



New national and regional bryophyte records, 85

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New national and regional bryophyte records, 85

J. Wilbraham ^a, Y. Abiyev ^b, D. J. Alvarez ^{c,d}, A. M. Aponte Rojas ^e, C. Arrocha ^f, G. Asthana^g, K. Aswathyraj^h, J. J. Atwood ⁱ, H. Bednarek-Ochyra ^j, Á. Benítez ^{f,k}, C. Bhagat^g, L. Fatková ^l, R. Gabriel ^m, A. Graulichⁿ, N. Guerra-Batista ^f, V. M. Jishnu^h, T. Kiebacher^o, J. Kučera ^p, J. Larraín^q, A. Mammadova ^r, C. N. Manju^h, E. Mikulášková ^s, F. Müller ^t, R. Natcheva ^u, F. Pereira ^m, K. P. Rajesh^v, E. Rodríguez-Quiel ^f, M. Rogośiċ ^w, J. Samudio-Palacio ^f, A. Schäfer-Verwimp ^x, C. Sérgio ^y, D. Shukla ^z, G. M. Silveira ^m, S. K. Singh ^z, M. Sousa ^m, A. Srivastava^g, O. M. Sruthi^{h,v}, P. P. Sruthi^h, G. M. Suárez ^{c,d} and V. M. Virchenko^{aa}

^aNatural History Museum, Cromwell Road, London, SW7 5BD, UK; ^bFaculty of Biology, Baku State University, Baku, Azerbaijan; ^cUnidad Ejecutora Lillo (UEL; FML-CONICET), Miguel Lillo 251, (4000) S.M. de Tucumán, Argentina; ^dFacultad de Ciencias Naturales e Instituto Miguel Lillo, Universidad Nacional de Tucumán, Miguel Lillo 205, (4000) S.M. de Tucumán, Argentina; ^eJardín Botánico de Bogotá, Bogotá, D.C., Colombia; ^fHerbario UCH, Universidad Autónoma de Chiriquí, Panamá; ^gDepartment of Botany, University of Lucknow, Lucknow-226007, India; ^hBryology Laboratory, Department of Botany, University of Calicut, Thenhipalam Malappuram Dist., Kerala-673635, India; ⁱMissouri Botanical Garden, 4344 Shaw Blvd., St. Louis, MO 63110, USA; ^jW. Szafer Institute of Botany, Polish Academy of Sciences, Lubicz 46, 31-512 Kraków, Poland; ^kBiodiversidad de Ecosistemas Tropicales-BIETROP, Universidad Técnica Particular de Loja, Departamento de Ciencias Biológicas, Herbario HUTPL, San Cayetano s/n, Loja, Ecuador; ^lCharles University, Faculty of Science, Institute for Environmental Studies, Prague, Czech Republic; ^mUniversity of the Azores, CE3C/GBA Centre for Ecology, Evolution and Environmental Changes / Azorean Biodiversity Group and CHANGE – Global Change and Sustainability Institute, Angra do Heroísmo, Portugal; ⁿDonceel, Belgium; ^oStuttgart State Museum of Natural History, Rosenstein 1, 70191 Stuttgart, Germany; ^pUniversity of South Bohemia, České Budějovice, Czech Republic; ^qCentro de Investigación en Recursos Naturales y Sustentabilidad (CIRENYS), Universidad Bernardo O'Higgins, Av. Viel 1497, Santiago, Chile; ^rInstitute of Botany, Baku, Azerbaijan; ^sMasaryk University, Brno, Czech Republic; ^tInstitut für Botanik, Technische Universität Dresden, Dresden, Germany; ^uInstitute of Biodiversity and Ecosystem Research, Department of Plant and Fungal Diversity and Resources, Bulgarian Academy of Sciences, Sofia, Bulgaria; ^vZamorins Guruvayurappan College, Kozhikode-14, Kerala, India; ^wGrenoble Alpes University, Faculty of Chemistry and Biology, Grenoble, France and Oikon d.o.o., Institute of Applied Ecology, Zagreb, Croatia; ^xMittlere Letten 11, 88634 Herdwangen-Schönach, Germany; ^yCE3C (Centre for Ecology, Evolution and Environmental Changes) / Natural History and Systematics (NHS) and CHANGE – Global Change and Sustainability Institute, Lisbon, Portugal; ^zBotanical Survey of India, Northern Regional Centre, 192 Kaulagarh Road, Dehradun-248195, Uttarakhand, India; ^{aa}Institute of Botany, National Academy of Sciences of Ukraine, Kyiv, Ukraine

1. *Anomobryum concinnum* (Spruce) Lindb.

Contributors. C. Bhagat and G. Asthana

India. Western Himalaya, Uttarakhand, Garhwal hill, Chamoli, Pandukeshwar, alt. ca. 1905 m a.s.l., 30°37'70"N, 79°33'10"E, 6 October 2012, *leg.* G. Asthana et al. 22518/12 (LWU).

Anomobryum concinnum is a very common species distributed across North America (Mexico, U.S.A, Canada and Greenland), widespread across Europe, and extending into Asia (India, Bhutan, China, Mongolia, Japan and Korea) (Holyoak and Köckinger 2010; Czernyadjeva et al. 2015). In India, it is known from Sikkim, in the Eastern Himalaya (Holyoak and Köckinger 2010; Czernyadjeva et al. 2015). During a study of the mosses of The Garhwal Hills, this species was identified from Pandukeshwar in Chamoli district of Uttarakhand, Western Himalaya, which is the first report of the taxon from the West Himalayan region. Plants were growing terrestrially, yellowish-brown in colour, julaceous, slender, branched or unbranched and 10–20 mm long. A cross-section of the stem shows the presence of a central conducting strand. Leaves are densely

arranged, imbricate, appressed on stem, ovate-lanceolate with an acute apex and smooth margin. The costa is single, strong, percurrent or shortly excurrent. Axillary bulbils are 1–3 in number, greenish-yellow, variable in size, 306–612 × 183–245 µm.

2. *Asterella echinella* (Gottsche) Underw.

Contributors. E. Rodríguez-Quiel and J. Samudio-Palacio

Panamá. Prov. Chiriquí, District of Boquete, Cordillera de Talamanca, Cerro Artillería, on moist soil at the base of a cave wall, alt. 2040 m a.s.l., 8°46'33.28"N, 82°23'19.12"W, 30 August 2025, *leg.* E. Rodríguez Quiel and J. Samudio Palacio 1369 (UCH 17277).

Asterella echinella is reported here for the first time from Panama. According to Bischler-Causse et al. (2005) and Dauphin et al. (2025), the species has a restricted distribution in North and Central America, previously known from Mexico, Guatemala, Belize and Honduras. The Panamanian record extends the known range of the species southwards into the Cordillera de Talamanca and suggests a more southerly distribution in the Americas than previously documented. Ecologically, *A. echinella* is typically associated

with moist microhabitats, particularly wet limestone outcrops along rivers, ravines and waterfalls (Bischler-Causse et al. 2005). The Panamanian population was found on permanently moist soil at the base of cave walls with constant water seepage. Three species of *Asterella* P.Beauv. have previously been reported for Panamá, *A. lateralis* M.Howe, *A. macropoda* (Spruce) A.Evans and *A. versicolor* A.Evans (Dauphin et al. 2025). The current record of *A. echinella* represents the fourth species of the genus documented for the country.

3. *Brachytheciastrum paradoxum* (Hook.f. & Wilson) Ignatov & Huttunen

Contributor. H. Bednarek-Ochyra

Îles Crozet, Île de la Possession: (1) north-eastern coast, Baie Américaine, peatlands and rock outcrops in the vicinity of the field hut near the mouth of the Moby Dick Rivière on the left bank of the river, alt. 20 m a.s.l., 46°23'54"S, 51°47'36"E, on soil between basalt stones, growing with *Brachythecium rutabulum* (Hedw.) Schimp., *Racomitrium lanuginosum* (Hedw.) Brid. and *Plagiochila heterodonta* (Hook.f. & Taylor) Gottsche, Lindenb. & Nees, 21 November 2012, leg. R. Ochyra 2955/12, det. H. Bednarek-Ochyra (KRAM B-286848); (2) north-eastern coast, Pointe Lieutard, rock outcrops immediately south of the meteorological station at Alfred Faure Station, alt. 130 m a.s.l., 46°26'01"S, 51°51'33"E, on soil beneath an overhanging basalt rock within an *Austroblechnum penna-marina* (Poir.) Gasper & V.A.O.Dittrich stand, associated with *Sanionia uncinata* (Hedw.) Loeske, *Brachythecium rutabulum* and *Plagiochila heterodonta*, 20 November 2012, leg. R. Ochyra 2899/12, det. H. Bednarek-Ochyra (KRAM B-286847).

