



## Extension in Distribution Range of 11 Flowering Plants in Peer Panjal Range of Lesser Himalayas of Jammu Province, Jammu and Kashmir

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### Abstract

The present study involves the new distributional record of eleven species of angiosperms from the Western most of the Himalayas (Peer Panjal) of Jammu province, Jammu and Kashmir. During the biodiversity exploration in this region for almost three years involving all seasons, it was found that the mentioned species of angiospermic flora were never recorded from this region of the Himalayas of Jammu province hence documented for the first time. The study involves the complete taxonomical analysis in the field followed by the collection of specimens for the herbarium. The detailed description, photographs and necessary details were provided in the manuscript.

**Keywords:** *Distributional record, Angiospermic, Jammu Province, Exploration, Lesser Himalayas.*

### Introduction

The Territory of Jammu Kashmir falls in the great northwestern Himalayan range having antecedent drainage, snow-capped hills and most importantly highly rich in biodiversity. It is located in the northern part of the Indian subcontinent in the vicinity of the Karakoram and western mountain ranges. The region is highly enriched in various types of habitats for diverse forms of floral and faunal biodiversity. The Himalayas are recognized as a global biodiversity hotspot (Mittermeier, *et al.*, 2005), however many parts of this biologically important region are still to be explored from the biodiversity point of view. The Jammu and Kashmir state in the Western Himalayas is one of the regions which is under-explored floristically according to the Botanical Survey of India (Dar, *et al.*, 2012). The territory of the state is divided into seven physiographic zones closely associated with the structural components of the western Himalayas; including the plains of Jammu regions, the foothills, the Lesser Himalayas comprise the Peer Panjal range which is the westernmost part of the Lesser Himalayas, the greater Himalayas, Valley of Kashmir, The upper Indus valley and the Karakoram range.

The Peer Panjal range of lesser Himalayas of Jammu province comprised the Rajouri and Poonch districts, which is the least surveyed region for biodiversity exploration (Dar, *et al.*, 2014). In the present documentation, we have recorded about 11 angiospermic plants which were not collected earlier from the Peer Panjal region of Jammu Province hence their distribution range in this region is analyzed for the first time.

### Material and Methods

#### Study Area

The Jammu province consists comprises the plains and part of Peer Panjal Himalaya of lesser Himalaya having various forms of habitats for floral diversity. The Peer Panjal range of Jammu province is comprised of twin districts Rajouri and Poonch enormously rich in biodiversity. Rajouri district was carved out of Poonch district in 1968. It shares a long border from Sunderbani to Bhimbergali with Pakistan-occupied Kashmir (PoK) in the west. It is bounded by Udhampur district in the east and by Jammu in the southeast. The northern part of the district consists of hilly terrain. The geographical area of the district is

2,630 sq. km. It comprises six tehsils, namely, Thanamandi, Rajouri, Budhal, Kalakote Sunderbani, and Nowshera. Poonch town, the headquarters of the district by the same name, is situated at a distance of 246 km. northwest of Jammu. The town is at a height of 3,287 feet above sea level. It is surrounded by the Line

of Control (LoC) on three sides and is separated from Kashmir Valley by the mighty Pir Panjal range in the north. The geographical area of the district is 1,674 sq. km. comprising three tehsils, viz., Mendhar, Surankote, and Haveli (Poonch).

