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NOTES ON PTEROCYMBIUM R. BR. (STERCULIACEAE)

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CONTENTS

1. SUMMARY AND CONCLUSIONS

1. For the Malaysian region three species and one variety of *Pterocymbium* are recognized, viz. *P. beccarii* K. Schumann, *P. tinctorium* (Blanco) Merrill, with var. *javanicum* (R. Brown) Kostermans and *P. tubulatum* (Masters) Pierre.

Pterocymbium parviflorum Merrill is reduced to *P. tubulatum; P. eamvanulatum* Pierre, *P. macrocrater* Warburg, and *P. viridiflorum* Koorders are reduced to *P. tinctorium; P. stipitatum* White & Francis is reduced to *P. beccarii;* whereas *P. javanicum* R. Brown is reduced to a variety of *P. tinctorium, Pterocymbium tinctorium* var. *javanicum* (R. Brown) Kostermans *var. nov.*

An enumeration of the specimens examined follows upon the annotations to each of the species recognized.

2. *Pterocymbium gigantifolium* Elmer is referred to *Sterculia* L. under the name of *Sterculia membranifolia* Kostermans *nom. nov.*

The present article is based on a study of the specimens from the Herbaria at Bogor (Buitenzorg), Leiden, and Singapore. Those from Leiden and Singapore are indicated with "L" and "S" respectively; all other material is in Herbarium Bogoriense and only occasionally marked "Bg" where such a differentiation is needed to avoid confusion.

2. THE MALAYSIAN SPECIES OF PTEROCYMBIUM R. BR.

KEY TO THE MALAYSIAN SPECIES OF PTEROCYMBIUM

1. Leaves pinnately nerved ..... *P. tubulatum*
1. Leaves palmately nerved
   2. Flowers campanulate; segments of mature flowers half or more than half the length of the broad, cup-like tube ..... *P. tinctorium*
   2. Flowers tubular; segments of mature flowers hardly one third the length of the narrow tube ..... P. *beccarii*

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1. **Pterocymbium beccarii** K. Schumann

Pterocymbium beccarii K.Schumann *in* Engl. Bot. Jb. 24: Beibl. 58: 21. 1897; Schum. & Lauterb., Fl. deuts. Schutzgeb. Siidsee 444. 1901; Mildbraed *in* Engl. Bot. Jb. 62: 365. 1929.

Pterocymbium stipitatwm White & Francis *in* Proc. roy. Soc. Queensl. 38: 241 *fig. 8.* 1927.

K. Schumann *(I.c.)* published a description of this species, based on a flowering but leafless specimen, collected by Beccari (PL papuan. no. 899) near Putat on the lower slopes of the Arfak Mountains in Netherlands New Guinea, October 1872. The species was collected again by Lauterbach (Schum. & Lauterb. *I.c.)* along the Ramu River in "Kaiser Wilhelmsland" (no. 2619, local name Apo, flowers greenish white). It was also mentioned from Astrolabe Bay, north-eastern New Guinea by Mildbraed *(I.c.).*

Although I had no access to the type, nor to the material mentioned by Schumann and Lauterbach, and Mildbraed, Schumann's description, although far from complete, leaves little doubt that the specimens collected by myself in the region of Momi and Ransiki at the foot of the Arfak Mountains, westcoast of Geelvink Bay, do belong to the present species.

The material was taken from a tree in leaf with flower-buds just appearing, and from two other trees in full bloom but entirely leafless. Fallen leaves were collected for comparison. Mature fruits were collected from a fourth tree.

The shape of the calyx ("clavato-infundibuliformis"), its dimensions (18 mm long, lobes 5 mm), its pubescence, the length and shape of the androgynophore and the subglobose androecium, as described by Schumann, fits in completely with our material. In the specimens, to be listed below, the petioles are 3.5—4.5 cm long. Young inflorescences are 6—8 cm long, but they grow considerably larger during anthesis. The calyx-lobes are slightly smaller than in Schumann's specimen (2—5 mm). The columna in our specimens is 20 mm long. For *Pterocymbium beccarii* the length given is 16 mm, but in *P. stipitatum* the columna is 25 mm long. The length of the columna depends largely on the size of the flower, which increases considerably after the fruit has set.

