

New national and regional bryophyte records, 17

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1. *Bucklandiella crispipila* (Taylor) Bednarek-Ochyra & Ochyra

Contributors: H. Bednarek-Ochyra and R. Ochyra

Papua New Guinea: Milne Bay District, Raba Raba Subdistrict, Goë, 9°42'S, 149°02'E, 3460 m a.s.l., on rock, 5 July 1972, leg. P. F. Stevens & J. F. Veldkamp LAE 54438 (BM).

Hitherto *Bucklandiella crispipila* has been considered an Afro-American tropical montane species, widely distributed but scattered in Central (Frisvoll, 1988; Allen, 2002) and South America (Bednarek-Ochyra, Ochyra & Buck, 1999) and in the East African mountains (Ochyra, 1993). The discovery of the species at an altimontane elevation in New Guinea represents a considerable extension of its range, and consequently the phytogeographical status of *B. crispipila* has to be redefined as pan-tropical montane. After *B. subsecunda* (Hook. & Grev.) Bednarek-Ochyra & Ochyra and *B. emersa* (Müll.Hal.) Bednarek-Ochyra & Ochyra, it is the third species of the genus occurring in Malesia.

2. *Dicranella dietrichiae* (Müll.Hal.) A.Jaeger

Contributors: R. Ochyra and H. Bednarek-Ochyra

Norfolk Island: Mt. Bates, terrestrial, shady banks, roadside, 5 August 1946, leg. F. C. Allen 29B, Com. Auckland Museum No 22094 (FH).

Dicranella dietrichiae is an Australasian endemic, widely distributed in eastern Australia where it ranges from Queensland to Tasmania (Streimann & Klazenga, 2002) and the North Island of New Zealand (Beever, Allison & Child, 1992). These widely separated centres of distribution of the species are now nicely bridged by the present record on Norfolk Island which is situated approximately midway between them. At the same time it is a new generic record for this isolated island (Streimann, 2002). The moss was collected by F. C. Allen in 1946. Allen's collection was reported to be deposited in WELT (Streimann, 2002), but according to the label data the present specimen was deposited in Auckland Museum (AK) and was subsequently communicated to E. B. Bartram, who named it *Dicranella watsii* Broth. This latter species is now considered to be conspecific with *D. cardotii* (R.Br.bis) Dixon (Ochyra & Newton, 1986) and is at once distinct in having strongly roughened leaf subulae from their distinctly mamilliose cells, whereas *D. dietrichiae* has entirely smooth leaf subulae.

3. *Dicranella hookeri* (Müll.Hal.) Cardot

Contributors: H. Bednarek-Ochyra and R. Ochyra

Peru: PROV. HUAMACHUCO, DEPTO. LIBERTAD: La Cabana between Huamachuco and Cajabamba, in stream, 3000 m a.s.l., 22 May 1973, leg. Eberhard & Pirkko Hegewald 6062 (KRAM).

Dicranella hookeri is a pan-south-temperate species that is widely distributed in southern South America, south-eastern Australia (Streimann & Klazenga, 2002) and New Zealand (Sainsbury, 1955 as *D. jamesonii*), as well as on Tristan da Cunha (Dixon, 1960) and Gough Island (Bartram, 1959) in the South Atlantic Ocean. Moreover, it is common on subantarctic South Georgia (Newton, 1977), Prince Edward Islands (Zanten, 1971; Ochyra, personal observations) and Îles Crozet and Kerguelen (Brotherus, 1906; Ochyra, personal observations) and penetrates into the Antarctic where it was recorded from Bouvetøya (Bell & Blom, 1986) and Deception Island in the South Shetland Islands (Lewis Smith, 2005a, b, c). In South America, *D. hookeri* extends at high elevations of 3800–4100 m along the Andean chain from the Valdivian region of Chile (He, 1998), through Bolivia and Ecuador to Colombia and Venezuela in the north (Churchill, Griffin & Muñoz, 2000). Thus, the present record of the species in Peru nicely bridges its localities in the Central and North Andes. The specimen was originally named *Hygrodicranum bolivianum* Herzog (Hegewald & Hegewald, 1976) but the vaginate leaf base closely sheathing the stem and abruptly tapered to a channelled, broad and short limb are characteristic of *D. hookeri*.

