Taiwania, 58(3): 199–204, 2013
DOI: 10.6165/tai.2013.58.199

NOTE

Three New Recorded species of *Rubus* L. (Rosaceae) from India

M. Bhaumik

Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar-791111, India.
Email: dr_manasb@yahoo.com

(Manuscript received 11 July 2012; accepted 21 January 2013)

ABSTRACT: *Rubus cooperi* D.G. Long, *R. polyodontus* Hand.-Mazz., *R. quinquefoliolatus* T.T. Yu & L.T. Lu, are reported first time from India. *Rubus cooperi* is characterized by the palmate stipules with lacinate margins. *Rubus polyodontus* shows some morphological closeness with other prostrate species of sect. *Chamaebatus* Focke, viz. *R. calycinus* Wall.*ex* D. Don, *R. pectinaris* Focke and *R. pectinellus* Maxim., but differs in having pink petals and acute to obtuse leaf apex. *Rubus quinquefoliolatus* can be easily recognized by its subsessile leaflets, hairs along veins on both surfaces and solitary terminal flowers which are always emarged from new shoots.

KEY WORDS: Distribution, India, new record, *Rubus*.

INTRODUCTION

The genus *Rubus* L. included about 250 species in the world (Mabberley, 2008). There were 39 species of *Rubus* in India (Hooker, 1878), and among 28 species and 1 variety were recorded in Arunachal Pradesh (Chowdhery *et al*., 1996).

In course of plant survey and exploration to Upper Siang district of Arunachal Pradesh under 'Flora of West Siang' project, the author collected many *Rubus* L. specimens along with other elements. All the specimens were identified to species, including *Rubus biflorus* Buch.-Ham. ex Sm., *R. calophyllus* C.B. Clarke, *R. calycinus* Wall., *R. effertus* L.H. Bailey, *R. ellipticus* Sm., *R. lineatus* Reinw., *R. lucens* Focke, *R. macilentus* Cambess., *R. moluccanus* L., *R. mesogaeus* Focke, *R. niveus* Thunb., *R. paniculatus* Sm., *R. pedunculosus* D. Don, *R. roseiflorus* P.J. Müll., *R. splendidissimus* Hara, *R. thomsonii* Focke, *R. treutleri* Hook. f., and *R. wardii* Merr. *ex* D. Don. However, there still were three unknown plants. After carefully examining the related literature (Hooker, *lc*.; Chowdhery *et al., lc*.; Long, 1987; Lu and Boufford, 2003) and specimens from herbaria CAL, ASSAM, and ARUN, these unknown plants were identified as *R. cooperi* D.G. Long, *R. polyodontus* Hand.-Mazz., *R. quinquefoliolatus* T.T. Yu & L.T. Lu.

Here the author provided the description and illustrations of the three newly recorded species. Phenological data and ecological notes were also provided for easily recognizing them in the field. The voucher specimens were deposited in ARUN.

TAXONOMIC TREATMENTS

Rubus cooperi D.G. Long, Notes Roy. Bot. Gard. Edinburgh 44(2): 259. 1987; Grierson & Long in Fl. Bhutan 1(3): 555. 1987.

庫氏懸鉤子　Figs. 1, 3A–B.

Scandent shrubs, up to 4 m long. Stems dark brown, terete, densely scarious-villous, unarmed. Leaves simple, brownish villous; blade 5-lobed, broadly ovate, 3.4–5.5 × 3.2–6 cm, palmatly 3–5-nerved, lateral nerves 3–5 pairs, prominently raised in lower surface, sunken in upper surface, densely hairy along nerves, base deeply cordate, margin sometimes undulate, unevenly dentate or doubly serrate, apex obtuse; petiole c. 6 cm long. Stipules free, green, *c.* 1 × 1.2 cm, margin lacinate, 9–10-lobed; lobes lanceolate, margin setose. Inflorescence terminal or axillary, solitary or 2–3-flowered raceme; bracts 6–10 mm long, villous, lacinate; lobes linear-lanceolate, hairy. Pedicel 4–6 mm long, villous. Flowers 1.5–2 cm across. Calyx tube *c*. 4 mm long, lobes *c*. 1cm long, margins pectinate; petals white, obovate, *c*. 5 × 6 mm, entire, apex rounded, margins undulate. Stamens numerous, 5–6 mm long. Carpels numerous, 5–6 mm long; style slender, white ciliate; stigma capitate, ciliate. Fruit *c.* 1.5 cm across, drupelets numerous, *c*. 40, black at maturity. Flowering and fruiting on June to August.

