

New national and regional bryophyte records, 19

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1. *Anomodon rostratus* (Hedw.) Schimp.

Contributor: Özlem Tonguç Yayıntaş

Turkey: ADANA: Pozanti, Sekerpinari, Hayat spring water, 36°25'28.95''N, 34°52'36.43''E, 675 m a.s.l., trees on bark, 23 April 2000, *leg.* Özlem Tonguç Yayıntaş *T 849* (MO; herbarium of Çanakkale Onsekiz Mart University).

Anomodon rostratus is an addition to the three species of *Anomodon* listed for Turkey by Kürschner and Erdag (2005). It is a circumboreal montane species distributed in central Europe (Germany south to Spain, east to Italy and Romania), Caucasus (Georgia), North America (Newfoundland to Mexico, west to Arizona and British Columbia), Guatemala, Jamaica, Haiti and Bermuda (Granzow-De la Cerda, 1997). The nearest localities to Turkey for *Anomodon rostratus* are in Syria and Iran (Kürschner, 2006).

Pozanti is located in the Middle Taurus Mountains, which are the westernmost branch of the great Himalayan mountain chain. The area has a climate transitional between that of Central Anatolia and the Mediterranean Region.

2. *Asterella gracilis* (F.Weber) Underw.

Contributor: David G. Long

China: YUNNAN PROVINCE: Gongshan County, Bingzhongluo Xiang, east slope of Gaoligong Shan, Nu Jiang (Salween) catchment, valley on S.W. slope of Gawagapu Mountain, 27°59'16.8''N, 98°28'27.4''E, alpine valley with rocky slopes and cliffs above snow patch; under fern clumps on wet scree slope, 3940 m, 20 August 2006, D.G. Long *35918-a* (E).

Long (2006) revised the world distribution of *Asterella gracilis*, confirming it in Asia from Russia (Siberia), Iran, India (Jammu & Kashmir) and Japan (Hokkaido, Honshu). This constitutes a new record for China. The plant was found in small quantity, with immature carpocephala but showing the very characteristic pseudoperianth divided to the base, with the lobes flat and becoming free at the apex. It was mixed with an as yet unidentified sterile member of Cleveaceae. The alpine habitat accords closely with its

known ecology in Europe and North America (Long, 2006).

3. *Austrofossombronia australis* (Mitt.) R.M.Schust.

Contributors: J. Váňa, R. Ochyra, B. Cykowska and H. Bednarek-Ochyra

Îles Crozet: ÎLE DE LA POSSESSION: (1) by road to Rivière du Camp, north of the Alfred Faure base, 80 m a.s.l., 46°25'S, 51°50'E, on bare ground on the escarpment overgrown with *Blechnum penna-marina*, 9 November 2006, *leg.* R. Ochyra *24C* (KRAM, PRC); (2) Baie du Marin, steep cliff overlooking Crique du Navire, north-east of the Alfred Faure base, 46°25'S, 51°50'E, on spots of bare moist soil in grassland dominated with *Poa cookii*, 9 November 2006, *leg.* R. Ochyra *49B* (KRAM, PRC).

Austrofossombronia australis is apparently an Australasian-Kerguelenian subantarctic species. So far, it has been recorded only from Macquarie Island (Schuster, 1994), Heard Island (Váňa & Gremmen, 2005) from where it was described as *Fossombronia australis* (Mitten, 1876) and Îles Kerguelen (Grolle, 2002; Váňa & Gremmen, 2006). The species has also been reported from New Zealand and Australia, but Schuster (1994) questioned these records, whereas the plants so-named from the Prince Edward Islands he recognized as a separate species, *A. marionensis* R.M.Schust. Here, the range of this species is extended to Îles Crozet, the next archipelago in the Kerguelenian Province of the Subantarctic. The plants are in fine fruiting condition and bear spherical sporangia and they are undoubtedly distinct from *A. marionensis* which has ellipsoid sporangia.

4. *Bryum alpinum* With.

Contributors: J. Larrain and R. Ochyra

Chile: X REGION: Palena Province, near Puerto Cárdenas, 43°10'30''S, 72°25'57''W, 45 m a.s.l., on gravel soil along the side of the road, 11 January 2004, *leg.* J. Larrain *17026* (CONC, KRAM).

