

A NEW VARIETY OF *PHLOGACANTHUS CURVIFLORUS* (WALL.) NEES FROM ASSAM, INDIA

BARNALI DUTTA¹ AND S.K. BORTHAKUR

Department of Botany, Gauhati University, Guwahati- 781014, Assam, India

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The genus *Phlogacanthus* Nees placed under the tribe Andrographideae of the family Acanthaceae (Endlicher, 1839) and was established by Nees von Esenbeck and Christian Gottfried Daniel published in “*Plantae Asiaticae Rariories*” in 1832. The genus comprised of about 49 species and is confined to south East Asian countries such as Bangladesh, Bhutan, China, Indonesia, India, Myanmar and Vietnam. (Scotland, 1992; Scotland and Vollesen, 2000; Mabberley, 2008; Mc Dade *et al.*, 2008). Clarke (1886) in Hooker’s “*Flora of British India*” described 10 species and *P. curviflorus* var. *brevicalyx* C.B. Clarke as variety from Indian subcontinent. In India the genus is mainly reported from the Subtropical Himalayan belts up to 1500 m MSL and distributed in Meghalaya and Assam (Hooker, 1886). Kanjilal *et al.* (1939) reported 8 species from Assam.

During field investigation for taxonomic studies of the genus *Phlogacanthus* Nees in Assam in 2014-2015 several interesting specimens were collected from Nagaon district of Assam. On perusal of relevant literature (Nees, 1832; Anderson, 1867; Kurz, 1877; Clarke, 1884), critical examination and scrutiny of specimens deposited in ASSAM (BSI, Eastern Regional Circle Shillong), K (Royal Botanic Gardens Kew) and Jstor global plants has resulted in identification of the specimens as *P. curviflorus* (Wall.) Nees.

However, the specimens differ from *P. curviflorus* in certain characters. Consulting the pertinent literature this specimens were identified as a new variety of *P. curviflorus* (Wall.) Nees. This paper describes this new variety as *P. curviflorus* (Wall.) Nees. var. *menchanensis* Barnali Dutta & S.K. Borthakur. Detailed taxonomic description along with other relevant information is provided herewith for easy recognition of the new taxon.

***Phlogacanthus curviflorus* (Wall.) Nees var. *menchanensis* Barnali Dutta & S.K. Borthakur, var. nov. (Fig. 1).**

Diagnosis: *Phlogacanthus curviflorus* var. *menchanensis* is closely related to *P. curviflorus* var. *curviflorus* but can be distinguished from the latter by its smaller height, longer inflorescence, epicalyx number and absence of staminode.

Types: INDIA, Assam, Nagaon, Menchan gaon, 04.01.2014, 26°34.049' N, 093°03.871' E; Alt- 72 m, Barnali Dutta & S.K. Borthakur 55 (Holotype: GUBH; Isotype: ASSAM). INDIA, Assam, Jorhat district, homesteads of Hollongapar, near Gibbon Wildlife Sanctuary, 28.03.2015, 26°42.240' N; 094°20.295' E, Alt- 100m, B. Dutta 58 (Paratype: GUBH).

Shrubs, 2-3 m tall. Stems woody and stout, glabrous, puberulous towards apex, nodes roughly pubescent, distance from the base of the inflorescence to the first node 4.5-5.0 cm, from first to second node 6.8 - 7.0 cm, from second to third node 11.0 - 11.7 cm. Leaves 25-36 × 15-19 cm,

