A note on *Mucuna schlechteri* Harms *(Leguminosae—Papilionoideae—Phaseoleae)*

B. VERDCOURT

Summary. Mucuna schlechteri Harms was described from New Guinea but the name has been ignored until the author associated certain material with it; this material is cited here. The remarkable variation in peduncle-length is discussed and the possibility that *M. lane-poolei* is not specifically distinct is entertained.

During studies in connection with the writing of a 'Manual of New Guinea Legumes' it became very clear that the genus *Mucuna* was particularly well represented in New Guinea and the Solomon Islands. There is no doubt that this area is one of the main centres of distribution for the genus since many endemic species occur here as well as others more generally distributed. Some of the endemic species are probably derived from the more well-distributed ones. A derivation in the reverse direction seems much less likely in view of the recent nature of much of the New Guinea flora. *Mucuna gigantea* (Willd.) DC. is well dispersed over the Indopacific as far as the East African Coast and certain specialized species are unquestionably related to it, e.g. *M. lamii* Verdc., *M. canaliculata* Verdc. and *M. schlechteri* Harms. It is with the last that this note is concerned. (Fig. 1)

M. Coode and C. Ridsdale, while attempting to put *Mucuna* in order at the herbarium in Lae, Papua New Guinea, sorted out material of a very characteristic species which they termed 'species I'; this was easily recognized by its remarkably elongate nodose inflorescence rachis and long peduncle. Whilst writing up *Mucuna* for the Manual I became satisfied that this species could be identified with *M. schlechteri* Harms (Notizbl. Bot. Gart. Berlin 7: 373 (1920)). Harms' description, particularly of the peduncles (50–60 cm) long and secondary branches (4–5 mm long) leaves little doubt about the correctness of the identification. It was based on *Schlechter* 17449 which was collected near Udu on the Waria R. which is above Pema. No authentic material has been traced even after circularizing all the numerous herbaria known to have Schlechter material. It was probably based on a unicate and thus burnt at Berlin. Schlechter has written an account of his trip to this river (Bericht über eine Erkundungstour nach dem Uaria (Herkules–Fluss) in Neu-Guinea in Tropenpflanzer 12: 569–573 (1908)). He mentions that 'the 10th March brought us to the small villages Peu and Udu over mountains to the foothills of Dscheregi; from there on the following days a further shorter advance to the English border was made'.

The elongate structure of the inflorescence and the habitat, usually hanging over rivers, leaves little doubt that the plant is bat-pollinated although so far as I am aware this has not definitely been observed. There is, however, considerable variation in the length of the inflorescence and a series of intermediates links specimens with very long inflorescences with those which have quite short ones; this in turn leads to an additional problem. In 1926, Summerhayes described a *M. lane-poolei* and one would

Accepted for publication January 1979.

