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NOTES ON MALESIAN FABACEAE (LEGUMINOSAE–PAPILIONOIDEAE)
3. The genera Dioclea, Luzonia, and Macropsychanthus

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SUMMARY

The genera *Dioclea* Humb., Bonpl. & Kunth, *Luzonia* Elmer, and *Macropsychanthus* Harms are briefly discussed. Keys to the species and notes to various taxa are given. *Dioclea decandra* Amshoff is proposed as a new name for *Macropsychanthus ferrugineus* Merr. *Macropsychanthus lauterbachii* Harms is lectotypified; its subspecies *glabricalyx* Verdc. and *parviflorus* Verdc. are lowered in rank to varieties, subsp. *neobrittanicus* Verdc. is synonymized to var. *parviflorus* (Verdc.) Adema.

Key words: Leguminosae, *Dioclea, Luzonia, Macropsychanthus*, Malesia.

INTRODUCTION

Dioclea, *Luzonia*, and *Macropsychanthus* are three closely related genera of tribe Phaseoleae subtribe Dioclineinae (Lackey, 1977, 1984). They are all large lianas with pinnately trifoliolate leaves and large pseudoracemes bearing numerous incurved fascicles with the flowers crowded at the apex. Bracts to the fascicles and the flowers are present as are bracteoles. The pods, except those of *Dioclea virgata* (A. Rich.) Amshoff, are large, rather thick, and indehiscent.

In the following paragraphs, mostly nomenclatural notes are given on the three genera and their Malesian species. Keys to the Malesian species of *Dioclea* and *Macropsychanthus* and to the varieties of *Macropsychanthus lauterbachii* are presented. An identification list of all material studied is included.

This treatment is partly based on unpublished studies by Amshoff (1943) and Den Hengst (1980).

DIOCLEA

Dioclea Humb., Bonpl. & Kunth is a pantropical genus of c. 50 species. Most taxa occur in South America; in Malesia three wild and one introduced species are found.

KEY TO THE SPECIES IN MALESIA

1a. Bracts to the fascicles 4–16(–20) mm long, patent. Keel petals entire. Ovary with 3–5 ovules. Pods indehiscent, swollen, 1–5-seeded 2

b. Bracts to the fascicles up to 2 mm long, tightly appressed. Keel petals dentate at the dorsal side. Ovary with more than 20 ovules. Pods dehiscent, compressed, 10–15-seeded ..... **4. D. virgata**

2a. Stipules 12–23 mm long. Stamens all fertile 3
b. Stipules 8–12 mm long. Six stamens fertile, alternating with 4 sterile ones ..... **2. D. hexandra**
3a. Blade of standard 28–35 mm long, with one small, laminal callosity just above the claw ..... **1. D. decandra**
b. Blade of standard 13–15 mm long, with 2 large, laminal callosities ..... **3. D. umbrina**

1. **Dioclea decandra** Amshoff, *nom. nov.*

Based on: *Macropsychanthus ferrugineus* Merr., Philipp. J. Sc. 5, Bot. (1910) 121; Enum. Philipp. Flow. Pl. 2 (1923) 311; non *Dioclea ferruginea* Ducke, 1925. — Type: *Clemens 419* (US holo; iso F, K), Philippines, Mindanao.

The transfer of *Macropsychanthus ferrugineus* Merr. to *Dioclea* and the new name were already proposed by Amshoff[1] (1943) in her unpublished manuscript on New Guinean Leguminosae.

2. **Dioclea hexandra** (Ralph) Mabb.

