

MISCELLANEOUS BOTANICAL NOTES ¹⁾

by

C. G. G. J. VAN STEENIS

(Foundation Flora Malesiana, Leyden)

(Issued 1. XII. 1961)

72. The status of *Dysoxylum lasiocarpum* Miq. (Meliaceae)

Mr F. H. Hildebrand, who is going gradually through the tree species from New Guinea, pointed my attention to this species, the type of which is in the Rijksherbarium at Leyden (in fruiting state). It was collected by Zippelius who rightly recognized its alliance; he added a MS description and gave it the MS name *Epicharis lasiocarpa*. Miquel subsequently described it in the genus *Dysoxylum*, but the curved fern-like leaf tip and other characters leave no doubt about its belonging to *Chisocheton*.

There are at Leyden two further collections of it from New Guinea, both made by Teysmann, HB 6058 and 6060.

Chisocheton lasiocarpum (Miq.) Hildebrand, comb. nov. — *Dysoxylum lasiocarpum* Miq. Ann. Mus. Bot. Lugd. Bat. 4 (1868) 13; C. DC. Mon. Phan. 1 (1878) 527; Bull. Herb. Boiss. III, 2 (1902) 168.

73. The identity of *Barringtonia ceramensis* R. Knuth

Mr F. H. Hildebrand showed me the type specimen of this species which is preserved in the Rijksherbarium, Leyden. It was described from the Moluccas by R. Knuth, Pfl. Reich Heft 105 (1939) 22.

It consists of a twig with long leaves and one loose fruit. It appears to be *Buchanania amboinensis* Miq. (*Anacardiaceae*) as far as the vegetative material is concerned. The loose fruit belongs to *Barringtonia*. As the type is based on entirely discordant elements the name of the species is to be discarded.

74. The identity of *Semecarpus ? fulvinervis* Bl. (*Anacardiaceae*)

This species was described by Blume, Mus. Bot. 1 (1850) 188, from Borneo. Blume put a question mark between generic name and epithet, as he was obviously in doubt of the generic disposition on account of the fact that the type material, preserved in the Rijksherbarium, Leyden, was only in the sterile state.

This doubt seems to be well founded, as it appeared to Mr F. H. Hildebrand

¹⁾ The first paper in this series appeared in Bull. Bot. Gard. Btzg III, 17, 1948, 383—411; the 2nd in Blumea 6, 1948, 243—246; the 3rd in Bull. Bot. Gard. Btzg III, 18, 1950, 457—461; the 4th in Reinwardtia 1, 1952, 467—481; the 5th in Acta Bot. Neerl. 2, 1953, 298—307; the 6th in Blumea 7, 1954, 595—598; the 7th in Blumea 8, 1955, 170—174; the 8th in Blumea 8, 1957, 514—517; the 9th in Nova Guinea n.s. 10, 1959, 207—212; the 10th in Blumea 10, 1960, 136—141.

and myself that the material represents sterile shoots of a *Melanochyla*, and not of *Semecarpus*. We have no intention to make a new combination as we have grave doubt whether this sterile material, which is obviously from a youngish tree, can ever be identified with certainty; anyhow the judgement should be left to a future monographer. Engler has had it in hands but could, according to his label, not place it.

75. The identity of *Aporosa* ? *minahassae* Koord.

In a note in *Reinwardtia* (vol. 2, 1952, 49) the late Dr. Van Slooten stated that "he would not be surprised if it would appear that *Aporosa* ? *minahassae* Koord. from N. Celebes would be a dipterocarpaceous plant, probably *Shorea koordersii*".

The plant was described by Koorders in his report on North Celebes (Med. 's-Lands Pl. T. 19, 1898, 580, 625). The isotype at the Rijksherbarium, Leyden, of the number concerned (Koorders 18743) is a tolerable specimen. It shows that the species is described from a sterile sapling. The axils of the leaves bear globular fascicles which might superficially be accepted as dense glomerules of buds, but they are really galls, similar to those frequently found in *Shorea javanica*. The large transverse leaf scars are those normally found in *Shorea* etc. Mr F. H. Hildebrand examined the wood structure of the twig and it appears that the wood is dipterocarpaceous and representative of *Shorea* sp. We may therefore safely conclude that it is a *Shorea*; it is less safe to conclude the specific identity and it may appear undeterminable.

