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New national and regional bryophyte records, 8

(Intending contributors to this column should consult the Instructions for Authors in part 1 of this volume, and should address their contributions to the column editor.)

1. *Anisothecium cardotii* (R. Br. bis) Ochyra

Contributors: R. Ochyra and V. R. Smith

Marion Island: (1) stream at the eastern foot of Repetto's Hill, 46° 50′ 40″ S, 37° 45′ 05″ E, 100–180 m alt., on bare moist soil on denuded slopes, forming extensive almost monospecific patches, occasionally with an admixture of *Plagiochila heterodonta*, 29 April 1999, Ochyra & V.R. Smith *2474/99 & 2485/99* (KRAM); (2) in the spring area of Van den Boogaard River at south-eastern foot of Tafelberg, 46° 53′ 25″ S, 37° 48′ 40″ E, 380 m alt., on wet bare earth on the steep bank of the river near the waterfall, with a small admixture of *Bartramia patens* and *Brachythecium austro-salebrosum*, 13 April 1999, Ochyra & V.R. Smith *865/99* (KRAM); (3) between Tafelberg and First Red Hill, 46° 53′ 30″ S, 37° 47′ 50″ E, 450 m alt., on moist pocket of soil between boulders of grey lava rocks intermixed with *Philonotis tenuis* and with smaller admixture of *Philonotis scabrifolia* and *Plagiochila heterodonta*, 13 April 1999, Ochyra & V.R. Smith *893/99 & 896/99* (KRAM).

A pan-south-temperate species, widely distributed but generally scattered in the *Nothofagus* zone along the western fringes of South America from central Chile to Tierra del Fuego, and infrequent on the Falkland Islands, in South Africa, south-eastern Australia, on Tasmania and in New Zealand and its offshore islands, then extending southwards to the Subantarctic as well as to the maritime Antarctic, and deeply penetrating into the tropics along the high elevations of the Andes north to Venezuela, reaching its highest elevation of 4500 m in Colombia (Ochyra & Newton, 1985; Ochyra, 1998). In the Subantarctic, *A. cardotii* has so far been known to be relatively frequent on South Georgia (Newton, 1977) and Macquarie Island (Selkirk, Seppelt & Selkirk, 1990) and very rare on Îles Kerguelen (Ochyra & Newton, 1985), but the latter archipelago is bryologically very under-investigated. On Marion Island in the Kerguelen Province of the Subantarctic *A. cardotii* is a rare and widely scattered species. Marion plants frequently produce spherical tubers but they are entirely sterile as is the case with South Georgian and Kerguelen material. In the Subantarctic, this species is known to produce sporophytes abundantly only on Macquarie Island (Bergstrom & Selkirk, 1987).

2. *Cephaloziella dentata* (Raddi) Steph.

Contributor: R. Schumacker

PORTUGAL: AZORES: (1) Island of Flores: E. of Fajãzinha, on fully exposed, bare, sandy soil of the banks of the Ribeira Grande, downstream of the bridge on EN 2-2a, associated with *Epipterygium tozeri* (Grev.) Lindb., *Cephalozia bicuspidata* (L.) Dumort., *Marsupella funckii* (F.Weber et D.Mohr) Dumort., UTM 25S FD 5266, 500 m alt., 23 August 2000, *leg.* R. Schumacker *20000823/1*, *c. per.*, *conf.* J. Váňa. (AZU, PRC and LGHF); (2) Island of Terceira: Biscoito Rachado (local name), *ca* 1 km NW of Algar do Carvão, along a track to the bog of Tamujal, on ± moist soil, close to a small permanent pool, associated with *Epipterygium tozeri* (Grev.) Lindb. and *Fossombronia* sp. (sterile), UTM 26S MH 8087, 620 m alt., *leg.* R. Schumacker *20000827/1*, 27 August 2000, *conf.* J. Váňa (AZU, LGHF).

C. dentata has an Atlantic–Mediterranean distribution in Europe; it is also known in western N. America (Paton, 1999). In Macaronesia, this species is only documented by a single very old record from Madeira made by Johnson (Mitten, 1870). It is new for the Azores on Flores and Terceira. Although easily identified by its typical 1–2-celled deep red gemmae with 8–12 tubercles, the species is probably overlooked in Macaronesia, where a lot of suitable habitat exists, owing to its very small size and unattractive habit, especially when dry.

