

A Note on *Cordia premnifolia* Ridl. (Boraginaceae)

HASSAN IBRAHIM

Singapore Botanic Gardens
Singapore 259569

Abstract

Cordia premnifolia Ridl. is confirmed as a synonym of *C. dichotoma* G. Forst., not of *C. cochinchinensis* Gagnep., which does not occur in Malesia. *C. premnifolia* is lectotypified.

Introduction

This paper arises out of the exercise to verify the status of type specimens in the Singapore Herbarium (SING), in this case, to verify the type of *Cordia premnifolia* Ridl. The family Boraginaceae was revised by Riedl (1997) for Flora Malesiana, in which he regarded *C. premnifolia* as a synonym of *C. cochinchinensis* Gagnep. and stated no types were known for *C. premnifolia*. By including *C. premnifolia* in the latter, he considered that *C. cochinchinensis* occurs in Malesia. This paper discusses whether *C. premnifolia* should be included in the more widely distributed *C. dichotoma* G. Forst. as suggested by Ng (1989) or in *C. cochinchinensis* as suggested by Riedl (1997).

Cordia premnifolia

The three specimens that Ridley (1915) cited when he described *Cordia premnifolia* are all in the Singapore Herbarium. These specimens were collected in the Pahang river region, Peninsular Malaysia.

Ridley (1915) described the leaves of *C. premnifolia* as ovate, obtuse or subacute, 6.5 x 4 in (16.5 x 10 cm), with the base as rounded or cordate and margins slightly undulate to distantly serrulate. These characters distinguished it from *C. griffithii* C.B. Clarke (now a synonym of *C. dichotoma*), which Ridley (1923) described as having ovate-lanceolate acute to acuminate leaves with a slightly cuneate base, 1.5–3.5 x 1–1.75 in (3.8–9 x 2.5–4.4 cm).

A comparison of specimens of *Cordia premnifolia* and *C. dichotoma* from

Peninsular Malaysia and Singapore shows the three syntypes of the former to have large, broad leaves up to 17 x 11 cm with a rounded to cordate base and entire to slightly serrulate margins; while the majority of the latter has smaller, narrower leaves, 6.5–11 x 3.5–9 cm, with a cuneate base and wavy margin. However, some specimens of *C. dichotoma* have broader leaves with a rounded base and an entire margin. In addition, even on a single specimen of *C. premnifolia* there is a great range in leaf size, for example, from 7.5–9.5 x 7 cm to 12.5–15 x 10–11 cm, thereby overlapping with those of *C. dichotoma*. There are no differences in fruit shape and size and both have the characteristic conical calyx cup. Taking the Peninsular Malaysian and Singapore population of *C. dichotoma* as a whole, the *C. premnifolia* specimens, although representing individuals with the largest leaves, fall within the range of variation for that species. Ng (1989) was therefore correct in including *C. premnifolia* as a synonym of *C. dichotoma*. He did not, however, lectotypify *C. premnifolia*.

Riedl (1997) made *Cordia premnifolia* a synonym of *C. cochinchinensis* without giving a reason for his decision as well as without seeing any of the three syntypes at SING and, because of this, he considered that *C. cochinchinensis* occurred in Malesia.

Cordia cochinchinensis

In 1951, Johnston's account of *Cordia dichotoma* highlighted its wide distribution ranging from southern China and northern India, south through Indochina and Malesia (including Peninsular Malaysia) to northeastern Australia. Gagnepain & Courchet (1914) first described *C. cochinchinensis* from specimens collected in Cambodia, Vietnam and Thailand (the Taleng Mountains in the Petchabouri region). Riedl (1997) recorded *C. cochinchinensis* as occurring in Malesia presumably because he considered *C. premnifolia* as a synonym of *C. cochinchinensis*. There is no other documentation of this species being found elsewhere in Malesia. For example, it is not included in the Flora of Java (Backer & Bakhuizen, 1965), the Tree Flora of Malaya (Ng, 1989), the Tree Flora of Sabah and Sarawak (Dayang Awa, 1996) or Merrill's 1923 Enumeration of Philippine Flowering Plants.

There are no specimens of *Cordia cochinchinensis* at SING but from the descriptions by Gagnepain & Courcet (1914) and Johnson (1951), *C. cochinchinensis* and *C. dichotoma* are very similar species with overlapping geographical ranges. The main difference appears to be in the fruit: ovoid and up to 30 mm long and 22 mm wide with a campanulate fruit calyx in *C. cochinchinensis* compared with ovoid and about 22 mm long and 13 mm wide with a broadly cup-shaped to an inverted cone-shaped fruit calyx about 6 mm long and 12 mm wide with obscurely lobed edges in *C. dichotoma* (including *C. premnifolia*). Unfortunately, there is as yet no

revision of the Boraginaceae for the Flora of Thailand, where both species occur. It is beyond the scope of this paper to conclude whether *C. cochinchinensis* and *C. dichotoma* are conspecific. However, *C. cochinchinensis* does not occur in Peninsular Malaysia and therefore not in Malesia either.

***Cordia dichotoma* G. Forst.**

Cordia dichotoma G. Forst., Fl. Ins. Austr. (1786) 18, nr. 110; Johnston, J. Arnold Arbor. 32 (1951) 8; Backer & Bakh. f., Fl. Java 2 (1965) 459; Ng, Tree Fl. Malaya 4 (1989) 60, Dayang Awa, Tree Fl. Sabah & Sarawak 2 (1996) 98, fig. 2; Riedl, Fl. Malesiana I.13 (1997) 74.

Type: New Caledonia, *Forster s.n.*, (not seen)

Synonym: *Cordia premnifolia* Ridl., J. Str. Br. Roy. As. Soc. 68 (1915) 12; Fl. Mal. Pen. 2 (1923) 438.

Type: Peninsular Malaysia – Tanjong Antan, Pahang, *Ridley 2158* (lecto SING, here designated).

Other syntypes examined: Peninsular Malaysia – PAHANG: Pahang River *Burn Murdoch 186* (SING), Kuala Lipis *Machado 11567* (SING).

Notes: *Ridley 2158* is chosen as the lectotype among the specimens it is the most complete having mature fruits.

Acknowledgements

I thank the Asean Regional Centre for Biodiversity Conservation for providing the grant for the Singapore Type Project and Ruth Kiew, Singapore Botanic Gardens, for support and guidance in preparing this paper.

References

- Backer, C.A. and R.C. Bakhuizen van den Brink 1965. Boraginaceae. *Flora of Java*. **2**: 457–459.
- Dayang Awa, A.L. 1996. Boraginaceae. *Tree Flora of Sabah and Sarawak*. **2**: 97–100.
- Gagnepain F. and L.D.J. Courchet. 1914. Boraginacées. *Flore Generale l'Indo-Chine*. **4**: 203–204.

- Johnston, I.M. 1951. Studies in the Boraginaceae, XX, Representatives of three subfamilies in Eastern Asia. *Journal of the Arnold Arboretum*. **32**: 8–11.
- Merrill, E.D. 1923. Boraginaceae. *An Enumeration of Philippine Flowering Plants*. **3**: 373–374.
- Ng, F.S.P. 1989. Boraginaceae. *Tree Flora of Malaya*. **4**: 60–62.
- Riedl, H. 1997. Boraginaceae. *Flora Malesiana*. I, **13**: 68–79.
- Ridley, H.N. 1915. New or Rare Malayan Plants. *Journal Straits Branch of Royal Asiatic Society*. **68**: 12.
- Ridley, H.N. 1923. Boragineae. *Flora of the Malay Peninsula*. **2**: 438–439.