

Short Note

A Further Note on the Genus *Piper* L. (Piperaceae) from Thailand

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Piper pedicellosum Wall. ex C.DC., *P. penangense* C.DC. and *P. rostratum* Roxb., are all newly recorded species for Thailand. These species are described with a line drawing of *P. rostratum*. *P. pilobracteatum* and *P. dominantinervium* are reduced to be synonyms of *P. caninum* Blume and *P. polycarpa* Ridl., respectively.

They are about 1,000 species in the genus *Piper* L.¹, of which 24 species are recognized in Thailand^{2,3}. Recent field work in southern Thailand for the *Flora of Thailand* Project has yielded three new records and two synonyms in the genus. They are previously known from the peninsular Malaysia. The three species described here have no male inflorescence. However, they seem sufficiently distinct for us to be certain of their identification when compared with the type specimens and those in some other collections.

This study is based on field studies and on material from the following herbaria: AAU, BK, BKF, CMU, DMSC, K, KKU, PSU and SING. Descriptions, distributional

and ecological data, and vernacular names are presented.

Piper pedicellosum Wall. ex C.DC.

Piper pedicellosum Wall. ex C.DC. in DC., Prodr. 16(1): 343. 1869; Hook.F., Fl. Br. Ind. 5: 81. 1887; Ridl., Fl. Mal. Pen. 3: 34. 1924. Types: Singapore, *Wallich* Cat. No. 6646A (K-W!); *Wallich & Lamhert* s.n. (G-DC).

Woody climber, dioecious, glabrous, node swollen with climbing roots. Leaves coriaceous, cordate, elliptic or ovate, symmetric or asymmetric, 7–9 by 2–4.5 cm, apex acute or acuminate, base cordate, rounded or truncate, rarely oblique, margin glabrous; venation pinnipalmately 2–3-nerved, glabrous; petioles 1–2 cm long. Inflorescence terminal or in upper branched, leaf-opposed, catkin, pendulous, cylindric, rachis hairy, with dense flowers, floral bract rounded, 1–2 mm diam., sessile. Male inflorescence 3–5 by 0.1–0.2 cm, peduncles 1–2 cm long. Male flower not seen. Female inflorescence 2–3 by 0.1–0.2 cm, peduncles 1–2 cm long. Female flower: ovary elliptic, stigma star-shaped 4–5-lobed, hairy. Infructescence 3–4 by 1–2 cm, pendulous,

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cylindric; peduncle 1–2 cm long. Fruit ± globose, 5–7 mm diam. with stipe 3–7 mm long, dense on rachis, stigma and rounded floral bract persistent.

Thailand.– Peninsular Thailand: Surat Thani, Khan Thu Lee, *Peerapat* s.n. (BK); Nakhon Si Thammarat, Tha Samet, *A.F.G. Kerr* 14336 (BK).

Distribution.– India, Myanmar, Peninsular Malaysia. Flowering and fruiting April–May.

Vernacular.– Ta Kran (Surat Thani).

Notes.– *P. pedicellosum* differs from *P. ribesioides* in its smaller leaves and sessile and rounded floral bract. The description is taken from the only two collections from Thailand.

Piper penangense C.DC.

Piper penangense C.DC. in DC., Prodr. 6(1): 353. 1869; Hook., Fl. Br. Ind. 5: 88. 1887; Ridl., Fl. Mal. Pen. 3: 42. 1924. Type: Malaysia, Penang, *Wallich* Cat. No. 6642 B (K-W!).

Perennial herb, 60 cm high, erect or prostrate on ground, dioecious. Leaves chartaceous, cordate or broadly-ovate, symmetric or asymmetric, 9.5–13 by 6–10 cm, apex acuminate, base cordate or oblique, margin glabrous, venation pinnately 3–4-nerved, glabrous, petioles 1–1.5 cm long, glabrous. Inflorescence terminal, leaf-opposed, catkin, erect, cylindric, white; rachis hairy, with dense flowers; floral bract peltate, 2 mm diam., with stalk 0.5–0.6 mm long, hairy. Male inflorescence 3–5 by 0.1–0.2 cm, peduncles 1–3 cm, long. Male flower unknown. Female inflorescence 1.8–2.3 by 0.3–0.4 cm; peduncle 0.8–1.2 cm long. Female flower: ovary elliptic, style 1–

2 mm long, stigma star-shaped, 3–4-lobed, hairy. Infructescences ca. 1.8 by 0.9 cm, erect, cylindric; peduncle ca. 2 cm long. Fruit ± globose, 3–4 mm diam., sessile, dense on rachis, style and stigma persistent, spine-like.

Thailand.– Peninsular Thailand: Narathiwat, Ba Jo waterfall, *K. Larsen et al.* 42293 (BKF); Yala, Betong, *C. Niyomdham*, *P. Phudjaa* and *S. Chonkunjana* 6053 (BKF).

