

Notes on two *Ixora* species, new records for Thailand

VORADOL CHAMCHUMROON*

ABSTRACT. During a revision of *Ixora* for the Flora of Thailand, two new records were found for Thailand. *Ixora henryi*, previously known only from China, is reported from northern Thailand. *Ixora cambodiana* is recorded from near the border between Thailand and Cambodia. Descriptions and illustrations of the species are provided.

Ixora L. comprises ca. 300 species from Africa and Asia (Mabberley, 1987). There are 20 species in Peninsular Malaysia, occurring in both lowland and upland areas (Corner, 1941). Craib (1934) listed ca. 38 species and seven varieties in *Florae Siamensis Enumeratio*. Boonbundral (1978) carried out a preliminary study of the genus in Thailand, describing 23 species and three varieties. Whilst revising the genus for the *Flora of Thailand* the following new records have come to light.

Ixora cambodiana Pit., Fl. Indo-Chine 3: 320. 1923. Types: Cambodia, without locality, *Jullien* s.n. (syntype P); Vietnam, Co-phah, between Hanoi and Bac-ninh, *Balansa* s.n. (syntype P). Figs. 1, 3.

Shrub 3 m high; branchlets glabrous. *Leaves* elliptic, oblong or oblong-ovate; petiole 0.4–0.9 cm long, glabrous; blades elliptic-oblong, base cuneate, apex broadly acuminate, 10.5–12 by 3–3.1 cm, herbaceous, with 6–8 pairs of lateral nerves; midrib prominent underneath. *Stipules* with sheaths 0.4–0.6 mm long, cuspidate, glabrous outside; awn 0.1–0.2 cm long. *Inflorescence* erect, lax, corymbiform, articulate, 8–9 cm wide and 6–8 cm long, the inflorescence-supporting leaf pairs with smaller, elliptic blades, (0.7)–1 by 0.2–0.4 cm, peduncle 1–4 cm long; axes, pedicels and calyces densely covered with short spreading hairs; central first order axes 4 cm long, lateral first order axes 5–6 cm long; first order bracts without the stipular parts, the latter rather loose, shortly-hairy. *Ultimate flower triads* with flowers pedicellate; pedicels 0.1–0.2 cm long, the pedicel of the central flower shorter than the pedicels of the lateral ones; bracteoles present on most pedicels, opposite at the base of the ovary, narrowly triangular to filiform, covered with spreading hairs outside and with colleters inside, 0.5–1.2 by 0.2 cm. *Flowers* fragrant. *Calyx* usually densely hairy, the hairs short; tube 0.2–0.4 cm long; lobes triangular with acute tips, 0.5–0.8 cm long. *Corolla* white or pale pinkish, tube 2.5–3.5 cm long; lobes 0.6–0.8 by 0.2 cm, ovate, obtuse or rounded, glabrous or sparingly ciliate at base. *Anthers* pale orange, opening by means of longitudinal slits. *Style* exserted, 3 mm long; stigma 0.4–0.5 mm long, pale orange. *Ovary* 0.1–0.3 cm long. *Fruits* globose, 1–2 cm in diam. *Seeds* usually 0.7–0.8 by 0.8–1 cm, in a 1–2-seeded drupe, semi-globose with one face flattened-convex.

*The Forest Herbarium, National Park, Wildlife and Plant Conservation Department, Chatuchak, Bangkok 10900, Thailand.

Thailand.— NORTH-EASTERN: Mukdahan [Dong Bang-I, 16 May 1930, *Kerr* 21489 (AAU, K); EASTERN: Buri Ram [Khao Phanom Dong Rak, 5 May 2002 *Chamchumroon* 1472 (BKF)].

Distribution.— Thailand, Cambodia, Vietnam.

Ecology.— Dry evergreen forest.

Phenology.— Flowering April–May.

Note.— *Chamchumroon* 1472 is in cultivation at the Rubiaceae garden in Dong Fa Haun Botanic Gardens, Ubon Ratchatani Province.

Ixora henryi H. Lév., Fedde, Repert. 13: 178. 1914; Pitard, Fl. Indo-Chine 3: 324. 1923. Types: China, Yunnan, A. *Henry* 11637 (syntype K!); China, Guizhou, Lou-fou, March 1909, *Cavalerie* 3496 (syntype K!). Figs. 2, 3.