When considering its current range, *Bryum alpinum* cannot be designated a cosmopolitan species as interpreted by Dierßen (2001) since it is absent from huge areas of tropical Asia, Oceania, Australasia and Antarctica. It is a typical bipolar species, having a strongly discontinuous,

boreal-temperate-montane range in the Northern Hemisphere, and in the austral region it is known only from Îles Kerguelen (Mitten, 1879; Ochyra, personal observations). The species deeply penetrates into the tropics in the African mountains, where it ranges from Ethiopia to South Africa in East Africa, and is occasional in West Africa (O'Shea, 2006). In the Neotropics it is rare and occasional in Mexico, Peru and northern Argentina (Ochi, 1980) and now its range is expanded to central Chile. The Chilean plants were collected at a low elevation in a fine fruiting condition.

5. *Bryum valparaisense* Thér.

Contributors: S. Rams, R.M. Ros and D.T. Holyoak

Spain: PROV. ALMERIA, Sierra Nevada (National Park), near Rágol town and crossing of Andarax river, 36°59'N 2°41'W, 410 m a.s.l., very thick protosoil on shady loamy rock, with *Bryum argenteum* Hedw., *B. dichotomum* Hedw., *B. gemmilucens* R.Wilczek & Demaret, *B. torquescens* Bruch & Schimp., *Dicranella howei* Renauld & Cardot, *Didymodon sicculus* M.J.Cano, Ros, García-Zamora & J.Guerra and *Funaria hygrometrica* Hedw., 21 March 2004, leg. S. Rams (MUB 19604).

This is the first report of *B. valparaisense* in peninsular Spain. Arts, Crundwell & Whitehouse (1995) synonymized *Bryum pyriferum* Crundw. & H.Whitehouse with this species and reported European records from the Canary Islands and Portugal (Algarve). It has since been reported again from southern Portugal (Baixo Alentejo: Sérgio & Garcia, 2001) and from the Isles of Scilly off SW England (Preston & Finch, 2006). Elsewhere in the world, it is known from northern Africa (Libya and Sudan), North America (southern USA) and South America (Chile) (Arts, Crundwell & Whitehouse, 1995). Its distribution can therefore be regarded as southern-temperate. The location in Prov. Almeria is dry throughout the year, with total annual rainfall of less than 350 mm in the area. The site is close to agricultural fields, and clearly nitrogen-rich. The specimen lacks a sporophyte. It can be distinguished from related *Bryum* species by the presence of numerous very small rhizoidal tubers, 35–58 µm long and 33–53 µm wide, which are pale yellowish brown, smooth in outline and up to 3–4 cells wide. *Bryum valparaisense* has been categorized as a Vulnerable species for the Iberian Peninsula (Sérgio *et al.*, 2006); its status has not yet been assessed for the European Red List.

6. *Dendrocryphaea latifolia* D.G.Griffin, S.R.Gradst. & J.Aguirre

Contributors: R. Ochyra, Z. Soldán and H. Bednarek-Ochyra

Ecuador: NAPO PROVINCE: Los Llanganates Mountains (=Parque Nacional Llanganates), a foggy forest on slope above the valley of 'Frailejones' (=nameless valley with the occurrence of *Espelecia pycnophylla* var. *llanganatensis*), ca 20 km south-east of Laguna Pisayambo lake), 01°09'43.1'' S, 78°15'08.8'' W, alt. ca 3490 m a.s.l., on boulders in a steep brooklet SW of the lake, 4 October 2000, leg. Z. Soldán (KRAM, PRC, QCA).

Dendrocryphaea latifolia is a North Andean endemic oreophyte which has hitherto been known only from two collections from the Colombian provinces of Cauca and Cundinamarca (type locality), occurring at altimontane elevations of 3080 and 4000 m, respectively (Griffin, Gradstein & Aguirre, 1982; Churchill & Linares, 1995; Linares, Aguirre & Rangel, 2000). It is a distinct rheophytic moss growing on stones in streams in the paramo zone. Although the present record extends the range of the species to Ecuador and is situated about 1300 km to the south of the Colombian localities, *D. latifolia* still retains the status of North Andean endemic and the Ecuadoran station at 3490 m is its highest known site.

7. *Grimmia reflexidens* Müll.Hal.