Dioclea hexandra (Ralph) Mabb., Taxon 29 (1980) 605. — *Mucuna hexandra* Ralph, IC. Carp. (1849) 30, t. 34, f. 5. — Type: The plate in *Parrana rubra* Rumph., Herb. Amb. 5 (1747) 9, t. 5.
Dioclea reflexa Hook.f., Niger Fl. (1849) 306, Baker in Hook.f., Fl. Brit. India 2 (1878) 196, p.p.; Koord., Exkursions Fl. Java 2 (1912) 403, p.p.; Ridl., Fl. Malay Penins. 1 (1922) 871; Merr., Enum. Philipp. Flow. Pl. 2 (1923) 311. — Type: *Vogel 32* (K), W Africa.
Dioclea javanica Benth. in Miq., Pl. Jungh. (1852) 236; Miq., Fl. Ind. Bat. 1 (1855) 217; Ridl., Fl. Malay Penins. 1 (1922) 571; Verdc., Man. New Guinea Leg. (1979) 465. — Type: *Junghuhn s.n.* (= *209*?; K, L), Java.
Macropsychanthus novoguineensis Pulle, Nova Guinea 8, 2 (1910) 382. — Type: *Versteeg 1028* (BO, L), Irian Jaya.
Dioclea reflexa Hook.f. var. *australiensis* Domin, Bibl. Bot. 22 (1926) 777. — Type: *Domin s.n.*, Australia (n.v.).

A very variable species. Amshoff (1943) proposed nine different species to accommodate this variability. She even predicted that more species might be found in the forests of Borneo and Sumatra; however, none have thusfar been collected and the expectation is that they never will. Den Hengst (1980), in an unpublished manuscript, proposed four varieties largely based on Amshoff's species. However, when describing the existing material of this species no combination of characters was found to justify a division at any level.

Throughout the range of the species specimens can be found with rather large bracts to the fascicles. *Carr 12552* is very remarkable by its large bracteoles.

3. **Dioclea umbrina** Elmer

Dioclea umbrina Elmer, Leafl. Philipp. Bot. 1 (1907) 224; Merr., Philipp. J. Sc. 5, Bot. (1910) 119; Merr., Enum. Philipp. Flow. Pl. 2 (1923) 311. — Type: ?*Elmer 9015*, Leyte, Jan. 1906? (n.v.).

1) For a note on the career of Amshoff, see Wassink (1996).

According to Den Hengst (1980) Elmer either cited the wrong locality or the wrong collection number. *Elmer 9015* (n.v.) was collected most probably on Luzon, May 1907, while on Leyte, January 1906 *Elmer 7249* (A, K) was collected. The latter specimen agrees well with the description of *D. umbrina*.

4. **Dioclea virgata** (A. Rich.) Amshoff

Dioclea virgata (A. Rich.) Amshoff, Meded. Bot. Mus. Herb. Utrecht 52 (1939) 69. — *Dolichos virgata* A. Rich., Act. Soc. Hist. Nat. Paris 1 (1792) 111. — Type: *Herb. Desvaux* (P, n.v.).
Canavalia bracteolata Merr., J. Straits Br. Roy. Asiat. Soc. 86 (1922) 513. — Type: *BS 1151 (Ramos)* (BM, K, L, P), Sabah, Sandakan.

This tropical American species was probably introduced as an ornamental. In Malaysia (Selangor, Sabah, Sarawak) it is found as a garden escape or as an alien.

DUBIOUS SPECIES

Mucuna wertheimii Burck, Ann. Jard. Bot. Buitenzorg 11 (1893) 188, pl. 14, f. 2. — Type: *Expédit. Néerl. s.n.*, Key Islands (n.v.).

Only known from a fruiting specimen. The pod depicted by Burck closely resembles a *Dioclea* pod not much different from that of *D. hexandra*.

LUZONIA

Luzonia Elmer is a rare and probably monotypic genus from the Philippines. The only known species, *L. purpurea* Elmer, is (was) found in Luzon and Leyte only.

One specimen from Luzon (*PNH 4697*) differs in several aspects from all other material of *Luzonia*. If it really belongs to that genus it might represent a new species.

MACROPSYCHANTHUS

Macropsychanthus Harms consists of two species, one of which is further divided into four varieties.