Brachytheciastrum paradoxum is a panholantarctic species with three centres of distribution. Its greatest occurrence is in southern South America, where it is widespread throughout Patagonia (McFarland 1988). The second centre lies in south-eastern Australia, Tasmania, and New Zealand (Hedenäs 2002; Fife 2020). Hedenäs (2002) reported the species from southern Africa; however, this record is misleading and is probably based on the entry 'Afr. 4' in *Index muscorum* (Wijk et al. 1959), which almost certainly refers to the subantarctic islands of the Southern Ocean. They constitute the third centre of its occurrence, which exhibits an amphiatlantic chorotype (Ochyra and Singh 2008; Blockeel et al. 2009; Ochyra 2010; Ochyra et al. 2015; Saluga et al. 2018). In this region, *B. paradoxum* is known from Îles Kerguelen (McFarland 1988), Îles Crozet, and the Prince Edward Islands (Zanten 1971; Ochyra and Hertel 1990). Within Îles Crozet, the only published record of *B. paradoxum* is from Île de l'Est (Hébrard 1970a, 1970b). In the present study, however, the species is reported from Île de la Possession, the largest and best-studied island of the

archipelago. Although its occurrence on this island was previously mentioned without detailed data in an unpublished doctoral dissertation (McFarland 1988), it is here documented from precisely located sites. As a result of this finding, the island's moss flora has increased to 73 species recorded there in recent decades (e.g. Ochyra and Bell 1984; Lightowlers 1986; Ochyra 1989, 2002, 2003; Blockeel, Chlebicki, et al. 2006; Blockeel et al. 2007, 2008; Ellis et al. 2011, 2016, 2017; Ochyra and Bednarek-Ochyra 2013).

4. *Bruchia aurea* Besch.

Contributors. D. J. Alvarez and G. M. Suárez

Argentina. Santa Fe, Departamento Garay, Cayastá, Paso del Tigre, 31°13'32.9"S, 60°11'01.2"W, alt. 19 m a.s.l., growing in a disturbed area with sandy soil near a watercourse, 23 July 2024, leg. D. J. Alvarez 553A (DTE, LIL, MFA).

The genus *Bruchia* Schwägr. is distinguished by its cleistocarpous capsules, the presence of stomata on the capsule neck, and characteristic spore ornamentation patterns. Species of the genus are mainly distinguished by variations in capsule and leaf morphology and by spore characters, particularly the number and arrangement of spinae on the distal spore surface (Rushing 1985, 1986). *Bruchia aurea* is characterised by its small size and short sporophyte, particularly by its short seta (0.8–1.5 mm long), and by spores with relatively few spinae per unit area, measuring 24–30 µm in diameter. *Bruchia aurea* is a South American species recorded in Paraguay and Brazil (Buck 1985; Rushing 1986). In Argentina it was previously reported (as *Bruchia uleana* Müll.Hal. ex G.Roth) from Misiones Province (Matteri 2003). The present record from Santa Fe Province confirms the occurrence of *B. aurea* in Argentina and significantly extends its known distribution southwards. This specimen was collected in a disturbed area with sandy soil near a watercourse—a typical habitat for *Bruchia* spp. where their short life cycle allows rapid colonisation of transient environments (Rushing 1986). Bryological knowledge in Santa Fe Province remains limited, with relatively few species recorded to date (Matteri 2003; Alvarez and Villalba 2021; Filippa and Villalba 2021; Alvarez et al. 2025). This new record contributes to the knowledge of the moss flora of the province and expands the known distribution of *B. aurea* in Argentina. A complete description and illustration of this species can be found in Rushing (1986).

5. *Bryum gemmilucens* (R.Wilczek & Demaret) J.R.Spence

Contributors. L. Fatková, F. Pereira, G. M. Silveira, M. Sousa, C. Sérgio and R. Gabriel

Portugal. Azores, Terceira Island, Angra do Heroísmo. The samples were collected in three streets near the ocean, within the historic city centre: (1) Rua Conselheiro José Silvestre (Sé), over basaltic cobblestones surrounding a manhole cover, alt. ca. 20 m a.s.l., 38.652292°N, 27.221912°W, 19 December 2010, *leg.* F. Pereira *FP_P037*; (2) Rua de São João (Sé), next to a traditional house, on a terrace facing the ocean, on basaltic stone slabs, alt. ca. 13 m a.s.l., 38.6540479°N, 27.2189853°W, 26 February 2011, *leg.* F. Pereira *FP_P092*; (3) Rua do Galo (Conceição), on basaltic cobblestones of a pedestrian walkway, alt. ca. 34 m a.s.l., 38.6558015°N, 27.217198°W, 27 February 2011, *leg.* F. Pereira *FP_P093*; all specimens *det.* L. Fatková, *conf.* C. Sérgio (Herbarium of the University of the Azores—Bryophyte Section (AZU)).

This is the first record of the species *Bryum gemmilucens* for the Azores, extending its known range in Macaronesia, since the species was already confirmed in the Canary Islands. The species has a transcontinental distribution with scattered occurrences in Europe, southwest Asia, northwest Africa and north America. The true extent of its distribution is likely underestimated because of the necessary microscopic confirmation of the small, though striking, pyriform, lemon yellow to orange or reddish, 120–230 µm long, bulbils (Holyoak 2021). In Europe, it is considered of Least Concern by the IUCN, however it is reported as Near Threatened or Vulnerable for some European countries (Hodgetts and Lockhart 2020). *Bryum gemmilucens* usually grows on exposed soil in woodland rides, arable fields and disturbed habitats on a variety of soils; light sandy, loamy, chalky, or nitrified soils enriched with salts. The usual habitat is moderately wet, warm and moderately to strongly illuminated (Dierßen 2001). In the Canary Islands, the species was found on La Gomera, Gran Canaria and Lanzarote (González-Mancebo et al. 2008). There, *B. gemmilucens* was growing at higher elevations, on stones in caldeiras and on mountains, in flat areas between stones (Dort and Nieuwkoop 2003). In Angra do Heroísmo, *B. gemmilucens* was found growing with typical species of anthropogenic influence, such as *B. argenteum* Hedw., *Tortula muralis* Hedw. and *Leptobarbula berica* (De Not.) Schimp.

6. ***Bucklandiella joseph-hookeri*** (Frisvoll) Bedn.-Ochyra & Ochyra

Contributor. H. Bednarek-Ochyra

China, Tibet (Xizang) Autonomous Region. (1) Shigatse Prefecture, Yadong County, Dong-Ga-La Mountain, alt. 4700 m a.s.l., on rock, 6 June 1975, *leg.* M. Zang 441 (as *Racomitrium fasciculare* (Hedw.) Brid.), *det.* H. Bednarek-Ochyra, 2016 (KRAM B-

286743, KUN barcode 0866786); (2) same prefecture and county, Ze-Li-La Mountain, alt. 4200 m a.s.l., on rock, 12 April 1974, *leg.* S. K. Chen 5032 (as *R. fasciculare*), *det.* H. Bednarek-Ochyra, 2016 (KRAM B-286742, KUN barcode 0866815); (3) Nyingchi Prefecture, Kongpo region centred in Gongbo'gyamda County, east side of Lang La pass, 28°57'N, 93°44'E, alt. 16,000 ft (=4,880 m a.s.l.), on slaty rocks, 16 May 1938, *leg.* F. Ludlow, G. Sherriff and G. Taylor 4299b (as *R. subsecundum* (Hook. & Grev. ex Harv.) Mitt. & Wilson), *det.* H. Bednarek-Ochyra, 2018 (BM); (4) same prefecture, Linzhi County, Sejila Mount in the Nyenchen Tanglha Range, 29°37'08.43"N, 94°38'21.75"E, on rock under shrub, 26 August 2009, *leg.* Lin Zhang 6978 (as *Racomitrium fasciculare*), *det.* Halina Bednarek-Ochyra, 2014 (KRAM B-213749) [Voucher specimen for barcoding, see Liu et al. (2011)].