4. *Didymodon australasiae* (Hook. & Grev.) R.H.Zander

Contributors: R. Ochyra and H. Bednarek-Ochyra

South Georgia: Cumberland East Bay, near Dartmouth Point, 54°20'S, 36°40'W, ca 105 m a.s.l., on peat amongst tussock, 27 Jan 1968, leg. S. W. Greene, G.C.S. Clarke & S. W. Greene 276 (AAS, KRAM).

Didymodon australasiae is an exceedingly variable species as evidenced by the large number of its synonyms (Zander, 1981, 1994; Jiménez *et al.*, 2005). It is a cosmopolitan species known from all continents except Antarctica (Ochyra & Zander, 2002). In the Southern Hemisphere *D. australasiae* is pan-temperate in distribution, having been recorded from southern Chile, South Africa, south-eastern Australia and Tasmania, as well as New Zealand (Jiménez *et al.* 2005). Now its range is extended to Subantarctica where *D. australasiae* was detected from a single collection from South Georgia in the South American province of this biome. It does not seem to have been collected previously

on this cold isolated island or described under a different name (Müller, 1890), since species of subfamily Merceyoideae have been very seldom collected in this area. To date only one species of *Didymodon* is known to occur in Subantarctica, i.e. *D. brachyphyllus* in South Georgia only (Ochyra, 2005).

5. *Drepanocladus aduncus* (Hedw.) Warnst.

Contributor: C.C. Townsend

Tanzania: ARUSHA DISTRICT: Nasolo River, E. slope of Mount Meru, 3°14'S, 36°45'E, forming dense mats on a broken cliff face at the foot of a waterfall above a pool full of *Zannichellia* and in the full spray of the fall, saturated with slightly alkaline water, 1820 m a.s.l., 14 March 1968, *leg. P.J. Greenway & Kanuri 13390* (S, Priv. Herb. Townsend); UFIPA DISTRICT: in masses by a small stream ca 7 km along the road from Tunduma to Sumbawanga, ca 1700 m a.s.l., 31 May 1980, *leg. C.C. Townsend 80/260* (EA, NAI, MO, BM, S, Priv. Herb. Townsend). Both specimens *conf.* Lars Hedenäs.

6. *Erpodium coronatum* (Hook. & Wilson) Mitt.

Contributor: C.C. Townsend

Tanzania: KIGOMA DISTRICT: in the main street of Kigoma, 4° 53'S, 29° 38.5'E, 767 m a.s.l., corticolous on a large tree ca 3 m from the base, in wide, spreading sheets with scattered stems of *E. beccarii* Müll.Hal. ex Vent. and *Fabronia pilifera* Hornsch., 15 June 1980, *leg. C.C. Townsend 80/333*, *conf.* H.A. Crum (BM, EA, MICH, MO, NAI, Priv. Herb. Townsend).

7. *Eurhynchium striatum* (Hedw.) Schimp.

Contributor: A. Schäfer-Verwimp

Canary Islands: LA PALMA: Barranco de La Galga on north-eastern slope, on rock, 400 m a.s.l., 26 March 2005, *leg. Schäfer-Verwimp & Verwimp 24698*, *conf.* L. Hedenäs (JE, S).

Eurhynchium striatum is a common species in most parts of Europe, restricted to mountainous regions in southern Europe and North Africa, and extending eastwards to Southwest and Central Asia; it is evidently very rare in Macaronesia, with certainty known only from the Azores. Hedenäs (1992, p. 108) stated that he had not seen any correctly determined material of *E. striatum* from northern Macaronesia, and Dirkse, Bouman & Losada-Lima (1993, p. 40) excluded this species from the bryophyte flora of the Canary Islands.

8. *Ganguleea angulosa* (Broth. & Dixon) R.H.Zander

Contributor: A. Schäfer-Verwimp

Indonesia, Bali: NORTH BALI, DISTR. BANGLI: Gunung Batur, 8°14'S, 99°59'E, in crevices of lava boulders, *c. spor.*, 1150 m a.s.l., 29 May 1999, *leg. Schäfer-Verwimp & Verwimp 20897*, *det.* P. Sollman (JE, L).

