New national and regional bryophyte records, 25

Intending contributors to this column should consult the Instructions to Authors in part 1 of this volume.

1. ***Amblystegium serpens*** (Hedw.) Bruch

Contributor: C.C. Townsend.

Zambia: NORTH-WESTERN PROVINCE; MWINILUNGA DISTRICT: at base of tree by Zambesi Rapids, 6 km. N. of Kalene Hill, *ca* 1350 m a.s.l., 11°10′S, 24°11′E, 22 February 1975, *leg. C.C. Townsend 75/201B* (Priv. *Herb*. Townsend).

New to Zambia.

2. ***Anisothecium ugandae*** P. de la Varde

Contributor: C.C. Townsend.

Kenya: TRANS-NZOIA DISTRICT; Mount Elgon, under Kotaibos, on wet peaty bank of stream from a depression just S. of the crater, with only scattered fruit, *ca* 3900 m a.s.l., 1 February 1985, *leg. C.C. Townsend 85/315* (BM, Priv. *Herb*. Townsend); SOUTH NYERI DISTRICT; Aberdare Mts, Chania Falls, 0°27.5′S, 26°43.5′E, stems attenuated by flowing water, sterile, in deep tufts on dripping rock ledges, 3030 m. a.s.l., 9 April 1975, *leg. C.C. Townsend 75/920* (BM, Priv. *Herb*. Townsend).

New to Kenya.

Although differing much in appearance, induced by habitat, the leaf structure in both gatherings is identical. The first specimen is similar in appearance to the isotype seen, from the W. slope of Mt Muhavura, Uganda, *Hedberg 2166* (BM). Noticeable, but not shown in Potier de la Varde's (1955) figure, is a single marginal row of small, isodiametric cells near the commencement of the basal expansion of the leaf, shown in both of the above gatherings as well as in the isotype.

3. ***Barbula pachyloma*** Broth.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: BAU, 30 km south-west of Kuching, Fairy Cave, on limestone rock *ca* 80 m a.s.l., 23 July 1991, *leg. H. Mohamed & B. Bakar 3210* (KLU); Mulu National Park, on limestone rock and soil, *ca* 100–200 m a.s.l., 13 May 2004, *leg. H. Mohamed & K.T. Yong 5395*, *5550*, *5557*, *5561* (KLU).

This species was believed to be endemic to New Guinea (Norris and Koponen, 1989), but with this recent discovery, its westernmost distribution now extends to Borneo. *Barbula pachyloma* is a calcicolous species, unusual within *Barbula* in having multistratose leaf margins with a stereid band in the centre. This species is somewhat similar in size and growth form to the regionally rather widespread *Barbula javanica* Dozy & Molk. (Mohamed & Tan, 1988; Suleiman, Akiyama & Tan, 2006). Although strongly inrolled, multistratose leaf margins are occasionally found in *B. javanica*, a band of stereids is absent.

4. ***Brachythecium rivulare*** Bruch, Schimp. & W.Gümbel

Contributor: C.C. Townsend.

Uganda: TORO DISTRICT: Ruwenzori Mts, Bujuku Valley, growing thickly on boulders in fast-flowing stream, 3333 m a.s.l., 7 September 1959, *leg. J.G.B. Newbould 5058*, *det*. C.C. Townsend (BM, Priv. *Herb*. Townsend)

New to Uganda.

5. ***Braunia arbuscula*** (Welw. & Duby) A.Gepp

Contributor: C.C. Townsend.

Malawi: BLANTYRE DISTRICT; lower slopes of Seche, c. 4 km. S. of Blantyre, corticolous on a tree with rugged bark, *ca* 1300 m a.s.l., 8 May 1980, *leg. C.C.Townsend 80/35*; *ibid.*, on rock on the lower N.E. slope, *leg. C.C. Townsend 80/35A* (both Priv. *Herb*. Townsend).

New to Malawi.

6. ***Braunia secunda*** (Hook.) Bruch, Schimp. & W.Gümbel

Contributor: C.C. Townsend.

Cameroon: VICTORIA DIVISION; Buea, Mana's Spring, slopes of Wanenga, on lava blocks in grassland, *ca* 2515 m a.s.l., 25 March 1948, *leg. J.P.M. Brenan* in *Richards 4184* (Priv. *Herb*. Townsend)

New to Cameroon

7. ***Bucklandiella lamprocarpa*** (Müll.Hal.) Bednarek-Ochyra & Ochyra

Contributors: H. Bednarek-Ochyra and R. Ochyra

Heard Island: Long Beach, between Manning Lagoon and Long Beach Hut, with *Ditrichum immersum* Zanten, *Dicranoweisia brevipes* (Müll.Hal.) Cardot and *Cryptochila* sp., 4 November 2000, *leg. P. Selkirk, M. Skotnicki & J. Whinan H457* (NSW 755338).

The occurrence of *Bucklandiella lamprocarpa* on the isolated, subantarctic Heard Island has been expected since the species was discovered on the conterminous Îles Kerguelen Archipelago, which is situated 450 km to the north-west. A moss collection from Heard Island, deposited in NSW and misnamed *Racomitrium crispulum* (Hook.f. & Wilson) Hook.f. & Wilson (Selkirk *et al.*, 2008), was critically re-examined and proved to be *B. lamprocarpa*. Typically, the vast majority of austral collections of *Racomitrium* have been lumped with *Racomitrium crispulum* following its ill-found taxonomic concept proposed by Clifford (1955).

Heard Island is the third subantarctic island on which *B. lamprocarpa* has been discovered. Formerly, this species was recorded from Îles Kerguelen (Bednarek-Ochyra & Ochyra, 1998) and Macquarie Island (Bednarek-Ochyra & Ochyra, 2007). Interestingly, so far it has not been found either in Îles Crozet or the Prince Edward Islands in the Kerguelen Province of the South Indian Ocean or on South Georgia, which is situated close to Tierra del Fuego and mainland South America. In the latter region, *B. lamprocarpa* is a relatively frequent, rheophytic moss (Ochyra, Sérgio & Schumacker, 1988; Ochyra, 1993; Bednarek-Ochyra & Ochyra, 1994; Bednarek-Ochyra, Matteri & Ochyra, 1996).

8. ***Bucklandiella striatipila*** (Cardot) Bednarek-Ochyra & Ochyra

Contributors: R. Ochyra, H. Bednarek-Ochyra and M. Lebouvier

Îles Kerguelen: GRANDE TERRE. Presqu'île Bouquet de la Grye. Port Couvreux, 1 km north-east of the cemetery, plateau of the hill '104', 49°16′28.962″S, 69°41′14.341″E, alt. *ca* 90 m; forming large patches on stony ground in the felfield, in dry and exposed sites, 20 November 2006, *leg. R. Ochyra 659/06* (with Christophe Brumbt and Marc Lebouvier) (KRAM).

Bucklandiella striatipila is one of the most distinctive species of this genus in southern South America, where its range extends from the Falkland Islands and Tierra del Fuego to the Valdivian region in southern Chile, with an isolated location on the Juan Fernandez Islands (Cardot & Brotherus, 1923; Robinson, 1975; Deguchi, 1984). The records of this species from Bolivia (Churchill, Griffin & Muñoz, 2000) are correctly referred to *B. crispipila* (Taylor) Bednarek-Ochyra & Ochyra (Bednarek-Ochyra & Ochyra, 2010). Additionally, the species is known from subantarctic South Georgia (Bell, 1974) and Îles Crozet (Bednarek-Ochyra & Ochyra, 2009). With this new record, its geographical range is extended to the largest subantarctic archipelago, Îles Kerguelen. This discovery has firmly established *B. striatipila* as an amphiatlantic south-cool-temperate species.

9. ***Callicostella brevipes*** (Broth.) Broth.

Contributor: C.C. Townsend.

Kenya: NORTH KAVIRONDO DISTRICT; Kakamega Forest, *ca* 0°15′N 34°52′E, one small tuft corticolous in primary forest near Lugushida River Bridge, *ca* 1500 m a.s.l., 20 March 1977, *leg. C.C. Townsend 77/195* (Priv. *Herb*. Townsend)

The first record of any species of this genus from Kenya, and one of the two most widespread in Africa; as with the other, *C. africana* Mitt., *C. brevipes* is recorded from Uganda and Tanzania and was likely to be found in Kenya.

10. ***Callicostella erosotruncata*** Cardot

Contributor: C.C. Townsend.

Zambia: NORTH-WESTERN PROVINCE: MWINILUNGA DISTRICT: on rocks in the R. Zambesi at Zambesi Rapids, 6 km N of Kalene Hill, 11°10′S, 24°11′E, *ca* 1350 m a.s.l., 20 February 1975, *leg. C.C. Townsend 75/160*; on rotting log over rivulet in Kafweko Protected Forest Area, near Lisombo River, *ca* 18 km SW of Kalene Hill, *ca* 1350 m. a.s.l., 22 February 1975, *leg. C.C. Townsend 75/206* (both Priv. *Herb*. Townsend).

Although new to Zambia, neither of these localities is far from the border with the Democratic Republic of Congo, from which country (as 'Congo Belge') Demaret and Potier de la Varde (1952) have numerous records for this species, and its occurrence in Zambia is thus not unexpected.

11. ***Catagonium nitens*** (Brid.) Cardot

Contributors: R. Ochyra, M. Lebouvier and H. Bednarek-Ochyra

Îles Crozet: ÎLE DE LA POSSESSION: a small intermittent stream 250 m south of Port Alfred, entering the stream with the dam and the water intake for the base, 46°26′30″S, 51°51′40″E, 170 m a.s.l., in dry, deep fissures of black lava rocks in rocks, 11 November 2006, *leg. R. Ochyra 131/06* (with Nathalie van der Putten) (KRAM).

