

New taxa of *Leguminosae* from Papua New Guinea

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Summary. Eight new species and eight new infraspecific taxa are dealt with; these taxa were found to require description during the preparation of a Manual of the Leguminosae of New Guinea. The genera discussed are *Macropsychanthus*, *Strongylodon*, *Mucuna*, *Derris*, *Crudia*, *Acacia* and *Albizia*.

PAPILIONOIDEAE

MACROPSYCHANTHUS Harms

Some of the most attractive leguminous climbers in New Guinea belong to the genus *Macropsychanthus* Harms but the material available is scarcely adequate for an understanding of the taxonomy of the genus. Almost no fruits are available. The specimens which have been collected vary in corolla colour and size, in the size of the bracteoles and in the indumentum of the stems, leaflets and calyx. Residents insist that there are different species with different flower colours—blue and purple or pink; the original description of *M. lauterbachii* gives the standard as pale violet and the keel and wings as cobalt blue and other specimens which I have no doubt are conspecific are variously described as having blue or purple or pink flowers. More observations are needed to discover if the colour changes with age. Even the size of the flower is not evident from herbarium material since it appears that the petals elongate after the flowers open; nevertheless there is definite variation in mature flower size. Until more information is available I have compromised by describing a series of subspecies and varieties. This will draw attention to the kind of observations and material needed; it is possible that some are in reality distinct species.

Macropsychanthus lauterbachii Harms in K. Schum. & Lauterbach, Fl. Deutsch. Schutzgeb. Südsee: 367 (1900). Types: Papua New Guinea: Nuru R., *Lauterbach* [2257], (syntype, B†; isosyntype, WRSL) & Oertzen Mts., *Lauterbach* 2106 (syntype, B†).

subsp. ***lauterbachii***

Calyx up to 2.7 cm long. Corolla 6–8 cm long.

var. ***lauterbachii***

Stems and leaflets glabrous or nearly so. Calyx silvery or golden silky or velvety, up to 2.7 cm long. Corolla blue or standard violet, 6–8 cm long.

PAPUA NEW GUINEA. Madang District: Nuru R., *Lauterbach* 2257 (B, syntype†; WRSL, isosyntype); Oertzen Mts., *Lauterbach* 2106 (B, syntype†). Central District: Koitaki, *Carr* 11936 (K).

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var. **hirsutus** Verdc., var. nov. a var. *lauterbachii* ramis et foliis hirsutis differt.

Calycis tubus 2.5 cm longus (in vivo), 1.8 cm longus (in siccitate), dense sericeus. *Corolla* caerulea, (7-)7.5-8 cm longa.

PAPUA NEW GUINEA. Morobe District: near Lae, Bumbu R., *Millar* in NGF 13819 (K, holotype; L, LAE, isotypes) & fruiting specimen from same plant, *Millar* in NGF 13855 (K, LAE); same locality, *van Royen* in NGF 20061 (L, LAE). Milne Bay District: M. 1. round to Mt. Suckling, Raba Raba, *Katik* in NGF 46985 (K, LAE) (intermediate with glabrescent leaflets).

Brass 23479 (L, LAE) from Milne Bay, N. slopes of Mt. Dayman, Maneau Range is also intermediate, with sparse hairs and *Brass* 6738 (LAE) from Western District, Fly R. has glabrous stems, sparsely hairy leaflets, less hairy inflorescences and corolla 6.7 cm long thus bridging several of the variants.

subsp. **glabricalyx** Verdc., subsp. nov. a subsp. *lauterbachii* calyce atropurpureo extra glabro pedicellis glabris differt.

Calycis tubus 2.2 cm longus. *Corolla* purpureo-caerulea, 6-7.5 cm longa.

PAPUA NEW GUINEA. Northern District: near Kokoda, between Mambare and Arumu rivers, S. of Botue village, *Hoogland* 3953 (K, holotype, BM, CANB, L, LAE, isotypes); near Kokoda, *Cheeseman* 108 (K) (the associated foliage is quite different from any other specimen and is presumably very immature foliage of *Macropsychanthus* appearing at the end of a new shoot; it does not appear to be identifiable with any other genus; the flowers undoubtedly represent the same plant as *Hoogland* 3953).

subsp. **parviflorus** Verdc., subsp. nov. a subsp. *lauterbachii* floribus minoribus, 4-5 cm longis differt.

Bracteolae 6.5 mm longae, 7 mm latae. *Calycis* tubus aureo-vel argenteo-sericeus, 1.2-1.3 cm longus, lobis 5-6 mm longis. *Corolla* caerulea, 4.7 cm longa.

PAPUA NEW GUINEA. Milne Bay District: Rossel Is., Abaleti, *Brass* 28335 (K, holotype of subspecies, L, LAE, isotypes); U-uma R., *Brass* 1519 (K, no open flowers on sheet).

SOLOMON Is. New Georgia, Treasury I., *Guppy* 195 (K) (this specimen consisting only of flowers was collected in Aug. 1884 and was found in the Leguminosae indeterminatae; it represents the first specimen of the genus ever collected). SE. New Georgia, Tita R., *Burn Murdoch's collectors* in BSIP 7187 (K, LAE). San Cristobal, ridge E. of Pegato, *Sore* in RSS. 2315 (K) (may belong here but atypical).

subsp. **neobritannicus** Verdc., subsp. nov. a subsp. *parvifloro* bracteolis majoribus 8 mm longis 10 mm latis margine undulatis differt.

Calycis tubus sericeus, 1.2-1.7 cm longus, lobis 7-10 mm longis. *Corolla* roseo-purpurea, 4-5 cm longa.

PAPUA NEW GUINEA. New Britain: Talasea subdistrict, Kopiura R. at junction with Karoli R., near Lavege Village, *Henty* in NGF 29391 (LAE,

holotype of subspecies; A, BOG, BRI, CANB, K, L, SING, isotypes) & same locality, *White* in NGF 10909 (LAE).

STRONGYLODON Vog.

There are clearly two groups of species of this genus in New Guinea—those plants which are mainly lowland, have 2 ovules in the ovary and an inflated ellipsoid 1–2-seeded fruit and those which are more upland in distribution, have 6–9 ovules in the ovary and a longer oblong more or less 6-seeded fruit. The first group I believe comprises one variable species which I have identified with *S. siderospermus* Cordemoy (= *S. pseudolucidus* Craib, *S. secundus* St. John & *S. lucidus* auctt. non (Forst. f.) Seem.) but although most of the material of the second group has been called *S. archboldianus* Merr. & Perry in herbaria, only a fraction of it is referable to that species; the rest appears to comprise the new species described below.

Strongylodon decipiens *Verdc.*, sp. nov. affinis *S. archboldiani* Merr. & Perry foliolis tenuioribus, nervis basalibus brevioribus medio laminae haud attingentibus differt. Typus: Papua New Guinea, *Robbins* 913 (holotypus, LAE; isotypi, CANB, L).

Planta scandens 2–3(–6) m longa, ramis gracilibus glabris. *Foliola* oblonga vel elliptico-oblonga, 4·3–12·5(–18) cm longa, 1·8–5(–7·7) cm lata, apice distincte acuminata raro acumine usque 3·5 cm longo, basi rotundata vel levissime subcordata, glabra; nervi laterales utrinsecus 7–8, reti venularum reticulato in siccitate leviter prominenti; nervi basales breves medio laminae haud attingentes. *Flores* 3–3·5 cm longi, valde approximati, in inflorescentias simplices pendulas usque 20(–24) cm longas dispositi; pedicelli 0·7–1·1 cm longi; bracteolae ovatae, 1·5 mm longae, costulatae. *Calycis* tubus 6–8 mm longus; lobi oblongo-rotundati, 1–3 mm longi, virides vel apice rubescentes, imbricati vel a sinus rotundatis separati. *Corolla* aurantiaca usque saturate rubra vel salmonea; vexillum intus pallidum, reflexum; carina apice saturate rubra. *Ovarium* 6–9-ovulatum. *Legumina* oblonga vel ± falcata, 8·5–12 cm longa, 2·5–3 cm lata, apice et basi acuta, leviter inflata, ± 6-seminata, valvis reticulatis dehiscentia. *Semina* immatura, 1·5 cm longa, 1 cm lata.

var. **decipiens**

Calycis lobi a sinus rotundatis separati.

