

A NEW SPECIES OF *BERCHEMIA* NECK. EX DC.(RHAMNACEAE) FROM INDIA

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ABSTRACT

A new species of *Berchemia* Neck. ex DC. (Rhamnaceae) is described from India. The species differs from allied *B. floribunda* (Wall.) Brongn. in tree habit; inflorescence a branched, terminal and axillary panicle bearing 3-15-flowered floral fascicles on the branches of second order (except terminal branch of the panicle); floral fascicles having terminal, older flower with longer, erect pedicels surrounding younger flowers with short, often nodding pedicels; stamens with filaments equal the length of the petals and completely encircled by the petal with anthers included or partly exerted; carpel with sessile stigma and oblong, flattened fruits without terminal stylar beak.

INTRODUCTION

The genus *Berchemia* Neck. ex DC. (Rhamnaceae) is represented by c. 12 species distributed from E. Africa to E. Asia and N.W. America (Mabberley, 1997). Of these, three species, viz. *B. edgeworthii* M. Lawson (Uttarakhand), *B. floribunda* (Wall.) Brongn. (Jammu & Kashmir, Himachal Pradesh, Uttarakhand, West Bengal and Assam) and *B. lineata* (L.) DC. (Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Sikkim) occur in India (Lawson, 1875; Bhandari & Bhansali, 2000).

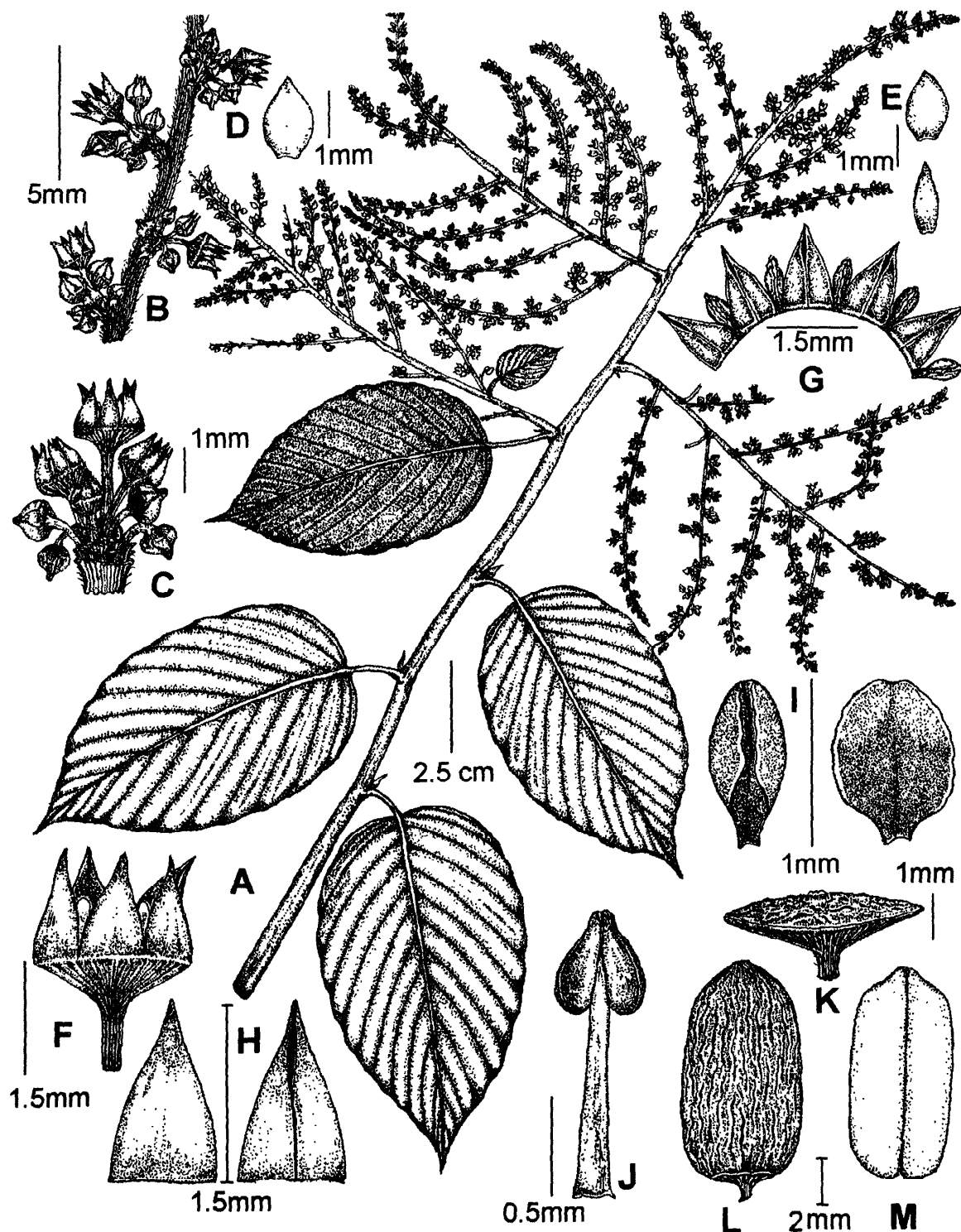
During critical examination of the specimens of the genus housed in the herbarium of the Botanical Survey of India, Northern Circle, Dehra Dun (BSD) and Forest Research Institute, Dehra Dun (DD) few specimens of the genus previously identified as *B. floribunda* appeared distinctly different from the rest of the collections of the species. These specimens have panicles with floral fascicles arranged on the branches of the second order with each fascicle showing older flower at the centre or apex and has longer pedicel than those of the surrounding younger flowers with nodding, short pedicels; stamens completely included or with partly exerted anthers and encircled by petals; carpels without styles; stigma sessile; and fruits without any stylar beak. Whereas, *B. floribunda* has panicles with floral fascicles arising on the branches of the first order and each fascicle having all the flowers with equal or sub equal pedicels; carpels with conspicuous styles; stamens usually with exerted anthers beyond the encircling petals and the fruits with distinct stylar beak. In view of the taxonomic merit of these differences, the specimens in question are described and illustrated here as *Berchemia jainiana*, sp. nov.

