Notes on the Systematy of Malayan Phanerogams

I—V

from

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Abstract

Canarium reniforme is described as new, from the Dindings.
Dillenia grandifolia is resurrected for a common Malayan simpoh.
Alloburkillia replaces Burkillia as the name for a very rare leguminous shrub. Crudia sparei, the second climber in the genus, is described as new. Ditalium angustisepalum is reduced into D. patens. Fordia johorensis and F. ngii are new species. Ormosia grandistipulata is a new rare endemic species. Abarema klahiti, optimistically proposed, is sunk into Pithecellobium globosum.

Ctenolophon grandifolius is reduced to C. parvifolius.

A new variety, Isonandra perakensis var. kelantanensis is described. Palaquium impressinervium and P. regina-montium are new endemic species.

At Kepong there has commenced a grand stock-taking of the Malayan forests. This is taking the form of enumeration surveys to prepare an inventory of the amount of timber and its nature throughout the country, and a new Tree Flora of Malaya to give an up to date definitive account of the species prior to their full exploitation. The inventory data is being published as a series of cyclostyled reports, one administrative district at a time. The Tree Flora will appear as a Malayan Forest Record; in it we aim to cover all families of trees with species which grow larger than the timber-size of 3 ft (90 cm) girth, and to replace the now old account by Ridley (The Flora of the Malaya Peninsula, 1922–5) with a new treatise firmly biased towards the forest and the living tree. It is a big project, and like all floristic accounts, is bound to be imperfect. Firstly in a few cases there is doubt whether a tree reaches timber-size, e.g. Illiciaceae; so the total of 91 families to be encompassed is very slightly arbitrary. Secondly we have not, as our boundaries
are Malaya and off shore islands, had opportunity to plumb all nomenclatural deeps lying in Malesia at large. We have, however, taken care that the taxa we deal with are in our judgement homogeneous, so that even if a few change rank or name at least our concept should stand. In many cases our precursory studies are inappropriate in the Flora itself, and so we promulgate this series of taxonomic notes, echoing in the title a former series leading to a former and now famous book on Malayan trees. In that book Corner (Wayside Trees of Malaya, 1940, vol. 2) adjured:

Malayan trees who cares to know,
Upon his shoulder sits a berok.

We at Kepong, however, work on the basis that:
Malayan trees who cares to study,
Travels with him, an orang asli.

This first instalment of notes covers the families to be dealt with in the first volume of the Tree Flora, which it is hoped to publish in 1970. We thank Drs. A. J. H. G. Kostermans and B. C. Stone for assistance with the latin descriptions. English translations are not given of the latin, as they will be found in the Flora.

Our observations are based on material at Kepong and Singapore herbaria.

I. Canarium, Burseraceae

K. M. Kochummen and T. C. Whitmore

Canarium reniforme Kochummen et Whitmore sp. nov.

Arbor inter C. caudatum et C. patentinervium quasi intermedia. Arbor usque ad 18 m alta, circuiter 90 cm. Stipulae grandes reniformes persistens, 15 × 10 mm, e ramulo productae. Foliola 5–9. Petioluli laterali 13–20 mm, petioluli terminali usque ad 35 mm. Lamina ovata ad elliptica, (3.5 × 1.5)–9.5 × 3.5–(13 × 9.5) cm, rufeo-brunneo, rigide-coriacea, apice late acuminato, base leviter asymmetrico; nervis utrinque 7–10 marginem versus arcuatis; reticulum vix prominens. Inflorescentia (fem. ignot.) terminalia c. 25 cm longa. Flores masculi parvissimi, 4 mm longi, calyx extus puberulenti intus glabri 5 mm longo apice trifido; petalis 3 oblongis 3 × 1.5 mm carnosis extus in parte mediandii aureo-pubescentis, staminis 3 filamentos 3 mm longis antheris 1.3 mm longis, margine disci insertis, discus globosus in pseudostylo attenuato. Fructus ellipsoideus 5 × 3.8 cm, calycce cupuliformis planis 1 cm diam. Pyrena rugosa, obtuse triangulata, operculi c. 3 mm crassi. Semen unicum, loculis fertilibus seminibus unicum, loculis 2 reuctus.

MALAYA, PERAK: coastal hill forest in the Dindings. Lumut F.R. FRI 978, 979; Pangkor Island KEP 99923 (holotype KEP), 99926, FRI 3060, 3094, 3096; Telok Kopia F.R. FRI 3104.
C. reniforme is a sparsely branched undergrowth tree, intermediate between C. caudatum and C. patentinervium and significantly different from both. The epithet refers to the big persistent reniform stipules.

