



RESEARCH ARTICLE

A New Variety of *Barleria longiflora* and Extended Distribution of *Barleria gibsonii*

P. Bharath Simha Yadav^{1*}, Ramesh Kandagatla², L. Paramesh³, G. Ravi⁴, Manchiryal Ravikanth⁵ and S. Karuppusamy¹

Abstract

Barleria longiflora var. *rosea* (Acanthaceae) a new variety from the Parvathagiri village, Warangal district of Telangana state, is described. Additionally, *Barleria gibsonii* Dalzell is reported here as a new distributional record for Telangana state from Amrabad Tiger Reserve. Brief description, colour photographs, and phenology are provided for better understanding of each species.

Keywords: Taxonomy; *Barleria longiflora* var. *rosea*; new taxa; *Barleria gibsonii*; Telangana; India

Introduction

The genus *Barleria* was proposed by Linnaeus (1753) on the basis of specimens collected from India. It is the third largest genus in the family Acanthaceae with 300 taxa (Balkwill & Balkwill, 1997; Mabberley, 2008). The genus *Barleria* consists of 28 taxa including 26 species, one subspecies and one variety in India belonging to 5 sections (Shendage & Yadav, 2010), in Telangana a total of 11 species are reported (Pullaiah

et al, 2015; Reddy & Reddy, 2016; Pullaiah & Sadasivaiah, 2024) i.e. *Barleria acuminata* Wight ex Nees, *B. buxifolia* L., *B. cristata* L., *B. cuspidata* F. Heyne ex Nees, *B. longiflora* L.f., *B. montana* Nees in Wall., *B. tomentosa* B. Heyne ex Roth, *B. prattiana* Santapau, *B. prionitis* L. and *B. strigosa* Willd. In fact, *B. noctiflora* L.f. distribution is doubtful, Reddy & Reddy (2016) and Pullaiah & Sadasivaiah (2024) did not provide specimen numbers or exact locations of this species, hence the distribution of this species in the state remains doubtful.

Materials and Methods

During the exploration of flora of Telangana, the authors collected two interesting specimens of genus *Barleria* from the scrubby hillocks of Parvathagiri village, Warangal District of Telangana state and Amrabad Tiger Reserve of Eastern Ghats. After a critical examination of the collected specimens and the pertinent literature (Hooker, 1886; Gamble, 1925; Shendage & Yadav, 2010; Pullaiah et al. 2015; Reddy & Reddy, 2016 and a comparison to the type specimens available at the relevant herbaria CAL, HY, BSI, BSID, K, L, MH, SUK, SGH and P.) it was found that material which collected from Parvathagiri village is hitherto undescribed variety and it is described here as *Barleria longiflora* var. *rosea* Bharath, Ramesh, Paramesh., G. Ravi & Karupp. The specimen collected from Amrabad Tiger Reserve identified as *Barleria gibsonii* representing a new distributional record for Telangana state.

Nomenclature and Taxonomy

Barleria gibsonii Dalzell, Hooker's J. Bot. Kew Gard. Misc. 2: 339. 1850. (Fig.1: A&B)

¹The Madura College (Autonomous), Madurai – 625 011, Tamil Nadu, India, (Affiliated with Madurai Kamaraj University)

²Plant Systematics Laboratory, Department of Botany, Kakatiya University, Hanamkonda-506009

³Plant Systematics and Palynology Laboratory, Department of Botany, Osmania University, Hyderabad -500007.

⁴Bharatiya Engineering Science and Technology Innovation University, Mandrol lake, Gownivaripalli, Gorantla Mandal, Sri Satya Sai District, Andhra Pradesh – 515231

⁵Wildlife Biologist, Amrabad Tiger Reserve, Telangana Forest Department

***Corresponding Author:** P. Bharath Simha Yadav, The Madura College (Autonomous), Madurai – 625 011, Tamil Nadu, India, (Affiliated with Madurai Kamaraj University), E-Mail: bharathpochamoni@gmail.com

How to cite this article: Yadav PBS, Kandagatla R, Paramesh L, Ravi G, Ravikanth M, Karuppusamy S. (2024). A New Variety of *Barleria longiflora* and Extended Distribution of *Barleria gibsonii*. *J. Indian bot. Soc.*, Doi: 10.61289/jibs2024.07.05.0168

Source of support: Nil

Conflict of interest: None.

