (160-200 cm hoch) – *Ch. lateriflorum* R. BR. (to 350 cm high, to 7 cm Ø) – *Ch. pauciflorum* A. DC. (40 cm high) – *Ch. Pritzelii* DIELS (170-200 cm high) – *Ch. spicatum* F. V. MÜLL. (to 100 cm high) – *Ch. spicatum* F. V. MÜLL. varietas (150 bis 200 cm hoch).

2. *Spirogardnera* STAUFFER

Terrestrial hemiparasite with completely local occurrence in southwest Australia (Perth: Wannamal). Monotypical genus (see Zeitschrift J 13 [1968] 305). 1 species: *Sp. rubescens* STAUFFER (160 cm high).

3. *Leptomeria* R. BR.

Terrestrial root parasites, shrublet from 30 cm to small trees of 3 m height. About host specificity nothing is known. Australian mainland and Tasmania as well as some smaller barrier islands to the west and the east of Australia. The genus very much requires a taxonomic revision. About 16 species: *L. acida* R. BR. (300 cm high, 7 cm Ø) – *L. aphylla* R. BR. (120-200 cm high) – *L. Billardieri* R. BR. – *L. Cunninghamii* MIQ. – *L. Dielsiana* PILGER – *L. empetriformis* MIQ. (30 cm high) – *L. ericoides* MIQ. – *L. laxa* MIQ. – *L. obovata* MIQ. – *L. pauciflora* R. BR. (180 cm high) – *L. Preissiana* A. DC. (ca. 120 cm hoch) – *L. scrobiculata* R. BR. (80-150 cm high) – *L. spinosa* A. DC. (40- or 70 cm high) – *L. squarrosula* R. BR. (100 cm high).

4. *Dendrotrophe* MIQ.

Upright or climbing terrestrial root parasites, upright epiphytic root parasites or stem parasites of the *Viscum album* type. *D. varians* is the most widely distributed species in the Tribe; its area is from north Australia to deep into the Asian mainland. The stem parasitic species occur only in New Guinea. 4 species: *D. amorpha* STAUFFER – *D. buxifolia* (BL.) MIQ. – *D. umbellata* (BL.) MIQ. – *D. varians* (BL.) MIQ. (5 m high, then overhanging).

5. *Dendromyza* DANSER

Climbing stem parasites with secondary haustoria. About host specificity nothing is known. A variety, *D. Reinwardtiana* var. *aphylla* STAUFFER, whose leaves are reduced to tiny scales, shows a tendency of the genus towards holoparasitism; it is host specific on Loranthaceae. *D. Reinwardtiana* is widely very common, from lower India to the islands, which are barriers to New Guinea in the west, the center of development of the genus is New Guinea. 7 species: *D. crassiolia* GIBBS STAUFFER comb. nova – *D. cucullata* (DANSER) STAUFFER combo nova – *D. intricata* (DANSER) STAUFFER comb. nova – *D. Ledermannii* (PILGER) STAUFFER combo nova – *D. puberula* STAUFFER – *D. Reinwardtiana* (BL.) DANSER – *D. volubilis* STAUFFER.

6. *Cladomyza* DANSER

Climbing stem parasites with secondary haustoria or stem parasites of the *Viscum album* type. About host specificity nothing is known. Center in New Guinea, where the genus is richly differentiated. Its area reaches up to the Philippines, northeast Borneo and up to the Solomon islands. About 20 species: *Cl. acrosclera* DANSER – *Cl. acutata* (PILGER)

DANSER – *Cl. angustifolia* STAUFFER sp. nov. – *Cl. -cuneata* DANSER (with var. *grandifolia* STAUFFER) – *Cl. dendromyzoides* STAUFFER – *Cl. densa* STAUFFER sp. nov. – *Cl. dubia* STAUFFER – *Cl. erecta* DANSER – *Cl. gracilis* DANSER – *Cl. kaniensis* (PILGER) DANSER – *Cl. Ledermannii* DANSER – *Cl. microphylla* (LAUTERB.) DANSER – *Cl. nivalis* (RIDLEY) DANSER – *Cl. pachydisca* DANSER – *Cl. stellata* STAUFFER sp. nov. – *Cl. trinervia* STAUFFER sp. nov. – *Cl. uncinata* DANSER.

7. *Dufrenoya* CHATIN (Synonym *Hylomyza* DANSER)

Stem parasite of the *Viscum album* type. Predominantly on Fagaceae. Center of development of the genus is Myanmar. As mountain plants it is distributed to Borneo and Java. 14 species: *D. aurantiaca* STAUFFER sp. nov. – *D. Collettii* (GAMBLE) STAUFFER comb. nova – *D. euryphylla* (DANSER) STAUFFER comb. nova – *D. granulata* (HOOK f. et TH.) STAUFFER comb. nova – *D. longicuneata* STAUFFER sp. nov. – *D. oresitropa* (DANSER) STAUFFER comb. nova – *D. papillosa* STAUFFER sp. nov. – *D. platyphylla* (SPRENG) STAUFFER comb. nova – *D. Poilanei* STAUFFER sp. nov. – *D. pruinosa* STAUFFER sp. nov. – *D. robusta* STAUFFER sp. nov. – *D. sessilis* (CRAIB) STAUFFER comb. nova – *D. sphaerocarpa* (DANSER) STAUFFER comb. nova.

8. *Phacellaria* BENTH.

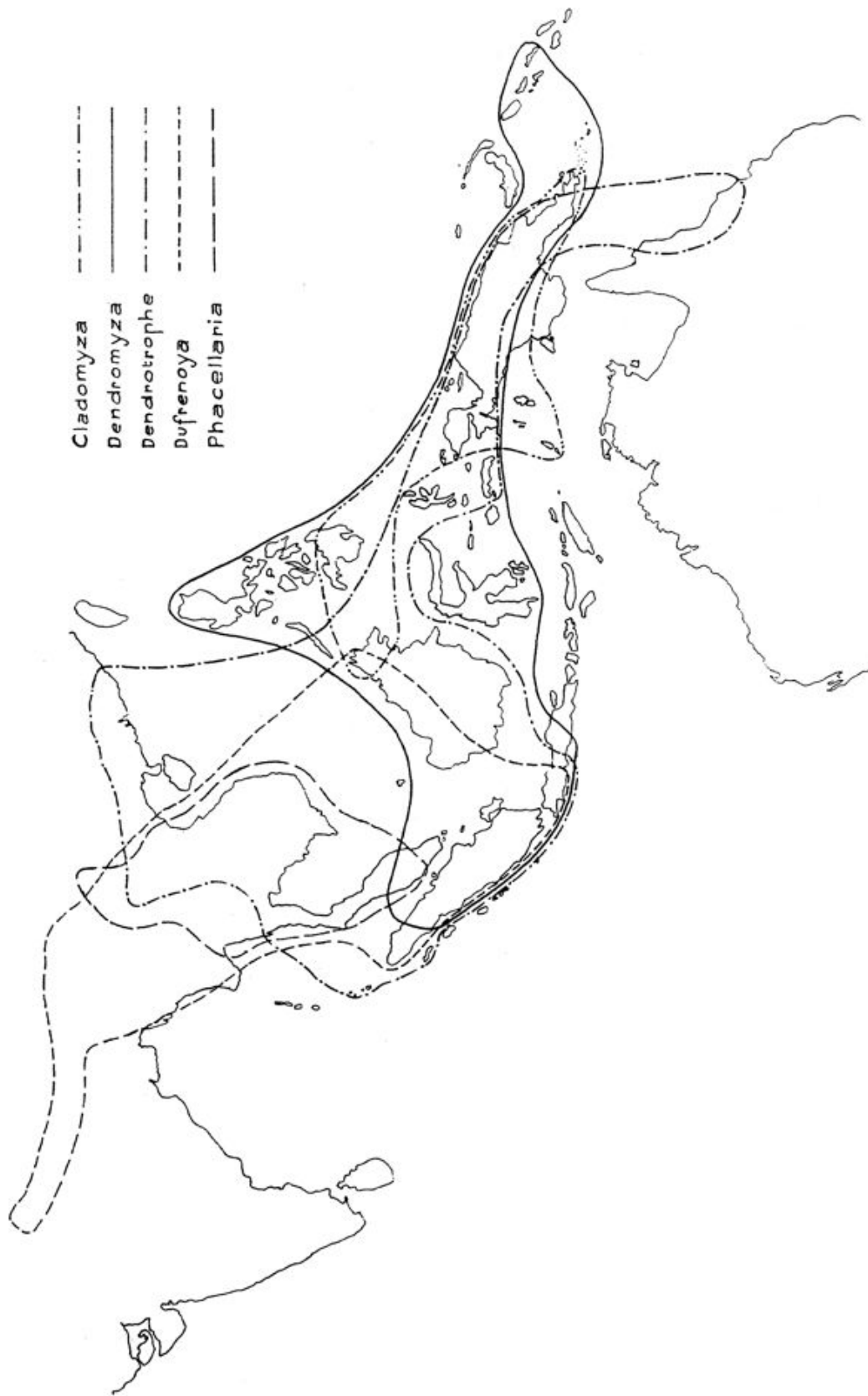
A more or less holoparasitic genus with a developed endophytic system and an outwardly reduced vegetative body. Host specificity: as hosts one observes *Dufrenoya* and some Loranthaceae genera. Distribution: Myanmar, SW China, Malaya. The genus was revised by DANSER in *Blumea* 3 (1939) 212-235. 7 species: *Ph. caulescens* COLLETT et HEMSLEY – *Ph. compressa* BENTH. Synonym: *Ph. Wattii* HOOK. f. *Fl. of Brit. India* 5 [1886] 236; *Ph. ferruginea* W. W. SMITH in *Notes R. Bot. Gard. Edinburgh* 10 [1918] 188 – *Ph. Fargesii* LECOMTE – *Ph. gracilis* DANSER – *Ph. malayana* RIDLEY – *Ph. rigidula* BENTH. – *Ph. tonkinensis* LECOMTE.

9. *Amphorogyne* STAUFFER et HÜRLIMANN

Terrestrial root parasite. Small tree from 1.5 – 5.5 m high. Endemic to New Caledonia. 3 species: *A. celastroides* STAUFFER et HÜRL. (150-230 cm high) – *A. spicata* STAUFFER et HÜRL. (200-550 cm high) – *A. Staufferi* MARKGRAF sp. nov.

10. *Daenikera* HÜRLIMANN et STAUFFER

Holoparasite, which can grow both terrestrially and laterally from the trunk of *Amphorogyne*. Shrublet of 50 cm in height. Probably host specific on *Amphorogyne*, after HÜRLIMANN also on *Myodocarpus fraxinifolius* BRONGN. et GRIS. Endemic in the south of New Caledonia (Dumbéa). Monotypic genus. 1 species: *D. corallina* HÜRLIMANN et STAUFFER (50 cm high).



Vouchers and New Descriptions

Dendrotrophe MIQ., Fl. Ind. Bat. 1 (1855) 779

1. *Dendrotrophe amorpha* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami recti vel leviter curvati, glabri, crassiores teretes, iuveniles paulum applanati, laterales 1-8 ex eodem nodo sub angulo 30°-60° oriundi, acrotoni Brachyblasti floriferi caduci. Cortex fusco-atra, laevis, serius grisea, rimosa. Folia laminifera glabra, acrotona, obovata vel suborbicularia, iniquilatera, carnosae, apice obtusa vel retusa, mucrone destituta, basi cuneata, subduplo longiora quam latiora, 42-170 mm longa, 22-130 mm lata. Nervi 5-11, utrimque perspicui. Folia basalia et apicalia ramorum squamiformia, semicircularia, 0,5 mm longa, 1 mm lata, in margine papillosa. Inflorescentiae dioicae, et brachyblastis et macroblastis insidentes, masculinae 1-10 ex eodem nodo, cymosae, (4-)5 (-7) -florae. Rhachis 1,5-6,5 mm longa. Flores ♂ olivacei, sessiles, 1,5-2,2 mm lati. Tepala floris terminalis 5, florum lateralium 4-5, pilis poststaminalibus ornata. Stamina isomera. Antherae globosae, 4 loculares, binis loculis superpositis. Discus 1 mm latus, subplanus, plerumque sine pistillodio. Inflorescentiae femineae pleraeque singulae ex nodis brachyblastorum oriundae, uniflorae. Rhachis 1 mm, sub fructu 2,5 mm longa, bracteis 2-4 basalibus et 4-5 apicalibus instructa. Flores ♀ sessiles, olivacei, 2 mm longi, 1,5 mm lati. Tepala (4-) 5. Discus 1,2 mm latus. Lobi stigmatis tepalis oppositi. Fructus rubri, 4-5 mm longi, 3-4 mm lati, ellipsoidei, tepalis persistentibus coronati. Endocarpium 2,8-4 mm longum, 2-3,5 mm latum, apice filis (fibrovascularibus) reclinatis ornatum.

Hemiparasitic shrub in tree branches. Branches straight or slightly curved, glabrous, thick, terete, juvenile somewhat flattened, laterals 1-8 from the same node oriented at about a 30°-60° angle, with caducous acrotonic [shoots which produce leaves below the inflorescence] floriferous brachyblasts [short shoots] caducous. Bark smooth, dark-black, later grey, fissured. Leaf lamina glabrous, acrotonic, obovate or suborbicular, not equally wide, fleshy, apex obtuse or retuse, devoid of a mucro, base cuneate, subduplo long as wide, 42-170 mm long, 22-130 mm wide. Nerves 5-11, evident on both sides. Leaves at the base and apex of the stems squamiform, semicircular, 0.5 mm long, 1 mm wide, papillose on the margin. Inflorescence dioecious, bearing brachyblasts and macroblasts (long shoots), masculine 1-10 from the same node, cymose, (4-)5 (-7) -flowered. Rachis 1.5-6.5 mm long. Male flowers olive colored, sessile, 1.5-2.2 mm wide. Terminal flower tepals 5, lateral flowers 4-5, adorned with post-staminal hairs. Stamens isomerous. Anthers globose, 4 locular, pair of locules superposed. Disk 1 mm wide, nearly planar, generally without a pistillode. Female inflorescence equally emerging single from the short shoot node, single flowered. Pre-fruiting rachis 1 mm, 2.5 mm long, fitted with 2-4 basal and 4-5 apical bracts. Female flowers sessile, olive in color, 2 mm long, 1.5 mm wide. Tepals (3-) 5. Disk 1.2 mm wide. Stigmatic lobes opposite the tepals. Fruit red, 4-5 mm long, 3-4 mm wide, ellipsoid, crowned by the persistent tepals. Endocarp 2.8-4 mm long, 2-3.5 mm wide, apex decorated with backward directed fibrovascular fibers.