PAPUA NEW GUINEA. Morobe District: Wau sub-district, near Yamap, head of Baime R., *Nothofagus* dominated ridge, 1500 m, 5 Dec. 1969, *Streimann & Kairo* in NGF 44463 (BRI, L, LAE); half way to Yamap, *Castanopsis* ridge forest, 1500 m, Aug. 1969, *Kairo* in NGF 44079 (BULOLO, L, LAE):—flowers deep red; Wau sub-district, Eraulu logging area, mixed forest on mountain ridges, 1829 m, 12 June 1974, *Katik* in LAE 62097 (LAE):—flowers red; Patep Creek, forest, 690 m, 6 Oct. 1959, *Millar* in NGF 11755 (LAE):—flowers orange. Eastern Highlands District: Kainantu sub-district, eastern ridge above Noreikora swamp, disturbed forest with uneven canopy, 1860 m, 16 Oct. 1966, *Wheeler* in ANU 5520 (CANB, LAE):—twiner with red flowers; Kainantu to Okapa road, beech forest, 1800 m, 11 Aug. 1963, *Hartley* 12152 (CANB, LAE):—orange-red flowers;

Kainantu-Okapa road, 29 km from Kainantu, in understorey of oak forest, 1650 m, 19 July 1965, *Womersley* in NGF 24647 (A, BRI, CANB, L, LAE):—inflorescence held horizontally, calyx purplish, flowers orange; Aiyura range, forest, 1800 m, 7 July 1954, *Womersley* in NGF 6019 (LAE); Goroka sub-district, Dunantina Valley, Yanofi, lower montane rain forest, 1920 m, 28 Sept. 1957, *Robbins* 913 (LAE, holotype, CANB, isotype). Western Highlands District: Jimmi Valley, regrowth and shrubbery, 1680 m, 14 June 1955, native collector for *Womersley & Millar* in NGF 7654 (LAE):—flowers bright orange.

var. **imbricata** *Verdc.*, var. nov. a var. *decipiens* calycis lobis imbricatis differt. Typus: Papua New Guinea, *Brass* 31888 (holotypus, K; isotypi, A, L, LAE).

S. secundus sensu St. John in Pacific Science 26: 121 (1972) quoad *Schlechter* 16080 non St. John sensu stricto.

PAPUA NEW GUINEA. Madang District: Finisterre range foothills, Domainde, 900 m, *Henty & Sayers* in NGF 20582 (BRI, L, LAE): vine with pinkish orange flowers. Eastern Highlands District: Arau, creek flat in *Castanopsis*-Oak forest, 1400 m, 6 Oct. 1959, *Brass* 31888 (K, holotype of variety; A, L, LAE, isotypes):—slender twiner climbing to 3–6 m, flowers salmon, the standard whitish within; Kassam, scattered in *Castanopsis*-Oak forest undergrowth, 1370 m, 27 Oct. 1959, *Brass* 32275 (A, K, LAE):—climbing to 2–4 m, flowers orange; Kainantu sub-district, Kassam Pass, forest, 1260 m, 14 Jan. 1968, *Coode* in NGF 32669 (LAE):—climber to 6 m, calyx green at base, reddish at tip, petals light orange-red, tip of keel more intense, standard paler inside; top of Kassam Pass, *Castanopsis*-*Lithocarpus* ridge forest, 1650 m, 11 July 1970, *Streimann* in NGF 47900 (BRI, L, LAE):—flowers orange. Morobe District: Finisterre Range, Kubando near Wantoat, second growth, 1350 m, 7 Aug. 1968, *W. R. & M. N. Philipson* 3285 (CHR, K, L):—liane with orange flowers; Kaiser-Wilhelmsland, without locality, 1902 (possibly Bismarck, Finisterre or Torricelli Mts.), *Schlechter* 16080 (K); above Boana, mountain bushland, 1050–1350 m, 23 Aug. 1938, *Clemens* 8700 (B, L):—flowers flame-red.

S. decipiens has usually been confused with *S. archboldianus* Merr. & Perry by those having to name specimens. The venation and texture of the leaflets is, however, quite different although doubtless the two are closely related. From *S. siderospermus* Cordemoy and its allies it differs in having 6–7 ovules and a more montane distribution.

MUCUNA Adans.

New Guinea is a secondary centre in the distribution of this genus and there are about 20–23 species in the flora making it one of the largest genera of the family in the island. Unfortunately since many of the species are beautiful and of great horticultural potential they are frequently mentioned in semi-popular literature very often under the wrong names. The species have been in urgent need of revision and my attempt at this will appear in the Manual. Several new taxa need description.

Mucuna brachycarpa *Rechinger* in Denkschr. Akad. Wiss. Wien 89: 562 (1914); Menninger, Flowering Vines of the World, col. fig. 109 (1970); Type: Bougainville I., Kieta, *Rechinger* (W, holotype; K, LAE, drawings).

This species was described from a single fallen pod, a circumstance which has led to a problem not yet fully resolved. Merrill and Perry (Journ. Arnold Arb. 23: 405 (1942)) when dealing with the Brass collection referred Brass 3514 to *M. brachycarpa*; this specimen had been collected on Florida I. in the Nggela Group (Guadalcanal region). They had not seen the type but considered the pods matched the description of *M. brachycarpa* well enough and gave an extended description. This was accepted in the Index Kewensis Suppl. 11: 162 (1953) as a 'descr. emend.' There is, however, a *Mucuna* on Bougainville with extremely attractive bright yellow flowers of which apparently Merrill and Perry were quite unaware; although a good deal of material is now available from the island virtually none is in fruit and that despite the fact that seeds have been collected for cultivation in botanic gardens by persons not having the forethought to preserve some fruits for the herbarium. The plants in the garden concerned have died. One fruit is available and is a good match of the type of *M. brachycarpa*; I have no doubt that this is the correct name for the yellow-flowered Bougainville species which sooner or later must become better known to horticulturists. Material I have seen is listed below.

PAPUA NEW GUINEA. Bougainville I.: 16 km W. of Buin, near Aku village, 24 Sept. 1964, *Craven & Schodde* 538 (A, BRI, K, L, LAE, US); 17.6 km N. of Buin, Patrol Post, Koniguru I. village, *Schodde & Craven* 3600 (A, CANB, L, LAE); Buin, Kihili, Feb. 1936, *Voyce* 7a (K); Kieta, *Rechinger* (W, holotype); near Kieta, Aropa Plantation, 27 Apr. 1968, *de la Motte* in NGF 29383 (LAE) (also cult. at LAE as S 3124); Kieta, Arawa Plantation, 4 Dec. 1969, *Millar* in NGF 38399 (LAE); road from Toimonapu plantation to Luluai R., 29 June 1963, *van Royen* in NGF 16361 (A, BO, BRI, CANB, K, LAE, NSW, SING); Siwai, Apr. 1931, *Waterhouse* 402 (K); without locality, *Waterhouse* s.n. (K) & Sept. 1932, *Waterhouse* 67 (K); Pavairi, *Laverack & Ridsdale* in NGF 31194 (LAE). Morobe District: Lae Botanic Garden, cult. 22 Apr. 1968, *Womersley* in NGF 37111 (BRI, CANB, L, LAE).

SOLOMON IS. Santa Ysabel: Maringe Lagoon, 19 Oct. 1963, *Whitmore* in BSIP 2245 (K, LAE) (possibly a variant with green flowers). Choiseul: NE., banks of Vacha R., 21 Apr. 1964, *Whitmore's collectors* in BSIP 5668 (LAE).

I am not certain if Brass 3514 is a variant of this species or not; I have compared it with the type of *M. brachycarpa* and the fruits match well as Merrill & Perry supposed. The flower colour is, however, quite at variance, the corolla being described as greenish with numerous black specks and occasional blotches of red. No other material has been seen and some enlightened collecting is required to solve the problem.

Mucuna hooglandii *Verdc.*, sp. nov., *M. cyanospermae* K. Schum., *M. albertisii* F. Muell., *M. stanleyi* C. T. White ob fructum transverse lamellatum similis, sed foliis utrinque glabris, bracteis inflorescentiae tenuissime tomentosus differt. Typus: Papua New Guinea, *Hoogland* 4328 (holotypus, K; isotypi, CANB, L & LAE).

