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continued on the back inside cover

Cover: Mixed media illustration of a Blue bird and Sunbird. © Lakshmi Niranjana.
New distribution record of Slender Wild Basil *Clinopodium gracile* (Benth.) Kunze (Lamiaceae: Nepetoideae: Mentheae) for the flora of Himachal Pradesh, India

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Abstract: *Clinopodium gracile* (Benth.) Kunze has been recorded for the first time in the Chamba district of Himachal Pradesh. The study provides descriptions, illustrations, and photographs to aid in the identification of the species. The new distribution record has been entrenched upon investigation based on observation and verification obtained from herbarium, literature, and plant web databases.

Keywords: Calamint, distribution, flora, identification, keys, native.

The mint family *Lamiaceae* Martinov (also known as *Labiateae* Juss.) has profound distribution, confining 232 accepted genera. According to Angiosperm Phylogeny Group (APG IV), the genus *Clinopodium* is bound within the sub-family *Nepetoideae* (Dumortier) Luerssen and tribe *Mentheae* Dumortier (Stevens 2001 onwards). *Clinopodium* L. comprises about 20 species in Asia and Europe (Li & Hedge 1994). In accord with Plants of World Online (POWO 2024), *Clinopodium* has nativity in tropical and sub-tropical regions with 186 species. The genus is commonly known as Calamint (Weakley 2010). It can be allocated from China, Indonesia, Japan, Jawa, Korea, Laos, Malaysia, Myanmar, Taiwan, Thailand, Vietnam, and India (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, & Tripura). It commonly flourishes near river banks, wild/semi-wild areas, and alongside forest margin sites (Li & Hedge 1994). In accord with Cantino & Wagstaff (1998), the species is associated with a morphologically diverse and taxonomically complex group called the ‘clinopodioid complex’. The species retain a 2n = 18 chromosomes number and distinct in possessing one vascular bundle in its petiole (Hsieh & Huang 1998).

*Clinopodium gracile* is known as slender wild Basil (Zomlefer et al. 2011). According to Mao & Dash (2020), *Clinopodium* is represented by three species in Himachal Pradesh: *Clinopodium capitellatum* (Benth.) Kunze, *C. gracile* (Benth.) Kunze, *C. hydaspidis* (Falc. ex Benth.) Kunze, *C. javanicum* (Blume) I.M.Turner, *C. piperitum* (D.Don) Murata, *C. umbrosus* (M.Bieb.) K.Koch., and *C. vulgare* L. The species *Clinopodium gracile* is native to Asia (Weakley 2010). It can be allocated from China, Indonesia, Japan, Jawa, Korea, Laos, Malaysia, Myanmar, Taiwan, Thailand, Vietnam, and India (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, & Tripura). It commonly flourishes near river banks, wild/semi-wild areas, and alongside forest margin sites (Li & Hedge 1994). In accord with Cantino & Wagstaff (1998), the species is associated with a morphologically diverse and taxonomically complex group called the ‘clinopodioid complex’. The species retain a 2n = 18 chromosomes number and distinct in possessing one vascular bundle in its petiole (Hsieh & Huang 1998).

*Clinopodium gracile* has been recorded for the first time in the Chamba district of Himachal Pradesh. The study provides descriptions, illustrations, and photographs to aid in the identification of the species. The new distribution record has been entrenched upon investigation based on observation and verification obtained from herbarium, literature, and plant web databases.
examined 'Clinopodium gracile' is the seventh addition of Clinopodium species to the flora of Himachal Pradesh.

**MATERIALS AND METHODS**

The first author collected the plant specimen from Gajnoi region during a field trip in Chamba district, Himachal Pradesh. Field photographs, and GPS location were recorded and flowering plant parts were collected for further investigations. The morphological attributes, including stem, leaves, inflorescence, bract, flowers, calyx, corolla, androecium, and gynoecium have been studied. The vegetative and reproductive features have been examined and the species was identified as Clinopodium gracile (Benth.) Kuntze. Further, the species identity was confirmed based on microfilms of herbarium records as furnished in specimen examined section. The voucher specimen of the presently examined species has been deposited in GUBH. The map showing the precise location of Clinopodium gracile in the Chamba district of Himachal Pradesh has been laid out (Figure 1).