Catagonium nitens is a pan-south-cool-temperate species widely distributed and locally common in the *Nothofagus* zone in southern South America, South Africa, south-eastern Australia, Tasmania and New Zealand, occasionally penetrating into the tropics in East Africa and Papua New Guinea (Lin, 1984). It also occurs on most islands of the Southern Ocean, including subantarctic South Georgia, the Prince Edward Islands and Îles Kerguelen. Here, *C. nitens* is reported from another subantarctic archipelago, Îles Crozet, and this discovery completes its continuous range in the subantarctic sectors of the Atlantic and Indian Oceans.

12. ***Chionostomum rostratum*** (Griff.) Müll.Hal.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: BAU, 30 km south-west of Kuching, on limestone hill, on wood in exposed area, *ca* 100 m a.s.l., 23 July 1991, *leg. H. Mohamed & B. Bakar 3212* (KLU).

This glossy golden species has a distribution extending eastwards from India and Sri Lanka, across Indochina, China, Indonesia, to the Philippines (Bartram, 1939; Tan & Jia, 1999). Although widely distributed, this is the first time it has been collected in Borneo. The plant is short, erect with tumid branches and occurs in small tufts or cushions. Branch leaves are ovate-lanceolate or elliptic, distinctly concave, with a short acuminate apex. *Chionostomum rostratum* is easily distinguished from other species in the family Sematophyllaceae by its erect and slender cylindrical capsule which may reach 2 mm in length. It has a long rostrate operculum.

13. ***Chryso-hypnum frondosum*** (Mitt.) W.R.Buck

Contributor: C.C. Townsend.

Guinea: MACENTA & BEYLA PRÉFECTURES; Simandou Range, 8°31′26″N, 8°54′26″W, Pic de Fon, on boulder *ca* 60 cm. diam. in partial shade at edge of forest, 1289 m a.s.l., 18 October 2008, *leg. M. Cheek 13774A*, scattered stems among *13774*, *Racopilum capense* Müll.Hal., *det*. C.C. Townsend (Priv. *Herb*. Townsend).

New to Guinea.

14. ***Didymodon tophaceus*** (Brid.) Lisa

Contributor: C.C. Townsend.

Uganda: TORO DISTRICT: Ruwenzori Mts., Mount Speke, summit, in crevices on rock debris, Victorio Emanuele summit, cone above glacier, very exposed, 4848 m a.s.l., 9 September 1959, *leg. J.G.B. Newbould 5130, det.* C.C. Townsend (BM, Priv. *Herb*. Townsend)

New to Uganda.

15. ***Didymodon validus*** Limpr.

Contributors: A. Stebel, R. Ochyra and G. Vončina

Poland: WESTERN CARPATHIAN MTS, PIENINY RANGE, Pieniny Zachodnie, Sromowce Wyżne, Pulsztyn, 49°24′42″N, 20°20′20″E, 610 m a.s.l., on exposed limestone rock in the western part of the hill at the foot of the cliff, 28 April 2007, *leg. G. Vončina s.n.* (KRAM, SOSN).

Didymodon validus is a poorly known species and its taxonomic status has been the source of controversy. It has usually been considered as an infraspecific taxon within *Didymodon rigidulus* Hedw. or *Didymodon acutus* (Brid.) K.Saito (e.g. Nyholm, 1990; Düll, 1992; Kučera, 2000, 2002), but recently Jiménez (2006) resurrected it as a species in its own right. *D. validus* differs from *D. rigidulus* by its possession of leaves with a smooth, entirely unistratose lamina and leaf margin. It is distinct from *D. acutus* in having a 1–3-stratose ventral stereid band in the costa and bearing axillary gemmae. *Didymodon validus* is a Eurasian species, occurring primarily in Central Europe (Austria, Germany, Switzerland, Italy and Slovakia), and extending to southern Scandinavia (Norway and Sweden) and Central Asia (Kirghizstan).

16. ***Didymodon vinealis*** (Brid.) R.H.Zander

Contributor: R. Ochyra

Falkland Islands: EAST FALKLAND, 1.5 km west of Port Stanley, *ca* 50 m a.s.l., on bare soil on wayside, 31 March 1980, *leg. R. Ochyra 2815/80* (KRAM).

Didymodon vinealis is a bipolar species which has a dissected geographical range throughout much of the Holarctic, especially in its southern regions. In the Western Hemisphere, it is predominantly distributed in western North America and extends to the Neotropics, ranging from Mexico through the Central American isthmus (Allen, 2002), southwards to Bolivia in South America. It occurs at high elevations in the Andes, from 1600 m in Venezuela to 4500 m in Bolivia (Churchill, Griffin & Muñoz, 2000). The species seems to be absent from tropical Africa (O'Shea, 2006) but is widely distributed and locally common over much of tropical Asia, extending southwards to the Philippines and Java (Eddy, 1990). In the temperate regions of the Southern Hemisphere, *D. vinealis* is widely scattered through southern Australia, in Western Australia, Victoria and South Australia (Sollman, 1995). Here, the species is recorded for the first time from the Falkland Islands, in the cool-temperate zone of southern South America. Species of *Didymodon* are poorly represented in the moss flora of this archipelago; both in terms of frequency and number. Hitherto, only *Didymodon rigidulus* Hedw. and *D. ampliretis* E.B.Bartam have been recorded from the Falkland Islands (Matteri, 1986). *D. vinealis* is the third species of this genus discovered in this region.

17. ***Exostratum asperum*** (Mitt.) L.T.Ellis

Contributors: Haji Mohamed and K.T. Yong

Sarawak: KAPIT, Lanjak-Entimau Wildlife Sanctuary, Nanga Bloh, 10 km from Indonesian border, on tree trunk, *ca* 150 m a.s.l., 20 June 2008, *leg. H. Mohamed 205* (KLU).

This lowland species was known only from oceanic south eastern regions of Polynesia, Micronesia, New Guinea and Java (Ellis, 1985). Discovery of this species in the lowland forests in the transboundary area between Sarawak and Kalimantan extends its westernmost distribution to Borneo. *Exostratum* is a small genus in the family Calymperaceae, represented by four species which have a palaeotropical distribution. It has an acrocarpous habit and forms low turfs. All four species of *Exostratum* are generally similar in their morphology, but *E. asperum* can be easily distinguished by the coronate-papillose chlorocysts found on the epidermal layer of the leaf costa. The only other species that bears similar compound-papillose chlorocysts is *E. scloropendrium* (Mitt.) L.T.Ellis, but shoots of the latter are more robust and the costal papillae much finer than those in *E. asperum*. Moreover, *E. scloropendrium* is known only from the type material collected in Fiji (Ellis, 1985). In the two other species of *Exostratum*, the costal chlorocysts are drawn out as simple spines.

18. ***Fossombronia pusilla*** (L.) Nees

Contributors: A. K. Asthana and Vinay Sahu

India: EASTERN HIMALAYA, Darjeeling (on way to Teesta from Mungpoo), on stony wall, 1580 m a.s.l., 26 September 2002, *leg. A. K. Asthana & Vinay Sahu s.n.* (LWG 224159A).

Srivastava & Udar (1975) reported seven species of *Fossombronia* as occurring in India. Of these, *F. himalayensis* Kash., *F. wondraczekii* (Corda) Dum. and *F. kashyapii* Srivastava *et* Udar were reported from the western Himalaya, while *F. himalayensis* was known from the eastern Himalaya and central India. Six of the species - *Fossombronia cristula* Aust., *F. foreaui* Udar *et* Srivastava, *F. pusilla* (L.) Dumort, *F. himalayensis*, *F. wondraczekii* and *F. indica* Steph. were reported from the west coast region of India, and Srivastava and Sharma (2000) recorded *F. cristula* (as *F. foveolata* Lindb. var. *cristula* (Austin.) R.M.Schust.) from South India. Singh and Singh (2007) recorded *Fossombronia pusilla* from the western Himalaya (Dehradun), and it was earlier reported in India from the Western Ghats (Tamil Nadu: Ootacamund). It is recorded here for the first time from the eastern Himalaya.

Fossombronia himalayensis shows close affinity with *F. pusilla* but differs in being monoceious and having tuberiferous stems. *F. pusilla* differs from *F. kasyapii* in its sporoderm pattern and absence of stem tubers. In *F. kashyapii*, the perispore is complete and elaters are trispirate, while in *F. pusilla*, the perispore is incomplete and elaters are bispirate, loosely twisted, sometimes poorly developed, and possess annular thickening bands.

19. ***Grimmia teretinervis*** Limpr.

Contributors: R. Ochyra, A. Stebel and H. Bednarek-Ochyra

Poland: WESTERN CARPATHIAN MTS, PIENINY RANGE, Pieniny Zachodnie, Piekiełko, alt. 640–678 m, on xeric, strongly insolated and exposed limestone rocks, 30 August 1984, *leg. H. Bednarek-Ochyra & Ochyra 853b/84* (KRAM); Pieninki, Głowa Cukru cliff in the massif of Sokolica, 745 m a.s.l., on exposed limestone rock, 9 October 1984, *leg. R. Ochyra 1249/84* (KRAM).

Grimmia teretinervis is a rare, localised and sporadically occurring epilithic moss which grows on calcareous rocks. It has its main centre of distribution in Europe, occurring in southern parts of the continent and ranging from western France and Switzerland, through Austria and Hungary to

Romania and Bulgaria in the east. It extends to northern Italy and Slovenia in the south and to southern Germany, the central Czech Republic and Slovakia in the north. The present discovery in the Pieniny Range apparently represents the second northernmost site of its occurrence in Europe, the first being Karlstejn Castle near Prague in the Czech Republic. Outside Europe, *G. teretinervis* has been recorded only from northern Algeria in North Africa (Jelenc, 1955), and North America where it is scattered in central and eastern parts of the continent, with an isolated station in the Northwest Territories in Canada (Ireland, 1982).

20. ***Gymnostomiella vernicosa*** (Hook.) M.Fleisch.

Contributors: A.K. Asthana and Vinay Sahu

India: EASTERN HIMALAYA, Darjeeling (on way to Teesta), on stony wall, 1702 m a.s.l., 26 September 2002, *leg. A. K. Asthana & Vinay Sahu s.n.* (LWG 224178B).