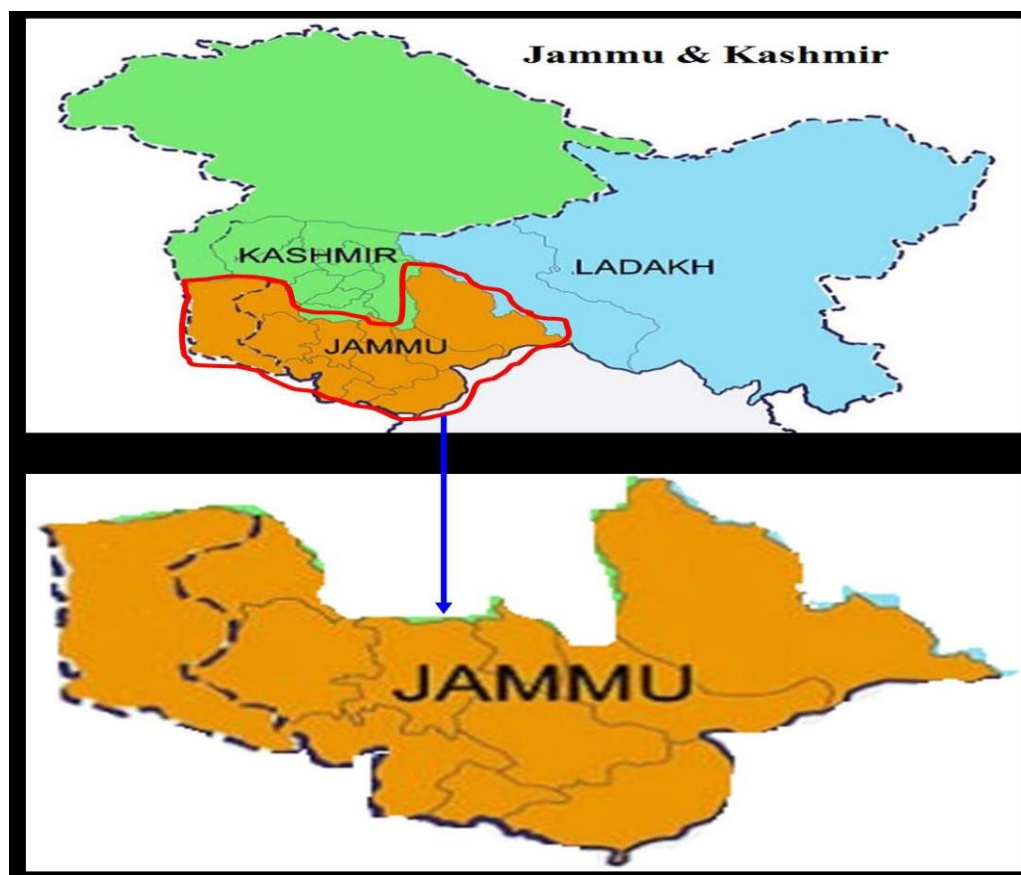


Fig 1: Study area; Jammu province of Jammu and Kashmir

## Methodology

During the biodiversity exploration surveys in the Peer Panjal region of lesser Himalayas of Jammu Province over three years in different seasons twelve flowering plants were collected, taxonomically studied in the field followed by the collection of herbarium specimens which are submitted to the herbarium of Department of Botany KL DAV PG College Roorkee. The plants were identified using different available literature, online and offline floras (Hooker, 1872-97), Stewart, (1972), Singh and Kirn, (1981); Sharma and Kachroo, (1981-82), Vir Jee, *et al.*, (1984); Dar, *et al.*, (2009); Malik, *et al.*, (2010); Dar, *et al.*, 2014); <https://efloraIndia.gov.in.>; <http://www.plantsoftheworldonline.org>), and

eflorachina, etc. These members of different families of angiosperms are recorded for the said range of the Himalayas of Jammu province. The taxonomic details, photographs and other necessary details are provided in the manuscript.

## Results

The study involves collection of 11 species belonging to from the Peer Panjal range of Jammu Province belonging to 10 genus and 8 families with Asteraceae 3, Onagraceae 2, and others Fabaceae, Geraniaceae, Campanulaceae, Phrymaceae, Rubiaceae and Rosaceae with 1 member of each family.

*Adenostemma lavenia* (L.) Kuntze, Revis. Gen. Pl. 1: 304. 1891. *Verbesina lavenia* L., Sp. Pl. 2: 902. 1753. *Adenostemma angustifolium*

Arn., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 18: 347. 1836. *Adenostemma viscosum* sensu Hook.f., Fl. Brit. India 3: 242. 1881, p.p., non J.R. Forst. & G.

Forst., 1776. *Adenostemma elatum* D. Don, Prodr. Fl. Nepal., 181. 1825. *Adenostemma viscosum* J.R. Forst. & G. Forst. var. *elatum* (D. Don) C.B. Clarke, Compos. Ind., 29. 1876.



