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Additions to the World Red List of Bryophytes

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SUMMARY

Since 1994 more than a hundred species names have been submitted to the IAB Committee on Endangered Bryophytes. Of these we have preliminary accepted 41 new additions to the 1994 list of IAB world most endangered bryophytes. The total number of listed species in the IAB Red List list includes 91 most endangered bryophyte species world-wide at present.

METHODS AND RESULTS

For the first World Red List of bryophytes in 1994 (Tan et al. 1994), 50 species were proposed (24 mosses, 25 liverworts and 1 hornwort). The publication of this list did not upset bryologists much because of its length. None of the species has been proposed

to be excluded or downlisted. Instead more than 100 new species were recommended for inclusion in the list since then.

As before, the selection was based on the following five criteria, namely, the species 1) must be threatened world-wide; 2) must be confined to a threatened habitat; 3) must have a narrow range; 4) is not overlooked or undercollected; and 5) has a unique morphology/biology or occupies a special evolutionary position.

A bibliographical search on all these species was made and potential candidates were transmitted to several experts for consultation. The list of candidates was then presented for public comment via the bryological internet, the BRYONET. Consequently, we have received several responses, especially information on the local geography of the endangered species; for which we are most thankful.

Several of the disqualified entries are

taxa whose current range or distribution is difficult to assess world-wide. Others are small species of disturbed sites whose habitats do not appear to be threatened by human activities. Many are simply rare, local endemics whose habitat threat has not been observed or identified. Also some names represent very recently described new species whose total range and habitat threat will need more time to assess or document.

We are publishing the updated list here for further comments before its official acceptance by IUCN (International Union of Conservation of Nature).

All in all, preliminarily we accept 16 mosses, 24 liverworts and 1 hornwort as additions to the IAB world most endangered bryophyte list.

DISCUSSION

It was not an easy task to select further candidates among these new proposals. Even for European and Macaronesian species, where the actual distribution should be relatively well known, honest

threat assessment is difficult to establish. But for many others, particularly in tropical regions, floristic knowledge is even poorer. Where recent literature still reports large regions of presence with many localities within the distribution area, the species were provisionally relegated in the last section of species not considered to be threatened at this moment. Likewise, all taxa with problems of taxonomical delimitation are not yet included.

We expect your comments, criticisms and contributions to be able to present an improved proposal taking into account all available knowledge on species living in endangered habitats. We are impatient to have your participation in constructive discussions.

Please send your comments to T. Hallingbäck at Swedish University of Agricultural Sciences, P.O. Box 7072, S-750 07 Uppsala, Sweden (email: tomas.hallingback@dha.slu.se), P. Geissler, Conservatoire et jardin botaniques, Case postale 60, CH-1292, Chambésy/Geneva, Switzerland (email: geissler@cjb.unige.ch) or B. C. Tan at the Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts, USA 02138 (email: btan@oeb.harvard.edu).

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NEW CANDIDATES FOR THE IAB WORLD RED LIST OF BRYOPHYTES

Musci

Aschisma kansanum Andrews (Pottiaceae)

A North American endemic of a oligotypic, disjunctive American-European genus. The species is known from "unusual habitat" in three counties of Kansas State in USA. Crum and Anderson (1981) described the habitat as quartz pebbles in sandy Pleistocene gravels covered partly by the persistent protonema of this species. Because of its rarity, the populations are very threatened these days by over collection and also by cattle grazing in the area. Sources: Crum and Anderson, 1981; Smith-Merrill, *pers. comm.*, 1997.

Bryoxiphium madeirense Löve & Löve (Bryoxiphiaceae)

A Madeiran endemic of a morphologically unique genus in a monotypic family, the species is found on moist and dripping volcanic rocks in shaded streams in Laurus forest on the island. There are only five known localities for the species. Habitat threatened by the recent logging of Laurus forest for agriculture and pasture. Sources: Löve and Löve, 1953; ECCB 1995.

Crassiphylllum fernandesii (C. Sérgio) Ochyra [syn. *Thamnobryum fernandesii* C. Sérgio] (Thamnobryaceae)

A Madeiran endemic restricted to about 10 populations in permanently wet habitats, such as dripping rocks or waterfalls, in the inner part of the island at high elevation above 1000 m. Habitat is threatened by the expansion of agriculture and pasturing. Sources: Ochyra, 1991; Hedenäs, *pers. comm.*, 1997.

Ditrichum cornubicum Paton (Ditrichaceae)

Endemic to Cornwall, England, the species is known from copper mine-wastes in two granitic areas. Plants grow on compacted, well-drained peaty, loamy or gravelly soil where the vegetation is sparse and open. In recent

years, one population is known to have disappeared from one of the two original sites. Habitat threatened by encroachment of coarse vegetation and excessive human disturbance as well as vehicles going around the sites. Sources: Paton, 1976; ECCB 1995.

Echinodium renauldii (Card.) Broth. (Echinodiaceae)

Endemic to Azores, this species grows on rocks in forested, shaded ravines and craters above 500 m alt. The species is also known from a Pliocene fossil in the Canary Islands. Habitat of laurel forests is threatened by logging brought by the changing land use policy. Sources: Churchill, 1986; ECCB 1995.

Flabellidium spinosum Herz. (Brachytheciaceae)

The species represents a monotypic genus known only from the type collection made in 1911 from Santa Cruz Cordillera, Bolivia. According to Enroth (1995), the ascending branching system of this epiphytic pleurocarpous moss is characteristically frondose reaching 1 cm tall. The forest vegetation of the type locality and vicinity has been logged and cultivated over the years. Probably extinct. Sources: Enroth, 1995; idem, *pers. comm.*, 1997.

Grimmia curviseta Bouman (Grimmiaceae)

An endemic of Canary Islands and Sardinia, this species grows on dry, exposed north-facing rocks at altitudes of 2,000- 2400 m. The habitat is vulnerable at present. Source: Greven, 1993.

Gymnostomum boreale Nyh. & Hedenäs (Pottiaceae)

Known only from a single locality in the mountain of Kulmakkapus in Kuu-samo Region of NW Russia where it has not been recollected after 1938. It is a species of boreal montane habitat threatened by local human activities in recent years. Sources: Hedenäs, *pers. comm.*, 1997; Söderström, *pers. comm.*, 1997.

Hypnodontopsis apiculata Iwats. & Nog. (Rhachithecaceae)

A Japanese endemic confined mainly to Honshu, this species has a restricted

habitat found growing on the bark of *Cryptomeria japonica* (rarely on pine tree) in gardens of buddhist temples, shinto shrines and old castles. The population at the type locality has disappeared because trees were cut down or knocked over by typhoon. The species is sensitive to air pollution in human habitation. Source: Iwatsuki, *pers. comm.*, 1997.

***Mamillariella geniculata* Lazar.
(Leskeaceae)**

A rare Russian endemic, this monotypic genus is known only from 5-7 localities in the southern part of Russian Far East near Khabarovsk. It is officially listed in the latest Russian Red Data Book for endangered plants. The forests in Russian Far East are today seriously threatened by the on-going economic development in the region. Sources: Buck, 1981; Ignatov, *pers. comm.*, 1997

***Neckeropsis pocsii* Enroth & Magill
(Neckeraceae)**

An endemic species of Mayotte, Comoro Islands, this species grows on boulders in mesic evergreen forest threatened by excessive logging according to T. Pócs who collected the type specimen. Sources: Enroth and Magill, 1994; Pócs, *pers. comm.*, 1994).

***Orthotrichum scanicum* Grönv.
(Orthotrichaceae)**

A rare European endemic known from a few localities in central Europe, Italy, Scandinavia and Russia (Baikal Lake?). The species grows on trunks and branches of conifers as well as broad-leaf deciduous trees. Its overall range has been observed to decline in recent years in Europe and many local populations have become extinct. The survival of this species is threatened by the felling of host trees and the increasing problem of air pollution in Europe. Sources: ECCB 1995; Ignatov, *pers. comm.*, 1997.

***Ozobryum ogalalense* G. L. S.-
Merrill (Pottiaceae)**

This monotypic endemic genus from the American Great Plains is a rarity confined to unusual habitat - strongly calcareous, porous rock outcrop ledges

charged with moisture, surrounded by prairie. It is known only from a single locality in Kansas State. According Merrill (*pers. comm.*, 1997), the location is threatened by cattle grazing and human disturbance. Sources: Merrill Smith, 1992; *ibid*, *pers. comm.* 1997.

***Pinnatella limbata* Dix.
(Neckeraceae)**

Known only from a single locality in SW India from the Uttar Kanad (formerly North Kanara) District of Karnataka State, this species is rather unique biologically among the congeners in being a rheophyte attached to rocks in streams. The flora of southwestern India, including the Western Ghats, is known for its rich diversity and high endemism. The fast destruction of forests in SW India owing to population expansion is also well documented today. Sources: Enroth, 1994; O'Shea, *pers. comm.*, 1997.

***Tayloria rudolphiana* (Garov.)
Bruch & Schimp. [syn. *Tayloria delavayi* (Besch.) Besch.]
(Splachnaceae)**

Restricted to subalpine environs in central Europe and disjunctively in SW China (Yunnan as *T. delavayi*), this species is unique in Europe growing epiphytically on the droppings of birds left on trees. Habitat in China is on *Quercus* tree trunk (Koponen 1992). Habitats in Europe are vulnerable to inappropriate forest management and the felling of old trees where populations were found. Sources: A. Koponen, 1992; ECCB 1995.

***Thamnobryum angustifolium* (Holt)
Crundw. (Thamnobryaceae)**

This is a rare moss known only from one locality in Derbyshire, England. The plants grow on shaded limestone rock-face beside a calcareous spring or on rock in the stream. Although the site is in a nature reserve today, there is public pressure to build a footpath next to the site. The population is also threatened by frequent collections made by botanists and pollution of the spring. Sources: Hodgetts & Blockeel, 1992; ECCB 1995, O'Shea, *pers. comm.*, 1997.

Hepaticae & Anthocerotae

***Andrewsianthus ferrugineus* Grolle
(Jungermanniaceae)**
(in litt.), Grolle (1966), Hattori (1975), Long & Grolle (1990).

***Bazzania bhutanica* Kitag. & Grolle
(Lepidoziaceae)**

Known from only one locality in S Bhutan. The subtropical zone of the Himalaya is especially threatened. Source: Long (in litt.).

***Cololejeunea azorica* V. All. &
Jovet-Ast (Lejeuneaceae)**

Known from less than 20 localities on Madeira and the Azores. Epiphyllous. Sources: ECCB 1995, Sjögren 1975, 1978.

***Cololejeunea magnilobula* (Horik.)
Hatt. (Lejeuneaceae)**

Endemic epiphyllous species from Taiwan and Zhejiang (East China). Zhu (1995) considers it as distinct species. Source: Piippo 1990.

***Dendroceros japonicus* Steph.
(Anthocerotaceae)**

Growing exclusively on trunks, branches or leaves of trees and known to occur sporadically along the Pacific coast from Taiwan to central Japan. Disappearing from the northern parts of its distribution range, probably due to changing forest growth conditions. Source: Hasegawa (in litt.).

***Drepanolejeunea bakeri* Herz.
(Lejeuneaceae)**

Known from three localities on Luzon (Philippines). Threatened by extensive logging. Source: Tixier (in litt.).

***Drepanolejeunea senticosa* Bischler
(Lejeuneaceae)**

Cuba. Only known from the type specimen, leg. Wright ca. 1860. The species may be extinct or not understood. Source: Bischler 1964.

***Drepanolejeunea spinosa* Herz.
(Lejeuneaceae)**

Colombia (2 localities, leg. Killip 1922). These two species (*D. senticosa* and *D. spinosa*) have probably never been collected since. The species may be extinct or not understood. Source: Bischler 1964.

***Geothallus tuberosus* Campb.
(Sphaerocarpaceae)**

A monotypic genus, notable for its isolated phylogenetic position and its adaptations to extremely xeric conditions. Its morphology has been the subject of two detailed studies (Campbell 1896a, b, Doyle 1962). Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) conducted extensive searches for this taxon in the wild, and found eight population in this small area. Since then, the population of the San Diego urban area has doubled. Consequently the whole native range of *Geothallus* has been subjected to rapid, intense urban development. Source: Whittemore (in litt.).

***Haesselia roraimensis* Grolle & Gradst. (Cephaloziaceae)**

Endemic distinct genus of Cephaloziaceae, restricted to the foot of Mt. Roraima (Guyana), growing on rotten log between 550 and 1550 m. Source: Grolle & Gradstein 1988.

***Herbertus borealis* Crundw.
(Herbertaceae)**

Endemic to NW Europe: A single locality in Scotland and three in SW Norway. Sources: ECCB 1995, Birks in Hill & al. 1991.

***Kurzia sinensis* Chang in Chang & Gao (Lepidoziaceae)**

Only known from type specimen (Chekiang: Mt. Nanyentang, 300 m). Sources: Chang & Gao 1984; Mizutani & Chang 1986.

***Lepidozia azorica* Buch & H. Perss.
(Lepidoziaceae)**

Epiphytic endemic to the Azores, recently also discovered in the Canaries by Dirkse et al. 1993. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Leptoscyphus azoricus* (Buch & H. Perss.) Grolle (Geocalycaceae)**

Epiphytic endemic to the Azores. Occurrence very rare and local. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Radula jonesii* Bouman, Dirkse & Yamada (Radulaceae)**

Endemic to Canary Islands and Madeira, on wet shaded rocks in *Laurus* forests. Threatened by forest clearing. Source: ECCB 1995.

***Riccia atlantica* Sérgio & Perold
(Ricciaceae)**

Only known from a restricted area at the eastern end of Madeira. Threatened by urbanisation. Sources: ECCB 1995, Sérgio & Perold 1992.

***Riccia caroliniana* Na-Thalang
(Ricciaceae)**

Endemic Australian species known from few localities in the Northern Territory. Member of an isolated monotypic subgenus. Sources: Jovet-Ast (in litt.), 1984, 1987.

***Scapania sphaerifera* Buch & Tuomik. (Scapaniaceae)**

Representing a monotypic section characterized by spherical multicellular gemmae and pluriplicate perianth. Known from at least five localities in Russia in very small populations. Sources: ECCB 1995, Konstantinova (in litt.), Váda 1992, Konstantinova & Potemkin 1994.

***Scaphophyllum speciosum* (Horik.) Inoue (Jungermanniaceae)**

A monospecific genus with a disjunct distribution. Found in China, Bhutan, Taiwan, and recently in Nepal (by D. Long, unpubl.). In Taiwan it occurs on forest floor at 2000-2400 m. Sources: Váda & Inoue 1983, Long & Grolle 1990, Zhu & al. 1994.

***Schistochila macrodonta* W.E. Nicholson. (Schistochilaceae)**

Apparently the only two known localities are in Yunnan (Nicholson 1930) and Bhutan (Long & Grolle 1990). D. Long did not find it in Yunnan. Source: Long (in litt.).

***Sphaerocarpos drewei* Wigglesw.
(Sphaerocarpaceae)**

Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) reported this taxon as an associate of *Geothallus tuberosus* at seven sites. Aside from the protologue

(Wigglesworth 1929), these are the only reports of *S. drewei* in the literature. Source: Whittemore (in litt.).

***Sphaerocarpos hians* C. C. Haynes
(Sphaerocarpaceae)**

Endemic to the United States. This taxon was described by Haynes (1910). Historically known only from near Pullman, Whitman County, Washington and Moscow, Latah County, Idaho; recently found in Corvallis, Benton County, Oregon. It grows on mud of river bank. Poorly known. A seasonal ephemeral which is evident in summer (Pullman) and fall (Corvallis), when the water levels are low. Ref. Frye & Clark 1937: 106, 107. Sources: Whittemore and David H. Wagner (in litt.).

***Stenorhrips rhizomatica* Herz.
(Jungermanniaceae)**

Only known from the type locality in Sarawak (G. Dulit). The habitat of *S. rhizomatica* is endangered or probably already destroyed. Source: Richards, Gradstein (in litt.).

***Stephensoniella brevipedunculata* Kash. (Exormothecaceae)**

Monotypic genus which is endemic to the Kumaon region in Western Himalaya, rapidly disappearing due to uncontrolled urbanisation. Not seen since 1986. Sources: Pant (in litt.), Pant & Tewari 1995.

***Tylimanthus azoricus* Grolle & Perss. (Acrobolbaceae)**

Endemic to the Azores. Growing preferably on rocks in threatened habitats in few localities. Sources: ECCB 1995. Grolle & Persson 1966, Sjögren 1978.

TAXA NOT INCLUDED

The taxa below have also been submitted for inclusion in the Red List. However, these did not fully meet our criteria because they A) are considered to not be confined to threatened habitat, or B) are probably very much overlooked, or C) are not threatened worldwide or D) have taxonomical problems and delimitations.

***Acrobolbus wilsonii* Nees**

(Acrobolbaceae)

Endemic to atlantic Europe from Faeroes to Macaronesia. No indication of threat known. Source: ECCB 1995.

Aphanolejeunea madeirensis

(Schiffn.) Grolle (Lejeuneaceae)

Epiphyllous endemic to Madeira, restricted to the cloud zone of the northern part of the island, and to the Azores, where it may become locally fairly frequent. Sources: Sjögren 1975, 1978.

***Aphanolejeunea teotonii* V. All. &**

Jovet-Ast (Lejeuneaceae)

Endemic to Macaronesia. Epiphyllous species in mature *Laurus* forest. No indication of threat known. Source: ECCB 1995.

***Calypogeia fusca* (Lehm.) Steph.**

(Calypogeiaceae)

The only European member of the subgen. *Caracoma*. Outside the Azores the species is known from scattered localities from Ethiopia to South Africa. No information on threats is available. Source: Bischler 1970.

***Bazzania azorica* Buch & H. Perss.**

(Lepidoziaceae)

Endemic to Madeira and the Azores, on all type of substrates (Sjögren 1978). As reported in Grolle (1983), the species is closely related to the tropical Asiatic *B. praerupta* (Reinw. et al.) Trev. Needs further taxonomic studies. Source: Grolle 1983.

Brachythecium appleyardiae

McAdam & AJE Smith

(Brachytheciaceae)

A local endemic restricted to only 8 sites in Somerset, Wiltshire and Derbyshire in England. The species grows both on calcareous rocks and acidic sandstone wall. Habitat threatened by recent road construction and stone wall repair work. Needs further taxonomic studies. Source: McAdam and Smith 1981; ECCB 1995, M. Ignatov (*pers. comm.*).

***Calypogeia azorica* Bischl.**

(Calypogeiaceae)

Endemic to the Azores, closely related to African species, known from 5 locali-

ties only. Habitat requirements are badly known. Needs further taxonomic studies. Sources: Bischler 1970, Sjögren 1978

***Cephaloziella nicholsonii* Douin & Schiffn. (Cephaloziellaceae)**

Apparently endemic to SW England (Paton 1984), but commonly considered to be conspecific with *C. massalongi* (Spr.) Müll. Needs further taxonomic studies. Source: Paton 1984, ECCB 1995

***Cheilolejeunea cederkretzii* (Buch & Perss.) Grolle (Lejeuneaceae)**

Endemic to the Azores, growing on small twigs, leaves and mosses, very rare. The taxonomic relationships to African species of the tropical genus should be investigated. Sources: ECCB 1995, Grolle 1983, Sjögren 1978.

***Cololejeunea schaeferi* Grolle (Lejeuneaceae)**

Endemic to Macaronesia. No indication of threat known. Source: Dirkse & al. 1993.

***Forsstroemia stricta* Lazar.**

(Cryphaeaceae)

The species is known only from the type collection from Primorskij Territory in the Far East Siberia of Russia. Closely related taxa are found in S India and Taiwan. The forests in Russian Far East are today seriously threatened by forestry going on in the region. Needs further taxonomic studies. Sources: Ignatov and Czerdantseva, 1995; M. Ignatov (*pers. comm.*).

***Fossombronia fimbriata* Paton**

(Fossombroniaceae)

Described in 1974, it has been found since in scattered localities on damp soil and similar substrates in Ireland, Scotland and Wales, not yet on the European mainland. No indication of threat known. Source: Preston in Hill & al. (eds.) 1991.

***Fossombronia incurva* Lindb.**

(Fossombroniaceae)

Occurring on damp, sandy soils with a scattered distribution in western Europe. Mostly found along the sea coast and at shores of larger lakes. Not frequent but apparently not threatened everywhere. Sources: Müller 1954, Ludwig & al. 1996.

***Frullania illyrica* Grolle**

(Jubulaceae)

Known from 2 localities, one in Albania, the other in Slovenia. Needs further taxonomic studies. Source: Meyer & Grolle, 1963.

***Frullania polysticta* Lindenb.**

(Jubulaceae)

Probably endemic to Macaronesia. Closely related to the *F. tamarisci*-complex, but distinct. No indications on threats available. Sources: Hattori 1972, Vanden Berghen 1976.

***Herbertus azoricus* (Steph.)**

Richards (Herbertaceae)

Endemic to the Azores, related to African species. Growing on soil and bark. Common above 900 m. Sources: Sjögren 1978, Grolle 1983.

***Heteroscyphus denticulatus* (Mitt.)**

Schiffn. (Geocalyceaceae)

Macaronesian endemic, closely related to African and Australasian species. These relationships need further studies. Source: Grolle 1983.

***Jungermannia breviperianthia* Gao in Gao & Zhang**

(Jungermanniaceae)

Known from 3 localities in north-eastern China. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Jungermannia flagellalioides* (Gao)**

Piippo (Jungermanniaceae)

Only known from the type specimen. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Lejeunea hibernica* Grolle**

(Lejeuneaceae)

Growing over mosses in Ireland, also reported from the Azores, Canaries and Madeira, also in wet shaded crevices in cliffs. No indication of threat known. Sources: Müller 1958, Birks in Hill & al. 1991.

***Lejeunea mandonii* (Steph.) Müll.**

Frib. (Lejeuneaceae)

On wet rocks and trunks in Scotland, Ireland, England, Spain, Portugal, Madeira, Canaries. Rare, but probably

overlooked. Sources: Müller 1958, Birks in Hill & al. 1991.

***Marsupella andreaeoides* (Lindb.) Müll. Frib. (Gymnomitriaceae)**

Reported by Jørgensen (1934) from at least 30 localities in SW Norway. It is also known from a few localities in northernmost Sweden. No indication of threat known. Source: Jørgensen 1934, Våda and Hallingbäck, *pers. comm.*

***Marsupella fengchengensis* Gao & Chang (Gymnomitriaceae)**

Only known from the type specimen. Needs further taxonomic studies. Source: Piippo 1990.

***Metzgeria liaoningensis* Gao (Metzgeriaceae)**

Known from type locality and another locality. Source: Gao & Zhang 1981

***Plagiochila allorgei* Herz. & Perss. (Plagiochilaceae)**

On several substrates in mature *Juniperus* cloud forest. Endemic to the Azores. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Plagiochila atlantica* F. Rose (Plagiochilaceae)**

On rocks and trunks in western Scotland, also known from Ireland, north Wales and north-western France. No indication of threat known. Sources: Jones & Rose 1975. Averis in Hill & al. 1991.

***Plagiochila carringtonii* (Balf.) Grolle (Plagiochilaceae)**

Reported from western Scotland, Orkney and Faeroe islands in dwarf shrub communities. The variety *lobuchensis* Grolle occurs in Nepal and China. Sources: Long (*in litt.*), Müller 1956; Averis in Hill et al. 1991.

***Plagiochila norvegica* Blom & Holten (Plagiochilaceae)**

Only known from Norway (2 localities) and Sweden (1 locality). Needs further taxonomic studies. Sources: ECCB 1995, Blom & Holten 1988.

***Porella inaequalis* (Gott. ex Steph.) H. Perss. (Porellaceae)**

Closely related to *P. pinnata* L. Endemic to Madeira. Needs further taxonomic studies. Sources: Grolle 1983, Persson 1955.

***Radula carringtonii* Jack (Radulaceae)**

Occurs in small quantities on shaded rocks from western Scotland to SW Ireland, NW Spain and Macaronesia. No indication of threat known. Source: Birks in Hill et al. 1991.

***Radula holtii* Spruce (Radulaceae)**

On wet rocks in SW Ireland, Spain, Portugal and Macaronesia. Everywhere rare. No indication of threat known. Source: Birks in Hill 1991.

***Radula visianica* Mass. (Radulaceae)**

Known from the type locality near Padova in Italy and a second locality 100 km farther north. Neither taxonomy nor occurrence have been recently investigated. Sources: ECCB 1995, Müller 1956.

***Radula wichurae* Steph. (Radulaceae)**

Rare but perhaps overlooked Macaronesian endemic. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Riccia breidleri* Steph. (Ricciaceae)**

Endemic to the Alps region in Europe, presently known from less than 20 localities between 2100 and 2650 m on damp, weakly acidic soil of temporary pools of melting snow. Perhaps not conspicuous every year (shuttle species) and therefore overlooked. Listed on Appendix I of the Bern Convention (conservation of European natural habitats) and Annex 2 of the EC Habitats and Species Directive. Sources: ECCB 1995. Geissler 1984.

***Riccia gothica* Damsh. & Hallingb. (Ricciaceae)**

Only known from Sweden. However, relatively recently described taxon which presently not occur in any threatened habitats. Source: Damsholt & Hallingbäck (1987).

***Trichocoleopsis tsinlingensis* Chen ex M. X. Zhang (Neotrichocoleaceae)**

Known from at least four provinces in China. Source: Gao & Cao 1988, Zhu & al. 1994.

***Tylimanthus madeirensis* Grolle & Perss. (Acrobolbaceae)**

Endemic to Madeira. According to Jones (1981), close or even conspecific with *T. ruwenzorensis* S. Arn. Similar ecology as *T. azoricus*. Needs further taxonomic studies. Sources: ECCB 1995, Grolle & Persson 1966.

REFERENCES

Bischler H. 1964. Le genre *Drepanolejeunea* Steph. en Amérique Centrale et Méridionale. *Revue Bryologique et Lichénologique* 33: 15-179.

Bischler H. 1970. Les espèces du genre *Calypogeia* sur le continent africain et les îles africaines. *Revue Bryologique et Lichénologique* 37: 63-134.

Blom H.H. & J.I. Holten 1988. *Plagiochila norvegica*, a new hepatic from West Norway. *Lindbergia* 14: 8-11.

Buck, W. R. 1981. A re-interpretation of the Fabroniaceae, III: *Anacamptodon* and *Fabronidium* revisited, *Mamillariella*, *Helicodontiadelphus* and *Bryobartlettia* gen. nov. *Brittonia* 33: 473-481.

Campbell D.H. 1896a. A new California liverwort. *Botanical Gazette* 21: 9-13.

Campbell D.H. 1896b. The development of *Geothallus tuberosus* Campbell. *Annals of Botany* 10: 489-510.

Chang K.-C. & C. Gao 1984. *Plantae novae hepaticarum sinarum*. *Bulletin of Botanical Research* 4, 3: 83-99.

Churchill, S. P. 1986. A revision of *Echinodium* Jur. (Echinodiaceae: Hypnobryales). *Journal of Bryology* 14: 117-133.

Crum, H. A. and L. Anderson 1981. *Mosses of Eastern North America*, vol. 1. Columbia University Press, New York.

Damsholt K. & T. Hallingbäck (1987). *Riccia gothica*, a new species of Hepaticae from Sweden. *Lindbergia* 12: 100-102 "1986".

Dirkse G.M., A.C. Bouman & A. Losada-Lima 1993. Bryophytes of the Canary Islands, an annotated checklist. *Cryptogamie, Bryologie-Lichénologie* 14: 1-47.

Doyle W.T. 1962. The morphology and affinities of the liverwort *Geothallus*. *University of California Publications, Botany* 33: 185-268.

ECCB 1995. Red Data Book of European bryophytes. European Committee for the Conservation of Bryophytes, Trondheim, 291 pp.

Enroth, J. 1994. A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida). *Acta Botanica Fennica* 151: 1-90.

- Enroth, J. 1995. Commentary on the moss genus *Flabellidium* (Brachytheciaceae). *Fragmenta Floristica Geobotanica* 40: 743-747.
- Enroth, J. and R. E. Magill 1994. *Neckeropsis pocsi* (Neckeraceae, Musci), a new species from Comoro Islands. *Bryologist* 97: 171-173.
- Gao C. & T. Cao 1988. A study of *Trichocolea* Dum., *Trichocoleopsis* Okam. and *Netotrichocolea* Hatt. (Hepaticae) in China. *Investigatio et studium naturae* 8: 24-37.
- Gao C. & G.-C. Zhang 1981. Flora hepaticarum Chinae boreali-orientalis. Beijing, 220 pp.
- Geissler P. 1984. A propos de *Riccia breidlerii* Jur. ex Steph. en Suisse et Haute-Savoie. *Cryptogamie, Bryologie-Lichénologie* 5: 63-67.
- Greven, H. C. 1993. Proposal for a red data list of European *Grimmia* species. *Cryptogamie, Bryologie Lichénologie* Vol. 14: 401-404.
- Grolle R. 1966. Die Lebermoose Nepals. *Khumbu Himal. Ergebnisse des Forschungsunternehmens Nepal Himalaya* 1: 262-298.
- Grolle R. 1983. Hepatics of Europe including the Azores: an annotated list of species, with synonyms from the recent literature. *Journal of Bryology* 12: 403-459.
- Grolle R. & S.R. Gradstein 1988. *Haeselia*, a new genus of Cephaloziaceae (Hepaticae) from Mt. Roraima, Guyana. *Journal of the Hattori Botanical Laboratory* 64: 327-334.
- Grolle R. & H. Persson 1966. Die Gattung *Tylimanthus* auf den Atlantischen Inseln. *Svensk Botanisk Tidskrift* 60: 164-174.
- Hattori S. 1972. *Frullania tamaricifolia* complex and the species concept. *Journal of the Hattori Botanical Laboratory* 35: 202-251.
- Hattori S. 1975. Anthocerotae and Hepaticae. In: H. Ohashi (ed.), *Flora of Eastern Himalaya. Third Report. Bulletin University Museum, University Tokyo* 8: 206-242.
- Haynes C.C. 1910. *Sphaerocarpus hians* sp. nov., with a revision of the genus and illustrations of the species. *Bulletin of the Torrey Botanical Club* 37: 215-230.
- Hill M.O., C.D. Preston & A.J.E. Smith 1991. Atlas of the bryophytes of Britain and Ireland. Vol. 1. Liverworts (Hepaticae and Anthocerotae). Colchester, 351 pp.
- Hodgetts, N. G. and T.L. Blockeel. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observation on *T. angustifolium* and *T. fernandesii*. *Journal of Bryology* 17: 251-262.
- Ignatov M.S. & V.YA. Czerdantseva 1995. The families Cryphaeaceae, Leucodontaceae and Leptodontaceae (Musci) in Russia. *Arctoa* 4: 65-104.
- Jones E.W. 1981. African Hepatics XXXII. *Journal of Bryology* 11: 311-323
- Jones E.W. & F. Rose 1975. *Plagiochila atlantica* F. Rose, sp. nov. *Journal of Bryology* 8: 417-422.
- Jovet-Ast S. 1984. *Riccia* (subg. *Viridiquamata*) *caroliniana* Ne-Thalan, espèce endémique rélictuelle d'Australie. *Cryptogamie, Bryologie-Lichénologie* 5: 389-402.
- Jovet-Ast S. 1987. Vers une classification phylogénétique des espèces du genre *Riccia*. *The Bryologist* 90: 321-330.
- Jørgensen, E. 1934. Norges levermoser. *Bergens Museums Skr. Nr. 16*. Bergen. 343 pp.
- Konstantinova N. A. & A. D. Potemkin (1994). Studies on *Scapania sphaerifera* (Hepaticae). *Annales Botanici Fennici* 31: 121-126.
- Koponen, A. 1992. European-Asiatic connections in *Tayloria* (Splachnaceae, Musci). *Bryobrothera* 1: 57-62.
- Long D. G. & R. Grolle 1990. Hepaticae of Bhutan II. *Journal of the Hattori Botanical Laboratory* 68: 381-440.
- Ludwig G., R. Düll, G. Philippi, M. Ahrens, S. Caspari, M. Koperski, S. Lütt, F. Schulz & G. Schwab 1996. Rote Liste der Moose (Anthocerotophyta et Bryophyta) Deutschlands. *Schriftenreihe für Vegetationskunde* 28: 189-306.
- Löve, A. and D. Löve 1953. Studies on *Bryoxiphium*. *The Bryologist* 56: 183-199.
- McAdam S.V. & A.J.E. Smith 1981. *Brachythecium appleyardiae* sp. nov. in southwest England. *Journal of Bryology* 11: 591-598.
- Merrill, G. L. S. 1992. *Ozobryum ogalense* (Pottiaceae), a new moss genus and species from the American Great Plains. *Novon* 2: 255-258.
- Meyer F.K. & R. Grolle 1963. Eine neue *Frullania*-Art aus Albanien. *Feddes Repertorium* 68: 101-107.
- Mizutani M. & K. C. Chang 1986. A preliminary study of Chinese Lepidoziaceae Flora. *Journal of the Hattori Botanical Laboratory* 60: 419-437.
- Müller K. 1951-58. Die Lebermoose Europas. In: Dr. L. Rabenhorst's *Kryptogamen-Flora von Deutschland, Österreich und de Schweiz*. Band 6, 3. Auflage. Leipzig. 1365 pp.
- Nicholson W.E., T. Herzog & F. Verdoorn. Hepaticae. *Symbolae Sinicae* 5: 1-60.
- Ochyra R. 1991. *Crassiphylllum* (Thamnobryaceae), a new moss genus from Madeira. *Fragmenta Floristica Geobotanica* 36: 71-79.
- Pant G. & S.D. Tewari 1995. Additional, up to date notes on Red list monotypic endemic liverwort taxa of Kumaon (Western Himalaya). *The Bryological Times* 83/84: 7.
- Paton J. 1984. *Cephaloziella nicholsoni* Douin & Schifffn. distinguished from *C. massalongi* (Spruce) K. Müll. *Journal of Bryology* 13: 1-8.
- Paton J. A. 1976. *Ditrichum cornubicum*, a new moss from Cornwall. *Journal of Bryology* 9: 171-175.
- Persson H. 1955. Remarks on the *Porella pinnata* group. *Archivum Societatis Zoologicae Botanicae Fennicae "Vanamo"* 9, suppl.: 225-231.
- Piippo S. 1990. Annotated catalogue of Chinese Hepaticae and Anthocerotae. *Journal of the Hattori Botanical Laboratory* 68: 1-192
- Sérgio C. & S. M. Perold 1992. A new species of *Riccia* L. from the island of Madeira, *Riccia atlantica* sp. *Journal of Bryology* 17: 127-132.
- Sjögren E. 1975. Epiphyllous bryophytes of Madeira. *Svensk Botanisk Tidskrift* 69: 217-288.
- Sjögren E. 1978. Bryophyte vegetation in the Azores Islands. *Memórias da Sociedade Broteriana* 26: 1-283.
- Tan B., Geissler, P. & Hallingbäck, T. 1994. Towards a World Red List of Bryophytes. *The Bryological Times* 77: 3-6; 78: 4-5.
- Váða J. 1992. Phytogeographically important hepatics from the Altai Mts. (Russia). *Novitates Botanicae ex Universitate Carolina* 7: 27-32.
- Váða J. & H. Inoue 1983. Studies in Taiwan Hepaticae V. *Jungermanniaceae*. *Bulletin of the National Science Museum, Tokyo, Ser. B*, 9: 125-142.
- Vanden Berghen, C. 1976. *Frullaniaceae* (Hepaticae) africanae. *Bulletin du Jardin Botanique National de Belgique* 46: 1-220.
- Wigglesworth, G. 1929. A new Californian species of *Sphaerocarpus*. *University of California Publications, Botany* 16: 129-137.
- Wolery M.G. & W.T. Doyle 1969. The distribution of *Geothallus tuberosus*. *The Bryologist* 72: 413-417.
- Zhu, R.-L. 1995. *Cololejeunea* (Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83-109.
- Zhu, R.-L., Hu, R.-L. & Ma, Y.-J. 1994. Some comments of rare and endangered liverworts in mainland China. *Arctoa* 3: 7-12.