76. *Rotala wallichii* (Hook. f.) Koehne new to Thailand (Lythraceae)

Rotala wallichii (Hook. f.) Koehne.

THAILAND. C. 100 km N of Bangkok, drying up clay ditch along the road, massed, with pale lilac or pinkish spikes, Nov. 24, 1957, Van Steenis 19580 (K, L, A, C, BKF).

This species which is known from India and Burma has not been cited in the Fl. Siam. En.. Messrs Kern and H. Caspers found the material exactly matching Koehne's description, except for two minor points, viz that Koehne mentioned the flowers to be white and that the leaves subtending the flowers are in the new material narrower than indicated by Koehne.

77. A second collection of *Moultonia singularis* Balf. f. & W. W. Sm.

(Gesneraceae)

In 1915 this remarkable genus was described from Sarawak. It is a close ally of *Monophyllaea* but differs manifestly in having its flowers serially bursting forth from almost the entire length of the hypocotyl (petiole). It has now appeared to occur also in other parts of Borneo. A most curious incidence is that whereas *Monophyllaea* species mostly invariably occur on limestone, *Moultonia* seems to be bound to siliceous soil.

Moultonia singularis Balf. f. & W. W. Smith, Not. R. Bot. Gard. Edinb. 40 (1915) 349; Sarawak Mus. J. n. 6 (1915) 277—286, pl. 2; Merr. En. Born. Pl. (1921) 533.

EAST BORNEO. Sangkulirang Distr., Karangan R., on sandstone, *Kostermans* 13556 (BO, L, K, A, distributed as *Monophyllaea*), corolla green, lip white with a yellow spot, flashed by tiny purple stripes.

There are in Borneo, however, other species hitherto referred to *Monophyllaea*, which have the inflorescences emerging along the midrib (Kostermans 7562, 6908; Endert 2884; Clemens 26197) without having them on the hypocotyle. And as long ago as 1898 two native collectors of Nieuwenhuis (Amdjah 328, Jaheri 1199) have collected in Central Borneo what would appear to be a second species of *Moultonia* with inflorescences along the midrib and on the midrib and indications of such appearing on the hypocotyle, flowering setting in highest first and obviously descending. Both have a hairy calyx and are not *Moultonia singularis*. In both collections there are sessile clusters but also stalked umbel-like cincinniae. The main difference between *Moultonia* and *Monophyllaea* seems in this way to be obscured. A definite opinion on the status of these two genera should be postponed till a revision will have been made.

78. A new combination in *Lespedeza* (Leguminosae) ¹⁾

Lespedeza junghuhniana Bakh. f. nom. nov. — *Phlebosporium cytisoides* Jungk. Naturw. Top. Reisen (1845) 346, nomen nudum; Flora (1847) 508, ditto. — *Lespedeza cytisoides* Bth. in Miq. Pl. Jungk. (1852) 230, 228 in nota. — *Campylotropis cytisoides* Bth. ex Miq. Fl. Ind. Bat. 1, 1 (1855) 229. — Non *Lespedeza cytisoides* Bertol. Mem. Acad. Sc. Ist. Bologna 2 (1850) t. 16; repr. Misc. Bot. 9 (1851) 14, t. 16.

79. The identity of *Foetidia ophirensis* R. Knuth and the distribution of *Foetidia* (Lecythidaceae)

During preliminary identifications of some plants from Siam I came across a fruiting specimen which exactly fitted the description of *Foetidia ophirensis* R. Knuth (Pfl. Reich Heft 105, 1939, 63). However, the lower surface of the leaves is in this species dotted with dark glands which is a character not occurring in the other species of the genus *Foetidia*. It seemed strange that a Mascarene genus would be represented in Malaya. Furthermore, it seemed almost impossible that a small tree with showy flowers and fruits could be described in 1939 from Mt Ophir, near Malacca, which has been so thoroughly investigated, and be based on specimens a century old (Griffith 1453 and Miller 1452).