Racomitrium Brid. is well represented in China, although the actual number of species is currently difficult to determine. This is largely due to limited access to many specimens cited in the literature, which are often misidentified (e.g. Cao et al. 2003; Bednarek-Ochyra 2004a, 2006; Wilbraham et al. 2025). At the same time, taxa new to science and new to the country continue to be discovered in China (Bednarek-Ochyra 2004b; Bednarek-Ochyra and Ochyra 2010; Ellis et al. 2010). As a result, the distributions of some species remain poorly known. A particularly illustrative example is *R. joseph-hookeri* Frisvoll, a species currently assigned to the genus *Bucklandiella* Roiv., one of six segregates of the broadly circumscribed genus *Racomitrium* (Ochyra et al. 2003; Bednarek-Ochyra et al. 2014, 2015; Sawicki et al. 2015). This species is a Sino-Himalayan endemic (Frisvoll 1988) and has been reported from three provinces in China—Sichuan, Yunnan, and Xizang (Cao et al. 1998, 2003). Unfortunately, no voucher specimens corresponding to these records could be located in the herbaria of KUN and IFP. Here, four specimens collected from Xizang are documented. Two originate from Yadong County, situated in the Eastern Himalayas between Bhutan and Sikkim, while the other two were collected on the eastern Tibetan Plateau. These records confirm the phytogeographical status of the species, whose range extends eastward to the Gaoligong Shan on the border between Myanmar and China's Yunnan Province (Ellis et al. 2019), a mountain range located along the boundary between the Tibetan Plateau and the Yunnan–Guizhou Plateau.

7. ***Calohypnum plumiforme*** (Wilson) Jan Kučera & Ignatov

Contributor. A. Schäfer-Verwimp

Malaysia. Pahang, Frasers Hill, [3.715°N, 101.736°E], on a grassy slope in the residential area, alt. 1300 m a.s.l., 21 May 1997, *leg.* Schäfer-Verwimp and Verwimp

18662, det. Schäfer-Verwimp, 2001 as *Hypnum plumaeforme* (JE).

Singapore. Botanical Garden, [1.3151°N, 103.8162°E], epiphytic on root of a large tree, alt. 10–20 m a.s.l., 8 June 1995, leg. Schäfer-Verwimp and Verwimp 17041, dupl. det. N. Nishimura, 1997 as *Hypnum plumaeforme* (JE, TNS).

This species is characterised by large plants that are usually regularly pinnately branched and grow to a length of up to 10 cm or more. They are yellowish-green to brownish-green in colour. Its leaves are falcate-secund and the pseudoparaphyllia are lanceolate and mixed with foliose ones. The alar group consists of large, thin-walled hyaline cells and small supra-alar cells. *Calohypnum plumiforme*, which for a long time was recognised as *Hypnum plumaeforme*, is widely distributed across Asia, including China, Taiwan, Japan, Korea, the Russian Far East, the Philippines, Vietnam, Thailand, Myanmar, India, Nepal and Hawaii (Tan and Iwatsuki 1993; He et al. 2021), and has probably been introduced to the Caucasus (Afonina and Ignatova 2007). The present records indicate an extension of its range to the south. It grows on soil, rocks, decaying wood and tree bases, at altitudes ranging from sea level to 3,780 m in the Nepalese Himalayas (Gangulee 1980). It is somewhat surprising that such a conspicuous moss has been overlooked. At least it is not mentioned by Yong et al. (2013) from Peninsular Malaysia and Singapore or by Suleiman et al. (2006) from Borneo.

8. *Campylopus subulatus* Schimp. ex Milde

Contributor. V. M. Virchenko

Ukraine. Transcarpathia, Khust district, Synevyr National Nature Park, outskirts of Mereshor village 48°24'15"N, 23°40'17"E, alt. ca. 700 m a.s.l., exposed old path in fir forest, on soil amongst stones, 30 July 2025, leg. V. M. Virchenko (KW-B).

Four species of the genus *Campylopus* Brid. have been reported for Ukraine (Virchenko and Nyporko 2022). Two of these, *C. fragilis* (Brid.) Bruch & Schimp. and *C. introflexus* (Hedw.) Brid., no doubt do occur in the country. However, determination of the other two, *C. gracilis* (Mitt.) A.Jaeger and *C. pyriformis* (Schultz) Brid., reported from Ukraine by the botanists M. Maloch, T. Ștefureac, and J. Krupa in past centuries, needs confirmation. During a study of bryophytes of the Synevyr National Nature Park in 2025, the author discovered another species of this genus, namely *C. subulatus*, which is new for the flora of Ukraine. Below is a short description of this sample. Plants are up to 3.5 cm high, not or slightly tomentose, forming lax yellowish green tufts. The leaves are 3–4 mm long, straight or sometimes recurved, with a very stout, excurrent nerve and a few teeth. The nerve section is without

stereids and the back of the nerve has low ridges. Capsules were absent on these plants and vegetative propagation was by caduceus shoot tips.

9. *Cephaloziella varians* (Gottsche) Steph.

Contributors. E. Mikulášková and J. Kučera

Czech Republic. Plzeň Region, Bohemian Forest foothills, Strašín, Strašínská jeskyně Nature Reserve, WGS-84: 49.18238°N, 13.63002°E, alt. 570 m a.s.l., on limestone rock, admixed to *Tortella inclinata* (R.Hedw.) Limpr., 29 April 2005, leg. E. Mikulášková (Loskotová), det. J. Kučera (CBFS, herb. E. Mikulášková no. 819).

Cephaloziella varians is a taxonomically critical liverwort species with a complex and convoluted taxonomic and phytogeographical history (Ochyra and Váňa 1989a; Bednarek-Ochyra et al. 2000). It was formerly considered a bipolar species (Ochyra and Váňa 1989b), exhibiting an arctic-alpine distribution pattern throughout the Holarctic (Bednarek-Ochyra et al. 2000, including a global distribution map; Damsholt 2002). More recently, however, it has been reported as widespread even in lowland regions (Meinunger and Schröder 2007), where, unlike most other species of *Cephaloziella* (Spruce) Schiffn., it typically occurs on disturbed, base-rich substrates. The above-reported specimen was originally identified as *Cephaloziella elegans* (Heeg) Schiffn. by the late Prof. J. Váňa, another critical taxon rarely reported from The Czech Republic, which, however, avoids limestone, on which this specimen was collected. Given the sterile condition of the sample and its ecology, the specimen was molecularly barcoded for the ITS region (GenBank accession PX998522), which confirmed an identity with other previously sequenced plants of *C. varians*. Meinunger and Schröder (2007) differentiate between two varieties, of which the above-reported plants could be assigned to var. *variens* based on the acute lobes, not pronouncedly thickened cell walls and distinctly developed underleaves. However, our plants were sterile, and could perhaps be confused with *C. divaricata*, which could be ruled out only on the basis of the substrate and molecular differences. Interestingly, *C. varians* has previously been reported from The Czech Republic (Váňa 1973 as *C. arctica*), but these records from two sites were later corrected to *C. grimsulana* (J.B.Jack ex Gottsche & Rabenh.) Lacout. (Duda 1978).

10. *Cylindrocolea tagawae* (N.Kitag.) R.M.Schust.