Distribution in India (Arunachal Pradesh) and Bhutan.

Specimen examined: INDIA, Menchukha hydral side river bank, West Siang, 2040 m, Jun. 14, 2012, *Bhaumik-27769* (ARUN).

Notes: Only one patch about 5–7 individuals was found in open forest near river bank. It's the first time that this species was collected outside its type locality.

Rubus polyodontus Hand.-Mazz., Symb. Sin. 7: 484. 1933.　多齒懸鉤子　Figs. 2A & B, 3C.

臺灣大學學術期刊資料庫

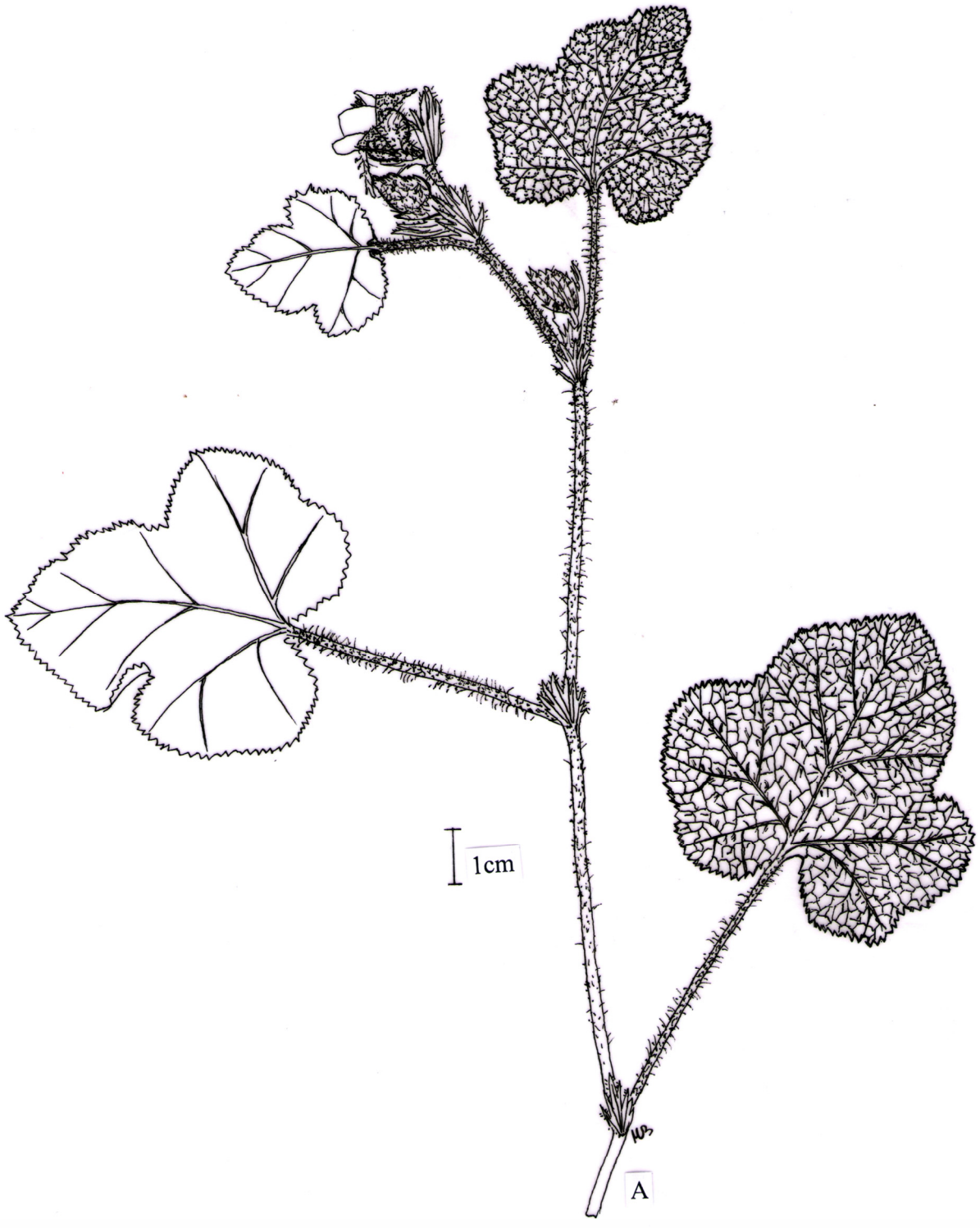


Fig. 1. A: Flowering twig of *Rubus cooperi* D.G. Long.