*Adenostemma lavenia*

Annual herbs, 25-95 cm tall. Stems erect, solitary, rigid, usually divaricately branched in upper part, white puberulent, glabrous in lower part. Leaves remote; basal leaves persistent or withered at anthesis; median leaves large; petiole narrowly winged, 0.5-3.5 cm; blade elliptic-lanceolate to elliptic or rhombic-elliptic, or broadly ovate to cordate, 4-11 × 1.8-4 cm, both surfaces sparsely puberulent or glabrescent, usually rather densely hairy on veins, base broadly or narrowly cuneate, margin crenate or incised, serrate, or doubly serrate, apex acute or obtuse; upper and lower leaves smaller, shortly petiolate. Capitula few, rarely many, small, in a lax or dense corymb or panicle; peduncle 0.8-3 cm, gray-white or ferruginous puberulent; involucre hemispheric, 3.5-5 × 5-7 mm, in diameter, fruiting; phyllaries 2-seriate, green, subequal, narrowly elliptic, thin, submembranous, outer phyllaries mostly connate, sparsely white villous, apex obtuse;

corollas ca. 2.4 cm, viscid-glandular, pubescent. Achenes blackish brown when mature, oblanceolate, ca. 3.8 × 1 mm, glandular, sometimes densely tuberculate, contracted at base, apex obtuse; pappus elements clavate, ca. 4.1 mm, basally connate into a ring, fulvous viscid-glandular.

**Flowering and fruiting:** Aug-Oct.

**Specimen Examined:** Phalni Rajouri of Jammu province, Jammu and Kashmir India on 7-09-2021, Ahmed and Dhiman 092119 (KLDH).

**Distribution:** India Nepal, Phillipines, Thailand, Myanmar, Japan, Korea, Taiwan, Australia etc.

*Argostemma sarmentosum* Wall. in Roxb., Fl. Ind ed. Carey & Wall. 2: 324. 1824. DC., l.c.; Hook. f., Fl. Brit. Ind. 3:42. 1880.



*Argostemma sarmentosum*

Small succulent herb, creeping at the base. Stem 6-13 cm long, slender, softly pubescent, sending out long filiform runners. Leaves opposite decussate, opposite pair unequal, uppermost smaller, ovate elliptic or rounded, entire, obtuse, smaller 1-2 cm and larger up to 10 cm long, puberulous above, villous on nerves beneath; petiole c.1.5-2.8 mm. Inflorescence a terminal umbel or corym biform raceme, 6-10-flowered., Peduncle 2.5-5.8 cm long, fleshy, glabrous; bracts ovate, 3-4 mm long. Flowers white, c. 1.5 cm across. Pedicel 7-8 mm long. Hypanthium c. 1.5 mm long, concave, lobes 4, c. 2 mm, ovate, acute, pubescent. Corolla lobes 4, valvate in bud, 6-7 x 2-3 mm, lanceolate, acute, greenish at the base; tube very short, throat naked, filaments short, inserted in the throat, c. 2.5 mm, bent downwards, anthers, c. 6 mm long. Disc somewhat thickened. Ovary 2-locular, many-ovuled; style c. 7 mm, filiform; stigma fleshy, concave, capitate.

**Flowering:** August.

**Specimen Examined:** Khambi Rajouri of Jammu province, Jammu and Kashmir India on 12-08-2022, Ahmed and Dhiman 092116 (KLDH).

**Distribution:** India (Jammu and Kashmir, Assam, Meghaya, Punjab, Sikkim, Uttarakhand, West Bengal) Bhutan and Pakistan.

*Dumasia villosa* Candolle, Ann. Sci. Nat. (Paris). 4: 97. 1825. *Apios martini* H. Léveillé; *Dumasia bicolor* Hayata; *D. glaucescens* Miquel; *D.*

*leiocarpa* Bentham; *D. pubescens* Candolle; *D. villosa* var. *arunachalensis* Predeep&M.P.Nayar; *D. villosa* subsp. *bicolor* (Hayata) Hayata; *D. villosa* var. *leiocarpa* (Bentham) Baker; *Erythrina mairei* H. Léveillé.



*Dumasia villosa*

Herbs twining. Stems villous. Stipules small, linear-lanceolate or setiform, 2-3 mm, densely villous; petiole 4-9 cm, densely hairy; petiolules 2-3 mm, hairy; leaflets papery; terminal leaflet ovate to broadly ovate, 3-7 × 2.5-4.5cm, both surfaces densely adpressed villous, lateral veins 4-6 pairs, base rounded, almost truncate or broadly cuneate, apex obtuse or slightly concave, with mucro; lateral leaflets slightly smaller and oblique. Raceme axillary, 4-11(-15) cm, flowers clustered or slightly sparse; peduncle obvious; bracts and bracteoles small, setiform. Flowers 1.5-1.8 cm; pedicel short, ca. 2 mm, pubescent. Calyx ca. 10 mm, glabrous or sparsely adpressed hairy. Corolla yellow; petals subequal, with obvious claws; standard obovate; wings and keels oblong-elliptic, with long claws, auricles

absent. Style long, hairy, compressed near top; stigma capitate. Legume oblong, constricted between seeds, 2-3 × ca. 0.5 cm, densely yellow villous.