Contributors: Helena Hespanhol, Ana Séneca and Cecília Sérgio

Portugal: BEIRA BAIXA: Parque Natural da Serra da Estrela, Torre, on an exposed rock surface of granite outcrops, 29SPE1754, 1972 m a.s.l., 15 July 2006, leg. Helena Hespanhol (PO 5005 B, PO 5006 B).

The occurrence of *Grimmia reflexidens* in Portugal is mentioned in the Iberian Peninsula Red List (Sérgio *et al.*, 2006), though this reference was based on doubtful material. These newly discovered populations of *G. reflexidens* consisting of less than 1000 mature individuals confirm its presence in Portugal. This species, classified as rare in Europe (ECCB, 1995), is widely distributed throughout the world and is widespread in mountain areas of Europe, on exposed siliceous rocks (Muñoz & Pando, 2000). *G. reflexidens* was found sterile, growing with *Racomitrium macounii* Kindb. subsp. *macounii* at the highest point of Mainland Portugal, which is an easily accessible site. Although sterile it was possible to separate it from related species like *Grimmia alpestris* (Schleich. ex F.Weber & D.Mohr) Schleich., since plants of *G. reflexidens* can be recognized by the narrowly recurved margins in the middle part of leaf, the mostly not or very slightly bulging laminal cells and its non-glaucous colour (Ignatova & Muñoz, 2004).

8. *Grimmia tergestina* Tomm. ex Bruch & Schimp.

Contributors: Helena Hespanhol, Ana Séneca and Cecília Sérgio

Portugal: TRÁS-OS-MONTES E ALTO DOURO: Serra do Marão, Coto, on an exposed rock surface of crystalline calcareous outcrops, 29TNF9075, 773 m a.s.l., 3 May 2005, leg. Helena Hespanhol (PO 4994 B); Sobrido, on an exposed rock surface of crystalline calcareous outcrops, 29TNF8774, 544 m a.s.l., 3 June 2005, leg. Helena Hespanhol (PO 4995 B).

This is the first report of *Grimmia tergestina* for Portugal. This species occurs through Europe, Central Asia and North and South America (Muñoz & Pando, 2000), frequently growing on calcareous rocks.

In Portugal this species occurs on crystalline calcareous outcrops enclosed in schist valleys in the Alvão/Marão

mountain system (Natura 2000 Site). These geological formations do not form continuous areas in the North-West of Portugal, a region dominated by granitic and schist outcrops. Rather they are a group of small separated areas easily distinguished from the surrounded schist outcrops by their particular flora and vegetation. The limestone vegetation and flora of this mountain system (vascular plants, bryophytes and lichens) was first reported by Pinto da Silva, Teles & Rozeira (1958); there have been no subsequent accounts.

The newly found populations of *G. tergestina* were growing in two separate localities, associated with *Grimmia orbicularis* Bruch ex Wilson, *Grimmia trichophylla* Grev., *Orthotrichum rupestre* Schleich. ex Schwägr., *Dialytrichia mucronata* (Brid.) Broth., *Syntrichia montana* Nees and *Tortella tortuosa* (Hedw.) Limpr. The material was sterile and plants with sporophytes were not observed on subsequent visits to the sites. Although sterile material of *G. tergestina* can be difficult to separate from *Grimmia poecilostoma* Cardot & Sebille, substrate information was decisive in assigning the collected specimens to *G. tergestina*, as *G. poecilostoma* grows on acidic or neutral substrates (Ignatova & Muñoz, 2004).

9. *Hilpertia velenovskii* (Schiffn.) R.H.Zander

Contributor: Z. Hradílek

Kazakhstan: N.E. KAZAKHSTAN: foothills of the Altay Mts., Uryl, route between Zhambul and Berel on the right bank of the Bukhtarma river, ca 6 km N. of Berel, 49°17'27''N 86°19'18''E, 1100 m a.s.l., loess wall, leg. Z. Hradílek, 9 July 2007 (Priv. Herb. Hradílek).

Hilpertia velenovskii is a widely distributed but very scattered moss species in the Holarctic region. The world distribution was summarized by Sabovljević, Frahm & Schaumann (2006). This species, once regarded as a European endemic, is probably a relict of the Pleistocene cold steppe. In Kazakhstan it was found on its typical biotope – on a loess wall in a steppe zone, together with *Aloina rigida* (Hedw.) Limpr. and *Didymodon acutus* (Brid.) K.Saito *sens.lat.* The population is quite abundant and fertile.