**Taxonomic treatment**

New distribution record of Clinopodium gracile from Himachal Pradesh

Chandra & Kalita


New distribution record of *Clinopodium gracile* from Himachal Pradesh
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Description
Small perennial herb, slender, stoloniferous; Stem quadrangular, numerous, tufted, erect or procumbent at the base, ascending, 8–30 cm, retrorse, pubescent; Leaves opposite, basal leaves circular-ovate, 1.2–1.5 × 1–1.1 cm, base rounded, apex obtuse, margin remotely crenate, lower and mid stem leaves ovate, 1.5–2.5 × 1–1.5 cm, papery, sub-glabrous, abaxially sparsely hispid on veins, apex obtuse, base rounded to cuneate, margin remotely dentate or crenate-serrate, petioles 0.3–1 cm; Inflorescence verticillaster, few flowered (5–10), lax or dense, crowded in short terminal raceme, floral leaves ovate-lanceolate, 0.5–1 × 0.3–0.8 cm, margin serrate, acute; Bract linear, acute, puberulous, much shorter than pedicel; Flower rose-pink, 5–7 × 3–4 mm, pedicel 1–3 mm; Calyx tubular, base rounded, ca. 3–5 mm and declinate in fruit, puberulent or subglabrous, minutely hispid on veins, throat sparsely fine pilose, teeth ciliate, lower two subulate, upper three triangular, reflexed in fruit; Corolla ca. 4.5 mm, puberulent; nutlets ovoid, smooth 0.4–0.5 mm (Image 1 and Figure 2).

Common name: Calamint, Savory, Slender Wild Basil,
New distribution record of Clinopodium gracile from Himachal Pradesh Chandra & Kalita


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Taxonomic note

The specific epithet ‘gracile’ (Latin–gracilis) suggests the slender and delicate habit of the species. Calamintha gracilis Benth. is the basionym for Clinopodium gracile (Benth.) Kuntze. Bentham (1848) showed uncertainty about the species kinship to the genus ‘Clinopodium’. He further considered Clinopodium gracile features somewhere between Clinopodium debilis (C. debile) and Clinopodium umbrosa (C. umbrosum). Ohwi (1965) mentioned four varieties of Clinopodium gracile viz. C. gracile var. latifolium (H.Hara) Ohwi, C. gracile var. minimum (H.Hara) Ohwi, C. gracile var. multicaule (Maxim.) Ohwi, C. gracile var. sachalinense (F. Schmidt) Ohwi. However, these remain as synonyms of C. latifolium, C. multicaule var. yakuosimense, C. multicaule, C. micranthum var. sachalinense respectively. No infra-specific ranks are available for Clinopodium gracile (POWO 2024).

Discussion

Chen et al. (2013) reported 34 essential oil compounds in Clinopodium gracile with higher content of sesquiterpenoids followed by monoterpenoids. Thus, the species occurring in the Himachal Pradesh region can also act as a potent therapeutic plant. The species can be efficacious in floristic, biodiversity, and conservation studies. The present examined species is similar in morphological description provided by Weakley (2010).

Conclusion

The perennial herb Clinopodium gracile, was collected from natural habitat of Gajnoi, Chamba district of Himachal Pradesh. The location site was specified with 12 numbers of C. gracile plants, growing in deteriorated broad-leaved oak and pine forest. Few other species flourishing along with C. gracile were Ageratum conyzoides L., grasses being Cynodon sp., Stachys sp., ferns such as Diplazium sp., and Matteuccia sp. The species might be a prospective for multitude of medicative activities. The findings can further assist in exploring the extended distribution of C. gracile in the western Himalayan belt.

References


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