Seeds 1-4, black or blue.

**Flowering:** Sep-Oct, **fruiting:** Nov-Dec.

**Specimen Examined:** Chambitarar of Koternaka of Jammu province, Jammu and Kashmir India on 01-09-2021, Ahmed and Dhiman (KLDH).

**Distribution:** Bhutan, India, Indonesia, Laos, Malaysia and Myan.

*Erodium cicutarium* (Linnaeus) L'Héritier ex Aiton, Hort. Kew. 2: 414. 1789. *Geranium cicutarium* Linnaeus, Sp. Pl. 2: 680. 1753.



*Erodium cicutarium*

Annuals 13-40 cm tall. Stems numerous, erect to decumbent. Stipules triangular-lanceolate, 2-6 mm. Leaves opposite or alternate; leaf blade triangular-lanceolate to oblong-lanceolate, 5-18 cm, pinnately divided to pinnately cleft, 5-12-lobed with basal ones more deeply incised, both surfaces appressed pilose. Pseudumbels conspicuously longer than leaves, with 3-10 hermaphrodite flowers; peduncle with glandular and nonglandular trichomes. Pedicel 0.8-1.7 cm. Sepals ovate, 3-6 mm, glandular and hirsute, apex acute. Petals uniformly purple or 2 with a basal black spot, obovate, 5-12 mm. Mericarp 3-7mm, with apical pit, with or without ridges or furrows; awn not plumose.

**Flowering:** Jun-Jul, **fruiting:** Jul-Oct.

**Specimen Examined:** Anas river of Koternaka of Jammu province, Jammu and Kashmir

India on 01-09 -2021, Ahmed and Dhiman (KLDH).

**Distribution:** Afghanistan, North Western India, Taiwan, Pakistan, Russia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan; N Africa, SW Asia, Europe.

*Aruncus dioicus* (Walter) Fernald, Rhodora 41: 423. 1939. *Actaea dioica* Walter, Fl. Carol. 152. 1788. *Aruncus vulgaris* Raf., Sylva. Tellur. 152. 1838, nom. nud. *Aruncus sylvester* Kostel., Ind. Pl. Hort. Prag 15. 1844, nom. nud. *Aruncus sylvester* Kostel. ex Maxim., Trudy Imp. S.Peterburgsk. Bot. Sada 6: 169. 1879. *Aruncus sylvester* ex Maxim. var. *vulgaris* Maxim., Trudy Imp. S.Peterburgsk. Bot. Sada 6: 170. 1879. *Spiraea aruncus* L., Sp. Pl. 1: 490. 1753.



*Aruncus dioicus*

Plants to 3 m tall, woody at base. Stems dark purplish, glabrous. Leaves 2- or 3-pinnate; petiolules 4–10 mm; leaflets rhombic-ovate, ovate-lanceolate, or long elliptic, 5–12 × 2–7 cm, subglabrous on both surfaces, base cuneate, margin irregularly toothed, apex acuminate to long acuminate. Panicle lax, 9–38 × 6–16 cm;

peduncle and pedicels glabrescent in fruit; bracts and bracteoles sparsely pubescent. Flowers 2–4 in diam.; pedicel ca. 2 mm. Hypanthium slightly pubescent. Sepals spreading or erect in fruit. Male flowers with filaments ca. 2 × as long as petals.

**Flowering:** Jun, **fruiting:** Aug–Sep.

**Specimen Examined:** Forests of Koternaka of Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman (KLDH).

**Distribution:** Bhutan, NW India (Himachal Pradesh), Japan, Korea, Mongolia, Nepal, Russia, Sikkim; SW Asia, Europe.

*Dichrocephala integrifolia* (L.f.) Kuntze, Revis. Gen. Pl. 1: 333. 1891. *Grangea latifolia* Poir. in Lam., Encycl. suppl. 2: 826. 1812. *Dichrocephala latifolia* (Poir.) DC. in Wight, Contr. Bot. India, 11. 1834. *Dichrocephala bicolor* (Roth) Schltld., Linnaea 25: 209. 1852.