10. *Niphotrichum canescens* (Hedw.) Bednarek-Ochyra & Ochyra subsp. *latifolium* (C.E.O.Jensen) Bednarek-Ochyra & Ochyra

Contributors: H. Bednarek-Ochyra, R. Ochyra and D.G. Long

Nepal: Sankhuwabasha District: Nehe Kharka, S side of Barun Khola, 27°45'N, 87°10'E, ca 3680 m a.s.l., open valley floor, open gravelly ground by stream, 30 September 1991, leg. D. G. Long 20780 (E).

Niphotrichum canescens subsp. *latifolium* is an arctic-boreal-montane taxon, with its maximum occurrence in North America, Greenland and North Europe, including Iceland, Svalbard and Fennoscandia (Frisvoll, 1983), whereas in Asia it is rare in the Far East including Chukotka (Afonina, 2004), Kamchatka (Czernyadjeva,

2005) and Japan (Frisvoll, 1983). In addition, this taxon has been recorded once at a highly isolated station in Sikkim in the Indian Himalayas at an alpine elevation of 3660 m (Frisvoll, 1983). This was not an incidental occurrence of this northern taxon in this region because now its range is extended to East Nepal, where *N. canescens* subsp. *latifolium* was discovered at a similar elevation as in the adjacent Sikkim. It is worth noting that recently this taxon has also been rediscovered in Sikkim (Long 26447, E). Moreover, the type subspecies of *N. canescens* is unknown from the Himalayan region.

11. *Orthostichopsis tetragona* (Hedw.) Broth.

Contributor: E. Fuertes

Argentina: SALTA: Parque Nacional de Baritú, bosque montano con *Alnus acuminata*, en las yungas, entre Lipeo y Baritú, 1520–1700 m a.s.l., 22°27'S, 64°44'W, leg. et det. E. Fuertes, 27 June 2007 (MACB 96885).

Orthostichopsis tetragona was collected at a few localities in the National Park of Baritú, between 1400 and 1800 m a.s.l., epiphyte on trees or hanging from twigs and branches of moist evergreen forests with an annual rainfall exceeding 2000 mm. According to Cabrera & Willink (1973), this locality is situated in the Neotropical Region, Amazónico Dominio and the Yungas Province. The most representative species of vascular plants in this habitat are *Alnus acuminata* Kunth, *Podocarpus parlatorei* Pilg, *Cedrela angustifolia* Moc. & Sessé ex DC., *Phyllostylon rhamnoides* Taub., *Calycophyllum multiflorum* Griseb., *Roupala meisneri* Sleumer, *Fuchsia boliviana* Britton, *Juglans australis* Griseb. *Tabebuia avellanadae* Lorentz ex Griseb, *Sambucus peruviana* Kunth, *Viburnum seemenii* Graebner. This vegetation is characteristic of these montane cloudy forests (Brown *et al.*, 2001).

Orthostichopsis tetragona has a wide range in the neotropical areas from Mexico to Panama, Central America and a wide area of northern South America: Colombia, Venezuela, Ecuador, Perú, the Guianas and northern Brazil (Arzeni 1954; Buck, 1991). A recent revision of the moss checklist of Argentina showed the genus *Orthostichopsis* to be represented by one species, *O. tenuis* (A.Jaeger) Broth. (Matteri, 2003). The presence of *O. tetragona* in the National Park of Baritú is therefore a new record for the bryophyte flora of Argentina. According to Buck (1991), the following characters clearly separate *O. tenuis* from *O. tetragona*: alar cells of the secondary stem and branch leaves much fewer, comparatively inconspicuous; branch leaves cuspidate; mid-leaf cells shorter (ca 28 µm).

12. *Pohlia drummondii* (Müll.Hal.) A.L.Andrews

Contributor: R. Ochyra

Prince Edward Islands: MARION ISLAND: Meteorological station at Transvaal Cove, 46°52'45''S, 37°51'40''E, 0–30 m a.s.l., exposed on bare peat, 22 December 1965, leg. B. J. Huntley 663d (GRO, KRAM, PRE).