Planta scandens ex arboribus altis pendens; rami glabri, vetustiores stramineo-colorati in siccitate forte longitudinaliter sulcati. *Foliola* terminalia oblongo-elliptica, lateralibus oblique ovato-triangularibus, 7–12 cm longa, 3·7–7 cm lata, apice acuminata, basi rotundata, truncata vel leviter emarginata, papyracea, glabra; nervi laterales principales utrinsecus 3–5, reti venarum reticulato utrinque prominulo. *Inflorescentiae* ex ramis vetustioribus ortae, ramosae, 13–26 cm longae, tenuiter pubescentes; pedunculi 7–8 cm longi; rami secundarii 2·5 cm longi; pedicelli usque 1·3 cm longi; bracteae bracteolaeque in inflorescentias juveniles valde conspicuae, ovatae vel oblongo-ovatae, usque 2 cm longae, 1 cm latae, tenuissime velutino-tomentosae, statim deciduae. *Calyx* tenuiter flavescens velutino-pubescentis et setis stramineo-coloratis irritantibus obtectus; tubus cupularis, 6–8 mm longus, lobo superiore brevi 2 mm longo 1 cm lato, lobis lateralibus triangularibus 2 mm longis 2·5–3 mm latis, lobo infimo triangulari 4–5 mm longo 3–3·5 mm lato divisus. *Corolla* pallide viridis, 3·7 cm longa; vexillum late ellipticum, 2·5 cm longum, 2·2 cm latum, breviter unguiculatum, ungue 2·5 mm longo, auriculatum; alae oblongo-ellipticae, 4 cm longae, ungue 2·3 mm longo incluso, 1·3 cm latae, basi margine hirsutae et dentibus 6 mm longis ornatae; carina 4 cm longa, anguste oblonga, apice curvato rigido, unguibus 3–4 mm longis, basi dentibus 2 mm longis ornata. *Fructus* oblongus, leviter curvatus, 15 cm longus, 3·8 cm latus, \pm 5-seminatus, margine alatus, pubescens et setis patentibus irritantibus obtectus; valvae lamellis undulatis 2–6 mm latis obliquis irregulariter ornatae. *Semina* nigra, discoidea, 1·9 cm longa et lata, 9 mm crassa, hilo per tres quadrantes ambitus cincta. (Fig. 1.)

PAPUA NEW GUINEA. Central District: without exact locality, Carr 12472 (BM, K). Milne Bay District: Cape Vogel Peninsula, some km inland of Tapio, low secondary forest, 150 m, 19 July 1954, Hoogland 4328 (K, holotype; CANB, L, LAE, isotypes):—climber with pale yellow-green flowers and Cape Vogel Peninsula, Menapi, rain-forest on limestone, 5–10 m, 23 Mar. 1953, Brass 21622 (A, L, LAE):—flowers greenish white; Normanby I., about 0·8 km inland from Waikaiuna Bay, hanging from tall trees, 15 m, 20 Apr. 1956, Womersley & Brass in NGF 8642 (K, LAE):—inflorescences arising from the stem, leaves thin and papery, calyx and corolla pale green.

Mucuna canaliculata Verdc., sp. nov. fortasse affinis *M. giganteae* (Willd.) DC., ramis longitudinaliter valde sulcatis, inflorescentiis haud umbellatis, calycis lobis evolutis, fructu maturo lineari-oblongo usque 25 cm longo 4·2 cm lato valvis laevibus differt. Typus: Papua New Guinea, Streimann in NGF 35864 (holotypus, LAE; isotypi, BRI, BULOLO, CANB, L).

Planta scandens usque 18 m alta; rami lignosi, usque 2 cm lati, 1·2 cm crassi, medio longitudinaliter conspicue sulcati cortice griseo rugoso obtecti; ramuli juveniles sparse adpresse pubescentes. *Foliola* oblongo-elliptica usque ovata, (5–)7–15 cm longa, (3–)4·5–8·6 cm lata, lateralibus obliquis, apice acuminata, basi rotundata vel truncata, glabra vel subtus praecipue ad costam sparse adpresse hirsuta, chartacea; nervi laterales utrinsecus 3–5, supra leviter impressi, subtus prominentes. *Flores* 2·5 cm long, in inflorescentias ramosas pendentes 6–18 cm longas e ramis vetustioribus ortas dispositi; pedicelli 1(–2·5) cm longi, pubescentes; bracteae bracteolaeque 6–7 mm longae, 2–3 mm latae, mox deciduae. *Calyx* adpresse sericeo-

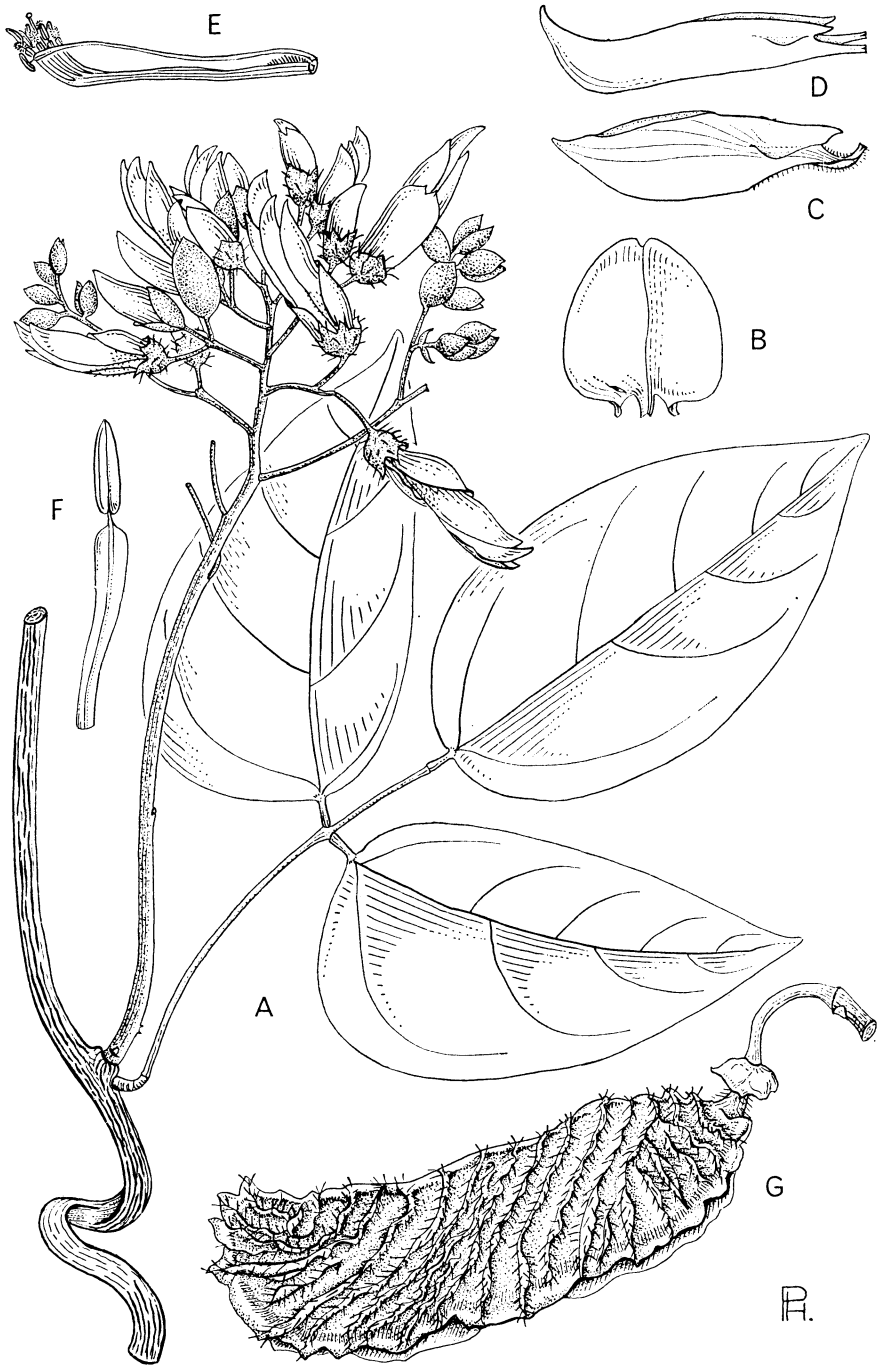


FIG. 1. *Mucuna hooglandii*. A, habit, $\times \frac{2}{3}$; B, standard, $\times 1$; C, wing, $\times 1$; D, keel, $\times 1$; E, gynoecium & androecium, $\times 1$; F, anther & top of filament, $\times 6$; G, fruit, $\times \frac{2}{3}$. A & G, from Hoogland 4328; B-F, from Womersley & Brass in NGF 8642. Drawn by Miss P. Halliday.

pubescens et setis sparsis irritantibus ornatus; tubus late cupularis, 7–8 mm longus, dentibus brevibus 1–3 mm longis divisus. *Corolla* albo-viridis vel flavo-viridis; vexillum ellipticum, 2.6–3 cm longum, 1.7–2.8 cm latum, auriculatum, ungue 3 mm longo, auriculis 1.5 mm longis; alae oblongae, 3.7–4.5 cm longae, 0.85–1.3 cm latae, unguibus 3 mm longis; carina 3.7–4.8 cm longa, 4–4.5 mm lata, apice rigida. *Fructus* lineari-oblongus, (13–)15–25 cm longus, 2.9–4.2 cm latus, apice acutus, basi angustatus, juventute costis obscuris obliquis anastomosantibus ornatus, mox laevis, margine plerumque anguste alatus, (1–)3–7-seminatus, setis flavis vel ferrugineis irritantibus dense obtectus. *Semina* nigra, discoidea, 2–3 cm longa, 2.1 cm lata, 6 mm crassa, hilo per quattuor quintos ambitus cincta.