¹Corresponding author. Email: barnalidutta10@gmail.com

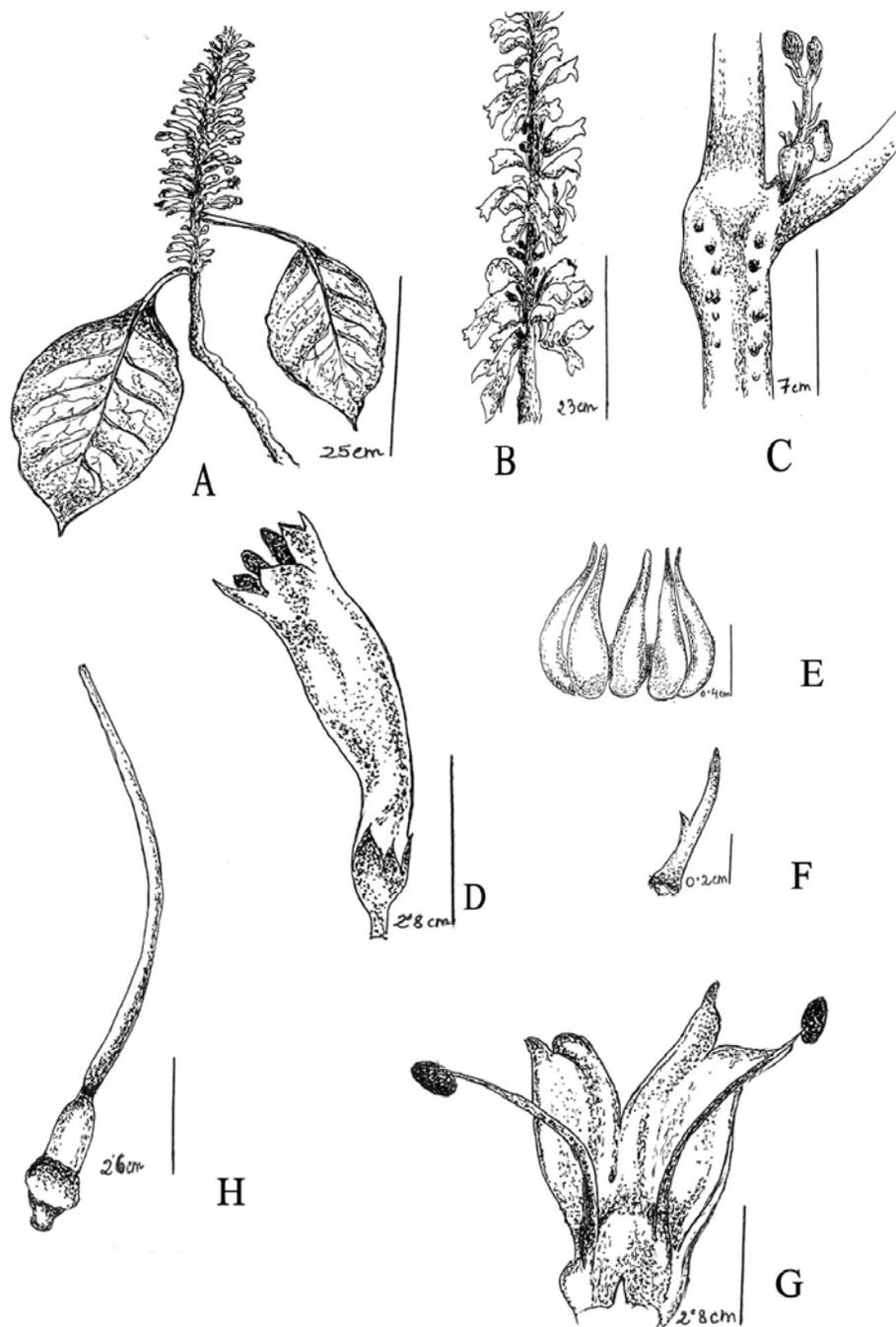


Fig. 1. *Phlogacanthus curviflorus* var. *menchanensis* Barnali Dutta & S.K. Borthakur, **var.nov.** A. Habit; B. Inflorescence; C. Warty stem with axillary inflorescence; D. Complete flower; E. Calyx; F. Bract; G. Corolla with androecium; H. Gynoecium.

entire, elliptic-oblongate, apex acute to acuminate, narrowed at base, cuneate, dark green above and light green underneath, petiolate; petiole purplish green, 5-11 cm long; leaf blade with punctulate cystoliths on both surfaces, glabrous; primary veins more prominent on the abaxial surface; secondary veins 11-16 pairs, prominent on both the surfaces, subparallel forming 45° with 1° vein, 0.5-0.8 cm apart. Inflorescence mostly terminal but sometimes two smaller axillary inflorescences also arises from the base of the petiole, 23-25 cm long, densely pubescent. Flowers pedicellate, pedicel about 0.2 cm long; bract green in colour, linear, 0.4-0.5 cm long. Calyx 5-lobed, c. 0.5 cm long, dark red in colour, pubescent, linear; epicalyx 2, c. 0.4 cm long, dark red in colour, also present at the base of the inflorescence. Corolla bilabiate with glandular hairs, 2.7-2.8 cm long, tubular, dark red, upper lip 2-fids, lower lip deeply 3-fids. Stamens 2, inserted at the base of the tube; anthers 2-celled, glabrous, dorsifixed. Gynoecium 2.5-2.6 cm long; ovary green; stigma and style pink in colour. Capsule about 2.5 cm long, linear, elongate. Seeds many, compressed.