3. *Encalypta microstoma* Bals.-Criv. & De Not.

Contributors: Jan Kučera and Ewa Fudali

Poland: Giant Mountains (Karkonosze): glacial cirque 'Mały Śnieżny Kocioł', basaltic vein, *ca* 1200 m alt. [as given on label, but probably higher, at least 1250 m], UTM (on WGS-84) 33U 539.2–5625.9, 23 and 24 August 1945, *leg.* Jan Šmarda (BRNM, KRAM).

Two specimens of *E. microstoma* were discovered during a revision of herbarium specimens, collected in the summit regions of the Giant Mountains under the name *Encalypta alpina* Sm. Neither *E. microstoma* nor *E. alpina* have ever been recorded from the Sudeten mountains, and *E. microstoma* is unknown even from the Polish Tatras (Chałubiński, 1886; Lisowski, 1959; Ochyra & Cisło, 1999); it is therefore new to Poland. However it occurs in the Slovak part of the latter range (Horton, 1981). There is no record from the Ukrainian Carpathians (cf. Ignatov & Afonina, 1992), and the nearest locality for this species outside the Tatras is probably the Austrian Alps.

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The site of the record is the well-known outcrop of base-rich basaltic rock in the otherwise acidic environment of granites and gneisses, of which the mountain range is predominantly built. Because of the specific micro-climatic conditions here several plant species have survived as relicts from the Ice Age, the best example being *Saxifraga nivalis* L., in its only station in continental Europe outside Scandinavia. *E. microstoma* thus seems to be the moss counterpart of this saxifrage, and it supplements the list of moss glacial relicts already known at this site, including *Amphidium lapponicum* (Hedw.) Schimp., *Arctoa fulvella* (Dicks.) Bruch & Schimp., *Dicranum elongatum* Schleich. ex Schwägr., *Polytrichastrum sexangulare* (Brid.) G.L.Sm., and the recently found *Andreaea nivalis* Hook. (Fudali & Kučera, 2003).

4. *Isopterygiopsis muelleriana* (Schimp.) Z. Iwats.

Contributors: Jan Kučera and Ryszard Ochyra

Czech Republic: Giant Mountains (Krkonoše): Labský důl valley: rocky slope along (beneath) the tourist path towards the Labská bouda lodge, 280 m E. of the lodge, *ca* 1195 m alt., UTM (on WGS-84) 33U 538.79–5624.39, on half-shaded granite stone in the grass in the E.S.E. slope, 10 September 2002, *leg*. Jan Kučera, *det*. Ryszard Ochyra (Priv. Herb. Kučera 9865; dupl. KRAM).

I. muelleriana was collected during a detailed survey of the uppermost part of Labský důl valley in the Czech part of the Giant Mountains. The species has been reported previously from the Czech Republic but that record is extremely doubtful (cf. Váňa, 1998, annotation 31).

The new site in the Krkonoše Mountains extends the known distribution of this taxon in central Europe, where it was previously known from the Carpathian Mountains (in all parts, but clearly rarer towards the west), Mátra Mountains, the Alps, and the Black Forest and Harz Mountains in Germany (for a summary of the highly disjunct pan-Holarctic distribution of *I. muelleriana* see Ochyra, 1976). It is almost certain that the occurrence in the Krkonoše Mountains is relictual; it is an addition to the group of similar phytogeographical elements found within a zone of several hundred metres at the site, and including *Haplomitrium hookeri* (Sm.) Nees, *Moerckia hibernica* (Hook.) Gottsche, *Hypnum callichroum* Brid. and *Amphidium lapponicum* (Hedw.) Schimp. The ecological conditions at the site are consistent with those in which the species is found elsewhere, although the substratum here was purely acidic and the situation sheltered and not much exposed (an E.S.E. slope with larger boulders at the treeline, with a sparse growth of shrubby trees, mostly *Salix silesiaca* Willd. and *Sorbus aucuparia* L.). Mosses which occurred in close proximity included *Hypnum callichroum*, *Brachythecium reflexum* (Starke) Schimp., *B. populeum* (Hedw.) Schimp., and *Rhytidiadelphus subpinnatus* (Lindb.) T.J.Kop.