Frullania as epiphyll

My name is Matt von Konrat and I am studying for a PhD at the University of Auckland. Dr John Braggins is my main supervisor. The title of my thesis is "a study of the liverwort genus *Frullania* in New Zealand". The focal point of this study will be to examine the relationship between the New Zealand taxa and overseas taxa in order to help resolve the taxonomic problems in the genus. The information obtained from the taxonomic study will provide the foundation for research investigating the ecology, conservation and biology of *Frullania* species.

On a recent field trip I collected some *Frullania* growing as an epiphyll at high altitude from several locations (1000m and 1300m). I was wondering if this is an aspect of its growth previously undescribed? I am unable to find any publications describing this growth habit. I am interested in publishing an account of this. I was wondering if anyone knew of any published records existed and/or unpublished records.

Thanks, Matt von Konrat

Email: MVONKONRAT@sbsnov2.auckland.ac.nz

New literature

“GENERA OF HEPATICS” by O. Yano and S. R. Gradstein

This booklet provides a quick reference to all accepted generic names of hepatics, synonyms and families to which they belong. A taxonomic arrangement of the genera according to families is also provided. The booklet should be a very handy tool for use in herbarium management and other purposes. This publication (paper bound, 29 p.) is distributed by the “Systematisch-Geobotanisches Institut der Universität Göttingen”. Those interested in obtaining this publication should write to the address below, enclosing US\$ 3 (in cash) or DM 6 (in Eurocheque, please note cheque card number on reverse side) per copy, US\$ 25 (in cash) or DM 40 (in Eurocheque, please note cheque card number on reverse side) per 10 copies. Price includes postage. Because of the high bank charges, payments can not be made in other type of cheques.

*M. Elena Reiner-Drehwald,
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Shelyah-Sosonko, Yu. R. (ed. in chief). 1996. *The Red Data Book of Ukraine. Vegetable Kingdom. Kyiv: Ukrainska Entsyklopediya. 608 pp.* [In Ukrainian with English summary].

The second edition of the Red Data Book of Ukraine was prepared some years ago but published last year. It is divided into five sections to include reviews of 541 plant and fungi taxa: vascular plants (439 species), bryophytes (28), algae (17), lichens (27), and fungi (30). The reviews are compiled by leading Ukrainian specialists for every group involved. Species reviews are arranged in systematic order and designed in the following format: plant (fungus) name, family name, scientific importance, population status according to the IUCN Red Data Book and European Red List categories, distribution in and beyond Ukraine, habitats, causative factors, general morphological characteristics and conservation measures. Each review is supplied with a colour illustration and distribution map in the country. The book also provides the official legislative documents.

V. Virchenko, Inst. of Botany, Tereshchenkivska 2, 252 601 Kyiv, Ukraine

MOSS GARDENING, including lichens, liverworts, and other miniatures by George Schenk

At last, a comprehensive, up-to-date, sensible book on growing mosses and similar things. The perfect answer to those frequent queries from gardeners about how to grow mosses, or for that matter to those who want an introduction to mosses, including what's not a moss. Sections include transplanting, propagating, and growing mosses in containers, for bonsai, and as ground covers.

261 pages, 97 beautiful color plates. Hard cover. 1997. Prices, postpaid: \$38.50 U.S. addresses; \$39.50, all other addresses.

The 3rd European Conference on the Conservation of Bryophytes

The Scientific Basis for Bryophyte Conservation
in

Trondheim, Norway

31 August — 4 September 1998

The symposium will cover the following main topics

- What is a rare species
- Where do we find rare species
- How do we select species for conservation and how to conserve them

There will also be two days of excursions during the conference.

There are a number of possibilities for accommodation in Trondheim, from high standard hotels to fairly inexpensive hostels. Details will follow in the 2nd circular.

Pre-registration: Please send the Name, Address (incl. email if possible) to Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, Trondheim, Norway, not later than **1 February 1998**. Indicate (with preliminary title) if you intend to give a presentation/poster.

Bryology at the Rijksherbarium, Leiden

During his latest visit to Leiden W. Meijer celebrated his return to bryology (with which he is to be congratulated) and enthusiastically inaugurated himself "in a short ceremony crowned with a calyptra made by MRS Schreuder, the only person there left on the Bryology payroll". Fortunately, however, the present bryological conditions at the Rijksherbarium are not as poor as it may look.

It is true that no bryologist occupies a permanent staff position, and none can be appointed because all vacancies remain blocked by the university. This is a matter of grave concern to the bryologists and the management of the institute alike, but bryology at Leiden is not dead!

At present three bryologists are working here. Niels Klazenga is the one only who gets paid for it. He holds a temporary position (for 4 years) and is working on *Dicranoloma* for the area covered by Flora Malesiana, consisting roughly of Malaysia, Indonesia, the Philippines, and Papua New Guinea. He has completed a revision of the species and is now preparing a cladistic analysis of *Dicranoloma* and *Dicranum* in an attempt to clear the relationships between these and other genera of the Dicranaceae. At present he is doing field work in Borneo. Thereafter, he will attend the Beijing meeting and present some results of his work.

Hans Kruijer (Hypopterygiaceae) and Dries Touw (Thuidiaceae) continue their bryological research at the institute in honorary position. Finally, curatorial assistant Mrs. Birgitta Schreuder-Sternemark takes care of specific bryological jobs.

Bryology at Leiden is weak, but not dead, and we keep working towards a full recovery!

Niels Klazenga (klazenga@rulhb.LeidenUniv.nl), Hans Kruijer (hkruijer@rulhb.LeidenUniv.nl), Dries Touw (touw@rulhb.LeidenUniv.nl)

Iwatsukia jishibae on Lava Flows

Iwatsukia jishibae (Kitagawa 1964) is a species of an interesting genus which has a brief taxonomic history (Kitagawa 1964, Grolle 1965, Schuster 1968). But the ecology and life strategy of this species have not really been examined.

During our expedition to Reunion Isle we collected this species from different areas and surfaces. The most interesting habitats were the young (10-20 years old) lava flows of the volcano called Piton de la Fourmese, where this species has a large cover on the rough and porous surface of the lava. On these areas, which are in the early stages of succession, *Iwatsukia jishibae* prefers the deeper parts. It can be found 70 cm deep in the lava. We have some data of *I. jishibae* collected in Borneo, Madagascar and Reunion. On the basis of these specimens this species occurs on dead trunks, living trunks (most frequently), sometimes on rocks or soil. However, they were collected mainly in elfin or rain forests, not open lava flows. Considering these facts the most interesting question is whether this species has an invasive or a pioneer character on these areas?

In order to examine this phenomenon more exactly we would be glad to get some information (publications or other data) about *Iwatsukia jishibae* occurring on lava.

P.E. Konya, Eszterhazy Karoly
Teachers College, H-3301 EGER, Pf.:
43, HUNGARY

E-mail: novtan@gemini.ektf.hu

Insider Tip-Off

The famous bibliography "Current Contents" is accessible through Internet. All records since 1994 can be searched for online. Current Contents include since some years also some bryological journals (Journal of Bryology, The Bryologist). The importance of Current Contents is, however, to search for bryological items in journals which are not so known amongst bryologists.

Flora of Australia

Australian Biological Resources Study (ABRS) will publish the first of the three bryological volumes in the Flora of Australia series in 1998. This volume will contain chapters on the history of Australian bryology, the biology of mosses, the ecology and biogeography of mosses, the fossil record, a key to genera and taxonomic treatments of several families. At short notice new authors have to be found for a number of these families:

Splachnaceae

Splachnobryum (2) *Tayloria* (6-8)

Mniaceae

Orthomnion (1) *Plagiomnion* (1)

Bartramiaceae

Bartramidula (1) *Breutelina* (8-11)

Conostomum (4) *Philonotis* (8-12)

Rhizogoniaceae

Bryobrothera (1) *Goniobryum* (1)

Hymenodon (1) *Leptotheca* (1)

Mesochaete (2) *Pyrrhobryum* (6)

Rhizogonium (5)

Here is an opportunity to contribute to a prestigious Flora series. ABRS would greatly appreciate hearing from any bryologists interested in preparing a flora treatment of any of these families or parts of these families. All authors will receive a complimentary copy of the Volume valued at about AUS\$80.

Because of the short time available, we are looking for a 'status quo' treatment. There is likely to be little time for in-depth new research.

If you are interested in contributing, please contact either:

Dr A.E. Orchard, ABRS, GPO Box 636, Canberra, ACT 2601, Phone: +61 6 2509442, Fax: +61 6 2509448, Email: tony.orchard@dest.gov.au

or

C. Grgurinovic, Phone: +61 6 2509 446, Email: cheryl.grgurinovic@dest.gov.au

Current Contents can be accessed in Internet through the University of Toronto: <http://utcat.library.utoronto.ca8002/db/CCBACK/search.html>

Jan-Peter Frahm (frahm@uni-bonn.de)

Future meetings of the British Bryological Society

The following meetings are planned by the BBS over the coming year. Contact local secretaries if you are interested in attending. Members are reminded to read the BBS Safety Code, which is published in Bulletin 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

Summer Field Meeting 1997 (I), North-east Yorkshire, 13-20 August.

Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815.

The headquarters hotel will be the Beansheaf Hotel, Malton Road, Kirby Misperton, Malton, YO17 0UE (Tel. 01653 668614). This hotel is 2½ miles south of Pickering and has been chosen because it has a good mix of accommodation, all en suite. Pickering is a popular tourist area, 20 miles from Scarborough, so early booking is recommended. There is plenty of varied accommodation available in the area, details of which will be supplied on request.

The last meeting of the Society in north-east Yorkshire was held in 1967, based in Northallerton, when most sites visited were in the western part of the county. This meeting will visit several sites covered on that occasion, but concentration will be more easterly. The sites to be visited will be varied. At least two days will be spent on acidic sandstone uplands and will include broadleaved woodlands, gills and griffs, as well as two bogs. Species in the wooded valleys could include *Discelium nudum*, *Dicranella subulata*, *Harpanthus scutatus*, *Herzogiella seligeri*, *Bazzania trilobata*, *Calypogeia integristipula*, *Hygrobiella laxifolia*, *Jungermannia hyalina*, *J. obovata*, *J. paroica*, *J. pumilum* and *J. sphaerocarpa*, and also *Radula complanata*, *Scapania umbrosa* and *Tritomaria exsectiformis*. Fen Bog has thirteen *Sphagnum* species and *Philonotis*

caespitosa, *Barbilophozia atlantica*, *Cephalozia macrostachya*, *Cladopodiella fluitans* and *Trichocolea tomentella*, whilst recent finds in the gills and griffs include *Brachydontium trichodes*, *Pohlia lutescens*, *Seligeria recurvata*, *Nowellia curvifolia* and *Jungermannia subelliptica*.

Several days will be spent in limestone country, where *Apometzgeria pubescens*, *Porella arboris-vitae* and *P. platyphylla* may be found. Further westwards, Duncombe Park NNR and Ashberry Meadows should be visited. If there is sufficient interest, a visit to Ingleby Greenhow can be arranged to see *Mielichhoferia elongata*. It would be nice to refind *Coscinodon cribrosus*, *Discelium nudum* and *Dicranella subulata* from here, not seen for many years. If time permits, we could visit Wass Bank to look for *Seligeria diversifolia*. Other bonuses would be *Acaulon muticum* and *Phascum floerkeanum* in stubble fields, not seen since the 1967 meeting.

Summer Field Meeting 1997 (II), North Italian Alps, 26 July-4 August.

Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Università, Viale Mattioli 25, I-10125 Turino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfur-long Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861.

The Italian Western Alps are not well known from the bryological point of view. There are many different habitats with a very interesting vascular flora, rich in endemic species, and probably also an interesting bryoflora, but there have been few bryological studies. It is hoped to visit a varied selection of habitats, including some well studied alpine bogs rich in bryophytes and the Valli di Lanzo, Susa and Chisone (Alpi Graie e Cozie). The bryophyte flora of most of these is sure to be rich but is at present unknown.

Annual General Meeting and Symposium Meeting 1997, Chichester, 12-14 September.

Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

This meeting will take place in the Chichester Inst. of Higher Education at Bishop Otter Campus. This is a college in a pleasant location with excellent modern accommodation and facilities. The city centre is within walking distance. Chichester is a very historic and attractive city and the Festival Theatre is also a major feature. There are other interesting places to visit in the Chichester area such as the open-air Weald and Downland Museum and Fishbourne Roman Palace. The College has indicated that any member who wishes to stay an extra night(s) may do so.

The field meeting on Sunday will be to one of the richer bryophyte areas in West Sussex, probably near Midhurst. On the Saturday night, it is proposed to have a celebration dinner to mark the 80th birthday of Dr. Harold Whitehouse.

Members who wish to make their own arrangements for accommodation may like to know that there is a good selection of B & B places (ca. £15 per night) within easy walking distance of the College.

Speakers will include (among others): Prof. Jeff Duckett (London Univ) - On protonemata, propagules, peristomes and phylogeny (or some mosses seem to be wrongly placed).

Mr. Malcolm Watling (Margate, Kent) - Bryology in Kent since Trudy Side.

Dr. Harold Whitehouse (Cambridge) - A presentation of stereoscopic slides.

Bryological Workshop 1997, London (date to be announced).

Local secretary: Dr. Ken Adams, Dept of Biology & Biochemistry, Univ of East London, Romford Road, London, NE15 4LZ. Tel.: 0181 5907722.

Topic to be arranged.

Spring field meeting 1998, Basse Normandie (Lower Normandy), France, March/April (date to be arranged).

Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. e-mail: J.Bates@ic.ac.uk.

The meeting will be of one-week's duration and organised along similar lines to the Brittany Field Meeting in 1993, probably in the week preceding the main Easter holiday and running from Saturday to Saturday. The headquarters hotel will (provisionally) be in the seaside town of Granville, which is probably the most central and pleasantly situated of the possibilities. There are convenient ferry crossings to Cherbourg, Caen and even St Malo.

The excursions will be into the departments of Manche, Calvados and Orne and include the rugged Cotentin Peninsula with similarities to Brittany, and the undulating and pleasantly wooded bocage countryside which has been likened to the English landscape as it was 50 years ago. There have been many Atlantic species recorded on this extension of the Armorican Massif and preliminary investigations by Jeff Bates suggest that there is still a lot to find. The main previous work is the flora for Manche by Corbiere (1889) and recent studies by Alain Lecoigne of Caen University. It is hoped that the party will be able to visit coastal cliffs and dunes near Granville and further north on Cotentin; the main forest and heath areas in Calvados and Orne including the Normandie-Maine Regional Park area; the sandstone gorges of the Orne valley which have some Mediterranean-Atlantic species and the granite ravine of the Vire; bogs in Manche (peat is used to fire a power station here); rocky hillsides; and a day trip to the French Channel Islands – Iles Chausey. There will many opportunities to study epiphytes on town trees and stubble fields, and to visit interesting sites like Mont St Michel.

Tropical Bryology course in Merida, Venezuela

Yelitza Leon V., Centro Jardin Botanico, Facultad de Ciencias, Universidad de Los Andes, Merida-Venezuela.

Twenty participants from eight countries met in Merida-Venezuela for the Tropical Bryology course that was held from February 24 to March 7 this year. The course was organized by the Centro Jardin Botanico of the Universidad de Los Andes, Merida, Venezuela and taught by the visiting professors Dr. Tamas Pócs (Eger, Hungary) and Dr. Jan-Peter Frahm (Bonn, Germany). This event was partially financed by CONICIT and FUNDACITE-Merida and the Postgraduate Studies Office of the University in Merida. In bilingual lectures (English-Spanish) the participants learned about morphology, taxonomy, and ecology of tropical bryophytes. Dr. Pócs talked about hepatic morphology, dispersal, diversity in the most stimulating way and Dr. Frahm, always enthusiastic, told us about morphology, taxonomy, ecology and distribution of mosses. Fieldtrips were made to the cloud forest just behind the university campus and (by cable car) to the paramos and subparamos of the Sierra Nevada. All enjoyed a great atmosphere with a group of experienced bryologists and bryology students.

The course the participation of Dr. Raymond Stotler and Dr. Barbara Crandall-Stotler (USA). Barbara gave us the most wonderful lecture on branching patterns.

In our fieldtrips we learned from Dr. Pócs and Frahm techniques for ecological studies, how to study plots and phytosociological relevés and how to measure climatic conditions such as light intensity, temperature and humidity as well as the use of dataloggers.

The most attractive topic was experience in tree climbing techniques, which was provided by a graduate student from Bonn University.

Once in the computer room Dr. Frahm demonstrated how to use software to process ecological data and other programs for cladistic, phenetic and community studies.

In the Sierra Nevada de Merida we visited the type locality of *Ruizanthus venezuelanus* Schust. (the logo plant of our course, which appeared also on the course T-shirt) and found many other interesting species. A very weird *Fossombronia* found at 4000 m will keep Drs. Stotler busy for some time.

The participants were: Margarita Escobar (Medellin, Colombia), Oscar Orrego Santa (Bogota, Colombia), Virginia Freires (Guatemala), Rosa Isela Meneses (Bolivia), Amalia Beatriz Biasuso (Argentina), Ines Sastre D-J. (Puerto Rico), Carmen Reyes (Puerto Rico), Abeliz Rosado (Puerto Rico), Sobeida Escoria A. (Puerto Rico), Patxi Heras (Spain), Marta Infante (Spain), Javier Estrada (Spain), Claudia Horning (Venezuela), Claudia Garbiso (Venezuela), Yrene Davila (Venezuela), Ana Escalona (Venezuela), Ricardo Rico (Venezuela), and myself.

This experience enriched us not only bryologically but also personally, tightened relations among bryologists of neighboring countries in Latin America, and with Europe and the USA. In addition, the course allowed young Latin American bryologists to learn the world of tropical bryophytes in our own surroundings.

Minutes for IAB Council Meeting

Beijing, May 27, 1997

The Chairman called the meeting to order at 7:30 p.m.

Present were T. Cao, C. Delgadillo M., J.-P. Frahm, T. Hallingbäck, M. Ignatov, T. Koponen, R. Seppelt, L. Söderström, D. Vitt.

1. Minutes from the Mexico meeting in 1995: Read and accepted with change to item eight.

2. Treasury Report by D. Vitt

Income

*Dues (incl. NBS & Arctoa)	15869.89
Interest	613.12
Capital Gains	1371.98
Sphagnum Symposium	4500.00
Mutual Fund Increase	3560.27
Total Income	25915.26

Expenses

Postage	1673.65
Photocopying	445.00
Salaries	1100.00
Secretarial Supplies	46.23
S. Greene Award (1995)	1000.00
Hattori Prize	400.00
NBS (pd)	266.00
Arctoa(pd)	400.00
Total Expenses	6238.41

BALANCE MAY 25, 1997

INCL. COMMITMENTS **42895.15**

Commitments (1997)

Endangered Species Fund	388.00
Hattori Prize	400.00
Stanley Greene Award	4000.00
Arctoa	1426.23
NBS	1518.56*
Next Sphagnum Symposium	4500.00
Total Commitments	12232.79

*IAB and NBS are collecting money for each other. Balancing with NBS was not done prior to this report.

There was some discussion of whether funds were invested to the best ability and the responsibility given to one person as the treasurer. A financial committee will be set up and chaired by the Secretary-Treasurer. A proposal was made by Frahm to consider raising fees to \$15 US with the extra \$4 going to research. Vitt suggested having donations, but it was felt this would not work. Delgadillo suggested \$1 raise and

Koponen suggested no raise. Decision made to not raise fees but to add a phrase to the dues notice and in The Bryological Times that persons "please contribute to the research fund".

3. Membership Report: Membership in IAB by regions in 1997 was:

Africa	5
Asia	23
Australia & New Zealand	27
China	30
Europe	239
E Europe	83
Japan	40
N & C America	140
S America	6
Total paying members	593.

This compares to 422 in 1993 and 495 in 1995. (At this time some of the persons who received The Bryological Times were not paying members). There was discussion over the small number of South American and African members. It was concluded that there are a number of bryologists in South America who are potential members, while in Africa the number of members probably reflects the actual number of bryologists. C. Delgadillo will take prospectus and copies of The Bryological Times to the Latin American Society to see if he can encourage members. S. Vitt is to send copies to him plus the names of current members.

4. The Bryological Times Report by L. Söderström: Six issues of The Bryological Times were not always possible due to lack of material. Suggestions for new organization included: 1) Editors to be formally appointed every two years with re-appointments possible. 2) Spread out responsibility by selecting six Regional Editors from around the world who will do one main article for The Bryological Times per year among other things. Six persons have been asked to serve as editors but only three have answered yet. 3) Column Editors

will be appointed for two years only. The number will vary and new Column Editors can be added as needed. They should contribute at least once a year. 4) A literature column needs to be added, including book reviews. A motion was made by J.-P. Frahm that the arrangements for the above be made by the editor and these changes be printed in The Bryological Times. These changes were accepted.

5. Meeting in St. Louis in 1999: The program at the International Botanical Congress consists of symposia and a combined poster session. Deadline for subject of symposia is September, 1997. Suggestion was made by D. Vitt that a committee be set up to organize the symposia. R. Seppelt commented that we should co-ordinate with ABLs in arranging symposia. A proposal was made to select 3-4 persons to set up at least two (and up to several more) symposia. The committee suggested B. Mishler, M. Crosby, and M. Ignatov be asked to serve on this committee. They were to check if there were other costs involved besides the registration fees.

6. IAB Meeting in 2001: There was a proposal from India to host this meeting. Spain had been asked to put forth a proposal, but had not done so. Vitt made a motion for the meeting to be held in India, it was seconded and passes with 5 votes against 3. Delgadillo and Frahm will put together a proposal for the 2003 meeting in South America. In 2005 the meeting will again be held with the International Botanical Congress.

7. Nomination for Awards:

Stanley Greene Research Award: 1800 CDN to G. Dauphine from Costa Rica to study Lejeuneaceae and 2200 CDN to Fu Xing of China do research in Canada. They will have to submit receipts for usage of money and a report

within a time period of one year. They should also include a line crediting this support in their publication.

Richard Spruce Plaque: Recommendation to accept (secret) nomination and make presentation to recipient at the Business Meeting. Award given to Timo Koponen.

Hattori Prize: 400 CDN for "Prodromus Bryologiae Novo-Granatensis: An Introduccion a la Flora de Musgos de Colombia" by Steven P. Churchill and Edgar L. Linares C.

The President appointed committees for the nominations of recipients of IAB awards: Richard Spruce Plaque for the 2001 meeting (Timo Koponen {as 1997 winner} plus three others to be decided in St. Louis), the Stanley Greene Award (T. Koponen, H. Deguchi and C. Delgadillo, chaired by D. Vitt, Secretary-

Treasurer), and the Hattori Prize (B. Crandall-Stotler, M. Ignatov and L. Söderström, chaired by T. Koponen, President of IAB). The Hedwig committee (W. Frey, H. Ramsay, W. Reese and T. Pócs) will make the decision about the 1999 medal and should be set the same as the Richard Spruce Award committee in 2001 and 2003.

8. Archives for Bryology cancelled as no longer needed.

9. The IAB Home Page is currently being organized and will be linked to other organizations.

10. Endangered Species Committee Report by T. Hallingbäck: Contributions to the fund for research on endangered species began in Mexico. Geissler, Gradstein, Hallingbäck, Pócs, and Tan make up the committee to decide the best use of these funds and they will

appoint Belland as a new member if he agrees. They will produce an action plan for endangered Bryophytes with the most needed research listed in a booklet with the IAB symbol. Recommended that they have a proposal for use of the funds by the St. Louis meetings.

11. Advances in Bryology by Royce Longton (given by Vitt): Vol. 6 done. Suggestions for Vol. 7. 1) Tropical Bryology and 2) Biodiversity & Conservation with Floristics included were suggested. Molecular biology was suggested for a future issue.

12. Constitution: Motion to amend constitution as presented by Vitt and Söderström, seconded by Delgadillo. Decision made to submit the proposal to the general membership for their approval.

General Annual Meeting to be held on Thursday, May 29.

Meeting adjourned.

News from the Herbaria

News from the Herbaria. Send contributions to the column editor: A. R. Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP, Wales, United Kingdom

Department of Botany, National Science Museum, Tokyo, Japan, moved to Tsukuba from Shinjuku in 1995 (cf. *Taxon* 44: 268, 1995). In view of the time-consuming activities involved in moving and re-housing the collections, the herbarium of the department (TNS) was temporarily closed from June 1995, and opened from May 1996. We now invite loan requests from recognized botanical institutions. We have expanded the size of our herbarium to provide more space for herbarium-related research. A new guest-house was also built to accommodate short- and long-term visitors.

For further information, please contact Dr Masanobu Higuchi, Department of Botany, National Science Museum, 4-1-1 Amakubo, Tsukuba, Ibaraki 305, Japan. E-mail: higuchi@kahaku.go.jp

Publication years for Illustrated Flora of Nordic Mosses

I often get questions regarding the actual years of publication for the first three fascicles of Elsa Nyholm's *Illustrated Flora of Nordic Mosses*. According to information provided by P. H. Enckell (Editorial Office, Ecology Building, S-223 62 Lund, Sweden; from where the flora can also be ordered), the following years are the correct ones. Fascicle 1 was published in 1987, fascicle 2 in 1990, and fascicle 3 in 1993.

PS! Anyone interested in the contents of the latest issues of *Lindbergia* (and the other journals edited at the Editorial Office in Lund) could check the following home page:

<http://www.oikos.ekol.lu.se>

Lars Hedenäs, Swedish Museum of Natural History, Dept. of Cryptogamic Botany, Box 50007, S-104 05 Stockholm, Sweden. e-mail: lars.hedenas@nrm.se

Course on Tropical Mosses and Lichens in Ecuador

The Herbario QCA of the Catholic University of Ecuador invites you to the first course about Tropical Mosses and Lichens which will be in Quito on August 25th to September 5th. This course will be carried out with collaboration of: Dr. Harrie Sipman of Berlin University and Dr. Robert Gradstein of Göttingen University in Germany. We will have several field trips to important tropical rain forest in Ecuador.

For more information please contact:

Dr. Renato Valencia or Lcdo. Eduardo Barahona, Herbario QCA, Universidad Cartolica, Apartado 17-01-2184, Quito, ECUADOR. Email: rvalenci@pi.pro.ec, rvalenci@ecnet.ec or mcbarahona@puceuo.puce.edu.ec, FAX (593-2) 567 117, TEL/FAX (593-2) 371 788

New Constitution for the International Association of Bryologists

In the late 1980's, IAB Council decided to become independent from IAPT (International Association of Plant Taxonomists). This move gave us the opportunity to develop our own funds and budget them as we see fit. It also allowed us to better develop bryological interests outside of taxonomy. In other words, by being independent of IAPT, the Association can better serve all of bryology.

Also, the present constitution was formulated while IAB was affiliated with IAPT, and as a result our elections and terms of office were strongly tied to those of IAPT.

While the Council's decision to become independent from IAPT took effect some years ago, our constitution has never been updated to reflect these changes. Additionally, the constitution needs some 'house cleaning' to make it a more current document that we can all follow closely.

As a result of this background, Council discussed the constitution while at the Beijing meeting and unanimously recommends to the membership that we amend the constitution as proposed here. The Council presents an amended constitution; these amendments require a 2/3 majority acceptance by the voting

membership by mail ballot.

Below you find both the old and the proposed constitution. There are a number of small changes in the text. The main changes are marked as strike-through in the old text for deleted parts and underlined in the proposed text for additions and major changes.

Please review the old and the amended versions of the constitution as presented below and return your vote by mail before September 15, 1997, to Dale H. Vitt, Secretary-Treasurer.

Note: the ballot is on the same yellow form as the information for your new IAB address list request for information.

Old Constitution

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Article 2. ~~The Association shall be affiliated to the International Association for Plant Taxonomy (I.A.P.T.) on the basis of Article 3, section 4, of the Constitution of that Association.~~

Section 2. Objectives and Means

Article 3. The objectives of the Association shall be to promote international co-operation and communication among bryologists, whether amateur or professional.

Constitutional Changes as recommended by IAB Council May 27, 1997 in Beijing, for ratification by the membership

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Section 2. Means and Objectives

Article 2. The Association is an international, non-profit society whose financial records reside with the current Secretary-Treasurer.

Article 3. The objectives of the Association shall be to promote international co-operation and communication among persons interested in bryophytes.

Article 4. ~~The objectives of the Association shall be pursued by the same methods and procedures as those provided in the I.A.P.T., either jointly or independently, but normally under the aegis of that Association. The methods of the Association shall include:~~

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter, ~~the publication of a regular list of all new taxa, at every level, from the world's literature; the periodic publication of an up-to-date address list of the world's bryologists;~~ and issues that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary of the I.A.B. ~~or I.A.P.T.~~ and payment of the appropriate fee.

Article 7. ~~Membership of the Association shall be open without payment of an additional fee to any personal member of the I.A.P.T. in good standing, who may desire to become a member of the I.A.B.~~

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary, and ten Councillors. Normally not more than two members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office between two Business meetings of the Association and shall not be eligible for re-election to the same office. The Councillors shall hold office between three Business Meetings; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office between three Business Meetings and shall be eligible for re-election.

Article 4. The objectives of the Association shall be:

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter and items that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary-Treasurer of the I.A.B. and payment of the appropriate fee.

Article 7. Non-profit bryological societies can be affiliated to the I.A.B. Affiliated societies may use the newsletters and the other I.A.B. channels free of charge. Commercial journals or publishers may use the I.A.B. network by paying an amount decided at any time by the current Executive Committee.

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary-Treasurer, the Editor of The Bryological Times, and ten Councillors. Normally not more than three members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office for 4 years and shall not be eligible for re-election to the same office. The two Vice-Presidents shall not be elected simultaneously. The Councillors shall hold office for 4 years; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary-Treasurer shall hold office for 6 years and shall be eligible for re-election.

Article 11. The Editor of The Bryological Times shall be appointed by the council for two year terms and be eligible for reappointment.

Article 11. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President until the next Business Meeting of the Association.

Article 12. The Council may at any time co-opt additional members for special purposes; ~~for example, the Association will eventually need the services of an Editor and a Bibliographer.~~

Article 13. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5. Meetings and Elections

Article 14. The Association shall meet at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each International Botanical Congress or at an appropriate International Congress. The time interval between two Business Meetings shall normally be at least four years and not more than six years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings.

Article 15. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the offices of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 16. At least seven months prior to a Business Meeting of the Association, the President shall appoint an ad hoc Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 17. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chairman of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency.

Section 7. By-Laws and Amendments

Article 18. The Council shall have power to make by-laws for carrying into operation the terms of the Constitution.

Article 12. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President for the remaining term of office.

Article 13. The Council may at any time co-opt additional members for special purposes.

Article 14. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5 Meeting and Elections

Article 15. The Association shall meet biennially, including if possible at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each biennial meeting. The time interval between Business Meetings shall normally be every two years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings through the newsletter.

Article 16. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the office of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 17. At least seven months prior to a Business Meeting of the Association, the President shall appoint an Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 18. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chair of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency. Ballots shall be sent to the election judge, appointed by the President.

Section 6. By-Laws and Amendments

Article 18. The Council shall have the power to make by-laws for carrying into operation the terms of the Constitution.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require favourable vote of two-thirds of the votes cast.

However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favourable decision is then obtained, they shall be voted upon by mail vote.

By-Laws for IAB Committees

1. Such Committees as may be required to fulfill IAB's purposes shall be created on a temporary or unlimited basis, upon the decision of the Council.

2. The Chairman and Members of each Committee shall be appointed (and can be dismissed) by the Executive Committee. Unless otherwise specified, their commission ends with that of the Council, during which they were appointed; it can be renewed. The President and the Secretary of the IAB are ex-officio members of each Committee.

3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary of IAB who shall circulate them and report back to the Committees any comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chairman of that Committee, their use being fully accounted for in the Committee's reports.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require a favorable vote of two-thirds of the votes cast. However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favorable decision is then obtained, they shall be voted upon by mail vote.

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3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary-Treasurer of IAB who shall circulate them and report back to the Committees and comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chair of that Committee, their use being fully accounted for in the Committee's reports.

The IAB Meeting in 1999

In 1999, IAB will meet in St. Louis, Missouri in connection with the XVI International Botanical Congress. This meeting will consist only of posters and organized Symposia. IAB will be suggesting symposia to the organizing committee. We need your suggestions now as the deadline for proposals is September 15, 1997.

Please send your symposium proposals to the Secretary, Dale H. Vitt before September 1, 1997. **Symposium proposals must include the following:**

-at least two convenors, one of which is from outside of North America.

-a listing of seven speakers with the tentative title and abstract for a 20 minute presentation.

The IAB Council

The Current IAB Council is as follows (with end of term):

President: **T. Koponen**, Finland (1999)

Past President: Vacant

1st Vice President: **W. B. Schofield**, Canada (2001).

2nd Vice President: **R. E. Longton**, UK (1999).

Secretary-Treasurer: **D. H. Vitt**, Canada (1999)

Councillors: **H. Ando**, Japan (1999), **C. Delgado M.**, Mexico (1999), **P. Geissler**, Switzerland (1999), **N. Miller**, USA (1999), **L. Söderström**, Norway (1999), **B. Buck**, USA (2001), **T. Cao**, China (2001), **J.-P. Frahm**, Germany (2001), **M.**

Ignatov, Russia (2001), **R. Seppelt**, Australia (2001).

Editors (appointed): **L. Söderström**, Norway (1999), **T. Hedderson**, UK (1999), **H. Weibull**, Sweden (1999).

The Nominations committee seeks nominations for the following offices that are to be filled by general election at the 1999 St. Louis meeting

President

Second Vice-President

Secretary-Treasurer

5 Councillors

Nomination can be done on the enclosed yellow form. Dale Vitt will pass it on to the Chair of Nominations committee.

The Bryological Times is a newsletter published bimonthly for the *International Association of Bryologists*. Items for publication are to be sent to the Editors (preferably HW), **except** for those for the regular columns, which may go **direct** to the column editors

Deadlines for material to the Bryol. Times will be January 15, March 15, May 15, July 15, September 15 and November 15 with the publication shortly afterwards. Shorter notes may be accepted later if there is still space.