Gymnostomiella vernicosa belongs to family Splachnaceae. It is distributed in Western Himalaya, south and central India, and the Gangetic plains (Gangulee, 1974; Lal, 2005). Here, this species is reported for the first time from Darjeeling in the Eastern Himalaya. *Gymnostomiella* is distinct from other genera in the family Splachnaceae in having a filiform stem. The leaves have quadrate to hexagonal cells with firm yellowish walls. Sparse warty papillae adorn the upper half of the leaf and its margins.

21. ***Hedwigia stellata*** Hedenäs

Contributor: C.C. Townsend.

Kenya: NORTH NYERI DISTRICT: dry rocks on slopes just west of the Sirimon Track, Mount Kenya, *ca* 3420 m a.s.l., in mixture with *Hedwigidium integrifolium* (P. Beauv.) Dixon, 4 April 1975, *leg. C.C. Townsend 75/682* (Priv. *Herb*. Townsend).

Joins the ranks of 'European' species found on Mt Kenya.

It may be of interest that *Hedwigia ciliata* (Hedw.) P. Beauv. var. *leucophaea* Bruch, Schimp & W.Gümbel was also found on Mount Kenya, but on the drier side in Meru District, on acid rock above the Urumandi Hut, 0.08.5°S, 37°25′E, *ca* 909 m a.s.l., 17 January 1985, *leg. C.C. Townsend 85/195*. (Priv. *Herb*. Townsend).

22. ***Heterogemma laxa*** (Lindb.) Konstant. & Vilnet (*Schistochilopsis laxa* (Lindb.) Konstant.)

Contributors: Michail V. Dulin and Dmitriy A. Philippov

Russian Federation: VOLOGDA REGION, Kharovsk District, 1 km to SW from Alambash railway station Alambash, protected area 'Raised bog Alambash', 59°51′59.8″N, 40°09′47.4″E, *ca* 172 m a.s.l., pine raised bog, on hollows and wet carpet, among *Sphagnum* sp., with *Cladopodiella fluitans* (Nees) H.Buch, *Calypogeia sphagnicola* (Arnell & J. Perss.) Müll. Frib, *Cephaloziella elachista* (J.B. Jack ex Gottsche & Rabenh.) Schiffn., 28 May 2009, *leg. M.V. Dulin* (with D.A. Philippov), *761mvd* (SYKO); Ust-Kubenskiy District, 2 km to W from village Markovskoe, mire Bol'shoy Mokh, 60°03′69.1″N, 39°02′38.5″E, pine raised bog, on wet hollows, among *Sphagnum* sp., with *Mylia anomala* (Hook.) Gray, *Cephaloziella spinigera* (Lindb.) Warnst., 5 July 2009, *leg. D.A. Philippov*, *0907dph* (IBIW).

This is the first report of *Heterogemma laxa* (Jørg.) Konstant. & Vilnet from the Vologda Region. It is a globally rare boreal amphiatlantic disjunctive liverwort included in the Red Data Book of European Bryophytes (ECCB, 1995). The species was otherwise known from several countries in the central and northern parts of Europe and from some localities in North America (Damsholt, 2002). It is known from various localities in Russia. In the European part of Russia, it is recorded in the Murmansk region (Shljakov, Konstantinova, 1982; Konstantinova, 1996), the Leningrad region (Potemkin & Kotkova, 2003), Tver region (Notov, 2005), Komi Republic (Zheleznova, 1985; Dulin, 2007, 2008a), and also from Western Siberia (Lapshina, 2003), Yakutia (Sofronova, 2005), Eastern Siberia (Abramova & Abramov, 1984; Bakalin, 2004) and the southern part of Kamchatka (Bakalin, 2009). Specimens from the Asian part of Russia were inaccessible for study and require critical research (Potemkin & Sofronova, 2009). It should be noted that sometimes *Heterogemma laxa* may be confused with the lax leaved form of *Schistochilopsis incisa* (Schrad.) Konstant.

23. ***Metzgeria violacea*** (Ach.) Dumort.

Contributors: D. P. Costa, J. Váňa, R. Ochyra and B. Cykowska

Prince Edward Islands: MARION ISLAND, north-eastern coast, Nellie Humps south-west of the meteorological station towards Junior's Kop, 46°52′58″S, 37°50′52″E, 85 m a.s.l.; in fissures of dry and protected black lava rocks, in tuft of *Kiaeria pumila* (Mitt.) Ochyra, and *Hypnum cupressiforme* Hedw., associated with *Andrewsianthus marionensis* (S.W.Arnell) Grolle (No. 914/03), on cushions of *Guembelia kidderi* (James) Ochyra & Żarnowiec, and *Bucklandiella membranacea* (Mitt.) Bednarek-Ochyra & Ochyra (No. 890b/03) and forming pure patches with a small admixture of *Plagiochila heterodonta* (Hook.f. & Taylor) Gottsche, Lindenb. & Nees and *Andreaea acutifolia* Hook.f. & Wilson, in small caves (No. 875/03), 9 April 2003, *leg. R. Ochyra 875e*, *890b*, *914c* (KRAM); south-western coast, Cape Crozier, 46°57′05″S, 37°36′29″E, 100–150 m a.s.l., on black lava rock faces in dry and sheltered situation, covering cushions of *Willia calobolax* (Müll.Hal.) Lightowlers, and *Muelleriella crassifolia* (Hook.f. & Wilson) Dusén, 20 April 2001, *leg. R. Ochyra* (with V.R. Smith) *1208b/01* (KRAM); (3) south-western coast, Vrystaat Point, 46°57′55″S 37°38′00″E, 50–100 m. a.s.l., on dry black lava rocks on cushions of *Willia calobolax*, *Hymenoloma insulare* (Mitt.) Ochyra, and *Muelleriella crassifolia*, 20 April 2001, *leg. R. Ochyra* (with V.R. Smith) *1282b/01* (KRAM).

As suggested by its specific epithet, *Metzgeria violacea* belongs to the group of species within the genus *Metzgeria* whose thalli become turquoise blue after 2 or more months drying. Despite this unique colouration, it has long remained an obscure and neglected species. In Western and Central Europe, it was commonly named *Metzgeria fruticulosa* (Dicks.) A.Evans, although in fact this name was

misapplied by the European authors since it correctly refers to a species described by Müller (1782) as *Riccia fruticulosa* O.F.Müll. Grolle & So (2003) provided convincing evidence that *Riccia fruticulosa* is actually a synonym of *Riccardia palmata* (Hedw.) Carruth. and cannot be applied to the European blue species of *Metzgeria*. Instead they found that the oldest available name for this species is *M. violacea* (Ach.) Dumort., originally described as *Jungermannia violacea* Ach. from material probably originating from Tierra del Fuego in southernmost South America, not in New Zealand as stated in the protologue (Acharius, 1805).

The global geographical range of *Metzgeria violacea* is imperfectly known, mostly because of still unresolved taxonomic problems in the *M. violacea–M. temperata* complex. It is certainly a bipolar species with many intermediate sites in the Neotropics where it occurs in southern Mexico and in the northern Andes (Columbia, Venezuela and Ecuador) and central Andes (Peru and Bolivia) (Costa, 2008). In the Northern Hemisphere, it has its main centre of occurrence extending from the Atlantic part of Europe eastwards to southern Sweden, Lithuania, the Ukraine and Romania, and southwards to northern Italy and Serbia (Söderström, Urmi & Váňa, 2002). Additionally, *M. violacea* is exceedingly rare in eastern North America, but it should be excluded from the flora of Madeira in Macaronesia (Grolle & So, 2003). Historically, the species was recorded from Asia, Africa and Australasia but according to Grolle & So (2003), all these records are referable to other species of *Metzgeria*. Therefore, in the Southern Hemisphere, *M. violacea* occurs only in southern South America in the *Nothofagus* zone at the western fringes of the continent, from the Valdivian region in Chile to Tierra del Fuego in Argentina and Chile (Costa, 2008). Here, the species is recorded for the first time from subantarctic Marion Island, one of two islands of the Prince Edward archipelago situated in the subantarctic sector of the southern Indian Ocean. Some of the Marion Island plants are atypical and only partly blue-coloured. Moreover, the attenuate gemmiferous branches are mostly absent and the gemmae are formed only at the margins of the thalli, never on the dorsal and ventral sides of the costa. Also, the apical papillae are relatively large and the thalli are sometimes nearly plane.

24. ***Mitthyridium papuanum*** (Broth.) H.Rob.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: MULU NATIONAL PARK, on tree trunk *ca* 80–200 m a.s.l., 12 May 2004, *leg. H. Mohamed & K.T. Yong 5327*, *5470*, *5603* (KLU).

This species has been reported from the Philippines, New Guinea, Northern Australia and Oceania but until now was unknown from Borneo. Unlike many *Mitthyridium* species, the leaves in *Mitthyridium papuanum* lack flaring shoulders above the leaf base. *Mitthyridium papuanum* was once synonymized with *M. luteum* (Mitt.) H.Rob. (Reese *et al.*, 1986a, b) but was later reinstated as a distinct species by Reese (1994) and Reese and Stone (1995). Both species are now reported for Borneo. *M. papuanum* has paralell sided leaves that abruptly narrow into the apex; in this feature, it resembles a large form of *M. flavum* (Müll. Hal.) H.Rob. In contrast *M. luteum* has leaves that gradually narrow from rather flared shoulders to the leaf tip.

25. ***Mitthyridium perundulatum*** (Broth.) H.Rob.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: MULU NATIONAL PARK, on bamboo plant *ca* 100–200 m a.s.l., 14 May 2004, *leg. H. Mohamed & K.T. Yong 5640* (KLU); Kapit, Lanjak-Entimau Wildlife Sanctuary, Nanga Bloh, 10 km from Indonesian border, on tree trunk, *ca* 150 m a.s.l., 20 June 2008, *leg. H. Mohamed 112*, *123* (KLU).