Further investigation showed that the plant in question is not a *Lecythidaceae*, but that it belongs to *Anneslea fragrans* Wall., of the *Theaceae*. And as a matter of fact I found under the latter name at Leyden Griffith and Miller material which, although unnumbered, must be regarded as isotypes. In an old German handwriting the generic name *Foetidia* occurred on the labels. Knuth took it obviously for granted that this pre-identification was correct.

The correct disposition of Knuth's species is that of a synonym under *Anneslea fragrans* Wall. var. *crassipes* (Hook. f. ex Choisy) Pierre, according to the monograph by Kobuski (J. Arn. Arb. 33, 1952, 85).

As to the further occurrence of *Foetidia* in continental Asia Knuth based *F. mauritiana* Lamk var. *elongata* Knuth (l. c. p. 63) from "East Bengal" on a sheet referred to as "Griffith n. 2420/21". Mr H. K. Airy Shaw kindly verified the Kew Herbarium and wrote that there are "4 sheets under the name *Foetidia*,

¹⁾ By Dr. R. C. Bakhuizen van den Brink Jr, Rijksherbarium, Leyden.

labelled 'Hort. Calc.', originating either from Griffith (ex herb. Lemann, 1845), or from Wallich (n. 3644), and I have no doubt that this is the origin of Knuth's 'East Bengal' specimen, as you suggest. The 'Griffith 2420/21' is no doubt a 'Kew distribution' number". These sheets have obviously not been derived from Indian material but from specimens cultivated in the Botanic Garden at Calcutta. Wallich noted in his Numerical List sub Cat. 3644 "*Foetidia mauritiana* Lam. H. B. C. Mauritio intr."

From this follows that the geographical distribution of the genus *Foetidia* is restricted to the Mascarenes and Madagascar (Réunion, Mauritius, Madagascar).

80. The proper generic disposition of *Phellodendron burkillii* Steen. (Rutaceae) *

Soon after the publication of the description of this new Malayan species Dr Hui-lin Li kindly informed me of his doubt about its proper generic disposition. He pointed out that according to the figure accompanying the description (Gard. Bull. Sing. 17, 1960, 357—360, 1 fig.), it could not belong to *Phellodendron*, as in that genus the lateral buds are concealed in a remarkable small pocket in the base of the petiole. He suggested that the species should belong to the genus *Evodia*. I am afraid I have to admit that Dr Li is right, but the fact that I erred has led to an investigation of its causes in which I was assisted by Mr M. Jacobs, who commented as follows.

Evodia (or *Euodia*, as the original spelling is said to be) is a large, mainly Malaysian genus, badly in need of revision. With *Phellodendron* it has in common: opposite, compound leaves; flowers sometimes in wide thyrses, unisexual, 4—5-merous; sepals small; petals mostly valvate; stamens episepalous, exserted, with suborbicular sagittate anthers, staminodial in the ♀ flowers. The ovary in the ♂ and ♀ flowers will be discussed below. A disk is said to be present in *Evodia*, but we saw hardly any.

On account of the structure of the ovary, and of the fruit, the two genera are placed into different subfamilies, the fruit being dry and dehiscent in *Evodia*, drupaceous and indehiscent in *Phellodendron*.

As mentioned above there is a good vegetative difference in the axillary buds; these are exposed in *Evodia*, but sunken in a small pocket of the petiolar base in *Phellodendron*.

Most species of *Evodia* can hardly be confused with *Phellodendron*, because of their 1—3-foliolate leaves, that is to say those belonging to sect. *Lepta* (Lour.) Engl., whereas *Phellodendron* has odd-pinnate leaves.