Editors

Lars Söderström, Dept of Botany, Norwegian University of Science & Technology, N-7055 Dragvoll, Norway. FAX +47 73596100.

Lars.Soderstrom@chembio.ntnu.no

Henrik Weibull, Dept Ecology & Environmental Science, Swedish Agricultural University, Box 7072, S-75007 Uppsala, Sweden. FAX +46 18673430.

Henrik.Weibull@emc.slu.se

Terry Hedderson, Dept of Botany, University of Reading, Whiteknights, RG6 2AS Reading, UK. FAX +44 1 734 753 676.

T.A.J.Hedderson@reading.ac.uk

Column Editors

J.-P. Frahm & B. O'Shea (computer techniques); T. Hallingbäck (conservation); A. R. Perry (news from the herbaria); T. Pócs (tropical bryology); J. Vána (floristics and phytogeography).

The Bryological Times, founded in 1980 by Stanley Wilson Greene (1928-1989), is distributed from Beijing (China), Canberra (Australia), Edmonton (Canada), Eger (Hungary), Geneva (Switzerland), Hiroshima (Japan), Moscow (Russia), Praha (Czech Republic), St. Louis (USA) and Trondheim (Norway).

Production

Lars Söderström, Trondheim

For details regarding membership of to *International Association of Bryologists* (currently US \$ 11.- per year) write to Dale H. Vitt, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.

Email:svitt@gpu.ualberta.ca

DIARY

1997

July 5. Field meeting with DBLS. Bryophytes round Boxmeer. Contact person: L. Spier, Kon. Arthurpad 8, NL-3813 HD Amersfoort, The Netherlands.

July 26-August 4. BBS Summer Field Meeting in North Italian Alps. Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Universit, Viale Mattioli 25, I-10125 Torino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861

August 3 - 7. ABLs Annual Meeting in Montreal, Quebec. Information from: Brent D. Mishler, Dept. of Integrative Biology, University of California, Berkeley, CA 94720-2465 phone: (510) 642-6810 FAX: (510) 643-5390 Email: bmishler@garnet.berkeley.edu

August 8-10. Annual Meeting and Excursion with the Nordic Bryological Society on the Archipelago of Åland. Information from Hanna Jalkanen, P.O.Box 47, FIN-00014 University of Helsinki, Finland. Tel. +358 09 708 4725. Fax. +358 09 708 4726. Email hanna.jalkanen@helsinki.fi

August 13-20. BBS Summer Field Meeting in North-east Yorkshire. Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815

September 3-9. SVBL/BLAM Summer field trip. Sarnen (OW), Switzerland. Montane and subalpine forests and bogs on the northern slope of Central Alps. Contact Person: Dr. Engelbert Ruoss, Naturmus., Kasernenplatz 6, CH-6003 Luzern. Phone ++41-41-2285411; Fax 2285406; email: natur@centralnet.ch

September 12-14. BBS Annual General Meeting and Symposium in Chichester. Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

September 13-14. Field meeting with the Dutch Bryological and Lichenological Society at Zandpol, Z.O.Drente. Address: "De Zandpol", Stieltjeskanaal 14, 7764 A.J. Zandpol. Information: 0543-51 53 41 (The Netherlands).

September 17-20. XII Symposium on Cryptogamic Botany, Valencia, Spain. Information from: Felisa Puche, Dept. de Biologia Vegetal, Facultad de Ciencias Biologicas, Universitat de Valencia, Dr. Molinar 50, 46100 Burjassot, Valencia, Spain. Email: M.F.Puche@uv.es. <http://bioweb.uv.es/cripto97>.

October 3-5. Annual Blomquist Bryological Foray. Contact Person: Molly McMullen, Cryptogamic Herbarium, Box 90342, Duke University, Durham, NC, 27708-0342, USA. Phone: (919) 660-7300. Fax: (919) 660-7293, email: mmcm@duke.edu

November 8. Field meeting with the Dutch Bryological and Lichenological Society around Soest. Lichens. Information: 035-601 85 41 (The Netherlands).

1998

March/April (date to be decided). BBS Spring Field Meeting in Basse Normandie, France. Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. email: J.Bates@ic.ac.uk.

August 31-September 4. 3rd European Conference on the Conservation of Bryophytes. The Scientific Basis for Bryophyte Conservation. Trondheim, Norway. Information from Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, N-7055 Dragvoll, Norway. Tel. +47 73596061. Fax: +47 73596100. Email: Lars.Soderstrom@chembio.ntnu.no.

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Additions to the World Red List of Bryophytes

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SUMMARY

Since 1994 more than a hundred species names have been submitted to the IAB Committee on Endangered Bryophytes. Of these we have preliminary accepted 41 new additions to the 1994 list of IAB world most endangered bryophytes. The total number of listed species in the IAB Red List list includes 91 most endangered bryophyte species world-wide at present.

METHODS AND RESULTS

For the first World Red List of bryophytes in 1994 (Tan et al. 1994), 50 species were proposed (24 mosses, 25 liverworts and 1 hornwort). The publication of this list did not upset bryologists much because of its length. None of the species has been proposed

to be excluded or downlisted. Instead more than 100 new species were recommended for inclusion in the list since then.

As before, the selection was based on the following five criteria, namely, the species 1) must be threatened world-wide; 2) must be confined to a threatened habitat; 3) must have a narrow range; 4) is not overlooked or undercollected; and 5) has a unique morphology/biology or occupies a special evolutionary position.

A bibliographical search on all these species was made and potential candidates were transmitted to several experts for consultation. The list of candidates was then presented for public comment via the bryological internet, the BRYONET. Consequently, we have received several responses, especially information on the local geography of the endangered species; for which we are most thankful.

Several of the disqualified entries are

taxa whose current range or distribution is difficult to assess world-wide. Others are small species of disturbed sites whose habitats do not appear to be threatened by human activities. Many are simply rare, local endemics whose habitat threat has not been observed or identified. Also some names represent very recently described new species whose total range and habitat threat will need more time to assess or document.

We are publishing the updated list here for further comments before its official acceptance by IUCN (International Union of Conservation of Nature).

All in all, preliminarily we accept 16 mosses, 24 liverworts and 1 hornwort as additions to the IAB world most endangered bryophyte list.

DISCUSSION

It was not an easy task to select further candidates among these new proposals. Even for European and Macaronesian species, where the actual distribution should be relatively well known, honest

threat assessment is difficult to establish. But for many others, particularly in tropical regions, floristic knowledge is even poorer. Where recent literature still reports large regions of presence with many localities within the distribution area, the species were provisionally relegated in the last section of species not considered to be threatened at this moment. Likewise, all taxa with problems of taxonomical delimitation are not yet included.

We expect your comments, criticisms and contributions to be able to present an improved proposal taking into account all available knowledge on species living in endangered habitats. We are impatient to have your participation in constructive discussions.

Please send your comments to T. Hallingbäck at Swedish University of Agricultural Sciences, P.O. Box 7072, S-750 07 Uppsala, Sweden (email: tomas.hallingback@dha.slu.se), P. Geissler, Conservatoire et jardin botaniques, Case postale 60, CH-1292, Chambésy/Geneva, Switzerland (email: geissler@cjb.unige.ch) or B. C. Tan at the Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts, USA 02138 (email: btan@oeb.harvard.edu).

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NEW CANDIDATES FOR THE IAB WORLD RED LIST OF BRYOPHYTES

Musci

Aschisma kansanum Andrews (Pottiaceae)

A North American endemic of a oligotypic, disjunctive American-European genus. The species is known from "unusual habitat" in three counties of Kansas State in USA. Crum and Anderson (1981) described the habitat as quartz pebbles in sandy Pleistocene gravels covered partly by the persistent protonema of this species. Because of its rarity, the populations are very threatened these days by over collection and also by cattle grazing in the area. Sources: Crum and Anderson, 1981; Smith-Merrill, *pers. comm.*, 1997.

Bryoxiphium madeirense Löve & Löve (Bryoxiphiaceae)

A Madeiran endemic of a morphologically unique genus in a monotypic family, the species is found on moist and dripping volcanic rocks in shaded streams in Laurus forest on the island. There are only five known localities for the species. Habitat threatened by the recent logging of Laurus forest for agriculture and pasture. Sources: Löve and Löve, 1953; ECCB 1995.

Crassiphylum fernandesii (C. Sérgio) Ochyra [syn. *Thamnobryum fernandesii* C. Sérgio] (Thamnobryaceae)

A Madeiran endemic restricted to about 10 populations in permanently wet habitats, such as dripping rocks or waterfalls, in the inner part of the island at high elevation above 1000 m. Habitat is threatened by the expansion of agriculture and pasturing. Sources: Ochyra, 1991; Hedenäs, *pers. comm.*, 1997.

Ditrichum cornubicum Paton (Ditrichaceae)

Endemic to Cornwall, England, the species is known from copper mine-wastes in two granitic areas. Plants grow on compacted, well-drained peaty, loamy or gravelly soil where the vegetation is sparse and open. In recent

years, one population is known to have disappeared from one of the two original sites. Habitat threatened by encroachment of coarse vegetation and excessive human disturbance as well as vehicles going around the sites. Sources: Paton, 1976; ECCB 1995.

Echinodium renauldii (Card.) Broth. (Echinodiaceae)

Endemic to Azores, this species grows on rocks in forested, shaded ravines and craters above 500 m alt. The species is also known from a Pliocene fossil in the Canary Islands. Habitat of laurel forests is threatened by logging brought by the changing land use policy. Sources: Churchill, 1986; ECCB 1995.

Flabellidium spinosum Herz. (Brachytheciaceae)

The species represents a monotypic genus known only from the type collection made in 1911 from Santa Cruz Cordillera, Bolivia. According to Enroth (1995), the ascending branching system of this epiphytic pleurocarpous moss is characteristically frondose reaching 1 cm tall. The forest vegetation of the type locality and vicinity has been logged and cultivated over the years. Probably extinct. Sources: Enroth, 1995; idem, *pers. comm.*, 1997.

Grimmia curviseta Bouman (Grimmiaceae)

An endemic of Canary Islands and Sardinia, this species grows on dry, exposed north-facing rocks at altitudes of 2,000- 2400 m. The habitat is vulnerable at present. Source: Greven, 1993.

Gymnostomum boreale Nyh. & Hedenäs (Pottiaceae)

Known only from a single locality in the mountain of Kulmakkapus in Kuu-samo Region of NW Russia where it has not been recollected after 1938. It is a species of boreal montane habitat threatened by local human activities in recent years. Sources: Hedenäs, *pers. comm.*, 1997; Söderström, *pers. comm.*, 1997.

Hypnodontopsis apiculata Iwats. & Nog. (Rhachithecaceae)

A Japanese endemic confined mainly to Honshu, this species has a restricted

habitat found growing on the bark of *Cryptomeria japonica* (rarely on pine tree) in gardens of buddhist temples, shinto shrines and old castles. The population at the type locality has disappeared because trees were cut down or knocked over by typhoon. The species is sensitive to air pollution in human habitation. Source: Iwatsuki, *pers. comm.*, 1997.

***Mamillariella geniculata* Lazar.**
(Leskeaceae)

A rare Russian endemic, this monotypic genus is known only from 5-7 localities in the southern part of Russian Far East near Khabarovsk. It is officially listed in the latest Russian Red Data Book for endangered plants. The forests in Russian Far East are today seriously threatened by the on-going economic development in the region. Sources: Buck, 1981; Ignatov, *pers. comm.*, 1997

***Neckeropsis pocsii* Enroth & Magill**
(Neckeraceae)

An endemic species of Mayotte, Comoro Islands, this species grows on boulders in mesic evergreen forest threatened by excessive logging according to T. Pócs who collected the type specimen. Sources: Enroth and Magill, 1994; Pócs, *pers. comm.*, 1994).

***Orthotrichum scanicum* Grönv.**
(Orthotrichaceae)

A rare European endemic known from a few localities in central Europe, Italy, Scandinavia and Russia (Baikal Lake?). The species grows on trunks and branches of conifers as well as broad-leaf deciduous trees. Its overall range has been observed to decline in recent years in Europe and many local populations have become extinct. The survival of this species is threatened by the felling of host trees and the increasing problem of air pollution in Europe. Sources: ECCB 1995; Ignatov, *pers. comm.*, 1997.

***Ozobryum ogalalense* G. L. S.-Merrill** (Pottiaceae)

This monotypic endemic genus from the American Great Plains is a rarity confined to unusual habitat - strongly calcareous, porous rock outcrop ledges

charged with moisture, surrounded by prairie. It is known only from a single locality in Kansas State. According Merrill (*pers. comm.*, 1997), the location is threatened by cattle grazing and human disturbance. Sources: Merrill Smith, 1992; *ibid*, *pers. comm.* 1997.

***Pinnatella limbata* Dix.**
(Neckeraceae)

Known only from a single locality in SW India from the Uttar Kanad (formerly North Kanara) District of Karnataka State, this species is rather unique biologically among the congeners in being a rheophyte attached to rocks in streams. The flora of southwestern India, including the Western Ghats, is known for its rich diversity and high endemism. The fast destruction of forests in SW India owing to population expansion is also well documented today. Sources: Enroth, 1994; O'Shea, *pers. comm.*, 1997.

***Tayloria rudolphiana* (Garov.)**

Bruch & Schimp. [syn. *Tayloria delavayi* (Besch.) Besch.]

(Splachnaceae)

Restricted to subalpine environs in central Europe and disjunctively in SW China (Yunnan as *T. delavayi*), this species is unique in Europe growing epiphytically on the droppings of birds left on trees. Habitat in China is on *Quercus* tree trunk (Koponen 1992). Habitats in Europe are vulnerable to inappropriate forest management and the felling of old trees where populations were found. Sources: A. Koponen, 1992; ECCB 1995.

***Thamnobryum angustifolium* (Holt) Crundw.** (Thamnobryaceae)

This is a rare moss known only from one locality in Derbyshire, England. The plants grow on shaded limestone rock-face beside a calcareous spring or on rock in the stream. Although the site is in a nature reserve today, there is public pressure to build a footpath next to the site. The population is also threatened by frequent collections made by botanists and pollution of the spring. Sources: Hodgetts & Blockeel, 1992; ECCB 1995, O'Shea, *pers. comm.*, 1997.

Hepaticae & Anthocerotae

***Andrewsianthus ferrugineus* Grolle**
(Jungermanniaceae)

(in litt.), Grolle (1966), Hattori (1975), Long & Grolle (1990).

***Bazzania bhutanica* Kitag. & Grolle**
(Lepidoziaceae)

Known from only one locality in S Bhutan. The subtropical zone of the Himalaya is especially threatened. Source: Long (in litt.).

***Cololejeunea azorica* V. All. & Jovet-Ast** (Lejeuneaceae)

Known from less than 20 localities on Madeira and the Azores. Epiphyllous. Sources: ECCB 1995, Sjögren 1975, 1978.

***Cololejeunea magnilobula* (Horik.) Hatt.** (Lejeuneaceae)

Endemic epiphyllous species from Taiwan and Zhejiang (East China). Zhu (1995) considers it as distinct species. Source: Piippo 1990.

***Dendroceros japonicus* Steph.**
(Anthocerotaceae)

Growing exclusively on trunks, branches or leaves of trees and known to occur sporadically along the Pacific coast from Taiwan to central Japan. Disappearing from the northern parts of its distribution range, probably due to changing forest growth conditions. Source: Hasegawa (in litt.).

***Drepanolejeunea bakeri* Herz.**
(Lejeuneaceae)

Known from three localities on Luzon (Philippines). Threatened by extensive logging. Source: Tixier (in litt.).

***Drepanolejeunea senticosa* Bischler**
(Lejeuneaceae)

Cuba. Only known from the type specimen, leg. Wright ca. 1860. The species may be extinct or not understood. Source: Bischler 1964.

***Drepanolejeunea spinosa* Herz.**
(Lejeuneaceae)

Colombia (2 localities, leg. Killip 1922). These two species (*D. senticosa* and *D. spinosa*) have probably never been collected since. The species may be extinct or not understood. Source: Bischler 1964.

***Geothallus tuberosus* Campb.
(Sphaerocarpaceae)**

A monotypic genus, notable for its isolated phylogenetic position and its adaptations to extremely xeric conditions. Its morphology has been the subject of two detailed studies (Campbell 1896a, b, Doyle 1962). Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) conducted extensive searches for this taxon in the wild, and found eight population in this small area. Since then, the population of the San Diego urban area has doubled. Consequently the whole native range of *Geothallus* has been subjected to rapid, intense urban development. Source: Whittemore (in litt.).

***Haesselia roraimensis* Grolle & Gradst. (Cephaloziaceae)**

Endemic distinct genus of Cephaloziaceae, restricted to the foot of Mt. Roraima (Guyana), growing on rotten log between 550 and 1550 m. Source: Grolle & Gradstein 1988.

***Herbertus borealis* Crundw.
(Herbertaceae)**

Endemic to NW Europe: A single locality in Scotland and three in SW Norway. Sources: ECCB 1995, Birks in Hill & al. 1991.

***Kurzia sinensis* Chang in Chang & Gao (Lepidoziaceae)**

Only known from type specimen (Chekiang: Mt. Nanyentang, 300 m). Sources: Chang & Gao 1984; Mizutani & Chang 1986.

***Lepidozia azorica* Buch & H. Perss.
(Lepidoziaceae)**

Epiphytic endemic to the Azores, recently also discovered in the Canaries by Dirkse et al. 1993. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Leptoscyphus azoricus* (Buch & H. Perss.) Grolle (Geocalycaceae)**

Epiphytic endemic to the Azores. Occurrence very rare and local. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Radula jonesii* Bouman, Dirkse & Yamada (Radulaceae)**

Endemic to Canary Islands and Madeira, on wet shaded rocks in *Laurus* forests. Threatened by forest clearing. Source: ECCB 1995.

***Riccia atlantica* Sérgio & Perold
(Ricciaceae)**

Only known from a restricted area at the eastern end of Madeira. Threatened by urbanisation. Sources: ECCB 1995, Sérgio & Perold 1992.

***Riccia caroliniana* Na-Thalang
(Ricciaceae)**

Endemic Australian species known from few localities in the Northern Territory. Member of an isolated monotypic subgenus. Sources: Jovet-Ast (in litt.), 1984, 1987.

***Scapania sphaerifera* Buch & Tuomik. (Scapaniaceae)**

Representing a monotypic section characterized by spherical multicellular gemmae and pluriplicate perianth. Known from at least five localities in Russia in very small populations. Sources: ECCB 1995, Konstantinova (in litt.), Váda 1992, Konstantinova & Potemkin 1994.

***Scaphophyllum speciosum* (Horik.) Inoue (Jungermanniaceae)**

A monospecific genus with a disjunct distribution. Found in China, Bhutan, Taiwan, and recently in Nepal (by D. Long, unpubl.). In Taiwan it occurs on forest floor at 2000-2400 m. Sources: Váda & Inoue 1983, Long & Grolle 1990, Zhu & al. 1994.

***Schistochila macrodonta* W.E. Nicholson. (Schistochilaceae)**

Apparently the only two known localities are in Yunnan (Nicholson 1930) and Bhutan (Long & Grolle 1990). D. Long did not find it in Yunnan. Source: Long (in litt.).

***Sphaerocarpos drewei* Wigglesw.
(Sphaerocarpaceae)**

Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) reported this taxon as an associate of *Geothallus tuberosus* at seven sites. Aside from the protologue

(Wigglesworth 1929), these are the only reports of *S. drewei* in the literature. Source: Whittemore (in litt.).

***Sphaerocarpos hians* C. C. Haynes
(Sphaerocarpaceae)**

Endemic to the United States. This taxon was described by Haynes (1910). Historically known only from near Pullman, Whitman County, Washington and Moscow, Latah County, Idaho; recently found in Corvallis, Benton County, Oregon. It grows on mud of river bank. Poorly known. A seasonal ephemeral which is evident in summer (Pullman) and fall (Corvallis), when the water levels are low. Ref. Frye & Clark 1937: 106, 107. Sources: Whittemore and David H. Wagner (in litt.).

***Stenorhrips rhizomatica* Herz.
(Jungermanniaceae)**

Only known from the type locality in Sarawak (G. Dulit). The habitat of *S. rhizomatica* is endangered or probably already destroyed. Source: Richards, Gradstein (in litt.).

***Stephensoniella brevipedunculata* Kash. (Exoromotheceae)**

Monotypic genus which is endemic to the Kumaon region in Western Himalaya, rapidly disappearing due to uncontrolled urbanisation. Not seen since 1986. Sources: Pant (in litt.), Pant & Tewari 1995.

***Tylimanthus azoricus* Grolle & Perss. (Acrobolbaceae)**

Endemic to the Azores. Growing preferably on rocks in threatened habitats in few localities. Sources: ECCB 1995. Grolle & Persson 1966, Sjögren 1978.

TAXA NOT INCLUDED

The taxa below have also been submitted for inclusion in the Red List. However, these did not fully meet our criteria because they A) are considered to not be confined to threatened habitat, or B) are probably very much overlooked, or C) are not threatened worldwide or D) have taxonomical problems and delimitations.

***Acrobolbus wilsonii* Nees**

(Acrobolbaceae)

Endemic to atlantic Europe from Faeroes to Macaronesia. No indication of threat known. Source: ECCB 1995.

Aphanolejeunea madeirensis

(Schiffn.) Grolle (Lejeuneaceae)

Epiphyllous endemic to Madeira, restricted to the cloud zone of the northern part of the island, and to the Azores, where it may become locally fairly frequent. Sources: Sjögren 1975, 1978.

***Aphanolejeunea teotonii* V. All. &**

Jovet-Ast (Lejeuneaceae)

Endemic to Macaronesia. Epiphyllous species in mature *Laurus* forest. No indication of threat known. Source: ECCB 1995.

***Calypogeia fusca* (Lehm.) Steph.**

(Calypogeiaceae)

The only European member of the subgen. *Caracoma*. Outside the Azores the species is known from scattered localities from Ethiopia to South Africa. No information on threats is available. Source: Bischler 1970.

***Bazzania azorica* Buch & H. Perss.**

(Lepidoziaceae)

Endemic to Madeira and the Azores, on all type of substrates (Sjögren 1978). As reported in Grolle (1983), the species is closely related to the tropical Asiatic *B. praerupta* (Reinw. et al.) Trev. Needs further taxonomic studies. Source: Grolle 1983.

Brachythecium appleyardiae

McAdam & AJE Smith

(Brachytheciaceae)

A local endemic restricted to only 8 sites in Somerset, Wiltshire and Derbyshire in England. The species grows both on calcareous rocks and acidic sandstone wall. Habitat threatened by recent road construction and stone wall repair work. Needs further taxonomic studies. Source: McAdam and Smith 1981; ECCB 1995, M. Ignatov (*pers. comm.*).

***Calypogeia azorica* Bischl.**

(Calypogeiaceae)

Endemic to the Azores, closely related to African species, known from 5 locali-

ties only. Habitat requirements are badly known. Needs further taxonomic studies. Sources: Bischler 1970, Sjögren 1978

***Cephaloziella nicholsonii* Douin & Schiffn. (Cephaloziellaceae)**

Apparently endemic to SW England (Paton 1984), but commonly considered to be conspecific with *C. massalongi* (Spr.) Müll. Needs further taxonomic studies. Source: Paton 1984, ECCB 1995

***Cheilolejeunea cederkretzii* (Buch & Perss.) Grolle (Lejeuneaceae)**

Endemic to the Azores, growing on small twigs, leaves and mosses, very rare. The taxonomic relationships to African species of the tropical genus should be investigated. Sources: ECCB 1995, Grolle 1983, Sjögren 1978.

***Cololejeunea schaeferi* Grolle (Lejeuneaceae)**

Endemic to Macaronesia. No indication of threat known. Source: Dirkse & al. 1993.

***Forsstroemia stricta* Lazar.**

(Cryphaeaceae)

The species is known only from the type collection from Primorskij Territory in the Far East Siberia of Russia. Closely related taxa are found in S India and Taiwan. The forests in Russian Far East are today seriously threatened by forestry going on in the region. Needs further taxonomic studies. Sources: Ignatov and Czerdantseva, 1995; M. Ignatov (*pers. comm.*).

***Fossombronia fimbriata* Paton**

(Fossombroniaceae)

Described in 1974, it has been found since in scattered localities on damp soil and similar substrates in Ireland, Scotland and Wales, not yet on the European mainland. No indication of threat known. Source: Preston in Hill & al. (eds.) 1991.

***Fossombronia incurva* Lindb.**

(Fossombroniaceae)

Occurring on damp, sandy soils with a scattered distribution in western Europe. Mostly found along the sea coast and at shores of larger lakes. Not frequent but apparently not threatened everywhere. Sources: Müller 1954, Ludwig & al. 1996.

***Frullania illyrica* Grolle**

(Jubulaceae)

Known from 2 localities, one in Albania, the other in Slovenia. Needs further taxonomic studies. Source: Meyer & Grolle, 1963.

***Frullania polysticta* Lindenb.**

(Jubulaceae)

Probably endemic to Macaronesia. Closely related to the *F. tamarisci*-complex, but distinct. No indications on threats available. Sources: Hattori 1972, Vanden Berghen 1976.

***Herbertus azoricus* (Steph.)**

Richards (Herbertaceae)

Endemic to the Azores, related to African species. Growing on soil and bark. Common above 900 m. Sources: Sjögren 1978, Grolle 1983.

***Heteroscyphus denticulatus* (Mitt.)**

Schiffn. (Geocalyceaceae)

Macaronesian endemic, closely related to African and Australasian species. These relationships need further studies. Source: Grolle 1983.

***Jungermannia breviperianthia* Gao in Gao & Zhang**

(Jungermanniaceae)

Known from 3 localities in north-eastern China. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Jungermannia flagellalioides* (Gao)**

Piippo (Jungermanniaceae)

Only known from the type specimen. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Lejeunea hibernica* Grolle**

(Lejeuneaceae)

Growing over mosses in Ireland, also reported from the Azores, Canaries and Madeira, also in wet shaded crevices in cliffs. No indication of threat known. Sources: Müller 1958, Birks in Hill & al. 1991.

***Lejeunea mandonii* (Steph.) Müll.**

Frib. (Lejeuneaceae)

On wet rocks and trunks in Scotland, Ireland, England, Spain, Portugal, Madeira, Canaries. Rare, but probably

overlooked. Sources: Müller 1958, Birks in Hill & al. 1991.

***Marsupella andreaeoides* (Lindb.) Müll. Frib. (Gymnomitriaceae)**

Reported by Jørgensen (1934) from at least 30 localities in SW Norway. It is also known from a few localities in northernmost Sweden. No indication of threat known. Source: Jørgensen 1934, Våda and Hallingbäck, *pers. comm.*

***Marsupella fengchengensis* Gao & Chang (Gymnomitriaceae)**

Only known from the type specimen. Needs further taxonomic studies. Source: Piippo 1990.

***Metzgeria liaoningensis* Gao (Metzgeriaceae)**

Known from type locality and another locality. Source: Gao & Zhang 1981

***Plagiochila allorgei* Herz. & Perss. (Plagiochilaceae)**

On several substrates in mature *Juniperus* cloud forest. Endemic to the Azores. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Plagiochila atlantica* F. Rose (Plagiochilaceae)**

On rocks and trunks in western Scotland, also known from Ireland, north Wales and north-western France. No indication of threat known. Sources: Jones & Rose 1975. Averis in Hill & al. 1991.

***Plagiochila carringtonii* (Balf.) Grolle (Plagiochilaceae)**

Reported from western Scotland, Orkney and Faeroe islands in dwarf shrub communities. The variety *lobuchensis* Grolle occurs in Nepal and China. Sources: Long (*in litt.*), Müller 1956; Averis in Hill et al. 1991.

***Plagiochila norvegica* Blom & Holten (Plagiochilaceae)**

Only known from Norway (2 localities) and Sweden (1 locality). Needs further taxonomic studies. Sources: ECCB 1995, Blom & Holten 1988.

***Porella inaequalis* (Gott. ex Steph.) H. Perss. (Porellaceae)**

Closely related to *P. pinnata* L. Endemic to Madeira. Needs further taxonomic studies. Sources: Grolle 1983, Persson 1955.

***Radula carringtonii* Jack (Radulaceae)**

Occurs in small quantities on shaded rocks from western Scotland to SW Ireland, NW Spain and Macaronesia. No indication of threat known. Source: Birks in Hill et al. 1991.

***Radula holtii* Spruce (Radulaceae)**

On wet rocks in SW Ireland, Spain, Portugal and Macaronesia. Everywhere rare. No indication of threat known. Source: Birks in Hill 1991.

***Radula visianica* Mass. (Radulaceae)**

Known from the type locality near Padova in Italy and a second locality 100 km farther north. Neither taxonomy nor occurrence have been recently investigated. Sources: ECCB 1995, Müller 1956.

***Radula wichurae* Steph. (Radulaceae)**

Rare but perhaps overlooked Macaronesian endemic. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Riccia breidleri* Steph. (Ricciaceae)**

Endemic to the Alps region in Europe, presently known from less than 20 localities between 2100 and 2650 m on damp, weakly acidic soil of temporary pools of melting snow. Perhaps not conspicuous every year (shuttle species) and therefore overlooked. Listed on Appendix I of the Bern Convention (conservation of European natural habitats) and Annex 2 of the EC Habitats and Species Directive. Sources: ECCB 1995. Geissler 1984.

***Riccia gothica* Damsh. & Hallingb. (Ricciaceae)**

Only known from Sweden. However, relatively recently described taxon which presently not occur in any threatened habitats. Source: Damsholt & Hallingbäck (1987).

***Trichocoleopsis tsinlingensis* Chen ex M. X. Zhang (Neotrichocoleaceae)**

Known from at least four provinces in China. Source: Gao & Cao 1988, Zhu & al. 1994.

***Tylimanthus madeirensis* Grolle & Perss. (Acrobolbaceae)**

Endemic to Madeira. According to Jones (1981), close or even conspecific with *T. ruwenzorensis* S. Arn. Similar ecology as *T. azoricus*. Needs further taxonomic studies. Sources: ECCB 1995, Grolle & Persson 1966.

REFERENCES

Bischler H. 1964. Le genre *Drepanolejeunea* Steph. en Amérique Centrale et Méridionale. *Revue Bryologique et Lichénologique* 33: 15-179.

Bischler H. 1970. Les espèces du genre *Calypogeia* sur le continent africain et les îles africaines. *Revue Bryologique et Lichénologique* 37: 63-134.

Blom H.H. & J.I. Holten 1988. *Plagiochila norvegica*, a new hepatic from West Norway. *Lindbergia* 14: 8-11.

Buck, W. R. 1981. A re-interpretation of the Fabroniaceae, III: *Anacamptodon* and *Fabronidium* revisited, *Mamillariella*, *Helicodontiadelphus* and *Bryobartlettia* gen. nov. *Brittonia* 33: 473-481.

Campbell D.H. 1896a. A new California liverwort. *Botanical Gazette* 21: 9-13.

Campbell D.H. 1896b. The development of *Geothallus tuberosus* Campbell. *Annals of Botany* 10: 489-510.

Chang K.-C. & C. Gao 1984. *Plantae novae hepaticarum sinarum*. *Bulletin of Botanical Research* 4, 3: 83-99.

Churchill, S. P. 1986. A revision of *Echinodium* Jur. (Echinodiaceae: Hypnobryales). *Journal of Bryology* 14: 117-133.

Crum, H. A. and L. Anderson 1981. *Mosses of Eastern North America*, vol. 1. Columbia University Press, New York.

Damsholt K. & T. Hallingbäck (1987). *Riccia gothica*, a new species of Hepaticae from Sweden. *Lindbergia* 12: 100-102 "1986".

Dirkse G.M., A.C. Bouman & A. Losada-Lima 1993. Bryophytes of the Canary Islands, an annotated checklist. *Cryptogamie, Bryologie-Lichénologie* 14: 1-47.

Doyle W.T. 1962. The morphology and affinities of the liverwort *Geothallus*. *University of California Publications, Botany* 33: 185-268.

ECCB 1995. Red Data Book of European bryophytes. European Committee for the Conservation of Bryophytes, Trondheim, 291 pp.

Enroth, J. 1994. A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida). *Acta Botanica Fennica* 151: 1-90.