Contributors. A. Srivastava and G. Asthana

India. Western Ghats, Maharashtra, Mahabaleshwar, Polo Ground, alt. ca. 4290 ft., 17.91°N, 73.64°E, corticolous, growing in association with *Metzgeria lindbergii* Schiffn., 1 January 2016, leg. A. Srivastava, (LWU 23103/16); Koyana Wildlife Sanctuary, Humbarli trek, alt. ca. 3146 ft., 17.25°N, 73.43°E, terricolous, growing

in association with *Lophocolea minor* Nees, *Metacephalozia crispata* (N.Kitag.) Bakalin, Maltsev & A.V.Troitsky, *Riccardia multifida* (L.) Gray, *Solenostoma tetragonum* (Lindenb.) R.M.Schust. ex Váňa & D.G.Long, and *S. truncatum* (Nees) R.M.Schust. ex Váňa & D.G.Long, 22 November 2023, *leg.* A. Srivastava, (LWU 23899/23, LWU 23907/23).

Cylindrocolea tagawae is an Asiatic species earlier reported from Thailand (Kitagawa 1969, as *Cephaloziella tagawae* N.Kitag.; Lai et al. 2008), China (Zhu 2006), Malaysia (Chuah-Petiot 2011, as *Cephaloziella tagawae*; see also Singh et al. 2016) and India. It was first reported from India from Pachmarhi, Madhya Pradesh (Udar and Kumar 1983). Later on, the species was also reported from Ponmudi, Kerala (Udar and Kumar 1985; Bapna and Kachroo 2000), Wayanad, Chandanathode, Kerala (Manju et al. 2005), Agasthyamalai, Chenmunji, Kerala (Manju et al. 2009), Pachmarhi, Madhya Pradesh (Sharma and Alam 2011) and Kanyakumari, Seafeld, Tamilnadu (Daniels and Daniel 2013; see also Singh et al. 2016). During investigation of bryophytes collected from Pologround, Mahabaleshwar (2016) and Humbarli trek, Koyna Wildlife Sanctuary (2023) of Satara district, Maharashtra, plants referable to *C. tagawae* were also observed. This is the first report of the species from the state of Maharashtra in South India, thus showing an extension of its distribution in The Sahyadri Hills (Western Ghats). Until now the species was reported to be terrestrial, however, the plants reported here were found to be growing on bark as corticolous populations in the Polo Ground forest area of Mahabaleshwar and as tericolous populations on moist soil in the dense forest of Humbarli in Koyna Wildlife Sanctuary.

11. *Diplasiolejeunea pocsii* Reyes Montoya

Contributors. N. Guerra-Batista, E. Rodríguez-Quiel, C. Arrocha and Á. Benítez

Panamá. Prov. Chiriquí, District of Tierras Altas, Cordillera de Talamanca, La Amistad International Park, La Cascada Trail, epiphyllous, alt. 2451 m a.s.l., 8° 53'58.7"N, 82°37'10.7"W, 4 November 2017, *leg.* N. Guerra, O. Quintero and A. Pitty 343 (UCH 17281).

Diplasiolejeunea (Spruce) Schiffn. is a pantropical genus comprising approximately 50 species, 12 of which have been reported from Panama (Dauphin et al. 2025). This is the first report of *Diplasiolejeunea pocsii* from Panamá, which is characterised by ocellate leaves with a hyaline border (Gradstein 2021). This is a rare species occurring on living leaves in lowland and montane rainforests. In Central America, *D. pocsii* is known from Cuba and Dominica at altitudes of 350–400 m a.s.l. (Schäfer-Verwimp 2004) and it has recently been reported from Costa Rica at an elevation of 2574 m a.s.l. (Dauphin et al. 2025). In south America, the species generally grows on leaves in shrubby

vegetation, at altitudes of 2000–2800 m a.s.l. in the montane forests of Ecuador (Schäfer-Verwimp 2004; Gradstein 2021). The new record of *D. pocsii* from Panamá in Central America, at an elevation of 2400 m a.s.l. and occurring on living leaves, suggests a broader distribution of the species along the Talamanca Cordillera (Dauphin et al. 2025).

12. *Fissidens ovatifolius* R.Ruthe

Contributors. L. Fatková, G. M. Silveira, M. Sousa, M. Rogošić, F. Pereira, C. Sérgio and R. Gabriel

Portugal. Azores. Terceira Island, Angra do Heroísmo. Sterile samples were collected within the historic city centre and the suburban outskirts of Angra: (1) Rua Baixinha, behind the 90° curve (Conceição), alt. ca. 17 m a.s.l., 38,653965°N, 27,217466°W, 2 January 2011, *leg.* F. Pereira, *FP_P058*; (2) Vale de Linhares (São Bento), in a concrete channel, alt. ca. 105 m a.s.l., 38,665129°N, 27,206704°W, 3 March 2021, *leg.* M. Rogošić and R. Gabriel *A2_04a_R1*; (3) Canada do Barreiro (Conceição) on a sidewalk built of volcanic rocks, alt. ca. 61 m a.s.l., 38,659450°N, 27,213644°W, 15 March 2021, *leg.* M. Rogošić and R. Gabriel, *A2_04a_R3*, *det.* L. Fatková, G. Silveira, and M. Sousa, *conf.* R. Gabriel and C. Sérgio (Herbarium of the University of the Azores—Bryophyte Section, AZU). Identification relied on the combination of a dorsal lamina not reaching the leaf base and a distinct limbidium.

Fissidens ovatifolius has been reported from the Azores under the synonym of *F. perssonii* P.de la Varde (Allorge and Allorge 1946), however, that record lacks information on the island and date of collection. Its presence in the Azores was regarded as problematic by Gabriel et al. (2010). The present records extend the known range of *F. ovatifolius* within Macaronesia, where it was previously confirmed only from the Canary Islands and Madeira. The species shows a Mediterranean distribution occurring in southern and western Europe, north Africa and Macaronesia (Lobo et al. 2011; Ros et al. 2013; Osman et al. 2022). According to the IUCN, *F. ovatifolius* is classified as Data Deficient (DD) (Hodgetts et al. 2019). In mainland Portugal, the species is classified as endangered, due to its scattered distribution and declining trend (Sérgio et al. 2013). *Fissidens ovatifolius* typically grows on soil and less frequently on rock, in habitats ranging from very wet to moderately dry (Dierßen 2001). It occurs in a wide variety of ecosystems, from forests to steppes and semi-deserts, and may also colonise anthropogenic habitats (Dierßen 2001), as observed in Angra do Heroísmo. In the present localities, it was found growing in association with the liverwort *Lunularia cruciata* (L.) Dumort. ex Lindb., small acrocarpous mosses such as *Bryum canariense* Brid., *Ptychostomum torquescens* (Bruch & Schimp.) Ros & Mazimpaka, *Didymodon umbrosus* (Müll.Hal.) R.H.Zander, *Tortella nitida* (Lindb.) Broth., *Tortula marginata* (Bruch &

Schimp.) Spruce and *T. muralis* Hedw., as well as the pleurocarpous moss *Scorpiurium circinatum* (Brid.) M.Fleisch. & Loeske.

13. *Grimmia hartmanii* Schimp.

Contributor. A. Mammadova

Azerbaijan. Masalli District, Hirkan National Park, on a vertical east-facing basaltic rock wall, alt. ca. 455 m a.s.l., 38°59'5.88"N, 48°32'47.91"E, 3 June 2024, *leg.* A. Mammadova, *det.* A. Mammadova (BAK 625).

Recognised by its dark cushion-forming plants, sinuose upper laminal cells, short hyaline awns, and abundant reddish-brown globose gemmae clustered at the shoot apices, this specimen is readily referred to *Grimmia hartmanii* (Muñoz and Pando 2000; Ignatova and Muñoz 2004). The species was not found in the principal published sources consulted for Azerbaijan (Lyubarskaya 1986; Ignatov et al. 2006). Therefore this is the first published record of *G. hartmanii* for Azerbaijan.

14. *Hypnum jutlandicum* Holmen & E.Warncke

Contributors. A. Mammadova and Y. Abiyev

Azerbaijan. Khachmaz District, Samur–Yalama National Park, on shaded trunk of *Pinus eldarica* (introduced), alt. 16 m a.s.l., 41°47'12.43"N, 48°40'3.26"E, 1 June 2025, *leg.* Y. Abiyev, *det.* A. Mammadova (BAK 803).