One (minor) difference should be stressed here: Schumann described the calyx-tube as being pubescent only at its base at the inside, whereas in our specimens the entire inner surface of the calyx-tube is sparsely and very minutely pilose. However, as our specimens originated from the same region as the type came from, and the intensively explored area revealed no other species of *Pterocymbium,* it may be safely assumed that they should be referred to *P. beccarii.*

The fruiting specimen of the tree already mentioned was spotted along the banks of the Momi River, at an altitude of about 200 m. The

wings of the fruit were pinkish or pinkish white, the calyx green or greenish white. This colour corresponds with Mildbraed's description. This author mentioned an (incomplete) specimen with greenish flowers, which he only hesitatingly referred to *P. beccarii.* As the flowers are green when young and only the wings pinkish, it is quite likely, that his specimen also belongs to *P. beccarii.*

In comparing our specimens with the diagnosis of *P. stipitatum* White & Francis *(I.c.),* based on a specimen collected by Lane Poole (no. 279) along the Baroi River, Purari Delta (New Guinea), it became evident that this species is doubtless synonymous with *P. beccarii.* The excellent drawing agrees perfectly with our specimens.

SPECIMENS EXAMINED. — NETHERLANDS NEW GUINEA: Geelvink Bay, Momi, about 80 km S of Manokwari, alt. 10 m, loam soil, in bud, August, *Kostermans 211* (bb. 33420); Warnapi, N of Ransiki, about 70 km S of Manokwari, alt. about 10 m, fl., September, tree of 30 m with 25 m clear bole, 150 cm in diameter, flowers white, *Kostermans 461* (bb. 33614). — KEY IS.: fr., *Jaheri 456.*

2. Pterocymbium tinctorium (Blanco) Merrill

Heritiera tinetoria Blanco, Fl. Filip. 653. 1837; Ed. 2: 456. 1846; Ed. 3, 3: 59. 1879. — *Pterocymbium tinctorium* (Blanco) Merr. *in* Bur. Govt Lab., Manila, Publ. No. 27: 24. 1905; *in* Philip. J. Sci. 1, Suppl.: 94. 1906; Spec. Blanc. 262. 1918; Enum. Philip, fl. PI. 3: 57. 1923.

Pterocymbium javanicum R. Br. *apud* Benn., PL jav. rar. 219 *pi. 45.* 1844; Miq., Fl. Ned.-Ind. 1 (2) : 179. 1859; Koord. & Val., Bijdr. Booms. Java 2: 162. 1895; Merrill *in* Philip. Bur. Forestry, Bull. No. 1: 38. 1903; Ridl., Fl. Mai. Penins. 1: 276. 1922; Tardieu-Blot *in* Lecomte, Fl. gen. Indochine, Suppl. 1: 397. 1945.

Pterocymbium columnare Pierre, Fl. forest. Cochinchine 3 (fasc. 17) : text to pis. 193-195 *pi. 195 B.* 1889 (as *P. "columnaris"). — Sterculia columnaris* Pierre, *op. cit.,* text to pi. 202.

Pterocymbium viridiflorum Koord. *in* Meded. 's Lands PlTuin 19: 362, 640. 1898; Suppl. Fl. N.O. Celebes 2: 33 *pi. 67.* 1922; Koorders-Schum., Syst. .Verzeichn. 3: 84. 1914.

Pterocymbium macrocrater Warb. *apud* Perkins, Fragm. Fl. Philip. 117. 1904.

This species was originally described under the name *Heritiera tinetoria* Blanco. It was called "Heritiera de tintes" because its bark was used to improve the dying (black) of cotton cloth. Blanco described the leaves as lanceolate, with a gland near the base of the midrib on the under-surface of the leaf, and with a short petiole. Thus far only one species of *Pterocymbium* is known from the Philippines, which has ovate-cordate leaves, no glands, and a very long petiole. From North Borneo *P.parviflorum* Merrill (= *P. tubulatum* Pierre) is known, it has oblanceolate, pinnately nerved leaves. As no species of *Pterocymbium* are known to possess glands, I assume that the description of the leaves of *Heritiera tinetoria* refers to another species (probably of *Sterculia)* than the description of the flower and the fruit. The flower (campanulate) excludes *P. tubulatum* Pierre, although the fruit is undoubtedly that of a species

of *Pterocymbium.* Likewise the properties **of the bark** probably do not coincide with *Pterocymbium,* as nothing of the kind is mentioned on the collecting labels of the numerous specimens studied. In one case, it is stated that the bark excudes a resin, somewhat like traganth, but it is not indicated whether it is put to some use.