- Enroth, J. 1995. Commentary on the moss genus *Flabellidium* (Brachytheciaceae). *Fragmenta Floristica Geobotanica* 40: 743-747.
- Enroth, J. and R. E. Magill 1994. *Neckeropsis pocsi* (Neckeraceae, Musci), a new species from Comoro Islands. *Bryologist* 97: 171-173.
- Gao C. & T. Cao 1988. A study of *Trichocolea* Dum., *Trichocoleopsis* Okam. and *Netotrichocolea* Hatt. (Hepaticae) in China. *Investigatio et studium naturae* 8: 24-37.
- Gao C. & G.-C. Zhang 1981. Flora hepaticarum Chinae boreali-orientalis. Beijing, 220 pp.
- Geissler P. 1984. A propos de *Riccia breidlerii* Jur. ex Steph. en Suisse et Haute-Savoie. *Cryptogamie, Bryologie-Lichénologie* 5: 63-67.
- Greven, H. C. 1993. Proposal for a red data list of European *Grimmia* species. *Cryptogamie, Bryologie Lichénologie* Vol. 14: 401-404.
- Grolle R. 1966. Die Lebermoose Nepals. *Khumbu Himal. Ergebnisse des Forschungsunternehmens Nepal Himalaya* 1: 262-298.
- Grolle R. 1983. Hepaticae of Europe including the Azores: an annotated list of species, with synonyms from the recent literature. *Journal of Bryology* 12: 403-459.
- Grolle R. & S.R. Gradstein 1988. *Haeselia*, a new genus of Cephaloziaceae (Hepaticae) from Mt. Roraima, Guyana. *Journal of the Hattori Botanical Laboratory* 64: 327-334.
- Grolle R. & H. Persson 1966. Die Gattung *Tylimanthus* auf den Atlantischen Inseln. *Svensk Botanisk Tidskrift* 60: 164-174.
- Hattori S. 1972. *Frullania tamaricifolia* complex and the species concept. *Journal of the Hattori Botanical Laboratory* 35: 202-251.
- Hattori S. 1975. Anthocerotae and Hepaticae. In: H. Ohashi (ed.), *Flora of Eastern Himalaya. Third Report. Bulletin University Museum, University Tokyo* 8: 206-242.
- Haynes C.C. 1910. *Sphaerocarpus hians* sp. nov., with a revision of the genus and illustrations of the species. *Bulletin of the Torrey Botanical Club* 37: 215-230.
- Hill M.O., C.D. Preston & A.J.E. Smith 1991. Atlas of the bryophytes of Britain and Ireland. Vol. 1. Liverworts (Hepaticae and Anthocerotae). Colchester, 351 pp.
- Hodgetts, N. G. and T.L. Blockeel. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observation on *T. angustifolium* and *T. fernandesii*. *Journal of Bryology* 17: 251-262.
- Ignatov M.S. & V.YA. Czerdantseva 1995. The families Cryphaeaceae, Leucodontaceae and Leptodontaceae (Musci) in Russia. *Arctoa* 4: 65-104.
- Jones E.W. 1981. African Hepaticae XXXII. *Journal of Bryology* 11: 311-323
- Jones E.W. & F. Rose 1975. *Plagiochila atlantica* F. Rose, sp. nov. *Journal of Bryology* 8: 417-422.
- Jovet-Ast S. 1984. *Riccia* (subg. *Viridiquamata*) *caroliniana* Ne-Thalan, espèce endémique rélictuelle d'Australie. *Cryptogamie, Bryologie-Lichénologie* 5: 389-402.
- Jovet-Ast S. 1987. Vers une classification phylogénétique des espèces du genre *Riccia*. *The Bryologist* 90: 321-330.
- Jørgensen, E. 1934. Norges levermoser. *Bergens Museums Skr. Nr. 16. Bergen*. 343 pp.
- Konstantinova N. A. & A. D. Potemkin (1994). Studies on *Scapania sphaerifera* (Hepaticae). *Annales Botanici Fennici* 31: 121-126.
- Koponen, A. 1992. European-Asiatic connections in *Tayloria* (Splachnaceae, Musci). *Bryobrothera* 1: 57-62.
- Long D. G. & R. Grolle 1990. Hepaticae of Bhutan II. *Journal of the Hattori Botanical Laboratory* 68: 381-440.
- Ludwig G., R. Düll, G. Philippi, M. Ahrens, S. Caspari, M. Koperski, S. Lütt, F. Schulz & G. Schwab 1996. Rote Liste der Moose (Anthocerotophyta et Bryophyta) Deutschlands. *Schriftenreihe für Vegetationskunde* 28: 189-306.
- Löve, A. and D. Löve 1953. Studies on *Bryoxiphium*. *The Bryologist* 56: 183-199.
- McAdam S.V. & A.J.E. Smith 1981. *Brachythecium appleyardiae* sp. nov. in southwest England. *Journal of Bryology* 11: 591-598.
- Merrill, G. L. S. 1992. *Ozobryum ogalense* (Pottiaceae), a new moss genus and species from the American Great Plains. *Novon* 2: 255-258.
- Meyer F.K. & R. Grolle 1963. Eine neue *Frullania*-Art aus Albanien. *Feddes Repertorium* 68: 101-107.
- Mizutani M. & K. C. Chang 1986. A preliminary study of Chinese Lepidoziaceae Flora. *Journal of the Hattori Botanical Laboratory* 60: 419-437.
- Müller K. 1951-58. Die Lebermoose Europas. In: Dr. L. Rabenhorst's *Kryptogamen-Flora von Deutschland, Österreich und de Schweiz*. Band 6, 3. Auflage. Leipzig. 1365 pp.
- Nicholson W.E., T. Herzog & F. Verdoorn. Hepaticae. *Symbolae Sinicae* 5: 1-60.
- Ochyra R. 1991. *Crassiphylllum* (Thamnobryaceae), a new moss genus from Madeira. *Fragmenta Floristica Geobotanica* 36: 71-79.
- Pant G. & S.D. Tewari 1995. Additional, up to date notes on Red list monotypic endemic liverwort taxa of Kumaon (Western Himalaya). *The Bryological Times* 83/84: 7.
- Paton J. 1984. *Cephaloziella nicholsoni* Douin & Schiffn. distinguished from *C. massalongi* (Spruce) K. Müll. *Journal of Bryology* 13: 1-8.
- Paton J. A. 1976. *Ditrichum cornubicum*, a new moss from Cornwall. *Journal of Bryology* 9: 171-175.
- Persson H. 1955. Remarks on the *Porella pinnata* group. *Archivum Societatis Zoologicae Botanicae Fennicae "Vanamo"* 9, suppl.: 225-231.
- Piippo S. 1990. Annotated catalogue of Chinese Hepaticae and Anthocerotae. *Journal of the Hattori Botanical Laboratory* 68: 1-192
- Sérgio C. & S. M. Perold 1992. A new species of *Riccia* L. from the island of Madeira, *Riccia atlantica* sp. *Journal of Bryology* 17: 127-132.
- Sjögren E. 1975. Epiphyllous bryophytes of Madeira. *Svensk Botanisk Tidskrift* 69: 217-288.
- Sjögren E. 1978. Bryophyte vegetation in the Azores Islands. *Memórias da Sociedade Broteriana* 26: 1-283.
- Tan B., Geissler, P. & Hallingbäck, T. 1994. Towards a World Red List of Bryophytes. *The Bryological Times* 77: 3-6; 78: 4-5.
- Váða J. 1992. Phytogeographically important hepatics from the Altai Mts. (Russia). *Novitates Botanicae ex Universitate Carolina* 7: 27-32.
- Váða J. & H. Inoue 1983. Studies in Taiwan Hepaticae V. *Jungermanniaceae*. *Bulletin of the National Science Museum, Tokyo, Ser. B*, 9: 125-142.
- Vanden Berghen, C. 1976. *Frullaniaceae* (Hepaticae) africanae. *Bulletin du Jardin Botanique National de Belgique* 46: 1-220.
- Wigglesworth, G. 1929. A new Californian species of *Sphaerocarpus*. *University of California Publications, Botany* 16: 129-137.
- Wolery M.G. & W.T. Doyle 1969. The distribution of *Geothallus tuberosus*. *The Bryologist* 72: 413-417.
- Zhu, R.-L. 1995. *Cololejeunea* (Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83-109.
- Zhu, R.-L., Hu, R.-L. & Ma, Y.-J. 1994. Some comments of rare and endangered liverworts in mainland China. *Arctoa* 3: 7-12.

Frullania as epiphyll

My name is Matt von Konrat and I am studying for a PhD at the University of Auckland. Dr John Braggins is my main supervisor. The title of my thesis is "a study of the liverwort genus *Frullania* in New Zealand". The focal point of this study will be to examine the relationship between the New Zealand taxa and overseas taxa in order to help resolve the taxonomic problems in the genus. The information obtained from the taxonomic study will provide the foundation for research investigating the ecology, conservation and biology of *Frullania* species.

On a recent field trip I collected some *Frullania* growing as an epiphyll at high altitude from several locations (1000m and 1300m). I was wondering if this is an aspect of its growth previously undescribed? I am unable to find any publications describing this growth habit. I am interested in publishing an account of this. I was wondering if anyone knew of any published records existed and/or unpublished records.

Thanks, Matt von Konrat

Email: MVONKONRAT@sbsnov2.auckland.ac.nz

New literature

“GENERA OF HEPATICS” by O. Yano and S. R. Gradstein

This booklet provides a quick reference to all accepted generic names of hepatics, synonyms and families to which they belong. A taxonomic arrangement of the genera according to families is also provided. The booklet should be a very handy tool for use in herbarium management and other purposes. This publication (paper bound, 29 p.) is distributed by the “Systematisch-Geobotanisches Institut der Universität Göttingen”. Those interested in obtaining this publication should write to the address below, enclosing US\$ 3 (in cash) or DM 6 (in Eurocheque, please note cheque card number on reverse side) per copy, US\$ 25 (in cash) or DM 40 (in Eurocheque, please note cheque card number on reverse side) per 10 copies. Price includes postage. Because of the high bank charges, payments can not be made in other type of cheques.

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Shelyah-Sosonko, Yu. R. (ed. in chief). 1996. *The Red Data Book of Ukraine. Vegetable Kingdom. Kyiv: Ukrainska Entsyklopediya. 608 pp.* [In Ukrainian with English summary].

The second edition of the Red Data Book of Ukraine was prepared some years ago but published last year. It is divided into five sections to include reviews of 541 plant and fungi taxa: vascular plants (439 species), bryophytes (28), algae (17), lichens (27), and fungi (30). The reviews are compiled by leading Ukrainian specialists for every group involved. Species reviews are arranged in systematic order and designed in the following format: plant (fungus) name, family name, scientific importance, population status according to the IUCN Red Data Book and European Red List categories, distribution in and beyond Ukraine, habitats, causative factors, general morphological characteristics and conservation measures. Each review is supplied with a colour illustration and distribution map in the country. The book also provides the official legislative documents.

V. Virchenko, Inst. of Botany, Tereshchenkivska 2, 252 601 Kyiv, Ukraine

MOSS GARDENING, including lichens, liverworts, and other miniatures by George Schenk

At last, a comprehensive, up-to-date, sensible book on growing mosses and similar things. The perfect answer to those frequent queries from gardeners about how to grow mosses, or for that matter to those who want an introduction to mosses, including what's not a moss. Sections include transplanting, propagating, and growing mosses in containers, for bonsai, and as ground covers.

261 pages, 97 beautiful color plates. Hard cover. 1997. Prices, postpaid: \$38.50 U.S. addresses; \$39.50, all other addresses.

The 3rd European Conference on the Conservation of Bryophytes

The Scientific Basis for Bryophyte Conservation
in

Trondheim, Norway

31 August — 4 September 1998

The symposium will cover the following main topics

- What is a rare species
- Where do we find rare species
- How do we select species for conservation and how to conserve them

There will also be two days of excursions during the conference.

There are a number of possibilities for accommodation in Trondheim, from high standard hotels to fairly inexpensive hostels. Details will follow in the 2nd circular.

Pre-registration: Please send the Name, Address (incl. email if possible) to Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, Trondheim, Norway, not later than **1 February 1998**. Indicate (with preliminary title) if you intend to give a presentation/poster.

Bryology at the Rijksherbarium, Leiden

During his latest visit to Leiden W. Meijer celebrated his return to bryology (with which he is to be congratulated) and enthusiastically inaugurated himself "in a short ceremony crowned with a calyptra made by MRS Schreuder, the only person there left on the Bryology payroll". Fortunately, however, the present bryological conditions at the Rijksherbarium are not as poor as it may look.

It is true that no bryologist occupies a permanent staff position, and none can be appointed because all vacancies remain blocked by the university. This is a matter of grave concern to the bryologists and the management of the institute alike, but bryology at Leiden is not dead!

At present three bryologists are working here. Niels Klazenga is the one only who gets paid for it. He holds a temporary position (for 4 years) and is working on *Dicranoloma* for the area covered by Flora Malesiana, consisting roughly of Malaysia, Indonesia, the Philippines, and Papua New Guinea. He has completed a revision of the species and is now preparing a cladistic analysis of *Dicranoloma* and *Dicranum* in an attempt to clear the relationships between these and other genera of the Dicranaceae. At present he is doing field work in Borneo. Thereafter, he will attend the Beijing meeting and present some results of his work.

Hans Kruijer (Hypopterygiaceae) and Dries Touw (Thuidiaceae) continue their bryological research at the institute in honorary position. Finally, curatorial assistant Mrs. Birgitta Schreuder-Sternemark takes care of specific bryological jobs.

Bryology at Leiden is weak, but not dead, and we keep working towards a full recovery!

Niels Klazenga (klazenga@rulhb.LeidenUniv.nl), Hans Kruijer (hkruijer@rulhb.LeidenUniv.nl), Dries Touw (touw@rulhb.LeidenUniv.nl)

Iwatsukia jishibae on Lava Flows

Iwatsukia jishibae (Kitagawa 1964) is a species of an interesting genus which has a brief taxonomic history (Kitagawa 1964, Grolle 1965, Schuster 1968). But the ecology and life strategy of this species have not really been examined.

During our expedition to Reunion Isle we collected this species from different areas and surfaces. The most interesting habitats were the young (10-20 years old) lava flows of the volcano called Piton de la Fourmese, where this species has a large cover on the rough and porous surface of the lava. On these areas, which are in the early stages of succession, *Iwatsukia jishibae* prefers the deeper parts. It can be found 70 cm deep in the lava. We have some data of *I. jishibae* collected in Borneo, Madagascar and Reunion. On the basis of these specimens this species occurs on dead trunks, living trunks (most frequently), sometimes on rocks or soil. However, they were collected mainly in elfin or rain forests, not open lava flows. Considering these facts the most interesting question is whether this species has an invasive or a pioneer character on these areas?

In order to examine this phenomenon more exactly we would be glad to get some information (publications or other data) about *Iwatsukia jishibae* occurring on lava.

P.E. Konya, Eszterhazy Karoly
Teachers College, H-3301 EGER, Pf.:
43, HUNGARY

E-mail: novtan@gemini.ektf.hu

Insider Tip-Off

The famous bibliography "Current Contents" is accessible through Internet. All records since 1994 can be searched for online. Current Contents include since some years also some bryological journals (Journal of Bryology, The Bryologist). The importance of Current Contents is, however, to search for bryological items in journals which are not so known amongst bryologists.

Flora of Australia

Australian Biological Resources Study (ABRS) will publish the first of the three bryological volumes in the Flora of Australia series in 1998. This volume will contain chapters on the history of Australian bryology, the biology of mosses, the ecology and biogeography of mosses, the fossil record, a key to genera and taxonomic treatments of several families. At short notice new authors have to be found for a number of these families:

Splachnaceae

Splachnobryum (2) *Tayloria* (6-8)

Mniaceae

Orthomnion (1) *Plagiomnion* (1)

Bartramiaceae

Bartramidula (1) *Breutelina* (8-11)

Conostomum (4) *Philonotis* (8-12)

Rhizogoniaceae

Bryobrothera (1) *Goniobryum* (1)

Hymenodon (1) *Leptotheca* (1)

Mesochaete (2) *Pyrrhobryum* (6)

Rhizogonium (5)

Here is an opportunity to contribute to a prestigious Flora series. ABRS would greatly appreciate hearing from any bryologists interested in preparing a flora treatment of any of these families or parts of these families. All authors will receive a complimentary copy of the Volume valued at about AUS\$80.

Because of the short time available, we are looking for a 'status quo' treatment. There is likely to be little time for in-depth new research.

If you are interested in contributing, please contact either:

Dr A.E. Orchard, ABRS, GPO Box 636, Canberra, ACT 2601, Phone: +61 6 2509442, Fax: +61 6 2509448, Email: tony.orchard@dest.gov.au

or

C. Grgurinovic, Phone: +61 6 2509 446, Email: cheryl.grgurinovic@dest.gov.au

Current Contents can be accessed in Internet through the University of Toronto: <http://utcat.library.utoronto.ca8002/db/CCBACK/search.html>

Jan-Peter Frahm (frahm@uni-bonn.de)

Future meetings of the British Bryological Society

The following meetings are planned by the BBS over the coming year. Contact local secretaries if you are interested in attending. Members are reminded to read the BBS Safety Code, which is published in Bulletin 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

Summer Field Meeting 1997 (I), North-east Yorkshire, 13-20 August.

Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815.

The headquarters hotel will be the Beansheaf Hotel, Malton Road, Kirby Misperton, Malton, YO17 0UE (Tel. 01653 668614). This hotel is 2½ miles south of Pickering and has been chosen because it has a good mix of accommodation, all en suite. Pickering is a popular tourist area, 20 miles from Scarborough, so early booking is recommended. There is plenty of varied accommodation available in the area, details of which will be supplied on request.

The last meeting of the Society in north-east Yorkshire was held in 1967, based in Northallerton, when most sites visited were in the western part of the county. This meeting will visit several sites covered on that occasion, but concentration will be more easterly. The sites to be visited will be varied. At least two days will be spent on acidic sandstone uplands and will include broadleaved woodlands, gills and griffs, as well as two bogs. Species in the wooded valleys could include *Discelium nudum*, *Dicranella subulata*, *Harpanthus scutatus*, *Herzogiella seligeri*, *Bazzania trilobata*, *Calypogeia integristipula*, *Hygrobiella laxifolia*, *Jungermannia hyalina*, *J. obovata*, *J. paroica*, *J. pumilum* and *J. sphaerocarpa*, and also *Radula complanata*, *Scapania umbrosa* and *Tritomaria exsectiformis*. Fen Bog has thirteen *Sphagnum* species and *Philonotis*

caespitosa, *Barbilophozia atlantica*, *Cephalozia macrostachya*, *Cladopodiella fluitans* and *Trichocolea tomentella*, whilst recent finds in the gills and griffs include *Brachydontium trichodes*, *Pohlia lutescens*, *Seligeria recurvata*, *Nowellia curvifolia* and *Jungermannia subelliptica*.

Several days will be spent in limestone country, where *Apometzgeria pubescens*, *Porella arboris-vitae* and *P. platyphylla* may be found. Further westwards, Duncombe Park NNR and Ashberry Meadows should be visited. If there is sufficient interest, a visit to Ingleby Greenhow can be arranged to see *Mielichhoferia elongata*. It would be nice to refind *Coscinodon cribrosus*, *Discelium nudum* and *Dicranella subulata* from here, not seen for many years. If time permits, we could visit Wass Bank to look for *Seligeria diversifolia*. Other bonuses would be *Acaulon muticum* and *Phascum floerkeanum* in stubble fields, not seen since the 1967 meeting.

Summer Field Meeting 1997 (II), North Italian Alps, 26 July-4 August.

Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Università, Viale Mattioli 25, I-10125 Turino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfur-long Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861.

The Italian Western Alps are not well known from the bryological point of view. There are many different habitats with a very interesting vascular flora, rich in endemic species, and probably also an interesting bryoflora, but there have been few bryological studies. It is hoped to visit a varied selection of habitats, including some well studied alpine bogs rich in bryophytes and the Valli di Lanzo, Susa and Chisone (Alpi Graie e Cozie). The bryophyte flora of most of these is sure to be rich but is at present unknown.

Annual General Meeting and Symposium Meeting 1997, Chichester, 12-14 September.

Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

This meeting will take place in the Chichester Inst. of Higher Education at Bishop Otter Campus. This is a college in a pleasant location with excellent modern accommodation and facilities. The city centre is within walking distance. Chichester is a very historic and attractive city and the Festival Theatre is also a major feature. There are other interesting places to visit in the Chichester area such as the open-air Weald and Downland Museum and Fishbourne Roman Palace. The College has indicated that any member who wishes to stay an extra night(s) may do so.

The field meeting on Sunday will be to one of the richer bryophyte areas in West Sussex, probably near Midhurst. On the Saturday night, it is proposed to have a celebration dinner to mark the 80th birthday of Dr. Harold Whitehouse.

Members who wish to make their own arrangements for accommodation may like to know that there is a good selection of B & B places (ca. £15 per night) within easy walking distance of the College.

Speakers will include (among others): Prof. Jeff Duckett (London Univ) - On protonemata, propagules, peristomes and phylogeny (or some mosses seem to be wrongly placed).

Mr. Malcolm Watling (Margate, Kent) - Bryology in Kent since Trudy Side.

Dr. Harold Whitehouse (Cambridge) - A presentation of stereoscopic slides.

Bryological Workshop 1997, London (date to be announced).

Local secretary: Dr. Ken Adams, Dept of Biology & Biochemistry, Univ of East London, Romford Road, London, NE15 4LZ. Tel.: 0181 5907722.

Topic to be arranged.

Spring field meeting 1998, Basse Normandie (Lower Normandy), France, March/April (date to be arranged).

Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. e-mail: J.Bates@ic.ac.uk.

The meeting will be of one-week's duration and organised along similar lines to the Brittany Field Meeting in 1993, probably in the week preceding the main Easter holiday and running from Saturday to Saturday. The headquarters hotel will (provisionally) be in the seaside town of Granville, which is probably the most central and pleasantly situated of the possibilities. There are convenient ferry crossings to Cherbourg, Caen and even St Malo.

The excursions will be into the departments of Manche, Calvados and Orne and include the rugged Cotentin Peninsula with similarities to Brittany, and the undulating and pleasantly wooded bocage countryside which has been likened to the English landscape as it was 50 years ago. There have been many Atlantic species recorded on this extension of the Armorican Massif and preliminary investigations by Jeff Bates suggest that there is still a lot to find. The main previous work is the flora for Manche by Corbiere (1889) and recent studies by Alain Lecoite of Caen University. It is hoped that the party will be able to visit coastal cliffs and dunes near Granville and further north on Cotentin; the main forest and heath areas in Calvados and Orne including the Normandie-Maine Regional Park area; the sandstone gorges of the Orne valley which have some Mediterranean-Atlantic species and the granite ravine of the Vire; bogs in Manche (peat is used to fire a power station here); rocky hillsides; and a day trip to the French Channel Islands – Iles Chausey. There will many opportunities to study epiphytes on town trees and stubble fields, and to visit interesting sites like Mont St Michel.

Tropical Bryology course in Merida, Venezuela

Yelitza Leon V., Centro Jardin Botanico, Facultad de Ciencias, Universidad de Los Andes, Merida-Venezuela.

Twenty participants from eight countries met in Merida-Venezuela for the Tropical Bryology course that was held from February 24 to March 7 this year. The course was organized by the Centro Jardin Botanico of the Universidad de Los Andes, Merida, Venezuela and taught by the visiting professors Dr. Tamas Pócs (Eger, Hungary) and Dr. Jan-Peter Frahm (Bonn, Germany). This event was partially financed by CONICIT and FUNDACITE-Merida and the Postgraduate Studies Office of the University in Merida. In bilingual lectures (English-Spanish) the participants learned about morphology, taxonomy, and ecology of tropical bryophytes. Dr. Pócs talked about hepatic morphology, dispersal, diversity in the most stimulating way and Dr. Frahm, always enthusiastic, told us about morphology, taxonomy, ecology and distribution of mosses. Fieldtrips were made to the cloud forest just behind the university campus and (by cable car) to the paramos and subparamos of the Sierra Nevada. All enjoyed a great atmosphere with a group of experienced bryologists and bryology students.

The course the participation of Dr. Raymond Stotler and Dr. Barbara Crandall-Stotler (USA). Barbara gave us the most wonderful lecture on branching patterns.

In our fieldtrips we learned from Dr. Pócs and Frahm techniques for ecological studies, how to study plots and phytosociological relevés and how to measure climatic conditions such as light intensity, temperature and humidity as well as the use of dataloggers.

The most attractive topic was experience in tree climbing techniques, which was provided by a graduate student from Bonn University.

Once in the computer room Dr. Frahm demonstrated how to use software to process ecological data and other programs for cladistic, phenetic and community studies.

In the Sierra Nevada de Merida we visited the type locality of *Ruizanthus venezuelanus* Schust. (the logo plant of our course, which appeared also on the course T-shirt) and found many other interesting species. A very weird *Fossombronia* found at 4000 m will keep Drs. Stotler busy for some time.

The participants were: Margarita Escobar (Medellin, Colombia), Oscar Orrego Santa (Bogota, Colombia), Virginia Freires (Guatemala), Rosa Isela Meneses (Bolivia), Amalia Beatriz Biasuso (Argentina), Ines Sastre D-J. (Puerto Rico), Carmen Reyes (Puerto Rico), Abeliz Rosado (Puerto Rico), Sobeida Escoria A. (Puerto Rico), Patxi Heras (Spain), Marta Infante (Spain), Javier Estrada (Spain), Claudia Horning (Venezuela), Claudia Garbiso (Venezuela), Yrene Davila (Venezuela), Ana Escalona (Venezuela), Ricardo Rico (Venezuela), and myself.

This experience enriched us not only bryologically but also personally, tightened relations among bryologists of neighboring countries in Latin America, and with Europe and the USA. In addition, the course allowed young Latin American bryologists to learn the world of tropical bryophytes in our own surroundings.

Minutes for IAB Council Meeting

Beijing, May 27, 1997

The Chairman called the meeting to order at 7:30 p.m.

Present were T. Cao, C. Delgadillo M., J.-P. Frahm, T. Hallingbäck, M. Ignatov, T. Koponen, R. Seppelt, L. Söderström, D. Vitt.

1. Minutes from the Mexico meeting in 1995: Read and accepted with change to item eight.

2. Treasury Report by D. Vitt

Income

*Dues (incl. NBS & Arctoa)	15869.89
Interest	613.12
Capital Gains	1371.98
Sphagnum Symposium	4500.00
Mutual Fund Increase	3560.27
Total Income	25915.26

Expenses

Postage	1673.65
Photocopying	445.00
Salaries	1100.00
Secretarial Supplies	46.23
S. Greene Award (1995)	1000.00
Hattori Prize	400.00
NBS (pd)	266.00
Arctoa(pd)	400.00
Total Expenses	6238.41

BALANCE MAY 25, 1997

INCL. COMMITMENTS **42895.15**

Commitments (1997)

Endangered Species Fund	388.00
Hattori Prize	400.00
Stanley Greene Award	4000.00
Arctoa	1426.23
NBS	1518.56*
Next Sphagnum Symposium	4500.00
Total Commitments	12232.79

*IAB and NBS are collecting money for each other. Balancing with NBS was not done prior to this report.

There was some discussion of whether funds were invested to the best ability and the responsibility given to one person as the treasurer. A financial committee will be set up and chaired by the Secretary-Treasurer. A proposal was made by Frahm to consider raising fees to \$15 US with the extra \$4 going to research. Vitt suggested having donations, but it was felt this would not work. Delgadillo suggested \$1 raise and

Koponen suggested no raise. Decision made to not raise fees but to add a phrase to the dues notice and in The Bryological Times that persons "please contribute to the research fund".

3. Membership Report: Membership in IAB by regions in 1997 was:

Africa	5
Asia	23
Australia & New Zealand	27
China	30
Europe	239
E Europe	83
Japan	40
N & C America	140
S America	6
Total paying members	593.

This compares to 422 in 1993 and 495 in 1995. (At this time some of the persons who received The Bryological Times were not paying members). There was discussion over the small number of South American and African members. It was concluded that there are a number of bryologists in South America who are potential members, while in Africa the number of members probably reflects the actual number of bryologists. C. Delgadillo will take prospectus and copies of The Bryological Times to the Latin American Society to see if he can encourage members. S. Vitt is to send copies to him plus the names of current members.

4. The Bryological Times Report by L. Söderström: Six issues of The Bryological Times were not always possible due to lack of material. Suggestions for new organization included: 1) Editors to be formally appointed every two years with re-appointments possible. 2) Spread out responsibility by selecting six Regional Editors from around the world who will do one main article for The Bryological Times per year among other things. Six persons have been asked to serve as editors but only three have answered yet. 3) Column Editors

will be appointed for two years only. The number will vary and new Column Editors can be added as needed. They should contribute at least once a year. 4) A literature column needs to be added, including book reviews. A motion was made by J.-P. Frahm that the arrangements for the above be made by the editor and these changes be printed in The Bryological Times. These changes were accepted.

5. Meeting in St. Louis in 1999: The program at the International Botanical Congress consists of symposia and a combined poster session. Deadline for subject of symposia is September, 1997. Suggestion was made by D. Vitt that a committee be set up to organize the symposia. R. Seppelt commented that we should co-ordinate with ABLs in arranging symposia. A proposal was made to select 3-4 persons to set up at least two (and up to several more) symposia. The committee suggested B. Mishler, M. Crosby, and M. Ignatov be asked to serve on this committee. They were to check if there were other costs involved besides the registration fees.

6. IAB Meeting in 2001: There was a proposal from India to host this meeting. Spain had been asked to put forth a proposal, but had not done so. Vitt made a motion for the meeting to be held in India, it was seconded and passes with 5 votes against 3. Delgadillo and Frahm will put together a proposal for the 2003 meeting in South America. In 2005 the meeting will again be held with the International Botanical Congress.

7. Nomination for Awards:

Stanley Greene Research Award: 1800 CDN to G. Dauphine from Costa Rica to study Lejeunaceae and 2200 CDN to Fu Xing of China do research in Canada. They will have to submit receipts for usage of money and a report

within a time period of one year. They should also include a line crediting this support in their publication.

Richard Spruce Plaque: Recommendation to accept (secret) nomination and make presentation to recipient at the Business Meeting. Award given to Timo Koponen.

Hattori Prize: 400 CDN for "Prodromus Bryologiae Novo-Granatensis: An Introduccion a la Flora de Musgos de Colombia" by Steven P. Churchill and Edgar L. Linares C.

The President appointed committees for the nominations of recipients of IAB awards: Richard Spruce Plaque for the 2001 meeting (Timo Koponen {as 1997 winner} plus three others to be decided in St. Louis), the Stanley Greene Award (T. Koponen, H. Deguchi and C. Delgadillo, chaired by D. Vitt, Secretary-

Treasurer), and the Hattori Prize (B. Crandall-Stotler, M. Ignatov and L. Söderström, chaired by T. Koponen, President of IAB). The Hedwig committee (W. Frey, H. Ramsay, W. Reese and T. Pócs) will make the decision about the 1999 medal and should be set the same as the Richard Spruce Award committee in 2001 and 2003.

8. Archives for Bryology cancelled as no longer needed.

9. The IAB Home Page is currently being organized and will be linked to other organizations.

10. Endangered Species Committee Report by T. Hallingbäck: Contributions to the fund for research on endangered species began in Mexico. Geissler, Gradstein, Hallingbäck, Pócs, and Tan make up the committee to decide the best use of these funds and they will

appoint Belland as a new member if he agrees. They will produce an action plan for endangered Bryophytes with the most needed research listed in a booklet with the IAB symbol. Recommended that they have a proposal for use of the funds by the St. Louis meetings.

11. Advances in Bryology by Royce Longton (given by Vitt): Vol. 6 done. Suggestions for Vol. 7. 1) Tropical Bryology and 2) Biodiversity & Conservation with Floristics included were suggested. Molecular biology was suggested for a future issue.

12. Constitution: Motion to amend constitution as presented by Vitt and Söderström, seconded by Delgadillo. Decision made to submit the proposal to the general membership for their approval.

General Annual Meeting to be held on Thursday, May 29.

Meeting adjourned.

News from the Herbaria

News from the Herbaria. Send contributions to the column editor: A. R. Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP, Wales, United Kingdom

Department of Botany, National Science Museum, Tokyo, Japan, moved to Tsukuba from Shinjuku in 1995 (cf. *Taxon* 44: 268, 1995). In view of the time-consuming activities involved in moving and re-housing the collections, the herbarium of the department (TNS) was temporarily closed from June 1995, and opened from May 1996. We now invite loan requests from recognized botanical institutions. We have expanded the size of our herbarium to provide more space for herbarium-related research. A new guest-house was also built to accommodate short- and long-term visitors.

For further information, please contact Dr Masanobu Higuchi, Department of Botany, National Science Museum, 4-1-1 Amakubo, Tsukuba, Ibaraki 305, Japan. E-mail: higuchi@kahaku.go.jp

Publication years for Illustrated Flora of Nordic Mosses

I often get questions regarding the actual years of publication for the first three fascicles of Elsa Nyholm's *Illustrated Flora of Nordic Mosses*. According to information provided by P. H. Enckell (Editorial Office, Ecology Building, S-223 62 Lund, Sweden; from where the flora can also be ordered), the following years are the correct ones. Fascicle 1 was published in 1987, fascicle 2 in 1990, and fascicle 3 in 1993.

PS! Anyone interested in the contents of the latest issues of *Lindbergia* (and the other journals edited at the Editorial Office in Lund) could check the following home page:

<http://www.oikos.ekol.lu.se>

Lars Hedenäs, Swedish Museum of Natural History, Dept. of Cryptogamic Botany, Box 50007, S-104 05 Stockholm, Sweden. e-mail: lars.hedenas@nrm.se

Course on Tropical Mosses and Lichens in Ecuador

The Herbario QCA of the Catholic University of Ecuador invites you to the first course about Tropical Mosses and Lichens which will be in Quito on August 25th to September 5th. This course will be carried out with collaboration of: Dr. Harrie Sipman of Berlin University and Dr. Robert Gradstein of Göttingen University in Germany. We will have several field trips to important tropical rain forest in Ecuador.

For more information please contact:

Dr. Renato Valencia or Lcdo. Eduardo Barahona, Herbario QCA, Universidad Cartolica, Apartado 17-01-2184, Quito, ECUADOR. Email: rvalenci@pi.pro.ec, rvalenci@ecnet.ec or mcbarahona@puceuo.puce.edu.ec, FAX (593-2) 567 117, TEL/FAX (593-2) 371 788

New Constitution for the International Association of Bryologists

In the late 1980's, IAB Council decided to become independent from IAPT (International Association of Plant Taxonomists). This move gave us the opportunity to develop our own funds and budget them as we see fit. It also allowed us to better develop bryological interests outside of taxonomy. In other words, by being independent of IAPT, the Association can better serve all of bryology.

Also, the present constitution was formulated while IAB was affiliated with IAPT, and as a result our elections and terms of office were strongly tied to those of IAPT.

While the Council's decision to become independent from IAPT took effect some years ago, our constitution has never been updated to reflect these changes. Additionally, the constitution needs some 'house cleaning' to make it a more current document that we can all follow closely.

As a result of this background, Council discussed the constitution while at the Beijing meeting and unanimously recommends to the membership that we amend the constitution as proposed here. The Council presents an amended constitution; these amendments require a 2/3 majority acceptance by the voting

membership by mail ballot.

Below you find both the old and the proposed constitution. There are a number of small changes in the text. The main changes are marked as strike-through in the old text for deleted parts and underlined in the proposed text for additions and major changes.

Please review the old and the amended versions of the constitution as presented below and return your vote by mail before September 15, 1997, to Dale H. Vitt, Secretary-Treasurer.

Note: the ballot is on the same yellow form as the information for your new IAB address list request for information.

Old Constitution

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Article 2. ~~The Association shall be affiliated to the International Association for Plant Taxonomy (I.A.P.T.) on the basis of Article 3, section 4, of the Constitution of that Association.~~

Section 2. Objectives and Means

Article 3. The objectives of the Association shall be to promote international co-operation and communication among bryologists, whether amateur or professional.

Constitutional Changes as recommended by IAB Council May 27, 1997 in Beijing, for ratification by the membership

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Section 2. Means and Objectives

Article 2. The Association is an international, non-profit society whose financial records reside with the current Secretary-Treasurer.

Article 3. The objectives of the Association shall be to promote international co-operation and communication among persons interested in bryophytes.

Article 4. ~~The objectives of the Association shall be pursued by the same methods and procedures as those provided in the I.A.P.T., either jointly or independently, but normally under the aegis of that Association. The methods of the Association shall include:~~

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter, ~~the publication of a regular list of all new taxa, at every level, from the world's literature; the periodic publication of an up-to-date address list of the world's bryologists;~~ and issues that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary of the I.A.B. ~~or I.A.P.T.~~ and payment of the appropriate fee.

Article 7. ~~Membership of the Association shall be open without payment of an additional fee to any personal member of the I.A.P.T. in good standing, who may desire to become a member of the I.A.B.~~

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary, and ten Councillors. Normally not more than two members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office between two Business meetings of the Association and shall not be eligible for re-election to the same office. The Councillors shall hold office between three Business Meetings; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office between three Business Meetings and shall be eligible for re-election.

Article 4. The objectives of the Association shall be:

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter and items that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary-Treasurer of the I.A.B. and payment of the appropriate fee.

Article 7. Non-profit bryological societies can be affiliated to the I.A.B. Affiliated societies may use the newsletters and the other I.A.B. channels free of charge. Commercial journals or publishers may use the I.A.B. network by paying an amount decided at any time by the current Executive Committee.

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary-Treasurer, the Editor of The Bryological Times, and ten Councillors. Normally not more than three members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office for 4 years and shall not be eligible for re-election to the same office. The two Vice-Presidents shall not be elected simultaneously. The Councillors shall hold office for 4 years; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary-Treasurer shall hold office for 6 years and shall be eligible for re-election.