PAPUA NEW GUINEA. Morobe District: Oberamngang, hill forest, 1770 m, 4 Dec. 1936, *J. & M. S. Clemens* 4515 (B):—liane to 18 m, fruit green with golden brown hairs; Sembanga, Timbe R., hill forest, 1500 m, 25 Nov. 1937, *M. S. Clemens* 7731 (B):—flowers pale greenish; Patep Creek, regrowth along road, 540 m, 30 July 1965, *Millar* in NGF 22604 (A, BISH, BO, BRI, CANB, K, L, LAE, NSW, SING):—scrambling woody vine with dark green leaves and pendulous compound racemes of greenish flowers, fruits immature with wings along sutures and long irritant hairs, apricot-red; same locality, forest, 690 m, 6 Oct. 1959, *Millar* in NGF 11756 (LAE):—large woody vine, flowers greenish cream in pendulous clusters; same locality, 750 m, 8 Nov. 1955, *Womersley* in NGF 7822 (LAE):—fruits green covered with irritating brown hairs, 2-ridged on the back; Kaiapit sub-district, Kassam Pass, foothill rain forest, 900 m, 22 June 1971, *Womersley* in NGF 43731 (BRI, CANB, K, L, LAE):—liane with very flattened and channelled stems (see note below); Wau sub-district, Upper Watut, Minnoa Creek, lower montane forest, 1050 m, 11 Apr. 1968, *Streimann* in NGF 35864 (LAE, holotype, BRI, BULOLO, CANB, L, isotypes):—climbers on small trees along creeks, stems up to 3.8 cm thick, flowers whitish green. Western Highlands District: Kapiago, 1410 m, *Womersley, Vandenberg & Galore* in NGF 37322 (L). Western District: Daru sub-district, Oriomo Rd., below Abam Village, swamp forest beside the river 3 m alt. 29 Sept. 1972, *Streimann & Lelean* in NGF 18443 (A, BISH, BRI, CANB, K, L, LAE):—trailing climber over a small tree, fruit covered with short brown irritant hairs. Central District: Yule I., *White* 733 (BRI).

There has been some confusion about the colour of the flowers of this species; *Womersley* in NGF 43731 states 'probably fruiting material of red-flowered *Mucuna* from Kassam pass'. Presumably at least two species occur in the area, one the upland form of *M. novo-guineensis*. There is no doubt that *M. canaliculata* has greenish flowers.

***Mucuna pruriens* (L.) DC.**, Prodr. 2: 405 (1825).

subsp. **novo-guineensis** *Verdc.*, subsp. nov. a subsp. *prurienti*, corolla alba vel albo-viridi, fructu rectiore differt. Typus: Papua New Guinea, *Hartley* 10172 (holotypus, K; isotypi, CANB, LAE).

PAPUA NEW GUINEA. Morobe District: Near Lae, Busu, in roadside bushland, 15 m, 2 Apr. 1967, *Coode* in NGF 29884 (BRI, E, K, L, LAE):—twiner to 1.5 m, leaves grey-green with soft silvery grey hairs, calyx creamy

with pink flush, standard very pale greenish cream, keel and wings paler less greenish except at tips, pods pendulous with very irritant hairs; Kaiapit, Leron R., streamside grassland, on low shrubs, 150 m, 20 Apr. 1972, *Henty & Lelean* in NGF 49270 (A, BO, BRI, CANB, K, L, LAE, SING):—flowers greenish white; NE. of Lae, Burep R., rain forest border, 30 m, 15 May 1962, *Hartley* 10172 (K, holotype of subsp., CANB, LAE, isotypes):—herbaceous vine with cream flowers, fruit with rusty hairs; Sattelberg, Boana, open bushland, 960 m, *Clemens* 8258A (B); near Lae, Yalu, 19 June 1954, *Floyd* in NGF 5783 (L, LAE); Kassam Pass, in *Albizia* savanna, 240 m, 18 June 1965, *Gillison* in NGF 22248 (BRI, CANB, L, LAE):—corolla white. Other specimens belonging here are—Nadzab, *Womersley* in NGF 3180; Finisterre Mts., near Wantoat, *Womersley & Thorne* in NGF 12606; Sesiang, *Henty* in NGF 14760; Cherasing Village, *Gillison* in NGF 25059; and Mumeng, *Millar* in NGF 23376, all seen at LAE.

It seems likely that the following specimens, duplicates of which I have not seen, may also be referable to this subspecies. *Hollrung* 147 (Finschhafen), *Lauterbach* 15 and 461 (forest on bank of Bumi), *Lauterbach* 2279 (Nuru R.), *Lauterbach* 2092 (Oertzen Mts., Nowulja R.); these are all cited as *M. pruriens* by K. Schumann & Lauterbach, Fl. deutsch. Schutzgeb. Südsee: 356 (1900).

Mucuna lamii Verdc., sp. nov. affinis *M. giganteae* (Willd.) DC. alis fructus multo latioribus pedunculis plerumque brevioribus calycis lobis bene evolutis differt.

Planta scandens; rami castanei pilis adpressis albis sparsis obtecti. *Petioli* 5·5–7 cm longi; rhachis 1·8–2·5 cm longa; petioluli 7–9 mm longi; foliolium terminale late ellipticum, 7–12·5 cm longum, 4–11 cm latum; foliola lateralia oblique ovata, 6·8–14 cm longa, 3·6–9 cm lata; foliola omnia apice obtusa vel minute mucronulata, basi rotundata vel leviter emarginata, supra glabra vel sparse pilosa, subtus pilis albis adpressis sparse pubescentia, nervis lateralibus utrinsecus 4–6 subtus prominentibus; stipulae anguste triangulares, 4 mm longae. *Inflorescentiae* axillares, apice 2–4-nodatae, nodis plerumque 3-floris; pedunculi 1·5–4 cm longi, dense ± adpresse pubescentes, in statu fructifero spissescens, pedicellis 1·6–2 cm longis dense pubescentibus; bractea ± lanceolata, 7 mm longae, 3 mm latae, bracteolis ellipticis 10 mm longis, 5 mm latis dense hirsutis. *Calyx* dense hirsutus et setis aurantiaco-brunneis obtectus; tubus cupuliformis, 6–7·5 mm longus, lobo superiore 7–8·5 mm longo, lobo inferiore anguste triangulari 0·9–1·4 cm longo acuto, lobis lateralibus oblongis 5·5–6 mm longis acutis. *Corolla* pallide viridis vel viridescens-alba, leviter carnosa, 1·8–2·2 cm longa. *Legumen* nigrum, ambitu elliptico-oblongum vel oblanceolatum, 15–18·5 cm longum, 5·5–6·8 cm latum, apice apiculato curvato 3 cm longo terminatum, basi in stipite 1 cm longo contractum, ± laeve, pilis albis adpressis et setis aurantiaco-brunneis irritantibus obtectum tandem glabrescens; corpus semifer fructus fusiformis, 2 cm latus, alis 1–2 cm latis instructus. *Semina* saturate brunnea, ellipsoideo-oblonga, compressa, 2 cm longa, 1·5 cm lata, 1 cm crassa, hilo nigro 3 cm longo 3–3·5 mm lato cincta.