New Guinea: Morobe District, Yunzaing, 1500 m, ♀ flowers & fruits 26 6 1936 - CLEMENS # 3438 (holotype G) Western Highlands District, the village Wauke, hillside 5 km southeast of Mount Hagen station, 2050 m, on a small tree in lower secondary forest, ♂ flowers 18 8 1956 - HOOGLAND & PULLEN # 5956

(paratype ♂ L). Wabag Subdistrict, Yaki Valley, near the village of Poio, 2250 m, 8.7. 1960 - HOOGLAND & Schodde # 6969, and ♂ flowers # 6970 (indigenous name: kumbabanai), on *Castanopsis* sp. Central Highlands District, Aiyura, 1800 m, ♂ flowers in October 1944 - LS SMITH # 1038 Southern Highlands District, Lake Kutubu, the village days, 800 m, fruits 18. 9. 1961 - Schodde # 2156 Papua: Alola, 1950111, flowers on a tree in the forest, ♀ flowers & fruit 11. 12. 1935 - CARR # 13734. Lala-river, forest, 1650 m, ♂ flowers 02. 28. 1936 - CARR # 15829.

var. *falcata* STAUFFER nov. var. Folia oblique lanceolata, falcata, pergamacea, 7-nervia, 88-153 x 41mm.

Netherlands New Guinea [Papua and West Papua, Indonesia]: Idenburg River, 6 km sw. Lager BERNARD, 1200 m, fruits Febr. 1939 - Brass # 12788 (Holotype of variety A).

2. *Dendrotrophe buxifolia* (BL.) MIQ., Fl. Ind. Bat. 1,1 (1856) 781. *Henslowia buxifolia* BL., Mus. Bot. Lugd.-Bat. 1 (1850) 244. *Osyris rotundata* GRIFF., Notulae 4 (1854) 742.

Vietnam: PIERRE 1409.

Cambodia: GEOFFRAY 287. MÜLLER 269.

Thailand: KERR 11889, 13854, 14106, 15916, 16029, 18550, 18946. KINGDON WARD 37469. PUT 750, 4177.

Sumatra: MEIJER 7072, 7593. DE RAADT 93. RAHMAT SI TOROES 3295, 3615. TEYSMANN (H. B. 1077).

Bangka: BÜNNEMEIJER 1350, 1473, 1621. BURGER 25. HORST (anno 1927, 1928). HUITEMA 39. KOBUS. TEYSMANN 3460 (Batoe Balai, Blienjoe, Muntok).

Billiton: BURGER 5. RIEDEL. TEYSMANN.

Riouw-Lingga-Archipelagoago: BÜNNEMEIJER 6445.

Malay Peninsula:

Perlis: RIDLEY 14933.

Kedah: RIDLEY. ROBINSON U. KLOSS 6058.

Perak: King's Coll. (= KÜNSTLER) 4179.

Kelantan: HENDERSON 19728. RIDLEY.

Trengganu: CORNER. ROSTADOS.

Pahang: CORNER 29917. RIDLEY 3, 89.

Malacca: BURKILL 2615. GRIFFITH 4391. RIDLEY 3159.

Johore: CORNER & HENDERSON 36616. GOODENOUGH 3381. NUR & KIAH 7804. RIDLEY 11032, s. #

Langkawi Island: ROBINSON 6274. SYMINGTON 46820.

Pulu Penang : BURKILL 3386. CURTIS (anno 1885, 1889, 1890), 477.

Singapore: LANGLASSÉ 42. RIDLEY 4698 (anno 1890, 1894).

Java: PLOEM.

Borneo: BECCARI 2527 ♂. DAN BIN HJ. BAKAR 3019 ♀. DUNSELMAN 169. HACKENBERG 121. HALLIER 1490, 1908. HENDERSON 20354. JACOBS 5508 ♂. KORTHALS. MOTLEY 521. POLAK 253. POSTHUMUS 2159. PURSEGLOVE 4920 ♂.

Karimata Island: MONDI 186.

Celebes: KJELLBERG 2185.

3. *Dendrotrophe umbellata* (BL.) MIQ., Fl. Ind. Bat. 1,1 (1855) 779.

Thesium spathulatum (BL.) Bijdr. FL. Ned. Indie (1826) 646. *Viscum umbellatum* BL. l. c. 666. *Henslowia umbellata* BL., Mus. Lugd.-Bat. 1 (1850) 243. *Tupeia umbellata* BL., Fl. Javae, Loranth. tab. 27 et ex KORTHALS in Verh. Bat. Genootschap 17 (1839) 195. *Henslowia retusa* BL., Mus. Lugd.-Bat. 1 (1850) 243. *H. pauciflora* BL. I. c. 244. *H.*

monticola GAMBLE in Kew Bull. (1912) 201. *Dendrotrophe monticola* DANSER in Nova Guinea N. Sero 4 (1940) 148.

Vientnam: POILANE 3499? ♂.

Sumatra: KORTHALS ♂. DE VOOGD 1153. Malay Peninsula: WRAY 1536 ♀.

Java: BINNENDIJK ♂. BLUME (SALAK ♂, PATUHAE ♂). JUNGHUHN ♂/♀. KOORDERS 31640 ♀. KUHL & HASSELT (413) ♂. SCHEFFER ♂. STEENIS 5012 ♀, 12918 ♀. DE VOOGD II ♂. WAITZ ♀. WARBURG 10984 ♂. WENT ♂.

4. *Dendrotrophe varians* (BL.) MIQ., FL. Ind. Bat. 1,1 (1855) 780.

Henslowia varians BL., Mus. Lugd.-Bat. 1 (1850) 244. *H. cassiaefolia* BL. I. C. *H. spicata* BL. I. c. *H. frutescens* BENTH. in Hookers Journ. Bot. and Kew Gard. Mise, 5 (1853) 194. *Dendrotrophe cassiaefolia* MIQ. I. c. 780. *D. spicata* MIQ. I. C. *Henslowia Lobbiana* A. DC. Prodr. 14 (1857) 631. *H. philippinensis* A. DC. I. c. *Dendrotrophe Lobbiana* MIQ. I. c. (1858) 1096. *D. philippinensis* MIQ. I. c. *Henslowia erythrocarpa* KURZ in Journ. of Bot. 13 (1875) 329. *H. sessiliflora* HEMSL. in Journ. Linn. Soc. 26 (1891) 409. *H. Ridleyi* GAMBLE in Kew Bull. (1912) 201. *H. Wrayi* KING ex GAMBLE I. c. *H. palawanensis* ELM. in Leaflet. Phil. Bot. 5 (1913) p. 1834. *H. tonkinensis* LEC. in Bull. Mus. Hist. Nat. Paris 20 (1914) 406. *H. umbellata* var. *Harmandii* LEC. I. c.; var. *longifolia* LEC. I. c. *H. Schlechteri* PILGER in Bot. Jahrb. 59 (1924) 127. *Exocarpos amboinensis* MERR. in Phil. Journ. Sc. Bot. 11 (1916) 267. *Dendrotrophe frutescens* DANSER in Nova Guinea N. Sero 4 (1940) 148. *D. palawanensis* DANSER I. c. *D. Ridleyi* DANSER I. c. *D. Wrayi* DANSER I. c.

China.

Kwang Tscheou Wang: ROTHE 116 ♂.

Yünnan: HENRY 11954 ♀/♂ ROCK 2746 ♂, 2747 ♂. TSAI 52517. WANG 80434 ♀. WANG & LIU 82850 ♀.

Kwangsai: CHING 8080 ♀, 8235 ♂. TSANG 22036 ♂, 22138 ♀, 22338 ♀, 23978 ♀, 24755 ♂.

Kwangtung: CHUN 6324 ♀, 40330 ♂, 40434 B ♂. McCLURE 6707 ♀ DALZIEL ♂, ♀ FABER ♂. GAUDICHAUD 318 ♂. HO 60060 ♂. LAU 701 ♂, 2735 ♂, 20030 ♂+♀, 20199 ♀ LEVINE 380 ♂, 3031 ♀ LEVINE & GROFF 101 ♂, 130 ♂. PLAYFAIR 255 ♀. RANKIN ♀ SAMPSON 572 ♂+♀. SCHINDLER 437 ♂. TSANG 13 ♀, 16524 ♂, 20026 ♀ TSIANG YING 68 ♀, 616 ♀, 814 ♀, 2554 ♀ TSO 20177 ♀ TSUI 12 ♀, 161 ♀, 346 ♀. 358 ♀ WANG 320 ♀, 548 ♀.

Hongkong: BODINIER 124 ♀ CHAMPION 154 ♂+♀. CHUN 5280 ♂, 40287 ♂. FABER ♂. FORD ♂. FURET 186 ♀ HANCE 554 ♂+♀ HENRY ♂+♀. RINDS ♂. SCHINDLER 471 ♂, 471 a ♂. SEEMANN 2458 ♂. TAAM 1114 ♀, 2131 ♀. TSIANG 162 ♀. WEISS 3162 ♀, 3238 ♀, 3240 J, J. WILFORD 130 ♂+♀, ♂+♀.

Hainan: CHUN H. TSO 43717 ♀, 44326 ♂. McCLURE 7698 ♀, 9450 ♀. FUNG 20299 ♀ GRESSITT 1018 ♀ HENRY 8527 ♂+♀ HOW 71742 ♀, 73951 ♂. HOW & CHUN 70121 ♀. KO 52132 ♀, 52262 ♀ LAU 41 ♀, 1487 ♀, 2920 ♂. LEI 123 ♂+♀, 374 ♀, 651 ♀, 897 ♂+♀. LIANG 62014 ♀, 62224 ♀, 63754 ♂, 64153 ♂, 64160 ♂, 64356 ♂, 65111 ♀, 65129 ♂, 66423 ♂, 66469 ♂. TSANG 131 ♀, 547 ♂. TSANG & FUNG 530 ♀ WANG 32915 ♀, 35381 ♂. 35461 ♂. 35907 ♂, 36290 ♂, 36585 ♀. WOON 5729.

Indochina.

Tonkin: BALANSA 1564 ♂, 1565 ♂, 2320 ♂. BON 5117 ♂, 5240 ♂+♀ EBERHARDT 2646 ♀, 3824 ♂. PETELOTT 2351 ♂, 2561 ♀, 2563 ♀, 5703 ♂. 6170 ♂, 6179 ♀, 6185 ♀. TSANG 30073 ♀.

Laos: HARMAND 220 ♂, 244 ♀, 1207 ♀. THOREL 2770 ♀. VIDAL 665 ♂, 920 ♀

Cambodia: PIERRE 1267 ♀, 1269 ♀, s. # ♀ POILANE 14681 ♀. SMITINAND & ABBE 6497 ♂.

Vietnam: MÜLLER 59 ♀. PIERRE 76 ♂, 326 ♀, 80 ♂, 1410 ♂+♀, s. # ♂. THOREL 647 ♀.

Vietnam: CHEVALIER 40447 ♀. CLEMENS 3420 ♀. EBERHARDT 2608 ♀. HAYATA 842. MÜLLER 1111 ♀. POILANE 3800 ♀, 3984 ♀, 6229 ♀, 7994 ♀, 8106 ♀, 9385 ♂, 10162 ♀, 12466 ♂, 21945 ♀,

22399 ♀, 23838 ♂, 27661 ♀, 30304 ♀. SQUIRES 100 ♂.

Siam: HANIFF & NUR 3896 ♀. KERR 8262 ♂, 11853 ♂, 11887 ♀, 13855 ♀, 14145 ♀, 14277 ♀, 14758 ♂. 16586 ♂, 17750 ♀, 17873 ♂, 18116 ♀, 18189 ♀, 18949 ♀, s. # PUT 789 ♀, 1160 ♂, 1672 ♀, 3030 ♀, 3030, 3667 ♀ SÖRENSEN, LARSEN & HANSEN 819 ♀. THOREL 647 ♂, 2770.

Burma: GRIFFITH 440 ♀, 4392 ♂+♀ HELFER 4393 ♀ MEEBOLD 14273 ♀ PROUDLOCK 10 ♂, 19 ♂.

Sumatra.

Tapanoeli: HUITEMA 76 ♀, 77 ♂. TEYSMANN 628 ♀.

West Coast: MARADJO 30, 397 ♂. MEIJER 5377 a, 5510 ♂+♀, 7336 ♀, 7340 ♀, 7369 ♀.

East Coast: KOORDERS 22325 ♂. LÖRZING 7983 ♂, 9608 ♀. RAHMAT SI TOROES 2220 ♀, 3318 ♀, 3348 ♂. 3356 ♀, 3364 ♂+♀, 3465 ♀, 3570 ♀, 3623 ♂, 3625 ♀, 3792 ♀, 3999 ♀, 4186 ♀.

Palembang: DE RAADT 95 ♀.

Simaloer: ACHMAD 1638 ♀.

Bangka: HORST 3 ♀, 4 ♀, s. # ♂+♀. HUITEMA 14 ♀. KOSTERMANS & ANTA 1353 ♂. DE LEEUW 8 ♀ TEYSMANN 3323 ♀, 3509 ♀, 7560 (Muntok, Batoe baleh), (Blienjoe) ♂, (Tobo alie), (Muntok) ♂, (Soengei-liat) ♂, (Djeboes) ♂. VAN DER VECHT 10 ♂.

Billiton: RIEDEL ♂+♀. TEYSMANN ♂.

Riouw-Lingga Archipelago: TEYSMANN (Tandjong Pinang & P. Pengoedjan).

Malay Peninsula:

Perlis: HENDERSON 22939 ♀. RIDLEY 14926 ♀.

Kedah: BURKILL 13336 ♀.

Prov. Wellesley: RIDLEY ♂.