臺灣大學學術期刊資料庫

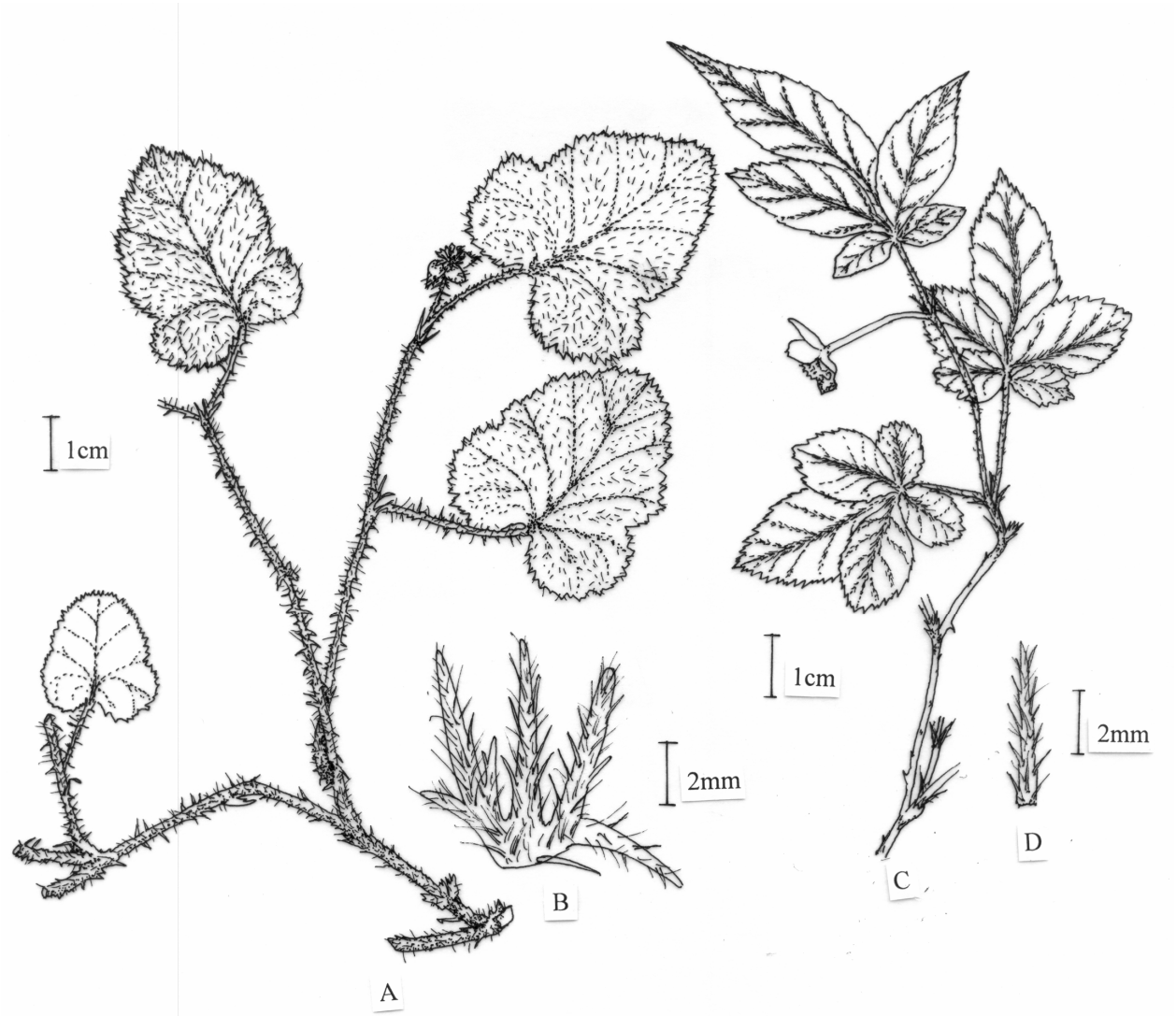


Fig. 2. Illustation of *Rubus polyodontus* and *Rubus quinquefoliolatus*. A & B: *Rubus polyodontus* Hand.-Mazz. A: Flowering twig. B: Stipule. C & D : *Rubus quinquefoliolatus* T.T. Yu & L.T. Lu. C: Flowering twig. D: Stipule.