Recognised by its pale glossy mats, regularly pinnate branching, strongly falcate-secund leaves, very short or absent costa, and conspicuous inflated orange-brown alar cell groups, this specimen agrees well with *Hypnum jutlandicum* and differs from members of the *H. cupressiforme* complex (Holmen and Warncke 1982; Terracciano et al. 2012; Schlesak et al. 2018). The species was not found in the principal sources consulted for the moss flora of Azerbaijan, nor in a recent survey of Samur–Yalama National Park (Lyubarskaya 1986; Ignatov et al. 2006; Mammadova et al. 2024). Therefore this is the first published record of *H. jutlandicum* for Azerbaijan.

15. *Kurzia pauciflora* (Dicks.) Grolle

Contributor. R. Natcheva

Bulgaria. Central Stara Planina Mts, valley of Vartopska river, along Treperyashko dere stream, 42.731595°N, 24.366162°E, alt. 1326 m a.s.l., on wet peat at the semi-vertical sides of a stream running through a *Sphagnum*-dominated mire, 12 August 2024, *leg.* and *det.* R. Natcheva (SOM 12163-B).

Kurzia pauciflora was collected with male bracts, which allowed reliable identification. It was associated with *Aneura pinguis* (L.) Dumort., *Calypogeia muelleriana* (Schiffn.) Müll.Frib., *Riccardia incurvata* Lindb., and

Riccardia multifida (L.) Gray. The mire was dominated by *Sphagnum capillifolium* (Ehrh.) Hedw. at the more elevated micro-sites, and by *S. flexuosum* Dozy & Molk. and *S. palustre* L. in the hollows. *Kurzia pauciflora* is a suboceanic boreo-temperate species (Düll 1983). It is widely distributed in North and Central Europe, eastwards to Russia, and also found in Macaronesia and North America. Although evaluated as of Least Concern at the European level, it is Red-Listed in most countries of central Europe, and some western European countries, e.g. as Critically Endangered in The Netherlands and Slovakia, Endangered in Portugal, Germany and Switzerland, and Vulnerable in Spain, Austria, and Belgium. It is also Red-Listed in the countries of southeast Europe where it occurs: Romania (Endangered) and Slovenia (Near Threatened) (Hodgetts and Lockhart 2020). Thus, the distribution of *K. pauciflora* is extended further to the southeast in Europe. Considering its specific micro-habitat and suboceanic preferences, it is a Red-List candidate in Bulgaria.

16. *Lindigianthus cipaconeus* (Gottsche) Kruijt & Gradst.

Contributors. N. Guerra-Batista, E. Rodríguez-Quiel, C. Arrocha and Á. Benítez

Panamá. Prov. Chiriquí, District of Tierras Altas, Cordillera de Talamanca, La Amistad International Park, Cerro Picacho Trail, epiphyllous, alt. 2860 m a.s.l., 8°58'55.2"N, 82°38'04.5"W, 17 March 2018, *leg.* N. Guerra, O. Quintero and A. Pitty 425, 427 (UCH 17279, 17280).

According to Dauphin et al. (2025), *Lindigianthus cipaconeus* is known in Central America from Costa Rica, particularly in the Cordillera de Talamanca, and from the northern Andes of Colombia and Ecuador. It occurs on bark, humus, leaf litter and soil in upper montane forest and páramo (Gradstein 2021). This is the first record of this genus for Panamá. This Panamanian material fills a geographic gap between Costa Rica and northern South America and confirms the continuity of this species distribution along the Central American montane system. The new record from Cerro Picacho Trail at 2860 m a.s.l. supports its association with moist montane environments and documents its occurrence as an epiphyllous taxon, indicating ecological plasticity under persistently humid conditions.

17. *Meesia minutissima* Hedenäs

Contributors. F. Müller and J. Kučera

Austria. (1) Tyrol, Zillertal Alps, ca. 4 km SSW of Hintertux, S to SE of the Spannagelhaus hut, 47°4'45"N, 11°40'20"E, alpine mat, alt. 2520 m a.s.l., 11 September 2025, *leg.* F. Müller *s.n.* (DR 089312), *rp16* sequence

GenBank accession PZ052711; (2) Tyrol, Ötztal Alps, between Hoher Mut and Kirchenkogel near Obergurgl (approx. 46°50'16"N, 11°2'37"E), alt. ca. 2600 m a.s.l., 30 August 1993, *leg.* F. Müller *s.n.* (DR 086320); (3) Tyrol, Stubai Alps, at the summit of the Kleiner Tribulaun (approx. 46°59'41"N, 11°23'4"E), alt. 2490 m a.s.l., 9 September 1990, *leg.* F. Müller *s.n.* (DR 086319); (4) Salzburg, Hohe Tauern Mts., W slope of Mt. Edelweißspitze (approx. 47.1230°N, 12.8289°E), alt. ca. 2450 m a.s.l., 26 July 1994, *leg.* J. Kučera 5103 (CBFS); (5) Carinthia, Hohe Tauern Mts., SSE slopes of Mt. Brennkogel W of Brennkogelscharte (approx. 47.0911°N, 12.8230°E), alt. ca. 2650 m a.s.l., 29 July 1994, *leg.* J. Kučera 5196 (CBFS); (6) NW slopes of Mt. Leiterkopf (approx. 47.0562°N, 12.7681°E), alt. ca. 2250 m a.s.l., 28 July 1994, *leg.* J. Kučera 5172 (CBFS); (7) Carinthia, Pasterze, Heiligenblut, 27 August 1843, *leg.* R.W. Papperitz *s.n.* (DR 086321).

Italy. Trentino-Alto Adige, Zillertal Alps, Pfitscher Joch (Passo di Vizze), 46°59'40"N, 11°39'38"E, on calcareous soil in alpine grassland, alt. 2250 m a.s.l., 13 September 2025, *leg.* F. Müller *s.n.* (DR 089372), *rpl16* sequence GenBank accession PZ052712.

Hedenäs (2020) segregated *Meesia minutissima* from *M. uliginosa* Hedw. using a combination of molecular and morphological data. The species was originally reported only from Scandinavia but subsequently proven to occur at eight sites in the Swiss Alps (Swissbryophytes 2004–2026; Bergamini et al. 2025), and at a single site in the French Alps (Queyras mountains in the Hautes-Alpes; Hodgson 2022). All records were reported from the alpine zone at elevations between 2250 and 2800 m. The new occurrences reported here also originate from the alpine belt (between 2250 m and 2650 m a.s.l.). At some of the sites (both those in the Zillertal Alps and on the slopes of Mt. Edelweißspitze in the Hohe Tauern Mts.), the species grew alongside *M. minor* Brid., another segregate taxon of *M. uliginosa*, similar to *M. minutissima* in its small size and habitat requirements, but differing in its longer setae, longer, darker, and more pronouncedly ornamented exostome and somewhat larger spores (Hedenäs 2020). Patches of *M. minutissima* were noticeable in the field due to their significantly smaller growth, shorter setae, and smaller capsules. Microscopic examination later confirmed the almost smooth to faintly striolate exostome outer surface. To provide an independent verification of morphological identification, two samples were also barcoded molecularly for the chloroplast *rpl16* gene, which proved to be the most variable among the analysed genomic regions. The analysis confirmed the identity of the new accessions with the other previously analysed Scandinavian plants.

18. *Mitthyridium fasciculatum* subsp. *cardotii* (M.Fleisch.) B.C.Tan & L.T.Ellis

Contributors. O. M. Sruthi, C. N. Manju and K. P. Rajesh

India. Kerala, Kannur district, Aralam Wildlife Sanctuary, Chullikandam 11.933733°N, 75.810933°E, alt. 140 m a.s.l., 19 November 2023, *leg.* Sruthi 14664, 14649 (CALI, ZGC).

