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Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

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Cover: A Southern Rockhopper Penguin *Eudyptes chrysocome* stands on Tussock Grass on Westpoint Island. Painted in poster colors, this artwork is a reproduction of a photograph by Phillip Colla. Thanks to the photographer for the original image. © Pooja Patil.



Acrospelion alpestre (Aveneae: Poaceae) in India: a new generic record from northwestern Himalaya

Kuntal Saha¹ , Manoj Chandran² , Ranjana Negi³ & Saurabh Guleri⁴

^{1,4} Department of Botany, Shri Guru Ram Rai University, Patel Nagar, Dehradun, Uttarakhand 248001, India.

² Indian Forest Service, Uttarakhand Forest Department, Dehradun, Uttarakhand 248001, India.

^{1,3} Systematic Botany Discipline, Forest Botany Division, Forest Research Institute (FRI), Dehradun, Uttarakhand 248006, India.

¹ kuntalsaha121@gmail.com, ² machanifs@gmail.com, ³ ranjananegi.icfre@gmail.com, ⁴ saurabhguleri@sgrru.ac.in (corresponding author)

Botanical explorations focused on collecting grass species have enhanced the understanding of Indian grasses (Saha et al. 2024). The scarcity of recent floristic studies and limited documentation on India's grass flora hinders the understanding, resulting in a large number of species remaining unrecorded to date, and their morphological features insufficiently described (Jacobs et al. 1999).

Floristic documentation was carried out from 2022 to 2024 across a range of habitats, from the lesser Himalaya to alpine meadows, in the northwestern Himalaya, covering regions such as Uttarakhand, Himachal Pradesh, Ladakh, and Jammu & Kashmir. These surveys facilitated the documentation of the genus *Acrospelion* (Besser) [Lectotype = *Acrospelion distichophyllum* (Vill.) (Barberá)]. Specimen collection, preservation, and preparation followed the standard herbarium method (Jain & Rao 1977). The herbarium specimen has been deposited at the Forest Research Institute, Dehradun (DD).

The genus *Trisetum* Pers. was first described by Christiaan Hendrik Persoon in 1805 with 11 species (Barberá et al. 2018), comprising both perennial and annual grasses, and no type specimen was designated at that time (Hara & Yü 1983). In 1827, Wilibald Swibert Joseph Gottlieb von Besser proposed new classification based on habit, retaining the annual species within *Trisetum* and transferring the perennials to a newly proposed genus, *Acrospelion* Besser (Baum 1968). This genus initially encompassed seven taxa (*Aira subspicata* L., *Avena flavescens* L., *Avena rigida* M. Bieb., *Avena argentea* Willd., *Avena distichophylla* Vill., *Avena brevifolia* Host., and *Avena alpestris* Host.), and was characterized by compound, spreading panicle; compressed, two–three-flowered spikelets; keeled, unequal glumes that are shorter than the florets; lower glume with one nerve and upper glume with three nerves; a bifid lemma with awn emerging from the split, folded, and flexible; seeds (caryopsis) that are covered and grooved. No formal taxonomic combinations were

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made, and no type specimen was designated at that time (Hara & Yü 1983). Later, Chrtek (1965) also divided the genus *Trisetum* in five sections: *T. sect. Carpatica*, *T. sect. Hispanica*, *T. sect. Rigida*, *T. sect. Trisetraera*, and *T. sect. Trisetum* (Barberá et al. 2017b). Subsequently, Pfeiffer (1871–1873) reclassified *Acrospelion* as a section, replacing *T. sect. Rigida*. Due to its earlier publication, the epithet *Acrospelion* takes precedence over *Rigida* at the sectional rank. *Trisetum* sect. *Acrospelion* is characterized by distichous young shoots, rigid or loosely tufted habit, panicles ranging from lax to slightly dense, unequal to subequal glumes, and the presence of long hairs on the rachilla segments between florets, and on the callus (Barberá et al. 2017a). Recently, *Acrospelion* has been expanded to encompass 13 species (WCVP 2025) following the inclusion of taxa previously classified in *Trisetum* sect. *Trisetum* and *Trisetum* sect. *Acrospelion*, and *Acrospelion distichophyllum* designated as the type specimen (Pfeiffer 1871). The recent phylogenetic study by Barberá et al. (2024) has revived and reinforced the recognition of the genus by analysing plastid DNA sequences from the *rpl32-trnL*, *rps16-trnK*, *rps16* intron, and ITS regions. The genus belongs to the subtribe Aveninae (Clayton & Renvoize 1986), under the tribe Aveneae (Bor 1960), within the subfamily Pooideae of family Poaceae.