Creeping shrubs, to 1 m long. Stems creeping, terete, soft bristles, prickles minute scattered. Leaves simple, with occasional small prickles; blade suborbicular, 4–6.8 × 3.5–4.5 cm, densely hairy when young, longer than broad, mid vain distinct, lateral veins 3–5-pairs, raised, upper surface scattered setose, densely hairy along nerves, lower surface glabrous except nerves, base deeply cordate, margin entire or scarcely 3–5-lobed, doubly serrate, apex acute to obtuse; petiole 2–4 cm long, soft bristles. Stipules free, digitately lobed, 5–8 mm long; lobes linear, sometimes divide again. Inflorescences 1(–2)-flowered, axillary on terminal branches; bracts linear, *c*. 5 mm long, hairy at margin. Pedicel 2–3 mm long, villous, with prickles. Flowers *c*. 1 cm across. Calyx with short tube at bases, lobe lanceolate, *c*. 7 mm long, apex caudate, abaxially villous, prickle at base. Petals pink, obovate, 5–6 mm long and broad. Stamens numerous, 2–3 mm long. Carpels shorter than stamens; apex of ovary slightly puberulous. Fruit *c*. 8 mm across, consisting of 7–11 drupelets, red at maturity. Flowering and fruiting on May to August.

Distribution in India (Arunachal Pradesh), China, Japan, and Philippines.

Specimens examined: INDIA, Sidaroa-Alpine camp, Mobo mountain near Tato, West Siang, 3000 m, Aug. 27, 2011, *Baumik-27056* (ARUN); Mobo Mountain to Sidaroa camp.,West Siang, 2600–3000 m, Aug. 30, 2011, *Bhaumik-27191* (ARUN); Manigong west side mountain, West Siang, 2040 m, Jun. 4, 2012, *Bhaumik-27912* (ARUN).

Notes: This taxon shows morphological closeness to *Rubus calycinus* Wall. ex D. Don, *R. pectinaris* Focke and *R. pectinellus* Maxim. in prostrate habit but differs in having pink petals and acute leaf apex. About 2–7 individuals seen on three different localities mainly in temperate river banks woodlands, mixed

臺灣大學學術期刊資料庫



Fig. 3. A & B: *Rubus cooperi* D.G. Long. C: *R. polyodontus* Hand.-Mazz. D: *R. quinquefoliolatus* T.T. Yu & L.T. Lu.

臺灣大學學術期刊資料庫

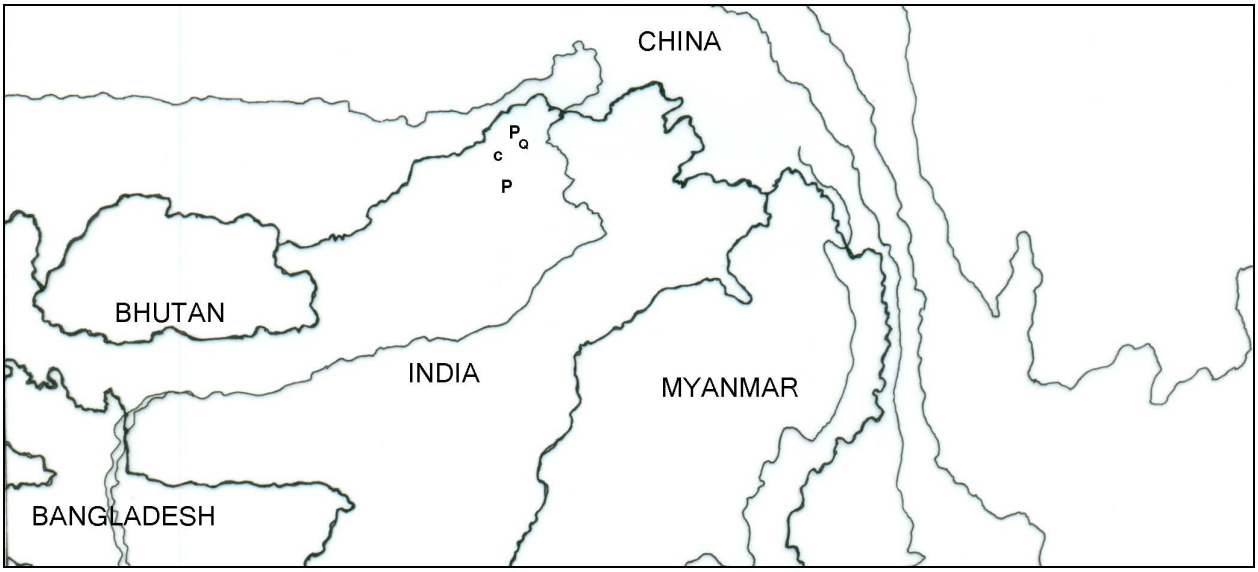


Fig. 4. Distribution of newly recorded *Rubus* species in India. C: *Rubus cooperi* D.G. Long. P: *R. polyodontus* Hand.-Mazz. Q: *R. quinquefoliolatus* T.T. Yu & L.T. Lu.

bamboo-*Rhododendron* forests. It grows at an altitudinal range of 1900–3000 m.