KEY TO THE SPECIES

1a. Blade of standard 2.5–3 cm long. Seeds discoid, dark brown ..... **1. M. dolichobotrys**
b. Blade of standard 3.5–7.5 cm long. Seeds quadrangular, black ..... **2. M. lauterbachii**

1. **Macropsychanthus dolichobotrys** Holthuis

Macropsychanthus dolichobotrys Holthuis, Blumea 5 (1942) 192, f. 6. — Type: *Lam 3002* (L, BO), Talaud Islands.

Originally described from two specimens from the Talaud Islands (*Lam 3002* type, *2893*). In the material on loan from A and BO three more specimens were discovered, one also from the Talaud Islands (*Fairchild 420*) and two from Ceram, Moluccas (*Rutten 2059, 2161*).

2. Macropsychanthus lauterbachii Harms

Macropsychanthus lauterbachii Harms in K. Schum. & Lauterb., Fl. Schutzgeb. (1900) 367, t. 10; Verdc., Kew Bull. 32 (1978) 455; Man. New Guinea Leg. (1979) 467. — Lectotype (here designated): *Lauterbach 2257* (B, WRSL), Papua New Guinea, Madang Prov.

Macropsychanthus carolinensis Kaneh. & Hosok., Trans. Nat. Hist. Soc. Formosa 24 (1934) 414. — Type: *Kanehira 1711*, Caroline Islands (n.v.).

A very variable species, mostly New Guinean. The few specimens differ in hairiness, kind of hairs, and colour and size of the flowers. Without much comment Verdcourt (1978, 1979) divided the species into four subspecies, of which one (subsp. *lauterbachii*) was further divided into two varieties. Subspecies *neobrittanicus* Verdc. differs only slightly from subsp. *parviflorus* and is here united with that form.

All forms seem to be of the same taxonomic level. Here they are distinguished as varieties.

KEY TO THE VARIETIES

1a. Indumentum (thinly) sericeous. Leaflets ± flat 2
b. Indumentum mostly hirsute. Leaflets bullate ..... **b.** var. **hirsutus**
2a. Corolla bluish or purplish, 5–8.5 cm long 3
b. Corolla pinkish (or white?), rarely blue, 4–5.5 cm long .... **d.** var. **parviflorus**
3a. Calyx with few appressed hairs, seemingly glabrous. Bracteoles 1.2–2 by 0.7–3 mm ..... **a.** var. **glabricalyx**
b. Calyx densely sericeous. Bracteoles 5–7 by 5–8 mm ..... **c.** var. **lauterbachii**

a. var. **glabricalyx** (Verdc.) Adema, *stat. nov.*

Basionym: *Macropsychanthus lauterbachii* Harms subsp. *glabricalyx* Verdc., Kew Bull. 32 (1978) 456; Man. New Guinea Leg. (1979) 467. — Type: *Hoogland 3953* (K holo; iso A, BM, CANB, L, LAE), Papua New Guinea, Northern Prov.

Indumentum thinly sericeous to almost glabrous. Leaflets ± flat. Bracteoles 1.2–2 by 0.7–3 mm. Calyx 21–26 mm long, outside with few appressed hairs, seemingly glabrous. Corolla bluish purple, 5–6 cm long.

Distribution — Known from two specimens only: *Lam 466*, Irian Jaya, Othe River; *Hoogland 3953*, Papua New Guinea, Northern Prov.

Habitat & Ecology — Rain forest. Altitude up to 350 m. Fl. June, Sept.; fr. Sept.

b. var. **hirsutus** Verdc.

Macropsychanthus lauterbachii Harms var. *hirsutus* Verdc., Kew Bull. 32 (1978) 456; Man. New Guinea Leg. (1979) 467. — Type: *NGF 13819* (K holo; iso A, BO, L, LAE), Papua New Guinea, Morobe Prov.

Indumentum (thinly) hirsute. Leaflets usually bullate. Bracteoles 5.5–7 by 6–8 mm. Calyx c. 30 mm long, outside densely hirsute to sericeous. Corolla blue with purple keel, 5–8 cm long.