Ganguleea angulosa had long been known only from the Himalayas of India and Nepal until it was recently detected in S.E. Brazil (Schäfer-Verwimp, 1992; Schäfer-Verwimp & Giancotti, 1993; Zander, 1989). The record from Bali

is a considerable range extension into the Malesian region. *G. angulosa* seems to occur from near sea level (150 m in S.E. Brazil) up to 1150 m in Bali; Gangulee (1972) mentioned an altitude of 2000 ft. (ca 650 m), and a specimen from Naini Tal in Uttar Pradesh, India, collected by T. Arts (*In 08/39*, dupl. in herb. Schäfer-Verwimp), is from 380 m a.s.l.

9. *Hygrodicranum falklandicum* Cardot

Contributors: H. Bednarek-Ochyra and R. Ochyra

Tristan da Cunha: Stony Beach, on wet rock, 5 February 1938, *leg. E. Christophersen 1429* (BM, O).

This moss was originally named by I. Thériot as *Dicranella fuegiana* Cardot & Broth. (Dixon, 1960). Because the plant differed in some respects from the Fuegian type material of this species name, Thériot intended to recognize a separate variety or form to accommodate it and the relevant name is visible on the label in the Dixon herbarium at BM. H. N. Dixon had not himself completed the treatment of the Tristan da Cunha mosses collected by the Norwegian Scientific Expedition 1937–1938 when he died in 1944 and the unfinished manuscript was prepared for publication by E. B. Bartram who also made a critical re-examination of the material previously determined. This author evidently did not approve the new variety (or form) suggested by I. Thériot and accordingly the material was reported as *Dicranella fuegiana*. The type material of this species name is a *Ditrichum* species, closely related to or possibly conspecific with *D. heteromallum* (Hedw.) E. Britton, and actually one of the specimens cited by Dixon (1960) from Tristan da Cunha – *Christophersen 730c* – does represent this species. However, another specimen – *Christophersen 1429* – represents a much larger Dicranalean moss which has nothing to do with *D. fuegiana*. A re-examination of this plant revealed that it corresponds well to *Hygrodicranum falklandicum*, a species so far known only from the type collection from West Point Island in the West Falklands (Cardot, 1911). The only real difference is the smaller stature of the Tristan da Cunha plant, a point unlikely to give any rise to problems of identification. Also, the bistratosity of the leaf base at the shoulder is less prominent but in the type collection there are also large unistratose patches on some leaves and this character is evidently very variable in *H. falklandicum*, as is the case in most aquatic mosses. The discovery of *H. falklandicum* on Tristan da Cunha changes the phytogeographical status of this species and genus, which now have to be considered as amphiatlantic south-temperate taxa, and it confirms the strong affiliation of the bryoflora of this isolated oceanic archipelago to South America.

10. *Jungermannia borneensis* Amakawa

Contributors: J. Vána & A. Schäfer-Verwimp

Indonesia, Sumatra: NORTH SUMATRA: highlands of Brastagi, western slope of Gunung Sibayak, 3.2° N, 98.5° E (UTM 47 446299 E, 351870 N) on shady earth slope in

rain forest along paved road, 1670 m a.s.l., 16 May 2005, *leg. Schäfer-Verwimp & Verwimp* 24832 (JE, PRC).

Jungermannia borneensis is known only from the type collection from Mt. Kinabalu in Borneo, Malaysia (Amakawa, 1970). This is the first record for Sumatra and Indonesia. The species seems to be restricted to montane rain forests between 1670 m and 2146 m.

11. *Leiocolea badensis* (Gottsche) Jørg.

Contributor: L. Söderström

Bulgaria: PLOVDIV: Trigrad Gorge in Rhodope Mts, 41°38'31"N, 24°23'17"E, 946 m a.s.l., on a moist cliff ledge in a narrow gorge, 14 July 2005, *leg. L. Söderström no. 2005/074* (SOM, Priv. Herb. L. Söderström).

Leiocolea badensis is here reported as new for Bulgaria (*cf.* Ganeva & Natcheva, 2003) but is known from many places in the Balkan region including Romania, Serbia and Greece (Söderström, Urmi & Váňa, 2002). It is therefore not surprising that it was found in Bulgaria, but more surprising that it had not been reported earlier. It is a circumboreal species not uncommon on moist cliffs in calcareous regions of Europe. In the Trigrad Gorge it was growing among other species on vertical cliffs along the road. There were many patches but only one patch could be found with perianths.