The genus *Mitthyridium* H.Rob. of the family Calymperaceae is reported here for the first time from Kerala. It is distinguished by the presence of broad hyaline cells along the leaf margins. *Mitthyridium fasciculatum* subsp. *cardotii* is characterised by obovate leaves having an irregularly serrate margin with acute tip and quadrate cells. The cancellinae cells are present with 17–20 rows of long cells on either side of the leaf and a marginal hyaline border formed of 10 rows of linear flexuose cells reaching up to leaf tip. The costa is percurrent and often bears gemmae adaxially at the apex. The subsp. *cardotii* can be distinguished by the smaller size of its plants, branches, and leaves. *M. fasciculatum* subsp. *cardotii* was previously recorded from Sri Lanka (O'Shea 2002), Cambodia, Guinea, Myanmar, Singapore, Thailand, Papua New Guinea, Vietnam (Reese et al. 1986), Malaysia (Atiqah et al. 2023), Philippines (Tan and Iwatsuki 1991; Ellis and Tan 1999) and Indonesia (Ho et al. 2006). From India it was reported from Tamil Nadu as *M. cardotii* (Sreeba et al. 2016) and from Meghalaya and Assam as *Thyridium cardotii* M.Fleisch. (Gangulee 1972; Chopra 1975). The present collection of this subspecies represents an extended distribution of the genus and species to Kerala.

19. *Notothylas himalayensis* Udar & D.K.Singh

Contributors. O. M. Sruthi, C. N. Manju and K. P. Rajesh

India. (1) Kerala, Kannur district, Aralam Wildlife Sanctuary, Thullal para 11.933733°N, 75.810933°E, alt. 65 m a.s.l., 26 January 2023, *leg.* Sruthi 14371, 14649; (2) Paripputhodu 11.962767°N, 75.815400°E, alt. 140 m a.s.l., 18 November 2021, *leg.* Sruthi 14615; (3) Chavachi 11.928720°N, 75.876020°E, alt. 250 m a.s.l., 26 August 2022, *leg.* Sruthi 14861 (CALI, ZGC).

Notothylas himalayensis is a columellate species of the genus *Notothylas* Sull. It is distinguished by the prostrate to erect thallus, capsule that remains completely immersed within the involucre and a columella composed of spirally thickened cells. The capsule dehisces longitudinally and its walls are 3–4 layered and lacking stomata. The spores are dark brown, 43–59 × 21–35 µm in diameter and the pseudoelaters are predominantly unicellular with spiral thickening. *Notothylas himalayensis* is endemic to India, first described from the Western Himalaya by Udar and Singh (1981) and later reported from Himachal

Pradesh (Singh and Singh 2008, 2015; Singh and Singh 2010), Jammu and Kashmir (Devi et al. 2015), Rajasthan and Uttarakhand (Udar and Singh 1981; Asthana and Srivastava 1991). The present collection represents an extension of the distribution of *N. himalayensis* to the Western Ghats.

20. *Odontoschisma denudatum* (Mart.) Dumort.

Contributor. R. Natcheva

Bulgaria. Central Rhodopi Mts, valley of Derinkouk river, along the road to Kastrakli Nature Reserve, 41.678419°N, 24.341813°E, alt. 916 m a.s.l., in *Fagus-Pinus nigra* forest, on fallen decaying log of *Pinus nigra* J.F.Arnold, 19 November 2024, *leg.* and *det.* R. Natcheva (SOM 12419-B).

Odontoschisma denudatum was found sterile, bearing abundant gemmae on attenuate branches and amongst apical leaves. It formed mixed stands with *Fuscocephaloziopsis catenulata* (Huebener) Váňa et L.Söderstr. and *Nowellia curvifolia* (Dicks.) Mitt. The macro-habitat was a deep humid ravine with old growth *Pinus nigra* forest (more than 200 years old) intermixed with *Fagus sylvatica* L., *Abies alba* Mill., and with *Picea abies* (L.) H.Karst., and *Ostrya carpinifolia* Scop. along the river. The bedrock was Precambrian marble. This boreo-temperate species is distributed in West, North and Central Europe, Russia, Asia, and eastern North, Central, and South America. In the Balkans, it is known from Croatia, Romania (Critically Endangered), and Slovenia (Hodgetts and Lockhart 2020). Thus, the distribution of *O. denudatum* is extended further to the southeast in Europe.

21. *Pinnatidendron piniforme* (Brid.) Enroth

Contributors. A. M. Aponte Rojas and J. J. Atwood

Colombia. Quindío, Salento, vereda Camino Nacional. La Cresta. Mirador del Puma 4.5745956°S, 75.5088259°W; alt. 2000m.a.s.l., 16 September 2020, *leg.* L. F. Coca 12064 (JBB # 4547).

Pinnatidendron piniforme is a stipitate pleurocarpous moss that is characterised by a rigid habit; complanate, regularly pinnate branches; leaves with an elongated costa, short apical leaf cells, coarsely serrate to serrulate margins and stems that lack a central strand (Enroth 1990). The species has an Afro-American distribution pattern, occurring in both tropical America and Africa. In the Neotropics, *P. piniforme* has been reported from Dominica, Guadeloupe, Brazil, Suriname and Ecuador (Sastre-de Jesús 1987 as *Porotrichum* (Brid.) Hampe), French Guiana (Buck 2003, as *Homaliidendron piniforme* (Brid.) Enroth) as well as from Costa Rica, Panama (Allen 2010 as *H. piniforme*) and Mexico (Smith 1994 as *Porotrichum piniforme* (Brid.) Mitt.). Churchill et al. (2000) additionally reported the species from Colombia, although a

later checklist of Colombian mosses (Churchill 2016) omitted it and we have been unable to locate any specimen on which the prior report was based. The Colombia specimen cited here was an epiphyte, and while there is no other ecological data associated with it, the locality is at a low elevation. This new distribution report, alongside that of *Scabrellifolium substriatum* (Hampe) Enroth, adds to the presence of the family Orthostichellaceae in Colombia based on Enroth et al. (2019).

22. *Plagiothecium sylvaticum* (Brid.) Schimp.

Contributor. A. Graulich

Belgium. Wallonia, Lesse valley, Daverdisse, siliceous boulders near the stream, with *Grimmia hartmanii* Schimp., *Hedwigia filiformis* (Michx.) P.Beauv., *Isothecium alopecuroides* (Lam. ex Dubois) Isov., *Loeskeobryum brevirostre* (Brid.) M.Fleisch. ex Broth., *Pseudisothecium myosuroides* (Brid.) Grout, and *Thuidium delicatulum* (Hedw.) Schimp., 50°00'18"N, 5°07'39"E, alt. 240 m a.s.l., 23 March 2025, *leg.* A. Graulich (herb. Graulich BE60/25, dupl. LG).

Plagiothecium platyphyllum Mönk. has recently been synonymised with the older name *Plagiothecium sylvaticum* (Brid.) Schimp. (Wolski et al. 2024). This species of *Plagiothecium* Schimp. is characterised by inflated cells in the leaf decurrencies and by the presence of rhizoids arising from specialised cells (nematogones) in the leaf apex (Erzberger et al. 2020; Wolski 2025). Widespread in Europe, *P. sylvaticum* is a calcifuge moss of moist, shaded habitats, occurring mainly in montane regions (Hodgetts and Blockeel 2014; Hugonnot and Chavoutier 2024). However, the species is also known from lower elevations, particularly along streams in shaded habitats (Frahm 2013; Erzberger et al. 2020). The present record of *P. sylvaticum* represents the first confirmed report for Belgium and for the Ardenne range. Further field investigations are required to assess the frequency of *P. sylvaticum* in this region, as the species may easily be overlooked or misidentified as other large species of the genus *Plagiothecium*, such as *P. nemorale* (Mitt.) A.Jaeger or *P. succulentum* (Wilson) Lindb. (Erzberger et al. 2020).

23. *Pleurochaete luteola* (Besch.) Thér.

Contributor. J. Larraín

Chile. Región de Antofagasta, Provincia de Antofagasta, Comuna de Taltal, Aguada Leoncito, unos 6 km al N de Paposo, matorral denso de *Balbisia peduncularis* (Lindl.) D.Don, con *Eulychnia* Phil., *Heliotropium* L., *Croton chilensis* Müll.Arg., y otros arbustos dispersos, alt. 240 m a.s.l., 24°56'52.1"S, 70°28'21.8"W, 20 June 2025, *leg.* J. Larraín 48029 (CONC).