Distribution — Papua New Guinea (Morobe Prov., Milne Bay Prov.). May also be present in the Caroline Islands.

Habitat & Ecology — Rain forest. Altitude up to 700 m. Fl. June–Aug.; fr. Aug., Sept.

c. var. **lauterbachii**

Macropsychanthus lauterbachii Harms var. *lauterbachii*; Verdc., Kew Bull. 32 (1978) 455; Man. New Guinea Leg. (1979) 467.

Indumentum (thinly) sericeous. Leaflets ± flat. Bracteoles 3–5 by 4–5 mm. Calyx 20–30 mm long, outside densely sericeous. Corolla blue flushed with purple, 6–8 cm long.

Distribution — Papua New Guinea (Madang Prov., Western Prov., Central Prov.).

Habitat & Ecology — Rain forest. Altitude up to 1500 m. Fl. Apr., May, Oct.; fr. Oct.

d. var. **parviflorus** (Verdc.) Adema, *stat. nov.*

Basionym: *Macropsychanthus lauterbachii* Harms subsp. *parviflorus* Verdc., Kew Bull. 32 (1978) 456; Man. New Guinea Leg. (1979) 469. — Type: *Brass 28335* (K holo; iso A, L, LAE), Papua New Guinea, Milne Bay Prov.

Macropsychanthus lauterbachii Harms subsp. *neobrittanicus* Verdc., Kew Bull. 32 (1978) 456; Man. New Guinea Leg. (1979) 469. — Type: *NGF 29391* (K holo; iso A, BO, BRI, CANB, L, LAE, SING), Papua New Guinea, New Britain.

Indumentum (thinly) sericeous. Leaflets ± flat. Bracteoles 4–8 by 3–11 mm. Calyx c. 22 mm long, outside densely sericeous. Corolla pinkish (or white?), 4–5.5 cm long.

Distribution — Papua New Guinea (New Britain Prov., Milne Bay Prov.); Solomon Islands.

Habitat & Ecology — Rain forest. Altitude up to 600 m. Fl. Feb., May, June, Aug., Oct.

Note — *NGF 29391* has much larger bracteoles (7–8 by 9–11 mm) than the other specimens (4–6 by 3–9 mm).

DUBIOUS SPECIES

Macropsychanthus mindanaensis Merr., Philipp. J. Sc. 5, Bot. (1910) 120; Enum. Philipp. Flow. Pl. 2 (1923) 311. — Type: *Bolster 330*, Philippines, Mindanao (n.v.).

This poorly understood species probably belongs to *Dioclea*. As it is described as having 10 fertile stamens, it may be related to *D. decandra* from which it differs by its larger pods and its standard with two inflexed auricles. However, material tentatively identified as *Macropsychanthus mindanaensis* (or *Dioclea mindanaensis*) belongs to *Diocele decandra* or *D. hexandra*. Up to now the type has not been traced.

EXCLUDED SPECIES

Macropsychanthus ferrugineus Merr., Philipp. J. Sc. 5, Bot. (1910) 121; Enum. Philipp. Flow. Pl. 2 (1923) 311. — Type: *Clemens 419* (US), Philippines, Mindanao (n.v.) = **Dioclea decandra** Amshoff.

Macropsychanthus novoguineensis Pulle, Nova Guinea 8, 2 (1910) 382. — Type: *Versteeg 1028* (BO, L), Irian Jaya = **Dioclea hexandra** (Ralph) Mabb.

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IDENTIFICATION LIST

1. *Dioclea decandra*
2. *D. hexandra*
3. *D. umbrina*
4. *D. virgata*
5. *D.* spec.
6. *Luzonia purpurea*
7. *Luzonia* spec.
8. *Macropsychanthus dolichobotrys*
9. *M. lauterbachii* var. *glabricalyx*
10. *M. lauterbachii* var. *hisutus*
11. *M. lauterbachii* var. *lauterbachii*
12. *M. lauterbachii* var. *parviflorus*

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