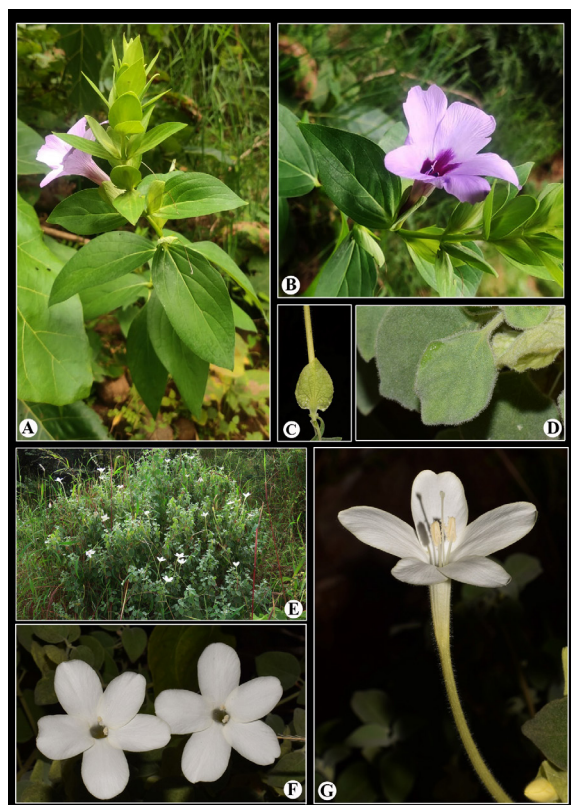


Figure 1: A&B. *Barleria gibsonii*; C-G. *Barleria longiflora* var. *longiflora*. C. Outer sepal; D. Leaf; E. habit; F. flower front view; G. flower side view (Photos by- A & B: Ravikanth; C-G: P. Bharath Simha Yadav)

Herbs or undershrubs, perennial, erect up to 1.5 m high, stem terete, angular, glabrous. Leaves ovate to elliptic lanceolate, 8–16 × 4–8; base cuneate or shortly decurrent, scabrous along margins, acute to acuminate at apex; petioles 1 – 2.5 cm long. Flowers solitary, axillary and in terminal spikes; bracts linear 1–2 × 0.4–0.8 cm, acute at apex, outer calyx lobes elliptic, acute, glabrous. Corolla 6 – 8 cm long, pink-purple; tube 3 – 4 cm long; lobes obovate, subequal, 2.5 – 3.5 × 2 – 2.8 cm, rounded at apex, with or without mauve blotches on two lateral lobes. Fertile stamens 2, exserted; filaments 2.5 – 4 cm long, glandular-pubescent at base; anthers c. 4 mm long, violet; staminodes 3, c. 2 mm long, much reduced, glandular-pubescent. Disc covering less than ¼ of ovary. Ovary ovoid, c. 4 × 2 mm, glabrous; style slender, 4 – 5 cm long, glabrous; stigma linear, papillate,