Rubus quinquefoliolatus T.T. Yu & L.T. Lu, Acta. Phytotax. Sin. 20: 306. 1982.

五葉懸鉤子 Figs. 2C & D, 3D.

Scandent shrubs, 1–3.5 m tall. Stem terete, minutely hairy to glabrescent, prickles few on old stem. Leaves palmately 5-foliolate; blades of leaflets sessile or subsessile, elliptic-lanceolate or rhombic-lanceolate, 1–5 × 0.8–2 cm, terminal leaflet longer than lateral ones, both surfaces hairy along veins, base cuneate, margin serrate or doubly serrate, apex acuminate to caudate; petiole 1–2.5 cm long, hairy. Stipules simple, linear-lanceolate, 3–4 mm long. Inflorescences terminal, mostly solitary, rarely 2-flowered; bracts linear-lanceolate, 3–5 mm long, puberulous. Pedicel 1–2.5 cm long, glabrous. Flowers *c*. 1.2 cm across. Calyx with short tube at base; lobes lanceolate, *c*. 1 cm long, white ciliate outside, adaxially villous, abaxially glabrous, margin dividing towards apices. Petals white, ovate or elliptic, shorter than sepals, puberulous. Stamens numerous, uniseriate, *c*. 4 mm long; filaments flat. Carpels 10–15; ovary and base of style villous. Fruit *c.* 1.3 cm across, drupelets red, styles persistent. Flowering and fruiting on April to June.

Distribution in India (Arunachal Pradesh) and China.

Specimens examined: INDIA, Manigong surrounding forest, West Siang, 2300 m, Sep. 5, 2011, *Bhaumik-27297* (ARUN) and Jun. 4, 2012, *Bhaumik-27662* (ARUN).

Notes: There were about 10–12 individuals confined to Manigong area on a mixed *Rhododendron spp. – Chimonobambusa callosa* forest margin.

ACKNOWLEDGEMENTS

The author is grateful to Dr. P. Singh, Director, Botanical Survey of India, Kolkata, and Dr. A. A. Mao, Scientist-E & HOO, Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar for providing necessary facilities to conduct the work.

LITERATURED CITED

Chowdhery H. J., G. S. Giri, G. D. Pal, A. Pramanik and S. K. Das. 1996. Materials for the flora of Arunachal Pradesh (Ranunculaceae-Dipsacaceae) in Hajra, P.K., D.M. Verma and G. S. Giri (eds.) **1**: 1–693. Botanical Survey of India, Kolkata, India.

Hooker J. D. 1878. '*Rubus* L.' in J. D. Hooker's Fl. Brit. India. **2**: 326–342. London, UK.

Long, D. G. 1987. '*Rubus* L.' in Grierson, A.J.C. & Long, D.G. (eds.) Fl. Bhutan **1**: 543–562. Royal Botanic Garden, Edinburgh, UK.

Lu, L.-D. and David E. Boufford. 2003. '*Rubus* L.'In: Wu, Z. H. and P. H. Raven (eds.) Fl. of China **9**: 195-286. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis, USA.

Mabberley, D. J. 2008. Mabberley's Plant Book, A Portable Dictionary of the Plants, their Classification and Uses. Cambridge University Press, Cambridge, UK. p.752–753.

臺灣大學學術期刊資料庫

印度的三種懸鉤子屬新紀錄種（薔薇科）

M. Bhaumik

Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar-791111, India.
Email: dr_manasb@yahoo.com

(收稿日期：2012年7月11日；接受日期：2013年1月21日)

摘要：本文首次報導了庫氏懸鉤子(新擬中名)、多齒懸鉤子與五葉懸鉤子在印度發現的新分佈紀錄。庫氏懸鉤子的托葉掌狀且裂片不規則鋸齒緣。多齒懸鉤子與某些屬於矮生莓節的匍匐性物種如齒萼懸鉤子、梳齒懸鉤子及刺萼寒莓相似，但其花瓣粉紅色，葉先端尖至鈍形而非圓形。五葉懸鉤子則可從近無柄的小葉、葉兩面沿脈被毛以及頂生單花等特徵輕易地與它種辨別。

關鍵詞：分布、印度、新紀錄、懸鉤子屬。

臺灣大學學術期刊資料庫