



EXTENDED DISTRIBUTION OF *NEPETA BOMBAIENSIS* DALZELL (LAMIACEAE) IN THE NORTHERN WESTERN GHATS, INDIA

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The significant *Nepeta bombaiensis* Dalzell (Lamiaceae) is endemic to the Indian subcontinent. We recorded during the floristic study, which has an extended distribution in the Indian part of the northern Western Ghats region. Along with the precise representation, morphology, and vegetation, this research piece discusses the expanded distribution of the new plant species in the floristic study of the northern Western Ghats, India. *N. bombaiensis* are collected during the extensive botanical study of Maharashtra's northern Western Ghats. These species were identified as new records and an expanded distribution of the flora of Nashik district, Maharashtra, India, based on macroscopic and microscopic observations and a review of available references.

Keywords: Endemic, Extended distribution, India, *Nepeta bombaiensis*, Northern Western Ghats.

Introduction

The Lamiaceae family, one of the largest families of flowering plants, includes the Lamiaceae (Labiatae or Mint family), which has approximately 7,200 species across 236 genera worldwide¹. In India, it is represented by 443 taxa from 67 genera². *Nepeta* L. belongs to the Nepetoidea Menthaeae tribe within the Lamiaceae family. With over 296 accepted species, it is one of the larger genera in the family and is found only in the Old World. A major centre of *Nepeta* diversity is in Southwest and Central Asia, Europe, North Africa, North and Central America, Japan, Korea, China, and the Canary Islands³⁻⁵. Although Joseph Dalton Hooker (1884) identified 33 species in the Indian flora, according to Mukerjee (1940), there are currently 43 species, as noted in "A Revision of the Labiatae of the Indian Empire"⁶.

Dalzell discovered this species, *Nepeta bombaiensis* Dalzell, in the northern Western Ghats and collected the specimen as a holotype from the old hill fort of Sewnere, east of Mumbai, in 1860⁷⁻⁹. Endemism:

Shivneri Fort, Pune (Birthplace of Chhatrapati Shivaji Maharaj)¹⁰. Investigation and scientific literature survey revealed that this taxon is reported from Sewnere fort in the northern Western Ghats⁷⁻⁹. During 2020, a new locality was reported in the Flora of Tadgarh-Raoli Wildlife Sanctuary, Rajasthan¹¹⁻¹³. Studied species are also reported in the Punjab district¹⁴. It has not been reported in the flora of Nashik district¹⁵⁻¹⁷. This is a new record for the Flora of Nashik district and a new extended record in the northern Western Ghats.

Material and Methods

Specimen examined:

INDIA, Maharashtra, Trimbakeshwar taluka, Nashik district, Dhadoshi Hills 05.10.2024, Kale et al. (GPS coordinates 19.891502 N, 73.520986 E).

Taxonomic treatment:

Nepeta bombaiensis Dalz. in Dalz. & Gibs. Bombay Fl. 209. 1861; Hook. f. Fl. Brit. India 4: 661. 1885; Cooke, Fl. Pres.