While *Pleurochaete luteola* has been generally considered conspecific with or a variety of *P. squarrosa* (Brid.) Lindb., several diagnostic morphological characters separate both taxa (Allen 2002; Suárez and Schiavone 2005; Wyatt and Stoneburner 2018). The taxon is characterised by rather large, yellowish plants with leaves contorted when dry, somewhat undulate, with a sheathing base, a well-developed limbidium extending from the leaf base to above mid-leaf, serrated borders, and a robust nerve in cross section with two stereid bands. This taxon is an American endemic, found in mountain areas between the United States and northwestern Argentina (Allen 2002; Suárez and Schiavone 2005). This new record is therefore the first for Chile and for the Atacama Desert. The newly reported specimen was found without sporophytes, forming a large population growing on soil underneath a thick shrub layer of *Balbisia peduncularis*, together with *Frullania pluricarinata* Gottsche, *Juratzkaea seminervis* Kunze ex Schwägr., *Lorentz*, and *Triquetrella patagonica* Müll.Hal. These thick shrublands are located on the extremely arid coast of the Atacama Desert but act as fog collectors, allowing the constant precipitation of water from the coastal fog and hence the development of a lush bryophyte carpet on the soil beneath them.

24. *Pohlia timmioides* (Broth.) Redf. & B.C.Tan

Contributor. H. Bednarek-Ochyra

Taiwan. Nantou County, Renai Township, Mt. Chilai, Chilai Cabin to Main Peak of Mt. Chilai, alt. 3300 m a.s.l., 24°06'05.4"N, 121°19'30.4"E, on moist tree base, on trail side of forest in filtered light, 1 October 2009, *leg.* K.-Y. Yao 2252, with M. Higuchi, T. Furuki and Y. Ohmura, *det.* R. Ochyra, July 2021 (KRAM B-258867, TAIE).

Pohlia timmioides is a very distinct species, readily recognised by its narrowly lanceolate to linear leaves, which are appressed when dry, with linear midleaf cells and margins recurved throughout and serrulate in the distal part. The species has been considered endemic to China, where it is exceedingly rare in north-western Yunnan and known only from two localities at altimontane elevations of 3500–4100 m (Zhang et al. 2007), including the *locus classicus* (Broth. 1929). Here, *P. timmioides* is reported for the first time from Taiwan, where it was collected at a similar montane elevation. This type of disjunct distribution is not exceptional, but is exhibited by many moss species, for example *Orthomnion piliferum* T.J.Kop. (Li et al. 2007), *Campylopus taiwanensis* Nog. (Gao et al. 1999), *Leucodon morrisonensis* Nog., *L. subulatus* Broth. (Zhang and He 2011), *Trachypodopsis formosana* Nog., *Trachypus longifolius* Nog. (Wu 2011), *Barbella linearifolia* S.-H.Lin (Wu and Pei 2011), *Macromitrium taiheizanense* Nog., *Orthotrichum taiwanense* Lewinsky, *Schlotheimia pungens* E.B.Bartram, and *S. rugulosa*

Nog. (Yu et al. 2011). Taiwan is a small insular country with an extraordinarily rich bryophyte flora. Within an area of nearly 36,000 km², only slightly larger than European Moldova, more than 900 moss species have hitherto been recorded (Redfearn et al. 1996; Chiang et al. 2001). Nevertheless, intensive exploration over recent decades continues to contribute new additions to its bryoflora (e.g. Higuchi and Lin 2005; Blockeel et al. 2006; Blockeel, Bednarek-Ochyra, et al. 2006; He 2008; He et al. 2009; Shevock et al. 2014; Ellis et al. 2014, 2018, 2019, 2024, 2025; Schäfer-Verwimp et al. 2021, 2022).

25. *Ptychostomum pseudotriquetrum* var. *bimum* (Schreb. ex anon.) Holyoak & N.Pedersen

Contributors. A. Mammadova and Y. Abiyev.

Azerbaijan. Khachmaz District, Samur–Yalama National Park, on periodically wet soils and shaded alluvial forest margins, alt. 50 m a.s.l., 41°41'24.18"N, 48°38'43.38"E, 26 May 2025, *leg.* Y. Abiyev, *det.* A. Mammadova (BAK 1256).

This specimen is assigned to var. *bimum* by its synoicous sexual condition, with antheridia and archegonia in the same inflorescence on a single shoot, unlike the dioicous var. *pseudotriquetrum* (Holyoak and Pedersen 2007). Additional gametophytic and sporophytic characters are consistent with current treatments of the taxon. The variety was not found in the principal Azerbaijani sources consulted, including the recent survey of Samur–Yalama National Park (Lyubarskaya 1986; Ignatov et al. 2006; Mammadova et al. 2024). This is therefore the first published record of *Ptychostomum pseudotriquetrum* var. *bimum* for Azerbaijan.

26. *Ptychostomum rubens* (Mitt.) Holyoak & N.Pedersen

Contributors. C. Bhagat and G. Asthana

India. Western Himalaya, Uttarakhand, Garhwal hill, Chamoli, Vishnuprayag, alt. ca. 1823 m a.s.l., 30°33'72"N, 79°39'98"E, 6 October 2012, *leg.* G. Asthana et al. 22539/12 (LWU).

Ptychostomum rubens is a widely distributed species reported across Europe, extending east to the Urals, and also reported from North America, Brazil, South Africa, southern Asia (India and Pakistan), Japan, Australia and New Zealand (Eckel and Shaw 1991; Erzberger and Schröder 2013 as *Bryum rubens* Mitt.; Holyoak 2021). It is uncommon in North America where it is considered to be an introduction and it is possible the Australian populations may also be introductions (Holyoak 2021). In India, it is known from the Eastern Himalaya regions of Assam and Sikkim and from Western India in Rajasthan (Lal 2005; Bansal and Nath 2013; Alam 2015 as *Bryum rubens*). During a study of mosses of The Garhwal Hills, this species was identified

from Vishnuprayag in Chamoli district of Uttarakhand, Western Himalaya, which is the first report of the taxon from the West Himalayan region. Plants are terrestrially growing, yellowish-green in colour, slender, unbranched and 10–25 mm long. A cross-section of the stem shows the presence of a central conducting strand. The leaves are spirally arranged on the stem, erect-spreading 1.7–2.0 mm long, 0.53–0.65 mm wide, oblong-lanceolate to ovate-lanceolate, apex acuminate, with the margin minutely dentate in the upper third of the leaf. A narrow, long border only one cell wide is present along the margin in the lower half of the leaf. The costa is single, strong, and excurrent. The leaf cells are smooth and the apical and median leaf cells narrow, rhomboidal-hexagonal; the basal cells are elongated-rectangular. Rhizoidal tubers are reddish-brown, small, with angular projections, 86–136 µm in diameter.

27. *Schistidium confusum* H.H.Blom

Contributor. T. Kiebachner

Italy. (1) Südtirol, Sterzing, Riedbergalm, alt. 1909m a.s.l., S-facing sunny rock outcrops, 46.93285°N, 11.47084°E, on calcareous schist, 1 October 2020, *leg.* T. Kiebachner 2797 (SMNS-STU-BR-0070147); (2) Vals, parking lot at Fanealm, 1730m a.s.l., rock outcrops, on calcareous schist, 46.88053°N, 11.62105°E, 24 June 2024, *leg.* T. Kiebachner 4688 (SMNS-STU-BR-0070148); (3) Vals, between Fanealm and Peachen Jöchl, rock outcrops, on siliceous rock, 46.88305°N, 11.61599°E, 24 June 2024, *leg.* T. Kiebachner 4694 (SMNS-STU-BR-0070149); (4) Vals, between Fanealm and Peachen Jöchl, rock outcrops, on calcareous schist, 46.87533°N, 11.61011°E, 24 June 2024, *leg.* T. Kiebachner 4695 (SMNS-STU-BR-0070150); (5) Moos in Passeier, Pfelders, 1596 m a.s.l., boulders on S-facing slope, on siliceous rock, 46.79665°N, 11.08803°E, 11 August 2025, *leg.* T. Kiebachner 5388 (SMNS-STU-BR-0070151).