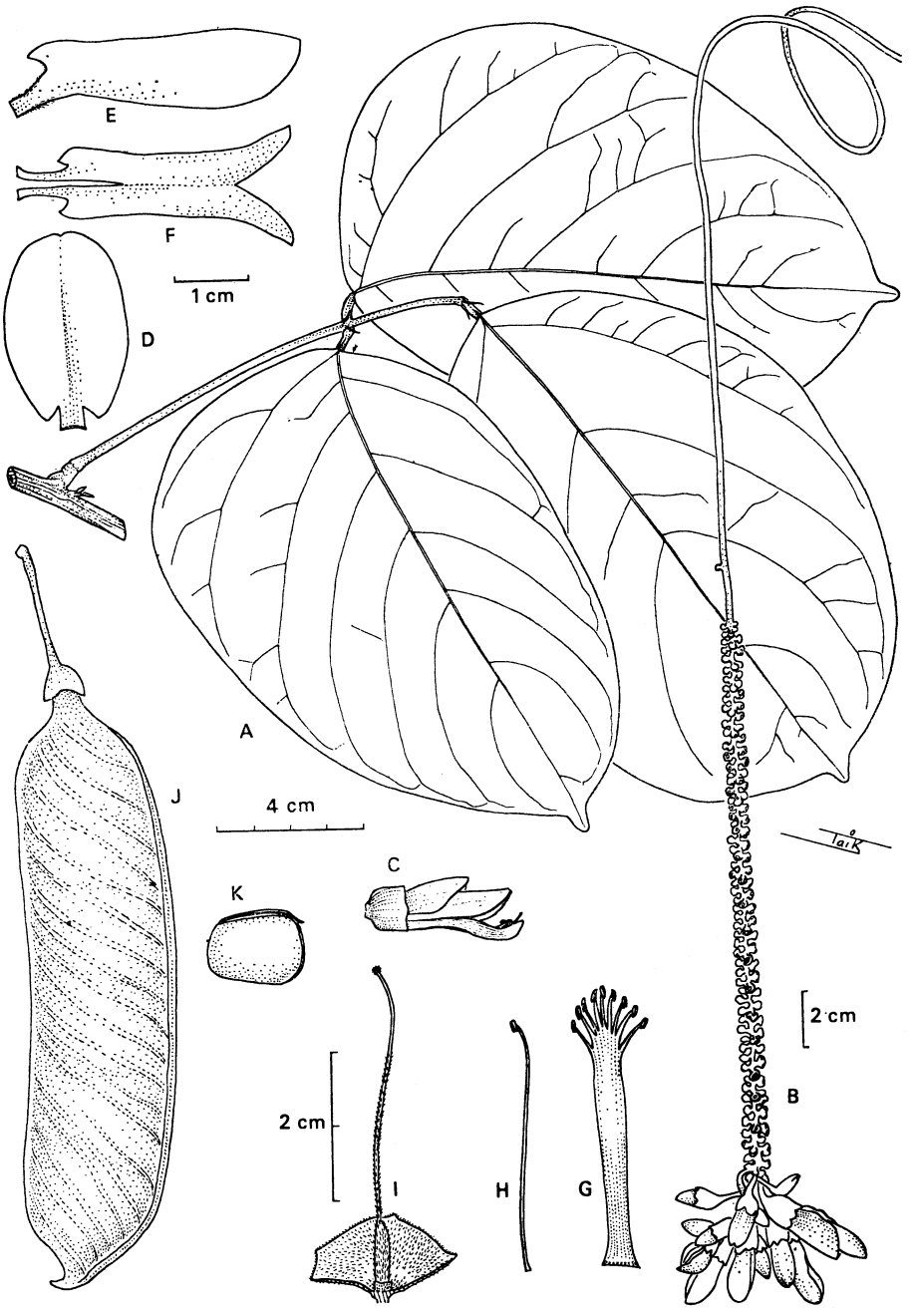


FIG. 1. *Mucuna schlechteri* Harms. **A** leaf; **B** part of inflorescence; **C** flower; **D** standard; **E** wing; **F** keel; **G** united stamens; **H** vexillar stamen; **I** gynoecium; **J** pod; **K** seed. Drawn from NGF 22282, 22285 and 22297 by Taikika Iwagu.

have expected the type to be preserved at Kew but it certainly cannot be found there. In Brisbane I could find only a few leaves and the specimen there may be an isotype or a fragment of the holotype but bears no label in Summerhayes' handwriting. There is a mention of flowers, fruits and seeds but all are missing. Summerhayes, who actually suggests the affinity of his new species as being with *M. schlechteri*, gives a very full description so one can only assume that the material he saw was lost; unfortunately no mention is made of where the type was deposited. The locality is given as 'Owen Stanley Range, 1800 m, Feb. 23rd., E. Stanley in Lane-Poole 372'. In his 'The Forest Resources of the Territories of Papua and New Guinea': 94 (1925) Lane-Poole mentions 'Mucuna sp. no. 372; flowers smaller than usual, white; pod 5″ long, green covered with brown penetrating hairs; 6000′, Owen Stanley Range, Feb. 1923; found by Mr Stanley, Government Geologist. Unfortunately pods were lost so that material is reduced to a few leaves, two flowers and some seeds'. On page 4 he states that he was with Stanley on Feb. 10th and 11th on the long ridge dividing the Kemp Welch and Brown Headwaters so on 23rd Stanley could not have been far away even if not on Mt Obree with Lane-Poole. It seems fairly clear that Stanley was not with Lane-Poole at the time else Mt Obree would have been given as the locality. In a list of 'Corrigendum et addendum' (sic) in the Kew copy of the work is given 'p. 94, for *Mucuna* sp. read *M. stanleyi* V. S. Summerhayes'. The name was obviously changed when Summerhayes discovered that the epithet had already been taken up by C. T. White in 1922. No correspondence about this matter can be found in the archives at Kew. The only specimen seen which fits the description and matches the fragmentary type is *Darbyshire* 346 from Sepik Province; Coode and Ridsdale had already assigned this to *M. sp. aff. lane-poolei*.