Perak: Cantley's Coll. ♀. Kings Coll, (KUNSTLER) 4214 ♀. SCORTECHINI ♂+♀. SEIMUND ♀. STRUGNELL 33805 ♂. WRAY 2279 ♀, 4032 ♀.

Dindings: BURKILL & SHAH 292 ♂. RIDLEY ♀.

Kelantan: RIDLEY ♂+♀. SHAH & KADIM 557 ♀.

Trengganu: CORNER.

Pahang: BUM MUREBEH 318. BURKILL & HANIFF 17301. F.M.S. Mus. Coll. RIDLEY 35 ♀, 1239 ♀. Sow 8197 ♀. YEOB 3117 ♀ BARNES ♀. NUR 11286 ♀.

Selangor: HUME 9672 ♂. King's Coll. (KUNSTLER) 10834 ♂. SYMINGTON 20171 ♀ RIDLEY 15568 ♂.

Negri Sembilan: BURKILL 3220 ♀. FINLAYSON ♀. HOLTTUM 9656 ♀ RIDLEY ♀.

Malacca: ALVINS 33 ♂, 773 ♀, s. # ♂, BURKILL 429 ♂, 434 ♂, 2614 ♀, 3532 ♀. Cantley's Coll, 546 ♀, 1321 ♀. CUMING 2255 ♂, 2366 ♀. GAUDICHAUD 199. GOODENOUGH 1675 ♂, 19379. GRIFFITH ♀. HERVEY ♀+♂. HULLETT 640 ♂. MAINGAY 1316/2 ♂, 1929 ♀. RIDLEY 322 ♀, (anno 1889 ♀, 1892 ♀), s. d. ♂.

Johore: HOLTTUM ♀. RIDLEY ♀.

Langkawi island: CURTIS 2593 ♂. ROBINSON 6324 ♀.

Pulu Penang: BURKILL 8980 ♂. CURTIS 21 ♂, 1393 ♂, (anno 1890) ♀, (s. d.) ♀, s. # ♀. KING ♂. King's Coll. (KUNSTLER) 5213 ♀. KUNSTLER 1386 ♀. LOBB 334 ♀ MAINGAY 1315 ♂+♀. RIDLEY 13099 ♀, (anno 1899 ♀, 1915 ♀, 1921 ♀). ROBINSON 6425 ♂. SINCLAIR 39039, 39084 ♀.

Singapore: BECCARI ♀. Cantley's Coll. ♀. GOODENOUGH ♀. HULLETT 133 ♂. King's Coll. (KUNSTLER) 1181 ♀ RIDLEY 4697 ♂, 4728 ♀, 5909 ♀, (anno 1890 ♂, 1892 ♀, 1905 ♀). SARGENT ♀. SINCLAIR 39243 ♀, (anno 1951 ♀).

Java: PLOEM ♀. SCHEFFER ♀. Borneo:

Northwest Borneo (Sarawak und Brunei): ANDERSON 4158 ♀, 4570, 4742 ♂, 9865 ♀, 12592 ♀. ASHTON (BRUN) 285 ♂, 946 ♀, 970 ♀, 5021 ♀, 5574 ♀. BECCARI 1980 ♂, 2406 ♂, 2408 ♂, 2932 ♀+♂, 3679 ♀. BRUNIG S 1166 ♀, 7653 ♀, 10332 ♀ CLEMENS 7260 ♂. DAN BIN HJ. BAKAR 3044 ♀. FOXWORTHY 177 ♀. HAVILAND 35 ♂, 84 ♀, 753 ♀. JACOBS 5503 ♂, 7671 ♂. PURSEGLOVE 5032 ♀, 5561 ♀, 5623 ♀, 5624 ♀+♂, 5626 ♀.

West-Borneo: HALLIER B 1451 ♀, 1490, B 2351 ♂+♀. MONDI 283 ♀ TEYSMANN 8269 ♂.

South- und Southeast-Borneo: KORTHALS (Pulu Lampei) ♂, (Borneo) *spicata* ♂, (Martapoera) ♀, (Martapura) *varians* var. *crassifolia* ♀. KOSTERMANS 7998 ♂. MOTLEY 643 ♂. WINKLER 3357 ♀.

East- und Northeast Borneo: ENDERT 2011 ♂. JAHERI 1529 ♂, 1697 ♀, 1910 ♀. POSTHUMUS 2128 ♀.

Brit. North Borneo: CARR 26951 ♀. CASTRO 26 ♀, 9992 ♀ CLEMENS 9527 ♂, 27127 ♀, 27749 ♀,

28620 ♀, 29322 ♀, 29398 ♀, 30750 ♂, 31261, 31501 ♀, 34416 ♂, 50297 ♀, 50332 ♀, s. # ♀, (suppl.) ♂.
PINGKUN 10152 ♀ SINGH SAN 24324 ♀. SMYTHIES, WOOD & ASHTON SAN 17143 ♀. WOOD 2068 ♀. WOOD SAN A 3656 ♀.

Karimata Island: MONDI 174 ♀.

Philippines, Palawan: EBALO 429 ♀. EDANO 573 ♀, 2934 ♀. ELMER 12752 ♀. SULIT 3761 ♀.

Celebes: KJELLBERG 2047 ♂, 2078 ♀+♂, 3166 ♀.

Maluka Islands:

Morotai: KOSTERMANS 1192 ♀, 1312 ♀.

Halmaheira: ANANG 651 ♀.

Ambon: RANT 398 ♀, ROBINSON 1810 ♀. TEYSMANN ♀.

New Guinea: HENTY 13684 ♂. SCHLECHTER 19385 ♂. STAUFFER 5545 ♂+♀, 5546 ♂.

Australien, Queensland: BLAKE 15261 ♂. SMITH 3394 ♀, 3752 ♀, 3752 A ♂, 3829, 4674, 5356 ♀.

var. *minor* (RIDL.) STAUFFER nov. comb. *Henslowia minor* RIDLEY in Journ. Fed. Malay States Mus. 7 (1916) 50.

Malay Peninsula:

Kedah: EVANS & GORDON 116 ♀. RIDLEY ♂.

Trengganu: MOYSEY & KIAR 31067 ♀.

Pahang: HANIFF & NUR 7892 ♂. HOLTUM 20721 ♂. RIDLEY (anno 1911) ♀+♂, 16127 ♀+♂.

SYMINGTON & KIAH 28842 ♂+♀.

Vietnam: POILANE 3501 ♀, 3778 ♀

Northwest Borneo: ANDERSON 189 ♀

var. *arfakensis* STAUFFER nov. var. Folia minora, (15-) 30-45 mm longa, 10-20 mm lata, magis approximata, in ramis magis verrucosis, sicca nigricantia (non ochraceo-fusca). [Smaller leaves (15-) 30-45 mm long, 10-20 mm wide, more or less, on the branches more verrucose (warty), drying with blackish specks (not ochraceous-dark brown).]

Netherlands New Guinea: Vogelkop Peninsula, Arfak Mountains, Anggi Lake, Heide-gesträuch, ♂ (buds) 30, 4, 1912 - Gjellerup # 1215 (holotype of variety BO); ibid, open low forest on the summit of the mountain Kobre, 2200 m, ♂ (buds) 6 4, 1940 - KANEHIRA & HATUSIMA # 13652, 14045, ♀ flowers 14055 back of the mountain Kobre (Kobrei), above Testega, Anggi Gita Lake, 2300 m, in summit scrub and on the edge of *Nothofagus* forest in quantity, ♂ flowers 14 1 1962 - SLEUMER & VINK # 4268; ibid, mountain Kongremottie, Anggi Gita lake, 2200 m, looping in open *Nothofagus-Tristania*-forest, on the ground, but with some branches over other shrubs, ♀ flowers + fruits 12 1 1962 - SLEUMER & VINK # 4254; ibid descent from the mountain Kobre against the Anggi Gigi lake and Surerei, 2300 m, the forest, on the floor, ♂ flowers 16 1 1962 - SLEUMER & VINK # 4285; ibid, Mountain Sense Nemes above Surerei, Anggi Gigi lake, 2550 m, in the remains of a low-*Nothofagus* forest, on the floor, probably root parasite on *Symplocos confusa*, ♀ flowers + fruits 20 1 1962 - SLEUMER & VINK # 4353; ibid at 2150 m, remnants of *Nothofagus* forest, ♀ flowers 21 1 1962 - SLEUMER & VINK # 4413; ibid, mountain Mesenuk (Misjnuk), on the way to Ransiki, 1900 m, west slope, forest, fruits 10th 1st 1962 - SLEUMER & VINK # 4203; ibid, 2150 m, in the *Nothofagus*-Myrtaceae bushes of the summit, the first fruits 10. 1. 1962 - SLEUMER & VINK 4217.

var. *multinervis* STAUFFER nov. var. Folia magna, saepe ad 70 (-79) mm longa et ad 40 (-60) mm lata. Petiolus latus, cuneatus, usque ad 9mm longus. Nervi perumque 9. [The leaves are large, often 70 (-79) mm long, and up to 40 (-60) mm wide. Petiole wide, cuneate, up to 9 mm long. Nerves approximately 9.]

Malay Peninsula: PERAK: Gunong Batu Pateh, 1300 m, fruits - WRAY # 278 (holotype of the variety K). PAHANG: Gunong Tahan, 1500-1800 m, fruits 7. 7. 1905 - WRAY & ROBINSON # 5484; ibid, 1650 m, fruits 1. 6. 1905 - WRAY & ROBINSON 11. 5349. Cameron-Highland, *Rhododendron* mountain, fruits 13. 1.

1924 - HENDERSON # 11623. FRASER HILL, 1200-1300 m, 29.9. 1922 - BURKILL & HOLTUM # 8923. SELANGOR, Gunong Mengkuang, 1500 m, ♂ flowers 5. 2. 1913 - ROBINSON. Thailand Anteil: Province Yala, Gunong Pua, Betong, 1200 m, evergreen forest, fruits 10. 8. 1923 - KERR # 7560. MALACCA, Mount Ophir, fruits, 1867/8 - MAINGAY # 2596; ibid fruits Juli 1888 - HULLETT # 750. TRENGGANU, Gunong Padang, 1200 m, fruits Juni 1937 - MOYSEY & KIAH # 31858.

var. *gracilior* STAUFFER nov. var. Folia minora, 17,5-33 mm longa, 7,5-9,5 nun lata, supra lucida, subtus opaca et dilutiora. Petiolus quartam partem laminae attingens, 5-8 mm longus. Nervi tres tantum. Flores longe pedicellati. [The leaves are smaller, 17.5-33 mm long, 7.5-9.5 wide, shiny above, opaque below even under shade. Petiole reaching a quarter of the blade, 5-8 mm long. Only three nerves. Flowers pedicels long.]

Vietnam: Nha Trang, la Mère et l'Enfant, 1500-1700 m, Southeastang, Peat soil with stones, ♀ flowers + fruits 24. 5. 1923 - POILANE # 6809 (Holotype of the variety P).

Dendromyza DANSER in Nova Guinea N. Ser. 4 (1940) 133

1. *Dendromyza Reinwardtiana* (BL.) DANSER in Nova Guinea N. Ser. 4 (1940) 134. *Tupeia Reinwardtiana* BL. FL Javae, Loranth. (1838) tab. 28 et ex KORTH. in Verh. Bat. Genootschap 17 (1839) 195. *T. racemosa* KORTH. in Bull. Neerl. (1838) 157. *Henslowia Reinwardtiana* BL., Mus. Lugd. Bat. 1 (1850) 244. *Dendrotrophe Reinwardtiana* MIQ., Fl. Ind. Bat. 1,1 (1856) 780. *D. plurinervia* MIQ. l. c. (1858) 1096. *Henslowia plurinervis* BOERL., Handl. Fl. Ned. Indie 3 (1900) 181. *H. Robinsonii* MERR. in Phil. Journ. Sc. Bot. 11 (1916) 268. *Cladomyza multinervis* DANSER in Nova Guinea N. Ser. 6 (1955) 274.

Sumatra: BECCARI 737 ♂+♀. BORSSUM WAALKES 1832 ♂+♀. KORTHALS 1032 ♂, S. # ♀+♂. PRAETORIUS ♀. RAHMAT SI BOEEA 9290 ♂+♀. TEYSMANN 1075 ♂+♀.

Malay Peninsula: KUNSTLER 6203 ♂+♀.

Java: BACKER 4511 ♀+♂, 12462 ♀+♂, 31508 ♀+♂. BAKH. v./d. BRINK 5244 ♀+♂. BRUGGEMAN 736 ♀+♂. Coll, indig, 10 ♀+♂. REINWARDT ♀+♂. VAN STEENIS 11762 ♀+♂.

Borneo: BUWALDA 7817 ♀+♂. CARR 26446 ♀. CLEMENS 30970 ♀, 32471 ♀, 33039 ♂, 33155 ♂. ENDERT 2958 ♀+♂, 3843 ♀+♂, 5268 ♀. HALLIER 2190 ♀+♂. JAHERI ♀+♂. JACOBS 5386 ♀+♂. KORTHALS ♀+♂. KOSTERMANS 12883 ♀, 13742 ♀+♂. TEYSMANN 8089 ♀+♂, S. # ♀+♂.

Philippines: BORDEN 1200 ♂. CUMING 1972 ♂. EDANO 11071 ♀. ELMER 8987 ♂+♀, 10106 ♀, 11296 ♂. FÉNIX 15917 ♂. MENDOZA 42394 ♂. MERRILL 8269 ♂. SULIT 9999 ♀ WENZEL 2553 ♀.

Celebes: EYMA 3483 ♀+♂. KJELLBERG 1636 ♀+♂, 1641 ♀+♂. KOORDERS 17745 ♀+♂, 17750 ♀+♂. SARASIN 1090 ♂.

Maluka Islands: BARCLAY 4099 ♂. JDJAN/MOEHTAR 296 ♀. KOSTERMANS 939 ♀.

Ceram: BUWALDA 5623 ♂. KUSWATA & SOEPADMO 116 ♂+♀ RUTTEN 2064 ♂. TREUB 158 ♂. VRIESB & TEYSMANN ♂+♀.