There are 2 sections of *Evodia*, however, where the leaves are odd-pinnate, and here confusion can arise with *Phellodendron*. They are sect. *Tetradium* (Lour.) Engl. with ± 12 species, and sect. *Oxyactis* (Benn.) Rehd. with ± 6 species. Engler is not very clear in his circumscription of these sections, and it is supposed that a new and thorough study is necessary. Of the last section no material was available in the Rijksherbarium.

In an attempt to find more characters to distinguish the 1—3-foliolate *Evodias*

* In collaboration with Mr M. Jacobs.

from the pinnate ones, a character can possibly be found in the development of the ovary in the ♂ flower. As it could be tested only in a few species, its value remains questionable for the time being. In all examined species of *Evodia*, the ovary in the ♀ flower has a style about as long as the ovary proper, with a flat shallowly lobed (peltate) stigma of about the same diameter as the ovary. In the ♂ flower, the ovary can either resemble merely a reduced ovary of the ♀ flower, or it can have quite a different shape, ending into 4—5 erect horn-like appendages. It occurred to us that in sect. *Lepta* (with 1—3-foliolate leaves) the first type of ovary is found and in sect. *Tetradium* (with pinnate leaves) the second. The second type would also occur in sect. *Oxyactis*, to judge from Engler's description. It is remarkable, that the pinnate-leaved genus *Phellodendron* has exactly the same sort of ovaries in the ♂ flower as the pinnate-leaved *Evodias*!

Much value has been attributed to the presence of pellucid dots in the leaves of *Evodia*. This holds almost throughout the *Rutaceae* as a family character. Generally *Evodia* leaves are full of them. But in certain species, both of sect. *Lepta* and sect. *Tetradium*, there seem to be only a few marginal ones, at any rate in certain individuals, or the dots are even totally absent, as was found in *E. gjellerupii*. In *E. fraxinifolia* specimens were examined with densely dotted leaves, whereas in other specimens there are only a few marginal pellucid dots. Certainly not enough is known about the occurrence of pellucid dots in *Evodia* to base any conclusion on their frequency.

As a tentative conclusion it appears that within *Evodia* the pinnate-leaved sections seem to show such clear floral differences with the 1—3-foliolate species, that a higher rank might be more suitable to evaluate their taxonomic rank.

Furthermore, it remains most remarkable that such a very close, and as has now appeared even misleading, resemblance, vegetative, floral, and plant-geographical, is found between ♂ specimens of these pinnate-leaved *Evodias* and *Phellodendron*, which are in the Rutaceous classification placed wide apart in remote tribes. This seems to represent an unnatural condition. It is caused by the fact that in the hitherto accepted classification the greatest weight is laid on structure of floral parts and whether the fruit is dehiscent or not, a berry, drupe, or capsule, but that hardly any attention is given to vegetative characters (habit, phyllotaxis, etc.). Both *Evodia* and *Phellodendron* find themselves in their subtribes in company with such a vegetatively varied assemblage. We cannot refrain from the thought that they are more closely related than is expressed by their present classification.

Leaving these suggestions to the attention of future workers in *Rutaceae*, we return to the proper disposition of *Phellodendron burkillii*. It has appeared that it should be reduced to *Evodia meliaefolia* (Hance) Bth. Fl. Hongk. (1861) 58. This is native in Japan, China, Assam, and Indo-China, and represents a northern species in Malaysia, where it had been hitherto reported from the Philippines and northern Celebes. It is a new record for the Malay Peninsula.

As for *Phellodendron macrophyllum* Dode, the species *P. burkillii* was assumed most related to, the sketch made of its type shows exposed axillary buds, which would point to a pinnate-leaved *Evodia*. The specimen had male flowers showing the 5-appendaged rudimentary ovary (see Gard. Bull. Sing. l. c. 357, fig. e—g). In the envelope with this ♂ type specimen there were, however, drupes of *Phellodendron* which must have come from another specimen. Whether mixing up has taken place here must be ascertained later.

81. The identity of *Glochidion cinerascens* Miq.

In 1873 Kurz shortly discussed this Sumatran species which he was inclined to refer either to *Ilex* or to compare with *Rhamnus* or *Scutia*, but certainly not to *Euphorbiaceae* (J. Bot. 11, 1873, 207).