Article 11. The Editor of The Bryological Times shall be appointed by the council for two year terms and be eligible for reappointment.

Article 11. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President until the next Business Meeting of the Association.

Article 12. The Council may at any time co-opt additional members for special purposes; ~~for example, the Association will eventually need the services of an Editor and a Bibliographer.~~

Article 13. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5. Meetings and Elections

Article 14. The Association shall meet at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each International Botanical Congress or at an appropriate International Congress. The time interval between two Business Meetings shall normally be at least four years and not more than six years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings.

Article 15. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the offices of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 16. At least seven months prior to a Business Meeting of the Association, the President shall appoint an ad hoc Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 17. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chairman of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency.

Section 7. By-Laws and Amendments

Article 18. The Council shall have power to make by-laws for carrying into operation the terms of the Constitution.

Article 12. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President for the remaining term of office.

Article 13. The Council may at any time co-opt additional members for special purposes.

Article 14. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5 Meeting and Elections

Article 15. The Association shall meet biennially, including if possible at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each biennial meeting. The time interval between Business Meetings shall normally be every two years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings through the newsletter.

Article 16. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the office of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 17. At least seven months prior to a Business Meeting of the Association, the President shall appoint an Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 18. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chair of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency. Ballots shall be sent to the election judge, appointed by the President.

Section 6. By-Laws and Amendments

Article 18. The Council shall have the power to make by-laws for carrying into operation the terms of the Constitution.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require favourable vote of two-thirds of the votes cast.

However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favourable decision is then obtained, they shall be voted upon by mail vote.

By-Laws for IAB Committees

1. Such Committees as may be required to fulfill IAB's purposes shall be created on a temporary or unlimited basis, upon the decision of the Council.

2. The Chairman and Members of each Committee shall be appointed (and can be dismissed) by the Executive Committee. Unless otherwise specified, their commission ends with that of the Council, during which they were appointed; it can be renewed. The President and the Secretary of the IAB are ex-officio members of each Committee.

3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary of IAB who shall circulate them and report back to the Committees any comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chairman of that Committee, their use being fully accounted for in the Committee's reports.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require a favorable vote of two-thirds of the votes cast. However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favorable decision is then obtained, they shall be voted upon by mail vote.

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3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary-Treasurer of IAB who shall circulate them and report back to the Committees and comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chair of that Committee, their use being fully accounted for in the Committee's reports.

The IAB Meeting in 1999

In 1999, IAB will meet in St. Louis, Missouri in connection with the XVI International Botanical Congress. This meeting will consist only of posters and organized Symposia. IAB will be suggesting symposia to the organizing committee. We need your suggestions now as the deadline for proposals is September 15, 1997.

Please send your symposium proposals to the Secretary, Dale H. Vitt before September 1, 1997. **Symposium proposals must include the following:**

-at least two convenors, one of which is from outside of North America.

-a listing of seven speakers with the tentative title and abstract for a 20 minute presentation.

The IAB Council

The Current IAB Council is as follows (with end of term):

President: **T. Koponen**, Finland (1999)

Past President: Vacant

1st Vice President: **W. B. Schofield**, Canada (2001).

2nd Vice President: **R. E. Longton**, UK (1999).

Secretary-Treasurer: **D. H. Vitt**, Canada (1999)

Councillors: **H. Ando**, Japan (1999), **C. Delgado M.**, Mexico (1999), **P. Geissler**, Switzerland (1999), **N. Miller**, USA (1999), **L. Söderström**, Norway (1999), **B. Buck**, USA (2001), **T. Cao**, China (2001), **J.-P. Frahm**, Germany (2001), **M.**

Ignatov, Russia (2001), **R. Seppelt**, Australia (2001).

Editors (appointed): **L. Söderström**, Norway (1999), **T. Hedderson**, UK (1999), **H. Weibull**, Sweden (1999).

The Nominations committee seeks nominations for the following offices that are to be filled by general election at the 1999 St. Louis meeting

President

Second Vice-President

Secretary-Treasurer

5 Councillors

Nomination can be done on the enclosed yellow form. Dale Vitt will pass it on to the Chair of Nominations committee.

The Bryological Times is a newsletter published bimonthly for the *International Association of Bryologists*. Items for publication are to be sent to the Editors (preferably HW), **except** for those for the regular columns, which may go **direct** to the column editors

Deadlines for material to the Bryol. Times will be January 15, March 15, May 15, July 15, September 15 and November 15 with the publication shortly afterwards. Shorter notes may be accepted later if there is still space.

Editors

Lars Söderström, Dept of Botany, Norwegian University of Science & Technology, N-7055 Dragvoll, Norway. FAX +47 73596100.

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Henrik.Weibull@emc.slu.se

Terry Hedderson, Dept of Botany, University of Reading, Whiteknights, RG6 2AS Reading, UK. FAX +44 1 734 753 676.

T.A.J.Hedderson@reading.ac.uk

Column Editors

J.-P. Frahm & B. O'Shea (computer techniques); T. Hallingbäck (conservation); A. R. Perry (news from the herbaria); T. Pócs (tropical bryology); J. Vána (floristics and phytogeography).

The Bryological Times, founded in 1980 by Stanley Wilson Greene (1928-1989), is distributed from Beijing (China), Canberra (Australia), Edmonton (Canada), Eger (Hungary), Geneva (Switzerland), Hiroshima (Japan), Moscow (Russia), Praha (Czech Republic), St. Louis (USA) and Trondheim (Norway).

Production

Lars Söderström, Trondheim

For details regarding membership of to *International Association of Bryologists* (currently US \$ 11.- per year) write to Dale H. Vitt, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.

Email:svitt@gpu.ualberta.ca

DIARY

1997

July 5. Field meeting with DBLS. Bryophytes round Boxmeer. Contact person: L. Spier, Kon. Arthurpad 8, NL-3813 HD Amersfoort, The Netherlands.

July 26-August 4. BBS Summer Field Meeting in North Italian Alps. Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Universit, Viale Mattioli 25, I-10125 Torino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861

August 3 - 7. ABLs Annual Meeting in Montreal, Quebec. Information from: Brent D. Mishler, Dept. of Integrative Biology, University of California, Berkeley, CA 94720-2465 phone: (510) 642-6810 FAX: (510) 643-5390 Email: bmishler@garnet.berkeley.edu

August 8-10. Annual Meeting and Excursion with the Nordic Bryological Society on the Archipelago of Åland. Information from Hanna Jalkanen, P.O.Box 47, FIN-00014 University of Helsinki, Finland. Tel. +358 09 708 4725. Fax. +358 09 708 4726. Email hanna.jalkanen@helsinki.fi

August 13-20. BBS Summer Field Meeting in North-east Yorkshire. Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815

September 3-9. SVBL/BLAM Summer field trip. Sarnen (OW), Switzerland. Montane and subalpine forests and bogs on the northern slope of Central Alps. Contact Person: Dr. Engelbert Ruoss, Naturmus., Kasernenplatz 6, CH-6003 Luzern. Phone ++41-41-2285411; Fax 2285406; email: natur@centralnet.ch

September 12-14. BBS Annual General Meeting and Symposium in Chichester. Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

September 13-14. Field meeting with the Dutch Bryological and Lichenological Society at Zandpol, Z.O.Drente. Address: "De Zandpol", Stieltjeskanaal 14, 7764 A.J. Zandpol. Information: 0543-51 53 41 (The Netherlands).

September 17-20. XII Symposium on Cryptogamic Botany, Valencia, Spain. Information from: Felisa Puche, Dept. de Biologia Vegetal, Facultad de Ciencias Biologicas, Universitat de Valencia, Dr. Molinar 50, 46100 Burjassot, Valencia, Spain. Email: M.F.Puche@uv.es. <http://bioweb.uv.es/cripto97>.

October 3-5. Annual Blomquist Bryological Foray. Contact Person: Molly McMullen, Cryptogamic Herbarium, Box 90342, Duke University, Durham, NC, 27708-0342, USA. Phone: (919) 660-7300. Fax: (919) 660-7293, email: mmcm@duke.edu

November 8. Field meeting with the Dutch Bryological and Lichenological Society around Soest. Lichens. Information: 035-601 85 41 (The Netherlands).

1998

March/April (date to be decided). BBS Spring Field Meeting in Basse Normandie, France. Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. email: J.Bates@ic.ac.uk.

August 31-September 4. 3rd European Conference on the Conservation of Bryophytes. The Scientific Basis for Bryophyte Conservation. Trondheim, Norway. Information from Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, N-7055 Dragvoll, Norway. Tel. +47 73596061. Fax: +47 73596100. Email: Lars.Soderstrom@chembio.ntnu.no.

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Additions to the World Red List of Bryophytes

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SUMMARY

Since 1994 more than a hundred species names have been submitted to the IAB Committee on Endangered Bryophytes. Of these we have preliminary accepted 41 new additions to the 1994 list of IAB world most endangered bryophytes. The total number of listed species in the IAB Red List list includes 91 most endangered bryophyte species world-wide at present.

METHODS AND RESULTS

For the first World Red List of bryophytes in 1994 (Tan et al. 1994), 50 species were proposed (24 mosses, 25 liverworts and 1 hornwort). The publication of this list did not upset bryologists much because of its length. None of the species has been proposed

to be excluded or downlisted. Instead more than 100 new species were recommended for inclusion in the list since then.

As before, the selection was based on the following five criteria, namely, the species 1) must be threatened world-wide; 2) must be confined to a threatened habitat; 3) must have a narrow range; 4) is not overlooked or undercollected; and 5) has a unique morphology/biology or occupies a special evolutionary position.

A bibliographical search on all these species was made and potential candidates were transmitted to several experts for consultation. The list of candidates was then presented for public comment via the bryological internet, the BRYONET. Consequently, we have received several responses, especially information on the local geography of the endangered species; for which we are most thankful.

Several of the disqualified entries are

taxa whose current range or distribution is difficult to assess world-wide. Others are small species of disturbed sites whose habitats do not appear to be threatened by human activities. Many are simply rare, local endemics whose habitat threat has not been observed or identified. Also some names represent very recently described new species whose total range and habitat threat will need more time to assess or document.

We are publishing the updated list here for further comments before its official acceptance by IUCN (International Union of Conservation of Nature).

All in all, preliminarily we accept 16 mosses, 24 liverworts and 1 hornwort as additions to the IAB world most endangered bryophyte list.

DISCUSSION

It was not an easy task to select further candidates among these new proposals. Even for European and Macaronesian species, where the actual distribution should be relatively well known, honest

threat assessment is difficult to establish. But for many others, particularly in tropical regions, floristic knowledge is even poorer. Where recent literature still reports large regions of presence with many localities within the distribution area, the species were provisionally relegated in the last section of species not considered to be threatened at this moment. Likewise, all taxa with problems of taxonomical delimitation are not yet included.

We expect your comments, criticisms and contributions to be able to present an improved proposal taking into account all available knowledge on species living in endangered habitats. We are impatient to have your participation in constructive discussions.

Please send your comments to T. Hallingbäck at Swedish University of Agricultural Sciences, P.O. Box 7072, S-750 07 Uppsala, Sweden (email: tomas.hallingback@dha.slu.se), P. Geissler, Conservatoire et jardin botaniques, Case postale 60, CH-1292, Chambésy/Geneva, Switzerland (email: geissler@cjb.unige.ch) or B. C. Tan at the Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts, USA 02138 (email: btan@oeb.harvard.edu).

Acknowledgments. We would like to thank all who kindly sent us information and suggestions, especially S. Churchill, J. Enroth, J.-P. Frahm, J. Hasegawa, L. Hedenäs, M. Ignatov, Z. Iwatsuki, S. Jovet-Ast, N. Konstantinova, D. Long, B. J. Muñoz, B. O'Shea, G. Pant, R.A. Pursell, W.D. Reese, P.W. Richards through S. R. Gradstein, W. B. Schofield, G. Smith-Merrill, T. Spribille, L. Söderström, P. Tixier, J. Váda, A. Whittemore, and R. H. Zander. The Red Data Book of European Bryophytes was published in 1995, and several new inputs and proposals discussed in this paper came thanks to this working group (ECCB).

NEW CANDIDATES FOR THE IAB WORLD RED LIST OF BRYOPHYTES

Musci

Aschisma kansanum Andrews (Pottiaceae)

A North American endemic of a oligotypic, disjunctive American-European genus. The species is known from "unusual habitat" in three counties of Kansas State in USA. Crum and Anderson (1981) described the habitat as quartz pebbles in sandy Pleistocene gravels covered partly by the persistent protonema of this species. Because of its rarity, the populations are very threatened these days by over collection and also by cattle grazing in the area. Sources: Crum and Anderson, 1981; Smith-Merrill, *pers. comm.*, 1997.

Bryoxiphium madeirense Löve & Löve (Bryoxiphiaceae)

A Madeiran endemic of a morphologically unique genus in a monotypic family, the species is found on moist and dripping volcanic rocks in shaded streams in Laurus forest on the island. There are only five known localities for the species. Habitat threatened by the recent logging of Laurus forest for agriculture and pasture. Sources: Löve and Löve, 1953; ECCB 1995.

Crassiphylum fernandesii (C. Sérgio) Ochyra [syn. *Thamnobryum fernandesii* C. Sérgio] (Thamnobryaceae)

A Madeiran endemic restricted to about 10 populations in permanently wet habitats, such as dripping rocks or waterfalls, in the inner part of the island at high elevation above 1000 m. Habitat is threatened by the expansion of agriculture and pasturing. Sources: Ochyra, 1991; Hedenäs, *pers. comm.*, 1997.

Ditrichum cornubicum Paton (Ditrichaceae)

Endemic to Cornwall, England, the species is known from copper mine-wastes in two granitic areas. Plants grow on compacted, well-drained peaty, loamy or gravelly soil where the vegetation is sparse and open. In recent

years, one population is known to have disappeared from one of the two original sites. Habitat threatened by encroachment of coarse vegetation and excessive human disturbance as well as vehicles going around the sites. Sources: Paton, 1976; ECCB 1995.

Echinodium renauldii (Card.) Broth. (Echinodiaceae)

Endemic to Azores, this species grows on rocks in forested, shaded ravines and craters above 500 m alt. The species is also known from a Pliocene fossil in the Canary Islands. Habitat of laurel forests is threatened by logging brought by the changing land use policy. Sources: Churchill, 1986; ECCB 1995.

Flabellidium spinosum Herz. (Brachytheciaceae)

The species represents a monotypic genus known only from the type collection made in 1911 from Santa Cruz Cordillera, Bolivia. According to Enroth (1995), the ascending branching system of this epiphytic pleurocarpous moss is characteristically frondose reaching 1 cm tall. The forest vegetation of the type locality and vicinity has been logged and cultivated over the years. Probably extinct. Sources: Enroth, 1995; idem, *pers. comm.*, 1997.

Grimmia curviseta Bouman (Grimmiaceae)

An endemic of Canary Islands and Sardinia, this species grows on dry, exposed north-facing rocks at altitudes of 2,000- 2400 m. The habitat is vulnerable at present. Source: Greven, 1993.

Gymnostomum boreale Nyh. & Hedenäs (Pottiaceae)

Known only from a single locality in the mountain of Kulmakkapus in Kuu-samo Region of NW Russia where it has not been recollected after 1938. It is a species of boreal montane habitat threatened by local human activities in recent years. Sources: Hedenäs, *pers. comm.*, 1997; Söderström, *pers. comm.*, 1997.

Hypnodontopsis apiculata Iwats. & Nog. (Rhachithecaceae)

A Japanese endemic confined mainly to Honshu, this species has a restricted

habitat found growing on the bark of *Cryptomeria japonica* (rarely on pine tree) in gardens of buddhist temples, shinto shrines and old castles. The population at the type locality has disappeared because trees were cut down or knocked over by typhoon. The species is sensitive to air pollution in human habitation. Source: Iwatsuki, *pers. comm.*, 1997.

***Mamillariella geniculata* Lazar.
(Leskeaceae)**

A rare Russian endemic, this monotypic genus is known only from 5-7 localities in the southern part of Russian Far East near Khabarovsk. It is officially listed in the latest Russian Red Data Book for endangered plants. The forests in Russian Far East are today seriously threatened by the on-going economic development in the region. Sources: Buck, 1981; Ignatov, *pers. comm.*, 1997

***Neckeropsis pocsii* Enroth & Magill
(Neckeraceae)**

An endemic species of Mayotte, Comoro Islands, this species grows on boulders in mesic evergreen forest threatened by excessive logging according to T. Pócs who collected the type specimen. Sources: Enroth and Magill, 1994; Pócs, *pers. comm.*, 1994).

***Orthotrichum scanicum* Grönv.
(Orthotrichaceae)**

A rare European endemic known from a few localities in central Europe, Italy, Scandinavia and Russia (Baikal Lake?). The species grows on trunks and branches of conifers as well as broad-leaf deciduous trees. Its overall range has been observed to decline in recent years in Europe and many local populations have become extinct. The survival of this species is threatened by the felling of host trees and the increasing problem of air pollution in Europe. Sources: ECCB 1995; Ignatov, *pers. comm.*, 1997.

***Ozobryum ogalalense* G. L. S.-
Merrill (Pottiaceae)**

This monotypic endemic genus from the American Great Plains is a rarity confined to unusual habitat - strongly calcareous, porous rock outcrop ledges

charged with moisture, surrounded by prairie. It is known only from a single locality in Kansas State. According Merrill (*pers. comm.*, 1997), the location is threatened by cattle grazing and human disturbance. Sources: Merrill Smith, 1992; *ibid.*, *pers. comm.* 1997.

***Pinnatella limbata* Dix.
(Neckeraceae)**

Known only from a single locality in SW India from the Uttar Kanad (formerly North Kanara) District of Karnataka State, this species is rather unique biologically among the congeners in being a rheophyte attached to rocks in streams. The flora of southwestern India, including the Western Ghats, is known for its rich diversity and high endemism. The fast destruction of forests in SW India owing to population expansion is also well documented today. Sources: Enroth, 1994; O'Shea, *pers. comm.*, 1997.

***Tayloria rudolphiana* (Garov.)
Bruch & Schimp. [syn. *Tayloria delavayi* (Besch.) Besch.]
(Splachnaceae)**

Restricted to subalpine environs in central Europe and disjunctively in SW China (Yunnan as *T. delavayi*), this species is unique in Europe growing epiphytically on the droppings of birds left on trees. Habitat in China is on *Quercus* tree trunk (Koponen 1992). Habitats in Europe are vulnerable to inappropriate forest management and the felling of old trees where populations were found. Sources: A. Koponen, 1992; ECCB 1995.

***Thamnobryum angustifolium* (Holt)
Crundw. (Thamnobryaceae)**

This is a rare moss known only from one locality in Derbyshire, England. The plants grow on shaded limestone rock-face beside a calcareous spring or on rock in the stream. Although the site is in a nature reserve today, there is public pressure to build a footpath next to the site. The population is also threatened by frequent collections made by botanists and pollution of the spring. Sources: Hodgetts & Blockeel, 1992; ECCB 1995, O'Shea, *pers. comm.*, 1997.

Hepaticae & Anthocerotae

***Andrewsianthus ferrugineus* Grolle
(Jungermanniaceae)**
(in litt.), Grolle (1966), Hattori (1975), Long & Grolle (1990).

***Bazzania bhutanica* Kitag. & Grolle
(Lepidoziaceae)**

Known from only one locality in S Bhutan. The subtropical zone of the Himalaya is especially threatened. Source: Long (in litt.).

***Cololejeunea azorica* V. All. &
Jovet-Ast (Lejeuneaceae)**

Known from less than 20 localities on Madeira and the Azores. Epiphyllous. Sources: ECCB 1995, Sjögren 1975, 1978.

***Cololejeunea magnilobula* (Horik.)
Hatt. (Lejeuneaceae)**

Endemic epiphyllous species from Taiwan and Zhejiang (East China). Zhu (1995) considers it as distinct species. Source: Piippo 1990.

***Dendroceros japonicus* Steph.
(Anthocerotaceae)**

Growing exclusively on trunks, branches or leaves of trees and known to occur sporadically along the Pacific coast from Taiwan to central Japan. Disappearing from the northern parts of its distribution range, probably due to changing forest growth conditions. Source: Hasegawa (in litt.).

***Drepanolejeunea bakeri* Herz.
(Lejeuneaceae)**

Known from three localities on Luzon (Philippines). Threatened by extensive logging. Source: Tixier (in litt.).

***Drepanolejeunea senticosa* Bischler
(Lejeuneaceae)**

Cuba. Only known from the type specimen, leg. Wright ca. 1860. The species may be extinct or not understood. Source: Bischler 1964.

***Drepanolejeunea spinosa* Herz.
(Lejeuneaceae)**

Colombia (2 localities, leg. Killip 1922). These two species (*D. senticosa* and *D. spinosa*) have probably never been collected since. The species may be extinct or not understood. Source: Bischler 1964.

***Geothallus tuberosus* Campb.
(Sphaerocarpaceae)**

A monotypic genus, notable for its isolated phylogenetic position and its adaptations to extremely xeric conditions. Its morphology has been the subject of two detailed studies (Campbell 1896a, b, Doyle 1962). Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) conducted extensive searches for this taxon in the wild, and found eight population in this small area. Since then, the population of the San Diego urban area has doubled. Consequently the whole native range of *Geothallus* has been subjected to rapid, intense urban development. Source: Whittemore (in litt.).

***Haesselia roraimensis* Grolle & Gradst. (Cephaloziaceae)**

Endemic distinct genus of Cephaloziaceae, restricted to the foot of Mt. Roraima (Guyana), growing on rotten log between 550 and 1550 m. Source: Grolle & Gradstein 1988.

***Herbertus borealis* Crundw.
(Herbertaceae)**

Endemic to NW Europe: A single locality in Scotland and three in SW Norway. Sources: ECCB 1995, Birks in Hill & al. 1991.

***Kurzia sinensis* Chang in Chang & Gao (Lepidoziaceae)**

Only known from type specimen (Chekiang: Mt. Nanyentang, 300 m). Sources: Chang & Gao 1984; Mizutani & Chang 1986.

***Lepidozia azorica* Buch & H. Perss.
(Lepidoziaceae)**

Epiphytic endemic to the Azores, recently also discovered in the Canaries by Dirkse et al. 1993. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Leptoscyphus azoricus* (Buch & H. Perss.) Grolle (Geocalycaceae)**

Epiphytic endemic to the Azores. Occurrence very rare and local. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Radula jonesii* Bouman, Dirkse & Yamada (Radulaceae)**

Endemic to Canary Islands and Madeira, on wet shaded rocks in *Laurus* forests. Threatened by forest clearing. Source: ECCB 1995.

***Riccia atlantica* Sérgio & Perold
(Ricciaceae)**

Only known from a restricted area at the eastern end of Madeira. Threatened by urbanisation. Sources: ECCB 1995, Sérgio & Perold 1992.

***Riccia caroliniana* Na-Thalang
(Ricciaceae)**

Endemic Australian species known from few localities in the Northern Territory. Member of an isolated monotypic subgenus. Sources: Jovet-Ast (in litt.), 1984, 1987.

***Scapania sphaerifera* Buch & Tuomik. (Scapaniaceae)**

Representing a monotypic section characterized by spherical multicellular gemmae and pluriplicate perianth. Known from at least five localities in Russia in very small populations. Sources: ECCB 1995, Konstantinova (in litt.), Váda 1992, Konstantinova & Potemkin 1994.

***Scaphophyllum speciosum* (Horik.) Inoue (Jungermanniaceae)**

A monospecific genus with a disjunct distribution. Found in China, Bhutan, Taiwan, and recently in Nepal (by D. Long, unpubl.). In Taiwan it occurs on forest floor at 2000-2400 m. Sources: Váda & Inoue 1983, Long & Grolle 1990, Zhu & al. 1994.

***Schistochila macrodonta* W.E. Nicholson. (Schistochilaceae)**

Apparently the only two known localities are in Yunnan (Nicholson 1930) and Bhutan (Long & Grolle 1990). D. Long did not find it in Yunnan. Source: Long (in litt.).

***Sphaerocarpos drewei* Wigglesw.
(Sphaerocarpaceae)**

Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) reported this taxon as an associate of *Geothallus tuberosus* at seven sites. Aside from the protologue

(Wigglesworth 1929), these are the only reports of *S. drewei* in the literature. Source: Whittemore (in litt.).

***Sphaerocarpos hians* C. C. Haynes
(Sphaerocarpaceae)**

Endemic to the United States. This taxon was described by Haynes (1910). Historically known only from near Pullman, Whitman County, Washington and Moscow, Latah County, Idaho; recently found in Corvallis, Benton County, Oregon. It grows on mud of river bank. Poorly known. A seasonal ephemeral which is evident in summer (Pullman) and fall (Corvallis), when the water levels are low. Ref. Frye & Clark 1937: 106, 107. Sources: Whittemore and David H. Wagner (in litt.).

***Stenorhrips rhizomatica* Herz.
(Jungermanniaceae)**

Only known from the type locality in Sarawak (G. Dulit). The habitat of *S. rhizomatica* is endangered or probably already destroyed. Source: Richards, Gradstein (in litt.).

***Stephensoniella brevipedunculata* Kash. (Exoromotheceae)**

Monotypic genus which is endemic to the Kumaon region in Western Himalaya, rapidly disappearing due to uncontrolled urbanisation. Not seen since 1986. Sources: Pant (in litt.), Pant & Tewari 1995.

***Tylimanthus azoricus* Grolle & Perss. (Acrobolbaceae)**

Endemic to the Azores. Growing preferably on rocks in threatened habitats in few localities. Sources: ECCB 1995. Grolle & Persson 1966, Sjögren 1978.

TAXA NOT INCLUDED

The taxa below have also been submitted for inclusion in the Red List. However, these did not fully meet our criteria because they A) are considered to not be confined to threatened habitat, or B) are probably very much overlooked, or C) are not threatened worldwide or D) have taxonomical problems and delimitations.

***Acrobolbus wilsonii* Nees**

(Acrobolbaceae)

Endemic to atlantic Europe from Faeroes to Macaronesia. No indication of threat known. Source: ECCB 1995.

Aphanolejeunea madeirensis

(Schiffn.) Grolle (Lejeuneaceae)

Epiphyllous endemic to Madeira, restricted to the cloud zone of the northern part of the island, and to the Azores, where it may become locally fairly frequent. Sources: Sjögren 1975, 1978.

***Aphanolejeunea teotonii* V. All. &**

Jovet-Ast (Lejeuneaceae)

Endemic to Macaronesia. Epiphyllous species in mature *Laurus* forest. No indication of threat known. Source: ECCB 1995.

***Calypogeia fusca* (Lehm.) Steph.**

(Calypogeiaceae)

The only European member of the subgen. *Caracoma*. Outside the Azores the species is known from scattered localities from Ethiopia to South Africa. No information on threats is available. Source: Bischler 1970.

***Bazzania azorica* Buch & H. Perss.**

(Lepidoziaceae)

Endemic to Madeira and the Azores, on all type of substrates (Sjögren 1978). As reported in Grolle (1983), the species is closely related to the tropical Asiatic *B. praerupta* (Reinw. et al.) Trev. Needs further taxonomic studies. Source: Grolle 1983.

Brachythecium appleyardiae

McAdam & AJE Smith

(Brachytheciaceae)

A local endemic restricted to only 8 sites in Somerset, Wiltshire and Derbyshire in England. The species grows both on calcareous rocks and acidic sandstone wall. Habitat threatened by recent road construction and stone wall repair work. Needs further taxonomic studies. Source: McAdam and Smith 1981; ECCB 1995, M. Ignatov (*pers. comm.*).

***Calypogeia azorica* Bischl.**

(Calypogeiaceae)

Endemic to the Azores, closely related to African species, known from 5 locali-

ties only. Habitat requirements are badly known. Needs further taxonomic studies. Sources: Bischler 1970, Sjögren 1978

***Cephaloziella nicholsonii* Douin & Schiffn. (Cephaloziellaceae)**

Apparently endemic to SW England (Paton 1984), but commonly considered to be conspecific with *C. massalongi* (Spr.) Müll. Needs further taxonomic studies. Source: Paton 1984, ECCB 1995

***Cheilolejeunea cederkretzii* (Buch & Perss.) Grolle (Lejeuneaceae)**

Endemic to the Azores, growing on small twigs, leaves and mosses, very rare. The taxonomic relationships to African species of the tropical genus should be investigated. Sources: ECCB 1995, Grolle 1983, Sjögren 1978.

***Cololejeunea schaeferi* Grolle (Lejeuneaceae)**

Endemic to Macaronesia. No indication of threat known. Source: Dirkse & al. 1993.

***Forsstroemia stricta* Lazar.**

(Cryphaeaceae)

The species is known only from the type collection from Primorskij Territory in the Far East Siberia of Russia. Closely related taxa are found in S India and Taiwan. The forests in Russian Far East are today seriously threatened by forestry going on in the region. Needs further taxonomic studies. Sources: Ignatov and Czerdantseva, 1995; M. Ignatov (*pers. comm.*).

***Fossombronia fimbriata* Paton**

(Fossombroniaceae)

Described in 1974, it has been found since in scattered localities on damp soil and similar substrates in Ireland, Scotland and Wales, not yet on the European mainland. No indication of threat known. Source: Preston in Hill & al. (eds.) 1991.

***Fossombronia incurva* Lindb.**

(Fossombroniaceae)

Occurring on damp, sandy soils with a scattered distribution in western Europe. Mostly found along the sea coast and at shores of larger lakes. Not frequent but apparently not threatened everywhere. Sources: Müller 1954, Ludwig & al. 1996.

***Frullania illyrica* Grolle**

(Jubulaceae)

Known from 2 localities, one in Albania, the other in Slovenia. Needs further taxonomic studies. Source: Meyer & Grolle, 1963.

***Frullania polysticta* Lindenb.**

(Jubulaceae)

Probably endemic to Macaronesia. Closely related to the *F. tamarisci*-complex, but distinct. No indications on threats available. Sources: Hattori 1972, Vanden Berghen 1976.

***Herbertus azoricus* (Steph.)**

Richards (Herbertaceae)

Endemic to the Azores, related to African species. Growing on soil and bark. Common above 900 m. Sources: Sjögren 1978, Grolle 1983.

***Heteroscyphus denticulatus* (Mitt.)**

Schiffn. (Geocalyceaceae)

Macaronesian endemic, closely related to African and Australasian species. These relationships need further studies. Source: Grolle 1983.

***Jungermannia breviperianthia* Gao in Gao & Zhang**

(Jungermanniaceae)

Known from 3 localities in north-eastern China. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Jungermannia flagellalioides* (Gao)**

Piippo (Jungermanniaceae)

Only known from the type specimen. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Lejeunea hibernica* Grolle**

(Lejeuneaceae)

Growing over mosses in Ireland, also reported from the Azores, Canaries and Madeira, also in wet shaded crevices in cliffs. No indication of threat known. Sources: Müller 1958, Birks in Hill & al. 1991.

***Lejeunea mandonii* (Steph.) Müll.**

Frib. (Lejeuneaceae)

On wet rocks and trunks in Scotland, Ireland, England, Spain, Portugal, Madeira, Canaries. Rare, but probably

overlooked. Sources: Müller 1958, Birks in Hill & al. 1991.

***Marsupella andreaeoides* (Lindb.) Müll. Frib. (Gymnomitriaceae)**

Reported by Jørgensen (1934) from at least 30 localities in SW Norway. It is also known from a few localities in northernmost Sweden. No indication of threat known. Source: Jørgensen 1934, Våda and Hallingbäck, *pers. comm.*

***Marsupella fengchengensis* Gao & Chang (Gymnomitriaceae)**

Only known from the type specimen. Needs further taxonomic studies. Source: Piippo 1990.

***Metzgeria liaoningensis* Gao (Metzgeriaceae)**

Known from type locality and another locality. Source: Gao & Zhang 1981

***Plagiochila allorgei* Herz. & Perss. (Plagiochilaceae)**

On several substrates in mature *Juniperus* cloud forest. Endemic to the Azores. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Plagiochila atlantica* F. Rose (Plagiochilaceae)**

On rocks and trunks in western Scotland, also known from Ireland, north Wales and north-western France. No indication of threat known. Sources: Jones & Rose 1975. Averis in Hill & al. 1991.

***Plagiochila carringtonii* (Balf.) Grolle (Plagiochilaceae)**

Reported from western Scotland, Orkney and Faeroe islands in dwarf shrub communities. The variety *lobuchensis* Grolle occurs in Nepal and China. Sources: Long (*in litt.*), Müller 1956; Averis in Hill et al. 1991.

***Plagiochila norvegica* Blom & Holten (Plagiochilaceae)**

Only known from Norway (2 localities) and Sweden (1 locality). Needs further taxonomic studies. Sources: ECCB 1995, Blom & Holten 1988.

***Porella inaequalis* (Gott. ex Steph.) H. Perss. (Porellaceae)**

Closely related to *P. pinnata* L. Endemic to Madeira. Needs further taxonomic studies. Sources: Grolle 1983, Persson 1955.

***Radula carringtonii* Jack (Radulaceae)**

Occurs in small quantities on shaded rocks from western Scotland to SW Ireland, NW Spain and Macaronesia. No indication of threat known. Source: Birks in Hill et al. 1991.

***Radula holtii* Spruce (Radulaceae)**

On wet rocks in SW Ireland, Spain, Portugal and Macaronesia. Everywhere rare. No indication of threat known. Source: Birks in Hill 1991.

***Radula visianica* Mass. (Radulaceae)**

Known from the type locality near Padova in Italy and a second locality 100 km farther north. Neither taxonomy nor occurrence have been recently investigated. Sources: ECCB 1995, Müller 1956.

***Radula wichurae* Steph. (Radulaceae)**

Rare but perhaps overlooked Macaronesian endemic. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Riccia breidleri* Steph. (Ricciaceae)**

Endemic to the Alps region in Europe, presently known from less than 20 localities between 2100 and 2650 m on damp, weakly acidic soil of temporary pools of melting snow. Perhaps not conspicuous every year (shuttle species) and therefore overlooked. Listed on Appendix I of the Bern Convention (conservation of European natural habitats) and Annex 2 of the EC Habitats and Species Directive. Sources: ECCB 1995. Geissler 1984.

***Riccia gothica* Damsh. & Hallingb. (Ricciaceae)**

Only known from Sweden. However, relatively recently described taxon which presently not occur in any threatened habitats. Source: Damsholt & Hallingbäck (1987).

***Trichocoleopsis tsinlingensis* Chen ex M. X. Zhang (Neotrichocoleaceae)**

Known from at least four provinces in China. Source: Gao & Cao 1988, Zhu & al. 1994.

***Tylimanthus madeirensis* Grolle & Perss. (Acrobolbaceae)**

Endemic to Madeira. According to Jones (1981), close or even conspecific with *T. ruwenzorensis* S. Arn. Similar ecology as *T. azoricus*. Needs further taxonomic studies. Sources: ECCB 1995, Grolle & Persson 1966.

REFERENCES

Bischler H. 1964. Le genre *Drepanolejeunea* Steph. en Amérique Centrale et Méridionale. *Revue Bryologique et Lichénologique* 33: 15-179.

Bischler H. 1970. Les espèces du genre *Calypogeia* sur le continent africain et les îles africaines. *Revue Bryologique et Lichénologique* 37: 63-134.