Mitthyridium perundulatum was known only from Seram, New Guinea and Australia. With the finding of this species in Sarawak, its westernmost distribution is extended to Borneo. The species is characterized by the long and very slender tips of its upper leaves. These leaf tips consist of only thin wings of lamina along the costa. *M. perundulatum* can be distinguished from *M. subluteum* (Müll. Hal.) Nowak by this feature, and also by its leaves being relatively shorter than those of the latter. *M. perundulatum* is also closely allied to *M. jungquilianum* (Mitt.) H.Rob., with which it had been placed in synonymy (Reese *et al.*, 1986a, b) until it was reinstated as a good species by Reese & Stone (1995). The vegetative leaves of *M. jungquilianum* are always broader and longer compared to those of *M. perundulatum*, and have apices that gradually narrow towards the leaf tips.

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

Contributors: H. Bednarek-Ochyra and R. Ochyra

China: XIANG: SE Tibet, Gyala Peri N, above Gyala Peri-N Glacier (High Camp 15′), 29°54′N 94°52′E: (*1*) alt. 4200 m, ericaceous dwarf-scrub on second lateral moraine, 20 August 1994, *leg. G. Miehe & U. Wündisch 94-209-28:03*, *94-209-29:01*, *94-209-29:03* (KRAM); 4240 m a.s.l., *Salix*-Ericaceae dwarf-scrub on older lateral moraine in 36° SSE exposure, 20 August 1994, *leg. G. Miehe & U. Wündisch 94-210-39:06* (KRAM); 4400 m a.s.l., Ericaceae dwarf-scrub with dwarf *Salix* sp., 19 August 1994, *leg. G. Miehe & U. Wündisch 94-186-17:016* (KRAM).

Niphotrichum canescens subsp. *latifolium* is a circumpolar arctic-boreal-montane taxon, reaching the highest possible latitudes in Greenland and Spitsbergen in the Arctic. It has its maximum occurrence in North America where it extends southwards to Washington in western North America and Labrador in the eastern part of the continent. In Northern Europe, its range includes Iceland, Svalbard and Fennoscandia where it occurs throughout the Scandes to southern Norway (Frisvoll, 1983). In Asia, it apparently occurs throughout Arctic Siberia and is rare in the Far East. Localities include Chukotka (Afonina, 2004), Kamchatka (Czernyadjeva, 2005) and Hokkaido and Honshu in Japan (Frisvoll, 1983). Some highly isolated records are known from Sikkim and Nepal in the Himalayas (Bednarek-Ochyra, Ochyra & Long, 2008) and

this is the first record from China, in Tibet, where it occurs at elevations of 4200–4400 m.

27. ***Philonotis dregeana*** (Müll.Hal.) A.Jaeger

Contributor: J. van Rooy

Angola: HUILA PROVINCE, Polygonal Florestal da Humpata, *ca* 5 km NE of Humpata, 8 km SW of Lubango, 14°58′55″S, 13°26′02″E, on stony soil of stream bank, 2018 m a.s.l., 26 January 2009, *leg. S.P. Bester 9312* (PRE, MO, TNS).

The most frequently collected species of *Philonotis* in the 'Flora of southern Africa' area (Magill, 1987), *P. dregeana* has also been recorded from Zimbabwe, Tanzania, Democratic Republic of Congo, Central African Republic, Sudan and Chad (O'Shea, 2006).

28. ***Plagiochasma appendiculatum*** Lehm. & Lindenb.

Contributor: N. Phephu

Angola: HUILA PROVINCE, Tchivinguilo Research Station, *ca* 23 km SW from Humpata, limestone hill, on stony soil, 15°10′02″S, 13°19′16″E, 1662 m a.s.l., 15 January 2009, *leg. S.P. Bester 9028* (PRE).

According to Perold (1999), *Plagiochasma appendiculatum* is chiefly an Asiatic species. In Africa, it has been collected rarely in South Africa and is also known from Zimbabwe, Tanzania, Kenya, Eritrea, Socotra, and Yemen on the Arabian Peninsula (Perold, 1999; Wigginton, 2009).

29. ***Plagiothecium piliferum*** (Sw.) Schimp.

Contributor: Özlem Tonguç Yayıntaş

Turkey: CANAKKALE, Bayramiç, Kazdağı (Ida Mountain), Evciler County, Ayazma, Northeast, 500 m a.s.l., on tree roots, 28 April 2010, *leg. Özlem Tonguç Yayıntaş T 2512* (CNH, MO).

Plagiothecium piliferum was collected in the province of Çanakkale within grid square A1 as outlined by Henderson (1961). Ida Mt is located in the northwest of Anatolia, at the natural boundary of the Marmara and Aegean regions. It is also at the intersection of the Euro-Siberian, Mediterranean and Iran-Turanian phytogeographical regions, and supports many endemic and endangered plant species. Since 1993, the area has been protected, with 21,000 hectares declared as a National Park (Özel & Gemici, 2001). Owing to the proximity of the Aegean Sea, the southern slopes of Ida Mt enjoy a Mediterranean climate. The northern slopes are cooler with a humid continental climate, and support forests of *Fagus orientalis* Lipsky and, endemic to the mountain, *Abies nordmanniana* ssp. *equi-trojana* (Boiss.) Coode & Cullen.

Plagiothecium was revised by Ireland (1969): it occurs in northern and central parts of Europe, the Pyrenees, Corsica, Sardinia, northern and western America and northern Asia. Kürschner and Erdag (2005) lists ten species of *Plagiothecium* from Turkey; two more were added by Yayintaş (1994) and Yayintaş & Tonguç (1994).

Plagiothecium piliferum may be confused with *P. latebricola* Schimp. but differs by its abruptly narrowed, long, filiform leaf apices.

30. ***Protolophozia elongata*** (Steph.) Schljakov

Contributor: Michail V. Dulin

Russian Federation: KOMI REPUBLIC, Vorkuta district, the south part of the Enganape ridge, 16 km to NE from Eletskaya station, right bank of Lek-Elets river, vicinity of Yuzhnaya mountain, closed wood, 67°09′37.0″N, 64°28′27.6″E, *ca* 177 m a.s.l., valley of a brook, at the brook banks, 1 July 2008, *leg. M.V. Dulin*, *719mvd* (SYKO).

This is the first finding of the globally rare mountain disjunctive liverwort *Protolophozia elongata* (Steph.) Schljakov in the Komi Republic. It is known from various parts of Europe including Austria, Germany, the northern part of former Yugoslavia, eastern parts of Poland and Scandinavia, and from Greenland and Iceland (Damsholt, 2002). In Russia, it has been found in montane areas. These include several localities in the Murmansk region (Schljakov & Konstantinova, 1982; Konstantinova, 1996), the Polar (Konstantinova & Czernjadieva, 1995) and North Urals (Konstantinova & Bezgodov, 2006), Eastern Siberia (Konstantinova *et al.*, 2009b), and the Chukchi region (Afonina & Duda, 1993). The report of *Protolophozia elongata* from Franz-Josef Land (Zhukova, 1973) is erroneous (Konstantinova & Potemkin, 1996).

The liverwort flora of the Komi Republic has been studied for more than 110 years and presently comprises 166 species and 10 varieties. This takes into account the new records of *Blepharostoma trichophyllum* var. *brevirete* Bryhn & Kaal., *Prasanthus suecicus* (Gottsche) Lindb., and *Schistochilopsis opacifolia* (Culm. ex Meyl.) Konstant. (Dulin, 2008b, c; Potemkin, 2008; Konstantinova *et al.*, 2009a) from the sub-Polar Urals. All collections are kept in the SYKO herbarium.

31. ***Pseudocrossidium pachygastrellum*** (Herzog) Broth.

Contributor: Guillermo M. Suárez and María M. Schiavone

Argentina: TUCUMÁN. Depto. Tafí del Valle, 'La Cienaga', pastizal de neblina, sobre suelo muy expuesto, 26°46′24″S, 65°39′02″W, 2539 m a.s.l., 11 September 2009, *leg. G. Suárez 639* (LIL).

During examination of collections from 'La Cienaga', in the Northwest of Argentina (Suárez, Schiavone & Zander, 2010), certain specimens were identified as *Pseudocrossidium pachygastrellum*, a species in the family Pottiaceae and only recorded previously from Bolivia (Churchill, Sanjines & Aldana, 2009).

Pseudocrossidium pachygastrellum is a distinctive species characterized in the following description: *Plants* growing in dense turfs. *Stems* simple or branching (4–13 mm high), transverse section with central strand present, sclerodermas and hyalodermis weakly differentiated; axillary hairs 100–180 μm long, of 3–5 cells, all hyaline. *Leaves* appressed when dry, weakly spreading when moist, oval-lanceolate, 1–1.5 mm in length, margins revolute to spiraled, entire, rolled margins differentiated as photosynthetic organs thin-walled, hollow-papillose cells; costa broad, excurrent as a mucro, superficial cells ventrally differentiated as a multi-layered pad of papillose, thin-walled photosynthetic cells, costal transverse section reniform, dorsal and ventral

stereid band present, ventral and dorsal epidermis present, the latter weak, guide cells 4–5, hydroid strand present, multiple; upper laminal cells subquadrate, transversally elongated 5–12 × 8–13, papillae restricted to juxtacostal cells (on both surfaces) and submarginal cells (only on ventral surface), basal cells rectangular. *P. pachygastrellum* is illustrated by Zander (1993).

The Argentinean plants of *P. pachygastrellum* are male with terminal perigonia having abundant paraphyses that are longer than the antheridia.

According to Churchill *et al.* (2009), *P. pachygastrellum* grows in Bolivia in the Puna, and conceivably, in inter-Andean dry valleys. In Argentina, it is found in grassland at high elevations. It forms extensive turfs, exposed to the sun in the basin of 'Cumbres Calchaquies'.

32. ***Racomitrium lanuginosum*** (Hedw.) Brid.

Contributor: P. Erzberger

Hungary: VAS COUNTY. Sorkikápolna, 47°08′23″N, 16°42′16″E, *ca* 15 km south of Szombathely, without date, *leg. J. Márton s.n.*, *conf.* Erzberger, 2008 (BP 6626; BP 6630).