Flowering: December-February; *fruiting:* February-April.

Etymology: The varietal epithet '*menchanensis*' is based on the name of the collecting place Menchan gaon.

Distribution: The new variety is distributed in Menchan gaon of Nagaon district and homesteads of Hollongapar, near Gibbon Wildlife Sanctuary of Jorhat district.

Habitat: Roadside and as forest undergrowth between 72-100 m above sea level.

Notes: *Phlogacanthus curviflorus* var. *menchanensis* is morphologically close to its type *P. curviflorus* var. *curviflorus* by its distinctly terminal inflorescence and obovate leaves but differs mainly in terms of height of the plant, length of inflorescence, number of epicalyx, absence of staminode and colour of stigma and style. Table 1 provides diagnostic morphological characters of *Phlogacanthus curviflorus* var. *menchanensis*, **var. nov.** and *P. curviflorus* var. *curviflorus*.

Table 1. Diagnostic morphological characters of *Phlogacanthus curviflorus* var. *menchanensis*, var. nov., and *P. curviflorus* var. *curviflorus*.

Characters	<i>P. curviflorus</i> var. <i>menchanensis</i> var.nov.	<i>P. curviflorus</i> var. <i>curviflorus</i>
Habit	Shrub, 3 m long	Shrub, 5 m long
Inflorescence	23-25 cm long	12-15 cm long
Flower colour	Brick red	Brick red
Length of sepals	0.5 cm long	0.4 cm long
Epicalyx number	2, equal in size	3, middle one larger
Staminode	Absent	Present

Uses: The tender leaves and flowers of *Phlogacanthus curviflorus* var. *menchanensis* are cooked and eaten as vegetable. Many ethnic communities use the plant in the treatment of cold, fever and sore throat. Hot poultice is used to treat swellings and dark bruises. Basal portion of the stem yields a red dye used mainly for dyeing yarn but commonly cotton and *eri* silk yarn. Decoction of leaves is used to cure muscular pain. Its roots are used in the treatment of malaria.

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References

- Anderson, T. 1867. An enumeration of the Indian species of Acanthaceae. *J. Linn. Soc. Bot.* **9**: 425–526.
- Clarke, C.B. 1884. *In*: Hooker, J.D. (Ed.), *Flora of British India*. Vol. 4. Indian Reprint 1973, Bishen Singh Mahendra Pal Singh, Dehradun, India, pp. 510–513.
- Kanjilal, U.N., Kanjilal, P.C., Das, P. and De, R.N. 1939. *Flora of Assam*. Vol 3. . Govt. of Assam, Shillong, India, pp. 441–445.
- Kurz, W.S. 1877. *Forest Flora of British Burma*, Calcutta. Vol. 2. Office of the Superintendent of Govt. Print., Calcutta, India, 246 pp.
- Mabberley, D.J. 2008. *Mabberley's Plant-book: A portable dictionary of plants, their classification and uses*. 3rd edition, Cambridge University Press, Cambridge, 1021 pp.
- Mc Dade, L.A., Daniel, T.F. and Kiel, C.A. 2008. Towards a comprehensive understanding of phylogenetic relationships among lineages of Acanthaceae s.l. (Lamiales). *Am. J. Bot.* **95**: 1136–1152.
- Nees von Esenbeck, C.G. 1832. *Acanthaceae Indiae Orientalis*. *In*: Wallich, N. (Ed.) *Plantae Asiaticae Rariories* Vol. 3. Treuttel, Würtz, Richter, London. pp. 70–112.
- Scotland, R.W. 1992. Pollen morphology of Andrographideae (Acanthaceae). *Review of Palaeobotany & Palynology* **72**: 229–243.
- Scotland, R.W. and Vollesen, K. 2000. Classification of Acanthaceae. *Kew Bull.* **55**: 513–589.

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