The taxonomic identification of the collected grass

specimens were confirmed as *Acrospelion alpestre* (Host) Barberá & Quintanar, a European grass, through examination of specimens from Natural History Museum herbarium (BM), Meise Botanic Garden herbarium (BR), Forest Research Institute herbarium (DD), Royal Botanic Gardens herbarium (K), Naturalis Biodiversity Center herbarium (L), Oberösterreichische Landeskultur GmbH herbarium (LI), Muséum National d'Histoire Naturelle herbarium (P), and Naturhistorisches Museum Wien herbarium (W) (acronyms as per Thiers 2024), as well as a review of type specimens (W18850002400 & W0024994), protologues (Host 1805), and pertinent taxonomic literature (Bor 1960; Finot et al. 2006; Barberá et al. 2017a,b, 2018). This species is characterized by spikelets with two–three florets, subequal or shorter upper glumes, keeled lemmas where geniculate or slightly curved awns inserted on the upper one-third; lemma apex bidentate with intermediate nerves prolonged into setae; callus obtuse, scarious to hyaline paleas, and glabrous or sparsely trichome-covered ovaries near the apex (Finot et al. 2006; Barberá et al. 2020; Barberá et al. 2024). Notably, *Acrospelion* represents a new generic record for the flora of India (Prasanna et al. 2020; Kellogg et al. 2020). Overall, *A. alpestre* marks its first occurrence in southern Asia, as previous studies have not documented its presence in literature (Bor 1960; Barberá et al. 2018, 2024; POWO 2024).



Image 1. *Acrospelion alpestre* (Host) Barberá & Quintanar: a—growing in its natural habitat | b—close-up of inflorescence. © Kuntal Saha.

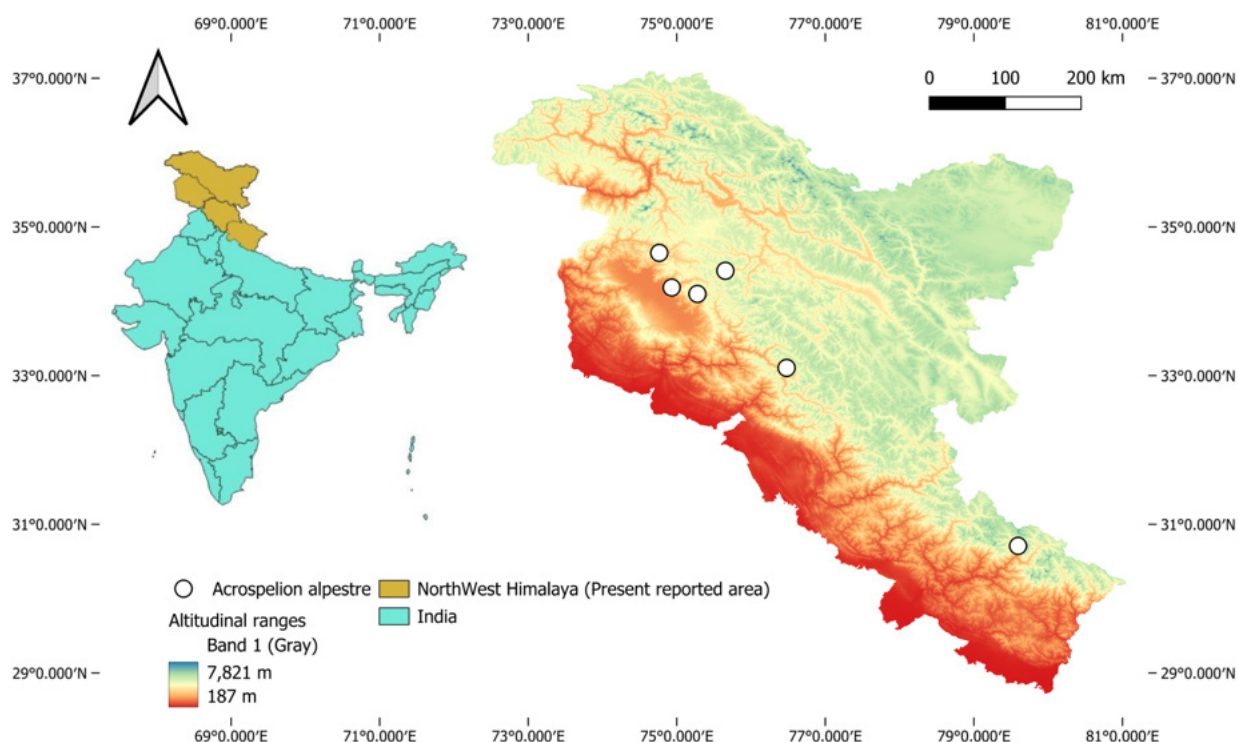


Figure 1. Distribution of *Acrospelion alpestre* (Host) Barberá & Quintanar in northern India.