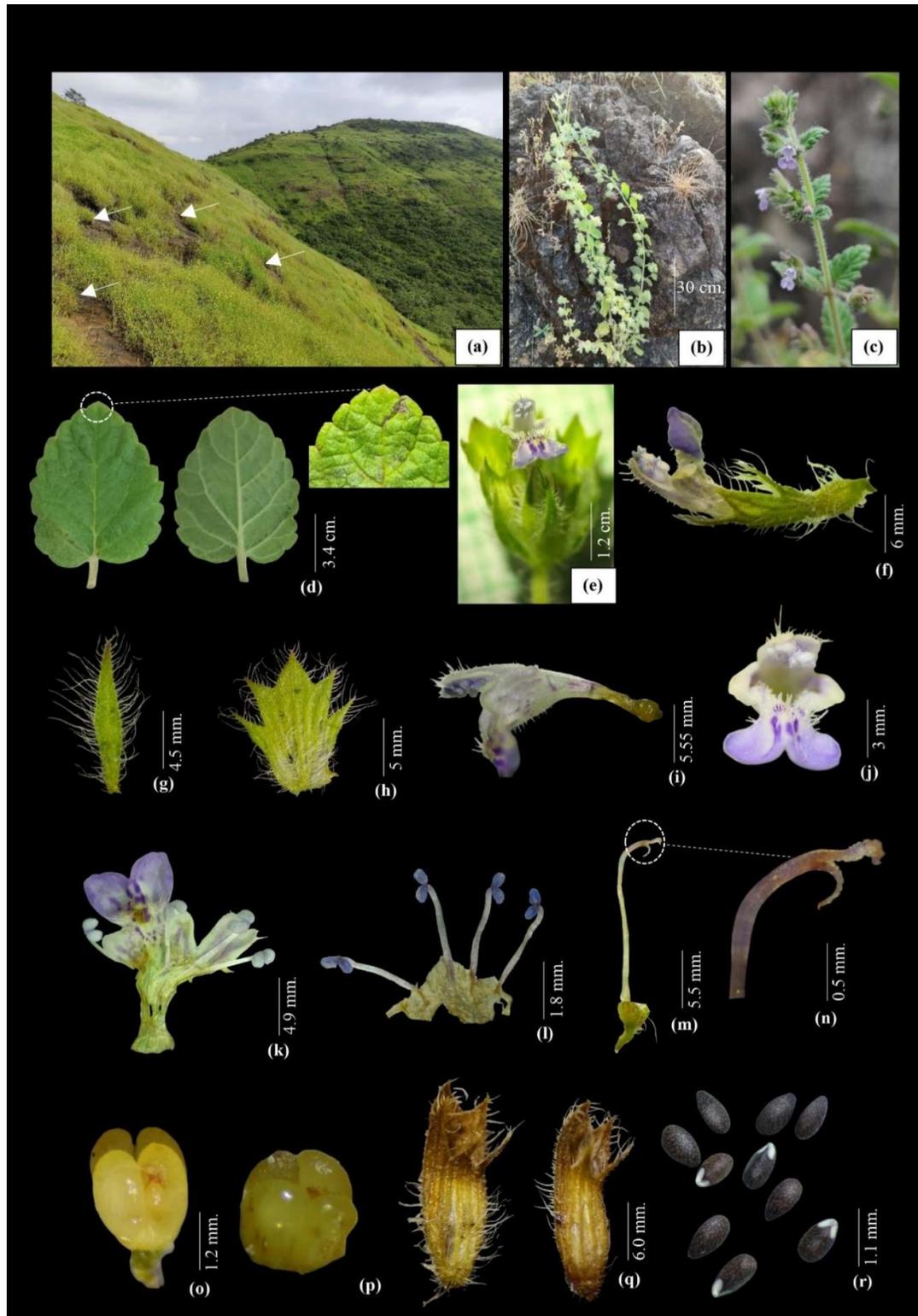


Figure 1. *Nepeta bombaiensis* Dalzell. **a** – Habitat; **b & c** – Flowering twig (Habit); **d** – Leaf; **e** – Inflorescence; **f** – Flower; **g** – Bract; **h** – Dissected calyx; **i** – Corolla; **j** – Bilabiate corolla; **k** – Dissected corolla showing stamens; **l** – Stamens; **m** – Pistil; **n** – Pistil showing bifid stigma; **o & p** – Ovary; **q** – Mature fruit with calyx; **r** – Seeds.

Bombay 2:556. 1958 (Repr.); Mukerjee in Rec. Bot. Surv. India 14 (1): 133. 1940.

Study area:

Studied plant species collected from the village of Dhadoshi, located in Trimbakeshwar taluka of Nashik district, Maharashtra, India.

During the field survey of the Northern Western Ghats of the Nashik district region. Fresh specimens were collected, photographed with a Redmi Note 13 Pro Max Mobile camera 200 MP camera, and Coslab ZSM 115 Stereo Microscopes were used for microscopical observations for important research. The specimens collected make a herbarium, and that herbarium is converted into to digital herbarium for future research. The studied specimen was identified with the help of different literature, such as floras, manuals, research notes, field notebooks, deposited herbaria, and research articles.

Herbarium consultation:

Royal Botanic Gardens, Kew (K), K000911182. Fresh or dried and pressed plant specimens were identified and described in the laboratory of the Centre of Plant Taxonomy.

All the available floras, such as Flora of British India, Flora of China, Flora Europaea, Flora of Turkey, Flora of Ladakh Range, Flora of Bombay, Flora of Maharashtra state, and Flora of Nashik district, were consulted for identification^{8,15,17-19}.

Result and Discussion

Description: Herbs, 15-30 cm high, erect, annual; stems and branches obtusely 4-angled. Leaves 3-8 x 2.5-3.2 cm, rounded-ovate, pubescent on both sides, apex subacute or rounded, base cordate or truncate, margins coarsely crenate. Flowers pale blue with purple spots, in pedunculate, axillary, 6-8-flowered cymes; bracts c 0.8 cm long, linear-lanceolate; calyx equal to bracts, pubescent; corolla-throat inflated,

tube not annulate inside, upper lip notched, lower 3-fid. Stamen 4, sky-blue anther, bifid stigma, Nutlets c 0.15 cm long, ellipsoid, smooth, dotted with white spots (Figure1).

Flowering & Fruiting: August-October.

Distribution: Pune (Maharashtra), Punjab districts, Tadgarh-Raoli Wildlife Sanctuary (Rajasthan).

Synonyms: *Glechoma bombaiensis* (Dalz.) Kuntze.

Ecology: On old hill forts and in open, moist places.

Identification of Nepeta L. species using the following key in the Western Ghats

1. Stems and leaves covered with long and spreading hairs; calyx c 0.6 cm long *N. bombaiensis*

1. Stems and leaves covered with short hairs (pubescent); calyx c 0.4 cm long..... *N. hindostana*

N. bombaiensis is a plant that is distinctive taxonomically in the northern Western Ghats of India. It was identified using Flora of British India, Flora of Maharashtra, and Flora of Nashik district, and it was confirmed by a deposited Herbarium Catalogue specimen No. K000911182^{8,15,17-19}. During the review survey, various floras were examined, such as the Flora of Nashik district, Maharashtra state, for which there are no taxonomic records of studied taxa^{15,17}. The basic literature review of accessible logical writing considered taxa that had not been added to the Flora of the Nashik district. It tends to be claimed that these are new records for the Flora of Maharashtra State, India.

Conclusion

During the floristic investigation of the northern Western Ghats, we explored the *N.*

bombaiensis Angiosperm plant taxa reported for the first time in the Flora of Nashik district. *N. bombaiensis* is a new addition and extended distribution to the vegetation of northern Western Ghats, Maharashtra State.

Acknowledgments

The authors would like to thank the Principal Prof. (Dr.) K. M. Khalkar of M.V.

P's, S.S.S.M. Arts, Science and Commerce College, Saikheda, Nashik. The authors would like to thank Head Prof. Prajakta A. Dhage, Department of Zoology, M.V. P's, S.S.S.M. Arts, Science and Commerce College, Saikheda, Nashik. Authors are also grateful to Mr. A.R. Handore and Mr. Rohit Rajole for providing facilities for recording various research support.

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