This species was excluded from the checklist of Hungarian bryophytes (Erzberger & Papp, 2004) owing to a comment of Boros (1968), who rejected reports of *R. lanuginosum* from Vas County by Borbás, as quoted by Hazslinszky. As the collections reported here are from Vas County, the rejection of these reports may have been unjustified. The specimens cited above had been overlooked in the bryophyte collection of BP during the compilation of the checklist. The collector, József Márton (1860–1895), was a teacher in Sorkitótfalu at the end of the 19th century (Balogh, 2005), and the original labels on his collections read: BP 6626: 'Flora Hung. Cottus Castriferrei Ex Harbario J. Márton Racomitirum lanuginosum Dill. in arenosis S-Kápolna leg. Márton'; BP 6630: 'Flora Hung. Cottus Castriferrei Ex Harbario J. Márton Racomitirum lanuginosum Dill. in silvis S-Kápolna leg. Márton'.

33. ***Rhacopilopsis trinitensis*** (Müll.Hal.) E.Britton ex Dixon

Contributor: C.C. Townsend.

Kenya: KIAMBU DISTRICT; Gatamayu Forest, 0°53′S, 36°37′E to 0°59′S, 36°42′E, on the trunk of a forest tree near the fishing camp, 2242 m a.s.l., 15 February 1948, *leg. R.W. Rayner 23*, *det.* C.C. Townsend; SOUTH NYERI DISTRICT; near Kamweti Forest Station, 0°20′S, 37°19′E, Mount Kenya, 2485 m a.s.l., 15 January 1985, *leg. C.C. Townsend 85/156* (both Priv. *Herb*. Townsend).

New to Kenya.

34. ***Riccia crozalsii*** Levier

Contributor: P. Erzberger

Hungary: HAJDÚ-BIHAR COUNTY. West of Hortobágy National Park, *ca* 1–2 km south of Kocsújfalu, near the road to Nagyiván, 47°32′N, 20°55′E, on soil in alkaline salt marsh vegetation, *ca*. 90 m a.s.l., 24 April 2003, *leg. P. Erzberger s.n.*, *det.* C. Sérgio, 2005 (B Erzberger 9198).

This species is absent from the checklist of Hungarian bryophytes (Erzberger & Papp, 2004) and thus is new to Hungary.

35. ***Schistidium cupulare*** (Müll.Hal.) Ochyra

Contributor: R. Ochyra

Heard Island: WINSTON LAGOON, on old stable moraine, 29 October 2000, *leg. P. Selkirk, M. Skotnicki & J. Whinan H95a* (NSW 755341); East Saddle Point, with *Ceratodon purpureus*, 29 October 2000, *leg. P. Selkirk, M. Skotnicki & J. Whinan H506* (NSW 755342).

Schistidium cupulare is an amphiatlantic subantarctic species. It is frequent and locally common in South Georgia and in Îles Kerguelen from where it was described. It occurs in the South Shetland Islands in the northern maritime Antarctic and was found once in Tierra del Fuego (Ochyra, 2004; Ochyra, Lewis Smith & Bednarek-Ochyra, 2008). Its range is now extended to Heard Island, an isolated, mountainous and almost totally glaciated speck of land in the Southern Ocean. The material was originally determined as *S. apocarpum* (Hedw.) Bruch & Schimp., a catch-all name which has served as a convenient repository for most schistidioid taxa described from the Southern Hemisphere (Bremer, 1980). However, careful taxonomic studies of these taxa has revealed them to be distinct and well defined species, and *S. apocarpum* is primarily a Northern Hemisphere species.

36. ***Sciuro-hypnum curtum*** (Lindb.) Ignatov

Contributors: Jose David Orgaz and María J. Cano

Spain: CANTABRIA: Brañavieja, NW slope of Cuchillón peak, 43°01′41″N, 04°23′10″W, 2100 m a.s.l., on rocks, 6 August 2008, *leg. Cano 4685* (MUB 28374).

Sciuro-hypnum curtum is a widespread species that occurs in Belarus, Estonia, Germany, Russia, Ukraine (Ignatov & Milyutina, 2007), Greece, Montenegro, Romania (Sabovljević *et al.*, 2008), Italy (Cortini Pedrotti, 2006), Poland (Ochyra, Żarnowiec & Bednarek-Ochyra, 2003) Scandinavia (Nyholm, 1965) and North America. *S. curtum* is here newly recorded for the Iberian Peninsula. It was collected in the north of the peninsula in the Cantabrian Mountains, occurring on conglomerates in a snow-bed. The dominant surrounding vegetation included *Juniperus communis* subsp. *alpina* (Suter) Ĉelak, *Calluna vulgaris* (L.) Hull and *Vaccinium uliginosum* L.

37. ***Splachnobryum obtusum*** (Brid.) Müll. Hal.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: MULU NATIONAL PARK, on soil, *ca* 100 m a.s.l., 10 May 2004, *leg. H. Mohamed & K.T. Yong 5293* (KLU).

The family Splachnobryaceae is reported as new to Borneo.

Splachnobryum obtusum is a cosmopolitan species that surprisingly has not previously been reported from Borneo. Most species of *Splachnobryum* are calcicolous and this new record was collected from a limestone habitat. *S. obtusatum* is a polymorphic species and differs from *S. oorschotii* (recorded below) in having mostly ovate to elliptic leaves which are usually widest close to midleaf. The leaf apices are often obtuse.

38. ***Splachnobryum oorschotii*** (Sande Lac.) Müll. Hal.

Contributors: Haji Mohamed and K.T. Yong

Sarawak: MULU NATIONAL PARK, on soil near limestone cave, *ca* 100 m a.s.l., 10 May 2004, *leg. H. Mohamed & K.T. Yong 5287* (KLU).

This South East Asian endemic species has been reported from New Guinea, Java, Singapore and Thailand (Arts, 2001). The new record was collected from soil near a limestone cave. *S. oorschotii* has lingulate leaves with bluntly acute apices. The costa is stout but always ends several cells below the leaf apex. Large, lax rhomboidal to hexagonal cells form the lamina. The margins in the upper leaf are crenulate, but become distinctly denticulate at the leaf apex.

39. ***Trachypodopsis serrulata*** (P. Beauv.) M.Fleisch.

Contributor: C.C. Townsend.

Liberia: NIMBA MTS, 'forets basses entre la prairie et la frontière libérienne', 450 m a.s.l.., at the base of the epiphytic orchid *Polystachya laxiflora* Lindl., 19 January 1965, *leg. J.G. Adam 20690a*, *det*. C.C. Townsend (Priv. *Herb*. Townsend).

New to Liberia.

40. ***Trichosteleum mammosum*** (Müll. Hal.) A.Jaeger

Contributors: Haji Mohamed and K.T. Yong

Sarawak: KUBAH NATIONAL PARK, Gunung Serapi, 15 km north of Kuching, at the peak in the vicinity of the telecommunications complex, on tree base, *ca* 780 m a.s.l., *leg. H. Mohamed & B. Bakar 3093a* (KLU).

This species is known from Sumatra, Krakatau, Thailand, Peninsular Malaysia and New Guinea (Tan, Koponen & Norris, 2007). Since it is widely distributed in South East Asia, its occurrence in Borneo is to be expected. The distinctive character of *Trichosteleum mammosum* is the presence of tubercules and pustules on the exothecial cells of the capsule, which can even be seen under the hand lens. The species of *Trichosteleum* are morphologically similar, and this species is almost impossible to identify if the sporophyte is absent. *T. mammosum* has elliptic-lanceolate to narrow ovate-lanceolate leaves with a long acuminate apex. The lamina cells are unipapillose.

41. ***Warnstorfia fontinaliopsis*** (Müll.Hal.) Ochyra

Contributor: R. Ochyra

Auckland Islands: AUCKLAND ISLAND, Hooker Hills, in the vicinity of Hooker, to east of summit, 50°33′S, 166°09′E, 430 m a.s.l.; on rock cliffs in tussock grassland zone, 22 December 1972, *leg. D.H. Vitt 9242* (ALTA, KRAM).

Campbell Islands: CAMPBELL ISLAND, Faye-Sorenson ridge, 52°29′50″S, 169°11′E, on peat in seepage, 8 January 1970, *leg. D.H. Vitt 2543* (ALTA, KRAM); north-west side of Six Foot Lake at junction with stream, 52°35′10″S, 169°09′E, covering ground in dried up seal wallow, 23 December 1969, *leg. D.H. Vitt 2125B* (ALTA, KRAM).

The Auckland and Campbell Islands are situated in the Southern Ocean 460 km and 700 km, respectively, from the South Island of New Zealand, and their moss floras are well known. At present, no less than 175 species have been reported from Auckland Island (Vitt, 1979) and 119 species from Campbell Island (Vitt, 1974), but taxonomic and field studies should yield additional species. For example, two endemic species of *Blindia* were described as new from these islands by Bartlett & Vitt (1986). Examination of specimens collected from these islands, originally determined as *Drepanocladus fluitans* (Hedw.) Warnst. [≡ *Warnstorfia fluitans* (Hedw.) Loeske], showed that a few of them actually represented *Warnstorfia fontinaliopsis*, a species closely related to *W. fluitans*, which is distinct in having poorly defined alar cells. *Warnstorfia fontinaliopsis* is a subantarctic species which is quite common in the northern maritime Antarctic and on South Georgia, but rare on the Prince Edward Islands and Îles Kerguelen in the subantarctic region. It is also very rare in the Fuegian region, western Patagonia (Ochyra & Matteri, 2001) and in the South Island of New Zealand (Ochyra *et al.*, 2008).

42. ***Wijkia trichocoleoides*** (Müll. Hal.) H.A. Crum

Contributor: C.C. Townsend

Liberia: NIMBA MTS, 'forets basses entre la prairie et la frontière libérienne', 450 m a.s.l., at the base of the epiphytic orchid *Polystachya laxiflora* Lindl., 19 January 1965, *leg. J.G. Adam 20690b*, *det*. C.C. Townsend (Priv. *Herb*. Townsend).

