

## SYMPLOCOS (SYMPLOCACEAE) FROM THE BUKIT RAYA

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### SUMMARY

Two new species of *Symplocos* (Symplocaceae) are described and the species of *Symplocos* found during the 1982–83 expedition to the Bukit Raya (Borneo) are discussed.

During the expedition to the Bukit Raya\* in Indonesian Borneo (Nov. 1982–March 1983) nearly 4000 collections were made, 2800 of which are at the Rijksherbarium at Leiden and already pre-identified. As could be expected, for quite a lot of species a gap in the distribution could be filled and, as far as could be established from the preliminary identifications, for quite a number of species the known distribution area has greatly extended. A remarkable example is *Gonocaryum crassifolium* Ridley (Icacinaceae) which hitherto was known only from the type, a scrappy collection from Selangor! We found complete material, fruiting as well as flowering.

Some gaps could be filled for Symplocaceae as well, and moreover, two new species from the area could be described.

### *Symplocos rayae* Noot., *spec. nov.*

Arbor parva pauciramifer ad c. 1 m alta. Rami appresse ad patente brevipilosi. Folia pseudoverticillata superne glabra infra pilosa apice acuminata venis primariis 9–13 paribus solum ad apicem in venam intramarginalem convenientibus dense reticulato-venosa. Inflorescentia fasciculata axe pubescente bracteis 4–6 mm longis bracteolis 3–4 mm longis. Flores obliqui ovario appresse pubescente, 1.5 ad 2 mm alto calice eodem indumento tubo c. 0.5 mm alto lobis 1.5 ad 2 mm longis corolla parce appresse pilosa c. 4 mm longa staminibus c. 60 disco et stylo basin versus sericeo. – Typus: *Nootboom 4575* (L; iso BO), Indonesia, Kalimantan Tengah, Bukit Raya, 112°41' E, 0°39' S.

Hardly branched treelet 1 m tall. Twigs rather densely appressedly to patently short-hairy. Terminal buds covered by appressedly pubescent scales. *Leaves* pseudo-

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verticillate or at least 3–5 close together at the end of the flushes, glabrous above, sparsely hairy beneath especially on midrib and nerves; base cuneate, base angle 30–40°, narrowing into the petiole; margin rather coarsely dentate; apex acuminate, acumen 15–30 mm, often terminating in a gland; nerves in 9–13 pairs, except towards the apex not meeting in an intramarginal vein; primary veins more or less transverse to nerves, conspicuously prominent beneath, secondary and tertiary veins less prominent, forming a dense reticulation. Petiole densely appressedly hairy, 12–15 mm. *Inflorescence* a fascicle (reduced spike) in the axils of the leaves or on wood between them, axis up to 4 mm, pubescent. Bracts appressedly pubescent, boat-shaped, 4–6 mm, bracteoles the same, but smaller and narrower, 3–4 mm. *Flowers* more or less oblique, c. 15 in each inflorescence. Ovary appressedly pubescent, 1.5–2.5 mm high; calyx with same indument, tube c. 0.5 mm, the ovate lobes 1.5–2 mm (in the same flower), the outermost the largest. Corolla sparsely appressedly hairy without, c. 4 mm. *Stamens* c. 60. Disk and stylebase silky hairy; style glabrous at least in the upper half, 3–4 mm. Fruits not known.

*Distribution.* Only known from the type.

*Ecology.* Type from primary mountain forest on slope at 1500 m altitude.

*Symplocos riangensis* Noot., *spec. nov.*

Frutex pauciramifer c. 1 m altus ramis tomentosis foliis distichis superne glabris infra parce pilosis 14 ad 36 cm longis, 5 ad 11 cm latis base cordata margine recurvato apice acuminato acumine 15 ad 40 mm longo venis primariis 9 ad 16 paribus infra conspicue prominentibus in venam intramarginalum conspicuam convenientibus. Inflorescentia racema ad c. 1 cm longa bracteis c. 1.5 mm longis bracteolis c. 1 mm longis. Flores ovario appresse ad patenter pubescente c. 1 mm alto calyce eodem indumento lobis 1.5 ad 2 mm longis diviso corolla glabra c. 4 mm longa staminibus 26 ad 30 disco glandulis quinque stylo basin versus inter glandulas disci hirsuto. Fructus ellipsoideus in vivo, cylindricus, statu sicco apicem versus angustatus 15–23 mm longus. — *Typus*: *Nooteboom 4643* (L; iso BO), Indonesia, Kalimantan Tengah, along Sgei Samba at Tumbang Riang near base camp, 112°42'E, 0°39'S.