5. *Orthotrichum philibertii* Venturi

Contributors: I. Draper and R. M. Ros

Algeria: Ft. des Senhadja, near Dem el Begrat, south of Skikda, 36° 52′ N, 07° 09′ E, on olive tree bark, leg. R.M. Ros, 26 March 1986, *det*. I. Draper (MUB *14.020* & *14.021*).

O. philibertii is an epiphytic moss which was characterized by Düll (1992) as a montane Mediterranean-oceanic species. Its distribution in the Mediterranean region has been considerably extended in recent years (Mazimpaka, Lara & Garilleti, 1999; Lo Giudice *et al*., 2000; Lara *et al*., 2003). At present it is known from Cyprus, France, Greece, Italy, Morocco, Norway, Romania, Sardinia and Spain. The new report is the first one for Algeria and the second one for Northern Africa. This locality seems to confirm the circum-Mediterranean character of this taxon.

6. *Paraleptodontium recurvifolium* (Taylor) D.G.Long

Contributors: D. G. Long and P. Sollman

Nepal: (1) East Nepal: Sankhuwasabha District, forested ridge between Tashigaon and Kauma, 27° 37′ N, 87° 14′ E, 2625 m alt,, mossy *Quercus lamellosa*/ laurel forest, on mossy boulder, 25 September 1991, D.G. Long *20577* (E); (2) East Nepal: Sankhuwasabha District, steep valley on N. side of Barun Khola/Saldim Khola watershed, 27° 45′ N, 87° 16′ E, 3500 m alt, steep rocky valley, on wet rock slabs, 11 October 1991, D. G. Long *21123* (E); (3) Central Nepal: Nuwakot District, S slope of Thare Danda ridge near Phedi, 28° 01′ N, 85° 28′ E, 3730 m alt., steep gully with *Juniperus* and *Rhododendron*, amongst wet rocks on cliff, 30 April 1992, D. G. Long *22212* (E).

P. recurvifolium (syn. *Leptodontium recurvifolium* (Taylor) Lindb., *Bryoerythrophyllum recurvifolium* (Taylor) R.H. Zander, *Trichostomum recurvifolium* (Taylor) R.H.Zander) was until quite recently regarded as endemic to the British Isles where it is a local species of the Atlantic counties of Ireland, England, Wales and Scotland (Blockeel, 1992). Although it was reported from Spain by Smith (1978) this record appears to be unsubstantiated (Brugués, *in litt*.). In 1968 it was first reported from Canada, from the Queen Charlotte Islands of British Columbia (Schofield, 1968) and subsequently it has been found in Alaska, U.S.A, on Attu and Adak Islands in the Aleutian Islands (Schofield, *in litt*.). This report constitutes the first for Asia, the Himalaya and Nepal.

Such a range is unusual in northern hemisphere mosses, where relatively few species show a disjunction between N.W. Europe, the Sino-Himalaya and N.W. North America; examples are *Dicranodontium uncinatum* (Harv.) A. Jaeger and *Dicranum subporodictyon* (Broth.) C.H.Gao. Among the leafy liverworts, however, several larger species show a very similar distribution pattern, such as *Anastrepta orcadensis* (Hook.) Schiffn., *Anastrophyllum donnianum* (Hook.) Steph., *Bazzania pearsonii* Steph., *Mastigophora woodsii* (Hook.) Nees and *Pleurozia purpurea* Lindb.

7. *Racomitrium carinatum* Cardot

Contributors: H. Bednarek-Ochyra and I. V. Czernyadjeva

Russia: Far East, West Kamchatka, in the basin of Left Kihchik River, 53° 25′ N, 156° 40′ E; on soil over the stone; 19 August 2001, *leg*. I.V. Czernyadjeva *116* (KRAM, LE).