Zambia: NORTH-WESTERN PROVINCE; Mwinilunga District, on a rotting log at the source of the Zambesi between Mwinilunga and Kalene Hill, in shade of forest remnant, *ca* 1450 m a.s.l.., *leg*. C.C. Townsend *s.n.* (Priv. *Herb*. Townsend).

New to Liberia and Zambia

The research of M.V. Dulin was performed with the financial support of the Russian Foundation for Basic Research (Project Nos. 06-04-48225-a, 08-04-10098-k and 09-04-00281-a). J. Váňa has received financial support for his research from the Ministry of Education of the Government of the Czech Republic through Grant No. 0021620828. The field work of R. Ochyra on the Prince Edward Islands received logistical support from the South African Department for Environmental Affairs and Tourism. Halina Bednarek-Ochyra, Ryszard Ochyra and Adam Stebel received the financial support from the Polish Ministry of Science and Higher Education through Grant Nos. N 303 063 32/2264, N N303 469338 and N N304 338534. The field work of R. Ochyra and Marc Lebouvier on Îles Crozet and Îles Kerguelen was carried out within the programme 136 ECOBIO sponsored by the French Polar Institute (IPEV). Ryszard Ochyra also wishes to thank Richard H. Zander, St Louis, for confirming the determination of *Didymodon vinealis* and the curators at ALTA and NSW for arranging specimens on loan.

O.T. Yayintas would like to thank Canakkale Onsekiz Mart University for supporting her sabbatical leave at the Missouri Botanical Garden. She especially thanks R.H. Zander for help with English and is very grateful to the curator of Missouri Botanical Garden herbarium for making available the resources of the Garden for this study.

Guillermo M. Suárez and María M. Schiavone thank Richard Zander for comments and suggestions on the manuscript. Their financial support was provided by CIUNT (Secretaria de Ciencia y Técnica, Universidad Nacional de Tucumán) and CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas). Jose David Orgaz and María J. Cano acknowledge that their work has been carried out with financial support from the Spanish 'Ministerio de Ciencia e Innovación' (Project CGL2009-07323, Flora Briofítica Ibérica).

Haji Mohamed and K.T. Yong thank Dr Benito C. Tan for help with the identification of some of their specimens, and gratefully acknowledge financial aid for fieldwork and the preparation of this manuscript from the University of Malaya, Forest Research Institute of Malaysia and Malaysian Ministry of Science, Technology and Innovation.

TAXONOMIC ADDITIONS AND CHANGES: Nil.

REFERENCES

Abramova AL, Abramov II. 1984. Contributions on the bryophyte flora of Daldyn in the North-West Yakutia. *Novosti Sistematiki Nizsšikh Rastenii* **21:** 197–208. (in Russian)

Acharius E. 1805. *Jungermannia violacea*, eine neue Art aus Dusky Bay. In: Weber F, Mohr DMH, eds. *Beiträge zur Naturkude*. **1**. Kiel: in der neuen akademischen Buchhandlung, 76–78.

Afonina OM. 2004. *Konspekt flory mkhov Chukotki* [*Moss flora of Chukotka*]. Sankt-Peterburg: Rossiyskaya Akademiya Nauk, Botanicheskiy Institut im. V. L. Komarova. (in Russian)

Afonina OM, Duda J. 1993. Liverworts of Chukotka. *Botaničeskij Žurnal* **78(3):** 77–93. (in Russian)

Allen B. 2002. Moss Flora of Central America. Part 2. Encalyptaceae – Orthotrichaceae. *Monographs in Systematic Botany from the Missouri Botanical Garden* **90:** 1–699.

Arts T. 2001. A revision of the Splachnobryaceae (Musci). *Lindbergia* **26:** 77–96.

Bakalin VA. 2004. Hepatics of Stanovoye Nagor'e Uplands. *Arctoa* **13:** 73–83. (in Russian)

Bakalin VA. 2009. *Hepatics (Marchantiophyta, Anthocerotophyta) flora and phytogeography of Kamchatka and adjacent islands.* Moscow: KMK Scientific Press. (in Russian)

Balogh L. 2005. *Egy elfeledett vasi tudós tanító*. – Vas Népe 2005 Május 11, Szombathely.

Bartlett JK, Vitt DH. 1985. A survey of species in the genus *Blindia* (Bryopsida, Seligeriaceae). *New Zealand Journal of Botany* **24:** 203–246.

Bartram EB. 1939. Mosses of the Philippines. *Philippine Journal of Science* **68:** 1–425.

Bednarek-Ochyra H, Matteri CM, Ochyra R. 1996. A major range extension of *Racomitrium lamprocarpum* (Musci, Grimmiaceae) in South America. *Fragmenta Floristica et Geobotanica* **41:** 995–1000.

Bednarek-Ochyra H, Ochyra R. 1994. *Racomitrium lamprocarpum* (Musci, Grimmiaceae) in southern South America. *Fragmenta Floristica et Geobotanica* **39:** 361–367.

Bednarek-Ochyra H, Ochyra R. 1998. *Racomitrium lamprocarpum* (Müll. Hal.) Jaeg. – an addition to the moss flora of Îles Kerguelen and the Subantarctic. *Journal of Bryology* **20:** 525–528.

Bednarek-Ochyra H, Ochyra R. 2007. *Bucklandiella lamprocarpa* (Müll.Hal.) Bednarek-Ochyra &, Ochyra [on Macquarie Island]. In: Blockeel TL, ed. New national and regional bryophyte records, 15. *Journal of Bryology* **29:** 139–140.

Bednarek-Ochyra H, Ochyra R. 2009. *Bucklandiella striatipila* (Cardot) Bednarek-Ochyra & Ochyra [in Îles Crozet]. In: Blockeel TL, ed. New national and regional bryophyte records, 22. *Journal of Bryology* **31:** 202.

Bednarek-Ochyra H, Ochyra R. 2010. *Bucklandiella allanfifei*, a new moss species from New Zealand, with a note on South American *B. striatipila*. *Journal of Bryology*, **32:** 245–255.

Bednarek-Ochyra H, Ochyra R, Long DG. 2008. *Niphotrichum canescens* (Hedw.) Bednarek-Ochyra & Ochyra var. *latifolium* (C.E.O.Jensen) Bednarek-Ochyra & Ochyra [in Nepal]. In: Blockeel TL, ed. New national and regional bryophyte records, 19. *Journal of Bryology* **30:** 233.

Bell BG. 1974. A synoptic flora of South Georgian mosses: V. *Willia* and *Racomitrium*. *British Antarctic Survey Bulletin* **38:** 73–101.

Boros, Á. 1968. *Bryogeographie und Bryoflora Ungarns*. Budapest: Akadémiai Kiadó.

Bremer B. 1980. A taxonomic revision of *Schistidium* (Grimmiaceae, Bryophyta) 2. *Lindbergia* **6:** 89–117.

Cardot J, Brotherus VF. 1923. Botanische Ergebnisse der Schwedischen Expedition nach Patagonien und dem Feuerlande 1907–1909. X. Les mousses. *Kongliga Svenska Vetenskapsakademiens Handlingar* **63(10):** 1–74 + pls. 1–4.

Churchill SP, Griffin D III, Muñoz J. 2000. A checklist of the mosses of the tropical Andean countries. *Ruizia* **17:** 1–203.

Churchill, SP, Sanjines NN, Aldana C. 2009. *Catálogo de las Briofitas de Bolivia: diversidad, distribución y ecología*. St Louis, MO: Missouri Botanical Garden Press.

Clifford HT. 1955. On the distribution of *Rhacomitrium crispulum* (H. f. & W.) H. f. & W. *Bryologist* **58:** 330–334.

Cortini Pedrotti C. 2006. *Flora dei Muschi d'Italia, Bryopsida (II Parte)*. Roma: Antonio Delfino Editore.

Costa DP. 2008. Metzgeriaceae (Hepaticae). *Flora Neotropica Monograph* **102:** 1–169.

Czernyadjeva IV. 2005. A check-list of the mosses of Kamchatka Peninsula (Far East). *Arctoa* **14:** 13–34.

Damsholt K. 2002. *Illustrated Flora of Nordic liverworts and hornworts*. Odense: Knud Graphic Consult.

Deguchi H. 1984. Studies on some Patagonian species of Grimmiaceae (Musci, Bryophyta). In: Inoue H, ed. *Studies on cryptogams in southern Chile*. Tokyo: Kenseisha, 17–72.

Demaret F, Potier de la Varde R 1952. Les espèces Africaines du genre *Callicostella*. *Bulletin du Jardin Botanique de l'Ětat Bruxelles* **22:** 323–396.

Dulin MV. 2007. *Liverworts of the middle subzone of the Russian European North-East*. Ekaterinburg: UrO RAN. (in Russian)

Dulin MV. 2008a. Rare liverworts in the Komi Republic (Russia). *Folia Cryptogamica Estonica* **44:** 23–33.

Dulin MV. 2008b. New finds of liverworts in the Komi Republic. *Arctoa* **17:** 198–199. (in Russian)

Dulin MV. 2008c. The preliminary check-list of liverworts of the Komi Republic (Russia). *Folia Cryptogamica Estonica* **44:** 17–23.

Düll R. 1992. Distribution of the European and Macaronesian mosses. (Bryophytina). Annotations and progress. *Bryologische Beiträge* **8/9:** 1–223.

Eddy A. 1990: *A handbook of Malesian mosses*. **2**. *Leucobryaceae to Buxbaumiaceae*. London: The Natural History Museum.

Ellis LT. 1985. A taxonomic revision of *Exodictyon* Card. (Musci: Calymperaceae). *Lindbergia* **11:** 9–37.

Erzberger P, Papp B. 2004. Annotated checklist of Hungarian bryophytes. *Studia botanica hungarica* **35:** 91–149.

European Committee for the Conservation of Bryophytes (ECCB). 1995. *Red data book of European bryophytes*. Trondheim: ECCB.