12. *Pohlia cruda* (Hedw.) Lindb.

Contributor: C.C. Townsend

Uganda: TORO DISTRICT: Ruwenzori Mountains, Kitandara, 0°21.5'N, 29°57'E, in damp crevice under boulders in *Senecio* forest, 4060 m a.s.l., 15 September 1959, *leg. J.G. Newbould 5173, det. C.C. Townsend* (BM, Priv. Herb. Townsend).

This collection is strikingly similar to a specimen in my herbarium (Herb. Townsend) from Mt. Cayambe, Ecuador (*Cazalet & Pennington 96*), which was at a comparable altitude, 4090 m a.s.l. Specimens which I (CCT) have determined in my herbarium as *P. afro-cruda* (Müll.Hal.) Broth., from the Ruwenzori, Mount Stanley, *leg. Newbould 5194*, and from Mount Kenya, *leg. Townsend 85/293*, differ from the above two specimens in their much more slender form and shorter cells, up to 112 μm as opposed to up to 175 μm .

13. *Pohlia nutans* (Hedw.) Lindb.

Contributors: H. Bednarek-Ochyra and R. Ochyra

Îles Crozet: ÎLE DE LA POSSESSION: north slope of valley south of the Alfred Faure base, 75 m a.s.l., 46°25'S, 51°50'E, as scattered stems in tufts of *Hypnum cupressiforme* and *Ditrichum conicum*, 22 March 1979, *leg. Bell 3011* (AAS, KRAM).

Pohlia nutans is a moss that we have long had in mind as one that should be looked for on Îles Crozet, since there seems to be no phytogeographical or other reason why it should not appear there, just as in the adjoining subantarctic islands. In austral polar regions the species is not uncommon on South Georgia (Clarke, 1973) and occasional on the Prince Edward Islands (Zanten, 1971; Ochyra,

personal observations) and Îles Kerguelen (Mitten, 1876a, b; Ochyra, personal observations). In contrast to the Subantarctic, *P. nutans* is common in the maritime Antarctic but very rare in continental Antarctica (Greene *et al.*, 1970; Ochyra, 1998). The discovery of the species on Îles Crozet completes a continuous geographical range in the Magellanian and Kerguelenian provinces of Subantarctica. *P. nutans* was found to grow in small quantity concealed within the turf of *Hypnum cupressiforme* Hedw. and *Ditrichum conicum* (Mont.) Mitt. and it is worth noting that the plants were often found with immature sporophytes.

14. *Pseudoleskeopsis claviramea* (Müll.Hal) Thér.

Contributor: C.C. Townsend

Malawi: ZOMBA DISTRICT: on rocks by the ascent by road from Zomba to Kuchawi Inn, Zomba Plateau, ca 1490 m a.s.l., 14 May 1980, *leg. C.C. Townsend 80/110* (EA, NAI, Z, Priv. Herb. Townsend).

Thériot (1929) states of *P. leikipiae* (Müll.Hal.) Thér., described from Kenya, "très proche de *P. claviramea* dont elle est peut-être pas spécifiquement distincte". The Kenyan material which I (CCT) had previously named as *P. leikipiae* is certainly uncomfortably close to the Malawi moss. I am reluctant to make a formal reduction since I have traced no type of *P. leikipiae*, though writing as he did before the destruction of Müller's herbarium, Thériot may well have seen one. *Pseudoleskeopsis claviramea* is the older name of a well-known southern African species, so no change would be involved for the Malawi moss. The leaves of the species usually have the nerve with a characteristic "wiggle" just below the apex such as is found in *Orthotheciella varia* (Hedw.) Ochyra (*Amblystegium varium* (Hedw.) Lindb.).

15. *Rhytidiadelphus loreus* (Hedw.) Warnst.

Contributors: Ozlem Tonguç Yayintaş and Janice M. Glime

Turkey: MUGLA PROVINCE: between Mugla and Karacasogut, 36°56'N, 28°11'E, woodland, on rich humus soil, 150 m a.s.l., 19 January 1995, *leg. Yayintaş T.288* (COMU - Canakkale 18 Mart University Herbarium).