Distribution.– India, Peninsular Malaysia.

Ecology.– In evergreen or hill evergreen forests, growing near streams or waterfalls. Alt. 1,500 m, Flowering and fruiting in May.

Vernacular.– Cha Plu Penang.

Notes.– *P. penangense* has many features in common with *P. sarmentosum* Roxb. but differs in having a persistent and spine-like style and stigma on the fruit. All parts are glabrous except the rachis.

Piper rostratum Roxb.

Figure 1

Piper rostratum Roxb., Fl. Ind. 1: 162. 1820 & Fl. Ind. 1: 160. 1832; C.DC. in DC., Prodr. 16(1): 377. 1869; Hook.f., Fl. Br. Ind. 5: 87. 1887. Types: Malaysia, Malacca, *Griffith* s.n. (K-W!) & Singapore, *Maingay* s.n. (K-W!). Fig. 1.

Perennial herb, 60 cm high, erect or climbing on ground, dioecious, terminal branch with woolly or velutinous hairs, node swollen. Leaves chartaceous, cordate or broadly ovate, symmetric or asymmetric, 9.5–13 by 6–10 cm, apex acute, base cordate or slightly oblique, margin hairy, scabrous on both surfaces; venation pinnately 3–4-nerved, rarely pinnipalmately, more densely scabrous than lamina; petioles

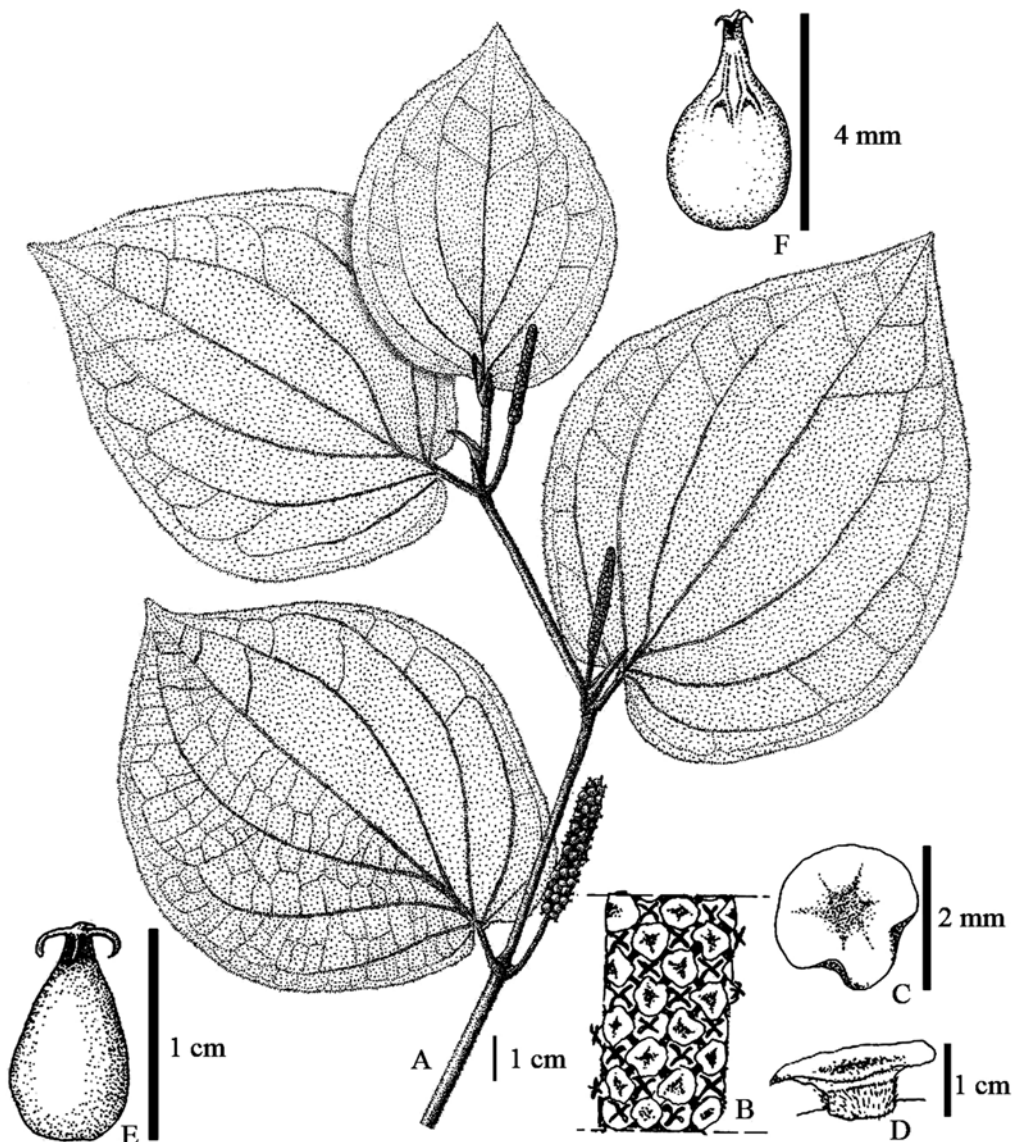


FIGURE 1. *Piper rostratum* Roxb.: A. branch with inflorescence and infructescence; B. portion of female inflorescence; C. lower size view of floral bract; D. top view of floral bract; E. ovary and F. fruit. Drawn by L. Loekhachon and C. Suwanphakdee from C. Suwanphakdee 141.