Frisvoll AV. 1983. A taxonomic revision of the *Racomitrium canescens* group (Bryophyta, Grimmiales). *Gunneria* **41:** 1–181.

Gangulee HC. 1974. *Mosses of Eastern India and adjacent regions* **4.** Calcutta: H.C. Gangulee.

Grolle R, So ML. 2003. *Riccia fruticulosa* O.F.Müll., 1782 and blue *Metzgeria* (Marchantiophyta) in Europe. *Botanical Journal of the Linnean Society* **142:** 229–235.

Henderson DM 1961. Contribution to the bryophyte flora of Turkey IV. *Notes from the Royal Botanic Garden, Edinburgh* **23:** 263–278.

Ignatov M, Milyutina I. 2007. On *Sciuro-hypnum oedipodium* and *S. curtum* (Brachytheciaceae, Bryophyta). *Arctoa* **16:** 47–61.

Ireland RR. 1969. A taxonomic revision of the genus *Plagiothecium* for North America, north of Mexico. *National Museum of Canada, National Museum of Natural Sciences, Publications in Botany* **1:** 1–118.

Ireland RR. 1982. *Grimmia teretinervis* (Musci: Grimmiaceae) in North America. *Bryologist* **85:** 332–334.

Jelenc F. 1955. *Muscinées de l'Afrique du Nord (Algérie, Tunisie, Maroc, Sahara)*. Oran: Société Anonyme des Papeteries et Imprimeries L. Fouque.

Jiménez JA. 2006. Taxonomic revision of the genus *Didymodon* Hedw. (Pottiaceae, Bryophyta) in Europe, North Africa and Southeast and Central Asia. *Journal of the Hattori Botanical Laboratory* **100:** 211–292.

Konstantinova NA. 1996. New for Murmansk Region and rare liverworts of Kandalaksha Nature Reserve (Noth-West Russia). *Botaničeskij Žurnal* **81(8):** 116–123. (in Russian)

Konstantinova NA, Bakalin VA, Andrejeva EN, Bezgodov AG, Borovichev EA, Dulin MV, Mamontov YS. 2009a. Checklist of liverworts (Marchantiophyta) of Russia. *Arctoa* **18:** 1–64. (in Russian)

Konstantinova NA, Bakalin VA, Mamontov YS, Savchenko AN. 2009b. New liverwort records from Republic of Buryatiya. *Arctoa* **18:** 270–273. (in Russian)

Konstantinova NA, Bezgodov AG. 2006. Hepatics of Vishera State Nature Reserve (Perm Province, Northern Ural Mountains). *Arctoa* **14:** 163–176. (in Russian)

Konstantinova NA, Czernjadieva IV. 1995. Hepatics of middle course of Sob River (Polar Ural). *Novosti Sistematiki Nizšikh Rastenii* **30:** 110–121. (in Russian)

Konstantinova NA, Potemkin AD. 1996. Liverworts of the Russian Arctic: an annotated checklist and bibliography. *Arctoa* **6:** 125–150.

Kučera J. 2000. Illustrierter Bestimmungsschlüssel zu den mitteleuropäischen Arten der Gattung *Didymodon*. *Meylania* **19:** 1–47.

Kučera J. 2002. Illustrerad bestämningsnyckel till *Didymodon* i norra Europa. *Myrinia* **12:** 1–40.

Kürschner H, Erdağ E. 2005. Bryophytes of Turkey: an annotated reference list of the species with synonyms from the recent literature and an annotated list of Turkish bryological literature. *Turkish Journal of Botany* **29:** 95–154.

Lal J. 2005. *A checklist of Indian Mosses*. Dehradun: Bishen Singh Mahendra Pal Singh.

Lapshina ED. 2003. *Flora of mires of south-east of the West Siberia*. Tomsk: Tomskiy University Press. (in Russian)

Lin S-H, 1984. A taxonomic revision of Phyllogoniaceae (Bryopsida). Part II. *Journal of Taiwan Museum* **37**(2): 1–54.

Magill RE. 1987. *Flora of Southern Africa, Bryophyta, Part 1 Mosses, Fasc. 2. Gigaspermaceae–Bartramiaceae*. Pretoria: Botanical Research Institute.

Matteri CM. 1986: Los Musci (Bryophyta) de las Islas Malvinas, su habitat y distribución. *Nova Hedwigia* **43:** 159–189.

Mohamed H, Tan BC. 1988. A checklist of mosses of Peninsular Malaya and Singapore. *Bryologist* **91:** 24–44.

Müller OF. 1782. *Riccia fruticulosa*. In: Müller OF, ed. *[G. Ch. Oeder's Flora danica or] Icones plantarum sponte nascentium in Regnis Daniae et Norvegiae, in Ducatibus Slesvici et Holsaticae, et in Comitatibus Oldenburgi et Delmenhorstiae; ad illustrandum opus de iisdem planti, regio jussu exarandum, Florae Danicae nomine inscriptum*. Vol. 5, fasc. 15. Havniae: typis M. Hallager, 6, Tab. DCCCXCVIII, Fig. 3.

Norris DH, Koponen T. 1989. Bryophyte flora of the Huon Peninsula, Papua New Guinea. XXVIII. Pottiaceae (Musci). *Acta Botanica Fennica* **137:** 81–138.

Notov AA. 2005. *Materials to the flora of Tver Province. Part 1. Embryophyta*. Version 4. Tver: GERS. (in Russian)

Nyholm E. 1965. *Illustrated Moss Flora of Fennoscandia. Volume 2. Musci*. CWK Gleerup, Lund, and Natural Science Research Council, Stockholm.

Nyholm E. 1990. *Illustrated Flora of Nordic mosses. Fasc. 2. Pottiaceae – Splachnaceae – Schistostegaceae*. Copenhagen & Lund: Nordic Bryological Society.

Ochyra R. 1993. New synonyms of *Racomitrium lamprocarpum* (Musci, Grimmiaceae). *Fragmenta Floristica et Geobotanica* **38:** 738–741.

Ochyra R. 2004. Antipodal mosses: XV. Taxonomy and distribution of *Schistidium cupulare* (Bryopsida: Grimmiaceae). *Polish Polar Research* **25:** 123–133.

Ochyra R, Lewis Smith RI, Bednarek-Ochyra H. 2008. *The illustrated moss flora of Antarctica*. Cambridge: Cambridge University Press.

Ochyra R, Matteri CM. 2001. Amblystegiaceae. In: Guerrera SA, Gamundi de Amos IJ, Matteri CM, eds. *Flora criptogámica de Tierra del Fuego*. **14(10)**. Buenos Aires: Consejo Nacional de Investigaciones Científicas y Técnicas de la Republica Argentina, 1–96.

Ochyra R, Sérgio C, Schumacker R. 1988. *Racomitrium lamprocarpum* (C. Muell.) Jaeg., an austral moss disjunct in Portugal, with taxonomic and phytogeographic notes. *Bulletin du Jardin Botanique National de Belgique* **58:** 225–258.

Ochyra R, Żarnowiec J, Bednarek-Ochyra H. 2003. *Census catalogue of Polish mosses. List of the Polish mosses.* Kracow: Polish Academy of Sciences, Institute of Botany.

O'Shea BJ. 2006. Checklist of the mosses of sub-Saharan Africa (version 5, 12/06). *Tropical Bryology Research Reports* **6:** 1–252.

Özel N, Gemici Y. 2001. *Kazdağları'nda Flora ve Vejetasyon. Kazdağları* I. Ulusal Sempozyomu Bildirileri, 20–22 Eylül 2001, Edremit.

Perold SM. 1999. *Flora of Southern Africa, Hepatophyta. Part 1: Marchantiopsida, Fasc. 1: Marchantiidae*. Pretoria: National Botanical Institute.

Potemkin AD. 2008. New finds of liverworts in the Komi Republic. *Arctoa* **17:** 198. (in Russian)

Potemkin AD, Kotkova VM. 2003. Liverworts of the Museum and Reserve 'Park of Monrepos' (Town of Vyborg, Leningrad Province). *Botaničeskij Žurnal* **88:** 37–44. (in Russian)

Potemkin AD, Sofronova EV. 2009. *Liverworts and hornworts of Russia*.**1**. St Petersburg: Yakutsk, Boston-Spectr. (in Russian)

Potier de la Varde R. 1955. Mousses récoltéés par le M. le Dr. Olov Hedberg, en Afrique orientale, au cours de la mission suédoise de 1948. *Arkiv för Botanik* **3:** 125–204.

Reese WD. 1994. The subgenera of *Mitthyridium* (Musci). *Journal of the Hattori Botanical Laboratory* **75:** 41–44.

Reese WD, Koponen T, Norris DH. 1986a. Bryophyte flora of the Huon Peninsula, Papua New Guinea. XIX. *Calymperes, Syrrhopodon* and *Mitthyridium* (Calymperaceae, Musci). *Acta Botanica Fennica* **133:** 151–202.

Reese WD, Mohamed H, Mohamed AD. 1986b. A synopsis of *Mitthyridium* in Malaysia and adjacent regions. *Bryologist* **89:** 49–58.

Reese WD, Stone IG. 1995. The Calymperaceae of Australia. *Journal of the Hattori Botanical Laboratory* **78:** 1–40.

Robinson H. 1975. The mosses of Juan Fernandez Islands. *Smithsonian Contributions to Botany* **27:** i–iv + 1–88.

Sabovljević M, Natcheva R, Dihoru G, Tsakiri E, Dragićević S, Erdağ A, Papp B. 2008. Check list of the mosses of SE Europe. *Phytologia Balcanica* **14:** 207–244.

Schljakov RN, Konstantinova NA. 1982. *Synopsis of the Bryophytes of the Murmansk Region*. Apatity: Kolsk. Fil. Akad. Nauk SSSR. (in Russian)

Selkirk PM, Whinam JP, Downing AJ, Skotnicki ML. 2008. Mosses of sub-Antarctic Heard Island: an updated list and discussion of their distribution. *Polar Record* **44(229):** 155–164.