As the species which nowadays is called *P. tinctorium* (Blanco) Merrill is not very uncommon in the Philippines, and the characters of its flower and fruit agree with the description of Blanco's *Heritiera tinctoria,* we may well accept Merrill's interpretation that *Heritiera tinctoria* Blanco belongs to *Pterocymbium* with the exception of the leaves and bark. This discrepancy in the characters of the leaf was not mentioned by Merrill. *P. tinctorium* of Merrill is completely bare when it flowers and sets fruit; this might perhaps account for Blanco's error.

Merrill, when making the new combination, at the same time included as synonyms *P. javanicum* R. Brown and *P. campanulatum* (Masters) Pierre *(Sterculia campanulata* Masters). These reductions were and are not universally accepted. Koorders & Valeton *(I.c.)* kept *P. javanicum* separated from *P. campanulatum,* although Masters *(in* Hook, f., Fl. Brit. India I: 362. 1874) and F.-Villar (Noviss. App. 27. 1880) had already before contended that the two were indentical. Koorders and Valeton's example has recently been followed by Tardieu-Blot (I.c.) I suppose on the strength of Pierre's example *(I.c.,* text to pis. 193-195), who made the new combination under *Pterocymbium,* without mentioning *P. javanicum.* This example was followed by Gagnepain *(in* Lecomte, Fl. gén. Indochine **1:** 479. **1911,** sub *Sterculia campanulata).* According to the descriptions of different authors and notes on herbarium labels, the sole difference between *P. javanicum* and *P. campanulatum* is in the colour of the flower (violet or red in the former, green in the latter).

Pierre *(I.c.)* also described *P. columnare* Pierre *(Sterculia columnaris* Pierre), based on a specimen from Tri-Huyen near the Donai in Indochina (Pierre *s. n.),* and which differs from *P. campanulatum,* according to his description and figure, on account of the completely glabrous columna of the androgynophore. This is also the one deviating character mentioned by Tardieu-Blot *(op. cit.,* p. 395). As in the numerous specimens to be listed below, the columna, although usually pilose near its base, is not uncommonly sparsely pilose to completely glabrous, I suggest reducing *P. columnare* Pierre to *P. campanulatum* (Masters) Pierre = *P. tinctorium* (Blanco) Merr., too.

The pubescence of the base of the androgynophore seems to be correlated with the pilosity of the lower part of the calyx-tube at the inside around the fleshy disc; when the columna is glabrous this part is also glabrous.

In Pierre's drawing of *P. columnare* the calyx-lobes are slightly reflexed. This was never observed in the specimens studied, but is also indicated in the drawing of *P. viridiflorum* Koorders (see below). Masters *(I.e.)* described the follicles of *P. campanulatum* as glabrous. In our specimens they are very sparsely pilose with very minute, short, stiff hairs (at any rate in the lower part of the follicles). This pubescence may easily have escaped attention. Koorders & Valeton indicated the wings as being glabrous, which they are not.

Although the authentic specimen of *P. campanulatum* Pierre (Kurz *s.n.* from Pegu) was not available for study, the specimens from the Malay Peninsula and the Philippines that were at my disposal, leave little doubt that they all belong to the same species, which should be called *P. tinctorium* (Blanco) Merrill.

For the Malaysian region two closely allied species were described, viz. *P. javanicum* R. Br. and *P. viridiflorum* Koorders.

As nientioned above, *P. javanicum* differs from *P. tinctorium* merely in the colour of its flowers. As this deviating character does not warrant specific status, I suggest, like Merrill *(I.c.),* including this species in *P. tinctorium,* although as a distinct variety, *Pterocymbium tinctorium* var. javanicum (R. Br.) Kosterm. *var. nov.* (Basinym: *Pterocymbium javanicum* R. Br. *apud* Benn., PL jav. rar. 215. 1844). The specimen from Borneo cited below is said to have violet flowers.