Few-branched shrub c. 1 m high. Twigs dark brown tomentose. *Leaves* distichously arranged, glabrous above, sparsely hairy beneath, especially on midrib and veins, narrowly elliptic, 14–36 by 5–11 cm; base cordate; margin recurved, entire; apex long-acuminate, acumen 15–40 mm; nerves in 9–16 pairs, impressed above, strongly prominent beneath, hardly curved upwards, mostly curved downwards apically before ending in a very conspicuous intramarginal vein which runs slightly undulating more or less parallel to the margin at a distance of 3–6 mm, secondary veins running about transverse to the nerves, with the slighter prominent lesser veins forming a dense and conspicuous reticulation. Petiole very thick, with same indument as twigs, 5–12 mm. *Inflorescence* a short raceme to c. 1 cm or slightly longer, in the axils of the leaves but mostly on wood beneath them, axis more or less patently hairy, together with the very short pedicels. Bracts narrowly ovate to triangular, 1.5–2 mm long, bracteoles narrower, 1–1.5 mm, both with same indument as axis. Ovary appressedly to patently pubescent, c. 1 mm high; calyx with same indument, nearly

entirely divided into 1.5–2 mm long slightly elliptic obtuse lobes (when dry the lobes seemingly acute by shrivelling). Corolla glabrous, c. 4 mm. *Stamens* 26–30 (two flowers seen). Disk consisting of 5 glabrous glands; stylebase between the glands hirsute, rest of style glabrous, c. 3 mm. *Fruit* bright blue *in vivo*, ellipsoid, 15–23 by 10–12 mm, but assuming the shape of the stone, becoming cylindrical, narrowed towards the apex and at most 6 mm diameter when dry. *Seed* 1, straight, with straight embryo.

**Distribution.** Except at the locality of the type also seen on the lower slopes of the Bukit Raya.

**Ecology.** In primary Dipterocarpaceous forest on dark places rather common but only very few plants flowering at the same time. One plant bears only few inflorescences and only one or two flowers are open per inflorescence. Altitude 100–1200 m.

**Collections.** Moge & de Wilde 3592, 3600, 3781, 3886, 4004; Nootboom 4033, 4112, 4424, 4643 (type); Veldkamp 8095.

For these new species the keys in Flora Malesiana I, 8 (1977) should be changed as follows:

page 217:

1. Leaves (pseudo-)verticillate.

1a. Leaves obovate . . . . . *S. verticillifolia*

1a. Leaves elliptic.

2. Upper side of leaves hairy. Twigs tomentose . . . . . *S. herzogii*

2. Upper side of leaves glabrous. Twigs appressedly to patently short-hairy *S. rayae*

1. Leaves not verticillate, etc.

page 218:

32. Leaves longer than 5 cm (mean length).

32a. Leaves 14–36 by 5–11 cm. Twigs tomentose . . . . . *S. riangensis*

32a. Leaves 3–13(–18) by 1.5–4.5(–6) cm. If leaves longer than 13 cm or broader than 4.5 cm then twigs not tomentose.

33. etc.

page 227:

4. Twigs hairy.

5. Leaves distichous.

5a. Leaves 14–36 cm long . . . . . *S. riangensis*

5a. Leaves at most 12 cm long . . . . . *S. laeteviridis*

5. Leaves spirally arranged or pseudo-verticillate.

5b. Leaves pseudo-verticillate or at least 3–5 close together at the end of the flushes . . . . . *S. rayae*

5b. Leaves spirally arranged.

6. etc.

page 235:

22. Leaves distichous.

22a. Leaves 14–36 cm long . . . . . *S. riangensis*

22a. Leaves at most 12 cm long.

23. etc.

22. Leaves spirally arranged or pseudo-verticillate.

22b. Leaves pseudo-verticillate or at least 3–5 close together at the end of the flushes . . . . . *S. rayae*

22b. Leaves spirally arranged.

29. etc.

Except the new ones more *Symplocos* species were found. A remarkable find is *Veldkamp 8349*, from Tumbang Tapi, Handayani T.C. logging area, alt. c. 100 m: *Symplocos goodeniacea* Noot., hitherto only known from the type in Sandakan, Sabah, East Malaysia.

Other Symplocaceae found during the expedition are: *S. adenophylla* Wallich ex G. Don (*Mogea & de Wilde 3842*, from the Bukit Raya at 1200 m); *S. crassipes* Clarke var. *ernae* (Brand) Noot. (*Mogea & de Wilde 4282*, Katingan Timber Cy logging area, c. 120 km west of Tumbang Samba); *S. odoratissima* (Bl.) Choisy ex Zoll. var. *odoratissima* (*Nooteboom 4754*, Tumbang Dahiye near old helicopter field, alt. 250 m); *S. rubiginosa* Wallich ex DC. (*Mogea & de Wilde 3798*, Bukit Raya, 1200–1500 m; this species is very rare in Kalimantan, only 2 collections were known, one from the Westcoast and one from E. Kalimantan. It is more common in Sumatra, the Malay Peninsula, and in Sarawak).

From *S. laeteviridis* Stapf var. *laeteviridis* a slightly aberrant form is found (*Mogea & de Wilde 3817, 3923, 3938*, all from the Bukit Raya between 1500 and 1700 m), which also is known from Sarawak. In this form the twigs are provided with a mixed indumentum of long, rather patent, hairs and a dense, short, more or less appressed pubescence. This should be added to the description and the key in *Flora Malesiana* I, 8 (1977) page 262.