Pohlia drummondii is a bipolar species without intermediate stations in the tropics, having an almost continuous arctic-boreal-montane range in the Northern Hemisphere, with occasional and scattered stations in Tierra del Fuego, the northern maritime Antarctic and subantarctic South Georgia, where it has long been known as *Pohlia inflexa* (Müll.Hal.) Wijk & Margad. (Clarke, 1973). Ochyra (1998) considered the latter species to be conspecific with *P. drummondii*. It is apparently known also from south-eastern Australia (Shaw, 2006, as *P. inflexa*) and the present record of *P. drummondii* in the Prince Edward Islands nicely bridges the South American and Australian centres of its occurrence in the Southern Hemisphere.

13. *Ricciocarpos natans* (L.) Corda

Contributors: B. Cykowska, J. Piątek and M. Piątek

Cameroon: EAST PROVINCE: Department Lom et Djérem: between Dondi and Vyalı, ca 37 km N.W. of Bertoua, 4°52'52''N, 13°32'03''E, ca 678 m a.s.l., lake in tropical forest partly surrounded by small banana plantations, 7 December 2007, leg. J. & M. Piątek s.n. (KRAM).

In Africa *Ricciocarpos natans* is rather rare, though widely scattered in 11 countries. It occurs predominantly in East Africa, ranging from southern Kenya to South Africa, whereas in West Africa it is very rare in Ghana and Nigeria (Wigginton 2004a, b; Wigginton & Grolle 1996). The locality in Cameroon nicely bridges the West and East African centres of its occurrence on the continent. The hepatic was collected from water and the wet muddy bank of a small tropical lake in the Guineo-Congolian rainforest. It grew in gaps within patches of *Leersia hexandra* Sw. forming small monospecific aggregations. The chemical and physical characteristics of the water are as follows: pH 6.1, temperature 29°C and conductivity 30 $\mu\text{S cm}^{-1}$.

14. *Scapania gymnostomophila* Kaal.

Contributor: S. Ștefănuț

Romania: SOUTHERN CARPATHIANS: Bucegi Massif, Caraïman Mountain, Prahova County, 45°24'56''N 25°29'02''E, 2330 m a.s.l., on basic conglomerates substrate, 20 June 2007, leg. et det. S. Ștefănuț, conf. J. Váňa (BUCA B3722, B3723).

This is the first report of *Scapania gymnostomophila* in Romania and also in the South Carpathians. The nearest localities of this species are in the Tatra Mountains. Therefore, this new record constitutes a range extension of this species towards South-East Europe. The plants are not abundant and grow together with *Ditrichum flexicaule* (Schwägr.) Hampe and *Cephaloziella rubella* (Nees) Warnst. Alongside sterile plants several male plants were found with intercalary androecia. Female plants were not found. In Europe *S. gymnostomophila* grows in the alpine zones from the Pyrenees to the Carpathians and lowlands of Northern Europe (Söderström, Urmi & Váňa, 2002, 2007).

15. *Scapania paludosa* (Müll.Frib.) Müll.Frib.

Contributors: Tamer Keçeli, Gökhan Abay, Güray Uyar and Barbaros Çetin

Turkey: RIZE: Kaçkar Mountains National Park, 40°57'49.9''N, 41°13'10.2''E, between northern slopes of Altıparmak Mountain and upper parts of Avusor High Plateau, 2725 m a.s.l., near marshy bank of glacial pond, on submerged rock together with *Scapania undulata* (L.) Dumort. and *Marsupella funckii* (F. Weber & D. Mohr) Dumort., 13 July 2006, leg. G. Uyar, G. Abay and T. Keçeli (3117), det. T. Keçeli and B. Çetin (Priv. Herb. Keçeli).

Hitherto, *Scapania* was represented in Turkey by 10 species (Papp, 2004; Ros *et al.*, 2007). Here we report an eleventh species of the genus. Only male plants were found in Turkey. The species differs from related species by its strongly arcuate to semicircular keel, reniform to cordate reniform and decurrent dorsal lobes and absence of gemmae. The species was not previously known in South-West Asia (Kürschner 2001).