***Dichrocephala integrifolia***

Erect annual herbs, 30-70 cm high, with tap roots, moderately to scarcely pilose to hirsutulous, the hairs often adpressed. Leaves alternate, lyrate-pinnatifid to simple, petiolate, blades 3-10 × 2-6.5 cm, with 3-5 lobes, the apical one larger, ovate to subcordate, 2.5-8 × 1.5-5 cm, palmately veined, the lower lobes often reduced to absent, lobe margins serrate, petioles 0.9-4 cm long. Capitulescence cymose paniculiform. Heads small, ovoid to subglobose, peduncles 1.5-3 mm long, heterogamous, disciform; involucre saucer 1 × 3 mm, phyllaries biseriate, equal or subequal in length, lanceolate, green. Peripheral flowers numerous (80+), in 6-8 series, pistillate and fertile, corollas white, tubular, 0.4-0.5 mm, with 4 apical lobes. Disk flowers 12-16, perfect, fertile, corollas green to yellowish, campanulate, with a short tube and four

apical lobes, 0.8-1.0 mm, with few resinous dots, anthers brown, style with two extremely short deltoid branches. Cypselae obovate to oblanceolate, 1.0- 1.2 × 0.4 mm, compressed, greenish to pale brown, with glands near apex, somewhat glutinous, pappus absent or of 1-2 readily deciduous, white bristles, 0.4 mm long. Receptacle convex-columnar.

**Flowering:** All around the year.

**Specimen Examined:** Tarkasi area of Koternaka, Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman 092199 (KLDH).

**Distribution:** India, Nepal, Myanmar, Vietnam, Indonesia, Africa, Australia etc.

*Circaea alpina* Linnaeus, Sp. Pl. 1: 9. 1753.



***Circaea alpina***

Plants 3-50 cm tall, glabrous or pubescent with short falcate hairs on stem and short glandular hairs in inflorescence. Rhizomes with tuberous thickening at apex. Leaves highly variably shaped from narrowly trullate or elliptic to nearly circular, 1-11 × 0.7-5.5(-8) cm, base narrowly cuneate to cordate, margin subentire to sharply serrate, apex acute to shortly acuminate. Terminal raceme 0.7-2 to 12(-17) cm. Flowering pedicels perpendicular to axis of raceme (in *C. alpina* subsp. *Caulescens* and some plants of subsp.

*angustifolia*) to ascending or erect, with or without a minute setaceous bracteole at base. Buds glabrous, rarely glabrescent; floral tube ranging from nearly absent to 0.6 mm. Sepals, spreading or slightly reflexed, white or pink, occasionally purple tinged at apex, rarely purple throughout, oblong, ovate to broadly so, or triangular-ovate, 0.8-2 × 0.6-1.3 mm, glabrous, apex rounded to obtuse or minutely mammiform. Petals white, narrowly obtriangular, obdeltoid, obovate to broadly so to depressed-obovate, 0.5-2 × 0.6-1.9 mm,

apical notch essentially lacking or to 1/2 length of petal; petal lobes rounded to truncate, rarely somewhat crenulate (in *C. alpina* subsp. *an gustifolia*). Stamens erect or ascending, less commonly spreading, equaling or slightly longer than style; nectary wholly within floral tube and inconspicuous. Fruiting pedicel and mature fruit 3.5-7.8 mm. Fruit clavate or obovoid, 1.6-2.7 × 0.5-1.2 mm, tapering smoothly to pedicel, locule 1, seed 1, without ribs or sulci, but pedicel extending as a shallow groove along upper surface.

**Flowering:** Aug- Oct.

**Specimen Examined:** Chambitar of Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman 0921100 (KLDH).

**Distribution:** Afghanistan, Bhutan, India, Japan, Kazakhstan, Korea, Mongolia, N Myanmar, Nepal, Russia, Thailand, NW Vietnam.

*Circaea cordata* Royle, Ill. Bot. Himal. Mts. 211. 1835.