Blom H.H. & J.I. Holten 1988. *Plagiochila norvegica*, a new hepatic from West Norway. *Lindbergia* 14: 8-11.

Buck, W. R. 1981. A re-interpretation of the Fabroniaceae, III: *Anacamptodon* and *Fabronidium* revisited, *Mamillariella*, *Helicodontiadelphus* and *Bryobartlettia* gen. nov. *Brittonia* 33: 473-481.

Campbell D.H. 1896a. A new California liverwort. *Botanical Gazette* 21: 9-13.

Campbell D.H. 1896b. The development of *Geothallus tuberosus* Campbell. *Annals of Botany* 10: 489-510.

Chang K.-C. & C. Gao 1984. *Plantae novae hepaticarum sinarum*. *Bulletin of Botanical Research* 4, 3: 83-99.

Churchill, S. P. 1986. A revision of *Echinodium* Jur. (Echinodiaceae: Hypnobryales). *Journal of Bryology* 14: 117-133.

Crum, H. A. and L. Anderson 1981. *Mosses of Eastern North America*, vol. 1. Columbia University Press, New York.

Damsholt K. & T. Hallingbäck (1987). *Riccia gothica*, a new species of Hepaticae from Sweden. *Lindbergia* 12: 100-102 "1986".

Dirkse G.M., A.C. Bouman & A. Losada-Lima 1993. Bryophytes of the Canary Islands, an annotated checklist. *Cryptogamie, Bryologie-Lichénologie* 14: 1-47.

Doyle W.T. 1962. The morphology and affinities of the liverwort *Geothallus*. *University of California Publications, Botany* 33: 185-268.

ECCB 1995. *Red Data Book of European bryophytes*. European Committee for the Conservation of Bryophytes, Trondheim, 291 pp.

Enroth, J. 1994. A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida). *Acta Botanica Fennica* 151: 1-90.

- Enroth, J. 1995. Commentary on the moss genus *Flabellidium* (Brachytheciaceae). *Fragmenta Floristica Geobotanica* 40: 743-747.
- Enroth, J. and R. E. Magill 1994. *Neckeropsis pocsi* (Neckeraceae, Musci), a new species from Comoro Islands. *Bryologist* 97: 171-173.
- Gao C. & T. Cao 1988. A study of *Trichocolea* Dum., *Trichocoleopsis* Okam. and *Netotrichocolea* Hatt. (Hepaticae) in China. *Investigatio et studium naturae* 8: 24-37.
- Gao C. & G.-C. Zhang 1981. Flora hepaticarum Chinae boreali-orientalis. Beijing, 220 pp.
- Geissler P. 1984. A propos de *Riccia breidler* Jur. ex Steph. en Suisse et Haute-Savoie. *Cryptogamie, Bryologie-Lichénologie* 5: 63-67.
- Greven, H. C. 1993. Proposal for a red data list of European *Grimmia* species. *Cryptogamie, Bryologie Lichénologie* Vol. 14: 401-404.
- Grolle R. 1966. Die Lebermoose Nepals. *Khumbu Himal. Ergebnisse des Forschungsunternehmens Nepal Himalaya* 1: 262-298.
- Grolle R. 1983. Hepaticae of Europe including the Azores: an annotated list of species, with synonyms from the recent literature. *Journal of Bryology* 12: 403-459.
- Grolle R. & S.R. Gradstein 1988. *Haeselia*, a new genus of Cephaloziaceae (Hepaticae) from Mt. Roraima, Guyana. *Journal of the Hattori Botanical Laboratory* 64: 327-334.
- Grolle R. & H. Persson 1966. Die Gattung *Tylimanthus* auf den Atlantischen Inseln. *Svensk Botanisk Tidskrift* 60: 164-174.
- Hattori S. 1972. *Frullania tamaric*-complex and the species concept. *Journal of the Hattori Botanical Laboratory* 35: 202-251.
- Hattori S. 1975. Anthocerotae and Hepaticae. In: H. Ohashi (ed.), *Flora of Eastern Himalaya. Third Report. Bulletin University Museum, University Tokyo* 8: 206-242.
- Haynes C.C. 1910. *Sphaerocarpus hians* sp. nov., with a revision of the genus and illustrations of the species. *Bulletin of the Torrey Botanical Club* 37: 215-230.
- Hill M.O., C.D. Preston & A.J.E. Smith 1991. Atlas of the bryophytes of Britain and Ireland. Vol. 1. Liverworts (Hepaticae and Anthocerotae). Colchester, 351 pp.
- Hodgetts, N. G. and T.L. Blockeel. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observation on *T. angustifolium* and *T. fernandesii*. *Journal of Bryology* 17: 251-262.
- Ignatov M.S. & V.YA. Czerdantseva 1995. The families Cryphaeaceae, Leucodontaceae and Leptodontaceae (Musci) in Russia. *Arctoa* 4: 65-104.
- Jones E.W. 1981. African Hepaticae XXXII. *Journal of Bryology* 11: 311-323
- Jones E.W. & F. Rose 1975. *Plagiochila atlantica* F. Rose, sp. nov. *Journal of Bryology* 8: 417-422.
- Jovet-Ast S. 1984. *Riccia* (subg. *Viridiquamata*) *caroliniana* Ne-Thalan, espèce endémique rélictuelle d'Australie. *Cryptogamie, Bryologie-Lichénologie* 5: 389-402.
- Jovet-Ast S. 1987. Vers une classification phylogénétique des espèces du genre *Riccia*. *The Bryologist* 90: 321-330.
- Jørgensen, E. 1934. Norges levermoser. *Bergens Museums Skr. Nr. 16. Bergen.* 343 pp.
- Konstantinova N. A. & A. D. Potemkin (1994). Studies on *Scapania sphaerifera* (Hepaticae). *Annales Botanici Fennici* 31: 121-126.
- Koponen, A. 1992. European-Asiatic connections in *Tayloria* (Splachnaceae, Musci). *Bryobrothera* 1: 57-62.
- Long D. G. & R. Grolle 1990. Hepaticae of Bhutan II. *Journal of the Hattori Botanical Laboratory* 68: 381-440.
- Ludwig G., R. Düll, G. Philippi, M. Ahrens, S. Caspari, M. Koperski, S. Lütt, F. Schulz & G. Schwab 1996. Rote Liste der Moose (Anthocerotophyta et Bryophyta) Deutschlands. *Schriftenreihe für Vegetationskunde* 28: 189-306.
- Löve, A. and D. Löve 1953. Studies on *Bryoxiphium*. *The Bryologist* 56: 183-199.
- McAdam S.V. & A.J.E. Smith 1981. *Brachythecium appleyardiae* sp. nov. in southwest England. *Journal of Bryology* 11: 591-598.
- Merrill, G. L. S. 1992. *Ozobryum ogalense* (Pottiaceae), a new moss genus and species from the American Great Plains. *Novon* 2: 255-258.
- Meyer F.K. & R. Grolle 1963. Eine neue *Frullania*-Art aus Albanien. *Feddes Repertorium* 68: 101-107.
- Mizutani M. & K. C. Chang 1986. A preliminary study of Chinese Lepidoziaceae Flora. *Journal of the Hattori Botanical Laboratory* 60: 419-437.
- Müller K. 1951-58. Die Lebermoose Europas. In: Dr. L. Rabenhorst's *Kryptogamen-Flora von Deutschland, Österreich und de Schweiz*. Band 6, 3. Auflage. Leipzig. 1365 pp.
- Nicholson W.E., T. Herzog & F. Verdoorn. Hepaticae. *Symbolae Sinicae* 5: 1-60.
- Ochyra R. 1991. *Crassiphylum* (Thamnobryaceae), a new moss genus from Madeira. *Fragmenta Floristica Geobotanica* 36: 71-79.
- Pant G. & S.D. Tewari 1995. Additional, up to date notes on Red list monotypic endemic liverwort taxa of Kumaon (Western Himalaya). *The Bryological Times* 83/84: 7.
- Paton J. 1984. *Cephaloziella nicholsoni* Douin & Schifffn. distinguished from *C. massalongi* (Spruce) K. Müll. *Journal of Bryology* 13: 1-8.
- Paton J. A. 1976. *Ditrichum cornubicum*, a new moss from Cornwall. *Journal of Bryology* 9: 171-175.
- Persson H. 1955. Remarks on the *Porella pinnata* group. *Archivum Societatis Zoologicae Botanicae Fennicae "Vanamo"* 9, suppl.: 225-231.
- Piippo S. 1990. Annotated catalogue of Chinese Hepaticae and Anthocerotae. *Journal of the Hattori Botanical Laboratory* 68: 1-192
- Sérgio C. & S. M. Perold 1992. A new species of *Riccia* L. from the island of Madeira, *Riccia atlantica* sp. *Journal of Bryology* 17: 127-132.
- Sjögren E. 1975. Epiphyllous bryophytes of Madeira. *Svensk Botanisk Tidskrift* 69: 217-288.
- Sjögren E. 1978. Bryophyte vegetation in the Azores Islands. *Memórias da Sociedade Broteriana* 26: 1-283.
- Tan B., Geissler, P. & Hallingbäck, T. 1994. Towards a World Red List of Bryophytes. *The Bryological Times* 77: 3-6; 78: 4-5.
- Váða J. 1992. Phytogeographically important hepaticae from the Altai Mts. (Russia). *Novitates Botanicae ex Universitate Carolina* 7: 27-32.
- Váða J. & H. Inoue 1983. Studies in Taiwan Hepaticae V. *Jungermanniaceae*. *Bulletin of the National Science Museum, Tokyo, Ser. B*, 9: 125-142.
- Vanden Berghen, C. 1976. *Frullaniaceae* (Hepaticae) africanae. *Bulletin du Jardin Botanique National de Belgique* 46: 1-220.
- Wigglesworth, G. 1929. A new Californian species of *Sphaerocarpus*. *University of California Publications, Botany* 16: 129-137.
- Wolery M.G. & W.T. Doyle 1969. The distribution of *Geothallus tuberosus*. *The Bryologist* 72: 413-417.
- Zhu, R.-L. 1995. *Cololejeunea* (Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83-109.
- Zhu, R.-L., Hu, R.-L. & Ma, Y.-J. 1994. Some comments of rare and endangered liverworts in mainland China. *Arctoa* 3: 7-12.

Frullania as epiphyll

My name is Matt von Konrat and I am studying for a PhD at the University of Auckland. Dr John Braggins is my main supervisor. The title of my thesis is "a study of the liverwort genus *Frullania* in New Zealand". The focal point of this study will be to examine the relationship between the New Zealand taxa and overseas taxa in order to help resolve the taxonomic problems in the genus. The information obtained from the taxonomic study will provide the foundation for research investigating the ecology, conservation and biology of *Frullania* species.

On a recent field trip I collected some *Frullania* growing as an epiphyll at high altitude from several locations (1000m and 1300m). I was wondering if this is an aspect of its growth previously undescribed? I am unable to find any publications describing this growth habit. I am interested in publishing an account of this. I was wondering if anyone knew of any published records existed and/or unpublished records.

Thanks, Matt von Konrat

Email: MVONKONRAT@sbsnov2.auckland.ac.nz

New literature

“GENERA OF HEPATICS” by O. Yano and S. R. Gradstein

This booklet provides a quick reference to all accepted generic names of hepatics, synonyms and families to which they belong. A taxonomic arrangement of the genera according to families is also provided. The booklet should be a very handy tool for use in herbarium management and other purposes. This publication (paper bound, 29 p.) is distributed by the “Systematisch-Geobotanisches Institut der Universität Göttingen”. Those interested in obtaining this publication should write to the address below, enclosing US\$ 3 (in cash) or DM 6 (in Eurocheque, please note cheque card number on reverse side) per copy, US\$ 25 (in cash) or DM 40 (in Eurocheque, please note cheque card number on reverse side) per 10 copies. Price includes postage. Because of the high bank charges, payments can not be made in other type of cheques.

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Shelyah-Sosonko, Yu. R. (ed. in chief). 1996. *The Red Data Book of Ukraine. Vegetable Kingdom. Kyiv: Ukrainska Entsyklopediya. 608 pp.* [In Ukrainian with English summary].

The second edition of the Red Data Book of Ukraine was prepared some years ago but published last year. It is divided into five sections to include reviews of 541 plant and fungi taxa: vascular plants (439 species), bryophytes (28), algae (17), lichens (27), and fungi (30). The reviews are compiled by leading Ukrainian specialists for every group involved. Species reviews are arranged in systematic order and designed in the following format: plant (fungus) name, family name, scientific importance, population status according to the IUCN Red Data Book and European Red List categories, distribution in and beyond Ukraine, habitats, causative factors, general morphological characteristics and conservation measures. Each review is supplied with a colour illustration and distribution map in the country. The book also provides the official legislative documents.

V. Virchenko, Inst. of Botany, Tereshchenkivska 2, 252 601 Kyiv, Ukraine

MOSS GARDENING, including lichens, liverworts, and other miniatures by George Schenk

At last, a comprehensive, up-to-date, sensible book on growing mosses and similar things. The perfect answer to those frequent queries from gardeners about how to grow mosses, or for that matter to those who want an introduction to mosses, including what's not a moss. Sections include transplanting, propagating, and growing mosses in containers, for bonsai, and as ground covers.

261 pages, 97 beautiful color plates. Hard cover. 1997. Prices, postpaid: \$38.50 U.S. addresses; \$39.50, all other addresses.

The 3rd European Conference on the Conservation of Bryophytes

The Scientific Basis for Bryophyte Conservation
in

Trondheim, Norway

31 August — 4 September 1998

The symposium will cover the following main topics

- What is a rare species
- Where do we find rare species
- How do we select species for conservation and how to conserve them

There will also be two days of excursions during the conference.

There are a number of possibilities for accommodation in Trondheim, from high standard hotels to fairly inexpensive hostels. Details will follow in the 2nd circular.

Pre-registration: Please send the Name, Address (incl. email if possible) to Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, Trondheim, Norway, not later than **1 February 1998**. Indicate (with preliminary title) if you intend to give a presentation/poster.

Bryology at the Rijksherbarium, Leiden

During his latest visit to Leiden W. Meijer celebrated his return to bryology (with which he is to be congratulated) and enthusiastically inaugurated himself "in a short ceremony crowned with a calyptra made by MRS Schreuder, the only person there left on the Bryology payroll". Fortunately, however, the present bryological conditions at the Rijksherbarium are not as poor as it may look.

It is true that no bryologist occupies a permanent staff position, and none can be appointed because all vacancies remain blocked by the university. This is a matter of grave concern to the bryologists and the management of the institute alike, but bryology at Leiden is not dead!

At present three bryologists are working here. Niels Klazenga is the one only who gets paid for it. He holds a temporary position (for 4 years) and is working on *Dicranoloma* for the area covered by Flora Malesiana, consisting roughly of Malaysia, Indonesia, the Philippines, and Papua New Guinea. He has completed a revision of the species and is now preparing a cladistic analysis of *Dicranoloma* and *Dicranum* in an attempt to clear the relationships between these and other genera of the Dicranaceae. At present he is doing field work in Borneo. Thereafter, he will attend the Beijing meeting and present some results of his work.

Hans Kruijer (Hypopterygiaceae) and Dries Touw (Thuidiaceae) continue their bryological research at the institute in honorary position. Finally, curatorial assistant Mrs. Birgitta Schreuder-Sternemark takes care of specific bryological jobs.

Bryology at Leiden is weak, but not dead, and we keep working towards a full recovery!

Niels Klazenga (klazenga@rulhb.LeidenUniv.nl), *Hans Kruijer* (hkruijer@rulhb.LeidenUniv.nl), *Dries Touw* (touw@rulhb.LeidenUniv.nl)

Iwatsukia jishibae on Lava Flows

Iwatsukia jishibae (Kitagawa 1964) is a species of an interesting genus which has a brief taxonomic history (Kitagawa 1964, Grolle 1965, Schuster 1968). But the ecology and life strategy of this species have not really been examined.

During our expedition to Reunion Isle we collected this species from different areas and surfaces. The most interesting habitats were the young (10-20 years old) lava flows of the volcano called Piton de la Fourmese, where this species has a large cover on the rough and porous surface of the lava. On these areas, which are in the early stages of succession, *Iwatsukia jishibae* prefers the deeper parts. It can be found 70 cm deep in the lava. We have some data of *I. jishibae* collected in Borneo, Madagascar and Reunion. On the basis of these specimens this species occurs on dead trunks, living trunks (most frequently), sometimes on rocks or soil. However, they were collected mainly in elfin or rain forests, not open lava flows. Considering these facts the most interesting question is whether this species has an invasive or a pioneer character on these areas?

In order to examine this phenomenon more exactly we would be glad to get some information (publications or other data) about *Iwatsukia jishibae* occurring on lava.

P.E. Konya, Eszterhazy Karoly
Teachers College, H-3301 EGER, Pf.:
43, HUNGARY

E-mail: novtan@gemini.ektf.hu

Insider Tip-Off

The famous bibliography "Current Contents" is accessible through Internet. All records since 1994 can be searched for online. Current Contents include since some years also some bryological journals (Journal of Bryology, The Bryologist). The importance of Current Contents is, however, to search for bryological items in journals which are not so known amongst bryologists.

Flora of Australia

Australian Biological Resources Study (ABRS) will publish the first of the three bryological volumes in the Flora of Australia series in 1998. This volume will contain chapters on the history of Australian bryology, the biology of mosses, the ecology and biogeography of mosses, the fossil record, a key to genera and taxonomic treatments of several families. At short notice new authors have to be found for a number of these families:

Splachnaceae

Splachnobryum (2) *Tayloria* (6-8)

Mniaceae

Orthomnion (1) *Plagiomnion* (1)

Bartramiaceae

Bartramidula (1) *Breutelina* (8-11)

Conostomum (4) *Philonotis* (8-12)

Rhizogoniaceae

Bryobrothera (1) *Goniobryum* (1)

Hymenodon (1) *Leptotheca* (1)

Mesochaete (2) *Pyrrhobryum* (6)

Rhizogonium (5)

Here is an opportunity to contribute to a prestigious Flora series. ABRS would greatly appreciate hearing from any bryologists interested in preparing a flora treatment of any of these families or parts of these families. All authors will receive a complimentary copy of the Volume valued at about AUS\$80.

Because of the short time available, we are looking for a 'status quo' treatment. There is likely to be little time for in-depth new research.

If you are interested in contributing, please contact either:

Dr A.E. Orchard, ABRS, GPO Box 636, Canberra, ACT 2601, Phone: +61 6 2509442, Fax: +61 6 2509448, Email: tony.orchard@dest.gov.au

or

C. Grgurinovic, Phone: +61 6 2509 446, Email: cheryl.grgurinovic@dest.gov.au

Current Contents can be accessed in Internet through the University of Toronto: <http://utcat.library.utoronto.ca/8002/db/CCBACK/search.html>

Jan-Peter Frahm (frahm@uni-bonn.de)

Future meetings of the British Bryological Society

The following meetings are planned by the BBS over the coming year. Contact local secretaries if you are interested in attending. Members are reminded to read the BBS Safety Code, which is published in Bulletin 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

Summer Field Meeting 1997 (I), North-east Yorkshire, 13-20 August.

Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815.

The headquarters hotel will be the Beansheaf Hotel, Malton Road, Kirby Misperton, Malton, YO17 0UE (Tel. 01653 668614). This hotel is 2½ miles south of Pickering and has been chosen because it has a good mix of accommodation, all en suite. Pickering is a popular tourist area, 20 miles from Scarborough, so early booking is recommended. There is plenty of varied accommodation available in the area, details of which will be supplied on request.

The last meeting of the Society in north-east Yorkshire was held in 1967, based in Northallerton, when most sites visited were in the western part of the county. This meeting will visit several sites covered on that occasion, but concentration will be more easterly. The sites to be visited will be varied. At least two days will be spent on acidic sandstone uplands and will include broadleaved woodlands, gills and griffs, as well as two bogs. Species in the wooded valleys could include *Discelium nudum*, *Dicranella subulata*, *Harpanthus scutatus*, *Herzogiella seligeri*, *Bazzania trilobata*, *Calypogeia integristipula*, *Hygrobiella laxifolia*, *Jungermannia hyalina*, *J. obovata*, *J. paroica*, *J. pumilum* and *J. sphaerocarpa*, and also *Radula complanata*, *Scapania umbrosa* and *Tritomaria exsectiformis*. Fen Bog has thirteen *Sphagnum* species and *Philonotis*

caespitosa, *Barbilophozia atlantica*, *Cephalozia macrostachya*, *Cladopodiella fluitans* and *Trichocolea tomentella*, whilst recent finds in the gills and griffs include *Brachydontium trichodes*, *Pohlia lutescens*, *Seligeria recurvata*, *Nowellia curvifolia* and *Jungermannia subelliptica*.

Several days will be spent in limestone country, where *Apometzgeria pubescens*, *Porella arboris-vitae* and *P. platyphylla* may be found. Further westwards, Duncombe Park NNR and Ashberry Meadows should be visited. If there is sufficient interest, a visit to Ingleby Greenhow can be arranged to see *Mielichhoferia elongata*. It would be nice to refind *Coscinodon cribrosus*, *Discelium nudum* and *Dicranella subulata* from here, not seen for many years. If time permits, we could visit Wass Bank to look for *Seligeria diversifolia*. Other bonuses would be *Acaulon muticum* and *Phascum floerkeanum* in stubble fields, not seen since the 1967 meeting.

Summer Field Meeting 1997 (II), North Italian Alps, 26 July-4 August.

Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Università, Viale Mattioli 25, I-10125 Turino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfur-long Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861.

The Italian Western Alps are not well known from the bryological point of view. There are many different habitats with a very interesting vascular flora, rich in endemic species, and probably also an interesting bryoflora, but there have been few bryological studies. It is hoped to visit a varied selection of habitats, including some well studied alpine bogs rich in bryophytes and the Valli di Lanzo, Susa and Chisone (Alpi Graie e Cozie). The bryophyte flora of most of these is sure to be rich but is at present unknown.

Annual General Meeting and Symposium Meeting 1997, Chichester, 12-14 September.

Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

This meeting will take place in the Chichester Inst. of Higher Education at Bishop Otter Campus. This is a college in a pleasant location with excellent modern accommodation and facilities. The city centre is within walking distance. Chichester is a very historic and attractive city and the Festival Theatre is also a major feature. There are other interesting places to visit in the Chichester area such as the open-air Weald and Downland Museum and Fishbourne Roman Palace. The College has indicated that any member who wishes to stay an extra night(s) may do so.

The field meeting on Sunday will be to one of the richer bryophyte areas in West Sussex, probably near Midhurst. On the Saturday night, it is proposed to have a celebration dinner to mark the 80th birthday of Dr. Harold Whitehouse.

Members who wish to make their own arrangements for accommodation may like to know that there is a good selection of B & B places (ca. £15 per night) within easy walking distance of the College.

Speakers will include (among others): Prof. Jeff Duckett (London Univ) - On protonemata, propagules, peristomes and phylogeny (or some mosses seem to be wrongly placed).

Mr. Malcolm Watling (Margate, Kent) - Bryology in Kent since Trudy Side.

Dr. Harold Whitehouse (Cambridge) - A presentation of stereoscopic slides.

Bryological Workshop 1997, London (date to be announced).

Local secretary: Dr. Ken Adams, Dept of Biology & Biochemistry, Univ of East London, Romford Road, London, NE15 4LZ. Tel.: 0181 5907722.

Topic to be arranged.

Spring field meeting 1998, Basse Normandie (Lower Normandy), France, March/April (date to be arranged).

Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. e-mail: J.Bates@ic.ac.uk.

The meeting will be of one-week's duration and organised along similar lines to the Brittany Field Meeting in 1993, probably in the week preceding the main Easter holiday and running from Saturday to Saturday. The headquarters hotel will (provisionally) be in the seaside town of Granville, which is probably the most central and pleasantly situated of the possibilities. There are convenient ferry crossings to Cherbourg, Caen and even St Malo.

The excursions will be into the départements of Manche, Calvados and Orne and include the rugged Cotentin Peninsula with similarities to Brittany, and the undulating and pleasantly wooded bocage countryside which has been likened to the English landscape as it was 50 years ago. There have been many Atlantic species recorded on this extension of the Armorican Massif and preliminary investigations by Jeff Bates suggest that there is still a lot to find. The main previous work is the flora for Manche by Corbiere (1889) and recent studies by Alain Lecoigne of Caen University. It is hoped that the party will be able to visit coastal cliffs and dunes near Granville and further north on Cotentin; the main forest and heath areas in Calvados and Orne including the Normandie-Maine Regional Park area; the sandstone gorges of the Orne valley which have some Mediterranean-Atlantic species and the granite ravine of the Vire; bogs in Manche (peat is used to fire a power station here); rocky hillsides; and a day trip to the French Channel Islands – Iles Chausey. There will many opportunities to study epiphytes on town trees and stubble fields, and to visit interesting sites like Mont St Michel.

Tropical Bryology course in Merida, Venezuela

Yelitza Leon V., Centro Jardin Botanico, Facultad de Ciencias, Universidad de Los Andes, Merida-Venezuela.

Twenty participants from eight countries met in Merida-Venezuela for the Tropical Bryology course that was held from February 24 to March 7 this year. The course was organized by the Centro Jardin Botanico of the Universidad de Los Andes, Merida, Venezuela and taught by the visiting professors Dr. Tamas Pócs (Eger, Hungary) and Dr. Jan-Peter Frahm (Bonn, Germany). This event was partially financed by CONICIT and FUNDACITE-Merida and the Postgraduate Studies Office of the University in Merida. In bilingual lectures (English-Spanish) the participants learned about morphology, taxonomy, and ecology of tropical bryophytes. Dr. Pócs talked about hepatic morphology, dispersal, diversity in the most stimulating way and Dr. Frahm, always enthusiastic, told us about morphology, taxonomy, ecology and distribution of mosses. Fieldtrips were made to the cloud forest just behind the university campus and (by cable car) to the paramos and subparamos of the Sierra Nevada. All enjoyed a great atmosphere with a group of experienced bryologists and bryology students.

The course the participation of Dr. Raymond Stotler and Dr. Barbara Crandall-Stotler (USA). Barbara gave us the most wonderful lecture on branching patterns.

In our fieldtrips we learned from Dr. Pócs and Frahm techniques for ecological studies, how to study plots and phytosociological relevés and how to measure climatic conditions such as light intensity, temperature and humidity as well as the use of dataloggers.

The most attractive topic was experience in tree climbing techniques, which was provided by a graduate student from Bonn University.

Once in the computer room Dr. Frahm demonstrated how to use software to process ecological data and other programs for cladistic, phenetic and community studies.

In the Sierra Nevada de Merida we visited the type locality of *Ruizanthus venezuelanus* Schust. (the logo plant of our course, which appeared also on the course T-shirt) and found many other interesting species. A very weird *Fossombronia* found at 4000 m will keep Drs. Stotler busy for some time.

The participants were: Margarita Escobar (Medellin, Colombia), Oscar Orrego Santa (Bogota, Colombia), Virginia Freires (Guatemala), Rosa Isela Meneses (Bolivia), Amalia Beatriz Biasuso (Argentina), Ines Sastre D-J. (Puerto Rico), Carmen Reyes (Puerto Rico), Abeliz Rosado (Puerto Rico), Sobeida Escoria A. (Puerto Rico), Patxi Heras (Spain), Marta Infante (Spain), Javier Estrada (Spain), Claudia Horning (Venezuela), Claudia Garbiso (Venezuela), Yrene Davila (Venezuela), Ana Escalona (Venezuela), Ricardo Rico (Venezuela), and myself.

This experience enriched us not only bryologically but also personally, tightened relations among bryologists of neighboring countries in Latin America, and with Europe and the USA. In addition, the course allowed young Latin American bryologists to learn the world of tropical bryophytes in our own surroundings.

Minutes for IAB Council Meeting

Beijing, May 27, 1997

The Chairman called the meeting to order at 7:30 p.m.

Present were T. Cao, C. Delgadillo M., J.-P. Frahm, T. Hallingbäck, M. Ignatov, T. Koponen, R. Seppelt, L. Söderström, D. Vitt.

1. Minutes from the Mexico meeting in 1995: Read and accepted with change to item eight.

2. Treasury Report by D. Vitt

Income

*Dues (incl. NBS & Arctoa)	15869.89
Interest	613.12
Capital Gains	1371.98
Sphagnum Symposium	4500.00
Mutual Fund Increase	3560.27
Total Income	25915.26

Expenses

Postage	1673.65
Photocopying	445.00
Salaries	1100.00
Secretarial Supplies	46.23
S. Greene Award (1995)	1000.00
Hattori Prize	400.00
NBS (pd)	266.00
Arctoa(pd)	400.00
Total Expenses	6238.41

BALANCE MAY 25, 1997

INCL. COMMITMENTS **42895.15**

Commitments (1997)

Endangered Species Fund	388.00
Hattori Prize	400.00
Stanley Greene Award	4000.00
Arctoa	1426.23
NBS	1518.56*
Next Sphagnum Symposium	4500.00
Total Commitments	12232.79

*IAB and NBS are collecting money for each other. Balancing with NBS was not done prior to this report.

There was some discussion of whether funds were invested to the best ability and the responsibility given to one person as the treasurer. A financial committee will be set up and chaired by the Secretary-Treasurer. A proposal was made by Frahm to consider raising fees to \$15 US with the extra \$4 going to research. Vitt suggested having donations, but it was felt this would not work. Delgadillo suggested \$1 raise and

Koponen suggested no raise. Decision made to not raise fees but to add a phrase to the dues notice and in The Bryological Times that persons "please contribute to the research fund".

3. Membership Report: Membership in IAB by regions in 1997 was:

Africa	5
Asia	23
Australia & New Zealand	27
China	30
Europe	239
E Europe	83
Japan	40
N & C America	140
S America	6
Total paying members	593.

This compares to 422 in 1993 and 495 in 1995. (At this time some of the persons who received The Bryological Times were not paying members). There was discussion over the small number of South American and African members. It was concluded that there are a number of bryologists in South America who are potential members, while in Africa the number of members probably reflects the actual number of bryologists. C. Delgadillo will take prospectus and copies of The Bryological Times to the Latin American Society to see if he can encourage members. S. Vitt is to send copies to him plus the names of current members.

4. The Bryological Times Report by L. Söderström: Six issues of The Bryological Times were not always possible due to lack of material. Suggestions for new organization included: 1) Editors to be formally appointed every two years with re-appointments possible. 2) Spread out responsibility by selecting six Regional Editors from around the world who will do one main article for The Bryological Times per year among other things. Six persons have been asked to serve as editors but only three have answered yet. 3) Column Editors

will be appointed for two years only. The number will vary and new Column Editors can be added as needed. They should contribute at least once a year. 4) A literature column needs to be added, including book reviews. A motion was made by J.-P. Frahm that the arrangements for the above be made by the editor and these changes be printed in The Bryological Times. These changes were accepted.

5. Meeting in St. Louis in 1999: The program at the International Botanical Congress consists of symposia and a combined poster session. Deadline for subject of symposia is September, 1997. Suggestion was made by D. Vitt that a committee be set up to organize the symposia. R. Seppelt commented that we should co-ordinate with ABLs in arranging symposia. A proposal was made to select 3-4 persons to set up at least two (and up to several more) symposia. The committee suggested B. Mishler, M. Crosby, and M. Ignatov be asked to serve on this committee. They were to check if there were other costs involved besides the registration fees.

6. IAB Meeting in 2001: There was a proposal from India to host this meeting. Spain had been asked to put forth a proposal, but had not done so. Vitt made a motion for the meeting to be held in India, it was seconded and passes with 5 votes against 3. Delgadillo and Frahm will put together a proposal for the 2003 meeting in South America. In 2005 the meeting will again be held with the International Botanical Congress.

7. Nomination for Awards:

Stanley Greene Research Award: 1800 CDN to G. Dauphine from Costa Rica to study Lejeuneaceae and 2200 CDN to Fu Xing of China do research in Canada. They will have to submit receipts for usage of money and a report

within a time period of one year. They should also include a line crediting this support in their publication.

Richard Spruce Plaque: Recommendation to accept (secret) nomination and make presentation to recipient at the Business Meeting. Award given to Timo Koponen.

Hattori Prize: 400 CDN for "Prodromus Bryologiae Novo-Granatensis: An Introduccion a la Flora de Musgos de Colombia" by Steven P. Churchill and Edgar L. Linares C.

The President appointed committees for the nominations of recipients of IAB awards: Richard Spruce Plaque for the 2001 meeting (Timo Koponen {as 1997 winner} plus three others to be decided in St. Louis), the Stanley Greene Award (T. Koponen, H. Deguchi and C. Delgadillo, chaired by D. Vitt, Secretary-

Treasurer), and the Hattori Prize (B. Crandall-Stotler, M. Ignatov and L. Söderström, chaired by T. Koponen, President of IAB). The Hedwig committee (W. Frey, H. Ramsay, W. Reese and T. Pócs) will make the decision about the 1999 medal and should be set the same as the Richard Spruce Award committee in 2001 and 2003.

8. Archives for Bryology cancelled as no longer needed.

9. The IAB Home Page is currently being organized and will be linked to other organizations.

10. Endangered Species Committee Report by T. Hallingbäck: Contributions to the fund for research on endangered species began in Mexico. Geissler, Gradstein, Hallingbäck, Pócs, and Tan make up the committee to decide the best use of these funds and they will

appoint Belland as a new member if he agrees. They will produce an action plan for endangered Bryophytes with the most needed research listed in a booklet with the IAB symbol. Recommended that they have a proposal for use of the funds by the St. Louis meetings.

11. Advances in Bryology by Royce Longton (given by Vitt): Vol. 6 done. Suggestions for Vol. 7. 1) Tropical Bryology and 2) Biodiversity & Conservation with Floristics included were suggested. Molecular biology was suggested for a future issue.

12. Constitution: Motion to amend constitution as presented by Vitt and Söderström, seconded by Delgadillo. Decision made to submit the proposal to the general membership for their approval.

General Annual Meeting to be held on Thursday, May 29.

Meeting adjourned.

News from the Herbaria

News from the Herbaria. Send contributions to the column editor: A. R. Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP, Wales, United Kingdom

Department of Botany, National Science Museum, Tokyo, Japan, moved to Tsukuba from Shinjuku in 1995 (cf. *Taxon* 44: 268, 1995). In view of the time-consuming activities involved in moving and re-housing the collections, the herbarium of the department (TNS) was temporarily closed from June 1995, and opened from May 1996. We now invite loan requests from recognized botanical institutions. We have expanded the size of our herbarium to provide more space for herbarium-related research. A new guest-house was also built to accommodate short- and long-term visitors.

For further information, please contact Dr Masanobu Higuchi, Department of Botany, National Science Museum, 4-1-1 Amakubo, Tsukuba, Ibaraki 305, Japan. E-mail: higuchi@kahaku.go.jp

Publication years for Illustrated Flora of Nordic Mosses

I often get questions regarding the actual years of publication for the first three fascicles of Elsa Nyholm's *Illustrated Flora of Nordic Mosses*. According to information provided by P. H. Enckell (Editorial Office, Ecology Building, S-223 62 Lund, Sweden; from where the flora can also be ordered), the following years are the correct ones. Fascicle 1 was published in 1987, fascicle 2 in 1990, and fascicle 3 in 1993.