***Berchemia jainiana* Pusalkar & D.K. Singh, sp. nov. (Fig. 1).**

*Berchemiae floribundae* affinis, sed habitu arborescenti; inflorescentia vulgo compositae paniculata; paniculis axillariibus et terminalibus; floribus centralium et interiorum in quoque fasciculum longiore pedicellatis; stigmatibus sessilib; fructibus sine rostris stylarium differt.

*Type* : India, Western Himalaya, Uttarakhand, Garhwal, Phata-Gaurikund, 1800 m., 09 August 1968, M.A. Rau 38617 (Holo: CAL, Iso: BSD). Meghalaya, Khasi hills, c. 1500 m, May 1877, *without collector name* 192 (Para : DD).

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**Fig. 1.** *Berchemia jainiana* Pusalkar & D.K. Singh. A. Habit; B. A part of inflorescence magnified; C. A single floral fascicle; D. Bract; E. Bracteoles; F. A flower; G. The same (cut open); H. Sepals (outer face and inner face); I. Petals (close and open); J. A Stamen; K. A Carpel with sessile stigma; L. A Fruit; M. A Seed.

Small tree. Young branches indistinctly ridged. Leaves alternate, stipulate, petiolate; lamina oblong-ovate, oblong-obovate or oblong-elliptic, 6-11 × 4.5-6 cm, base rounded, apex shortly acuminate, margins entire, indistinctly undulate, surfaces glabrous; midvein depressed above, raised below; lateral veins 11-13-paired; petiole 1-2.5 cm long, glabrous; stipules infra-axillary, lanceolate or ovate-lanceolate, 2-5 mm long, acute or acuminate, sub-glabrous. Inflorescence of axillary and terminal panicles bearing many, 3-15-flowered fascicles, arising on the panicle branches of second order; terminal panicle c. 30 cm long; axillary branches up to 20 cm long with branches of axillary panicles up to 8 cm long; inflorescence axis ribbed, pubescent. Flowers white, 1.5-2 mm long, 1.8-2.5 mm across, on 0.5-1 mm long, dwarfed, sparsely pubescent, ribbed pedicels; bracts ovate, 0.5-2 mm long, acute or obtuse, glabrous; bracteoles ovate or ovate-lanceolate, 0.5-2 mm long, acute or sub-acute, glabrous; fascicles cymose with dwarf cyme axis bearing closely arranged floral nodes; terminal flower older, erect, opening first followed by usually nodding peripheral or surrounding, younger flowers opening and maturing later; pedicel unequal, glabrous; 1-2.5 mm long in terminal flowers; 0.5-1.2 mm long in surrounding flowers. Disc short, 0.2-0.6 mm long, tapering below, ribbed, glabrous. Sepals 5, triangular or deltoid, 1-2 mm long, acuminate or acute, glabrous with inner face showing prominent central keel running almost the entire length. Petals 5, alternisepalous, obovate, 0.8-1.2 mm long, with pale margins, encircling the filaments. Stamens 5, opposite the petals, 