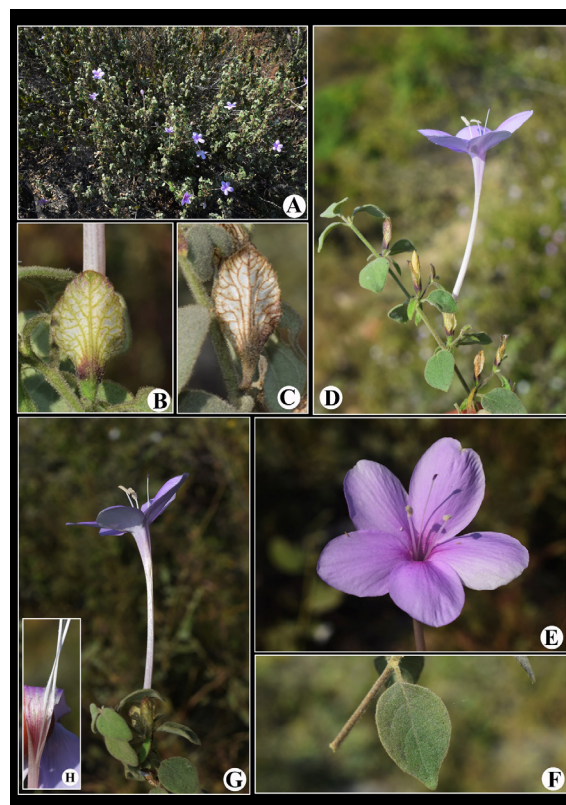


Figure 2: *Barleria longiflora* var. *rosea* A. habit; B&C. outer sepal; D. flowering twig; E. flower front view; F. leaf; G. flower side view; H. stamen base (Photos by: P. Bharath Simha Yadav)

2-lobed, violet. Capsules oblong lanceoloid, 2 – 2.5 × 0.5 – 1 cm, glabrous, turgid. Seeds subglobose, 5 – 6 × 4 – 5 mm, glabrous, dark brown.

Phenology: September – February

Habitat: Rare in moist-deciduous forests

Distribution: **India:** Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu and Telangana; **Endemic.**

Barleria longiflora* var. *rosea Bharath, Ramesh, Paramesh., G. Ravi & Karupp. **var. nov.** (Fig.2)

Diagnosis. *Barleria longiflora* var. *rosea* is similar to *B. longiflora* var. *longiflora* but differs by the 1 or 2 flowers (vs. 1 to 4), outer sepals oblong, base attenuate, margin dentate, apex rounded or acute or cuspidate (vs. ovate, base cordate, margin entire, apex rounded), inner sepals lanceolate, base

Table 1: Comparison between *Barleria longiflora* var. *rosea* and *Barleria longiflora* var. *longiflora*

Character	<i>Barleria longiflora</i> var. <i>rosea</i>	<i>Barleria longiflora</i> var. <i>longiflora</i>
Flowers	1 or 2 in inflorescence	1 – 4 in inflorescence
Outer sepals	Oblong, base attenuate, margin dentate, apex rounded or acute or cuspidate	Ovate, base cordate, margin entire, apex rounded
Inner sepals	Sepals lanceolate, base rounded	Ovate, base cordate
Corolla tube	Up to 6 cm long, pink	Up to 10 cm long, white
Corolla lobe	Elliptic to oblong, pink,	Oblong to oblanceolate, white,

rounded (vs. ovate, base cordate), corolla tube up to 6 cm, pink (vs. up to 10 cm, white), corolla lobe elliptic to oblong, pink (vs. oblong to oblanceolate, white) (Fig. 1: C-G; Table.1)

Type. India, Telangana, Warangal, Parvathagiri, 23 December 2023, P. Bharath Simha Yadav **2981** (Holo-. SGH; Iso-. BSID).

Shrubs, perennial, erect, up to 1.5–2.5 m high. Stems terete, glandular hairy. Leaves ovate to orbicular, 2.5–3.5 × 2–2.5 cm, margin entire, base rounded, apiculate at apex, glandular hairy abaxially and adaxially; lateral veins 4–6 pairs; petiole 0.8–1 cm long, glandular hairy. Inflorescence axillary terminal, 1(2)-flowered scorpioid cyme; **bracts** linear to lanceolate, leafy, 1.1–1.5 × 0.2–0.4 cm, stellate and glandular hairy, throughout, margin entire. **Outer sepals**, 2–2.3 × 1.3 cm, oblong, base attenuate, apex cuspidate, margin dentate, glandular hairy, stellate and glandular hairy outside, glabrous inside. **Inner sepals**, 0.8 × 0.3 cm, lanceolate, glandular hairy outside, glabrous inside, base rounded, margin entire, apex acute. **Corolla tube** pink, up to 6 cm long, glandular hairy outside, glabrous inside. **Corolla lobe**, 1.7 × 0.6 cm, pink colour, elliptic to oblong, entire margin, obtuse at apex, glandular hairy outside, pubescent inside. **Stamens** 2 hairy at base, exserted; sterile stamens 2, hairy, staminode one, filaments 1.8–2 cm, adnate to the tube, anther 5 × 1.5 cm. Ovary 4 × 2 mm, ovoid, disciferous; disc covering half of the ovary; style 9 cm long, hairy at base; stigma bifid, 0.8 × 0.2 mm, violet. **Capsules** ellipsoid, 1.8–2 × 0.6–0.8 cm, tip hairy. **Seeds** 4, broadly ovate, sub-cordate or truncate base, seed covered with appressed hairs.