Ambon: BUWALDA 6126 ♀ DOCTERS V. LEEUWEN 8674 ♀. RANT 66 ♀, 323 ♂. ROBINSON 1809 ♀ TEYSMANN 5153 ♀.

New Guinea: BRASS 27795 ♀, 31601 ♂. CARR 12060 ♀+♂. CLEMENS 9317 bis ♀ DOCTERS VAN LEEUWEN 10687 ♀+♂. FRYAR 4009 ♀+♂. HENTY 14375 ♀+♂. SCHLECHTER 14259 ♀+♂, 16456 ♀+♂, 17781 ♀+♂. SCHODDE 2163 ♂, 2181 ♀ STAUFFER 5559, 5582, 5589, 5555, 5618.

Salomon Island: BRASS 3430 ♀.

var. *aphylla* STAUFFER nov. var. Rami aphylli. Rhachis inflorescentiae bracteis squamiformibus, acute et anguste triangularibus, minimis obtecta. [The branches are leafless. The inflorescence rachis bracts squamiform, acute and narrowly triangular, minimally covering].

Philippines: Mindanao, Province Agusan, Cabadbaran, Berg Urdaneta, fruits & ♂ flowers Oct, 1912 - ELMER # 14063 (Holotype of the variety MAN).

2. *Dendromyza puberula* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus, uno loco insidens et intra ramos arboris nutricis haustoria turionum modo emittens. Rami crassiores recti vel leviter curvati, teretes, glabri, tenuiores volubiles, applanati, haustoria brevia edentes, iuveniles puberuli, laterales 1-2 ex eodem nodo oriundi. Cortex laevis, rubro-fusca, serius nigra et fissa. Folia glabra, obovata, basi cuneata, apice rotundata et mucrone recto apiculata, coriacea, lucida, iuvenilia rubella, subtriplo longiora quam latiora, 9,8-60 X 3,7-19 mm. Petiolus 1,4-3,5 mm longus. Nervi (3-) 5, indistincti. Inflorescentiae dioicae, masculina 1-3 ex eodem nodo; rhachis puberula, usque ad 2,7 mm longa. Bractee persistentes. Flores ♂ luteoli, (5-) 6 (-8), sessiles, 1,2 mm longi, 1,5 mm lati. Tepala 4-5, pilis poststaminalibus ornata. Stamina 4-5. Filamenta brevissima, antherae globosae, latae, dithecicae, thecis iuxtapositis. Discus planus, in centro pistillodio apiculatus. Inflorescentiae femineae 1 (-3) ex eodem nodo, rhachis subglabra, 1,5 mm longa. Flores ♀ luteoli, 2,8 mm longi, 1,8 mm lati. Tepala 5 (-6), cum lobis stigmatis alternantia. Fructus 7,2 mm longi, 3,2 mm lati, prope basin latissimi. Endocarpium 6 X 3 mm, apice filis coronatum; valvulae faciles fissu.

Hemiparasitic shrub in the branches of trees, sitting in one place and within the branches of the tree, sending off nurse haustoria. Branches straight or slightly curved, terete, glabrous, thinner ones twining, flattened, putting forth short haustoria, young growth puberulous, 1-2 lateral ones originating from the same node. Bark smooth, reddish dark brown, later black and fissured. Leaves glabrous, obovate, base cuneate, apex rounded and mucronate to apiculate, leathery, shiny, young leaves reddish, one third longer than wide, 9.8-60 X 3.7-19 mm. Petiole 1.4-3.5 mm long. Nerves (3-5), indistinct. Inflorescences dioecious, male 1-3 from the same node; rachis pubescence, up to 2.7 mm long. Bracts persistent. The ♂ flowers yellowish, (5-) 6 (-8), sessile, 1.2 mm long, 1.5 mm wide. Tepals 4-5, trimmed with poststaminal hairs. Stamens 4-5. Filaments very short, anthers globose, wide, dithecal, thecae juxtaposed. Disc flat, apiculate in the center of pistillode. Female inflorescences 1 (-3) from the same node, the rachis subglabrous, 1.5 mm long. The ♀ flowers yellowish, 2.8 mm long, 1.8 mm wide. Tepals 5 (-6), alternating with the stigmatic lobes. Fruit 7.2 mm long, 3.2 mm wide, broad at the base. Endocarp 6 X 3 mm, apex crowned with fibers; valves easily split.

New Guinea: Vogelkop-Peninsula, Kebar-Tal, 850 m, against Andjai, above the sulfur source on the way to Hatai on *Acsmithia* sp., ♂ flowers 20. 11. 1961 - VAN ROYEN & SLEUMER # 7340 (holotype L). Cyclops Mountains, Hollandia District, way from Ifar to Ormoe, 1220 m, on *Quintinia* sp., ♀ flowers & fruits 28. 6. 1961 - VAN ROYEN & SLEUMER # 6069 (paratype ♀ L).

3. *Dendromyza Ledermannii* (PILGER) STAUFFER nov. comb. *Henslowia Ledermannii* PILGER in Bot. Jahrb. 59 (1924) 126. *Cladomyza Ledermannii* DANSER in Nova Guinea N. Ser. 6 (1955) 271. *Dendromyza apiculata* DANSER l. c. 265. *D. mucronulata* DANSER l. c. 266. *D. papuana* DANSER l. c. 266.

New Guinea: ARDLEY ♀ BORGMANN 356 ♂. BRASS 613 ♂, 3800 ♀, 3920 5f, 5393 ♂, 25059 ♀. CARR 11918 ♂, 14308 ♂. CLEMENS 199 ♀, 9221 B ♂. WARBURG 20589 ♀. LAUTERBACH 583 ♀

LEDERMANN 8979 ♂, 12211 ♂. PULLE 1182♀. SLEUMER 4179♀. STAUFFER 5624, 5690. VINK 15228 ♂.

4. *Dendromyza cucullata* (DANSER) STAUFFER nov. comb. *Cladomyza cucullata* DANSER in Nova Guinea N. Ser. 6 (1955) 274.

New Guinea: LEDERMANN 12697 ♀, 12911 ♂.

5. *Dendromyza volubilis* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami plerique volubiles, dense intricati, nutricem suffocantes, laterales 1-3 ex eodem nodo, sub angulo 30°-100° oriundi, crassiores teretes, tenuiores applanati, conspicue angulosi, 6-7 mm lati; internodia 2-46 mm longa. Brachyblasti indistincti. Folia omnia laminifera, oblanceolata vel lanceolata, basi cuneata, apice rotundata sed apiculo incurvo cucullata, supra sub lucida, iuvenilia luteofusca, plerumque tripla longiora quam latiora, 9-51 X 3-15 mm. Nervi (3-) 5 (-8), conspicui. Rami floriferi simplices vel interdum racemoso-ramificati. Inflorescentiae dioicae, masculinae plerumque singulae, cymosae, (4-) 5 (-7)-florae. Rhachis 1,5-6 mm longa, 0,9 mm lata, applanata, basi bracteis modo 2/5 insertis usque ad mediam partem ornata, apice bracteis 4 confertis, 0,6-0,8 mm longis, 0,5 mm latis, lanceolatis, ciliatis ornata. Flores ♂ albi, pedicellati, 1,5 mm lati. Tepala 5, rugulosa, 1 mm longa. Stamina 5, 0,5-0,6 mm longa. Antherae globosae, dithecicae, thecis iuxtapositis. Discus planus, in centro pistillodio minimo, conico apiculatus. Inflorescentiae femineae singulae, uniflorae; rhachis ad 3 mm longa. Flores ♀ albi, 2,5 mm longi, 1,5 mm lati. Tepala 5, cum lobis stigmatis alternantes. Fructus ellipsoidei, in tertia inferiore parte latissimi, 7,3-8,5 mm longi, 3,0-3,5 mm lati; collum breve, crassum.

Hemiparasitic shrub in the branches of trees. Stems mostly twining, densely entangled, strangling the host plants, lateral stems 1-3 from the same node, the angle of orientation 30° -100°, larger ones terete, thinner ones flattened, noticeably angular, 6-7 mm wide; internodes 2-46 mm long. Brachyblasts indistinct. Leaves all laminar, oblanceolate or lanceolate, base cuneate, apex rounded but apiculate incurved cucullate, above somewhat shiny, young leaves yellowish brown, for the most part three times longer than wide, 9-51 X 3-15 mm. Nerves (3-) 5 (-8), conspicuous. Flowering branches simple or sometimes in racemose clusters. Inflorescences dioecious, male for the most part solitary, cymose, (4-) 5 (-7) -flowered. Rachis 1.5-6 mm long, 0.9 mm wide, flattened, basal bracts in a 2/5 insertion mode up to the median part ornate, apical bracts 4 crowded, 0.6-0.8 mm long, 0.5 mm wide, lanceolate, ciliate trimmed. ♂ flowers white, pedicellate, 1.5 mm wide. Tepals 5, rugulose, 1 mm long. Stamens 5, 0.5-0.6 mm long. Anthers globose, dithecal, thecae juxtaposed. Disc flat, in the center a small, conical, apiculate pistillode. Female inflorescences solitary, unifloral; rachis to 3 mm long. ♀ flowers white, 2.5 mm long, 1.5 mm wide. Tepals 5, alternating with the stigmatic lobes. Fruit ellipsoidal, in the lower third part very broad, 7.3-8.5 mm long, 3.0-3.5 mm wide; collar short, thick.

Maluka Islands: Morotai, Gunong Pare, 1000 m, many scattered specimens, ♂ flowers 27. 5. 1949 - KOSTERMANS # 1140 (Holotype BO). Ibid, on *Garcinia* sp., ♀ flowers & fruits 27. 5. 1949 - KOSTERMANS # 1162, 1185.

6. *Dendromyza salomonica* DANSER in Nova Guinea N. Ser. 6 (1955) 267.

New Guinea: KAJEWSKI 1672 ♀.

7. *Dendromyza crassifolia* (GIBBS) STAUFFER nov. comb. *Henslowia crassifolia* GIBBS, Phytogeogr. and Fl. Arfak Mts. (1917) 132. *Cladomyza crassifolia* DANSER in Nova Guinea N. Ser. 4 (1940) 136.

New Guinea: GIBBS 5620 ♀. KANEHIRA & HATUSIMA 13526 ♀. V. ROYEN & SLEUMER 7866 ♂, 8173 ♀+♂. SLEUMER & VINK 4215 ♂, 4296 ♀+♂.

8. *Dendromyza intricata* (DANSER) STAUFFER nov. comb. *Cladomyza intricata* DANSER in Nova Guinea N. Ser. 6 (1955) 276.

New Guinea: LAM 1986 ♀.

Cladomyza DANSER in Nova Guinea N. Ser. 4 (1940) 135

1. *Cladomyza pachydisca* DANSER in Nova Guinea N. Ser. 4 (1940) 140.

Borneo: CLEMENS 26905 ♂+9-, 27308 ♂+♀.

Philippines: CLEMENS 947 ♂+♀. RAMOS & EDANO 38974 ♂+♀.

New Guinea: GIBBS 5623 ♂+♀. KANEHIRA & HATUSIMA 12258 ♀. LEDERMANN 9387 ♂+♀. V. ROYEN & SLEUMER 7073 ♀, 7146 ♀+♂. SLEUMER & VINK 4410 ♂+♀, 4280 ♂+♀, 4294 ♂+♀, 4459 ♂+♀.

2. *Cladomyza kaniensis* (PILGER) STAUFFER nov. comb. *Henslowia kaniensis* PILGER in Bot. Jahrb. 59 (1924) 127. *Cladomyza latifolia* DANSER in Nova Guinea N. Ser. 4 (1940) 141.

New Guinea: BODEN KLOSS ♀. BRASS 10245 ♂, 11206 ♀, 12692 ♀+♂. CARR 13025 ♀, 14406 ♀. CLEMENS 3337 ♂. HOOGLAND & SCHODDE 6967 ♀+♂. LEDERMANN 8979 ♀, 10347 ♀. McKEE 1354 ♂. V. ROYEN & SLEUMER 7482 ♀. SCHLECHTER 17283a ♂. SCHODDE 1508 ♂, 1617 ♀. SLEUMER & VINK 4204 ♂, 4214 ♀, 4198 ♀. STAUFFER 5605, 5607. VERSTEEG 1385 ♀. VINK 15247 ♀.

var. *Eymae* STAUFFER nov. var. Folia multo minora, late cuneato-obovata, 10-15 mm longa, 8-12 mm lata. Inflorescentiae singulae, sessiles. [Leaves smaller, wide, cuneate-obovate, 10-15 mm long, 8-12 mm wide. Inflorescences single, sessile.]

Netherlands New Guinea: Vogelkop-Peninsula, Arfak Mountain, Anggi Gita Lake, climb to the mountain Kongremottie, 1950 m, n low, open *Nothofagus* forest with Ericaceae undergrowth, on *Garcinia* sp., ♂ flowers 12. 1. 1962 - SLEUMER & VINK n, 4237; ibid, mountain Saru-mot at Iray, Anggi Gigi Lake, in *Nothofagus* forest at 2050 m, ♂ flowers 26. 1. 1962 - SLEUMER & VINK # 4458. Ferner: EYMA # 5180 ♂ (Holotype of the variety L), KANEHIRA & HATUSIMA # 14026 ♂.

3. *Cladomyza stellata* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami partim recti, teretes, partim volubiles, applanati, costati, in sinibus nutricem tangentibus haustoria ramosa edentes. Rami laterales

1-2 (-4) ex eodem nodo sub angulo 20°-130° oriundi. Cortex fusca. Folia obovata vel elliptica, apice rotundata, non mucronata, basi cuneata, utrimque lucida, 15-72 X 6-45 mm, 1-5 in brachyblastis. Petiolus 0,6-9 mm longus. Nervi utrimque conspicui, 7-15. Inflorescentiae dioicae, masculinae 1-3 (-5) ex eodem nodo, plerumque triflorae, rhachis 0,7-2,1 mm longa. Flores ♂ luteoli. Tepala (3-) 4 (-5), pilis poststaminalibus destituta. Stamina totidem. Pistillodium distinctum. Inflorescentiae femineae 1-5 ex eodem nodo, plerumque uniflorae, rhachis subnulla vel usque ad 1 mm longa, bracteata. Flores ♀ luteoli, 2,5 mm longi, 1,3 mm lati. Tepala 4-5. Stigma capitatum. Fructus 5,5-7,8 mm longi, 2,4-3,3 mm lati, collum 1,7 mm longum. Endocarpium costatum, costis tepalis oppositis, 4 x 2,8 mm, apice filis patulis coronatum.