0.9-1.4 mm long; filaments flat, broadened below, 0.8-1.2 mm long, glabrous, not exceeding the petal length; anthers yellow, oblong, 1.8-2.5 mm long. Ovary 0.2-0.5 mm long, sunk in and adnate to the disc, glabrous, ribbed; style absent; stigma conspicuous, raised, lobed. Fruit oblong, flattened, 9-12 mm long, black with stigmatic remains, without stylar beak; seeds 2, united, white, 7-11 mm long, smooth, with tapering obtuse apex.

*Fl. & Fr.*: April - September.

*Distribution* : India; Uttarakhand, Meghalaya, endemic.

*Habitat* : Occasional, on open slopes between 1350 – 1800 m.

*Etymology* : The species is named after the visionary taxonomist and ex-Director of the Botanical Survey of India, Dr. S.K. Jain, FNA, as a token of respect for his immense contribution to Indian plant taxonomy.

Comparison of distinguishing characters of *Berchemia floribunda* and *Berchemia jainiana*

Characters	<i>Berchemia floribunda</i>	<i>Berchemia jainiana</i>
Habit	climbing shrub or tree(?)	usually tree
Inflorescence	simple panicle with floral fascicles arising on the branches of first order	branched, terminal and axillary panicle bearing floral fascicles arising on the branches of second order (except terminal branch of the panicle)
Floral fascicles	with flowers having equal or sub equal pedicels; flowers opening more or less at same time	with terminal, older flower (opening first) having longer, erect pedicels than surrounding younger flowers (opening later) with short, often nodding pedicels.
No. of flowers	3-8	3-15
Stamens	filaments exceeding the length of the petals so that the part of the filament and anthers completely exerted	filaments equal the length of the petals and completely encircled by the petal with anthers included or partly exerted
Style	present	absent
Stigma	stylate	sessile
Fruit	cylindrical with prominent stylar beak	oblong, flattened, without stylar beak

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## भारत से बर्केमिआ (रैम्नेसी) की एक नयी जाति

प्रशान्त के पुसलकर एवं डी.के. सिंह

सार संक्षेप

भारत से बर्केमिआ नेकर एक्स डी सी (रैम्नेसी) की एक नयी जाति का वर्णन हुआ है। इसकी वृक्ष प्रकृति समवर्गी बर्केमिआ फ्लोरिबंडा से भिन्न है; शाखित पुष्पक्रम, अग्रस्थ एवं कक्षीय पुष्प गुच्छ द्वितीय क्रम (पुष्प गुच्छ के अग्रस्थ शाखा को छोड़कर) की शाखाओं पर 3-15 पुष्पित पुष्प गुच्छ; स्तवक के साथ अंतस्थ पुराने फूल जिनके तने हुए लम्बे पुष्पवृंत छोटे एवं अक्सर झुके हुए पुष्पवृंत वाले नये फूलों को घेरे रहते हैं; तंतु युक्त पुंकेसर की लम्बाई पंखड़ी के सामन एवं पंखड़ी से पूरी तरह घिरे हुए, परागकोश अंतर्मुख या अंशतः उभरा हुआ; अवृत वर्तिकाग्र के साथ आयताकार गर्भकेशर, अग्रस्थ स्टाइलर चंचु रहित चपटे फल।