P. viridiflorum has the same green flowers as *P. tinctorium.* Its glabrous leaves do not separate it from the latter species either, as glabrous leaves, along with pubescent ones, are not uncommon in *P. tinctorium* and its variety. According to the figure of Koorders (Suppl. *I.c.)* the leaves were pubescent; this is in disagreement with his description. As in other respects *P. viridiflorum* falls within the limits of *P. tinctorium,* I suggest including it in the latter species, too.

Merrill (Enum. Philipp. fl. PL 3: 57. 1923) also suggested the identity of *P. macrocrater* Warburg with *P. tinctorium.* It was based on the specimens Warburg 11855 and 12406 from Luzon. The authentic specimens have not been studied by me, but considering the main deviating characters enumerated by Warburg, namely the large and truncate calyx with longitudinal ribs (Warburg himself stated that in specimen 12406 the ribs are rather inconspicuous), which are also found in the Javanese specimens of *P. tinctorium,* where I measured calyces of 3 X 3 cm with the ribs faintly indicated, I think it advisable also to include *P. macrocrater* in *P. tinctorium.*

SPECIMENS EXAMINED. — MALAY PENINSULA: Perlis: fl., March, *Ridley 15075* (S) ; Penang: road to Balik Pulau, fr., March, fr. white, *Curtis 2783* (S, L) ; Perak: Sg. Brotal, f l., February, local name Melembu, *Tachin 39259* (S) ; Negri Sembilan: fr. and leaves, March, local name Poko kulunot, *Alvins 1099* (S) ; Locality*unknown: f 1., *Scortechini 1756* (S). — SUMATRA: West Coast:

Huta Padang Estate near Kesaren, ster., *Krukoff 337;* Bencoolen: Redjang near Tabah Penandjung, Cape Serawai, ster., *Olivier 46* (bb. 1804) ; Redjang Tuin Konak, 2 km from Kepahiang, alt. 550 m., ster., *de Voogd 1014* (bb. 15439); Lais, Talong Benal, ster., local name Gelumbah, *Idris 34* (bb. 8807) ; East Coast: Sibolangit, fr., April and May resp., fl. green, *Lorzing 5105* and *5696;* Palembang: Simelungun, Bandar Pulan, alt. 50 m, ster., October, *Gasa 37* (bb.4924) ; Lampongs: Telokbetong near Hadjimenah, ster., local name Kelumbak, *Abuhasan 36* (bb. 8097) ; Kaliandak near Kota Dalem, ster., March, local name Kerumbuh, *Saleh 34* (bb.8002) ; Semangho River, fr., August, *Witkamp s.n.;* Isl. Sebesie: alt. 400 m., ster., April, *Boaters van Leeuwen-Reynvaan 5306.* — JAVA (All specimens cited from Java represent var. *javanicum (R.* Br.) Kosterrnans) : Cultivated: Bogor, imported from Calcutta as *Sterculia eampanulata* Mast., *Hort. Bog. IV. 1,150b,* formerly *IV, 1 124a;* Bogor, Tjikeumeuh Garden, ster., *Koorders 12163 ft* and *s.n.;* Batavia: Mr. Cornelis (culta), juvenile plant, leaves palmately cleft, *Backer 35288;* Djasinga near Bogor (culta), fr., September, *Backer 1132, 26031;* Bantam: Danau marsh, alt. 100 m, fl., August, local name Tongtolok, *van Steenis 10530;* same locality, fl., September, fl. dirty red, *sine coll. s.n.;* Tukan Gedeh forest, on dry slopes, fl. wine-red, local Sundanese name Tongtolok, *sine coll. s.n.;* near Serang, ster., September, *Endert 1182;* near Menes, Batu Lideung, ster., August, *Koorders 1565 ft;* Priangan: Pelabuhan Ratu, fr., August, *Koorders 11833 ft;* Tomo near Sumedang, ster., May, *Koorders 7872 ft;* Djampang Kulon near Sukabumi, ster., July, *Koorders 1567 ft;* Cheribon: Mt Tjermai near Lingga Djati, fl., October, *Beumee 4871;* Kuningan, ster., *Houter 147;* Pekalongan: near Subak, *Koorders 11598 ft, 11618 ft;* near Brebes, *Koorders 7891 ft;* Prupuk, fl., October, local name Winong, *Noltee 4036;* Banjumas: Bandjar, Rawah Lakbok, fl., August, *Beumee 4227;* along Djagagonda River, N of Segara Anak, ster., juvenile form, *Backer 31462;* Tjilatjap near Tjikorol, ster., leaves palmately cleft, juvenile form, local name Wunong, *Verduyn lunel 12* (Ja. 2924) ; Gladagan River, N coast of Nusa Kambangan, fl., *Meindersma 6;* Nusa Kambangan, fr., November, *Koorders 7892-7897 ft, 20148 ft, 20322 ft, 24722 ft;* Semarang: forest district of Kradenan, teak forest, lime soil, ripe fr. yellowish, local name Iwil-iwil or Sriwil, *sine coll^ s.n,;* same locality, fr., October, *Beumee 3419;* forest distr. of Ngarengan, ster., *Beumee 5369;* Mt Muria near Dudakawa along rivulet, alt. 600 m, rare, ster., December (Ja. 3717) ; Kedung Djati and Karang Asem, fl., fr., *Koorders 7874-7890 ft, 21,942 ft, 25234 ft, 25316 ft, 251+72 ft, 28147ft;* Telawa, fl., October, *Noltee 4603;* Djokjakarta: Mt Sewu, Klimpit, ster., August, *Burgers 2067;* Mt Kidul, Kutungan on limestone, ster., November, *Kalshoven 27;* Rembang: forest district of Ngoro-gunung, alt. 75 m., fl., September, *Beumee 1103;* Ngandang, ster., *Koorders 36453 ft, 36116 ft;* Djapara, Ngarengan, ster., *Koorders 52975 ft;* Madiun: Klino on Mt Pandan, alt. 500 m, fr., local name Sriwil kutil, *Kalshoven 28;* same locality, ster., local name Munung, *Kartodihardjo 132* (Ja. 1987) ; Pasuruan: near Tangkil, ster., *Koorders 23663 ft;* Probolinggo near Lumadjang, ster., *Koorders 7908 ft;* Malang, Kalipose, ster., October, local name Munung, *Kalshoven 3;* Mt Watangan near Puger, alt. 100—300 m, fl., August, common, fl. violet, local name Wining, *Beumee A. 73 & 2915;* Perigi, ster., January, *Lorzing 1053;* SE Besuki, ster., October, *Becking 58;* Bondowoso, Mt Andong, ster., local name Birring, *de Veer 46* (Ja. 3298) ; forest distr. Tubukan, *Boerrigter 208;* Djember, Idjen, fl., fr., *Koorders 7899-7906 ft, 7910 ft, 10250 ft, 13055 ft, 13064 ft, 13067 ft, 14721 ft, 21886 ft, 38427 f), 38575 ft, 39812 ft, 39924 ft;* Banjuwangi near Rogodjampi, *Koorders 7907ft, 7909 ft, 29091ft;* Locality unknown (presumably Java) : fl., *de Vriese s. n.* (L); fl., herb, name *Busca calopteris* L., *Zippelius s.n.;* fl., July, herb, name *Sterculia atrojmrpurea, Blume 1321.* — MADURA: Bangkilan, ster., January, *Backer 19166.* — KANGEAN ISL.: Duki, fl., September, *Dommers 34;* Sambakati, *Dommers 112;* Batu putih ster., *Backer 27789.*— BALI: Prapat Agung, alt. 20 m, ster., March, *Becking 47.* — SUMBAWA: Sekonkang, alt. 300 m, ster., May, *de Voogd 1706.* — BORNEO: British North Borneo: Sandakan near Ramaguian, fr., April, fl. blue, this may perhaps represent var. *javanicum, Goklin 347* (T.B. 2448, S) ; Isl. Lombokutan, fr., *Hallier 396.* — CELEBES: Menado: Pangi, Malekosa, alt. 60 m, ster., *Bish 220* (bb. 18806) ; Tondano, Isl. Lembeh, alt. 100 m, ster., local name Talu-utu, *Steup 48* (bb. 17042) ; Poso near Kalora, ster., local name Kojara, *Tangkilisan 4* (bb 28722); Boalemo, alt. 90 m, ster., local name Tolutu, *Moha 23* (bb. 13818); same locality, ster., April, *Uno 35* (bb. 15388) ; near Bolaang, Mongondon, ster., April, local name Tolutu, *Verhoef 125* (bb. 19610) ; alt. 10 m, ster., *Maengkom 20* (bb. 7517); fl., *Teysmann 5736 (type* of *P. viridiflorum* Kds.); near Kajuwatu, forest of Pingsung, alt. 50 m, ster., local name Talutu, *Koorders 18073 ft;* Totok near Ratatato, alt. 10 m, fl., March, *Koorders 18059 ft, 19451ft, 19465 ft;* Rataka near Liwutung, ster., *Koorders 18060 ft;* S. Celebes: Pankadjene near Makassar, fl., *Teysmann 11759;* Malili near Wala-ipi, alt. 120 m, ster., local name Toli-toli in Bela-Padoe language, *Burki 123* (bb. 25542); Kawata near Malili, alt. 250 m, ster., January, local name Toli-toli, *Reppie 515* (Cel. V-301) ; same locality, fl., fr., September, *Waturandang 13* (Cel. V-131) and *442* (Cel. V-131). — ISL. MUNA: Raha, ster., local name Habangka-bangka, *Waturandang 108* (bb. 21353). — SULA ISL.: Mangoli, ster., August, local name Kaju kuki, *Asda* & *Anta 17* (bb. 29674) ; same locality, ster., October, local name Senteri, *Bloembergen 480.* — TANIMBAR IS.: near Otimmer, ster., March, local name Katjetburi, *Buwalda 71* (bb. 24290). — PHILIPPINES: Luzon: Bataan prov., Lamao River, Mt Mariveles, respectively ster., May and fl., March, *Borden 780, 2909* (Bg, L, S) ; Camarines Sur, Pasacao, fl., fr., *A^hern 124* (Bg) ; Laguna Prov., *Merrill Spec. Blancoana 870* (Bg) ; Mindanao: Camaguin, fr., March-April, *Ramos 14601* (L) ; S. Ramon, Zamboanga Prov., ster., February, *Hallier 4668* (L). An enumeration of local names may be found in Merrill, Enum. Philip, fl. PL 3: 57. 1923; the most common name is Taluto (Tagalog) and Balulo or Baguo (Mbo).