1–1.5 cm long, scabrous; stipules lanceolate with velutinous hairs. Inflorescence terminal or in the upper axis, leaf-opposed, catkin, erect, white, cylindric; rachis hairy, with dense flowers, floral bract rounded, 2 mm diam., with stalk 0.4 – 0.5 mm long, hairy. Male inflorescence 4–7 by 0.1–0.2 cm,

peduncles 2–3 cm, long, woolly. Female inflorescence 1.8–2.3 by 0.3–0.4 cm, peduncles 0.8–1.2 cm long, woolly. Female flower: ovary ± globose, 0.6–0.8 mm diam., style ca. 0.2 mm, stigma star-shaped, 3–4-lobed, hairy. Infructescences 1.8– 4 by 0.9–1.5 cm, erect, cylindric,

peduncles *ca.* 1.5 cm long, woolly. Fruit \pm globose, 3–4 mm diam., dense on rachis, sessile, style and stigma persistent, spine-like.

Thailand.– Peninsular Thailand : Narathiwat, Hala Bala, *S. Chongko* 255 (CMU), *C. Niyomdham* and *P. Puudjaa* 5457 (BKF), Yala, Bala Hala, *C. Suwanphakdee* 141 (BK, DMSC).

Distribution.– Peninsular Malaysia, Sumatra, Java.

Ecology.– In evergreen or hill evergreen forest. Alt. 380–1,250 m, Flowering and fruiting: May.

Vernacular.– Cha Plu Khon.

Notes.– *P. rostratum* is distinguishable from *P. penangense* by all its parts being hairy except the fruit.

NEW SYNONYMS

Piper caninum Blume in Verh. Nat. Batav. Gen. 11: 214. 1826; C.DC. in DC., Prodr. 16(2): 341. 1869; Hook., Fl. Br. Ind. 5: 82. 1887; Boerl., Handl. Fl. Nederl. Ind. 3: 72. 1900; C. DC. in Philip. Piperac. 44: 755. 1910; C.DC. & Winkler in Engl., Bot. Jahrb. 49: 35. 1913; Ridl. in J. St. Bran. Roy. Asiat. Soc. special no.: 207. 1921; Merrill, En. Philip. 2: 5. 1923; C.DC. in Candollea 1: 223–226. 1923; Ridl., Fl. Mal. Pen. 3: 38. 1924; Henderson, Mal. Wild Flow. 6(3): 422. 1951; Backer & Bakh.f., Fl. Java 1: 171. 1963; Keng, Concs. Fl. Sing.: 62. 1990; C. Suwanphakdee, S. Masuthon, P. Chantarnothai, K. Chayamarit & N. Chansuvanich, Thai For. Bull. (Bot.) 34: 206. 2006. Types: Indonesia, Java. *Motley* 210 (K) *Zollinger* 710 (G-DC). — *P. pilobracteatum* A. Chaveerach & R. Sudmoon, Act.

Phytotax. Sin. 44(4): 449. 2006. Type: Thailand, Phang Nga, Sri Phang Nga National Park, *A. Chaveerach* 63495 (holotype, BK!), **syn. nov.**

Notes.– *P. caninum* is a variable species in terms of leaf shape and size, and indumentum. The species is characterized by the erect inflorescence and infrutescence, ciliate margins of the stalked and rounded floral bracts and stipitate fruits. The species is commonly distributed in peninsular Thailand, especially in evergreen forests. On the examination of the holotype of *P. pilobracteatum*, we concluded that it should be regarded as conspecific with *P. caninum*.

Piper polycarpa Ridl., J. Fed. Mal. St. Mus. 10: 112. 1920. Type: Thailand, Ranong, Kraburi, Tasan, *H.N.Ridley* 6888 (not located). — *P. dominantinervium* A. Chaveerach & P. Mookamul, Act. Phytotax. Sin. 44(4): 447. 2006. Type: Thailand, Phang Nga, Sri Phang Nga National Park, *A. Chaveerach* 63498–500 (holotype, BK!), **syn. nov.**

Notes.– *P. polycarpa* is distinguished by the pinnately venation with 4–10 pairs and that ripening fruits are dark orange-red in color. The species is found in evergreen forests in Ranong and Phangnga provinces. Comparison of materials of *P. polycarpa* at SING and the holotype of *P. dominantinervium* shows that they are conspecific.

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