Hemiparasitic shrub in the branches of trees. Branches are partly straight, terete, partly twining, flattened, ribbed, putting forth branched haustorial in sinuses touching the host. Lateral branches 1-2 (-4) originating from the same node at an orientation angle of 20°-130°. Bark dark brown. Leaves obovate or elliptic, apex rounded, not mucronate, base cuneate, shiny on both sides, 15-72 X 6-45 mm, 1-5 in the brachyblasts. Petiole 0.6-9 mm long. Nerves conspicuous, 7-15. Inflorescences dioecious, male 1-3 (-5) from the same node, and, for the most part triflorous, the rachis 0.7-2.1 mm long. ♂ flowers yellowish. Tepals (3-) 4 (-5), deprived of poststaminal hairs. Stamens just as many. Pistillode distinct. Female inflorescence 1-5 from the same node, usually unifloral, rachis nearly lacking or up to 1 mm long, bracteate. The ♀ flowers yellowish, 2.5 mm long, 1.3 mm wide. Tepals 4-5. Stigma capitate. The fruit 5.5-7.8 mm long, 2.4-3.3 mm broad, collar 1.7 mm in length. Endocarp costate, ribs opposite the tepals, 4 x 2.8 mm, apex crowned with spreading fibers.

Maluka Islands: Aru Island: Pulu Kobreör, Dositama Laoe, primary forest, in treetops, ♀ flowers & fruits 17. 5. 1938 - BUWALDA # 4992 (Holotype BO). Pulu Tranggan, Kampong Ngaibor, ♂ flowers 29.6. 1938 - BUWALDA # 5421. Kei Island: Kei Keteil a Tual, ♂ flowers Aug. 1873 - BECCARI # 8249 ♀, 8250 ♀, 8250 A ♀ Tenimber Island: Timorlaut, Pulu Jamdena, the forest rest house between Kampong Slynei and Otimmei, ♀ flowers & fruits, 15.3.1938 - BUWALDA # 4204.

4. *Cladomyza gracilis* DANSER in Nova Guinea N. Ser. 6 (1955) 275.

New Guinea: EYMA 4423 ♀. PULLE 817 ♂.

5. *Cladomyza dendromyzoides* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus, ad 1 m altus, densus, pendulus et scandens. Rami omnes volubiles, nutricem non suffocantes, teretes, iuveniles in sinibus nutricem tangentibus haustoria edentes. Brachyblasti 0,9-5 cm longi, 3-8 folia laminifera gerentes, a reliquis ramis distincte differentes. Flagellae squamiferae et floriferae, interdum inter se ipsas parasiticae. Folia obovata, basi cuneata, iuvenilia apice mucronata, concava, margine revoluta, 3-7 (-18,5) X 1,5-5 (-12) mm. Petiolus 0,5-4,5 mm longus. Nervi 3 (-5) inconspicui. Inflorescentiae dioicae. Flores ♂ luteo-virides, sessiles, 1,8 m longi, tepalis patulis 2,2 mm lati. Tepala 3 (-4) pilis poststaminalibus destituta. Stamina totidem. Antherae quadriloculares, loculis superpositis. Pistillodium distinctum. Inflorescentiae femineae 1-3 ex eodem nodo, brevissimae multibracteatae, uniflorae. Flores ♀ luteo-virides. Tepala 3-5. Lobi stigmatis tepalis isomeris oppositi. Fructus intense purpurei, 5,4-6,3 mm longi, 3,0-3,3 mm lati. Endocarpium 3,3 X 2 mm, dense pilosum, apice filis

(fibrovascularibus) plumosis coronatum.

A hemiparasitic shrub in the branches of the trees, up to 1 m tall, dense, pendulous and scandent. Branches are all twining, not strangling the host, terete, juveniles putting forth haustoria in recesses touching the host. Brachyblasts 0.9-5 cm long, carrying 3-8 laminar leaves, distinctly different from the other branches. Squamiform and floriferous whips sometimes parasitic among themselves. Leaves obovate, base cuneate, juvenile apices mucronate, concave, margin revolute, 3-7 (-18.5) X 1.5-5 (-12) mm long. Petiole 0.5-4.5 mm long. Nerves 3 (-5) inconspicuous. Inflorescences dioecious. ♂ flowers yellow-green, sessile, 1.8 m long, open tepals 2.2 mm wide. Tepals 3 (-4) or without poststaminal hairs. The same number of stamens. Anthers quadrilocular, loculae *super-positioned*. Pistillode distinct. Female inflorescences 1-3 from the same node, shortly multibracteate, unifloral. Flowers ♀ yellow-green. Tepals 3-5. Stigmatic lobes same number as and opposite tepals. Fruit intensely purple, 5.4-6.3 mm long, 3.0-3.3 mm wide. Endocarp 3.3 X 2 mm, densely pilose, apex crowned with feathery fibrovascular fibers.

Netherlands New Guinea: Vogelkop-Peninsula, Arfak mountains, Mount Koebre northeast of Tembrok-Berges, 2400 m, between the Anggi Lakes, in open residues of *Nothofagus*-Myrtaceae forest, sometimes not unusually on *Vaccinium minuti-calcaratum* J. J. Sm., ♀ flowers & fruits 28. 1. 1962 - SLEUMER & VINK # 4484 (Holotype L); ibid, Mount Sensenemes over Surerei, Anggi-Gigi Lake, 2550 m, remnants of low forest and summit scrub, on *Vaccinium globosum* J. J. SM., *Nepenthes* sp., *Drimys* sp., ♂ flowers 20. 1. 1962 - SLEUMER & VINK # 4356 (Paratype ♂ L) and ♀ flowers & fruits # 4357; ibid, at the summit of Sarumot at Iray, Anggi-Gigi-See, 2350 m, in *Nothofagus* forest and summit scrub, on *Vaccinium paradisearum* BECC.

6. *Cladomyza nivalis* (RIDLEY) DANSER in Nova Guinea N. Ser. 4 (1940) 136. *Henslowia nivalis* RIDLEY in Transact. Linn. Soc. Bot. 9 (1916) 146. *Cladomyza robustior* DANSER l. c. 137.

New Guinea: BODEN KLOSS ♀+♂. KALKMANN 4485 ♂. VERSTEEG 2447 ♀.

7. *Cladomyza microphylla* (LAUTERB.) DANSER in Nova Guinea N. Ser. 4 (1940) 136. *Henslowia microphylla* LAUTERB. in Nova Guinea 8 (1912) 813. *H. laevis* PILGER in Bot. Jahrb. 59 (1924) 125. *Cladomyza laevis* DANSER in Nova Guinea N. Ser. 4 (1940) 137.

New Guinea: BRASS 9016 ♂. BRASS & MYER DREES ♀. PULLE 842 ♀+♂, 908 ♀, 1038 ♂. VON RÖMER 1250 ♀+♂.

8. *Cladomyza acrosclera* DANSER in Nova Guinea N. Ser. 4 (1940) 138.

New Guinea: BRASS 4240 ♀, 4240a ♂, 4587 ♂, 4749 ♀ CARR. 13814 ♂, 15043 ♂.

9. *Cladomyza densa* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus, subrectus. Rami glabri, pleiochasiales, teretes, iuveniles costati, laterales 1-2 ex eodem nodo sub angulo 15°-60° oriundi, acrotoni. Cortex fusca, laevis, serius grisea. Folia laminifera glabra, modo 2/5 disposita, ovato-lanceolata vel basalia suborbicularia, apice obtusa, non mucronata, basi cuneata, plana, crassa, 18-38 mm longa, 15-22 mm lata, iuvenilia lucida. Nervi supra conspicui, (3-) 5.

Folia squamiformia in ramis basalia, triangularia, 1,5-2 mm longa, 0,9-1,2 mm lata. Inflorescentiae femineae singulae, uniflorae, rhachis valde abbreviata, dense bracteata. Flores ♀ sessiles, 2 mm longi et aequilati. Tepala 5 luteola, erecta, apice cartilaginea, 1-1,3 mm longa et aequilata. Staminodia nulla. Lobi stigmatis cum tepalis alternantes. Fructus tepalis persistentibus coronati, obtuse 5-costati, 6-7,9 mm longi, 3,3-4 mm lati, collum 2-4 mm longum. Mesocarpium fibrosum, endocarpium 3,8 mm longum, 2,9-3,3 mm latum, 5-costatum, apice filis (fibrovascularibus) 5 X 4 plumosis, reclinato-patulis ornatum.

Hemiparasitic shrub in the branches of trees, suberect. Branches glabrous, pleiochasial, terete, juvenile ribbed, laterals 1-2 originating from the same node at an orientation angle of 15°-60°, acrotonic. Bark dark brown, smooth, later gray. Laminar leaves glabrous, disposed in a 2/5 mode, ovate-lanceolate or the basal ones suborbicular, apex obtuse, not mucronate, base cuneate, flat, thick, 18-38 mm long, 15-22 mm wide, juvenile shiny. Nerves from above conspicuous, (3-) 5. Squamiform leaves basal on branches, triangular, 1.5-2 mm long, 0.9-1.2 mm wide. Female inflorescences solitary, unifloral, rachis very abbreviated, densely bracteate. The ♀ flowers sessile, 2 mm long and equally wide. Tepals 5 yellow, erect, the tip cartilaginous, 1-1.3 mm long, and equally wide. Staminodia absent. Stigmatic lobes with alternate with the tepals. Fruit crowned with persistent tepals, bluntly 5-ribbed, 6-7.9 mm long, 3.3-4 mm wide, collar 2-4 mm in length. Mesocarp fibrous, endocarp 3.8 mm long, 2.9-3.3 mm wide, 5-ribbed, apex ornamented with feathery, reclined-spreading fibrovascular fibers 5 X 4.

New Guinea: Papua, Milne Bay District, Northern slopes of the mountain Daymau, Maneau chain, in dense clumps on different host trees in moss forest, 2230 m, ♀ flowers & fruits 20. 5. 1953 - BRASS # 22301 (Holotype LAE).

10. *Cladomyza erecta* DANSER in Nova Guinea N. Ser. 6 (1955) 275.

New Guinea: BRASS 10253 ♀. LAM 1977 ♂. ROBBINS 1062 ♀. SCHODDE 2111 ♂.

11. *Cladomyza uncinata* DANSER in Nova Guinea N. Ser. 4 (1940) 139.

New Guinea: BRASS 13409 ♂, 23290 ♂. CARR 13121 ♀. CLEMENS 6396 ♀. V. ROYEN & SLEUMER 7928 ♂. WOMERSLEY & MILLAR 8731 ♀. STAUFFER 5544 ♀.

12. *Cladomyza angustifolia* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami teretes, modice ramificati, undato-volubiles, in sinibus nutricem tangentibus haustoria usque ad 34 mm longa edentes, laterales 1 (-3) ex eodem nodo sub angulo 45°-60° oriundi, brachyblasti bene distincti, multifolii. Folia oblongo-lineararia, crassiuscula, uninervia, apice acuta et mucronata, basi subito angustata, prope basin latissima, 2,5-12,6 mm longa, 1,2-3,0 mm lata, Petiolus 0,4-1,3 mm longus. Inflorescentiae dioicae, masculinae bracteatae, 3- ad 6-florae. Flores ♂ rubelli, 2,5 mm longi, 3 mm lati. Tepala 4-5, pilis poststaminalibus ornata. Stamina isomera, 0,5 mm longa. Antherae globosae, dithecicae, thecis oblique iuxtapositis. Discus 1 mm latus, in centro pistillodio minimo apiculatus. Inflorescentiae femineae plerumque uniflorae. Flores ♀ rubri, 2 mm longi, 1,3 mm lati. Tepala 4-5. Stylus crassus, brevis, lobi stigmatis cum tepalis alternantes. Fructus rubro-suffusi, 6,0-7,2 mm longi, 2,5-3 mm crassi,

endocarpium 4 X 2 mm.

Hemiparasitic shrub in the branches of trees. Branches terete, slightly branching, undulating twining, putting forth haustoria to 34 mm long in sinues touching the host, laterals 1 (-3) from the same node at an orientation angle of 45°-60°, brachyblasts quite distinct, multifoliate. Leaves oblong-linear, rather thick, single-nerved, apex acute and mucronate, the base narrowed abruptly, near the base wide, 2.5-12.6 mm long, 1.2-3.0 mm wide, petioles 0.4-1.3 mm long. Inflorescences dioecious, male bracteate, 3- to 6-flowered. The ♂ flowers reddish, 2.5 mm long, 3 mm wide. Tepals 4-5 ornamented with poststaminal hairs. Stamens isomeric, 0.5 mm long. Anthers globose, dithecal, thecae obliquely juxtaposed. Disc 1 mm wide, the center pistillode minutely apiculate. Female inflorescence mostly unifloral. The ♀ flowers red, 2 mm long, 1.3 mm wide. Tepals 4-5. Style thick, short, stigmatic lobes with alternate tepals. The fruit red-suffused, 6.0-7.2 mm long, 2.5-3 mm thick, endocarp 4 X 2 mm.

New Guinea: Eastern Highlands District: Bismarck Mountains, East slope of William Hill, the lake Aunde, on trees at the edge of the moss forest, 3600 m, ♂ + ♀ flowers & fruits 25 7 1956 - HOOGLAND & PULLEN # 5776 (Holotype CANB) (indigenous name: ndegeh pongi, pugagagan korinarah; in Chimbu: waimam bano, masul; in Wahgi: minj); ibid in the moss forest 3600-3650 m, on *Trochocarpa nutans* (SM JJ.) LAM, *Rhododendron Womersleyi* SLEUMER and *Gaultheria mundula* F.v. M, ♂ + ♀ flowers 14 9 1961 - SLEUMER # 4159; ibid, at the edge of the subalpine forest, 3840 m, on *Rhododendron* sp., ♀ flowers 23 6, 1959 - BRASS # 30105. ibid, 3450 m, in alpine grasslands, ♀ flowers & fruits 31 7 1956 - Womersley # 8925; ibid, on small trees in the montane coniferous forest, 3560 m, ♀ flowers & fr, 1 8 1956 - WOMERSLEY # 8867; ibid, 3400 m, ♀ flowers & fruits 1961 - BORGMANN # 33, # 223 pro parte; ibid, 3550 m, ascent to the lower lake, Ericaceae bush, ♀ flowers & fruits 3. 2. 1964 - STAUFFER # 5668 and # ♂ 5659.