WEST IRIAN. Geelvink Bay District: Wandammen Peninsula, Wondiwoi Mts., primary forest, 700 m, 26 Feb. 1962, *Koster* in BW 13612 (L, MANO-KWARI):—common climber with green fruits. Djajapura District:—

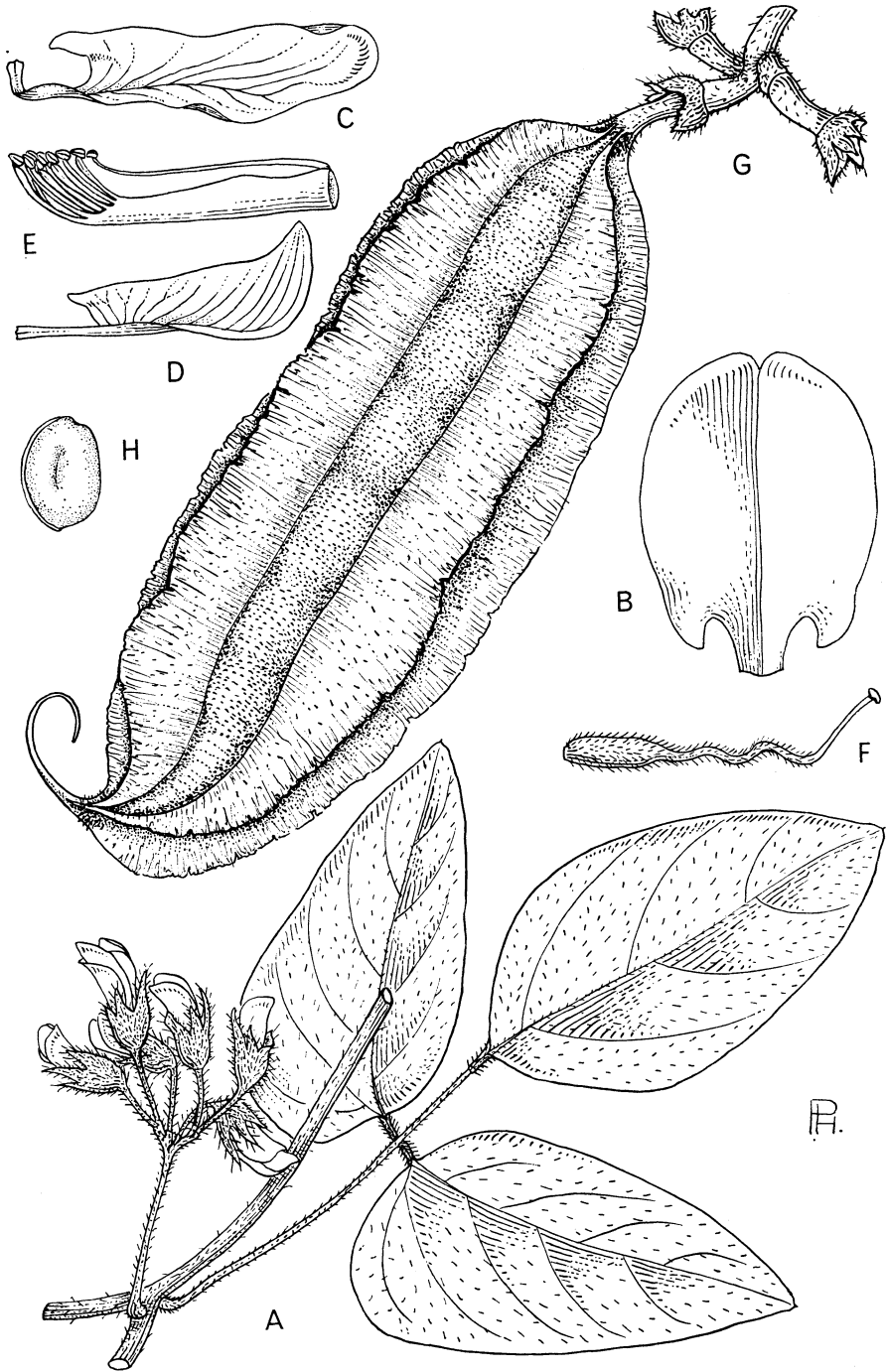


FIG. 2. *Mucuna lamii*. A, habit, $\times \frac{2}{3}$; B, standard, $\times 2$; C, wing, $\times 2$; D, keel, $\times 2$; E, stamens, $\times 2$; F, gynoceium, $\times 2$; G, fruit, $\times \frac{2}{3}$; H, seed, $\times \frac{2}{3}$. A-F, from Lam 7811; G & H, from v. d. Sidje in BW5523. Drawn by Miss P. Halliday.

Cycloop Mts., primary forest on sandy soil, 300 m, 31 May 1957, *van der Sijde* in BW 5523 (L, holotype, DJAJAPURA, isotype):—climber with yellowish white flowers and green fruits; same Mts., N. of Depapre, forest, 100 m, 15 Oct. 1954, *Lam* 7811 (L):—pale green flowers; same Mts., S. of Depapre, forest by Kp. Mariboe, 100 m, 15 Oct. 1954, *Lam* 7809 (L):—liane with green fruits.

I have little doubt that this is a locally evolved species from *M. gigantea* stock which is widespread and plastic. *M. lamii* differs in many characters including shorter peduncles, less umbel-like inflorescences, much wider fruit wings and the practical absence of lozenge-like reticulate sculpture on the fruit surface. It gives me great pleasure to name the species in memory of the late Prof. H. J. Lam.

DERRIS Lour.

The genus *Derris* is moderately well represented in New Guinea but it has proved most difficult to name the species involved. A complete revision of the genus has been a pressing desideratum during the past century; S. T. Dunn commenced a revision but it was never published and the manuscript has not been discovered. Some years would be needed for such a revision. Without one it is difficult to assign reliable affinities to several species which appear to be undescribed. I have been forced to describe two species as new but several remain for which no fruiting material is available.

***Derris submontana* Verdc.**, sp. nov. *D. scandentis* (Roxb.) Benth. probabiliter affinis leguminibus distincte latioribus differt. Typus: Papua New Guinea, *M. S. Clemens* 8162 (holotypus, B; isotypi, A, L).

Planta scandens usque 3·6 m alta; ramuli atro-purpurei, striati, lenticellati, juventute tenuiter adpresse puberuli, mox glabrescentes. *Foliola* 7–11, elliptica, oblongo-elliptica vel obovata, 3·4–6 cm longa, 1·7–3·4 cm lata, apice anguste acuminata, basi rotundata, membranacea, supra glabra et subnitida, subtus pilis brevibus ferrugineis adpressis tenuiter pubescentia; nervi laterales utrinsecus 6–7. *Inflorescentiae* paniculatae; rami usque 30 cm longi, adpresse ferrugineo-pubescentes, nodis floriferis valde approximatis 0–2 mm longis; pedicelli usque 2 mm longi, ferrugineo-pubescentes; bracteolae ellipticae, 1 mm longae. *Calyx* campanulatus, circa 3 mm longus, adpresse ferrugineo-pubescentis; lobi late triangulares, 0·5–1 mm longi, lobo infimo longissimo. *Corolla* caerulea vel purpureo-caerulea; vexillum orbiculare, 8–10 mm longum, 7–8 mm latum, fere glabrum vel extra ad basin pilis paucis medio ornatum; lamina alae oblonga, 7 mm longa, 1·8 mm lata, basi calcari 1 mm longo producta, ungue 2·5 mm longo; petala carinalia leviter connata, apice pubescentia, medio alarum adhaerentia; lamina oblonga, 6·5 mm longa, 2·5 mm lata, apice curvata, basi calcari producta, ungue 3 mm longo. *Staminum* vexillare in parte superiore cum tubo connatum. *Ovarium* lineare, 7 mm longum, pubescens, 11–12-ovulatum, stylo curvato 2·5 mm longo terminatum. *Legumina* elliptico-oblongata, usque 8 cm longa, 2·2 cm lata, 1–2-seminata, tenuia, reticulate venosa, obscure maculata, subnitida, ut videtur glabra sed vero tenuiter adpresse ferrugineo-pubescentia, secus unum latus ala 2·5–3 mm lata marginata. (Fig. 3K.)

2—M

PAPUA NEW GUINEA. Morobe District: Wau sub-district, Wau, Bulolo R., lower montane forest dominated by *Castanopsis* and *Flindersia*, 1200 m, 23 June 1967, *Kairo & Streimann* in NGF 30696 (A, BISH, BO, BRI, CANB, K, L, LAE, PNH, NSW, SING, & US):—climber on *Castanopsis*, leaflets dull dark green above, dull grey-green below, fruit green; Boana, open bushland, 5 May 1938, *M. S. Clemens* 8162 (B, holotype, A, L, isotypes):—big vine; Partep, Sept. 1947, NGF 3123 (LAE). Eastern Highlands District: Kainantu sub-district, Tairora, road to Obura, in secondary growth along road, 1800 m, 9 Aug. 1967, *Kairo & Streimann* in NGF 37500 (L, LAE):—climber with leaflets dark green above, lighter beneath, flowers blue; 16 km SE. of Obura, secondary vegetation along stream, 1830 m, 6 Oct. 1972, *Hays* 505 (LAE):—shrub (sic) 3·6 m tall with purple-violet flowers.