In its leaves and large fruits C. reniforme has a strong resemblance to C. patentinervium which however has 6 stamens in the male flowers, small caducous stipules and a smooth fruit kernel.

The presence of 3 stamens and persistent stipules gives a resemblance to C. caudatum f. caudatum but that differs in size and shape of stipules, shape of the leaflets, smooth fruit kernel and glabrous flowers.

Leenhouts in his monograph (Blumea 9, 1959, 346) notes that C. caudatum f. caudatum and C. patentinervium closely resemble each other especially in Malaya. The latter is a very common species.

We have seen most of the material cited by him and a lot of more recent collections he did not see, and find the two species are quite distinct (see the forthcoming Tree Flora). There are no intermediate collections except one (KEP 97757) which differs from C. caudatum in having 4 not 3 stamens in the male flowers.

Because, even here in Malaya where the two species are closest, they yet remain distinct without intermediates we feel confident that in describing C. reniforme we are presenting a new species, not a member of a hybrid swarm, or of a population of intermediates; we do not think that ultimately this group will be reducable to one broad, polymorphic species.

II. Dillenia

K. M. Kochummen and T. C. Whitmore

Dillenia grandifolia Wall. ex Hk. f. et Thoms, Wall. Cat., 1828. 946, nomen nudum. Fl. Ind. 1 (1855) 71.


D. grandifolia is based on Wallich 946, leaves only, from Convalescent Hill, Penang. Hoogland in his recent monograph (Blumea 7, 1952, 134) points out that the collection comes from a sapling or young tree and considers it may be juvenile D. ovata or D. reticulata. He leaves D. grandifolia as a doubtful species.

We now reduce D. eximia to D. grandifolia, pace Hoogland, because both species are identical in the long decurrent leaf base, the minor venation, and the rather sparse harsh tomentum of the leaf below. No other Malayan species has these features together. Both D. ovata and D. reticulata by contrast have rounded leaf bases and are softly velvety below. The shape of the leaf base does not alter with age.

We base this decision on a study of collections from juvenile and mature trees and of photographs at Kepong of Wallich 946.

We also thank Mr. Forman at Kew for kindly comparing leaf fragments of KEP 98573 (D. eximia), KEP 94685 (D. ovata) and KEP 100022 (D. reticulata) with the Wallichian type and reporting on the tomentum.
III. Leguminosae

T. C. Whitmore

**Alloburkillia** Whitmore nom. nov.
Type Species — *Alloburkillia alba* (Ridley) Whitmore comb. nov.

Type Species — *Burkillia alba* Ridley loc. cit.

Unfortunately the rare leguminous shrub *Burkillia alba* Ridley, known only from the type collection Burkill 12493 (sphalm. Burkill 12498 in Ridley loc. cit.), has to change its name as the green algal genus *Burkillia* West & West was published earlier in Ann. R. Bot. Gard. Calcutta 6 (1907) 228.

**Crudia sparei** Whitmore sp. nov.

Scandens. Rachis 2.5 cm, glabra. Foliola 2, ovata-elliptica
9 × 3–14 × 6 cm, subcoriaceae, infra leviter grisea vestita pilis
sparsis minutis adpressis, apice late acuminato, base cuneato;
nervis utrinque c. 8, reticulato aequaliter manifesto. Racemi
25 cm porcati glabri. Flores aggregati, subsessili; calyx vix
pubescens, apicis loborum acuminatis rotundantis. Legumen
ignotum.

MALAYA, PERAK: S. Krian, SFN 34494 (holotype SING), collected by G. H. Spare, a rubber planter.

This is the second climbing *Crudia* known. The distinctive characters are all present in other Malayan species but differently combined.

**Dialium patens** Baker Fl. Brit. Ind. 2 (1879) 270.

*D. angustisepalum* Ridley Kew Bull. (1929) 255 syn. nov.

Ridley based his species on Yusop 4123, he also cited Yeop KEP 0846. He notes ‘(species) affine *D. patenti* Bak. sed sepalis
anguste lanceolatis acuminatis differt.’ I have examined the
Kepong sheet of KEP 0846. Nearly all the flowers are old, with
the sepals wide spreading or reflexed; they are indeed
narrowly lanceolate but this is due to the fact that the margins
are curled inwards a little at the base, progressively more towards
the apex. The normal ovoid-oblong sepals of *D. patens* are present
on a few young flowers on the sheet which have the sepals still
covering the ovary. Two sheets of *D. patens* at Singapore
(Denny s.n. 2/X/53, KEP 15772) also have a few overmature
flowers with spreading incurled lanceolate sepals; the other
flowers on these specimens and all the many other flowering
collections at Kepong and Singapore have the normal sepals
of *D. patens*. Clearly *D. angustifolium* cannot be maintained as
a separate species.