The locality is situated in Eastern Black Sea Region, in the northeast of Turkey and belongs to grid square A4 according to the system adopted by Henderson (1961). The study area has a typical oceanic climate. There is no dry season and annual rainfall averages 2313 mm in Rize (Akman, 1999). The basic mother rocks of the area are made up of granite, syenite and andesite rocks that belong to the Palaeozoic and Mesozoic eras (Fındık, 2001).

The worldwide distribution of *Scapania paludosa* extends through Europe, Siberia, North Russia, East Russia, North Caucasus, Eastern Asia, China, Mongolia, Subarctic America, Canada, and North-western and North-eastern USA (Söderström *et al.*, 2002).

16. *Scapania sphaerifera* H. Buch et Tuomik.

Contributor: Vadim A. Bakalin

Russian Federation (Southern Far-East): PRIMORSKII KRAI: southern Sikhote-Alin Range, area near the top of Olkhovaya Mt., northern slope, *Picea ajanensis* (Lindl et Gord.) Fish ex Carr, *Betula lanata* (Regel) V. Vassil. forest with admixture of *Abies nephrolepis* (Trautv.) Maxim. and cover of ferns, forbs, *Oplopanax elatus* (Nakai) Nakai and other shrubs, 43°20'50''N, 133°39'22''E, ca 1500 m a.s.l., stony field, in crevices, 3 October 2006, leg. V.A. Bakalin P-65-27a-06 (VLA).

Scapania sphaerifera was originally described by Buch & Tuomikoski (1936) on the basis of material from north-east Europe (Murmansk Province, Russia). Fifty years later it was discovered at several locations in the mountainous areas of southern Siberia: Sayan Mts., Khamar-Daban Range (Konstantinova & Potemkin, 1994). The species was recently discovered in eastern Siberia (Sofronova & Potemkin, 2000).

The record mentioned above was found ca 2300 km or 22° latitude south of the nearest location in eastern Siberia. This discovery considerably enlarges the distribution of the species. Furthermore, all the aforementioned locations are found in the boreal zone (Circumboreal Floristic Region of

Takhtajan, 1986), whereas the present specimen is the first collection within the South Temperate Zone (East Asian Floristic Region). The presence of the species in this zone probably represents a relict of Pleistocene glaciations. This latter supposition is supported in part by the wide distribution of permafrost in mountainous areas of the southern Sikhote-Alin Range, a condition that allows for the growth in this area of a taxon with presumably arctic-montane distribution.

17. *Syntrichia montana* Nees var. *calva* (Durieu & Sagot ex Bruch & Schimp.) J.J. Amann

Contributors: H. Kürschner and G. Parolly

Turkey: VILAYET MARDIN: Mardin Dagları, ca 10 km east of Savur towards Senköy, 2 km east of Dereçi, 37°32'48.8''N, 40°59'06.3''E, 1000 m a.s.l., limestone hill, on ground in oak (*Quercus brantii*) scrub, 20 March 2006, leg. U. Hauke & G. Parolly s.n.; VILAYET BATMAN: Mardin Dagları, between Kayapınar and Gercüs, ca 2 km south of Hisarköy, 37°34'38.8''N, 41°13'52.6''E, 840–880 m a.s.l., marly hill, on stony ground in open thorn-cushion formation, 21 March 2006, leg. U. Hauke & G. Parolly 06-60a (B; Priv. Herb. H. Kürschner).

A basiphytic taxon of montane distribution known from the limestone areas of W., S. and C. Europe and N. Africa. In S.W. Asia with an insufficiently known distribution and recorded only from Iraq (Liwa Suleimaniya: Dokan dam: Agnew & Vondráček, 1975). The new localities in S.E. Turkey are close to the Iraqi locality and together outline a distinct S.E. Anatolian-Mesopotamian partial area. *S. montana* var. *calva* was found on sunny and dry stony ground of marl and limestone in the understorey of open oak scrub and thorn-cushion formations between 840 and 1000 m. Accompanying taxa are *Grimmia pulvinata* (Hedw.) Sm. and *Syntrichia calcicola* J.J. Amann.

The Turkish plants fit well in the concept of this very distinct variety and are easily recognized by the broadly spatulate leaves, in outline violin-shaped (constricted at or below the middle), and the absence of a central strand. In contrast to the typical variety, hyaline hair-points are absent and the leaves are mucronate, with a brownish, recurved mucro reaching 20–50 µm.

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