Singh SK, Singh DK. 2007. Some new and noteworthy records of Hepaticae and Anthocerotae from western Himalaya, India. *Cryptogamie, Bryologie* **28:** 253–265.

Söderström L, Urmi E, Váňa J. 2002. Distribution of Hepaticae and Anthocerotae in Europe and Macaronesia. *Lindbergia* **27:** 3–47.

Sofronova EV. 2005. Liverworts. In: *Raznoobrazie rastitelnogo mira Yakutia*. Novosibirsk: Siberian Division of the Russian Academy of Science. (in Russian)

Sollman P. 1995. Studies on Australian pottiaceous mosses. *Lindbergia* **20:** 144–146.

Srivastava SC, Sharma D. 2000. A preliminary study on the liverwort and hornwort flora of Silent Valley (Kerala). In: Chauhan, ed. *Recent trends in botanical researches: Prof. D. D. Nautiyal commemoration volume*. Allahabad: Allahabad University, 53–75.

Srivastava SC, Udar R. 1975. The genus *Fossombronia* Raddi in India with a note on the Indian taxa of the family Fossombroniaceae. *Nova Hedwigia* **26:** 799–845.

Suárez, GM, Schiavone MM, Zander R. 2010. Sporophytes in the genus *Saitobryum* (Pottiaceae, Bryophyta). *Gayana Botánica* **67:** 125–129.

Suleiman M, Akiyama H, Tan BC. 2006. A revised catalogue of mosses reported from Borneo. *Journal of the Hattori Botanical Laboratory* **99:** 107–183.

Tan BC, Jia Y. 1999. A preliminary revision of Chinese Sematophyllaceae. *Journal of the Hattori Botanical Laboratory* **86:** 1–70.

Tan BC, Koponen T, Norris DH. 2007. Bryophyte flora of the Huon Peninsula, Papua New Guinea. LXX. Sematophyllaceae (Musci) 1. *Acanthorrhynchium*, *Acroporium, Clastobryophilum*, *Pseudopiloecium*, *Radulina* and *Trichosteleum*. *Annales Botanici Fennici* **44:** 35–78.

Vitt DH. 1974. A key and synopsis of the mosses of Campbell Island, New Zealand. *New Zealand Journal of Botany* **12:** 185–210.

Vitt DH. 1979. The moss flora of the Auckland Islands, New Zealand, with a consideration of habitats, origins, and adaptations. *Canadian Journal of Botany* **57:** 2226–2263.

Wigginton MJ. 2009. Checklist and distribution of the liverworts and hornworts of sub-Saharan Africa, including the East African Islands. *Tropical Bryology Research Reports* **7:** 1–114.

Yayintaş A. 1994. A new moss record for Türkiye, *Plagiothecium denticulatum* (Hedw.) B.S.G. var. *obtusifolium* (Turn.) Moore (Plagiotheciaceae). *Journal of Faculty of Science, Aegean University, Series B* **16:** 19–21.

Yayintaş A, Tonguç Ö. 1994. A new moss record for Turkey, *Plagiothecium succulentum* (Wils.) Lindb. (Plagiotheciaceae). *Turkish Journal of Botany* **18:** 517–518.

Zander RH. 1993. Genera of the Pottiaceae: Mosses of Harsh Environments. *Bulletin of the Buffalo Society of Natural Sciences* **32:** 1–378.

Zheleznova GV. 1985. On the hepatic flora of Meddle Timan (Komi Republic). *Novosti Sistematiki Nizšikh Rastenii* **22:** 223–229. (in Russian)

Zhukova AL. 1973. Floristic analysis of Hepaticae from the Franz-Josef Land. *Botaničeskij Žurnal* **58:** 528–539. (in Russian)

L. T. Ellis[1], Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD, UK. E-mail: l.ellis@nhm.ac.uk

A. K. Asthana & Vinay Sahu, Bryology Laboratory, National Botanical Research Institute, Lucknow 226 001, India

B. H. Bednarek-Ochyra & R. Ochyra, Laboratory of Bryology, Institute of Botany, Polish Academy of Sciences, ul. Lubicz 46, 31-512 Kraków, Poland. E-mails: H.Bednarek@botany.pl and R.Ochyra@botany.pl

María J. Cano, Departamento de Biología Vegetal (Botánica), Facultad de Biología, Universidad de Murcia, Campus de Espinardo, E-30100 Murcia, Spain.
E-mail: mcano@um.es

D. P. Costa, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rua Pacheco Leão 915, 22460-030, Rio de Janeiro, RJ, Brasil. E-mail: dcosta@jbrj.gov.br

B. Cykowska & R. Ochyra, Laboratory of Bryology, Institute of Botany, Polish Academy of Sciences, ul. Lubicz 46, 31-512 Kraków, Poland. E-mails: B.Cykowska@botany.pl and R.Ochyra@botany.pl

Dmitriy A. Philippov, I. D. Papanin Institute for Biology of Inland Water RAS, Borok, 152742, Yaroslavl Region, Nekouz District, Russia. E-mail: philippov_d@mail.ru

Michail V. Dulin, Institute of Biology Komi Science Centre UB RAS, Kommunisticheskaja st., 28, Syktyvkar 167982, Komi Republic, Russia. E-mail: dulin@ib.komisc.ru

P. Erzberger, Belziger Str. 37, D-10823 Berlin, Germany. E-mail: erzberger.peter@googlemail.com

M. Lebouvier, CNRS UMR 6553, Université de Rennes 1, Station Biologique, F-35380 Paimpont, France. E-mail: marc.lebouvier@univ-rennes1.fr

Haji Mohamed, Biology Department, Universiti Brunei Darussalam, Gadong BE1410, Brunei. E-mail: binabdulmajid@gmail.com

R. Ochyra, Laboratory of Bryology, Institute of Botany, Polish Academy of Sciences, ul. Lubicz 46, 31-512 Kraków, Poland. E-mail: R.Ochyra@botany.pl

J. D. Orgaz, Departamento de Biología Vegetal (Botánica), Facultad de Biología, Universidad de Murcia, Campus de Espinardo, E-30100 Murcia, Spain.
E-mail: jdavid.orgaz@um.es

N. Phephu, National Herbarium, South African National Biodiversity Institute, Private Bag X101, Pretoria 0001, South Africa. E-mail: n.phephu@sanbi.org.za

J. van Rooy, National Herbarium, South African National Biodiversity Institute, Private Bag X101, Pretoria 0001, South Africa. E-mail: j.vanrooy@sanbi.org.za

A. Stebel, Department of Pharmaceutical Botany, Medical University of Silesia in Katowice,
ul. Ostrogórska 30, 41-200 Sosnowiec, Poland. E-mail: astebel@sum.edu.pl

Guillermo M. Suárez & Maria M. Schiavone, Fundación Miguel Lillo, Facultad de Ciencias Naturales, Miguel Lillo 205/251, (4000) San Miguel de Tucumán, Tucumán, Argentina

C. C. Townsend, 392 Staines Road, Twickenham, TW2 5JA, UK. E-mail: cliff.townsend@lineone.net

J. Váňa, Department of Botany, Charles University, Faculty of Science, Benátská 2, CZ-128 01 Praha 2, Czech Republic. E-mail: vana@natur.cuni.cz

G. Vončina, Pieniny National Park, ul. Jagiellońska 107B, 34-450 Krościenko nad Dunajcem, Poland. E-mail: gvoncina@poczta.onet.pl

Özlem Tonguç Yayintaş, Çanakkale Onsekiz Mart University, Biga Vocational College, 17200, Biga, Çanakkale, Turkey. E-mail: oyayintas@comu.edu.tr

K. T. Yong, Institute of Biological Sciences, Faculty of Science, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

R. H. Zander, Missouri Botanical Garden, PO Box 299, St Louis, MO 63166-0299, USA. E-mail: Richard.Zander@mobot.org
[1]Column editor, to whom contributions should be sent.

The Editorial Board would like to thank the following for their help in reviewing manuscripts during 2009/10

Claudine Ah-Peng
Jeff Bates
Richard P. Beckett
Ariel Bergamini
Tim Blackstock
Tom Blockeel
Sam Bosanquet
Ida Bruggerman-Nannenga
Guntis Brumelis
María J. Cano
Steven P. Churchill
Cymon Cox
Nils Cronberg
Claudio Delgadillo
Isabel Draper
Jeffrey G. Duckett
Heinjo During
Johannes Enroth
Alan Forrest
Laura Forrest
Rosalina Gabriel
Maria Teresa Gallego
Eric Harris
Kristian Hassel
Lars Hedenäs
Mark O. Hill
Nick Hodgetts
David Thomas Holyoak
Virginie Hutsemékers
Sanna Huttunen
Kristoffer Hylander
Michael S. Ignatov
Robert R. Ireland
Juan A. Jiménez
Eric F. Karlin
Niels Klazenga
Helena Korpelainen
Jan Kučera
Harald Kürschner
Francisco Lara
Juan B. Larrain
David G. Long
Robert E. Magill
Javier Martinez-Abaigar
Howard Matcham
Eva Maier
Vicente Mazimpaka
Nicholas Mcletchie
Robert Mill
Frank Müller
Steven Newmaster
Daniel Howard Norris
Ryszard Ochyra
Sanna Olsson
Sándor Orbán
Brian J. O'Shea
Tamás Pócs
Ronald Porley
Silvia Pressel
Christopher D. Preston
Michelle J. Price
Ronald A. Pursell
Dietmar Quandt
Elena Reiner-Drehwald
Rosa M. Ros
David Rycroft
Marko Sabovljevic
Marta Infante Sánchez
Norbert Schnyder
Rod Seppelt
Cecília Sérgio
Lars Söderström
John Spence
Michael Stech
Benito C. Tan
Ray Tangney
Edi Urmi
Alain Vanderpoorten
Risto Virtanen
Martin Wigginton
Joanna Wilbraham
Richard H Zander
Charles Zartman
Rui-Liang Zhu