PS! Anyone interested in the contents of the latest issues of *Lindbergia* (and the other journals edited at the Editorial Office in Lund) could check the following home page:

<http://www.oikos.ekol.lu.se>

Lars Hedenäs, Swedish Museum of Natural History, Dept. of Cryptogamic Botany, Box 50007, S-104 05 Stockholm, Sweden. e-mail: lars.hedenas@nrm.se

Course on Tropical Mosses and Lichens in Ecuador

The Herbario QCA of the Catholic University of Ecuador invites you to the first course about Tropical Mosses and Lichens which will be in Quito on August 25th to September 5th. This course will be carried out with collaboration of: Dr. Harrie Sipman of Berlin University and Dr. Robert Gradstein of Göttingen University in Germany. We will have several field trips to important tropical rain forest in Ecuador.

For more information please contact:

Dr. Renato Valencia or Lcdo. Eduardo Barahona, Herbario QCA, Universidad Católica, Apartado 17-01-2184, Quito, ECUADOR. Email: rvalenci@pi.pro.ec, rvalenci@ecnet.ec or mcbarahona@puceuo.puce.edu.ec, FAX (593-2) 567 117, TEL/FAX (593-2) 371 788

New Constitution for the International Association of Bryologists

In the late 1980's, IAB Council decided to become independent from IAPT (International Association of Plant Taxonomists). This move gave us the opportunity to develop our own funds and budget them as we see fit. It also allowed us to better develop bryological interests outside of taxonomy. In other words, by being independent of IAPT, the Association can better serve all of bryology.

Also, the present constitution was formulated while IAB was affiliated with IAPT, and as a result our elections and terms of office were strongly tied to those of IAPT.

While the Council's decision to become independent from IAPT took effect some years ago, our constitution has never been updated to reflect these changes. Additionally, the constitution needs some 'house cleaning' to make it a more current document that we can all follow closely.

As a result of this background, Council discussed the constitution while at the Beijing meeting and unanimously recommends to the membership that we amend the constitution as proposed here. The Council presents an amended constitution; these amendments require a 2/3 majority acceptance by the voting

membership by mail ballot.

Below you find both the old and the proposed constitution. There are a number of small changes in the text. The main changes are marked as strike-through in the old text for deleted parts and underlined in the proposed text for additions and major changes.

Please review the old and the amended versions of the constitution as presented below and return your vote by mail before September 15, 1997, to Dale H. Vitt, Secretary-Treasurer.

Note: the ballot is on the same yellow form as the information for your new IAB address list request for information.

Old Constitution

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Article 2. ~~The Association shall be affiliated to the International Association for Plant Taxonomy (I.A.P.T.) on the basis of Article 3, section 4, of the Constitution of that Association.~~

Section 2. Objectives and Means

Article 3. The objectives of the Association shall be to promote international co-operation and communication among bryologists, whether amateur or professional.

Constitutional Changes as recommended by IAB Council May 27, 1997 in Beijing, for ratification by the membership

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Section 2. Means and Objectives

Article 2. The Association is an international, non-profit society whose financial records reside with the current Secretary-Treasurer.

Article 3. The objectives of the Association shall be to promote international co-operation and communication among persons interested in bryophytes.

Article 4. ~~The objectives of the Association shall be pursued by the same methods and procedures as those provided in the I.A.P.T., either jointly or independently, but normally under the aegis of that Association. The methods of the Association shall include:~~

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter, ~~the publication of a regular list of all new taxa, at every level, from the world's literature; the periodic publication of an up-to-date address list of the world's bryologists;~~ and issues that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary of the I.A.B. ~~or I.A.P.T.~~ and payment of the appropriate fee.

~~**Article 7.** Membership of the Association shall be open without payment of an additional fee to any personal member of the I.A.P.T. in good standing, who may desire to become a member of the I.A.B.~~

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary, and ten Councillors. Normally not more than two members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office between two Business meetings of the Association and shall not be eligible for re-election to the same office. The Councillors shall hold office between three Business Meetings; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office between three Business Meetings and shall be eligible for re-election.

Article 4. The objectives of the Association shall be:

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter and items that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary-Treasurer of the I.A.B. and payment of the appropriate fee.

Article 7. Non-profit bryological societies can be affiliated to the I.A.B. Affiliated societies may use the newsletters and the other I.A.B. channels free of charge. Commercial journals or publishers may use the I.A.B. network by paying an amount decided at any time by the current Executive Committee.

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary-Treasurer, the Editor of The Bryological Times, and ten Councillors. Normally not more than three members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office for 4 years and shall not be eligible for re-election to the same office. The two Vice-Presidents shall not be elected simultaneously. The Councillors shall hold office for 4 years; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary-Treasurer shall hold office for 6 years and shall be eligible for re-election.

Article 11. The Editor of The Bryological Times shall be appointed by the council for two year terms and be eligible for reappointment.

Article 11. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President until the next Business Meeting of the Association.

Article 12. The Council may at any time co-opt additional members for special purposes; ~~for example, the Association will eventually need the services of an Editor and a Bibliographer.~~

Article 13. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5. Meetings and Elections

Article 14. The Association shall meet at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each International Botanical Congress or at an appropriate International Congress. The time interval between two Business Meetings shall normally be at least four years and not more than six years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings.

Article 15. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the offices of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 16. At least seven months prior to a Business Meeting of the Association, the President shall appoint an ad hoc Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 17. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chairman of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency.

Section 7. By-Laws and Amendments

Article 18. The Council shall have power to make by-laws for carrying into operation the terms of the Constitution.

Article 12. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President for the remaining term of office.

Article 13. The Council may at any time co-opt additional members for special purposes.

Article 14. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5 Meeting and Elections

Article 15. The Association shall meet biennially, including if possible at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each biennial meeting. The time interval between Business Meetings shall normally be every two years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings through the newsletter.

Article 16. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the office of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

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Article 18. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chair of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency. Ballots shall be sent to the election judge, appointed by the President.

Section 6. By-Laws and Amendments

Article 18. The Council shall have the power to make by-laws for carrying into operation the terms of the Constitution.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require favourable vote of two-thirds of the votes cast.

However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favourable decision is then obtained, they shall be voted upon by mail vote.

By-Laws for IAB Committees

1. Such Committees as may be required to fulfill IAB's purposes shall be created on a temporary or unlimited basis, upon the decision of the Council.

2. The Chairman and Members of each Committee shall be appointed (and can be dismissed) by the Executive Committee. Unless otherwise specified, their commission ends with that of the Council, during which they were appointed; it can be renewed. The President and the Secretary of the IAB are ex-officio members of each Committee.

3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary of IAB who shall circulate them and report back to the Committees any comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chairman of that Committee, their use being fully accounted for in the Committee's reports.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require a favorable vote of two-thirds of the votes cast. However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favorable decision is then obtained, they shall be voted upon by mail vote.

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3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary-Treasurer of IAB who shall circulate them and report back to the Committees and comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chair of that Committee, their use being fully accounted for in the Committee's reports.

The IAB Meeting in 1999

In 1999, IAB will meet in St. Louis, Missouri in connection with the XVI International Botanical Congress. This meeting will consist only of posters and organized Symposia. IAB will be suggesting symposia to the organizing committee. We need your suggestions now as the deadline for proposals is September 15, 1997.

Please send your symposium proposals to the Secretary, Dale H. Vitt before September 1, 1997. **Symposium proposals must include the following:**

-at least two convenors, one of which is from outside of North America.

-a listing of seven speakers with the tentative title and abstract for a 20 minute presentation.

The IAB Council

The Current IAB Council is as follows (with end of term):

President: **T. Koponen**, Finland (1999)

Past President: Vacant

1st Vice President: **W. B. Schofield**, Canada (2001).

2nd Vice President: **R. E. Longton**, UK (1999).

Secretary-Treasurer: **D. H. Vitt**, Canada (1999)

Councillors: **H. Ando**, Japan (1999), **C. Delgado M.**, Mexico (1999), **P. Geissler**, Switzerland (1999), **N. Miller**, USA (1999), **L. Söderström**, Norway (1999), **B. Buck**, USA (2001), **T. Cao**, China (2001), **J.-P. Frahm**, Germany (2001), **M.**

Ignatov, Russia (2001), **R. Seppelt**, Australia (2001).

Editors (appointed): **L. Söderström**, Norway (1999), **T. Hedderson**, UK (1999), **H. Weibull**, Sweden (1999).

The Nominations committee seeks nominations for the following offices that are to be filled by general election at the 1999 St. Louis meeting

President

Second Vice-President

Secretary-Treasurer

5 Councillors

Nomination can be done on the enclosed yellow form. Dale Vitt will pass it on to the Chair of Nominations committee.

The Bryological Times is a newsletter published bimonthly for the *International Association of Bryologists*. Items for publication are to be sent to the Editors (preferably HW), **except** for those for the regular columns, which may go **direct** to the column editors

Deadlines for material to the Bryol. Times will be January 15, March 15, May 15, July 15, September 15 and November 15 with the publication shortly afterwards. Shorter notes may be accepted later if there is still space.

Editors

Lars Söderström, Dept of Botany, Norwegian University of Science & Technology, N-7055 Dragvoll, Norway. FAX +47 73596100.

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Terry Hedderson, Dept of Botany, University of Reading, Whiteknights, RG6 2AS Reading, UK. FAX +44 1 734 753 676.

T.A.J.Hedderson@reading.ac.uk

Column Editors

J.-P. Frahm & B. O'Shea (computer techniques); T. Hallingbäck (conservation); A. R. Perry (news from the herbaria); T. Pócs (tropical bryology); J. Vána (floristics and phytogeography).

The Bryological Times, founded in 1980 by Stanley Wilson Greene (1928-1989), is distributed from Beijing (China), Canberra (Australia), Edmonton (Canada), Eger (Hungary), Geneva (Switzerland), Hiroshima (Japan), Moscow (Russia), Praha (Czech Republic), St. Louis (USA) and Trondheim (Norway).

Production

Lars Söderström, Trondheim

For details regarding membership of to *International Association of Bryologists* (currently US \$ 11.- per year) write to Dale H. Vitt, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.

Email:svitt@gpu.ualberta.ca

DIARY

1997

July 5. Field meeting with DBLS. Bryophytes round Boxmeer. Contact person: L. Spier, Kon. Arthurpad 8, NL-3813 HD Amersfoort, The Netherlands.

July 26-August 4. BBS Summer Field Meeting in North Italian Alps. Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Universit, Viale Mattioli 25, I-10125 Torino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861

August 3 - 7. ABLs Annual Meeting in Montreal, Quebec. Information from: Brent D. Mishler, Dept. of Integrative Biology, University of California, Berkeley, CA 94720-2465 phone: (510) 642-6810 FAX: (510) 643-5390 Email: bmishler@garnet.berkeley.edu

August 8-10. Annual Meeting and Excursion with the Nordic Bryological Society on the Archipelago of Åland. Information from Hanna Jalkanen, P.O.Box 47, FIN-00014 University of Helsinki, Finland. Tel. +358 09 708 4725. Fax. +358 09 708 4726. Email hanna.jalkanen@helsinki.fi

August 13-20. BBS Summer Field Meeting in North-east Yorkshire. Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815

September 3-9. SVBL/BLAM Summer field trip. Sarnen (OW), Switzerland. Montane and subalpine forests and bogs on the northern slope of Central Alps. Contact Person: Dr. Engelbert Ruoss, Naturmus., Kasernenplatz 6, CH-6003 Luzern. Phone ++41-41-2285411; Fax 2285406; email: natur@centralnet.ch

September 12-14. BBS Annual General Meeting and Symposium in Chichester. Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

September 13-14. Field meeting with the Dutch Bryological and Lichenological Society at Zandpol, Z.O.Drente. Address: "De Zandpol", Stieltjeskanaal 14, 7764 A.J. Zandpol. Information: 0543-51 53 41 (The Netherlands).

September 17-20. XII Symposium on Cryptogamic Botany, Valencia, Spain. Information from: Felisa Puche, Dept. de Biologia Vegetal, Facultad de Ciencias Biologicas, Universitat de Valencia, Dr. Molinar 50, 46100 Burjassot, Valencia, Spain. Email: M.F.Puche@uv.es. Http://bioweb.uv.es/cripto97.

October 3-5. Annual Blomquist Bryological Foray. Contact Person: Molly McMullen, Cryptogamic Herbarium, Box 90342, Duke University, Durham, NC, 27708-0342, USA. Phone: (919) 660-7300. Fax: (919) 660-7293, email: mmcm@duke.edu

November 8. Field meeting with the Dutch Bryological and Lichenological Society around Soest. Lichens. Information: 035-601 85 41 (The Netherlands).

1998

March/April (date to be decided). BBS Spring Field Meeting in Basse Normandie, France. Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. email: J.Bates@ic.ac.uk.

August 31-September 4. 3rd European Conference on the Conservation of Bryophytes. The Scientific Basis for Bryophyte Conservation. Trondheim, Norway. Information from Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, N-7055 Dragvoll, Norway. Tel. +47 73596061. Fax: +47 73596100. Email: Lars.Soderstrom@chembio.ntnu.no.

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Additions to the World Red List of Bryophytes

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Conservation column. Send contributions to the column editors: T. Hallingbäck, Swedish Univ. of Agric. Sci., P.O.Box 7072, S-75007 Uppsala Sweden

SUMMARY

Since 1994 more than a hundred species names have been submitted to the IAB Committee on Endangered Bryophytes. Of these we have preliminary accepted 41 new additions to the 1994 list of IAB world most endangered bryophytes. The total number of listed species in the IAB Red List list includes 91 most endangered bryophyte species world-wide at present.

METHODS AND RESULTS

For the first World Red List of bryophytes in 1994 (Tan et al. 1994), 50 species were proposed (24 mosses, 25 liverworts and 1 hornwort). The publication of this list did not upset bryologists much because of its length. None of the species has been proposed

to be excluded or downlisted. Instead more than 100 new species were recommended for inclusion in the list since then.

As before, the selection was based on the following five criteria, namely, the species 1) must be threatened world-wide; 2) must be confined to a threatened habitat; 3) must have a narrow range; 4) is not overlooked or undercollected; and 5) has a unique morphology/biology or occupies a special evolutionary position.

A bibliographical search on all these species was made and potential candidates were transmitted to several experts for consultation. The list of candidates was then presented for public comment via the bryological internet, the BRYONET. Consequently, we have received several responses, especially information on the local geography of the endangered species; for which we are most thankful.

Several of the disqualified entries are

taxa whose current range or distribution is difficult to assess world-wide. Others are small species of disturbed sites whose habitats do not appear to be threatened by human activities. Many are simply rare, local endemics whose habitat threat has not been observed or identified. Also some names represent very recently described new species whose total range and habitat threat will need more time to assess or document.

We are publishing the updated list here for further comments before its official acceptance by IUCN (International Union of Conservation of Nature).

All in all, preliminarily we accept 16 mosses, 24 liverworts and 1 hornwort as additions to the IAB world most endangered bryophyte list.

DISCUSSION

It was not an easy task to select further candidates among these new proposals. Even for European and Macaronesian species, where the actual distribution should be relatively well known, honest

threat assessment is difficult to establish. But for many others, particularly in tropical regions, floristic knowledge is even poorer. Where recent literature still reports large regions of presence with many localities within the distribution area, the species were provisionally relegated in the last section of species not considered to be threatened at this moment. Likewise, all taxa with problems of taxonomical delimitation are not yet included.

We expect your comments, criticisms and contributions to be able to present an improved proposal taking into account all available knowledge on species living in endangered habitats. We are impatient to have your participation in constructive discussions.

Please send your comments to T. Hallingbäck at Swedish University of Agricultural Sciences, P.O. Box 7072, S-750 07 Uppsala, Sweden (email: tomas.hallingback@dha.slu.se), P. Geissler, Conservatoire et jardin botaniques, Case postale 60, CH-1292, Chambésy/Geneva, Switzerland (email: geissler@cjb.unige.ch) or B. C. Tan at the Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts, USA 02138 (email: btan@oeb.harvard.edu).

Acknowledgments. We would like to thank all who kindly sent us information and suggestions, especially S. Churchill, J. Enroth, J.-P. Frahm, J. Hasegawa, L. Hedenäs, M. Ignatov, Z. Iwatsuki, S. Jovet-Ast, N. Konstantinova, D. Long, B. J. Muñoz, B. O'Shea, G. Pant, R.A. Pursell, W.D. Reese, P.W. Richards through S. R. Gradstein, W. B. Schofield, G. Smith-Merrill, T. Spribille, L. Söderström, P. Tixier, J. Váda, A. Whittemore, and R. H. Zander. The Red Data Book of European Bryophytes was published in 1995, and several new inputs and proposals discussed in this paper came thanks to this working group (ECCB).

NEW CANDIDATES FOR THE IAB WORLD RED LIST OF BRYOPHYTES

Musci

Aschisma kansanum Andrews (Pottiaceae)

A North American endemic of a oligotypic, disjunctive American-European genus. The species is known from "unusual habitat" in three counties of Kansas State in USA. Crum and Anderson (1981) described the habitat as quartz pebbles in sandy Pleistocene gravels covered partly by the persistent protonema of this species. Because of its rarity, the populations are very threatened these days by over collection and also by cattle grazing in the area. Sources: Crum and Anderson, 1981; Smith-Merrill, *pers. comm.*, 1997.

Bryoxiphium madeirense Löve & Löve (Bryoxiphiaceae)

A Madeiran endemic of a morphologically unique genus in a monotypic family, the species is found on moist and dripping volcanic rocks in shaded streams in Laurus forest on the island. There are only five known localities for the species. Habitat threatened by the recent logging of Laurus forest for agriculture and pasture. Sources: Löve and Löve, 1953; ECCB 1995.

Crassiphylllum fernandesii (C. Sérgio) Ochyra [syn. *Thamnobryum fernandesii* C. Sérgio] (Thamnobryaceae)

A Madeiran endemic restricted to about 10 populations in permanently wet habitats, such as dripping rocks or waterfalls, in the inner part of the island at high elevation above 1000 m. Habitat is threatened by the expansion of agriculture and pasturing. Sources: Ochyra, 1991; Hedenäs, *pers. comm.*, 1997.

Ditrichum cornubicum Paton (Ditrichaceae)

Endemic to Cornwall, England, the species is known from copper mine-wastes in two granitic areas. Plants grow on compacted, well-drained peaty, loamy or gravelly soil where the vegetation is sparse and open. In recent

years, one population is known to have disappeared from one of the two original sites. Habitat threatened by encroachment of coarse vegetation and excessive human disturbance as well as vehicles going around the sites. Sources: Paton, 1976; ECCB 1995.

Echinodium renauldii (Card.) Broth. (Echinodiaceae)

Endemic to Azores, this species grows on rocks in forested, shaded ravines and craters above 500 m alt. The species is also known from a Pliocene fossil in the Canary Islands. Habitat of laurel forests is threatened by logging brought by the changing land use policy. Sources: Churchill, 1986; ECCB 1995.

Flabellidium spinosum Herz. (Brachytheciaceae)

The species represents a monotypic genus known only from the type collection made in 1911 from Santa Cruz Cordillera, Bolivia. According to Enroth (1995), the ascending branching system of this epiphytic pleurocarpous moss is characteristically frondose reaching 1 cm tall. The forest vegetation of the type locality and vicinity has been logged and cultivated over the years. Probably extinct. Sources: Enroth, 1995; idem, *pers. comm.*, 1997.

Grimmia curviseta Bouman (Grimmiaceae)

An endemic of Canary Islands and Sardinia, this species grows on dry, exposed north-facing rocks at altitudes of 2,000- 2400 m. The habitat is vulnerable at present. Source: Greven, 1993.

Gymnostomum boreale Nyh. & Hedenäs (Pottiaceae)

Known only from a single locality in the mountain of Kulmakkapus in Kuu-samo Region of NW Russia where it has not been recollected after 1938. It is a species of boreal montane habitat threatened by local human activities in recent years. Sources: Hedenäs, *pers. comm.*, 1997; Söderström, *pers. comm.*, 1997.

Hypnodontopsis apiculata Iwats. & Nog. (Rhachithecaceae)

A Japanese endemic confined mainly to Honshu, this species has a restricted

habitat found growing on the bark of *Cryptomeria japonica* (rarely on pine tree) in gardens of buddhist temples, shinto shrines and old castles. The population at the type locality has disappeared because trees were cut down or knocked over by typhoon. The species is sensitive to air pollution in human habitation. Source: Iwatsuki, *pers. comm.*, 1997.

***Mamillariella geniculata* Lazar.
(Leskeaceae)**

A rare Russian endemic, this monotypic genus is known only from 5-7 localities in the southern part of Russian Far East near Khabarovsk. It is officially listed in the latest Russian Red Data Book for endangered plants. The forests in Russian Far East are today seriously threatened by the on-going economic development in the region. Sources: Buck, 1981; Ignatov, *pers. comm.*, 1997

***Neckeropsis pocsii* Enroth & Magill
(Neckeraceae)**

An endemic species of Mayotte, Comoro Islands, this species grows on boulders in mesic evergreen forest threatened by excessive logging according to T. Pócs who collected the type specimen. Sources: Enroth and Magill, 1994; Pócs, *pers. comm.*, 1994).

***Orthotrichum scanicum* Grönv.
(Orthotrichaceae)**

A rare European endemic known from a few localities in central Europe, Italy, Scandinavia and Russia (Baikal Lake?). The species grows on trunks and branches of conifers as well as broad-leaf deciduous trees. Its overall range has been observed to decline in recent years in Europe and many local populations have become extinct. The survival of this species is threatened by the felling of host trees and the increasing problem of air pollution in Europe. Sources: ECCB 1995; Ignatov, *pers. comm.*, 1997.

***Ozobryum ogalalense* G. L. S.-
Merrill (Pottiaceae)**

This monotypic endemic genus from the American Great Plains is a rarity confined to unusual habitat - strongly calcareous, porous rock outcrop ledges

charged with moisture, surrounded by prairie. It is known only from a single locality in Kansas State. According Merrill (*pers. comm.*, 1997), the location is threatened by cattle grazing and human disturbance. Sources: Merrill Smith, 1992; *ibid.*, *pers. comm.* 1997.

***Pinnatella limbata* Dix.
(Neckeraceae)**

Known only from a single locality in SW India from the Uttar Kanad (formerly North Kanara) District of Karnataka State, this species is rather unique biologically among the congeners in being a rheophyte attached to rocks in streams. The flora of southwestern India, including the Western Ghats, is known for its rich diversity and high endemism. The fast destruction of forests in SW India owing to population expansion is also well documented today. Sources: Enroth, 1994; O'Shea, *pers. comm.*, 1997.

***Tayloria rudolphiana* (Garov.)
Bruch & Schimp. [syn. *Tayloria delavayi* (Besch.) Besch.]
(Splachnaceae)**

Restricted to subalpine environs in central Europe and disjunctively in SW China (Yunnan as *T. delavayi*), this species is unique in Europe growing epiphytically on the droppings of birds left on trees. Habitat in China is on *Quercus* tree trunk (Koponen 1992). Habitats in Europe are vulnerable to inappropriate forest management and the felling of old trees where populations were found. Sources: A. Koponen, 1992; ECCB 1995.

***Thamnobryum angustifolium* (Holt)
Crundw. (Thamnobryaceae)**

This is a rare moss known only from one locality in Derbyshire, England. The plants grow on shaded limestone rock-face beside a calcareous spring or on rock in the stream. Although the site is in a nature reserve today, there is public pressure to build a footpath next to the site. The population is also threatened by frequent collections made by botanists and pollution of the spring. Sources: Hodgetts & Blockeel, 1992; ECCB 1995, O'Shea, *pers. comm.*, 1997.

Hepaticae & Anthocerotae

***Andrewsianthus ferrugineus* Grolle
(Jungermanniaceae)**
(in litt.), Grolle (1966), Hattori (1975), Long & Grolle (1990).

***Bazzania bhutanica* Kitag. & Grolle
(Lepidoziaceae)**

Known from only one locality in S Bhutan. The subtropical zone of the Himalaya is especially threatened. Source: Long (in litt.).

***Cololejeunea azorica* V. All. &
Jovet-Ast (Lejeuneaceae)**

Known from less than 20 localities on Madeira and the Azores. Epiphyllous. Sources: ECCB 1995, Sjögren 1975, 1978.

***Cololejeunea magnilobula* (Horik.)
Hatt. (Lejeuneaceae)**

Endemic epiphyllous species from Taiwan and Zhejiang (East China). Zhu (1995) considers it as distinct species. Source: Piippo 1990.

***Dendroceros japonicus* Steph.
(Anthocerotaceae)**

Growing exclusively on trunks, branches or leaves of trees and known to occur sporadically along the Pacific coast from Taiwan to central Japan. Disappearing from the northern parts of its distribution range, probably due to changing forest growth conditions. Source: Hasegawa (in litt.).

***Drepanolejeunea bakeri* Herz.
(Lejeuneaceae)**

Known from three localities on Luzon (Philippines). Threatened by extensive logging. Source: Tixier (in litt.).

***Drepanolejeunea senticosa* Bischler
(Lejeuneaceae)**

Cuba. Only known from the type specimen, leg. Wright ca. 1860. The species may be extinct or not understood. Source: Bischler 1964.

***Drepanolejeunea spinosa* Herz.
(Lejeuneaceae)**

Colombia (2 localities, leg. Killip 1922). These two species (*D. senticosa* and *D. spinosa*) have probably never been collected since. The species may be extinct or not understood. Source: Bischler 1964.

***Geothallus tuberosus* Campb.
(Sphaerocarpaceae)**

A monotypic genus, notable for its isolated phylogenetic position and its adaptations to extremely xeric conditions. Its morphology has been the subject of two detailed studies (Campbell 1896a, b, Doyle 1962). Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) conducted extensive searches for this taxon in the wild, and found eight population in this small area. Since then, the population of the San Diego urban area has doubled. Consequently the whole native range of *Geothallus* has been subjected to rapid, intense urban development. Source: Whittemore (in litt.).

***Haesselia roraimensis* Grolle & Gradst. (Cephaloziaceae)**

Endemic distinct genus of Cephaloziaceae, restricted to the foot of Mt. Roraima (Guyana), growing on rotten log between 550 and 1550 m. Source: Grolle & Gradstein 1988.

***Herbertus borealis* Crundw.
(Herbertaceae)**

Endemic to NW Europe: A single locality in Scotland and three in SW Norway. Sources: ECCB 1995, Birks in Hill & al. 1991.

***Kurzia sinensis* Chang in Chang & Gao (Lepidoziaceae)**

Only known from type specimen (Chekiang: Mt. Nanyentang, 300 m). Sources: Chang & Gao 1984; Mizutani & Chang 1986.

***Lepidozia azorica* Buch & H. Perss.
(Lepidoziaceae)**

Epiphytic endemic to the Azores, recently also discovered in the Canaries by Dirkse et al. 1993. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Leptoscyphus azoricus* (Buch & H. Perss.) Grolle (Geocalycaceae)**

Epiphytic endemic to the Azores. Occurrence very rare and local. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Radula jonesii* Bouman, Dirkse & Yamada (Radulaceae)**

Endemic to Canary Islands and Madeira, on wet shaded rocks in *Laurus* forests. Threatened by forest clearing. Source: ECCB 1995.

***Riccia atlantica* Sérgio & Perold
(Ricciaceae)**

Only known from a restricted area at the eastern end of Madeira. Threatened by urbanisation. Sources: ECCB 1995, Sérgio & Perold 1992.

***Riccia caroliniana* Na-Thalang
(Ricciaceae)**

Endemic Australian species known from few localities in the Northern Territory. Member of an isolated monotypic subgenus. Sources: Jovet-Ast (in litt.), 1984, 1987.

***Scapania sphaerifera* Buch & Tuomik. (Scapaniaceae)**

Representing a monotypic section characterized by spherical multicellular gemmae and pluriplicate perianth. Known from at least five localities in Russia in very small populations. Sources: ECCB 1995, Konstantinova (in litt.), Váda 1992, Konstantinova & Potemkin 1994.

***Scaphophyllum speciosum* (Horik.) Inoue (Jungermanniaceae)**

A monospecific genus with a disjunct distribution. Found in China, Bhutan, Taiwan, and recently in Nepal (by D. Long, unpubl.). In Taiwan it occurs on forest floor at 2000-2400 m. Sources: Váda & Inoue 1983, Long & Grolle 1990, Zhu & al. 1994.

***Schistochila macrodonta* W.E. Nicholson. (Schistochilaceae)**

Apparently the only two known localities are in Yunnan (Nicholson 1930) and Bhutan (Long & Grolle 1990). D. Long did not find it in Yunnan. Source: Long (in litt.).

***Sphaerocarpos drewei* Wigglesw.
(Sphaerocarpaceae)**

Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) reported this taxon as an associate of *Geothallus tuberosus* at seven sites. Aside from the protologue

(Wigglesworth 1929), these are the only reports of *S. drewei* in the literature. Source: Whittemore (in litt.).

***Sphaerocarpos hians* C. C. Haynes
(Sphaerocarpaceae)**

Endemic to the United States. This taxon was described by Haynes (1910). Historically known only from near Pullman, Whitman County, Washington and Moscow, Latah County, Idaho; recently found in Corvallis, Benton County, Oregon. It grows on mud of river bank. Poorly known. A seasonal ephemeral which is evident in summer (Pullman) and fall (Corvallis), when the water levels are low. Ref. Frye & Clark 1937: 106, 107. Sources: Whittemore and David H. Wagner (in litt.).

***Stenorhrips rhizomatica* Herz.
(Jungermanniaceae)**

Only known from the type locality in Sarawak (G. Dulit). The habitat of *S. rhizomatica* is endangered or probably already destroyed. Source: Richards, Gradstein (in litt.).

***Stephensoniella brevipedunculata* Kash. (Exoromotheceae)**

Monotypic genus which is endemic to the Kumaon region in Western Himalaya, rapidly disappearing due to uncontrolled urbanisation. Not seen since 1986. Sources: Pant (in litt.), Pant & Tewari 1995.

***Tylimanthus azoricus* Grolle & Perss. (Acrobolbaceae)**

Endemic to the Azores. Growing preferably on rocks in threatened habitats in few localities. Sources: ECCB 1995. Grolle & Persson 1966, Sjögren 1978.

TAXA NOT INCLUDED

The taxa below have also been submitted for inclusion in the Red List. However, these did not fully meet our criteria because they A) are considered to not be confined to threatened habitat, or B) are probably very much overlooked, or C) are not threatened worldwide or D) have taxonomical problems and delimitations.

***Acrobolbus wilsonii* Nees**

(Acrobolbaceae)

Endemic to atlantic Europe from Faeroes to Macaronesia. No indication of threat known. Source: ECCB 1995.

Aphanolejeunea madeirensis

(Schiffn.) Grolle (Lejeuneaceae)

Epiphyllous endemic to Madeira, restricted to the cloud zone of the northern part of the island, and to the Azores, where it may become locally fairly frequent. Sources: Sjögren 1975, 1978.

***Aphanolejeunea teotonii* V. All. &**

Jovet-Ast (Lejeuneaceae)

Endemic to Macaronesia. Epiphyllous species in mature *Laurus* forest. No indication of threat known. Source: ECCB 1995.

***Calypogeia fusca* (Lehm.) Steph.**

(Calypogeiaceae)

The only European member of the subgen. *Caracoma*. Outside the Azores the species is known from scattered localities from Ethiopia to South Africa. No information on threats is available. Source: Bischler 1970.

***Bazzania azorica* Buch & H. Perss.**

(Lepidoziaceae)

Endemic to Madeira and the Azores, on all type of substrates (Sjögren 1978). As reported in Grolle (1983), the species is closely related to the tropical Asiatic *B. praerupta* (Reinw. et al.) Trev. Needs further taxonomic studies. Source: Grolle 1983.

Brachythecium appleyardiae

McAdam & AJE Smith

(Brachytheciaceae)

A local endemic restricted to only 8 sites in Somerset, Wiltshire and Derbyshire in England. The species grows both on calcareous rocks and acidic sandstone wall. Habitat threatened by recent road construction and stone wall repair work. Needs further taxonomic studies. Source: McAdam and Smith 1981; ECCB 1995, M. Ignatov (*pers. comm.*).

***Calypogeia azorica* Bischl.**

(Calypogeiaceae)

Endemic to the Azores, closely related to African species, known from 5 locali-

ties only. Habitat requirements are badly known. Needs further taxonomic studies Sources: Bischler 1970, Sjögren 1978

***Cephaloziella nicholsonii* Douin & Schiffn. (Cephaloziellaceae)**

Apparently endemic to SW England (Paton 1984), but commonly considered to be conspecific with *C. massalongi* (Spr.) Müll. Needs further taxonomic studies. Source: Paton 1984, ECCB 1995

***Cheilolejeunea cederkretzii* (Buch & Perss.) Grolle (Lejeuneaceae)**

Endemic to the Azores, growing on small twigs, leaves and mosses, very rare. The taxonomic relationships to African species of the tropical genus should be investigated. Sources: ECCB 1995, Grolle 1983, Sjögren 1978.

***Cololejeunea schaeferi* Grolle (Lejeuneaceae)**

Endemic to Macaronesia. No indication of threat known. Source: Dirkse & al. 1993.

***Forsstroemia stricta* Lazar.**

(Cryphaeaceae)

The species is known only from the type collection from Primorskij Territory in the Far East Siberia of Russia. Closely related taxa are found in S India and Taiwan. The forests in Russian Far East are today seriously threatened by forestry going on in the region. Needs further taxonomic studies. Sources: Ignatov and Czerdantseva, 1995; M. Ignatov (*pers. comm.*).

***Fossombronia fimbriata* Paton**

(Fossombroniaceae)

Described in 1974, it has been found since in scattered localities on damp soil and similar substrates in Ireland, Scotland and Wales, not yet on the European mainland. No indication of threat known. Source: Preston in Hill & al. (eds.) 1991.

***Fossombronia incurva* Lindb.**

(Fossombroniaceae)

Occurring on damp, sandy soils with a scattered distribution in western Europe. Mostly found along the sea coast and at shores of larger lakes. Not frequent but apparently not threatened everywhere. Sources: Müller 1954, Ludwig & al. 1996.

***Frullania illyrica* Grolle**

(Jubulaceae)

Known from 2 localities, one in Albania, the other in Slovenia. Needs further taxonomic studies. Source: Meyer & Grolle, 1963.

***Frullania polysticta* Lindenb.**

(Jubulaceae)

Probably endemic to Macaronesia. Closely related to the *F. tamarisci*-complex, but distinct. No indications on threats available. Sources: Hattori 1972, Vanden Berghen 1976.

***Herbertus azoricus* (Steph.)**

Richards (Herbertaceae)

Endemic to the Azores, related to African species. Growing on soil and bark. Common above 900 m. Sources: Sjögren 1978, Grolle 1983.

***Heteroscyphus denticulatus* (Mitt.)**

Schiffn. (Geocalyceaceae)

Macaronesian endemic, closely related to African and Australasian species. These relationships need further studies. Source: Grolle 1983.