R. carinatum is an East Asian endemic belonging to subg. *Cataracta* (Bednarek-Ochyra, 1995). It is externally similar to the European endemic *R. aquaticum* (Schrad.) Brid., mostly because of the frequent presence of epiliferous, narrowly obtuse and entire leaf apices as well as a subpercurrent costa. However, most often the leaf apex is shortly hyaline-tipped, acute and denticulate in *R. carinatum* and both types of leaves may usually be observed on the same plant. The essential difference between both species is in the anatomical structure of the costa. In *R. carinatum* it consists of two large ventral epidermal cells in the distal half, whereas in *R. aquaticum* the costa is much broader above and comprises no fewer than four ventral cells as clearly seen in cross-section. So far, *R. carinatum* has been known only from all the islands of Japan (Noguchi, 1974, 1988), Korea (Choe, 1980), China (Cao, Gao & Wu, 1998; Li, 2000; Cao, Si & Vitt, 2003) and Taiwan (Chuang, 1973) and here the species is recorded for the first time from West Kamchatka in the Russian Far East.

8. *Rhytidiadelphus subpinnatus* (Lindb.) T.J.Kop.

Contributors: R. Schumacker and A. Sotiaux

Belgium: (1) Prov. Liège: Theux, IFBL coordinates (Belgian floristic grid) G7.28.12, UTM 31 U GRO9, on ground in *Fagus-Quercus* forest at *ca* 300 m alt., *leg*. R. Schumacker *960906/1*, *det*. Z. Soldan; (2) Prov. Luxembourg: Narcimont, IFBL coordinates L7.13.12, UTM 31U FR82, on damp peaty humus along forest brook (wet *Salix* bush with *Chrysosplenium oppositifolium* and *Viola palustris*) with *Pellia neesiana, Plagiochila asplenioides, Sphagnum girgensohnii, S. palustre*, and *S. squarrosum*, 430 m alt., *leg*. A. Sotiaux *28965*, A. Vanderpoorten *R5*, *teste* L. Hedenäs (S).

R. subpinnatus is not included in the recent check-list of Belgian bryophytes (Sotiaux & Vanderpoorten, 2001). It is a mountain species with a more boreal distribution than the sibling species *R. squarrosus* (Hedw.) Warnst. (Koponen, 1971; Müller, 1995). *R. subpinnatus* is distributed in central and northern Europe, northern Asia and northern America, where, however, it is reduced to the synonymy of *R. squarrosus* by Anderson, Crum & Buck (1990). Certain forms of *R. squarrosus* may indeed be extremely difficult to separate from *R. subpinnatus* (Smith, 1978; Müller, 1995). In North America the latter is even considered as an ecological morphological variant of *R. squarrosus* under wet conditions (Crum & Anderson, 1981). However molecular studies that are currently being conducted in the genus clearly reveal a sharp genetic discontinuity paralleled by a series of divergent morphological features between the two sibling species (A. Vanderpoorten, *pers. comm.*).

9. *Sphagnum subnitens* Russow & Warnst. ssp. ***ferrugineum*** Flatberg

Contributor: Karen Thingsgaard

Scotland: North Slope of Ben Lomond (Vice-county 86, British Ordnance Survey Grid NN 30), 550–600 m alt., 8 July 2001, *leg*. Simon Lægaard *SL 21448 F*, *det*. K. Thingsgaard 2002, *conf*. K.I. Flatberg 2002 (TRH).

Since the publication of *S. subnitens* ssp. *ferrugineum* almost 20 years ago (Flatberg, 1985) very few if any additional records of this oceanic taxon have appeared in the literature. In the British Isles this species was previously recorded only from Ireland (Flatberg, 1985). In Europe, it is occasionally encountered in the highly and markedly oceanic vegetation sectors of central and southern Norway, and its distribution in the British Isles may well be wider than the two collections from Ireland and this single one from Scotland indicate.

10. *Syntrichia anderssonii* (Ångstr.) R.H.Zander

Contributors: R. Ochyra and V. R. Smith

Marion Island: (1) between Tafelberg and First Red Hill, 46° 53′ 30″ S, 37° 47′ 50″ E, 450 m alt., on ledges and in crevices of grey lava rocks in dry and sheltered situations associated with *Bartramia patens*, *Plagiochila heterodonta* and *Orthotheciella varia*, 13 April 1999, *leg*. Ochyra & V. R. Smith *896/99* (KRAM); (2) between Crawford Bay and south-east part of Santa Rosa Valley, 300 m inland from the seashore, 46° 57′ 55″ S, 37° 44′ 15″ E, 25 m alt., in fissures of black lava rocks on raised marine platform, in dry and sheltered sites, associated with *Ceratodon purpureus* and *Racomitrium membranaceum*, 26 April 1999, *leg*. Ochyra & V. R. Smith *2011/99* (KRAM).