A detailed description of the species has been provided, accompanied by colour photographs depicting specimens in their natural habitat (Image 1), photo plate (Image 2), and map of collection sites (Figure 1), which was created using QGIS version 3.36.2.

Taxonomic treatment

Acrospelion alpestre (Host) Barberá & Quintanar, J. Syst. Evol. x: [19 of 27] (2024). *Trisetum alpestre* (Host) P. Beauv. in Ess. Agrostogr.: 88 (1812).

Avena alpestris Host, Icon. Descr. Gram. Austriac. 3: 27, t. 39 (1805).

Lectotype: Austria. N.T. Host s.n. (W18850002400!; isolectotype: W0024994!). Lectotype designated by Barberá et al. in taxonomic revision of *Trisetum* 358. 2018.

Perennial, caespitose. Culms 18.6–31 cm × 0.2–0.8 cm, glabrous, erect, smooth, glabrous; 2–4 nodes, glabrous. Leaf sheaths 4–11 cm × 0.3–0.5 cm, smooth, sparsely pilose. Ligule 1.9–2.3 mm, dentate, with scattered ciliate. Leaf blades 6–21 cm × 0.3–0.4 cm, flat, inrolled in dried, greenish, sparsely pubescent abaxially, pubescent adaxially, apex acuminate. Panicles 5.5–12 × 1–2.5 cm, lax, narrowly oblong, very effuse, greenish-yellow, shining; basal node glabrous; rachis up to 2 cm, sparsely scabrid; branches semi-whorled at lower node, 0.7–1.5 cm. Spikelets 0.5–1.7 × 0.1–0.3 cm (including

awns), 2–4-floret, laterally compressed, oblanceolate; disarticulating at maturity; pedicel 0.4–0.7 cm, scabrid. Lower glume 3.1–4 mm, elliptic to oblong or lanceolate, glabrous, one-nerved, hyaline margins, apex acute. Rachilla 0.9–1.5 mm, densely ciliate. Upper glumes 4.6–5.8 mm, oval-lanceolate, membranous, three-nerved, glabrous, apex acuminate. Lemmas 4.5–5.5 mm, glabrous, shining, narrowly to broadly lanceolate, bifid, teeth conspicuous, awned, scabrous toward apex; awn 4.5–8 mm, arising from upper 1/3 of lemmas, bent or straight, very slightly twisted at base, scabrid; callus ciliate, trichomes up to 0.5 mm. Paleas 3.5–4.8 mm, narrowly elliptical hyaline, elliptic, glabrous, scabrid margins. Lodicules 0.5–0.7 mm, glabrous, apex bilobed. Anthers 2–2.5 mm, yellowish. Ovary 0.6–0.8 mm, densely pubescent, scattered hairs at apex.

Flowering and fruiting: July–October.

Habitat: Along roadsides and in open, dry habitats with sandy, and neutral soils, as well as sunny meadows, at elevations ranging from 2100–3700 m.

Distribution: India [Himachal Pradesh, Jammu & Kashmir, Ladakh, Uttarakhand (present report)], Austria, Czechoslovakia, France, Germany, Italy, Poland, Romania, Spain, Ukraine, Yugoslavia (POWO 2024).

Specimens examined: 100218(DD), India, Jammu & Kashmir, Srinagar District, Dara, Harwan, Dara rest point, Dara-Haayan WLS, near Scholars' School,