Shrub 2–3 m high; branchlets glabrous. *Leaves* opposite, simple, entire, petiolate; petiole 0.4–0.6 cm long, glabrous; blades elliptic-oblong, base cuneate, apex broadly acuminate, 8.5–12(–18) by 2–3.1(–5) cm, herbaceous, with 6–8 pairs of lateral nerves; midrib prominent underneath; nerves in 8–10 pairs. *Stipules* with sheaths 0.8–1 cm, cuspidate, glabrous outside; awn 1–2.5 cm long. *Inflorescence* sessile, articulate, 2.5–3.5 cm wide and 2–3.5 cm long; axes, pedicels and calyces glabrous; central first order axis 0.5–1 cm long, lateral first order axes 2–3 cm long; first order bracts with the stipular parts the latter rather loose. *Ultimate flower triads* with flowers pedicellate; pedicels 0.2–0.3 cm long or absent, the pedicel of the central flower shorter than the pedicels of the lateral ones; bracteoles present on most pedicels, opposite at the base of the ovary, narrowly triangular to filiform, glabrous outside and with colleters inside, 0.5–0.9 by 0.1–0.2 cm. *Flowers* solitary, fragrant. *Calyx* tube 2–4 mm long, lobes triangular with ovate tips, 2–3 mm long. *Corolla* white or pale pinkish, tube 2.5–3.5 cm long; lobes 1–1.75 by 0.6 cm, ovate, obtuse or rounded, glabrous. *Anthers* pale orange, opening by means of longitudinal slits. *Style* exserted, 3–5 mm long; stigma 0.3–0.4 mm long, pale orange. *Ovary* 1.2 mm long. *Fruits* globose, 7–8 mm in diam., greenish to red to black. *Seeds* usually 5–6 by 5 mm, in 1–2-seeded drupe; seeds semi-globose with one face flattened-convex.

Thailand.— NORTHERN: Chiang Rai [Doi Langka, 27 Dec. 1965, *Iwatsuki & Fukuoka* T-3642 (BKF)]; Lampang [Jae Sawn, 2 March 1997, *Maxwell* 97–167 (BKF)]; Nan [Doi Phu Kha, 27 Feb. 1921, *Kerr* 4943 (AAU, BK, K); Doi Phu Kha, 21 Nov. 1993, *Larsen, S. S. Larsen, Norgaard, Pharsen, Puudja & Uerchirakan* 44693 (AAU); Doi Phu Kha, 1 Nov. 1995, *Pooma* 1258 (BKF); Doi Phu Kha, 7 Dec. 1998, *Srisanga* 392, (QBG); Doi Phu Kha, 12 Feb. 1999, *Srisanga* 498 (QBG); Doi Phu Kha, 3 Dec. 1999, *Srisanga* 1206 (QBG); Doi Phu Kha, 12 Jan. 2000, *Srisanga* 1269 (QBG); Doi Phu Kha, 11 Nov. 2000, *Srisanga* 1745, (QBG); Doi Phu Kha, 22 Aug. 2001, *Srisanga* 2040 (QBG); Doi Phu Kha, 22 Aug. 2001, *Srisanga & Maknoi* 2040 (QBG); Doi Phu Kha, 13 Dec. 1990, *Tirvengadum, K. & S. Larsen, Puangpen & Uerchirakan* 2010, (AAU)]; NORTH-EASTERN: Loei [Phu Rua, 5 March 1993, *Chantaranothai, Middleton, Parnell & Simpson* 1101 (K)]; SOUTH-WESTERN: Kanchanaburi [Khao Lieuw Long, 1 April 1968, *Beusekom & Phengkhrai* 271 (AAU, BKF, C)]. Fig. 3.

Distribution.— China (Guizhou, Yunnan).

Ecology.— Along streams in hill evergreen forest.

Phenology.— Flowering November–April, fruiting April–July.

ACKNOWLEDGEMENTS

I wish to thank DANIDA for a Scholarship which supported my Ph.D. studies at Kasetsart University and visits to Aarhus Herbarium and Copenhagen Herbarium and the ÖAD (Austrian Academic Exchange) for a scholarship which made it possible to carry out part of the work at the Institute of Botany, University of Vienna, Austria. I would like to thank my supervisors Dr Sunya Vajrothaya, Dr Kongkanda Chayamarit, Dr Lily Kaveeta, and Dr Christian Puff for their valuable suggestions. Thanks are also due to my colleagues at BKF, especially Dr Rachun Pooma, Kanlaya Phattarahirankanok and Narong Koonkhunthod for their help in various ways, especially during fieldwork.

REFERENCES

Boonbundral, S. 1978. A primary on taxonomy of the genus *Ixora* in Thailand. M.S. thesis, Chulalongkorn University, Bangkok. 92p. (in Thai).

Corner, E.J.H. 1941. Notes on the systematy and distribution of Malayan Phanerogams, IV: *Ixora*. Gard. Bull. Str. Settlem. 11: 177–235.

Craib, W.G. 1934. Flora Siamensis Enumeratio 2(2): 147–234.

Mabberley, D.J. 1987. The Plant Book. Cambridge University Press, Cambridge. 858 p.