Recently Hoogland concluded that it would represent the Malaysian-Melanesian genus *Alphitonia* in Sumatra (Kew Bull. 14, 1960, 33).

As up till Hoogland's paper I held the record of the westernmost locality of *Alphitonia* in the Natuna Islands (NW of Sarawak) (Bull. Jard. Bot. Btzg III, 12, 1932, 167, 191), and furthermore considered that it would be surprising if *Alphitonia*, which is characteristic of and common in secondary forest, would have only once long ago been found in Sumatra, I was particularly interested in this record and have borrowed Miquel's type for further examination.

Though certainly Rhamnaceous it appears to belong to the genus *Rhamnus* and is conspecific with the Sumatran endemic species *Rhamnus lancifolius* Steen. (J. Bot. 72, 1934, 7). The specimen is in fruit and Hoogland was obviously misled by the rather strong resemblance of the leaf, acute, with sunken nervation, and underneath with a grey indument, which is deceptive.

Among the incertae sedis of *Rhamnus* and *Rhamnaceae* in the Rijksherbarium I found moreover several sheets which were distributed as *Rhamnus* and which belong to *Colubrina*.

In the sterile state it must be rather difficult to separate them but if flowers (or buds) or fruit are available it does not give much difficulty in the herbarium and they can be discriminated as follows:

Rhamnus: Ovary in anthesis superior, perigynous, the cupular or obconical receptacle lined about halfway up by a flat disk, the margin bearing the sepals, petals, and stamens. Flowers ♂ and ♀ (or ♀?). Drupe with a thin exocarp and hard endocarp, tardily splitting into 3—5 cocci. Calyx in fruit circumscribing its lobes and remaining under the fruit as a small, flattish, orbicular disk. Veins mostly transverse. Seeds without aril.

Alphitonia and *Colubrina* have both an inferior ovary which means that the receptacle is adnate to the ovary and is not produced as a tube with the discal lining; if the disk is present it is mostly annular. Flowers are bisexual. The growing fruit protrudes from the receptacle-tissue, coming into a semi-superior position. After falling the calyx lobes leave an annular scar on the drupe, marking the upper end of the receptacular tissue; this scar is clearly visible in ripe fruits in the lower half of the fruit.

The two genera can then further easily be differentiated as follows:

Colubrina: Fruit structure as in *Rhamnus*, drupe with a thin leathery exocarp without red, powdery cell-complexes and not crumbling after maturity, and hard endocarp, tardily falling apart into three or more cocci or remaining closed. Aril absent or small. Veins largely reticulate.

Alphitonia: Drupe with a brittle, rather thick, mostly blackish exocarp, gradually crumbling away and full of red, powdery cell-complexes; endocarp hard, splitting from the top into valves, each valve often bifid, exposing the seeds. Seeds almost entirely enveloped by a thin aril. Veins largely transverse.

Zizyphus can of course easily be distinguished from the three genera just mentioned by the non-dehiscent drupes with woody endocarp, triple-nerved

leaves,¹⁾ and (mostly) thorny stipules, whilst the calyx scar is found at the base of the drupe. The ovary is adnate to the flattish receptacle. Suessenguth mentioned that *Zizyphus* would also have sessile fruit, but that does not hold true (Pfl. Fam. ed. 2, 20d, 1953, 51, in clavis).

As to the nomenclatural position of *Glochidion cinerascens* Miq. its epithet cannot be used in *Rhamnus* because of *Rhamnus cinerascens* Bl. 1826 (now *Berchemia cinerascens*). As I am not aware that any previous transfer of it under a new name has been made to *Rhamnus*, its synonymy will have to run as follows:

Rhamnus lancifolius Steen. J. Bot. 72 (1934) 7. — *Glochidion cinerascens* Miq. Fl. Ind. Bat. Suppl. (1861) 451. — *Phyllanthus cinerascens* M. A. in DC. Prod. 15, 2 (1866) 314, non Hook. & Arn. 1837; cf. Kurz, J. Bot. — *Alphitonia cinerascens* Hoogl. Kew Bull. 14 (1960) 33.