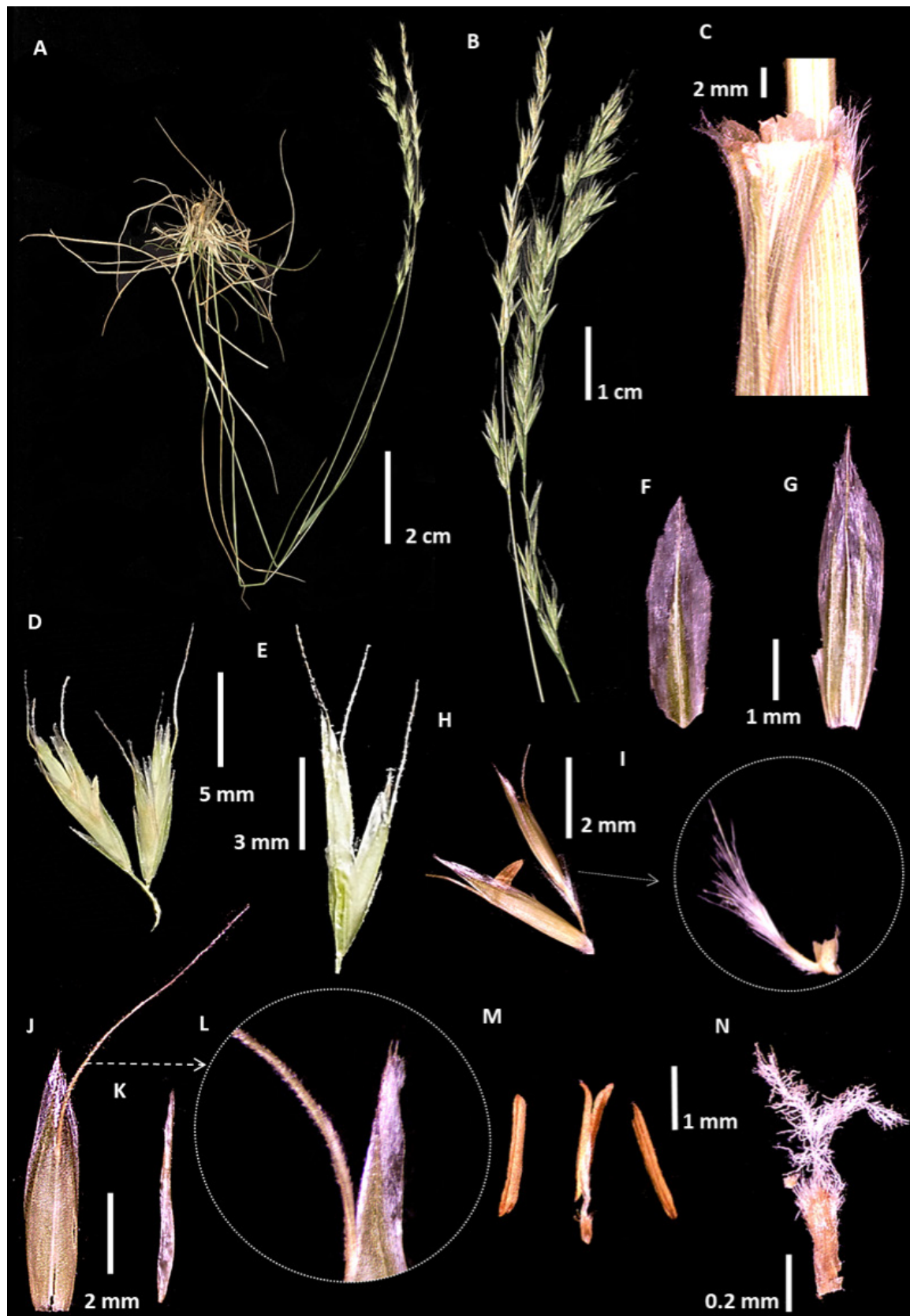


Image 2. *Acrospelion alpestre* (Host) Barberá & Quintanar: a—Habit | b—inflorescence | c—ligule | d—group of spikelets | e—single spikelet | f—lower glume | g—upper glume | h—florets | i—callus of floret | j—lemma with awn | k—palea | l—bifid apex of lemma & very slightly twisted at base of awn | m—anther | n—ovary. © Kuntal Saha.

34.184° N 74.932° E, 2,113 m, 20.ix.2024, coll. Kuntal Saha; 100221(DD), 22.ix.2024, Ganderbal District, Sonamarg, near hotel Snowland Sonamarg, 34.304°N 75.289° E, 2,681 m, coll. Kuntal Saha; 100231(DD), 28.ix.2024, Bandipora District, Badwan Wanpora, along the way to Gurez Valley, 34.650° N 74.764° E, 2,457 m, Kuntal Saha; 100229(DD), 22.ix.2024, Ladakh, Kargil District, Zoji La, along the roadsides near the Zoji La war memorial, 34.300° N 75.506°E, 3,479 m, coll. Kuntal Saha; 100207(DD), 28.vii.2024, Uttarakhand, Chamoli District, Valley of Flowers, 30.708° N 79.596° E, 3,267 m, coll. Kuntal Saha; 100216(DD), 04.viii.2024, Himachal Pradesh, Chamba District, Pangi Valley, on the Hudan Bhatiori, 33.103° N 76.479° E, 3,630 m, coll. Kuntal Saha.

Ethno-botanical notes: Interactions with local villagers in Kashmir Valley, particularly in the Dara region revealed insights into the species' utilization in daily life. They mentioned that *Acrospelion alpestre* is not ideal as fodder, as cows and goats seem to have difficulty digesting it. Instead, locals use it to tie bundles of other fodder, as it is resistant to rats, insects, and pests. Additionally, they use it for roofing material for sheds.

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Fishes

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Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
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Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraja, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Mandar S. Paingankar, University of Pune, Pune, Maharashtra, India (Molecular)
Dr. Jack Tordoff, Critical Ecosystem Partnership Fund, Arlington, USA (Communities)
Dr. Ulrike Streicher, University of Oregon, Eugene, USA (Veterinary)
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c/o Wildlife Information Liaison Development Society,
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Tamil Nadu 641006, India
ravi@threatenedtaxa.org & ravi@zooreach.org

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