Derris rubrocalyx *Verdc.*, sp. nov. affinis *D. cebuensis* Merr. et *D. affinis* Benth., fructu oblongo angustiore differt. Typus: Papua New Guinea, *Schodde* 2759 (holotypus, K; isotypi, CANB, L, LAE).

Planta scandens 10–20 m alta; ramuli juniores adpresse ferrugineo-pubescentes, vetustiores glabri, purpureo-brunnei, lenticellati, sulcati. *Foliola* 3–5, elliptica vel leviter obovato-elliptica, 4·5–12 cm longa, 2·3–6·5 cm lata, apice obtuse usque distincte acuminata, basi cuneata usque rotundata, chartacea, glabra; nervi laterales 7–8; petiolus, rhachis et venatio marginesque laminae pallide flava cum petiolulis brunneis vel nigrescentibus comparanda. *Inflorescentiae* paniculatae, 30–50 cm longae, saepe ramis aphyllis ortae; rami secundarii inflorescentiae 6–15 cm longi, dense adpresse ferrugineo-pubescentes, ramulis ultimis 0·5–5 cm longis 5-multi-floris dense pubescentibus; pedicelli 3–6 mm longi, pubescentes, bracteolis 0·5 mm longis. *Flores* fragrantae. *Calyx* roseus vel saturate purpureus, campanulatus, 3–5 mm longus, glaber praeter marginem ciliatam, lobis late triangularibus 0·2–0·5 mm longis vel fere obsoletis. *Corolla* alba vel rosea, 1–1·1 cm longa; petala apice extra ferrugineo-pubescentia vel fere glabra; vexillum orbiculare, apice cucullatum; lamina 8 mm longa et lata ungue 2·5–3·5 mm longo; lamina alae oblongo-lanceolata, 7 mm longa, 2·5 mm lata, ungue 3·5–4·5 mm longo; petala carinalia leviter connata medio alarum adhaerentia; lamina oblonga, 7 mm longa, 3·5 mm lata, apice rotundata, ungue 3·5 mm longo. *Ovarium* lineare, 5 mm longum, adpresse ferrugineo-pubescentem vel ferrugineo-hirtellum, 4-ovulatum, stylo curvato 5 mm longo hirtello terminatum. *Legumina* oblonga (aut si monosperma nunc elliptica), 2·5–7 cm longa, 1·4–1·6 cm lata, glabra praeter stipitem brevissimum et basem styli sparse pubescentem excepta, margine conspicue alata, ala superiore 3–4·5 mm lata, ala inferiore 2–2·5 mm lata; legumina immatura rostrata. (Fig. 3A–J.)

subsp. ***rubrocalyx***

Foliola obtuse acuminata. *Ramuli* ultimi inflorescentiae elongati, 1–3(–5) cm longi, multiflori. *Calyx* saturate roseus. *Corolla* alba vel rosea; vexillum fere glabrum; carina apice ferrugineo-pubescentem.

PAPUA NEW GUINEA. Central District: Port Moresby showground, Sogeri road turn-off, on a rocky hillside with *Harrisonia*, *Allophylus*, *Euodia*, *Ficus*, *Dioscorea* and *Smilax*, 31 Dec. 1975, *Verdcourt & Huxley* 4877 (K, LAE,



FIG. 3. *Derris*. A-J, *D. rubrocalyx*. A, leaf, $\times \frac{2}{3}$; B, flowering branch, $\times \frac{2}{3}$; C, flower, $\times 3$; D, standard, $\times 3$; E, wing, $\times 3$; F, keel, $\times 3$; G, androecium, $\times 3$; H, gynoecium, $\times 3$; I, stem, $\times 3$; J, fruit, $\times \frac{2}{3}$; K, *D. submontana*. Fruit, $\times \frac{2}{3}$. A-J, from Schodde 2759; K, from Clemens 8162. Drawn by Miss P. Halliday.

UPNG):—rambling shrub with coppery young leaflets, very young fruits markedly beaked; Kairuku sub-district, N. coast of Yule I., on coral rocks near sea, 9 m, 31 July 1962, *Darbyshire* 747 (CANB, K, L, LAE):—climber, flowers fragrant with dark maroon calyx and white petals suffused with pink; 0.8 km N. of Rigo, stunted pyric swamp forest, 6 m, 11 Aug. 1962, *Schodde* 2759 (K, holotype; CANB, L, LAE, isotypes):—climber with leaflets dark slightly glossy green above, duller beneath, calyx dark pink, corolla white with pink tinge. Milne Bay District: Cape Vogel Peninsula, Menapi, second growth rain forest, 60 m, 25 Mar. 1953, *Brass* 21657 (A, CANB, L, LAE):—large scrambling shrub 10–20 m tall with red calyx and pink petals & same locality, 50 m, 4 Apr. 1953, *Brass* 21824 (A, L, LAE) (very long young beaked pods); Normanby I., Waikaiuna, rain forest, 20 m, 14 May 1956, *Brass* 25868 (K, L, LAE):—high climbing liane with red calyx and white petals.

subsp. **acuminata** *Verdc.*, subsp. nov.

Foliola ± abrupte acuminata. *Ramuli* ultimi inflorescentiae reducti, fasciculiformes, 5 m longi, pauciflori. *Calyx* saturate purpureus. *Corolla* alba; vexillum extra ± tenuiter pubescens; carina apice ferrugineo-pubescens.

PAPUA NEW GUINEA. Madang District: NE. foot of Mt. Hellwig, along Puria R., along creek in open tall rain forest, 350 m, 7 Sept. 1955, *Hoogland* 5189 (CANB, LAE):—climber, calyx dark purple, corolla white. Morobe District: Huon Peninsula, along Kua R., N. of Zalimpa, in low river bank forest, 420 m, *Hoogland* 9003 (K, holotype of subspecies; A, BRI, CANB, L, LAE, US, isotypes):—climber to 10 m, calyx deep purple, corolla white.

Derris elegans *Graham ex Benth.* in *Miq.*, *Pl. Junghuhn.*: 252 (1852); Merr. & Perry in *Journ. Arn. Arb.* 33: 403 (1942). Types: Burma, Phanoë, *Wallich* Cat. 5883 & Troglia Hills, *Wallich* Cat. 5884 (K, syntypes).

D. rufula *Lauterb. & K. Schum.*, *Fl. deutsch. Schutzgeb. Südsee*: 361 (1900). Types: Papua New Guinea, Hatzfeldhafen, *Hollrung* 429 (B, syntype†; K, isosyntype fragment), Bismarck-Ebene, *Lauterbach* 2821 (B, syntype†; K, isosyntype), Gogol R., *Lauterbach* 1052 (B, syntype†).

var. **elegans**

Derris elegans is a common species in India, Indo-China and Malesia and is found in West Irian (Djajapura) and Papua New Guinea (Madang, Central and New Britain). Merrill & Perry appear to have been the only authors to have recorded the species from the island under the correct name.

var. **gracillima** (*Hemsley*) *Verdc.* comb. et var. nov.

Millettia gracillima *Hemsley* in *Bull. Misc. Inf. Kew* 1895: 134 (1895). Type: Solomon Is., San Cristobal, *Comins* 300 (K, holotype).

Derris papuana *Pulle* in *Nova Guinea* 8: 380 (1910). Type: W. Irian, Noord-Fluss near Sabangkamp, *Versteeg* 1754 (L, holotype; K, isotype).

D. momiensis *Kanehira & Hatusima* in *Bot. Mag.*, Tokyo 56: 364, fig. 5 (1942). Type: West Irian, Momi, *Kanehira & Hatusima* 13255 (FU, holotype).

D. salomonensis *Thothathri* in *Journ. Arn. Arb.* 51: 251, pl. 1 (1970). Type: Bougainville I., Karngu, *Kajewski* 2290 (LE, holotype; A, isotype).

This variety differs in its more or less glabrous leaflets but intermediates are frequent. It is widely distributed and was referred to *Derris* long ago by Dunn in annotations on sheets but as mentioned his revision of the genus was never published. I have seen specimens from West Irian (Vogelkop, Djajapura and Mimika), Papua New Guinea (E. Sepik, Madang, S. Highlands, Western, Central, Milne Bay, New Britain and Bougainville Districts), the Solomon Islands (New Georgia, Guadalcanal, Malaita and San Cristobal) and the New Hebrides (Espirito Santo).

var. **vestita** (Bak.) Prain in Journ. As. Soc. Bengal 66: 103 (1897).

Derris vestita Bak. in Hook. f., Fl. Brit. India 2: 242 (1878). Type: Malaysia, Malacca, *Maingay* 608 (K, holotype).