**Fordia johorensis** Whitmore sp. nov.

Arbor parva usque ad 6 m alta. Rachis 12–20 cm. Foliola
11–17, ovata ad anguste-elliptica, parva c. 6.3 × 2.5 cm, griseo-
viridia, glabra, apice longo acuminato, base rotundo ad cuneato;
nervis utrinque 4–5; reticulum tenue densum a nervis subaequaliter manifestum. Paniculi fasciculati in tuberculis lignosis in trunco situato, 10–20 cm longi. Flores 7.5 mm longi, aggregati in pedunculis 3 mm sparsis, pedicellis 3 mm gracillis; sepala et petala alba fragrantissima. Legumen 7.5 × 2.5 cm.

A very common underground treelet in parts of south Johore, hence the name. Its occurrence also in northern Borneo is typical of many Johore plants.

MALAYA, JOHORE: Bt. Tinjau Laut, SFN 37065 (holotype SING); Ulu Sedili F.R. KEP 93144, KEP 94813; Kluang F.R. KEP 98016.

BORNEO, SARAWAK: Marudi SAR 23291.

SABAH: Ranau SAN 33726.

Most closely similar to *F. ophirensis* Ridley against whose type (and only collection) at Kew Mr. Forman has kindly compared my description; he finds that the two taxa are clearly distinct.

**Fordia lanceolata** Ridley Flora 5 (Supplement) (1925) 304.

I unexpectedly had to take a party of student foresters into the S. Lallang Virgin Jungle Reserve, Selangor on 19th January, 1968 after this paper had gone to press. It was even more unexpected to find *F. lanceolata* gregarious on the hillside, and in full flower. The species was previously only known from a single fruiting collection (Holtum 9775) from Senaling Inas F.R. about 30 miles further south on the Main Range than S. Lallang F.R. Here follows a full description of the inflorescence and flower from fresh material of my collection FRI 4065.

Racemes solitary in leaf axils, to 9 cm long, stout, finely distantly hairy. Peduncles in a close spiral; subtended by a tiny (0.8 mm) brown bract; whitish-green, swollen, like a tiny *Morinda* fruit, 2 × 1 mm; closely covered with flower buds; only 1–2 flowers opening, others aborting to leave prominent scars. Open flowers 9 mm long, slightly fragrant. Pedicel 0.5 mm. Calyx whitish green, tubular, truncate, sometimes margin undulate, with sparse, short, white hairs outside, 3 mm long. Petals all clawed, white; standard 7 mm long with 1 mm claw; wings 6 mm long, linear, with 1 mm claw, spreading in open flower; keel 3 mm deep, base hastate, claws free, 2 mm, joining blade at centre line; stamens and carpel 9 mm long.

**Fordia ngii** Whitmore sp. nov.

Arbor parva 4 m alta. Rachis 10–14 cm longa. Foliola 3. Petiolulus crassus ater 8 mm. Lamina oblonga — elliptica ad elliptica usque ad 17 × 6 cm subcoriacea glabra griseo-viridia, acumine 3 cm, base cuneato ad late rotundato; nervis utrinque 5–6 valde arcuatis, infra valde prominentis. Racemi ex axillis et ramunculis producti usque ad 4 cm longis subtiliter aureo-velutini. Flores aggregata in pedunculis crassis 10 mm longis. Pedicelli 4 mm gracilli. Flores 15 mm longi, tubus calycis 3–4 mm longis oblongus leviter gibbosus parte basalis contractus 1 mm longus, lobi 4, 2 × 1 mm, extus aureo-sericeus; petala alba aequales, unguiculati, carina interdum abst. Legumen ignotum.

MALAYA, JOHORE: S. Kayu SFN 32042 (holotype SING); Lenggor F.R. KEP 99069.
Distinctive in its trifoliate leaves and stout, distinctly lobed calyx from all other *Fordia* species. The type collection has open flowers all without a keel, the other collection has flowers in bud, some keeled some not.
Named for F. S. P. Ng, Forest Botanist, Kepong.