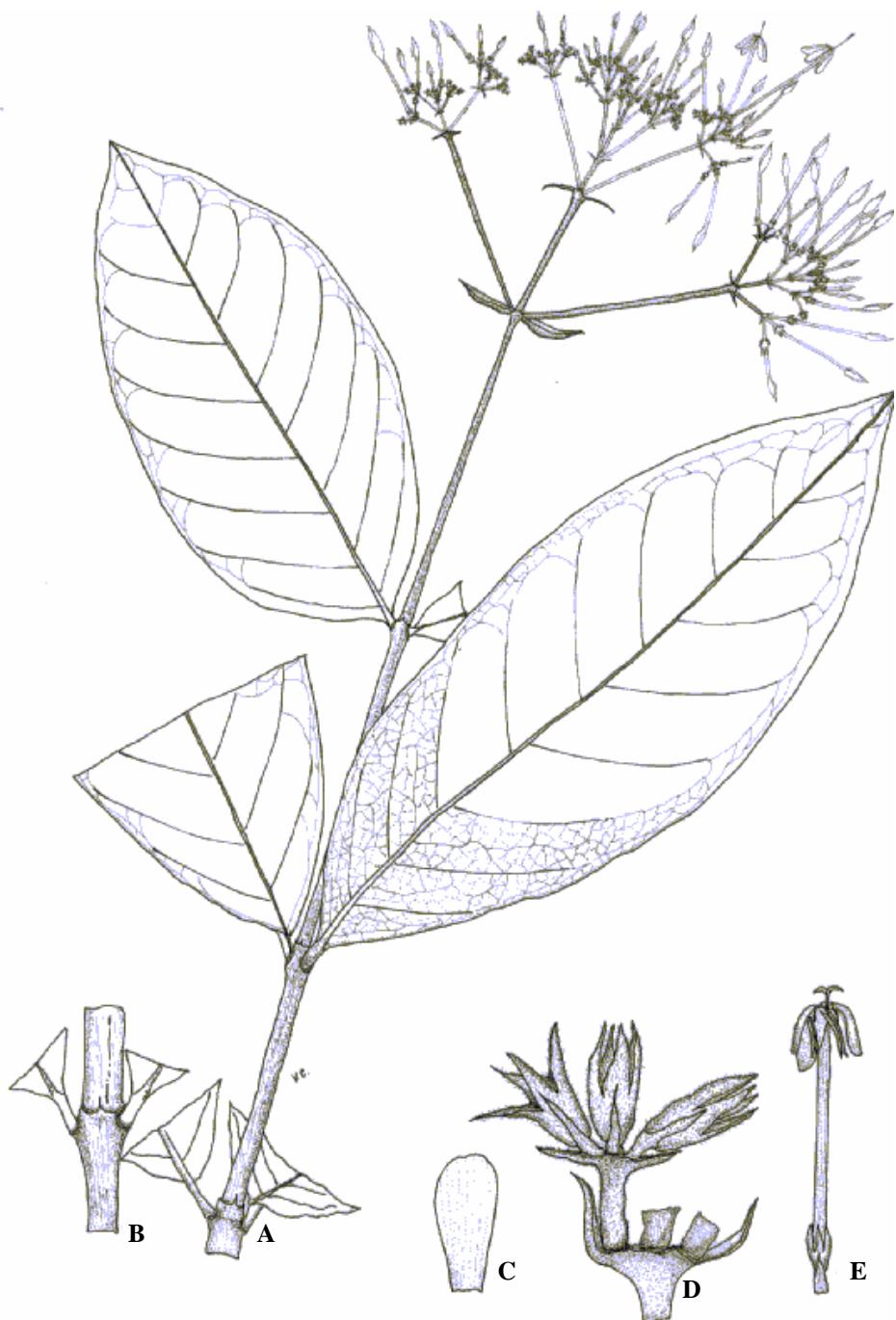


Figure 1. *Ixora cambodiana* Pit.: A. a twig with terminal articulated inflorescence ($x\frac{1}{2}$); B. stipule with branch (x1); C. petal (x1.5); D. a portion of the inflorescence (x3); E. flower (x1.5). All from *Chamchumroon* 1472 (BKF). Drawn by V. Chamchumroon.