Rhytidiadelphus loreus is not listed in the checklists of Uyar & Çetin (2004) or Kürschner & Erdağ (2005) and it is therefore reported here as new for Turkey and Southwest Asia (Frey & Kürschner, 1991). *Rhytidiadelphus* (Limpr.) Warnst. is a genus of mosses which mostly grow under hygrophytic conditions, generally occurring on soil and humus, rocks and tree bases.

16. *Southbya organensis* Herzog

Contributors: A. Schäfer-Verwimp & J. Váňa

Peru: DEP. CUSCO: ruins of Machu Picchu, 13°09'S, 72°32'W, on rock in cloud forest along trail to Huayno Picchu, 2350 m a.s.l., 9 October 1989, *leg. Schäfer-Verwimp & Verwimp 11865* (JE, PRC).

Southbya organensis was described and illustrated by Herzog (1949) from a single collection made by Lützelburg

in S.E. Brazil, in the Serra dos Órgãos of Rio de Janeiro state, and was previously known only from the type (Gradstein & Costa, 2003). The present locality in the Andes of Peru is a remarkable range extension of this very little known and rare species. It may be more widely distributed, because of vegetative reproduction by numerous caducous leaves which have been observed in the specimen at hand, a feature hitherto not reported in the genus *Southbya*. Marginal gemmae have been seen in *S. grollei* Kitagawa (Kitagawa 1973). *Southbya organensis* must now be removed from the list of Southeast Brazilian endemics.

17. *Syntrichia handelii* (Schiffner) S. Agnew & Vondr.

Contributor: H. M. Shabbara

Egypt: SOUTHERN SINAI: Jebel Abu Khisheib, ca 28°31'N, 34°04'E, in shade between rocks, on fine granite soil, 1840 m a.s.l., 3 August 1985, leg. M. Mansi (CAIA, no. MI.16).

Syntrichia handelii is similar to *S. caninervis* Mitt. in having a bistratose lamina and papillose cells whose papillae may be low in some parts of the leaf. This led Mansi (1988) to misidentify *S. handelii* as *Tortula* cf. *bistratosa* Flowers (= *S. caninervis*). Compared with *S. handelii*, *S. caninervis* has a broader costa, with stronger papillae on the abaxial surface, varying from simple to bi- or trifurcate or pedicellate and branched, and often extremely large towards the apex of the costa; the lamina is bistratose in the upper third and middle part; the leaves are not constricted at the middle, and the margins are recurved to near the apex (Gallego *et al.*, 2002). In the specimen collected by Mansi, the abaxial surface of the costa has small, simple, non-pedicellate papillae (2–5 µm tall) near the apex and becomes ± smooth lower down, the leaves are ± constricted and irregularly bistratose at the middle, the upper and median cells are smaller, to 6 µm wide, and a central strand is absent. The characters of Mansi's specimen agree with those from Spain (Gallego, 2002) except in the longer hair point (the longest equalling the length of the lamina, but only half the length of the lamina in Spain), and the broader costa (up to 115 µm wide at middle, 105 µm in Spanish plants).

This species is recorded in Europe (Spain, Italy and Greece), North Africa (Morocco), and Southwest Asia (Cyprus and Turkey eastwards to Afghanistan).

18. *Syntrichia virescens* (De Not.) Ochyra

Contributor: H. M. Shabbara

Egypt: SOUTHERN SINAI: Wadi El-Teffaha, ca 28°29'N, 33°47'E, between rocks and the ground in shade and on fine granite soil, April 1982, leg. Abou Salama (CAIA, no. U.F3b).

Syntrichia virescens is distinguished from related species (*S. laevipila* Brid. and *S. montana* Nees) in having a weak costa with 1–2(–3) stereid rows, and the margins plane or recurved only in the middle and lower part of the leaf; the costae in the related species are strong and the margins are

recurved to above mid-leaf. The hair point in *S. laevipila* is nearly smooth but denticulate in *S. virescens*, and the cells in the upper part of the leaves are smaller in *S. montana*, 8–10(–12) µm wide (Smith, 2004), but 10–16 µm wide in *S. virescens*.