Katik in NGF 46616 from Madang District, near Gogol R., Enecil Village seems indistinguishable in its dense woolly indumentum from Baker's taxon. The Gogol R. is one of the syntype localities for *Derris rufula*.

Derris koolgibberah F. M. Bailey, Rep. Exped. Bellenden-Ker: 38 (1889). Type: Australia, Queensland, along the Mulgrave R. (BRI, holotype; K, isotype).

subsp. **pseudinvoluta** Verdc., subsp. nov. a subsp. *koolgibberah* foliolis minoribus, fasciculis florum brevissimis subsessilibus, corollis brevioribus plerumque 6 mm longis, vexillo extra pubescenti (haud velutino) differt. Typus: Papua New Guinea, *Womersley* in NGF 15395 (holotypus, K; isotypi L, LAE).

WEST IRIAN. Snow Mountains: Balim R., on grassy deforested slope, 1600 m, Dec. 1938, *Brass* 11820 (A, LAE):—large scrambling shrub with pink flowers (corolla larger up to 1 cm long). Djajapura District: Rouffaer R., Aug. 1926, *Doctors van Leeuwen* 9926 (BO, K, L) (determination not certain).

PAPUA NEW GUINEA. Morobe District: Lae Botanic Gardens, in forest trees in wild part, 15 m, Apr. 1963, *Womersley* in NGF 15395 (K, holotype; L, LAE, isotypes):—climber in crowns of trees, flowers pinkish-purple, pods green, 1-seeded; Markham R., near bridge, on forest edge, 30 m, 27 Mar. 1962, *Henty* in NGF 14714 (K, L, LAE):—woody vine with dark pink flowers; Oomsis, disturbed forest, 15 m, 12 Feb. 1964, *Millar* in NGF 23305 (K, L, LAE):—vine with pink flowers; Bulolo, near Sawmill Creek, in advanced secondary forest, 750 m, 31 May 1966, *Streimann & Kairo* in NGF 27776 (K, L, LAE):—climber, leaflets dull green above, grey-green below, pods golden brown hairy; Sattelburg, Hill Woods near Mission, 990 m, 7 Mar. 1936, *J. & M. S. Clemens* 2026 (B, L):—liane, 7.5–10 cm diameter, flowers pink and white. Eastern Highlands District: Kassam Gap, in *Castanopsis*-oak forest, second growth, 1460 m, 28 Oct. 1959, *Brass* 32288 (K, L, LAE):—scrambler to 5 m with brown indumentum and pink flowers.

Typical *D. koolgibberah* has the flowers arranged densely along the ultimate branchlets of the inflorescence which attain 8 cm in length in the type; in other material from Queensland they are only 1 cm long. Material from Madang, Morobe, Western, Central and Northern Districts of Papua New Guinea which I have referred to subsp. *koolgibberah* mostly has these branchlets very reduced, scarcely more than 1 cm long, but one specimen from

Northern District, *Darbyshire* 1121 is virtually identical with the type. Subspecies *pseudinvoluta* at first sight seems distinct enough to regard as a separate species but some intermediates do occur e.g. *Hartley* 10158 (CANB, LAE) with cream flowers from Burep R., NE. of Lae and for the present I have decided to treat it as a subspecies. The branchlets are reduced to sessile fascicles, the flowers are mostly much smaller and usually pink, and the leaflets are also smaller. If *D. koolgibberah* had been found in tropical Africa it would undoubtedly have been placed in the genus *Leptoderris* Dunn since the inflorescence has exactly the facies associated with that genus. In Africa no difficulties are experienced since *Derris trifoliata* Lour. is the only typical *Derris* which occurs. I have thought it unwise to transfer the Australian species to *Leptoderris* but it does throw some doubt on the wisdom of maintaining *Leptoderris*. Hutchinson (Gen. Fl. Pl. 1: 384 (1964)) sinks it into *Derris*. *D. koolgibberah* subsp. *pseudinvoluta* bears a strong initial resemblance to the Australian *D. involuta* Sprague but that differs totally in having a glabrous corolla.

CAESALPINIOIDEAE

CRUDIA Schreb.

Crudia katikii Verdc., sp. nov. affinis *C. subsimplicifoliae* Merr., *C. papuanae* Kosterm. et *C. dewitii* Kosterm. sed foliolis 2–3 alternis latioribus tenuioribus differt. Typus: Papua New Guinea, *Katik* in NGF 46250 (holotypus, BRI; isotypi, CANB, L, LAE).

Arbor 15–21 m alta; truncus erectus, 6–13.5 m altus, diametro 28–75 cm, cortice brunneo vel griseo-brunneo obtectus. *Folia* 2–3-foliolata; foliola elliptico-oblonga, 6.5–17 cm longa, 2.8–8.5 cm lata, apice acuminata, basi late cuneata, tenuia, supra glabra, subtus tenuissime puberula; nervi laterales utrinsecus 10–12 principales et 40–50 minores; petioli 1–3 cm longi; petioluli 5–6 mm longi, transverse crenulato-rugulosi. *Inflorescentia* racemosa, 5–7 cm longa, pedunculo \pm 1 cm longo incluso, pubescens; pedicelli 5–6 mm longi. *Calycis* tubus 2 mm longus, pubescens; lobi oblongi, 4.5 mm longi, 2.5 mm lati, extra tenuiter pubescentes. *Stamina* 10, filamentis \pm 8 mm longis primo forte geniculatis. *Ovarium* fusiforme, 3.5 mm longum, dense tomentosum et pubescens, 4-ovulatum. *Legumina* immatura circa 8 cm longa, 4 cm lata, valde compressa, tenuiter rugulosa, dense breviter pubescentia, stipite 5 mm longo.

PAPUA NEW GUINEA. Madang District: Gogol R., rain forest, 30 m, 3 Sept. 1969, *Katik* in NGF 46520 (BRI, holotype; CANB, L, LAE, isotypes):—tall tree with straight bole, height 21 m, bole 13.5 m, d.b.h. 75 cm, bark grey-brown, inner bark reddish brown, sapwood cream, heartwood brown hard, leaves light green, flowers green; same locality, lowland rain-forest, 60 m, 12 Oct. 1971, *Katik* 46837 (A, BISH, BO, BRI, CANB, K, L, LAE, NSW, SING):—medium tree, height 15 m, bole 6 m, d.b.h. 27.5 cm, bark brown, under red, inner reddish-brown, wood brown and hard, leaves dark green, fruit green flat.

MIMOSOIDEAE

ACACIA Mill.

In Africa Brenan and Exell (Bull. Soc. Brot. 31: 99-140 (1957)) found that quite a number of distinct species were masquerading under the name *Acacia pennata*, but, in actual fact, none was to be identified with that species which they typified as a plant native to Sri Lanka (Ceylon). The situation in New Guinea is considerably simpler, only two plants having been confused under the name so far as is evident from the material preserved at Lae and Kew. These two are totally different from each other; one is a scrambling shrub or tree with larger leaflets 4-9 mm long, 0.8-2 mm wide, glands present between the apical two pairs of pinnae and the buds red or purple; the other is a climbing shrub, has smaller leaflets 2.5-5 mm long, 0.5-0.8 mm wide, small obconic glands present between all the pinnae and pale buds. The larger leafleted species matches fairly well material of *A. concinna* (Willd.) DC. based on material collected in 'India orientali' by D. Klein and particularly well specimens of *A. hooperana* Zipp. ex Miq. described from Java and usually considered synonymous. Backer in his Flora of Java uses the name *A. rugata* '(L.) Merr.', actually (Lam.) Merr. I have preferred to maintain *A. concinna* distinct. The New Guinea plant differs from typical *A. concinna* in its stipules and habit and may possibly need separating as a distinct subspecies; nowhere else through its range is it ever reported to be a tree. Material I have seen is cited beneath.

Acacia concinna (Willd.) DC., Prodr. 2: 464 (1825). Type: E. India, Klein (B-WILLD 19085, holotype).

Mimosa concinna Willd., Sp. Pl. 4: 1039 (1805).