SUMATRA. Tapanuli and Westcoast Res.: *Rahmat si Boeea* 10200; *Teysmann* HB 492 (type of *Glochidion cinerascens* Miq. in U); *Meijer* 5393 (topotype); *bb.* 6204, *bb.* 6419 (type of *Rhamnus lancifolius* Steen. in L); *Maradjo* 211.

BORNEO. Eastern Division: *Kostermans* 12940, 12958.

Of this montane tree a deviating specimen (*bb.* 17028) has been collected in Bencoolen Res. (S. Sumatra) by F. W. Rappard in which the undersurface of the leaves lacks the thin grey tomentose indument, but possesses a short-woolly indument only on the midrib and nerves. Its proper disposition should be left to a future revisor.

Both this species and *Rhamnus borneensis* are interesting in that the indument contains stellate hairs which has not been recognized by Suessenguth, l. c. p. 49, in his subdivision of the tribe *Rhamnaceae*.

82. Notes on some Colubrina species (Rhamnaceae)

Backer distinguished three species in Java, the common *C. asiatica* (L.) Brongn., a glabrous very widely distributed plant from the sandy beach, and two hairy species, viz *C. javanica* Miq. and *C. longipes* Backer, both endemic. The first of the latter pair has grey, rather long hairs and a cuneate leaf base, the latter a brownish woolly indument and a rounded leaf base; there are additional differences in the details of the flowers.

Both occur in arid lowland of East Java of the teak forest type and both are rare.

The type of *C. javanica* Miq. (Fl. Ind. Bat. 1, 1, 1855, 648) is a specimen collected by Horsfield. A later collection is Backer 30778, found on the N. slope of Mt Idjen, near Bajeman, 400 m alt., duplicates of which have been distributed to various herbaria.

The type of *C. longipes* Backer is Backer 3869 (L), originally distributed under the name *C. javanica*; it was collected on the N. slope of Mt Tengger, near Bantur, 250 m alt.; an additional collection is Beumée 987 from teak forest on marl, in Rembang Res.

It has appeared that material conspecific with *C. longipes* has been described by Kurz as *C. pubescens* Kurz, from Lower Burma (Pegu). I have

¹⁾ There is, however, also a remarkable species of *Colubrina* with triple-nerved leaves in W. Malaysia, viz *C. anomala* King.

seen Tenasserim material (Galatly 558) but not the type, but Kurz mentions that the leaf is similar in shape to that of *C. asiatica*, which means that it has a cordate base, and he mentions further that it is densely fulvous-pubescent (as in *C. longipes*).

Kurz's name cannot be maintained because of homonymy; another plant under that name was described by Don, 1832, so that Backer's name seems to be the correct one.

Besides using the combination *C. longipes* for *C. pubescens* Kurz, botanists in SE. Asia should be aware that it seems very probable that also *C. javanica* Miq. occurs in SE. Asia. I derive this suspicion from the treatment of *Colubrina* in the Fl. Gén. Indo-Chine vol. 1 (1912) 930, where Pitard has incorrectly reduced *C. javanica* to *C. asiatica*, but where he described in *C. pubescens* var. *subpubescens* Pitard, l. c. p. 931, that the leaves may be cuneate or rounded at the base. It may be that *C. pubescens* is in this Flora a mixture of *C. javanica* and *C. longipes*.

The synonymy of what has been called *C. pubescens* sens. strict. is as follows:

Colubrina longipes Backer, Blumea 5 (1945) 520; Bekn. Fl. Java (em. ed.) 6 (1948) fam. 142, p. 11, descr. holl. — *C. pubescens* Kurz, J. As. Soc. Beng. 41, ii (1872) 301, non Don, 1832; Lawson, Fl. Br. Ind. 1 (1875) 642; Pitard, Fl. Gén. I.-C. 1 (1912) 930, pro parte?