13. *Cladomyza cuneata* DANSER in Nova Guinea N. Ser. 4 (1940) 137.

New Guinea: BORGMANN 223 ♂+♀. BRASS 5013 ♂, 23343 ♀, 30561 ♀. CARR 13092 ♀. CLEMENS 4830 ♀, 6031 ♀, 9106 ♂, 9262 ♀. HOOGLAND & PULLEN 5448 ♀+♂, 6183 ♂. SCHODDE 1376 ♂+♀. SLEUMER 4144 ♀, 4187 ♂, 4189. STAUFFER 5630, 5631, 5633.

var. *grandifolia* STAUFFER nov. var. Folia glauca, (4,5-) 25 (-62) mm longa, (3-) 12 (-28) mm lata, oblanceolato-obovata. [Leaves glaucous, (4.5-) 25 (-62) mm long, (3-) 12 (-28) mm wide, oblanceolate-obovate.]

New Guinea: Western Highlands District: at Nondugl on Ganigl River, 1830 m, on the lower branches of small trees in the mountain forest, ♀ flowers & fruits 5. 7. 1956 - WOMERSLEY & JONES # 8791 (Holotype of the variety LAE) (indigenous name: de pondgl.). Eastern Highlands District: Michaels-Berg, northeast slopes, 2000 m, in the *Castanopsis-Nothofagus* forest on different host trees, flowers & fruits ♀ 5. 9. 1959 - BRASS # 31361. Morobe District: Saddle Mountain, Sambanga, from 1500 to 1800 m, steep forest above a river, on moss-covered trees, not rare, ♀ flowers & fruits 24. 8. 1937 - CLEMENS # 6810.

14. *Cladomyza acutata* (PILGER) DANSER in Nova Guinea N. Ser. 4 (1940) 136.
Henslowia acutata PILGER in Bot. Jahrb. 59 (1924) 125.

New Guinea: LAM 1590 ♀, 1649 ♂+♀, 1696 ♀.

15. *Cladomyza dubia* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami volubiles, teretes, iuveniles in sinibus nutricem tangentibus haustoria edentes, brachyblasti 1. et 2. ordinis floriferi lateraliter ad 1-3 ex eodem nodo sub angulo 30°-100° oriundi, recti, densissimi. Internodia 2 mm longa. Cortex nigricans, dense granulosa. Folia luteo-viridia, valde carnosae, obovata vel elliptica, basi cuneata, apice mucronata, 2,5-11,5 X 1,5-6,4 mm. Petiolus 0,6-3 mm longus. Nervi inconspicui. Inflorescentiae dioicae, masculinae singulae ex eodem nodo, uni- ad triflorae. Flores ♂ virides, pedicellati, 1,9 mm longi, tepalis patulis 3,3 mm lati. Tepala 4 (-5), pilis poststaminalibus destituta. Stamina isomera, patula. Antherae ditheciae, thecis iuxtapositis. Pistillodium conicum. Inflorescentiae femineae singulae ex eodem nodo, uni- ad triflorae. Flores ♀ minimi, virides, 2 mm longi, 2,2 mm lati. Tepala (3-) 4 (-5) patula. Stylus 0,5-0,5 mm longus, disco immersus. Fructus 7 mm longi, 2,3-2,5 mm lati, endocarpium 2,8-5,5 mm longum, 1,8-2 mm latum, apice filis (fibrovascularibus) coronatum.

Hemiparasitic shrub in the branches of trees. Branches twining, terete, juveniles putting forth haustoria in sinuses touching the host, floriferous brachyblasts of 1 and 2 orders, 1-3 originating laterally from the same node at an orientation angle of 30° -100°, straight, dense. Internodes 2 mm long. Bark blackish, densely granular. Leaves yellow-green, very fleshy, obovate or elliptic, base cuneate, apex mucronate, 2.5-11.5 X 1.5-6.4 mm. Petiole 0.6-3 mm long. Nerves inconspicuous. Inflorescences dioecious, male single from the same node, 1-3-flowered. The ♂ flowers green, pedicellate, 1.9 mm long, spreading tepals 3.3 mm wide. Tepals 4 (-5), poststaminal hairs absent. Stamens isomeric, spreading. Anthers dithecal, thecae juxtaposed. Pistillode conical. Female inflorescence single from the same node, 1-3- flowered. The ♀ flowers small, green, 2 mm long, 2.2 mm wide. Tepals (3-) 4 (-5) spreading. Style 0.5-0.5 mm long, immersed in a disk. Fruit 7 mm long, 2.3-2.5 mm wide, endocarp 2.8-5.5 mm long, 1.8-2 mm wide, apex crowned with fibrovascular fibers.

New Guinea: Southern Highlands District: West summit of Giluwe mountain, alpine grassland and scrub, 3150 m, on *Vaccinium* sp., ♂ flowers & fruits 8. 8. 1961- SCHODDE # 1746 (Holotype CANB) (indigenous name: . maudidi, in Meudi language), Eastern Highlands District: Chimbu watershed, Marafunga clearcut, upper Asaro valley near Goroka, on *Symplocos* sp. ♂ flowers 7. 9. 1961 - WOMERSLEY & SLEUMER # 14026 (Paratype ♂ CANB). Otto Mountain, South slopes, 2680 m, on *Nothofagus*, in lower altitudes on several other trees, flowers & fruits ♀ 7. 8. 1959 - BRASS # 30896. William mountain, east slope, 2770 m, often on different host trees in the moist moss forest, ♂ flowers 16. 7. 1959 - BRASS # 30896. Ibid Pengagl-Bach, 2550 m, on *Dimorphanthera* (# 5642.) & a, ♀ flowers & fruits. 2. 2. 1964 - STAUFFER # 5643 and # ♂ flowers # 5644.

The similar *Cl. cuneata* DANSER has upwardly curved, not spreading tepals, and its style is not sunken. The arrangement of the leaves is less dense (internodes 3-5 mm long).

16. *Cladomyza trinervia* STAUFFER sp. nov.

Frutex in arborum ramis hemiparasiticus, volubilis (ex notis collectoris). Rami recti vel leviter curvati, basales teretes, apicales applanati, laterales 1-4 ex eodem nodo sub angulo 30°-80° oriundi, brachyblasti floriferi bene distincti. Folia laminifera glauca, obovata vel elliptica, apice rotundata vel leviter retusa, iuvenilia submucronata, basi cuneata, 6-49 mm longa, 4,2-30 mm lata. Petiolus 2-7 mm longus. Nervi supra conspicui, 3 (-5). Folia squamiformia in ramis basalia, breviter triangularia, 1 mm longa, 0,7 mm lata.

Inflorescentiae dioicae, masculinae 1-7 ex eodem nodo, pleraeque uniflorae, rhachis 0,4-0,7 mm longa, bracteata. Flores ♂ virides, pedicellati, 2 mm longi, tepalis patentibus 3,2 mm lati. Tepala (3-) 4 (-5), 1,2 mm longa et aequilata, reclinato-patula, pilis poststaminalibus destituta. Stamina isomera, 0,9 mm longa. Antherae 0,4 mm longae, dithecicae, thecis iuxtapositis. Discus patelliformis, 1,6 mm latus. Pistillodium 0,4-0,5 mm altum.

Hemiparasitic shrub in the branches of trees, twining (from the collector notes). Branches straight or slightly curved, basally terete, apically flattened, the laterals 1-4 originating from the same node at an orientation angle of 30°-80 °, floriferous brachyblasts quite distinct. Leaf lamina glaucous, obovate or elliptic, apex rounded or slightly retuse, juvenile submucronate, base cuneate, 6-49 mm long, 4.2-30 mm wide. Petiole 2-7 mm long. Nerves from conspicuous, 3 (-5). Squamiform leaves basal on the branches, shortly triangular, 1 mm long, 0.7 mm wide. Inflorescences dioecious, male 1-7 from the same node, most unifloral, rachis 0.4-0.7 mm long, bracteate. The ♂ flowers green, pedicellate, 2 mm long, spreading tepals 3.2 mm wide. Tepals (3-) 4 (-5), 1.2 mm long and equally wide, downwardly spreading, without poststaminal hairs. Stamens isomeric, 0.9 mm long. Anthers 0.4 mm long, dithecal, thecae juxtaposed. Disk patelliform, 1.6 mm wide. Pistillode 0.4-0.5 mm high.

New Guinea: Papua, Northern slopes of the mountain Daymau, Mameau chain on a tree of lower growth in an oak forest, 1450 m, ♂ flowers 5.7.1953 - BRASS # 23305 (Holotype A).

Dufrenoya CHATIN

in Comptes Rendus Acad. Paris 51 (1860) 657. Synonym: *Hylomyza* DANSER in Nova Guinea N. Ser. 4 (1940) 141.

1. *Dufrenoya oresitropha* (DANSER) STAUFFER nov. comb. *Hylomyza oresitropha* DANSER l. c. 143. *H. oocarpa* DANSER l. c. 143.

Malay Peninsula: Pahang: BARNES 10908 ♂. BURKILL & HOLTUM 7812 ♂. HANIFF & NUR 7918 ♀. HOLTUM 11368 ♂, 20729 ♂. RIDLEY 16104 ♂+♀.

British North Borneo [Sabah]: Chew, Corner, STANTON 830 ♀. CLEMENS 29084 ♀, 29742 ♀.

2. *Dufrenoya sphaerocarpa* (DANSER) STAUFFER nov. comb., *Hylomyza sphaerocarpa* DANSER l. c. 142.

Tonkin. PETELOT 6180 ♂.

Sumatra: BÜNNEMEJER 9177 ♂, 9361 ♀, 9580 ♀+♂. VAN STEENIS 6440 ♀, 8447 ♂.

Java: BACKER 11178 ♂. FORBES 1084 ♀. SMITH & RANT 493 ♂.

Borneo: CARR 26574♀, 27556 ♂, 27753 ♀, 27847 J. CLEMENS 30857 ♂. 31093 ♀, 31117 s. 33784 ♀, 40831 ♂, HALLIER 2166 ♂.

3. *Dufrenoya aurantiaca* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami teretes, laterales 1-2 ex eodem nodo sub angulo 30°-100° oriundi. Folia crassiuscula, opaca, obovato-elliptica, apice rotundata, mucrone destituta, basi longe cuneata, paulo plus quam dupla longiora ac latiora, 15-57 X 6-27,5 mm. Petiolus 3-6 mm longus. Inflorescentiae femineae 1-3 ex eodem nodo, rhachis

2,8-5 mm longa. Fructus ovati, rubri, 6,5-7,0 X 3,9-4,4 mm, tepalis 5, staminodiis, pilis poststaminalibus coronatum. Stylus brevis. Stigma vix lobatum, lobi cum tepalis alternantes. Exocarpium coriaceum, endocarpium 5,2 X 2,5 mm.

Hemiparasitic shrub in the branches of trees. Branches terete, the laterals 1-2 from the same node at an orientation angle of 30°-100°. Leaves thick, opaque, obovate-elliptic, rounded at the apex, without mucro, base long cuneate, a little more than twice as long as wide, 15-57 X 6-27.5 mm. Petiole 3-6 mm long. Female inflorescences 1-3 from the same node, rachis 2.8-5 mm long. Fruit ovoidal, red, 6.5-7.0 X 3.9-4.4 mm, tepals 5, staminodial, crowned with poststaminal hairs. Style short. Stigma hardly lobed, lobes alternate with tepals. Exocarp leathery, endocarp 5.2 X 2.5 mm.

Vietnam: Tourane, Col des Nuages, 1200 m, forest on moderate rock and gravel bottom, fruits 18.9.1923 - POILANE # 8118 (Holotype P).

4. *Dufrenoya papillosa* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami recti, breviusculi, laterales 1-2 ex eodem nodo sub angulo 20°-80° oriundi. Cortex laevis, ferrugineo-nigra, serius grisea. Folia obovata, apice rotundata, non mucronata, basi cuneata, subtriplo vel subduplo longiora quam latiora, 13-66 X 4-34 mm. Petiolus 1,6-7,5 mm longus. Nervi 7-9, supra distinctiores. Inflorescentiae dioicae, masculinae 1-4 ex eodem nodo, rhachis 1,2-6 mm longa. Flores ♂ plerumque 6, sessiles, 2 mm longi, 1,5-2 mm lati. Tepala 5 (-6), extus papillosa, patula, pilis poststaminalibus ornata. Stamina 5. Discus patelliformis, in centro pistillodio apiculatus. Inflorescentiae femineae 1-8 ex eodem nodo, uniflorae. Rhachis 1,6-3 mm longa. Flores ♀ virides, 2,1 mm longi, 1,5 mm lati. Tepala 5 (-7), extus papillosa, pilis poststaminalibus ornata. Staminodia isomera. Lobi stigmati isomera, cum tepalis alternantia. Fructus (immaturi) 4,4 mm longi, 2,2 mm lati.

Hemiparasitic shrub in the branches of trees. Branches straight, short, laterals 1-2 originating from the same node at an orientation angle of 20°-80°. Bark smooth, dark rusty-brown, later gray. Leaves obovate, apex rounded, not mucronate, base cuneate, half to one third as long as wide, 13-66 X 4-34 mm. Petiole 1.6-7.5 mm long. Nerves 7-9, distinct above. Inflorescences dioecious, male 1-4 from the same node, rachis 1.2-6 mm long. The ♂ flowers generally 6, sessile, 2 mm long, 1.5-2 mm wide. Tepals 5 (-6), papillose, spreading, ornamented with poststaminal hairs. Stamens 5. Disk patelliform, in the center an apiculate pistillode. Female inflorescences 1-8 from the same node, unifloral. Rachis 1.6-3 mm long. The ♀ flowers green, 2.1 mm long, 1.5 mm wide. Tepals 5 (-7), papillose on the outside, ornamented with poststaminal hairs. Staminodia isomeric. Stigmatic lobes isomeric, alternating with tepals. Fruit (unripe) 4.4 mm long, 2.2 mm wide.