This has the peduncle 2·75 cm long; Summerhayes gives the peduncle length as 2·5 cm. Comparison of the Sepik specimen with typical *M. schlechteri* would lead one to believe that they could not possibly be conspecific but there are intermediates. Some figures for peduncle length are given in Table 1.

Hoogland 3965 would certainly seem to indicate that long and short inflorescences can occur on the same plant and it appeared that the shorter would not elongate further. The evidence is, however, too scanty to decide the nature of the variation. There is a possibility that the *M. schlechteri–M. lane-poolei* complex represents a species only part of which is adapted to bat-pollination and that specimens with short peduncles and mostly from higher altitudes are either not pollinated in this way or else are pollinated by a different species of bat. On the other hand the correlation with altitude may be illusory and long-peduncled plants may be found higher up.

At present I am not prepared to formally merge the two; what is needed are further collections with fruits and full information on peduncle variation from a range of altitudes and peduncle development on one plant over a period of time. Although the material available is quite extensive it does not supply this information. I have cited this material below and give an illustration of typical *M. schlechteri* (Fig. 1); a map showing localities for both taxa is appended (Map 1). It is hoped that this paper will stimulate local students to make further investigations. Altitudes and habit data are not given in the list when they have already been mentioned for the gathering concerned in the above table.

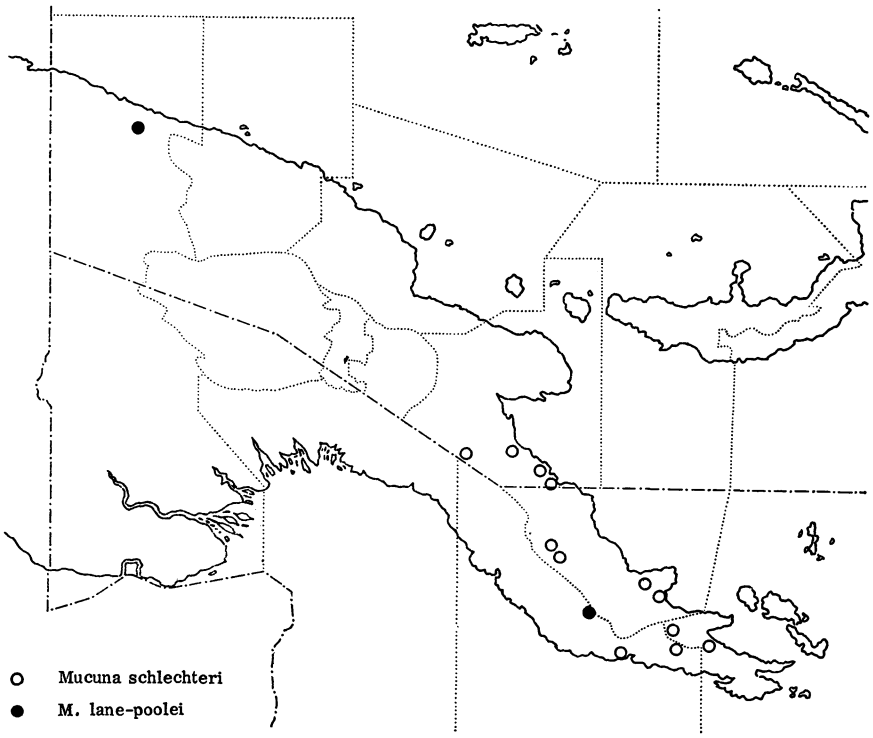
TABLE 1. Notes on specimens of *Mucuna schlechteri* and *M. lane-poolei*

Specimen	*Altitude* (m)	*Peduncle length* (cm)	*Comments*
Brass 23975	200	12	Trailing on dry river bed
Brass 24083	50	35–70 (—100 fide field note)	Creek banks
Derbyshire 346	1200	2·75	Forest
Hoogland 3965	350	4–67 (both mature)	Riverine; 4 cm one at end of a twig which was probably hanging anyway
Hoogland 4241	25	47–107	Pedicels 3 cm; secondary branches 3 mm; in tall trees
NGF 13887	480	46	Riverine
NGF 22282	30	100 (odd branch at 53 cm)	Riverine
NGF 22285	30	10–15	Riverine. Actual inflorescence 60–70 cm long
NGF 22297	240	63	Riverine, rain forest edge
NGF 24308	30	92	Riverine
NGF 25673	30	5·6	Exposed riverside
NGF 28751	200	28–33	Streamside forest
NGF 44464	1500	2·9	*Nothofagus* ridge
NGF 45096	15	66·4	Riverine
NGF 46432	1200	27·5	Forested streamside
NGF 46953	366	52	
LAE 54139	1760	7·5	*Araucaria* forest; bat damage to inflorescence tip, suggested by collectors
LAE 60164	1250	19·6	Fagaceae ridge forest
LAE 70235	180	35–60	Riverine
Pullen 7727	762	30	Ridge forest
Pullen 8191	30	41–71	Rain-forest