Schistidium confusum is certainly among the lesser-known species of the genus. In the original description, the species was reported from Austria, The Czech Republic, Estonia, Finland, Germany, Latvia, Norway, Poland, Sweden, and Switzerland (Blom 1996). Since then, only France, Hungary, The Netherlands, north-west Russia, and Turkey have been added to its distribution (Uyar 2018; Hodgetts and Lockhart 2020; Uygur 2020). In the Alps, it is widespread on calcareous rocks in the montane and subalpine elevation zones, which is consistent with the Italian records presented here. It is assumed that it also occurs in other parts of Europe, particularly in the Balkans, from where it has not yet been reported.

28. *Taxithelium instratum* (Brid.) Broth.

Contributors. K. Aswathyraj, C. N. Manju, P. P. Sruthi and V. M. Jishnu

India. Kerala, Kannur district, Kappimala, Manjapul-medu, 12°11'11.9796"N, 75°32'3.4584"E, alt. 865 m a.s.l., 8 September 2025, *leg.* R. K. Aswathy, P. P. Sruthi and V. M. Jishnu 196000 (CALI).

Taxithelium instratum was first reported by Brotherus (1901) from Koh Chang, an island in Thailand. This species is characterised by its complanate shoots; leaf margins serrate above with erect spines and serrulate below, leaf cells pluripapillose and with a small region of alar cells. *Taxithelium instratum*, *T. nepalense* (Schwägr.) Broth. and *T. arnottii* Thér. & P.de la Varde are very closely related species requiring further study. *Taxithelium instratum* was previously known from Borneo, China, Taiwan, Vietnam (Tan and But 1997), Guam, Northern Mariana Islands (Miller et al. 1978), Malaysia (Tan and Iwatsuki 1991; Atiqah et al. 2023), Java, Kampuchea, Myanmar, New Guinea, Philippines (Tan and Iwatsuki 1991; Logatoc et al. 2023), Thailand (Brotherus 1901; Dixon 1932), and Australia (Câmara 2011). Chopra (1975) noted the distribution of this species in the Western Ghats without mentioning precise locations. Lal (2005) also mentioned its occurrence in south India, but there is no previous record of its occurrence in Kerala. Thus, the present collection from Kappimala of Kannur district is a new report of this species from Kerala.

29. *Weissia angustifolia* (Baumgartner) D.A.Callaghan

Contributor. A. Graulich

Belgium. Wallonia, Visée, Montagne Saint-Pierre, Thier de Nivelles, calcareous grassland, 50°46'42"N, 5°40'46"E, alt. 100 m a.s.l., 28 January 2025, *leg.* A. Graulich (herb. Graulich BE04/25, LG).

Weissia angustifolia (Pottiaceae) was long considered a variety of *Weissia longifolia* Mitt. However, based on an integrated morpho-molecular study, it was recently reinstated as a distinct species (Callaghan et al. 2019). *Weissia angustifolia* is distinguished from other related species of *Weissia* Hedw. subg. *Astomum* (Hampe) C.E.O.Jensen ex P.W.Richards & E.C.Wallace by two key features. Firstly, the margins of the distal half of perichaetial leaves are tightly involute. Secondly, an abscission zone of small, differentiated cells is present at the junction of the operculum and the urn (Callaghan et al. 2019). Its recent taxonomic recognition helps explain why *W. angustifolia* has so far only been reported from a limited number of European countries: France, Germany, Montenegro, Spain and The Netherlands (Papp and Erzberger 2007; Callaghan et al. 2019; Casas et al. 2020; Nieuwkoop 2020; INPN 2025). The present record of *W. angustifolia* represents the first confirmed report for Belgium. Following this discovery, I revised specimens of *W. longifolia* from LG herbarium and the private herbarium of A. Sotiaux, all collected in

Wallonia. As a result, I identified 26 specimens as *W. angustifolia* and 56 specimens as *W. longifolia*. No differences in the distribution and the ecological preferences of the two species were observed in Wallonia.

30. *Wiloniella hampeana* (Müll.Hal.) E.S.Salmon

Contributors. D. Shukla and S. K. Singh

India. Uttarakhand, Dehradun, in Swarn Jayanti Udyan, BSI-NRC campus, 30.347477°N, 78.014324°E, alt. ca. 600 m a.s.l., 9 October 2024, *leg.* D. Shukla UKB1367 (BSD) and 7 October 2025, *leg.* D. Shukla UKB2068 (BSD).

Müller (1881) described *Thiamea* Müll.Hal. and its type species *Thiamea hampeana* Müll.Hal., based on a collection from Myanmar. Salmon (1902) subsequently studied the type specimens and found that *Thiamea* is congeneric with *Wiloniella* Müll.Hal., recombining *T. hampeana* as *Wiloniella hampeana*. Presently, *W. hampeana* is a well-accepted taxon belonging to the family Bruchiaceae (Verma et al. 2011; Fedosov et al. 2025). The species is reported here for the first time from the Western Himalaya. It has been previously recorded from Nilgiri Hills, Western Ghats (Dixon 1922; Bruehl 1931; Verma et al. 2011) and Myanmar (Müller 1881). The plants are minute, 2–3 mm long, yellowish-green, growing in patches on bricks covered by a very thin layer of soil. The leaves are lanceolate, becoming crumpled when dry and with an acute apex. The leaf margins are somewhat crenulate in the upper half; laminal cells are thin-walled, large, rhomboidal to sub-rectangular in the upper leaf and usually long-rectangular below; the percurrent costa ends just below the apex. The setae are somewhat flexuous, 4–6 mm long, and capsules are somewhat arcuate, short, and pyriform with a very short apophysis. The peristome is jointed at the base, yellowish, bifurcated in the apical portion, appearing dark reddish-brown with spiral trabeculae.

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ORCID

J. Wilbraham  <http://orcid.org/0000-0003-4101-0611>
 Y. Abiyev  <http://orcid.org/0000-0002-6850-4307>
 D. J. Alvarez  <http://orcid.org/0000-0001-7582-554X>
 A. M. Aponte Rojas  <http://orcid.org/0000-0003-4691-2673>
 C. Arrocha  <http://orcid.org/0000-0002-0555-1747>
 J. J. Atwood  <http://orcid.org/0000-0002-8646-6711>
 H. Bednarek-Ochyra  <http://orcid.org/0000-0002-6994-8313>
 Á. Benítez  <http://orcid.org/0000-0003-4579-1291>
 L. Fatková  <http://orcid.org/0009-0007-1201-2374>
 R. Gabriel  <http://orcid.org/0000-0002-3550-8010>
 N. Guerra-Batista  <http://orcid.org/0000-0002-4455-1694>
 J. Kučera  <http://orcid.org/0000-0002-0230-5997>
 A. Mammadova  <http://orcid.org/0009-0000-0909-7660>
 E. Mikulášková  <http://orcid.org/0000-0002-6122-4265>
 F. Müller  <http://orcid.org/0000-0001-9482-9423>
 R. Natcheva  <http://orcid.org/0000-0001-7873-5523>
 F. Pereira  <http://orcid.org/0000-0002-2238-9681>
 E. Rodríguez-Quiel  <http://orcid.org/0000-0002-2954-8462>
 M. Rogošić  <http://orcid.org/0009-0007-7982-6639>
 J. Samudio-Palacio  <http://orcid.org/0009-0007-8431-3205>
 A. Schäfer-Verwimp  <http://orcid.org/0000-0002-2720-6055>
 C. Sérgio  <http://orcid.org/0000-0001-5145-5329>
 D. Shukla  <http://orcid.org/0009-0001-0869-9026>
 G. M. Silveira  <http://orcid.org/0009-0002-8684-7204>
 S. K. Singh  <http://orcid.org/0000-0002-6332-2010>
 M. Sousa  <http://orcid.org/0009-0007-9829-3014>
 G. M. Suárez  <http://orcid.org/0000-0002-7131-0634>

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