Syntrichia virescens in Egypt has some characters which differ slightly from those recorded in other regions. It has a shorter and less denticulate hair point than that recorded in England (Smith, 2004), shorter basal cells (up to 40 µm long) than those recorded in Spain (up to 82.5 µm long: Gallego, 2002) and a weaker costa, with a less well defined group of dorsal stereids than that recorded in Iraq (Agnew & Vondráček, 1975). The rather weak costa originally led to confusion with the genus *Tortula* (Abou-Salama, 1985), but the specimen has a crescent-shaped dorsal stereid band and lacks a dorsal costal epidermis. It therefore belongs to the genus *Syntrichia* (cf. Zander, 1993). No sporophytes are present.

The species is recorded in Europe (from Spain, Sardinia and Sicily north to C. Scandinavia), North Africa (Canary Islands, Morocco and Algeria) Asia (Turkey eastwards to Kashmir), and North America.

19. *Zygodon bartramioides* Malta

Contributors: F. Lara, R. Garilleti & V. Mazimpaka

Argentina: NEUQUÉN: Villa La Angostura, península Quetrihué, Parque Nacional Los Arrayanes, *Nothofagus dombeyi* (Mirb.) Oerst, forest, 40°49'52"S, 71°36'58"W, 890 m a.s.l., on base of *Maytenus boaria* Mol., 19 December 2005, leg. F. Lara & E. San Miguel (MA-Musci, and Herb. Universidad Autónoma de Madrid).

Zygodon bartramioides was known previously only from Chile (Malta, 1926; He, 1998). After the segregation of *Z. chilensis* Calabrese & F. Lara (Calabrese, Elias & Lara, 2006), the known distribution of *Z. bartramioides* was limited to regions IX and X of Chile (Calabrese, 2006). The new report from Argentina is consistent with this previous distribution, and enlarges its southernmost extent 60 km to the east, although this is the only known locality of this moss on the eastern slopes of the Andean range. The studied sample has several turfs of *Z. bartramioides* with sporophytes. Growing as associates were *Zygodon magellanicus* Dusén ex Malta, *Z. jaffuelii* Thér., and *Orthotrichum rupestre* Schwägr. *Zygodon bartramioides* is easily differentiated, even in the field, by its robust and erect habit, its rhomboidal leaves arranged in five rows (the pentastichous condition is very evident in the studied Argentinean specimens), and its sporophytes with a short seta, less than 0.5 cm long.

20. *Zygodon chilensis* Calabrese & F. Lara

Contributors: F. Lara, R. Garilleti & V. Mazimpaka

Argentina: NEUQUÉN: Villa La Angostura, península Quetrihué, Parque Nacional Los Arrayanes, *Nothofagus dombeyi* (Mirb.) Oerst and *Luma apiculata* (DC.) Burret, forest, 40°51'09"S, 71°37'01"W, 835 m a.s.l., on decayed trunk of *Nothofagus dombeyi*, 19 December 2005, leg. F.

Lara & E. San Miguel (MA-Musci, and Herb. Universidad Autónoma de Madrid).

Zygodon chilensis has been described recently from herbarium specimens from six localities in regions X and XI of Chile (Calabrese, Elias & Lara, 2006). The new report from Argentina is some 180 km south-eastward of the northern population nucleus known in Chile. The sample had many turfs of *Zygodon chilensis* in full fruit, mixed with other species of the genus: *Z. magellanicus* Dusén ex Malta, *Z. pentastichus* (Mont.) Müll.Hal., and *Z. hookeri* Hampe var. *leptobolax* (Müll.Hal.) Calabrese. *Z. chilensis* is easily distinguished from *Z. bartramioides* by several conspicuous characters, especially its long seta (more than 1 cm), its lanceolate, not rhomboidal leaves, and its brown propagula.

21. *Zygodon hookeri* Hampe var. *leptobolax* (Müll.Hal.) Calabrese

Contributors: F. Lara, R. Garilleti & V. Mazimpaka

Argentina: NEUQUÉN. Villa La Angostura, península Quetrihué, Parque Nacional Los Arrayanes, *Nothofagus dombeyi* (Mirb.) Oerst and *Luma apiculata* (DC.) Burret forest, 40°51'09"S, 71°37'01"W, 835 m a.s.l., on decayed trunk of *Nothofagus dombeyi*, 19 December 2005, leg. F. Lara & E. San Miguel. (MA-Musci, and Herb. Universidad Autónoma de Madrid).