Mucuna schlechteri *Harms* in Notizbl. Bot. Gart. Berlin 7: 373 (1920); Verdc., Manual New Guinea Legumes: 453, fig. 105 (1979). Type: Papua New Guinea, Waria R., Udu, Pema, *Schlechter* 17449 (holotype B†).

NORTHEAST NEW GUINEA. Morobe Province: SE of Lae, opposite Lasanga I., Baden Bay, forest, sea level, *Jacobs* 9640 (L, LAE); Buso R., 30 m, *Gillison et al.* NGF 25673 (A, BRI, CANB, K, L, LAE) & *Streimann* NGF 45096 (BRI, L, LAE); 24 km SW of Morobe, Mo R., Ana Village, *Streimann* NGF 24308 (BRI, CANB, L, LAE); Wau District, head of Baime R., New Yamap, *Streimann & Kairo* NGF 44464 (LAE); Patep R., *Millar* NGF 13887 (LAE). Western Highlands Province: Kopiago District, *Castanopsis* forest, 1410 m, *Womersley et al.* NGF 37322 (L, LAE).

PAPUA. Central Province: Port Moresby District, above Boridi village, *Foreman & Vinas* LAE 60164 (LAE); Sogeri District, Efogi, *White et al.* NGF 46432 (BRI, L, LAE); 15 km E of Cape Rodney, Mori R., *Pullen* 8191 (A, CANB, L, LAE). Northern Province: S of Botue Village, along Arumu R., *Hoogland* 3965 (CANB, LAE); Tufi District, near Guruguru, *Hoogland* 4241 (CANB, LAE); Wanigela, *Gillison* NGF 22282 (BRI, CANB, L, LAE); 17·6 km S of Wanigela, *Gillison* NGF 22297 (BRI, CANB, L, LAE); Wanigela, Ui'aku R., *Gillison* NGF 22285 (A, BRI, CANB, L, LAE); Kokoda District, 0·5 km E of Hanjion Village, on the Luwuni R., *Wiakabu & Kairo* LAE 70235 (L, LAE). Milne Bay Province; Kwagira R., Peria Creek, *Brass* 24083 (A, LAE); Raba Raba District, 3 km SE of Biniguni, headwaters of Peria Creek, *Streimann* NGF 28751 (A, BRI, CANB, K, L, LAE); Gwariu R., Biniguni Camp, *Brass* 23975 (A, LAE); Raba Raba



MAP 1. Distribution of *Mucuna schlechteri* Harms and *M. lane-poolei* Summerhayes.

District, Mt Suckling, Mayu II, *Stevens & Veldkamp* LAE 54139 (BRI, CANB, L, LAE); M.I. road to Mt Suckling, *Katik* NGF 46953 (A, BRI, CANB, K, L, LAE); about 13 km W of Rabaraba, *Pullen* 7727 (CANB, L, LAE).

The flowers are stated to be 'pale olive-green, apple green, lemon-green or greenish white' and are recorded from July to November; the filaments are pinkish or violet-tinged at the base according to two field-notes. Pods are greenish with brown indumentum and have been found during the same months as the flowers; Gillison remarks on the inflorescences hanging over water in sunlight and that they are always infested with green ants and their associated aphids and scale insects.

Mucuna lane-poolei *Summerhayes* in Bull. Misc. Inf. Kew 1926: 240 (1926).

NORTHEAST NEW GUINEA. Sepik Province: Lumi District, Torricelli Mts, southern slopes of Mt Somoro, dense forest, 1200 m, 1 Sept. 1961, *Darbyshire* 346 (CANB, LAE);—climbing in a small tree, flower greenish white.

PAPUA. Central Province: Owen Stanley Range, 1800 m, 23 Feb. 1923, *Stanley* in *Lane-Poole* 372 (?holotype BRI).

I wish to thank Mr Taikika Iwagu for the illustration of *M. schlechteri*.