*Ormosia grandistipulata* Whitmore sp. nov.
Arbor parva 4 m alta. Stipulae oblongae late acutae, 2.5 × 1.3 cm persistens. Rachis 25 cm. Foliola 11, ovata, c. 11 × 8 cm subcoriacea glabra breviter acuminata base rotundato. Flores ignotis. Legumines (immaturi) aurantiaca nitida glabra c. 5 × 3 cm rigida coriacea. Semen unicum rubrum 14 × 9 mm.

MALAYA, TRENGGANU: Mile 10½ K. Trengganu-Besut Rd. SFN 40851 (holotype at SING !; K, L).
Although the flowers remain unknown this is a distinctive species in its small stature, big persistent stipules and leathery oblong pods. The leaflets resemble *O. polita* Prain.
Exploration of Trengganu, above all other Malayan States, continues to reveal novelties, this is one amongst many, and the interior still remains *terra botanica incognita*.

*Pithecellobium sensu lato*

*Pithecellobium globosum* (Bl.) Kosterm. Reinw. 3 (1954) 11.
The Singapore isotype of *Abarema kiaii*, known from only one collection, *Sinclair & Kiah SFN 40940*, is in fruit. All the Singapore and Kepong sheets of *P. globosum* are in flower. The two species are identical in vegetative morphology on these sheets and moreover the descriptions by Kostermans (*Pl. cc.*) of the missing fertile parts are the same, almost word for word. It appears that *A. kiaii* was ‘optimistically proposed’ and I therefore make this reduction.

IV. Ctenolophon, Linaceae

P. F. Cockburn

*Ctenolophon parvifolius* Oliver Trans. Linn. Soc. Bot. (Lond.) 28 (1873) 516, t. 43.
*Ctenolophon grandifolius* Oliver loc. cit. syn. nov.
Oliver distinguishes these two species based respectively on Kew distrib. 382 Maingay (*C. parvifolius*) and Kew distrib. 383 Maingay (*C. grandifolius*) on the length of the ovarian cavity, the cavity in the former being longer than that in the latter,
where it only occupies base of the ovary. Beccari, Malesia 1 (1877) 119, distinguishes the species on the colour of the branches, which are much darker and with a fine scurf on the young twigs in *C. parvifolius*. Kings Materials (J. As. Soc. Beng. 64 1895, 106, adds size difference and the colour of the tomentum on the inflorescence. Ridley in Flora 1 (1922) 423 uses size of leaf and flower, colour of tomentum, and the more stout spreading branches of the panicle in *C. grandifolius*, but suggests that it may only be a variety of *C. parvifolius*.

From numerous collections at Kepong, six of which have mature flowers, I can find no important difference in the length of the ovarian cavity. Of Beccari's characters I find that young twigs of all specimens have a fine scurf. In KEP 9765 there is variation in the colour of the tomentum within the inflorescence from 'rusty', to 'pale'. In FRI 0177 the flowers are small, but the leaves rather long (11.5 cm). In KEP 9765 there is variation in flower size within a single inflorescence. Leaf size variation is great, 3.5–23 cm, and gradual.

I find no reason why these two should hold specific status, nor from the gradual variation can a variety be established. I have therefore reduced *C. grandifolius* to a synonym *C. parvifolius* bearing in mind that Bullock (Kew Bull. 14, 1960, 41) has selected the latter as basionym for the genus *Ctenolophon*.

I would like to thank Mr. Forman at Kew for observations on the type specimens.

V. Sapotaceae

F. S. P. Ng

Isonandra perakensis King et Gamble, var. kelantanensis Ng var. nov.

A varietas typica differt foliis glabris obtusis. Fructus ignotus.

MALAYA, KELANTAN: Gua Jaya at Kuala Jenerya, Sg. Nenggeri, FRI 4248 (holotype KEP). On summit of limestone hill.

Possibly a new species but as only one collection is known, I hesitate to describe it as such. It is known only from Kelantan whereas the var. *perakensis* is restricted to Perak.

Palaquium impressionervium Ng sp. nov.

Arbor magna usque ad 45 m alta, circuiter 3.6 m. Stipulae binatae mox caducae. Petiolus 7–20 mm, gracilis, supra plerumque aplanatus canaliculatusque. Lamina chartacea, glabra, elliptica ad obovata, 5 × 2–15 × 5.3 cm, apice plerumque acuminato, base cuneato, costis supra anguste canaliculatis, nervis secundariis supra saepe impressis utrinque 11–16 in nervium intramarginallem obscuram arcuatum conjunctis, tertiaris reticulatis ad parallelo-reticulatis supra saepe impressis. Inflorescentiae fasciculatae
Fig. 1 *Palaquium impressinervium* Ng