Zygodon hookeri var. *leptobolax* has an amphiatlantic cool-temperate distribution, occurring on Table Mountain in the Cape Peninsula of South Africa (Magill & van Rooy, 1998), and in south-western South America (Calabrese, 2006), but it has not previously been reported from Argentina. The specimens studied were fruiting, and their taxonomic placement presented no problems because of the synoicous inflorescence, peristome consisting of only eight smooth, hyaline endostome segments, entire leaves, and abundant fusiform propagula. The propagula are 2-5 celled, with green or brown, rarely hyaline walls, and frequently with some oblique to longitudinal walls. This is not a common condition for the propagula in this taxon, although it falls within the range of morphological variability previously described (Calabrese 2006). Furthermore, comparison with South African specimens (Table Mountain, *Lara & San Miguel*, 27 December 2006, Herb. Universidad Autónoma de Madrid) reveals that this type of propagulum is also present in specimens from the vicinity of the type locality.

22. *Zygodon jaffuelii* Thér.

Contributors: F. Lara, R. Garilleti & V. Mazimpaka

Argentina: NEUQUÉN. Villa La Angostura, península Quetrihué, Parque Nacional Los Arrayanes, *Nothofagus dombeyi* (Mirb.) Oerst, forest, 40°49'52"S, 71°36'58"W, 890 m a.s.l., on base of *Maytenus boaria* Mol., 19 December 2005, leg. F. Lara & E. San Miguel. (MA-Musci, and Herb. Universidad Autónoma de Madrid).

Zygodon jaffuelii is considered by Calabrese (2006) as endemic to central and southern Chile, where only three

localities are currently known. The present record provides the first Argentinean locality for this moss, and is the southernmost and easternmost currently known, though it is not very far (*ca* 200 km) from that of Valdivia in Region X of Chile. The specimens examined were fertile but bearing only male gametangia. Consequently no sporophytes were present. However, their taxonomic placement presented no problems because of the dioicous condition, quadrate to short-rectangular basal leaf cells with thickened walls (especially at the angles), and the abundant brown-tinted, clavate to sub-cylindrical propagula, composed of (2-)3(-4) aligned cells. These characters prevent confusion with *Z. hookeri* var. *leptobolax*, which is similar in habit (Calabrese 2006). However, when comparing our material with the description in Calabrese (2006), the Argentinean *Zygodon jaffuelii* shows some differences in leaf morphology and propagulum size. The leaves are frequently somewhat undulate, patent to recurved when moist and their bases are often decurrent. The propagula are (43.0-)49.0-57.5(-63.7) μm long and 17.5-21.5 μm wide, which somewhat extends their known size range.

The new reports of *Zygodon bartramioides*, *Z. chilensis*, *Z. hookeri* var. *leptobolax* and *Z. jaffuelii* from the surroundings of Nahuel Huapí Lake increase to ten the number of taxa in the genus *Zygodon* known in Argentina. In Chile, all of the 13 taxa of *Zygodon* recognised for South America are present (Calabrese 2006), but none is now restricted to that country.

23. *Zygodon stirtonii* Schimp.

Contributors: Adam Stebel, Jan Żarnowiec & Anna Rusińska

Poland: WEST POMERANIA: Wolin Island, beech forest near Wiselka village, *ca* 53°57'57.1"N 14°34'23.7"E, leg. S. Lisowski *s.n.*, 8 November 1957 (POZG, no. 64127).