Malay Peninsula: Pahang, Cameron- Highland, 1200 m, ♂ flowers 15. 4. 1930 - HENDERSON # 23578 (Holotype SING); ibid, Boh Plantation, 1200 m, ♂+♀. flowers 1. 4. 1937 - MOHAMED NUR # 32813.

5. *Dufrenoya euryphylla* (DANSER) STAUFFER nov. comb, *Hylomyza euryphylla* DANSER 1. ♂. 144. *Tupeia Reinwardtiana* var. *angustifolia* MOLKENBOER ex JUNGHUHN, *Plantae Junghuhnianae* (1852) 117.

Malay Peninsula: Pahang; BATTEN POOL ♀.
Sumatra: JUNGHUHN ♀.
Java: JUNGHUHN ♀. VAN STEENIS 4872 ♂.

6. *Dufrenoya longicuneata* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami modice densi, recti vel leviter curvati, juveniles acute costati, laterales 1-2 ex eodem nodo sub angulo (20-) 45 (-60)° oriundi. Cortex fusca, striata. Folia cuneato-obovata, apice rotundata, non mucronata, basi longe cuneata, plerumque dupla longiora quam latiora, 11-44 X 4,2-26 mm. Petiolus 2,0-7,0 mm longus. Nervi supra conspicui, (5-) 7-10 (-12). Inflorescentiae dioicae, masculinae (1-) 3 (-5) ex eodem nodo, rhachis 1,4-2,8 mm longa. Flores ♂ (4-) 6-7, 2 mm longi, 1,5 mm lati. Tepala 5, glabra, pilis poststaminalibus ornata. Stamina 5. Discus patelliformis, lobatus, in centro pistillodio apiculatus. Inflorescentiae femineae 1-3 (-4) ex eodem nodo, nonnullae terminales, uniflorae, rhachis 0,6-2,2 mm longa. Flores ♀ virides, 4-5 mm longi, 1,5 mm lati. Tepala 5, pilis poststaminalibus ornata. Staminodia 5. Discus patelliformis. Stylus brevis, lobi stigmatis cum tepalis alternantes. Fructus 4,5-6-8 mm longi, 2-4 mm lati, ellipsoidei. Mesocarpium floccosum, endocarpium plerumque 3,0-3,4 X 1,4-1,6 mm, filis apicalibus destitutum.

Hemiparasiticus shrub in the branches of trees. Branches moderately dense, straight or slightly curved, juveniles acutely ribbed, laterals 1-2 out of the same node at an orientation angle of (20-) 45 (-60)°. Bark dark brown, streaked. Leaves cuneate-obovate, apex rounded, not mucronate, base long cuneate, usually twice as long as wide, 11-44 X 4.2-26 mm. Petiole 2.0-7.0 mm long. Nerves above conspicuous, (5-) 7-10 (-12). Inflorescences dioecious, male (1-) 3 (-5) out of the same node, the rachis 1.4-2.8 mm long. The ♂ flowers (4-) 6-7, 2 mm long, 1.5 mm wide. Tepals 5, glabrous, ornamented with poststaminal hairs. Stamens 5. Disk patelliform, lobed, in the center and apiculate pistillode. Female inflorescences 1-3 (-4) from the same node, some of them terminal, unifloral, the rachis 0.6-2.2 mm long. The ♀ flowers green, 4-5 mm long, 1.5 mm wide. Tepals 5, ornamented with poststaminal hairs. Staminodia 5. Disk patelliform. Style short, the stigmatic lobes alternate with tepals. Fruit 4.5-6-8 mm, 2-4 mm wide, ellipsoidal. Mesocarp floccose [with tufts of soft hairs], endocarp generally 3.0-3.4 X 1.4-1.6 mm, without apical fibers.

Vietnam: Langbian Massif, Dran, 1000-1200 m, fruits 29. 4. 1919 - CHEVALIER # 40396 (Holotype P). Between Dalat and Daninh, on an oak with white leaf undersides, ♂ flowers, 28. 11. 1911 - LECOMTE & PROFINET # 1459 Dalat, fruits 3. 6. 1921 - HAYATA # 135 Dalat, old way to Prenh, ♀ flowers & fruits 15. 12. 1924 - EVRARD # 2204 Province Haut Douai, agricultural station Blao, 800 m, on an oak tree, fruits 24. 4. 1933 - POILANE # 22351 (name in Moï language: eop yor).

7. *Dufrenoya pruinosa* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus, subluxus. Rami recti, crassiores teretes, juveniles costati, laterales 1-2 ex eodem nodo sub angulo 30-80° oriundi, acrotoni. Cortex grisea, laevis. Folia obovata, crassiuscula, apice rotundata vel leviter emarginata, non mucronata, basi cuneata, subduplo longiora quam latiora, 23,0-68,5 X 9-40 mm. Petiolus 3-9 mm longus. Nervi (5-) 7-9, utrimque perspicui. Inflorescentiae dioicae, masculinae 1-8 ex eodem nodo, rhachis 3,4-7,6 mm longa. Flores ♂ 4-6-8, extus pruinosi. Tepala 5, pilis poststaminalibus ornata. Stamina 5. Discus profunde cyathiformis, 1,4 X 1,0 mm, in centro

pistillodio breviter apiculatus. Inflorescentiae femineae 1-5 ex eodem nodo, uniflorae, rhachis 0,8-3,0 mm longa. Flores ♀ extus leviter pruinosi, 1,1-1,3 mm lati. Tepala 5 glabra, pilis poststaminalibus ornata. Staminodia 5. Lobi stigmatis 5, breves sed distincti.

Hemiparasitic shrub in the branches of trees, somewhat loose. Branches straight [upright?], thickly terete, juveniles ribbed, lateral 1-2 from the same node with an orientation angle of 30-80°, acrotonic. Bark gray, smooth. Leaves obovate, rather thick, apex rounded or slightly emarginate, not mucronate, base cuneate, one half as long as wide, 23.0-68.5 X 9-40 mm. Petiole 3-9 mm long. Nerves (5-) 7-9, evident on both sides. Inflorescences dioecious, male 1-8 from the same node, rachis 3.4-7.6 mm long. The ♂ flowers 4-6-8, externally pruinose [with waxy, powdery secretion- a „bloom“]. Tepals 5, ornamented with poststaminal hairs. Stamens 5. Disk deeply cyathiform [cup-shaped], 1.4 10 1.0 mm, the center a shortly apiculate pistillode. Female inflorescences 1-5 from the same node, unifloral, rachis 0.8-3.0 mm long. The ♀ flowers externally slightly pruinose, 1.1-1.3 mm wide. Tepals 5 glabrous ornamented with poststaminal hairs. Staminodia 5. Stigmatic lobes 5, short but distinct.

Vietnam: Northern border of Kontum Province, between the villages Eu Inh and Mang Lum, 1800-2000 m, granite substrate, mild rainy climate, ♂ flowers 7. 3. 1941 - POILANE 32125 to (Holotype P). Province Haut Doual, Blao, 800 m, dense young forest on good red soil, ♂ flowers 22. 1. 1933 - POILANE # 21767; ibid, on a tree, ♀ shoots 31. 11. 1933 - POILANE # 21783 (Moi Name: eap yor.) West of Nha Trang, on an oak (# 4394), ♂ flowers with galls 4. 7. 1922 - CHEVALIER # 4396 (Moi Name: chua). Dalat, ravine behind the police station, ♂ buds 2. 10. 1924 - EVRARD # 1300 Quang Nam Province, Item 6, 600-700 m, on Lauraceae (# 29403), ♀ buds 1939 - POILANE # 29404.

8. *Dufrenoya Poilanei* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami recti vel curvati, laterales 1-3 (-5) ex eodem nodo sub angulo 30°-90° oriundi. Cortex rubro-fusca, laevis, opaca, serius grisea, fissa. Folia obovata, apice rotundata, plerumque non mucronata, basi cuneata, plerumque subduplo longiora quam latiora, 11-67 X 4-24 mm. Petiolus 2,5-9 mm longus. Nervi (5-) 8 (-11), utrimque conspicui. Inflorescentiae dioicae, masculinae in ramulis iuvenilibus ad 1-3 ex eodem nodo sub angulo 30°-80° oriundae, (4-) 6-florae. Rhachis 1,5-5,0 mm longa, bracteis patulis, 2,8 mm latis instructa. Flores ♂ subsessiles, angulosi, 1,9 mm longi, tepalis patulis 3 mm lati. Tepala 5 (-6), glabra, pilis poststaminalibus paucis ornata. Stamina isomera. Discus planus, 1,5 mm latus. Pistillodium humile vel nullum. Inflorescentiae femineae in ramulis iuvenilibus 1-5 ex eodem nodo, rhachis 2,1-2,8 mm longa, bracteis 2,8 mm latis induta. Flores ♀ lutei, 1,6-1,9 mm lati. Tepala 5 (-6). Staminodia nulla. Discus 1,3 mm latus, planus vel pulvinatus. Stylus brevissimus. Lobi stigmatis inconspicui, si isomeri, tepalis oppositi. Fructus rubri, 3,5-5,0 mm longi, 2,6-4,0 mm lati. Endocarpium 3 mm longum, 1,9-2,4 mm latum.

Hemiparasitic shrub in the branches of trees. The branches are straight or curved, the laterals 1-3 (-5) from the same node at an orientation angle of 30°-90°. Bark reddish dark brown, smooth, opaque, later gray, fissured. Leaves obovate, apex rounded, generally not mucronate, base cuneate, usually one half as long as wide, 11-67 X 4-24 mm. Petiole 2.5-9 mm long. Nerves (5-) 8 (-11), conspicuous on both sides. Inflorescences dioecious, male in juvenile branches, 1-3 originating out of the same node at an orientation angle of 30°-80°, (4-) 6- flowered. Rachis 1.5-5.0 mm long, bracts spreading, 2.8 mm wide in the array. The

♂ flowers subsessile, with prominent angles, 1.9 mm long, spreading tepals 3 mm wide. Tepals 5 (-6), glabrous, ornamented with few poststaminal hairs. Stamens isomeric. Disk flat, 1.5 mm wide. Pistillode small or none. Female inflorescences on young branches 1-5 from the same node, rachis 2.1-2.8 mm long, clad with 2.8 mm wide bracts. The ♀ flowers yellow, 1.6-1.9 mm wide. Tepals 5 (-6). Staminodia none. Disk 1.3 mm wide, flat or pulvinate. Style short. Lobes of the stigma inconspicuous, if isomeric, tepals opposite. Fruit red, 3.5-5.0 mm long, 2.6-4.0 mm wide. Endocarp 3 mm long, 1.9-2.4 mm wide.

Vietnam: Province Haut Douai, massif Bi Doup, 2000 m, high forest, on an oak, fruits 11. 10. 1940 - POILANE # 30716 (Moi Name: etono) (Holotype P); ibid 2200, ancient forest, fruits 13. 10. 1940 - POILANE # 30872 Province Haut Doual, massif Braian in Djiring, from 1700 to 1800 m, the forest on sandstone soil, ♂ flowers 16. 1. 1935 - POILANE # 23897 (Moi -Name: tap dor, tap yor); ibid 1500 to 1700 m, on a tree in the forest, ♀ flowers 02.18.1935 - POILANE # 24366 (Moi -Name: eoc dor) Haut Douai, north of Dankia, 1400-1500 m, on an oak or *Castanopsis* sp., fruits, 2. 9. 1940 - POILANE # 30272. Province Darlac, massif Chu Yang Sinh, above 2000 m, old forest on granite substrate, ♀ flowers 23. 4.1941- POILANE # 32529. Nha Trang, 1800 m, in the fork of an oak, fruits 21. 5. 1922 - POILANE # 3540.

Laos: Province Bassac, Boloven-Plateau, north of Pak Son, 1200 m, ♂ flowers 1929 - POILANE # 15676.

Tonkin: at Cha Pa, on *Pasania* sp., fruits, Aug. 1930 - PETELOT # 6168 and # 3384. Col de Lö Qui at Cha Pa, 1800 m, in rainy climate, fruits 28. 7. 1926 - POILANE # 12597.

Yünnan: Mien Ning, Po Shan, 2750 m, fruits 5. 10. 1938 - Yü # 17913. Tsang Yuan, 1250 m, Mixed deciduous forest, on an oak, ♀ flowers April 1936 - WANG # 73170. Lan Tsang Hsien, 2000 m, dense forest, flowers Mai 1936 - WANG # 76846.

Burma: Pangsalap, 1250 m, light jungle, fruits 1. 1. 1903 - H. WOOD.

Sumatra: residing at Atjeh, Gajo-Land, Kapi-Gelände, between Biwak 3 (at the confluence of Kapi with Aoenan) and Biwak Paja, 1100-1250 m, forest, ♂ bl 21. 3. 1937 - VAN STEENIS # 9999.

9. *Dufrenoya sessilis* (CRAIB) STAUFFER nov. comb. *Henslowia sessilis* CRAIB in Kew Bull. (1911) 455. *H. heterantha* var. *sessiliflora* ROOK. f., Flora Brit. India 5 (1886) 233. *H. shanensis* GAMBLE in Kew Bull. (1913) 48. *H. polyneura* Hu in Bull. Fan Mem. Inst. Biol. Bot. Ser. 10 (1940) 157 pro parte.

Vietnam: BOR 2840 ♂. KANJILAL 6132 ♂.

Bengal [Bangladesh and the Indian state of West Bengal]: BISWAS 5099 ♀. GAMBLE 3010 ♂.

Nepal: BUCHANAN-HAMILTON (? Herb. Webb) ♀ HOOKER f. s. WALLICH 488 (?)♂.

Sikkim: KING ♂. Native Collector 727 ♀

Khasia: HOOKER f. et THOMSON ♂.

Naga Hill: CLARKE 41837 ♂. PRAIN ♂.