For a long time *S. anderssonii* was considered to be a southern South American endemic, being a widespread and almost weedy species in Tierra del Fuego and scattered in western Patagonia north to the Valdivian region (Greene, 1986). It was subsequently discovered on Subantarctic South Georgia (Lightowlers, 1985a), on the South Island of New Zealand and Subantarctic Macquarie Island (Lightowlers, 1985b) as well as in south-eastern Australia and Tasmania (Streimann & Curnow, 1989). Thus *S. anderssonii* should be considered to be an amphipacific-south-temperate species with a maximum occurrence in the temperate regions of southern South America and Australasia and penetrating into the Subantarctic. Apart from South Georgia and Macquarie Island, the species has been recorded from Îles Kerguelen and Îles Crozet in the Kerguelen Province of the Subantarctic (Lightowlers, 1986).

In 1999, during a bryological survey of Marion Island, one of the two islands of the Prince Edward Islands archipelago situated in the western flank of the Kerguelen Province, *S. anderssonii* was discovered at two localities. They complete its total range in the whole of the Subantarctic where the species is generally rare and occasional. As is the case with South Georgian, Crozet and Kerguelen material, Marion specimens are entirely sterile and very close morphologically. They have broader and oblong leaves with a relatively short mucro (up to 200 μm) and show teeth on at least some leaves. The latter character is typical for the specimens from the Kerguelen Province, whereas South Georgian and Macquarie plants usually have entire leaves.

11. *Syntrichia norvegica* F. Weber

Contributors: Magda Zmrhalová and Jan Kučera

Czech Republic: Giant Mountains (Krkonoše): Mt. Sněžka, S.S.W.-facing mica schist rock *ca* 70 m west of the summit of Mt. Sněžka, *ca* 1595 m alt., UTM (on WGS 84) 33U 552.14–5620.72, 21 September 2002, *leg.* Magda Zmrhalová *10706*, det. J. Kučera (SUM).

S. norvegica has not always been recognized at species level in central Europe, and therefore perhaps has not been pursued so eagerly as other taxa of the genus in the past. Hence no historical source has been found for any record from the territory of the Czech Republic (cf. Váňa, 1997). This might also be due to more intense collecting in other parts of the former Czechoslovakia, especially in the Slovakian Tatras, where the species has been historically well known and documented. There is, however, at least one report of *S. norvegica* from the Czech Republic: Kučera (1996), unaware of anything unusual, reported it among the little known taxa found by him in the Šumava Mountains. When revised later the specimen (Kučera *1648*) was found to be wrongly identified (it belonged to a morph of *S. ruralis* (Hedw.) F.Weber & D.Mohr with brownish bases to the hair-points), but the record remained uncorrected and — fortunately — overlooked, even by Váňa (1998).

The new site for *S. norvegica* is at the highest point of the Sudeten mountain range. The bedrock at the site is purely acidic (mica schists) but basic ions are supplied from disturbed habitats and lime in the mortar and concrete of the summit buildings. *Bryum pallescens* Schleich. ex Schwägr., *Lescuraea incurvata* (Hedw.) E. Lawton, *Plagiothecium cavifolium* (Brid.) Z. Iwats., *Racomitrim sudeticum* (Funck) Bruch & Schimp. and *Sanionia uncinata* (Hedw.) Loeske have been recorded as associated species within a few centimetres of the stand of *S. norvegica*, which illustrates well the mixture of acidophilous and basiphilous elements. It is interesting to speculate when the species first occurred on the site. Obviously it was not before building activities began on the mountain summit (the first building, a chapel, was founded in 1665 and more substantial construction began in the first half of the 19th century), since no basiphilous species has ever been found at the site away from the area influenced by ion flux from man-made objects. Consequently it has to be regarded as a neophyte, perhaps even of very recent date.

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