*Circaea cordata*

*Circaea cardiophylla* Makino; *C. ×hybrida* Handel-Mazzetti; *C. kitagawae* H. Hara. Plants 20-150 cm tall, pubescent, usually densely so, with long, soft, spreading hairs, soft, falcately recurved hairs, and capitate and clavately tipped glandular hairs. Rhizomes not tuberous. Leaves narrowly to broadly ovate, 4-13 × 2.3-11 cm, base broadly cuneate to broadly rounded or truncate or more commonly cordate, margin denticulate to subentire, apex shortly acuminate. Racemes simple or branched near base, 2-20 cm; flowering pedicels ± clustered and perpendicular to axis of raceme, pubescent, with a minute setaceous bracteole at base. Buds with few to many, long, straight or slightly curved, rarely hooked, hairs. Floral tube 0.6-1 mm. Sepals reflexed in flower, white or pale green, ovate to broadly so, 2-3.7 × 1.4-2 mm, apex broadly to narrowly

rounded to obtuse. Petals reflexed, white, ovate to broadly so, or depressed-obovate to broadly obovate, 1-2.4 × 1.2-3.1 mm, apex obcordate, apical notch 1/2-2/3 length of petal, petal lobes broadly rounded. Stamens spreading, shorter than to ca. as long as style; nectary wholly within floral tube and inconspicuous. Fruiting pedicel and mature fruit 4.4-7 mm. Fruit 3-3.9 × 1.8-3.3 mm, locules 2, obliquely obovoid to lenticular, abaxially flattened, base obliquely rounded or truncate to pedicel, with low, corky thickenings along margins and between locules, without prominent sulci. Seed 1 per locule.

**Flowering:** Jun-Aug, **fruiting:** Jul-Sep.

**Specimen Examined:** Chambitar of Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman 0921101 (KLDH).

**Distribution:** N India, Japan, Korea, Nepal, Pakistan, Russia.

*Phryma leptostachya* L., Sp. Pl. 2: 601. 1753. *Phryma oblongifolia* Koidz., Bot. Mag. (Tokyo) 43: 400. 1929. *Phryma leptostachya* var. *oblongifolia* (Koidz.) Honda, Bot. Mag. (Tokyo)

50: 608. 1936. *Phryma leptostachya* var. *asiatica* H. Hara, Enum. Spermatoph. Jap. 1: 297. 1948. *Phryma leptostachya* subsp. *asiatica* (H.Hara) Kitam., Acta Phytotax. Geobot. 17: 7. 1957. *Phryma asiatica* (H.Hara) O. Deg. & I. Deg., Phytologia 22: 212. 1971.



*Phryma leptostachya*

Herbs, perennial, (10-) 30-80(-100) cm tall. Stems simple or sometimes with apical branches bearing inflorescences, erect, 4-angular, apically pubescent or rarely subglabrous. Leaves petiolate or sometimes apical ones sessile; petiole to 4 cm, puberulent; leaf blade ovate-oblong, ovate-lanceolate, ovate-elliptic, ovate-triangular, or broadly ovate, 1-16 × 1-8 cm, herbaceous, both surfaces puberulent and sometimes more densely so along veins, secondary veins 4-6 on each side of midvein, base cuneate, rounded, or truncate but often decurrent for middle and basal leaves, margin serrate, dentate, or crenulate, apex acuminate, acute, or rarely subrounded. Spikes terminal or axillary, puberulent; peduncle 3-20 cm; inflorescence axis 10-30 cm; bracts subulate to linear, 1-2.5 mm. Pedicel short, erect at anthesis but later reflexed; bracteoles 2, at base of pedicel, subulate to linear, 0.5-2 mm. Calyx tubular, 5-ribbed, puberulent outside; tube 2.5-3.2 mm at anthesis; abaxial teeth 2, triangular, ca. 0.3 mm; adaxial teeth 3, subulate, 1.2-2.3 mm, apex ± hooked. Corolla light purplish, pale

red, to white, tubular-funnelform, 6.5-7.5 mm, glabrous outside; tube 4-4.5 mm, ca. 1.5 mm broad at mouth, inside anteriorly puberulent; limb 2-lipped; abaxial lip 2.5-3 mm, apex 3-lobed with central lobe larger; adaxial lip erect, 1.3-2 mm, apex 2-lobed. Stamens inserted in corolla tube 2.5-3 mm from base, glabrous; filaments filiform, 1.5-1.8 mm, anterior 2 longer; anthers reniform-spherical, 0.3-0.4 × ca. 0.5 mm. Gynoecium glabrous; ovary obliquely oblong-lanceolate, 1.9-2.2 mm; style 3-3.5 mm; stigma 2-lipped, basal lip longer and oblong. Achene long ellipsoid, enveloped in persistent clavate calyx; persistent calyx tube 4.5-6 mm.