3. Pterocymbium tubulatum (Masters) Pierre

Sterculia tubulata Masters *in* Hook, f., Fl. Brit. India 1: 362. 1874; King *in* J, Asiat. Soc. Bengal 60: 76. 1891. — *Pterocymbium tubulatum* (Masters) Pierre, Fl. forest. Indochine 3 (fasc. 17): text to pis. 193-195. 1889; Ridley, Fl. Mai. Penins. 1: 277. 1922.

Pterocymbium parviflorum Merr. *in* Univ. Calif. Publ. Bot. 15: 193. 1929.

This species was originally described as *Sterculia tubulata* Masters after a specimen collected in the Malay Peninsula (Maingay s. *n.).* King *(l.c.) gave* an ample description of the species, which was accepted by Ridley *(I.e.).* The latter author, apparently unaware of the same earlier combination under *Pterocymbium* by Pierre *(l.c.1)* transferred *Sterculia tubulata* once more to *Pterocymbium.*

The species is very characteristic in comparison with the other known species of this genus by its pinnately nerved leaves; most other species have palmately nerved leaves. The two other Malaysian species, *Pterocymbium beccarii* K. Schumann and P. *tinctorium* (Blanco) Merr., have, moreover, a cordate or subcordate leaf-base, which in *P. tubulatum* is rounded. The shape of the flower comes very close to P. *beccarii,* which however has palmately nerved leaves.

[1] Masters's specieS is erroneously cited here as *Sterculia 'tubulosa'* instead of *'tubulcUa'.*

Its closest ally seems *P. parviflorum* Merr. *(I.e.)* based on specimen Elmer 21894 from British North Borneo. As was stressed by Merrill, the only difference is found in the pubescence of the inflorescences, the latter being glabrous in *P. tubulatum.* (I had no access to the type specimen of *P. tubulatum;* Masters did not mention anything about the indumentum of the inflorescence.) Specimens collected in the Malay Peninsula enumerated below, have pubescent inflorescences, the pilosity consisting of scattered, minute tufts of hairs. Since in all other material, which could be studied, the same pubescence was found, I assume that either Ridley committed an error in his description, or that Maingay's specimen has glabrescent inflorescences. The tufts of hairs become easily detached in herbarium specimens. Therefore, I suppose *P. parviflorum* to be synonymous with *P. tubulatum.*

Thus far specimens of this tree have been collected in the Malay Peninsula, Sumatra, and Borneo.