Distribution: Known only from Parvathagiri village, Warangal district, Telangana state, India

Ecology: *Barleria longiflora* var. *rosea* has been growing on the small hillocks in association with *Barleria tomentosa* B. Heyne ex Roth, *Barleria longiflora* L.f., *Ipomoea aitonii* Lindl., *Abutilon indicum* (L.) Sweet, *Cardiospermum halicacabum* L., *Lepidagathis cristata* Willd., *Striga gesnerioides* (Willd.) Vatke, *Hibiscus micranthus* L.f., and *Chrysopogon fulvus* (Spreng.) Chiov.

Phenology: September – February

Etymology: The specific epithet is named after flower colour.

Provisional IUCN conservation assessment: Critically Endangered (CR). Fewer than 15 mature individuals of *Barleria longiflora* var. *rosea*, with an extent of occurrence of 30 km², have been found at the type locality. The proximity of the widened road, extension of agriculture, pesticides and other chemicals used in agriculture lands could pose a threat

to this species in the future. According to the latest IUCN conservation status assessment guidelines (IUCN Standards and Petitions Committee, 2022), *Barleria longiflora* var. *rosea* can be considered Critically Endangered. Nevertheless, further observations of the species are needed for a full assessment.

Conclusion

Variations in flower colour within the genus *Barleria* are common, and many species distinguished by differences in outer sepal characteristics. Current population of *B. longiflora* var. *rosea* is expanding alongside those of *B. longiflora* var. *longiflora*, along with flower colour there are considerable variation between these two species especially in outer sepal character. In Telangana, *B. cristata* and *B. montana* are displays colour variations without any discernible morphological differences in outer sepal characters, the variations in flower colour are due to ecological differences or may serve to attract various pollinators, further study is warranted to elucidate the frequency of pollinators visiting both variants. *B. gibsonii* endemic to Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu, now it extended to Telangana state.

References

- Balkwill MJ, and Balkwill K 1997 Delimitation and infra-generic classification of *Barleria* (Acanthaceae). Kew Bull. 52(3): 535 – 573.
- Comito R, Darbyshire I, Kiel C, McDade L. & Fisher AE 2022. A RADseq phylogeny of *Barleria* (Acanthaceae) resolves fine-scale relationships. *Elsevier*. 169: 1-19.
- Gamble JS 1925 Flora of the Presidency of Madras, pt. 7. London: Adlard & Sons Ltd.
- Hooker JD 1886 The Flora of British India, vol. 5. London: L. Reeve & Co.
- IUCN Standards and Petitions Committee 2022 Guidelines for Using the IUCN Red List Categories and Criteria. Version 15.1. Prepared by the Standards and Petitions Committee. Available from <http://iucnredlist.org/resources/redlistguidelines>.
- Mabberley DJ 2008 Mabberley's Plant-Book. A portable dictionary of plants, their classification and uses. Third Edition. Cambridge University Press, Cambridge.
- Pullaiah T 2015 Flora of Telangana- The 29th state of India. Regency Publications, New Delhi.
- Pullaiah T and Sadasivai B 2024. Flora of Telangana- 2nd revised edition, vol:2. Regency Publications, New Delhi.
- Reddy KN and Reddy CS 2016 Flora of Telangana State, India. Bishen Singh Mahendra Pal Singh, Dehradun.
- Shendage SM and Yadav SR 2010 Revision of the Genus *Barleria* (Acanthaceae) in India. *Rheedea* 20(2): 81-130.