Manipur: BOR 18519 ♂+♀ BULLOCK 843 ♂. MEEBOLD 9156 ♀, 9157 ♀. WATT 6041 ♀, 6078 ♂, 6682 ♀.

Burma: DICKASON 7307 pro parte, ♀. HUK 100 ♀. KINGDON WARD 436 ♂. MACMACKENZIE 12 ♀. ROBERTSON 295 ♀.

Thailand: COLLINS 1205 ♂. KERR 1768 ♀, 3240 ♀, 20059 ♀ SÖRENSEN, LARSEN, HANSEN 892 ♂, 2869, 6272 ♂, 6615 ♂, 6921 ♂.

Laos: POILANE 26319 ♀, 20376 ♂. VIDAL 1610 ♀.

Tonkin: TSANG 30272 ♀.

Yünnan: TSAI 56649 ♂. WANG 74023 ♀, 74126 ♀, 76528 ♀, 76639 ♀.

10. *Dufrenoya Collettii* (GAMBLE) STAUFFER nov. com. *Henslowia Collettii* GAMBLE in Kew Bull. (1913) 47. *H. heterantha* WALL. ex DC. var. *coriacea* KURZ, Forest Fl. of Brit. Burma 2 (1877) 328.

Burma: COLLETT 333 ♀, 772 ♀. COOPER 5910 A ♀. KURZ 371 ♀. MACKER 5940 ♂. MASON 30 ♂. ROBERTSON 326 ♀.
Thailand: COOLIDGE & CARPENTER 63 ♀. GARRETT 847 ♂, 1119 ♀ PUT 3795 ♀.

11. *Dufrenoya robusta* STAUFFER sp. nov.

Frutex in ramis arborum hemiparasiticus. Rami recti vel leviter curvati, iuveniles distincte costati, laterales 1-3 ex eodem nodo sub angulo 30°-80° oriundi, acrotoni. Folia laminifera obovato-elliptica, crassiuscula, supra lucida, apice rotundata, non mucronata, basi cuneata, subduplo longiora quam latiora, 11-67 X 5,2-42 mm. Petiolus 2-7 mm longus. Nervi (7-) 9 (-11). Folia squamiformia basalia, 1 mm longa, 1,8 mm lata. Inflorescentiae masculinae 1-4 ex eodem nodo, (5-) 6-florae, rhachis 2,8-6,5 mm longa, bracteata. Flores ♂ subsessiles, virides, 2 mm longi, tepalis patulis 2,9-3,5 mm lati. Tepala 5 (-7), glabra, pilis poststaminalibus destituta. Stamina isomera, magna. Discus 1,6 mm latus, planus, in centro pistillodio apiculatus.

Hemiparasitic shrub in the branches of trees. Branches straight or slightly curved, juveniles distinctly ribbed, laterals originating from the same node at an orientation angle of 30°-80°, acrotonic. Leaves laminate, obovate-elliptic, rather thick, shiny above, apex rounded, not mucronate, base cuneate, half as long as wide, 11-67 X 5.2-42 mm. Petiole 2-7 mm long. Nerves (7-) 9 (-11). Squamiform leaves basal, 1 mm long, 1.8 mm wide. Male inflorescences 1-4 out of the same node, (5-) 6-flowered, the rachis 2.8-6.5 mm long, bracteate. The ♂ flowers subsessile, green, 2 mm long, spreading tepals 2.9-3.5 mm wide. Tepals 5 (-7), glabrous, without poststaminal hairs. Stamens isomeric, large. Disk 1.6 mm wide, flat, in the center an apiculate pistillode.

Thailand: Province Kauburi, Kao Ri Yai, 1600 m, evergreen forest, on *Quercus* sp., ♂ flowers 1. 2. 1926 - KERR # 10393 (Holotype K).

Burma: Pegu, Loko-Rücken, ♂ flowers - KURZ # 381.

Southl. Shan-Staaten: Taunggyi-Klippen, 1700 m, on oak and chestnut, ♀ flowers 3. 4. 1926 - ROBERTSON # 2109.

12. *Dufrenoya platyphylla* (SPRENGEL) STAUFFER nov. comb., *Viscum platyphyllum* SPRENGEL in Linne, Syst. Vegetab., 16. Aufl. 4 Curae Poster. (1827) 47. *V. latifolium* BUCH.-HAM. ex D. DON, Prodr. Fl. Nepal. (1825) 142, non LAM. (1789). *V. heteranthum* WALL. ex DC. Prodr. 4 (1830) 279. *Henslowia heterantha* HOOK f. ex DC. Prodr. 14 (1857) 632. *Dufrenoya heterantha* CHATIN in Comptes Rendus Acad. Paris 51 (1860) 657. *Hylomyza platyphylla* DANSER in Nova Guinea N. Ser. 4 (1940) 145.

India: INAYAT 26007 ♀.

Nepal: BUCHANAN-HAMILTON ♂+♀. STANTON, SYKES, WILLIAMS ♀ WALLICH 488 ♂+♀.

Bhutan: COOPER 1132 ♀, 3785 ♂. KING ♂, ♀.

Sikkim: ANDERSON ♂. CLARKE 25458 ♂, 27937 ♀ GAMBLE 3011 Cf. HOOKER f. ♂+♀. KING 863 ♀. LACAITA 233 ♀.

Bengal: HAINES 2017 ♀

Kumaon: CHAMPION ♀. STRACHEY & WINTERBOTTOM 7 ♀.

Burma: DICKASON 7307 (pro parte) ♀, 7430 ♂, 8573 ♂. DUN 106 ♀. KINGDON WARD 21820 ♂. MACKENZIE 13. UNWIN 3012 ♂.

13. *Dufrenoya granulata* (HOOK f. et TH.) STAUFFER nov. comb. *Henslowia granulata* HOOK. f. et TH. ex DC. Prodr. 14 (1857) 632. *Hylomyza granulata* DANSER in Nova Guinea N. Ser. 4 (1940) 145.

India: GAMBLE 788.

Sikkim : ANDERSON 666. CLARKE 36452. GAMBLE 372 ♂, 10082 ♀. GRIFFITH 4389 ♂+♀. HOOKER f. ♀. KING 3041 ♀, 5119 ♀.

Bhutan: COOPER 4537 ♀. GRIFFITH 2084 ♂. LUDLOW, SHERRIFF, TAYLOR 7225 ♀. LUDLOW, SHERRIFF, HICKS 18625 ♂.

Khasia: GRIFFITH ♀. HOOKER f. ♀.

Assam: KING DON WARD 8219 ♂, 18244 ♂.

Yünnan: FORREST 25759 ♀. YÜ 20586 ♀.

Amphorogyne STAUFFER et HÜRL.
in Vierteljahrschr. Naturf. Ges. Zürich 102 (1957) 337

1. *Amphorogyne spicata* STAUFFER et HÜRL. l. c. 338.

New Caledonia: BALANSA 2882. HÜRLIMANN 949 und 1747. STAUFFER et BLANCHON 5711 und 5757.

2. *Amphorogyne celastroides* STAUFFER et HÜRL. l. c. 342.

New Caledonia: HÜRLIMANN 452, 855 und 1568. STAUFFER 5707, 5708, 5722, 5794.

3. *Amphorogyne Staufferi* MARKGRAF sp. nov.

Frutex glaber, ramis teretibus, articulatis densiuscule divaricato-ramosus. Ramuli praesertim infra nodos lineis a foliis decurrentibus angulosi. Cortex laevis, lenticellis paucis, serius lateraliter dilatatis notata. Internodia 2-4 cm longa, ramuli sub angulo 30-45° oriundi, prope basin squamis paucis, minimis, triangularibus obsiti. Folia pseudovercillata, 4-5 in quoque nodo, valde coriacea, cuneato-obovata, paulo inaequalia, (20-) 25-30 (-35) mm longa, 15-20 mm lata, apice obtusa, subtus pallidiora quam supra. Nervus medianus crassus, infra prominulus, venae nec supra nec infra distinctae. Petiolus crassus, 2-3 mm longus. Inflorescentiae axillares et terminales, ad 3-4 ex axillis superioribus oriundae, ramulis usque ad quartum ordinem ramificatis paniculatae, multiflorae, minute bracteolatae, 25-30 mm longae, 15-20 mm latae. Flores luteoli, obconici, 2 mm longi, 0,8 mm lati, hermaphroditici. Receptaculum sensim in pedicellum 0,5 mm longum attenuatum. Tepala 5, erecta, triangularia, valvata, intus pilis poststaminalibus ornata. Stamina 5, epitepala; filamenta brevissima, antherae quadriloculares, loculi bini superpositi. Pollinis granula lenticularia. Discus conspicuus. Stylus conicus, stamina vix superans. Stigma punctiforme. Ovarium triloculare, in parte superiore uniloculare. Ovula 3, placenta centrali pendula. Fructus desunt.

Glabrous shrub, branches terete, articulated with dense, divaricate branches. Branchlets, especially within the nodes angled down in decurrent lines from the leaves. Bark smooth, with few lenticels, later markedly laterally dilated. Internodes 2-4 cm long, the branches originating in an orientation angle of 30-45°, near the base beset with a few scales, very small, triangular. The leaves pseudovercillate, 4-5 at each node, very coriaceous, cuneate-

obovate, a little unequal, (20-) 25-30 (-35) mm long, 15-20 mm wide, apex obtuse, the underside is paler than above. Median nerve thick, prominent beneath, the veins not distinct either above nor below. Petiole thick, 2-3 mm long. Inflorescences axillary and terminal, 3-4 originating from the axils in the upper part, up to the fourth order ramified branchlets, paniculate, many flowered, minutely bracteolate, 25-30 mm long, 15-20 mm wide. The flowers yellowish, obconic, 2 mm long, 0.8 mm wide, hermaphroditic. Receptaculum gradually attenuated into the pedicel, 0.5 mm long. Tepals 5, erect, triangular, valvate, ornamented inside with poststaminal hairs. Stamens 5, epitepalous; filaments very short, anthers quadrilocular, thecae paired, superposed. Pollen grains lenticular. Disk conspicuous. Style conical, barely surpassing the stamens. Stigma punctiform. Ovary trilocular, in the upper part unilocular. Ovules 3, placenta free-central, pendulous. The fruit is lacking.

New Caledonia: Montagne des Sources, ca. 900 m, shrub in gully forest, flowers 6.11. 1959 - R. F. THORNE # 28637 (Holotype RSA, Isotypus P).

These species had already been recognized by Dr. STAUFFER to be new. Dr. GUTZWILLER had made for him microtome sections of flowers. As with the other two species of these endemic species in the same narrow area of New Caledonia, the richly branched inflorescences indicate it is closer to *A. celastroides*. However, its flowers are more than twice as large, and its smallest leaves correspond to the length of the largest of the new species. Moreover its lateral nerves are more apparent.

Notes. This work was created by Dr. Stauffer during his last days. It is to be understood as a preliminary work for a monograph, which he had likewise already tackled, first for the Malesian genera *Cladomyza*, *Dendromyza*, *Dendrotrophe*, and *Dufrenoya*. Many herbarium specimens, including the holotypes, were checked and detailed notes were laid down in a number of copies, partly written by Ms. Dr. GUTZWILLER. It seemed to me to be quite sensible to use these advanced-stage investigations and at least to describe his newly established species. He had indeed already mentioned the names in the almost-ready-for-press pages 1-6 (this work) that were left behind. So I tried to figure out the essentials in this form of circular characteristics to complement his manuscript from his raw notes and to summarize the Latin diagnoses, have led also to the synonyms he mentioned their original quotes and entered into the distribution map the missing area of *Phacellaria*. Furthermore, it seemed to me necessary to enumerate the documents which establish the limits of the species. They are in various herbaria and had already been collected by him in short lists. Also, the order of the species, as is observed here, is an expression of his opinion about their relatedness.

PLATE 1



Amphorogyne spicata STAUFFER et HÜRL. (STAUFFER Nr. 5711).

Fig. 1. Habit (small tree, 2.4 m high).

Fig. 2. Branch with ♂ flowers.

Fig. 3. ♂ flowers (2.0-2.2 mm Ø).

Fig. 4. Fruit (7.2-9.1 mm Ø).

PLATE 2



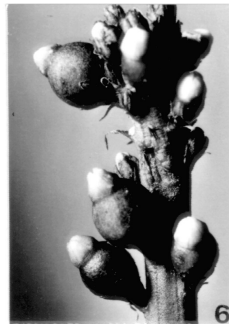
Amphorogyne celastroides
STAUFFER et HÜRL.
(STAUFFER Nr. 5794).

Fig. 1. ♀ Flowers.
Fig. 2. Fruit.

Daenikera corallina HÜRLIMANN et
STAUFFER.

Fig. 3. Attachment to the stem of the host
plant (STAUFFER Nr. 5793).
Fig. 4. Habit (STAUFFER Nr. 5793).
Fig. 5. ♀ Flowers (STAUFFER Nr. 5724).
Fig. 6. Fruits (STAUFFER Nr. 5723).

PLATE 3



Leptomeria pauciflora R. BR. STAUFFER
Nr. 5365).

- Fig. 1. Habit.
- Fig. 2. ♀ Flowers.
- Fig. 3. Fruit.

Choretrum spicatum F. V. MÜLLER.
Fig. 4. Habit (STAUFFER Nr. 5411).
Fig. 5. ♀ Flowers (STAUFFER Nr. 5417).
Fig. 6. Fruit (STAUFFER Nr. 5417).

PLATE 4



Cladomyza uncinata DANSER (STAUFFER Nr. 5544).

Fig. 1. Branch with ♀ flowers.

Fig. 2. Haustorial whips on *Ceratopetalum* sp.

Dendrotrophe varians (BL.) MIQ. (STAUFFER Nr. 5545).

Fig. 3. Branch with ♂ flowers.

PLATE 5



Dendromyza Ledermannii (PILGER) STAUFFER.

Fig. 1. Part of a branch with ♂ flowers (STAUFFER Nr. 5691).

Fig. 2. Part of a branch with ♀ flowers and fruits (STAUFFER Nr. 5690).

Dendromyza Reinwardtiana (BL.) DANSER (STAUFFER Nr. 5559).

Fig. 3. Habit.