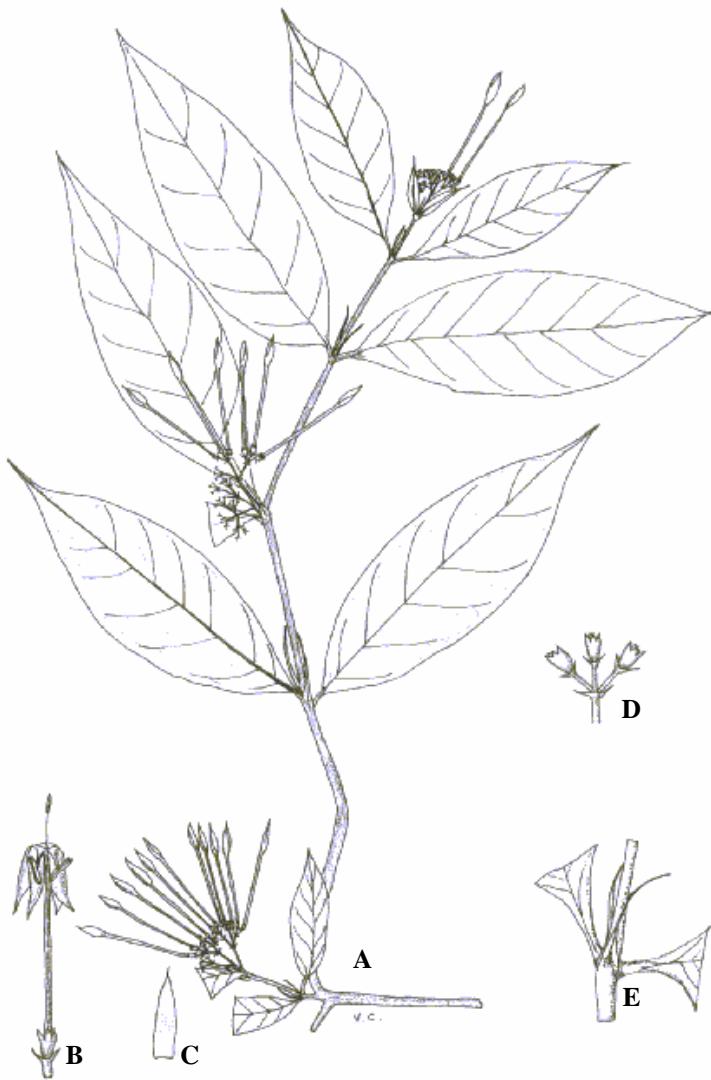


Figure 2. *Ixora henryi* H. Lév.: A. a twig with terminal articulated inflorescence (x1); B. flower (x1); C. petal (x1); D. a portion of the inflorescence (x2); E. stipule with branch (x1). All from Maxwell 97–167 (BKF). Drawn by V. Chamchumroon.

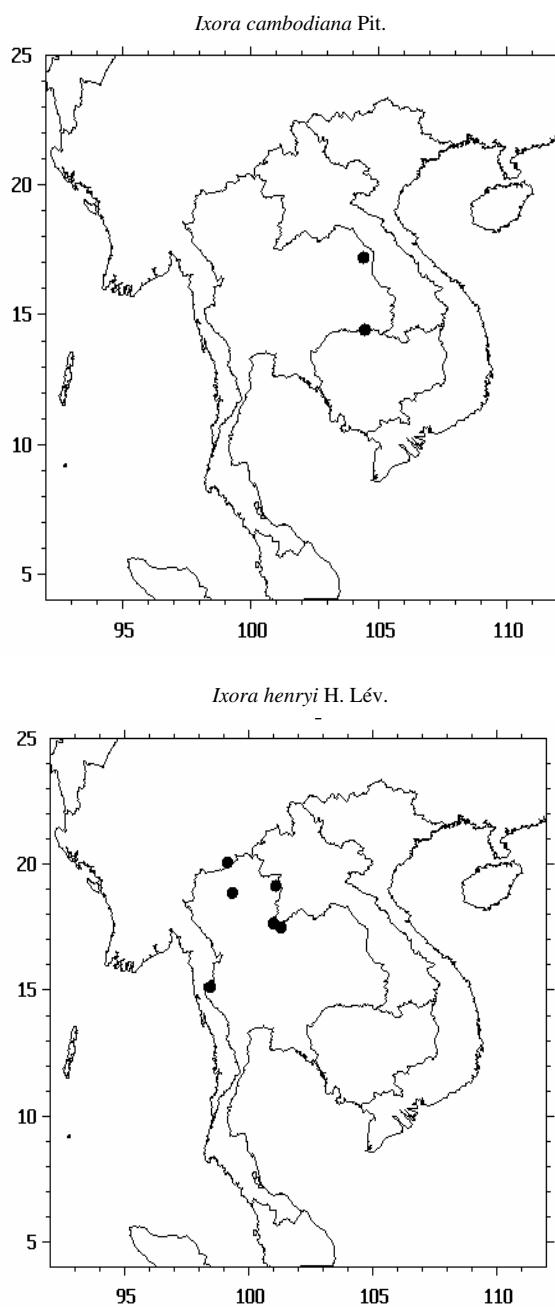


Figure 3. Distribution of *Ixora cambodiana* Pit. and *I. henryi* H. Lév. in Thailand.