A. hooperana Zipp. ex Miq., Fl. Ind. Bat. 1(1): 10 (1855). Type: Java, Zippelius (L, holotype).

PAPUA NEW GUINEA. Morobe District (Wau sub-district): Bulolo, B.G.D. Agricultural Lease, in disturbed rain-forest adjacent to alluvial mining, 720 m, 8 Jan. 1963, *Havel & Kairo* in NGF 17063 (K, L, LAE):—short-boled tree with broad crown, tendency to layering of foliage, height 18 m, bole 4.5 m, d.b.h. 45 cm, bark 3 mm thick, outer bark light to medium grey, shallowly fissured but appears smooth, under bark green turning light brown, blaze straw-coloured with layers of fibres, wood medium heavy to hard, sapwood straw-coloured, pores large solitary, parenchyma paratracheal and confluent, leaves thin, medium green, flower-buds red-brown, open flowers and anthers yellow; Bulolo, 600 m, 20 Nov. 1960, *Henty* in NGF 13644 (K, LAE):—small tree 7.5 m with several trunks, average diam. 10 cm, top straggly, spreading branchlets bearing small thorns, calyces dark red, stamens cream; Bulolo, Middle Creek Road 45, logged forest, 900 m, 18 Mar. 1971, *Stone* 9738A in LAE 53038A (A, BISH, BRI, K, L, LAE):—sprawling shrub, spiny, flower buds reddish purple, flowers white; 8 km NW. of Bulolo, *Pouteria*-dominated ridge on road cutting, 1050 m, 17 June 1970, *Streimann* in NGF 47815 (A, BO, BRI, CANB, K, L, SING):—spreading multi-stemmed bush, leaves dull dark green above, dull green below, fruit green. Central District: Sogeri road above Rouna Falls, 510 m, 12 Dec. 1956, *Womersley* in NGF 8998 (K, L, LAE):—erect or scrambling

woody shrub, leaflets sensitive, main rhachis with recurved thorns beneath, flowers in large axillary panicles, heads globular, dark red in bud, pale cream when open, 'apparently an introduced plant'.

The other species is much more like typical *A. pennata* (L.) Willd. and is characterized by having small obconic margined glands between *all* or nearly all the 24 pairs of pinnae, the petiole with a large gland about $\frac{1}{4}$ the way up from the base and 40–60 pairs of small subacute leaflets with the midrib just under $\frac{1}{3}$ of the width of the leaflet from the front margin. This combination of characters excludes it from true *A. pennata* and from *A. megaladena* Desv.; the numerous leaflets on numerous pinnae make it similar to *A. pluricapitata* Steud. ex Benth, but in that species about half the pairs of pinnae, those towards the base, lack the glands on the rhachis between them and the petiolar gland is small and usually placed well above the middle of the petiole. I have concluded after a detailed survey of the available material that the New Guinea plants form a distinct species.

Acacia pluriglandulosa Verdc., sp. nov. affinis *A. pluricapitatae* Steud. ex Benth. sed glandulis petioli saepe binis, infima gibbosa 1.5–2 mm longa supra pulvinum, summa obsoleta vel parva obconica prope vel supra medium posita, glandulis rhachidis folii inter paria omnia pinnarum (1–2) infimis plerumque exceptis) locatis, leguminibus crassioribus differt. Typus: Papua New Guinea, *Hoogland & Craven* 10334 (holotypus, K; isotypi A, BO, BRI, CANB, L, LAE, US).

A. pennata sensu Merr. & Perry in Journ. Arn. Arb. 23: 396 (1942) non (L.) Willd.

Frutex alte scandens; ramuli juveniles puberuli et glandulis minutis fuscis dense obtecti, lineis longitudinalibus aculeiferis brunneis quam lineis lenticelliferis pallide brunneis interjacentibus angustioribus; aculei \pm recti, 1–2 mm longi, basi dilatati. *Stipulae* haud spinescentes, caducissimae, 3 mm longae. *Folia*: petiolus 2.8–4 cm longus, armatus, glandula gibbosa 1.5–2 mm longa protinus supra pulvinum basalem ornatus et saepe glandula altera obconica 1 mm diametro prope vel supra medium instructus; rhachis 12.5–18.5 cm longa, \pm armata; glandulae inter paria omnia pinnarum (1–2) infimis plerumque exceptis) 1 mm altae et latae positae; pinnae usque 24-jugatae, 1.5–5 cm longae; foliola numerosa, 40–60-juga, lineari-oblonga 2.5–5 mm longa, 0.5–0.8 mm lata, apice subacuta, basi valde excentrica, glabra vel basi ciliolata, costa valde excentrica. *Flores* albi vel eburnei, in capitulas circiter 1.2 cm diametro 0.8–1.5 cm longe pedunculatas conferti, pedunculis pubescentibus, capitulis racemosis dispositis. *Calyx* glaber; tubus 1 mm longus, lobis triangularibus 0.5 mm longis. *Corolla* fere glabra, 2.5 mm longa, lobis oblongis ciliolatis 1.2 mm longis. *Stamina* numerosa (circa 110), filamentis 4.5 mm longis, antheris 0.15 mm longis. *Ovarium* oblongo-cylindricum, 1 mm longum, 0.5 mm latum, pubescens, 1.5 mm longe stipitatum. *Legumen* anguste oblongum, 10–13 cm longum, 2.2 cm latum, leviter lignosum, 2–2.5 mm crassum, \pm 9-spermum, levissime puberulum.

WEST IRIAN. Djajapura District: Idenburg R., Bernhard Camp, in low growths fringing creeks on deeply flooded river plain, 50 m, Apr. 1939, *Brass*

13776 (A, K):—large prickly scandent shrub, very abundant, flowers white; same locality, Apr. 1939, *Brass* 14098 (A, BM, L).

PAPUA NEW GUINEA. Sepik District: along Tiyangaram (Black River), south of Ambunti, in gallery forest on levee in grass swamp, 45 m, 22 June 1966, *Hoogland & Craven* 10334 (K, holotype; A, BO, BRI, CANB, L, LAE, US, isotypes):—tall climber, flowers creamy, vern. name 'Abukwaspok' (Waskuk).

Several specimens from the Philippine Is. also have small glands between all the pairs of pinnae and are I think to be referred to *A. pluriglandulosa* but I am not altogether certain of this; e.g. *Jacobs* 7764 (Luzon, Sierra Madre Mountains).

ALBIZIA Durazz.

Albizia sepikensis *Verdc.*, sp. nov. affinis *A. granulosa* (Labill.) Benth. sed lobis corollae multo longioribus, corolla et calyce extra dense velutine adpresse pubescenti, staminibus 2 cm longis differt. Type: Papua New Guinea, *Foreman & Kumul* in NGF 48302 (holotypus, LAE; isotypi, A, BISH, BO, BRI, CANB, K, LAE, NSW, SING).

Arbor 24 m alta; truncus 18 m altus, 37 cm diametro, cortice griseo-albo obtectus; ramuli gemmaeque dense ferrugineo-pubescentes, lenticellati. *Folia* bipinnata; petiolus 5–6 cm longus, glandulo obscuro supra medium instructus, ferrugineo-pubescentis; rhachis ferrugineo-pubescentis, 15 cm longa, inter paria pinnarum glandulis rotundatis parvis leviter elevatis ornata; pinnae 6–8-jugatae, 7–13 cm longae, prope insertiones foliolorum glandulosae; foliola 19–21-juga, oblonga, 0.8–1.6 cm longa, 3–7 mm lata, apice leviter angustata, obtusa, basi oblique truncata, glabra vel costa et margine puberula; venatio reticulata utrinque prominula; petioluli 0.5 mm longi. *Inflorescentiae* axillares, spicatae, ramosae, erectae, 26 cm longae, ferrugineo-pubescentes; pedicelli crassi, 0.5–1 mm longi. *Calycis* tubus 1.5 mm longus, dense pubescens, lobis ovatis 1 mm longis 1.25 mm latis breviter acuminatis. *Corollae* tubus 1.8 mm longus, lobis lanceolatis 3.5 mm longis 0.8 mm latis dense pubescentibus. *Stamina* circa 50, 2 cm longa, basi in tubo cum corolla adnato 3 mm longo conjuncta. *Ovarium* fusiforme, 1.2 mm longum, glabrum, stipiti 0.5 mm longo insidens. *Legumina* vix matura lineari-oblonga, breviter stipitata, valde compressa, 8.5–16.5 cm longa, 2.3 cm lata, margine leviter incrassata, flavo-brunnea, venis obscuris prominulis, pilis parvis setaceis ferrugineis sparse obtecta. *Semina* non visa.

PAPUA NEW GUINEA. West Sepik District: Amanab sub-district, N. of Kilifas, by river on rocky bank, 300 m, 23 Mar. 1970, *Foreman & Kumul* in NGF 48302 (LAE, holotype; A, BISH, BO, BRI, CANB, K, L, NSW, SING, isotypes):—medium-sized tree to 24 m, bole 18 m, d.b.h. 37 cm, bark pale whitish grey, inner bark reddish brown, sapwood white, quite hard.

There seems to be little doubt that this is related to the New Caledonian species with spicate inflorescences but differing from most of them in the size of the leaflets.