Flowering: Jun-Oct, **fruiting:** Aug-Dec.

**Specimen Examined:** Forests of Koteranka, Rajouri, Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman (KLDH).

**Distribution:** Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Uttarakhand.

*Symphotrichum subulatum* (Michx.)  
G.L.Nesom. *Aster subulatus* Michaux, Fl. Bor.-

Amer. 2: 111. 1803.



*Symphotrichum subulatum*

Annual herb, 16–200 cm tall. Stem erect, branched, glabrous, green, becomes purplish on maturity. Leaves of two types: basal leaves petiolate, lanceolate to ovate, wither at anthesis; cauline leaves sessile, linear to lanceolate, 2–14 × 0.1–1.0 cm, becoming smaller in size upwards, adaxial and abaxial leaf surfaces glabrous, base attenuate, margin serrulate to entire, apex acute. Inflorescence capitula in paniculiform synflorescences. Involucre cylindrical, phyllaries 3- or 4 seriate, lanceolate, clearly unequal, 2–6 × 0.2–0.5 mm, margin entire, tip acute and prominently purplish. Ray florets 2- or 3 seriate, 34–36 in number, 6–7 mm long, lamina bluish or pinkish white, coiling backwards; stigma bifid; bristles whitish, 3–4 mm long. Disc florets 12–14 in number,

yellow, 5–6 mm long; lobes erect and triangular; stigma feathery and spoon-shaped. Fruit cypsela (achene), lanceoloid, 2.5 × 0.6 mm, 6-veined, strigillose. Pappus bristly, white, 3–4 mm long. (Figs. 2A–G, 3A–I).

**Flowering and fruiting:** August to November.

**Specimen Examined:** Chambitar, Rajouri, Jammu province, Jammu and Kashmir India on 23-07-2021, Ahmed and Dhiman (KLDH).

**Distribution:** Jammu and Kashmir, Punjab, Himachal Pradesh and Uttarakhand.

*Lobelia heyneana* Schultes, Syst. Veg. 5: 50. 1819. *Lobelia trialata* Buchanan-Hamilton ex D. Don; *L. trialata* var. *asiatica* Chiovenda.



*Lobelia heyneana*

Herbs, annual, 10-50(-60) cm tall. Stems erect, 3-angular, winged, glabrous, branched. Leaves alternate; petiole 1-4 mm, winged; blade broadly deltoid-ovate, 0.8-2.5 × 0.4-2.5 cm, upper ones smaller and more narrow, abaxially glabrous, adaxially sparsely puberulent, base truncate or shallowly cordate, often decurrent, apex rounded or acute. Flowers solitary, axillary at leaflike bracts, often forming a raceme; bracts narrowly elliptic, shorter than pedicels; pedicels 1-1.5(-2) cm, slender, with 2 bracteoles at base; bracteoles subulate, less than 1 mm, often caducous. Hypanthium campanulate, 1-2 mm, glabrous; calyx lobes longer than hypanthium at anthesis, but shorter than tube after anthesis, subulate, 2-3 mm, entire. Corolla pale purple, 3-5 mm, inside sparsely puberulent; limb 2-lipped, upper lobes erect, linear, less than 1 mm; lower lobes spreading, elliptic to suborbicular, ca. 2 mm. Stamens connate into tube above middle of filaments; anther tube ca. 1 mm, lower 2 anthers barbate at top. Capsule oblong or obovoid-oblong, 4-5 × 2-4 mm. Seeds pale red-brown, ellipsoid, slightly compressed, smooth.

**Flowering and fruiting:** Jan - Dec.

**Specimen Examined:** Panihad area of Koteranka, Rajouri, Jammu province, Jammu

and Kashmir India on 11-08-2021, Ahmed and Dhiman (KLDH).

**Distribution:** India (Sikkim, Himachal Pradesh, Uttarakhand, West Bengal (Darjeeling), Bhutan, Indonesia, Myanmar, Nepal Sri Lanka, Thailand and Africa.

### Conclusions

The present study from the Peer Panjal range of lesser Himalayas involving a distribution record of 11 unknown species to that area indicates that the region is least explored from a biodiversity perspective. This region of the Himalayas is enriched with diverse habitats and hence diverse forms of vegetation distributed throughout the province. This study will help further researchers and scientists to carry out further researches in the said region.

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