A: Flowering twig, after Haniff & Nur 2726 (Type).
B: Twig with young fruits, after FRI 6189.
C & D: Mature fruit and seed, after KEP 10449.
E — H: Bud, open flower, part of corolla with stamens, pistil, after Haniff & Nur 2726.
Axillaris c. 6–floriferae. Flores c. 7 mm diam.; pedicellis 12–20 mm longis sepalis 6 biseriati triangularibus c. 3 × 2 mm, corolla 6–lobato c. 7 mm longo, staminibus 12, ovario ovoidoe, stylo c. 8 mm longo. Fructus oblongus c. 30 × 17 mm. Semen unicum oblongum c. 25 × 12 mm, hilo subaequilongis, semen tertia parte obtectus. Albumen nullum. Cotyledones carnosae.

MALAYA, KEDAH, KELANTAN, PERAK, PAHANG, NEGRI SEMBILAN, JOHORE. The following fertile specimens are all from Perak: KEP 10449, 10828, 39067, 39069, 45182, 45191, 76729, 110752, 110754; numerous sterile specimens have been collected from the states listed above.

SIAM, Kopah Ban Kiap (B. Tinggi): SFN 2726 (holotype KEP).

Common big trees in Upper Perak and Kedah, known to the aborigines as ‘surin’, represented by a large number of collections, mostly sterile, in the Kepong herbarium. KEP 10449 was misidentified by Lam (Bull. Jard. Bot. Buitenz. sér 3, 7, 1927, 479) as Mimusops elengi L. Two other specimens (sterile), KEP 10414, KEP 10415, were also misidentified by him (loc. cit. 425), as Ganna motleyana Pierre var. glabrescens Lam. Probably influenced by the latter, Wyatt-Smith (Research Pamphlet 4, 1954, 12) considered this an undescribed species of Ganna though he annotated on one specimen (KEP 45182) that with 6 instead of 4 sepals, this could not possibly be a Ganna. Neither can it be Payena nor Madhuca, which also have 4 sepals. It was van Royen who first came to the conclusion (annotated on KEP 10828) that this was probably a new species of Palaquium. The difficulty in identifying these specimens was due to the fact that the Malayan collections have either very young flower-buds, or old fruits, or are sterile. To date, the only collection with mature flowers is the holotype cited above, which unfortunately was not seen by Lam or van Royen.

The species is distinct by its small to medium sized papery more or less elliptic leaves with midrib always, and secondary/tertiary nerves usually, sunken on the uppersurface.

Palaquium regina-montium Ng sp. nov.

Arbor usque ad 30 m alta, circuiter 2.4 m. Stipulae binatae minutae mox caducae. Petiolus 15–40 mm, supra leviter aplanatus. Lamina coriacea, bullata, supra glabra, subtus cupreo-velutina, obovata interdum elliptica, 5.3 × 2.5–13 × 7.3 cm, apice rotundato acuto vel leviter acuminato, base cuneato, nervii secundarii utrinque 4–8, tertiarii transversis obscuris. Inflorescentiae fasciculatae, 1–6–floriferae, axillaris (sed folii interdum delapsis). Flores c. 5 mm diam. pedicellis usque ad 13 mm longis, sepalis 6 biseriati ovatis c. 4 × 3 mm, corolla 6–lobato, ad 5 mm longo, staminibus 11–12, ovario conico apice in stylo breve attenuato. Fructus obovoideus c. 25 × 13 mm glabrescens. Semen unicum obovoideum 20 × 8 × 6 mm, hilum anguste lineare semine aequilongis. Albumen crassum. Cotyledones tenues.
Fig. 2. *Palaquium regina*—*montium* Ng

A: Flowering twig, after KEP 78841 (Type).
B: Fruiting twig, after FRI 5818.
C—E: Bud, corolla with stamens, pistil, after FRI 3894.
F: Seeds, after FRI 5818.
MALAYA, PERAK, SELANGOR, PAHANG: on G. Tahan, G. Benom, and along the main range at Slim Hills, Fraser's Hill, B. Tunggul, G. Ulu Kali, G. Bunga Buah, and G. Mengkuang. Representative fertile collections are KEP 78841 (holotype KEP, from G. Mengkuang), FRI 1990, 2310, 3185, 5585, 5710, 5818.

This beautiful large tree, previously misidentified as the Sarawak *P. cryptocarillofolium* van Royen, is found on the mountains at 1000–1830 m, where it often occurs gregariously and is easily recognised by its coppery crown and bullate leaves with few nerves and velvety undersurface.