SPECIMENS EXAMINED. — MALAY PENINSULA: Kelantan: base of Bukit Batu Papan, Libir River, fl., July, *Henderson F. N. 29584* (Bg, S); Selandas, fr., September, local name Kluet, *sine coll. s.n.* (S). — SUMATRA: Bencoolen: near Taba Penandjung, Cape Serawai, distr. Redjang, alt. 400 m., ster., March, local name Remiding, *Bemvarin s. n.* (bb. 1809) ; near Kroe, alt. 1000 m., ster., October, local name Menimar, *Mesurip 96* (bb. 4094); East Coast: Indragiri, Muara Serangge, alt. 75 m., ster., September, leaves slightly cordate, local name Bajur, *Buwalda 668* (bb. 30076) ; Palembang: Lematang Ilir, Semangus, alt. 75 m., ster., May, local name Kelumbuk, *Buwalda 88* (bb. 31760); same locality, ster., June, local name Kelumbuk, *Versteegh & Nurkamal 12* (bb. 31946), *117* (bb. 32043), *202* (bb. 32127) ; Lematang Ilir, Mt. Megang, fr., local name Tengkaras, fr. yellowish-green, calyx dark green below, above paler green, *Dorst 99 T. 3 P. 226 & T.3 P. 957* (both February), and *128 E.P. 892* (October) ; same locality, ster., July, local name Bajur talang, *van der Zwaan 128 E.3 P. 892 & T.U2S;* Ogan Ulu, ster., August, *Affiah T.B.U68;* Banjuasin & Kubu region near Bajung Lintji, fr., December, local name Kelampang, *Endert 128 E.iP.797.* — BORNEO: British North Borneo: Tawao, Elphinstone province, June, *Elmer 21894.* (fr., *type* of *P. parviflorum* Merr.), *2180U* (fl.) ; West Borneo: Melawi, Nanga Betung, alt. 475 m., ster., October, local name Panaloba, *Budding U09* (bb. 29621) ; same locality, ster., January, local name Belebu, *Sudarsono 18* (bb. 31636) ; same locality, alt. 175 m., ster., February, local name Tenoro, *Budding 211* (bb. 26868) ; Bulungan: Sumbatu, Rumah River, alt 75 m., ster., April, *van der Zwaan 220* (bb. 11272) ; South-East Borneo: Tanah Bumbu, Kampong Bara, alt. 25 m, on clay soil, common tree with pale green fruit, local name Bilungkaan in Bandjar language, *Verhoef 1/239* (bb. 13391, fr., January), *1/187* (bb. 13079, fl., December); Muara Teweh, on sandy clay soil, ster., May, local name Borang karung in Dyak language, *Ukup 51* (bb. 11435) ; Pleihari near Asem-Asem, Mangala River, alt. 45 m, on sandy soil, in bud, November, local name Djuwe luk langit in Bandjar language, *Hildebrand 61* (bb. 9486).

3. ON PTEROCYMBIUM GIGANTIFOLIUM ELMER

This species was described after a specimen collected by Elmer (no. 9424) in the Philippines, Island of Leyte, near Palo, January 1906, and

described in his "Leaflets of Philippine Botany" (1:320. 1908). A duplicate of the type collection was available from the Leiden Herbarium and consists of two sheets, each with one leaf, and one with a detached inflorescence and flowers, the other with a detached fruit and the top of a branch. If this material was picked from the same tree (which may be reasonably assumed, as Elmer did not state otherwise), the specimen is no *Pterocymbium* but should be referred to *Sterculia* because of its pod-like mesocarp and the large scales at the apex of the branches. In *Pterocymbium* the tree is leafless when it flowers or bears fruit and the scales are absent.

As the epithet in *Sterculia* is occupied by that of *StercuUa gigantifolia* Warburg *ex* Mildbraed *{in* Engl. Bot. Jb. 61: 354. 1929) I propose to call this species Sterculia membranifolia Kosterman *nom. nov.* (basinym: *Pterocymbium gigantifolium* Elmer, Leafl. Philip. Bot. 1: 320. 1908).