Zygodon stirtonii was originally described by W.P. Schimper in a paper by Stirton (1871, p. 75). For a long time it was widely treated at a lower taxonomic rank, as *Z. viridissimus* subsp. *stirtonii* (Schimp.) Dixon, *Z. viridissimus* var. *stirtonii* (Schimp.) I.Hagen or *Z. viridissimus* fo. *stirtonii* (Schimp.) Malta. Smith (2004) and Hill *et al.* (2006) considered it as an independent species. The key features distinguishing it from *Z. viridissimus* are the less acutely pointed leaves and the costa widened in the upper part and then excurrent in a stout point (Nyholm, 1998; Smith, 2004; Frey *et al.*, 2006). *Zygodon stirtonii* is a European species strongly associated with an oceanic climate (Nyholm, 1998; Smith, 2004). Like many taxa in the genus *Zygodon*, it occurs on the bark of trees and on base-rich rocks.

During revision of *Zygodon* from Poland we found one specimen collected by S. Lisowski on Wolin Island (north-western part of Poland) in the 1950s. Quite a large tuft of *Z. stirtonii* occurred on bark covered with dust, probably at the base of a trunk of *Fagus sylvatica*, and was mixed mainly with *Neckera complanata* (Hedw.) Huebener, *Dicranella heteromalla* (Hedw.) Schimp. and *Hypnum* sp.

Z. stirtonii is a new moss taxon for the flora of Poland (Ochyra, Żarnowiec & Bednarek-Ochyra, 2003).

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T. L. BLOCKEEL¹, 9 Ashfurlong Close, Dore, Sheffield S17 3NN, UK. E-mail: Tblockeel@aol.com

H. BEDNAREK-OCHYRA & R. OCHYRA, Laboratory of Bryology, Institute of Botany, Polish Academy of Sciences, ul. Lubicz 46, 31-512 Kraków, Poland. E-mails: Halina.Bednarek@ib-pan.krakow.pl and Ryszard.Ochyra@ib-pan.krakow.pl

RICARDO GARILLETI, Departamento de Botánica, Facultad de Farmacia, Universidad de Valencia, Avda. Vicente Andrés Estellés s/n, E-46100 Burjassot, Spain

JANICE M. GLIME, Department of Biological Sciences, Michigan Technological University, Houghton, MI 49931-1295, USA. E-mail: jmglime@mtu.edu

FRANCISCO LARA, Departamento de Biología (Botánica), Facultad de Ciencias, Universidad Autónoma de Madrid, C/Darwin, 2, E-28049 Madrid, Spain. E-mail: francisco.lara@uam.es

VICENTE MAZIMPAKA, Departamento de Biología (Botánica), Facultad de Ciencias, Universidad Autónoma de Madrid, C/Darwin, 2, E-28049 Madrid, Spain. E-mail: vicente.mazimpaka@uam.es

A. RUSIŃSKA, Adam Mickiewicz University, Faculty of Biology, Natural History Collections, Umultowska 89, PL-61-614 Poznań, Poland E-mail: annarus@amu.edu.pl

A. SCHÄFER-VERWIMP, Mittlere Letten 11, D-88634 Herdwagen-Schönach, Germany. E-mail: moos.alfons@herter.de

HANAA MOSTAFA SHABBARA, Department of Botany, Faculty of Science, Ain Shams University, Cairo, Egypt. E-mail: hshabbara@Yahoo.com

L. SÖDERSTRÖM, Department of Biology, Norwegian University of Science and Technology, N-7491 Trondheim, Norway. E-mail: lars.soderstrom@bio.ntnu.no

A. STEBEL, Department of Pharmaceutical Botany, Medical University of Silesia, Ostrogórska 30, PL-41-200 Sosnowiec, Poland. E-mail: astebel@farmant.slam.katowice.pl

C. C. TOWNSEND, 392 Staines Road, Twickenham, Middlesex TW2 5JA, UK. E-mail: cliff.townsend@blueyonder.co.uk

J. VÁNA, Department of Botany, Charles University, Benátská 2, 12801 Praha 2, Czech Republic. E-mail: vana@natur.cuni.cz

OZLEM TONGUÇ YAYINTAŞ, Canakkale 18 Mart University, Biga Vocational College, 17200 Biga-Canakkale, Turkey. E-mail: oyayintas@comu.edu.tr

J. ŻARNOWIEC, Department of Ecology and Nature Conservation, Institute of Environmental Protection and Engineering, University of Bielsko-Biała, Willowa 2, PL-43-309 Bielsko-Biała, Poland. E-mail: jzarnowiec@ath.bielsko.pl

¹Column editor, to whom contributions should be sent.