***Jungermannia breviperianthia* Gao in Gao & Zhang**

(Jungermanniaceae)

Known from 3 localities in north-eastern China. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Jungermannia flagellalioides* (Gao)**

Piippo (Jungermanniaceae)

Only known from the type specimen. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Lejeunea hibernica* Grolle**

(Lejeuneaceae)

Growing over mosses in Ireland, also reported from the Azores, Canaries and Madeira, also in wet shaded crevices in cliffs. No indication of threat known. Sources: Müller 1958, Birks in Hill & al. 1991.

***Lejeunea mandonii* (Steph.) Müll.**

Frib. (Lejeuneaceae)

On wet rocks and trunks in Scotland, Ireland, England, Spain, Portugal, Madeira, Canaries. Rare, but probably

overlooked. Sources: Müller 1958, Birks in Hill & al. 1991.

***Marsupella andreaeoides* (Lindb.) Müll. Frib. (Gymnomitriaceae)**

Reported by Jørgensen (1934) from at least 30 localities in SW Norway. It is also known from a few localities in northernmost Sweden. No indication of threat known. Source: Jørgensen 1934, Våda and Hallingbäck, *pers. comm.*

***Marsupella fengchengensis* Gao & Chang (Gymnomitriaceae)**

Only known from the type specimen. Needs further taxonomic studies. Source: Piippo 1990.

***Metzgeria liaoningensis* Gao (Metzgeriaceae)**

Known from type locality and another locality. Source: Gao & Zhang 1981

***Plagiochila allorgei* Herz. & Perss. (Plagiochilaceae)**

On several substrates in mature *Juniperus* cloud forest. Endemic to the Azores. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Plagiochila atlantica* F. Rose (Plagiochilaceae)**

On rocks and trunks in western Scotland, also known from Ireland, north Wales and north-western France. No indication of threat known. Sources: Jones & Rose 1975. Averis in Hill & al. 1991.

***Plagiochila carringtonii* (Balf.) Grolle (Plagiochilaceae)**

Reported from western Scotland, Orkney and Faeroe islands in dwarf shrub communities. The variety *lobuchensis* Grolle occurs in Nepal and China. Sources: Long (*in litt.*), Müller 1956; Averis in Hill et al. 1991.

***Plagiochila norvegica* Blom & Holten (Plagiochilaceae)**

Only known from Norway (2 localities) and Sweden (1 locality). Needs further taxonomic studies. Sources: ECCB 1995, Blom & Holten 1988.

***Porella inaequalis* (Gott. ex Steph.) H. Perss. (Porellaceae)**

Closely related to *P. pinnata* L. Endemic to Madeira. Needs further taxonomic studies. Sources: Grolle 1983, Persson 1955.

***Radula carringtonii* Jack (Radulaceae)**

Occurs in small quantities on shaded rocks from western Scotland to SW Ireland, NW Spain and Macaronesia. No indication of threat known. Source: Birks in Hill et al. 1991.

***Radula holtii* Spruce (Radulaceae)**

On wet rocks in SW Ireland, Spain, Portugal and Macaronesia. Everywhere rare. No indication of threat known. Source: Birks in Hill 1991.

***Radula visianica* Mass. (Radulaceae)**

Known from the type locality near Padova in Italy and a second locality 100 km farther north. Neither taxonomy nor occurrence have been recently investigated. Sources: ECCB 1995, Müller 1956.

***Radula wichurae* Steph. (Radulaceae)**

Rare but perhaps overlooked Macaronesian endemic. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Riccia breidleri* Steph. (Ricciaceae)**

Endemic to the Alps region in Europe, presently known from less than 20 localities between 2100 and 2650 m on damp, weakly acidic soil of temporary pools of melting snow. Perhaps not conspicuous every year (shuttle species) and therefore overlooked. Listed on Appendix I of the Bern Convention (conservation of European natural habitats) and Annex 2 of the EC Habitats and Species Directive. Sources: ECCB 1995. Geissler 1984.

***Riccia gothica* Damsh. & Hallingb. (Ricciaceae)**

Only known from Sweden. However, relatively recently described taxon which presently not occur in any threatened habitats. Source: Damsholt & Hallingbäck (1987).

***Trichocoleopsis tsinlingensis* Chen ex M. X. Zhang (Neotrichocoleaceae)**

Known from at least four provinces in China. Source: Gao & Cao 1988, Zhu & al. 1994.

***Tylimanthus madeirensis* Grolle & Perss. (Acrobolbaceae)**

Endemic to Madeira. According to Jones (1981), close or even conspecific with *T. ruwenzorensis* S. Arn. Similar ecology as *T. azoricus*. Needs further taxonomic studies. Sources: ECCB 1995, Grolle & Persson 1966.

REFERENCES

Bischler H. 1964. Le genre *Drepanolejeunea* Steph. en Amérique Centrale et Méridionale. *Revue Bryologique et Lichénologique* 33: 15-179.

Bischler H. 1970. Les espèces du genre *Calypogeia* sur le continent africain et les îles africaines. *Revue Bryologique et Lichénologique* 37: 63-134.

Blom H.H. & J.I. Holten 1988. *Plagiochila norvegica*, a new hepatic from West Norway. *Lindbergia* 14: 8-11.

Buck, W. R. 1981. A re-interpretation of the Fabroniaceae, III: *Anacamptodon* and *Fabronidium* revisited, *Mamillariella*, *Helicodontiadelphus* and *Bryobartlettia* gen. nov. *Brittonia* 33: 473-481.

Campbell D.H. 1896a. A new California liverwort. *Botanical Gazette* 21: 9-13.

Campbell D.H. 1896b. The development of *Geothallus tuberosus* Campbell. *Annals of Botany* 10: 489-510.

Chang K.-C. & C. Gao 1984. *Plantae novae hepaticarum sinarum*. *Bulletin of Botanical Research* 4, 3: 83-99.

Churchill, S. P. 1986. A revision of *Echinodium* Jur. (Echinodiaceae: Hypnobryales). *Journal of Bryology* 14: 117-133.

Crum, H. A. and L. Anderson 1981. *Mosses of Eastern North America*, vol. 1. Columbia University Press, New York.

Damsholt K. & T. Hallingbäck (1987). *Riccia gothica*, a new species of Hepaticae from Sweden. *Lindbergia* 12: 100-102 "1986".

Dirkse G.M., A.C. Bouman & A. Losada-Lima 1993. Bryophytes of the Canary Islands, an annotated checklist. *Cryptogamie, Bryologie-Lichénologie* 14: 1-47.

Doyle W.T. 1962. The morphology and affinities of the liverwort *Geothallus*. *University of California Publications, Botany* 33: 185-268.

ECCB 1995. Red Data Book of European bryophytes. European Committee for the Conservation of Bryophytes, Trondheim, 291 pp.

Enroth, J. 1994. A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida). *Acta Botanica Fennica* 151: 1-90.

- Enroth, J. 1995. Commentary on the moss genus *Flabellidium* (Brachytheciaceae). *Fragmenta Floristica Geobotanica* 40: 743-747.
- Enroth, J. and R. E. Magill 1994. *Neckeropsis pocsi* (Neckeraceae, Musci), a new species from Comoro Islands. *Bryologist* 97: 171-173.
- Gao C. & T. Cao 1988. A study of *Trichocolea* Dum., *Trichocoleopsis* Okam. and *Netotrichocolea* Hatt. (Hepaticae) in China. *Investigatio et studium naturae* 8: 24-37.
- Gao C. & G.-C. Zhang 1981. Flora hepaticarum Chinae boreali-orientalis. Beijing, 220 pp.
- Geissler P. 1984. A propos de *Riccia breidlerii* Jur. ex Steph. en Suisse et Haute-Savoie. *Cryptogamie, Bryologie-Lichénologie* 5: 63-67.
- Greven, H. C. 1993. Proposal for a red data list of European *Grimmia* species. *Cryptogamie, Bryologie Lichénologie* Vol. 14: 401-404.
- Grolle R. 1966. Die Lebermoose Nepals. *Khumbu Himal. Ergebnisse des Forschungsunternehmens Nepal Himalaya* 1: 262-298.
- Grolle R. 1983. Hepaticae of Europe including the Azores: an annotated list of species, with synonyms from the recent literature. *Journal of Bryology* 12: 403-459.
- Grolle R. & S.R. Gradstein 1988. *Haeselia*, a new genus of Cephaloziaceae (Hepaticae) from Mt. Roraima, Guyana. *Journal of the Hattori Botanical Laboratory* 64: 327-334.
- Grolle R. & H. Persson 1966. Die Gattung *Tylimanthus* auf den Atlantischen Inseln. *Svensk Botanisk Tidskrift* 60: 164-174.
- Hattori S. 1972. *Frullania tamaricifolia* complex and the species concept. *Journal of the Hattori Botanical Laboratory* 35: 202-251.
- Hattori S. 1975. Anthocerotae and Hepaticae. In: H. Ohashi (ed.), *Flora of Eastern Himalaya. Third Report. Bulletin University Museum, University Tokyo* 8: 206-242.
- Haynes C.C. 1910. *Sphaerocarpus hians* sp. nov., with a revision of the genus and illustrations of the species. *Bulletin of the Torrey Botanical Club* 37: 215-230.
- Hill M.O., C.D. Preston & A.J.E. Smith 1991. Atlas of the bryophytes of Britain and Ireland. Vol. 1. Liverworts (Hepaticae and Anthocerotae). Colchester, 351 pp.
- Hodgetts, N. G. and T.L. Blockeel. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observation on *T. angustifolium* and *T. fernandesii*. *Journal of Bryology* 17: 251-262.
- Ignatov M.S. & V.YA. Czerdantseva 1995. The families Cryphaeaceae, Leucodontaceae and Leptodontaceae (Musci) in Russia. *Arctoa* 4: 65-104.
- Jones E.W. 1981. African Hepaticae XXXII. *Journal of Bryology* 11: 311-323
- Jones E.W. & F. Rose 1975. *Plagiochila atlantica* F. Rose, sp. nov. *Journal of Bryology* 8: 417-422.
- Jovet-Ast S. 1984. *Riccia* (subg. *Viridiquamata*) *caroliniana* Ne-Thalan, espèce endémique rélictuelle d'Australie. *Cryptogamie, Bryologie-Lichénologie* 5: 389-402.
- Jovet-Ast S. 1987. Vers une classification phylogénétique des espèces du genre *Riccia*. *The Bryologist* 90: 321-330.
- Jørgensen, E. 1934. Norges levermoser. *Bergens Museums Skr. Nr. 16*. Bergen. 343 pp.
- Konstantinova N. A. & A. D. Potemkin (1994). Studies on *Scapania sphaerifera* (Hepaticae). *Annales Botanici Fennici* 31: 121-126.
- Koponen, A. 1992. European-Asiatic connections in *Tayloria* (Splachnaceae, Musci). *Bryobrothera* 1: 57-62.
- Long D. G. & R. Grolle 1990. Hepaticae of Bhutan II. *Journal of the Hattori Botanical Laboratory* 68: 381-440.
- Ludwig G., R. Düll, G. Philippi, M. Ahrens, S. Caspari, M. Koperski, S. Lütt, F. Schulz & G. Schwab 1996. Rote Liste der Moose (Anthocerotophyta et Bryophyta) Deutschlands. *Schriftenreihe für Vegetationskunde* 28: 189-306.
- Löve, A. and D. Löve 1953. Studies on *Bryoxiphium*. *The Bryologist* 56: 183-199.
- McAdam S.V. & A.J.E. Smith 1981. *Brachythecium appleyardiae* sp. nov. in southwest England. *Journal of Bryology* 11: 591-598.
- Merrill, G. L. S. 1992. *Ozobryum ogalense* (Pottiaceae), a new moss genus and species from the American Great Plains. *Novon* 2: 255-258.
- Meyer F.K. & R. Grolle 1963. Eine neue *Frullania*-Art aus Albanien. *Feddes Repertorium* 68: 101-107.
- Mizutani M. & K. C. Chang 1986. A preliminary study of Chinese Lepidoziaceae Flora. *Journal of the Hattori Botanical Laboratory* 60: 419-437.
- Müller K. 1951-58. Die Lebermoose Europas. In: Dr. L. Rabenhorst's *Kryptogamen-Flora von Deutschland, Österreich und de Schweiz*. Band 6, 3. Auflage. Leipzig. 1365 pp.
- Nicholson W.E., T. Herzog & F. Verdoorn. Hepaticae. *Symbolae Sinicae* 5: 1-60.
- Ochyra R. 1991. *Crassiphylum* (Thamnobryaceae), a new moss genus from Madeira. *Fragmenta Floristica Geobotanica* 36: 71-79.
- Pant G. & S.D. Tewari 1995. Additional, up to date notes on Red list monotypic endemic liverwort taxa of Kumaon (Western Himalaya). *The Bryological Times* 83/84: 7.
- Paton J. 1984. *Cephaloziella nicholsoni* Douin & Schiffn. distinguished from *C. massalongi* (Spruce) K. Müll. *Journal of Bryology* 13: 1-8.
- Paton J. A. 1976. *Ditrichum cornubicum*, a new moss from Cornwall. *Journal of Bryology* 9: 171-175.
- Persson H. 1955. Remarks on the *Porella pinnata* group. *Archivum Societatis Zoologicae Botanicae Fennicae "Vanamo"* 9, suppl.: 225-231.
- Piippo S. 1990. Annotated catalogue of Chinese Hepaticae and Anthocerotae. *Journal of the Hattori Botanical Laboratory* 68: 1-192
- Sérgio C. & S. M. Perold 1992. A new species of *Riccia* L. from the island of Madeira, *Riccia atlantica* sp. *Journal of Bryology* 17: 127-132.
- Sjögren E. 1975. Epiphyllous bryophytes of Madeira. *Svensk Botanisk Tidskrift* 69: 217-288.
- Sjögren E. 1978. Bryophyte vegetation in the Azores Islands. *Memórias da Sociedade Broteriana* 26: 1-283.
- Tan B., Geissler, P. & Hallingbäck, T. 1994. Towards a World Red List of Bryophytes. *The Bryological Times* 77: 3-6; 78: 4-5.
- Váða J. 1992. Phytogeographically important hepaticae from the Altai Mts. (Russia). *Novitates Botanicae ex Universitate Carolina* 7: 27-32.
- Váða J. & H. Inoue 1983. Studies in Taiwan Hepaticae V. *Jungermanniaceae*. *Bulletin of the National Science Museum, Tokyo, Ser. B*, 9: 125-142.
- Vanden Berghen, C. 1976. *Frullaniaceae* (Hepaticae) africanae. *Bulletin du Jardin Botanique National de Belgique* 46: 1-220.
- Wigglesworth, G. 1929. A new Californian species of *Sphaerocarpus*. *University of California Publications, Botany* 16: 129-137.
- Wolery M.G. & W.T. Doyle 1969. The distribution of *Geothallus tuberosus*. *The Bryologist* 72: 413-417.
- Zhu, R.-L. 1995. *Cololejeunea* (Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83-109.
- Zhu, R.-L., Hu, R.-L. & Ma, Y.-J. 1994. Some comments of rare and endangered liverworts in mainland China. *Arctoa* 3: 7-12.

Frullania as epiphyll

My name is Matt von Konrat and I am studying for a PhD at the University of Auckland. Dr John Braggins is my main supervisor. The title of my thesis is "a study of the liverwort genus *Frullania* in New Zealand". The focal point of this study will be to examine the relationship between the New Zealand taxa and overseas taxa in order to help resolve the taxonomic problems in the genus. The information obtained from the taxonomic study will provide the foundation for research investigating the ecology, conservation and biology of *Frullania* species.

On a recent field trip I collected some *Frullania* growing as an epiphyll at high altitude from several locations (1000m and 1300m). I was wondering if this is an aspect of its growth previously undescribed? I am unable to find any publications describing this growth habit. I am interested in publishing an account of this. I was wondering if anyone knew of any published records existed and/or unpublished records.

Thanks, Matt von Konrat

Email: MVONKONRAT@sbsnov2.auckland.ac.nz

New literature

“GENERA OF HEPATICS” by O. Yano and S. R. Gradstein

This booklet provides a quick reference to all accepted generic names of hepatics, synonyms and families to which they belong. A taxonomic arrangement of the genera according to families is also provided. The booklet should be a very handy tool for use in herbarium management and other purposes. This publication (paper bound, 29 p.) is distributed by the “Systematisch-Geobotanisches Institut der Universität Göttingen”. Those interested in obtaining this publication should write to the address below, enclosing US\$ 3 (in cash) or DM 6 (in Eurocheque, please note cheque card number on reverse side) per copy, US\$ 25 (in cash) or DM 40 (in Eurocheque, please note cheque card number on reverse side) per 10 copies. Price includes postage. Because of the high bank charges, payments can not be made in other type of cheques.

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Shelyah-Sosonko, Yu. R. (ed. in chief). 1996. *The Red Data Book of Ukraine. Vegetable Kingdom. Kyiv: Ukrainska Entsyklopediya. 608 pp. [In Ukrainian with English summary].*

The second edition of the Red Data Book of Ukraine was prepared some years ago but published last year. It is divided into five sections to include reviews of 541 plant and fungi taxa: vascular plants (439 species), bryophytes (28), algae (17), lichens (27), and fungi (30). The reviews are compiled by leading Ukrainian specialists for every group involved. Species reviews are arranged in systematic order and designed in the following format: plant (fungus) name, family name, scientific importance, population status according to the IUCN Red Data Book and European Red List categories, distribution in and beyond Ukraine, habitats, causative factors, general morphological characteristics and conservation measures. Each review is supplied with a colour illustration and distribution map in the country. The book also provides the official legislative documents.

V. Virchenko, Inst. of Botany, Tereshchenkivska 2, 252 601 Kyiv, Ukraine

MOSS GARDENING, including lichens, liverworts, and other miniatures by George Schenk

At last, a comprehensive, up-to-date, sensible book on growing mosses and similar things. The perfect answer to those frequent queries from gardeners about how to grow mosses, or for that matter to those who want an introduction to mosses, including what's not a moss. Sections include transplanting, propagating, and growing mosses in containers, for bonsai, and as ground covers.

261 pages, 97 beautiful color plates. Hard cover. 1997. Prices, postpaid: \$38.50 U.S. addresses; \$39.50, all other addresses.

The 3rd European Conference on the Conservation of Bryophytes

The Scientific Basis for Bryophyte Conservation
in

Trondheim, Norway

31 August — 4 September 1998

The symposium will cover the following main topics

- What is a rare species
- Where do we find rare species
- How do we select species for conservation and how to conserve them

There will also be two days of excursions during the conference.

There are a number of possibilities for accommodation in Trondheim, from high standard hotels to fairly inexpensive hostels. Details will follow in the 2nd circular.

Pre-registration: Please send the Name, Address (incl. email if possible) to Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, Trondheim, Norway, not later than **1 February 1998**. Indicate (with preliminary title) if you intend to give a presentation/poster.

Bryology at the Rijksherbarium, Leiden

During his latest visit to Leiden W. Meijer celebrated his return to bryology (with which he is to be congratulated) and enthusiastically inaugurated himself "in a short ceremony crowned with a calyptra made by MRS Schreuder, the only person there left on the Bryology payroll". Fortunately, however, the present bryological conditions at the Rijksherbarium are not as poor as it may look.

It is true that no bryologist occupies a permanent staff position, and none can be appointed because all vacancies remain blocked by the university. This is a matter of grave concern to the bryologists and the management of the institute alike, but bryology at Leiden is not dead!

At present three bryologists are working here. Niels Klazenga is the one only who gets paid for it. He holds a temporary position (for 4 years) and is working on *Dicranoloma* for the area covered by Flora Malesiana, consisting roughly of Malaysia, Indonesia, the Philippines, and Papua New Guinea. He has completed a revision of the species and is now preparing a cladistic analysis of *Dicranoloma* and *Dicranum* in an attempt to clear the relationships between these and other genera of the Dicranaceae. At present he is doing field work in Borneo. Thereafter, he will attend the Beijing meeting and present some results of his work.

Hans Kruijer (Hypopterygiaceae) and Dries Touw (Thuidiaceae) continue their bryological research at the institute in honorary position. Finally, curatorial assistant Mrs. Birgitta Schreuder-Sternemark takes care of specific bryological jobs.

Bryology at Leiden is weak, but not dead, and we keep working towards a full recovery!

Niels Klazenga (klazenga@rulhb.LeidenUniv.nl), *Hans Kruijer* (hkruijer@rulhb.LeidenUniv.nl), *Dries Touw* (touw@rulhb.LeidenUniv.nl)

Iwatsukia jishibae on Lava Flows

Iwatsukia jishibae (Kitagawa 1964) is a species of an interesting genus which has a brief taxonomic history (Kitagawa 1964, Grolle 1965, Schuster 1968). But the ecology and life strategy of this species have not really been examined.

During our expedition to Reunion Isle we collected this species from different areas and surfaces. The most interesting habitats were the young (10-20 years old) lava flows of the volcano called Piton de la Fourmese, where this species has a large cover on the rough and porous surface of the lava. On these areas, which are in the early stages of succession, *Iwatsukia jishibae* prefers the deeper parts. It can be found 70 cm deep in the lava. We have some data of *I. jishibae* collected in Borneo, Madagascar and Reunion. On the basis of these specimens this species occurs on dead trunks, living trunks (most frequently), sometimes on rocks or soil. However, they were collected mainly in elfin or rain forests, not open lava flows. Considering these facts the most interesting question is whether this species has an invasive or a pioneer character on these areas?

In order to examine this phenomenon more exactly we would be glad to get some information (publications or other data) about *Iwatsukia jishibae* occurring on lava.

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Teachers College, H-3301 EGER, Pf.:
43, HUNGARY

E-mail: novtan@gemini.ektf.hu

Insider Tip-Off

The famous bibliography "Current Contents" is accessible through Internet. All records since 1994 can be searched for online. Current Contents include since some years also some bryological journals (Journal of Bryology, The Bryologist). The importance of Current Contents is, however, to search for bryological items in journals which are not so known amongst bryologists.

Flora of Australia

Australian Biological Resources Study (ABRS) will publish the first of the three bryological volumes in the Flora of Australia series in 1998. This volume will contain chapters on the history of Australian bryology, the biology of mosses, the ecology and biogeography of mosses, the fossil record, a key to genera and taxonomic treatments of several families. At short notice new authors have to be found for a number of these families:

Splachnaceae

Splachnobryum (2) *Tayloria* (6-8)

Mniaceae

Orthomnion (1) *Plagiomnion* (1)

Bartramiaceae

Bartramidula (1) *Breutelina* (8-11)

Conostomum (4) *Philonotis* (8-12)

Rhizogoniaceae

Bryobrothera (1) *Goniobryum* (1)

Hymenodon (1) *Leptotheca* (1)

Mesochaete (2) *Pyrrhobryum* (6)

Rhizogonium (5)

Here is an opportunity to contribute to a prestigious Flora series. ABRS would greatly appreciate hearing from any bryologists interested in preparing a flora treatment of any of these families or parts of these families. All authors will receive a complimentary copy of the Volume valued at about AUS\$80.

Because of the short time available, we are looking for a 'status quo' treatment. There is likely to be little time for in-depth new research.

If you are interested in contributing, please contact either:

Dr A.E. Orchard, ABRS, GPO Box 636, Canberra, ACT 2601, Phone: +61 6 2509442, Fax: +61 6 2509448, Email: tony.orchard@dest.gov.au

or

C. Grgurinovic, Phone: +61 6 2509 446, Email: cheryl.grgurinovic@dest.gov.au

Current Contents can be accessed in Internet through the University of Toronto: <http://utcat.library.utoronto.ca8002/db/CCBACK/search.html>

Jan-Peter Frahm (frahm@uni-bonn.de)

Future meetings of the British Bryological Society

The following meetings are planned by the BBS over the coming year. Contact local secretaries if you are interested in attending. Members are reminded to read the BBS Safety Code, which is published in Bulletin 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

Summer Field Meeting 1997 (I), North-east Yorkshire, 13-20 August.

Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815.

The headquarters hotel will be the Beansheaf Hotel, Malton Road, Kirby Misperton, Malton, YO17 0UE (Tel. 01653 668614). This hotel is 2½ miles south of Pickering and has been chosen because it has a good mix of accommodation, all en suite. Pickering is a popular tourist area, 20 miles from Scarborough, so early booking is recommended. There is plenty of varied accommodation available in the area, details of which will be supplied on request.

The last meeting of the Society in north-east Yorkshire was held in 1967, based in Northallerton, when most sites visited were in the western part of the county. This meeting will visit several sites covered on that occasion, but concentration will be more easterly. The sites to be visited will be varied. At least two days will be spent on acidic sandstone uplands and will include broadleaved woodlands, gills and griffs, as well as two bogs. Species in the wooded valleys could include *Discelium nudum*, *Dicranella subulata*, *Harpanthus scutatus*, *Herzogiella seligeri*, *Bazzania trilobata*, *Calypogeia integristipula*, *Hygrobiella laxifolia*, *Jungermannia hyalina*, *J. obovata*, *J. paroica*, *J. pumilum* and *J. sphaerocarpa*, and also *Radula complanata*, *Scapania umbrosa* and *Tritomaria exsectiformis*. Fen Bog has thirteen *Sphagnum* species and *Philonotis*

caespitosa, *Barbilophozia atlantica*, *Cephalozia macrostachya*, *Cladopodiella fluitans* and *Trichocolea tomentella*, whilst recent finds in the gills and griffs include *Brachydontium trichodes*, *Pohlia lutescens*, *Seligeria recurvata*, *Nowellia curvifolia* and *Jungermannia subelliptica*.

Several days will be spent in limestone country, where *Apometzgeria pubescens*, *Porella arboris-vitae* and *P. platyphylla* may be found. Further westwards, Duncombe Park NNR and Ashberry Meadows should be visited. If there is sufficient interest, a visit to Ingleby Greenhow can be arranged to see *Mielichhoferia elongata*. It would be nice to refind *Coscinodon cribrosus*, *Discelium nudum* and *Dicranella subulata* from here, not seen for many years. If time permits, we could visit Wass Bank to look for *Seligeria diversifolia*. Other bonuses would be *Acaulon muticum* and *Phascum floerkeanum* in stubble fields, not seen since the 1967 meeting.

Summer Field Meeting 1997 (II), North Italian Alps, 26 July-4 August.

Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Università, Viale Mattioli 25, I-10125 Turino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfur-long Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861.

The Italian Western Alps are not well known from the bryological point of view. There are many different habitats with a very interesting vascular flora, rich in endemic species, and probably also an interesting bryoflora, but there have been few bryological studies. It is hoped to visit a varied selection of habitats, including some well studied alpine bogs rich in bryophytes and the Valli di Lanzo, Susa and Chisone (Alpi Graie e Cozie). The bryophyte flora of most of these is sure to be rich but is at present unknown.

Annual General Meeting and Symposium Meeting 1997, Chichester, 12-14 September.

Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

This meeting will take place in the Chichester Inst. of Higher Education at Bishop Otter Campus. This is a college in a pleasant location with excellent modern accommodation and facilities. The city centre is within walking distance. Chichester is a very historic and attractive city and the Festival Theatre is also a major feature. There are other interesting places to visit in the Chichester area such as the open-air Weald and Downland Museum and Fishbourne Roman Palace. The College has indicated that any member who wishes to stay an extra night(s) may do so.

The field meeting on Sunday will be to one of the richer bryophyte areas in West Sussex, probably near Midhurst. On the Saturday night, it is proposed to have a celebration dinner to mark the 80th birthday of Dr. Harold Whitehouse.

Members who wish to make their own arrangements for accommodation may like to know that there is a good selection of B & B places (ca. £15 per night) within easy walking distance of the College.

Speakers will include (among others): Prof. Jeff Duckett (London Univ) - On protonemata, propagules, peristomes and phylogeny (or some mosses seem to be wrongly placed).

Mr. Malcolm Watling (Margate, Kent) - Bryology in Kent since Trudy Side.

Dr. Harold Whitehouse (Cambridge) - A presentation of stereoscopic slides.

Bryological Workshop 1997, London (date to be announced).

Local secretary: Dr. Ken Adams, Dept of Biology & Biochemistry, Univ of East London, Romford Road, London, NE15 4LZ. Tel.: 0181 5907722.

Topic to be arranged.

Spring field meeting 1998, Basse Normandie (Lower Normandy), France, March/April (date to be arranged).

Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. e-mail: J.Bates@ic.ac.uk.

The meeting will be of one-week's duration and organised along similar lines to the Brittany Field Meeting in 1993, probably in the week preceding the main Easter holiday and running from Saturday to Saturday. The headquarters hotel will (provisionally) be in the seaside town of Granville, which is probably the most central and pleasantly situated of the possibilities. There are convenient ferry crossings to Cherbourg, Caen and even St Malo.

The excursions will be into the departments of Manche, Calvados and Orne and include the rugged Cotentin Peninsula with similarities to Brittany, and the undulating and pleasantly wooded bocage countryside which has been likened to the English landscape as it was 50 years ago. There have been many Atlantic species recorded on this extension of the Armorican Massif and preliminary investigations by Jeff Bates suggest that there is still a lot to find. The main previous work is the flora for Manche by Corbiere (1889) and recent studies by Alain Lecoite of Caen University. It is hoped that the party will be able to visit coastal cliffs and dunes near Granville and further north on Cotentin; the main forest and heath areas in Calvados and Orne including the Normandie-Maine Regional Park area; the sandstone gorges of the Orne valley which have some Mediterranean-Atlantic species and the granite ravine of the Vire; bogs in Manche (peat is used to fire a power station here); rocky hillsides; and a day trip to the French Channel Islands – Iles Chausey. There will many opportunities to study epiphytes on town trees and stubble fields, and to visit interesting sites like Mont St Michel.

Tropical Bryology course in Merida, Venezuela

Yelitza Leon V., Centro Jardin Botanico, Facultad de Ciencias, Universidad de Los Andes, Merida-Venezuela.

Twenty participants from eight countries met in Merida-Venezuela for the Tropical Bryology course that was held from February 24 to March 7 this year. The course was organized by the Centro Jardin Botanico of the Universidad de Los Andes, Merida, Venezuela and taught by the visiting professors Dr. Tamas Pócs (Eger, Hungary) and Dr. Jan-Peter Frahm (Bonn, Germany). This event was partially financed by CONICIT and FUNDACITE-Merida and the Postgraduate Studies Office of the University in Merida. In bilingual lectures (English-Spanish) the participants learned about morphology, taxonomy, and ecology of tropical bryophytes. Dr. Pócs talked about hepatic morphology, dispersal, diversity in the most stimulating way and Dr. Frahm, always enthusiastic, told us about morphology, taxonomy, ecology and distribution of mosses. Fieldtrips were made to the cloud forest just behind the university campus and (by cable car) to the paramos and subparamos of the Sierra Nevada. All enjoyed a great atmosphere with a group of experienced bryologists and bryology students.

The course the participation of Dr. Raymond Stotler and Dr. Barbara Crandall-Stotler (USA). Barbara gave us the most wonderful lecture on branching patterns.

In our fieldtrips we learned from Dr. Pócs and Frahm techniques for ecological studies, how to study plots and phytosociological relevés and how to measure climatic conditions such as light intensity, temperature and humidity as well as the use of dataloggers.

The most attractive topic was experience in tree climbing techniques, which was provided by a graduate student from Bonn University.

Once in the computer room Dr. Frahm demonstrated how to use software to process ecological data and other programs for cladistic, phenetic and community studies.

In the Sierra Nevada de Merida we visited the type locality of *Ruizanthus venezuelanus* Schust. (the logo plant of our course, which appeared also on the course T-shirt) and found many other interesting species. A very weird *Fossombronia* found at 4000 m will keep Drs. Stotler busy for some time.

The participants were: Margarita Escobar (Medellin, Colombia), Oscar Orrego Santa (Bogota, Colombia), Virginia Freires (Guatemala), Rosa Isela Meneses (Bolivia), Amalia Beatriz Biasuso (Argentina), Ines Sastre D-J. (Puerto Rico), Carmen Reyes (Puerto Rico), Abeliz Rosado (Puerto Rico), Sobeida Escoria A. (Puerto Rico), Patxi Heras (Spain), Marta Infante (Spain), Javier Estrada (Spain), Claudia Horning (Venezuela), Claudia Garbiso (Venezuela), Yrene Davila (Venezuela), Ana Escalona (Venezuela), Ricardo Rico (Venezuela), and myself.

This experience enriched us not only bryologically but also personally, tightened relations among bryologists of neighboring countries in Latin America, and with Europe and the USA. In addition, the course allowed young Latin American bryologists to learn the world of tropical bryophytes in our own surroundings.

Minutes for IAB Council Meeting

Beijing, May 27, 1997

The Chairman called the meeting to order at 7:30 p.m.

Present were T. Cao, C. Delgadillo M., J.-P. Frahm, T. Hallingbäck, M. Ignatov, T. Koponen, R. Seppelt, L. Söderström, D. Vitt.

1. Minutes from the Mexico meeting in 1995: Read and accepted with change to item eight.

2. Treasury Report by D. Vitt

Income

*Dues (incl. NBS & Arctoa)	15869.89
Interest	613.12
Capital Gains	1371.98
Sphagnum Symposium	4500.00
Mutual Fund Increase	3560.27
Total Income	25915.26

Expenses

Postage	1673.65
Photocopying	445.00
Salaries	1100.00
Secretarial Supplies	46.23
S. Greene Award (1995)	1000.00
Hattori Prize	400.00
NBS (pd)	266.00
Arctoa(pd)	400.00
Total Expenses	6238.41

BALANCE MAY 25, 1997

INCL. COMMITMENTS **42895.15**

Commitments (1997)

Endangered Species Fund	388.00
Hattori Prize	400.00
Stanley Greene Award	4000.00
Arctoa	1426.23
NBS	1518.56*
Next Sphagnum Symposium	4500.00
Total Commitments	12232.79

*IAB and NBS are collecting money for each other. Balancing with NBS was not done prior to this report.

There was some discussion of whether funds were invested to the best ability and the responsibility given to one person as the treasurer. A financial committee will be set up and chaired by the Secretary-Treasurer. A proposal was made by Frahm to consider raising fees to \$15 US with the extra \$4 going to research. Vitt suggested having donations, but it was felt this would not work. Delgadillo suggested \$1 raise and

Koponen suggested no raise. Decision made to not raise fees but to add a phrase to the dues notice and in The Bryological Times that persons "please contribute to the research fund".

3. Membership Report: Membership in IAB by regions in 1997 was:

Africa	5
Asia	23
Australia & New Zealand	27
China	30
Europe	239
E Europe	83
Japan	40
N & C America	140
S America	6
Total paying members	593.

This compares to 422 in 1993 and 495 in 1995. (At this time some of the persons who received The Bryological Times were not paying members). There was discussion over the small number of South American and African members. It was concluded that there are a number of bryologists in South America who are potential members, while in Africa the number of members probably reflects the actual number of bryologists. C. Delgadillo will take prospectus and copies of The Bryological Times to the Latin American Society to see if he can encourage members. S. Vitt is to send copies to him plus the names of current members.

4. The Bryological Times Report by L. Söderström: Six issues of The Bryological Times were not always possible due to lack of material. Suggestions for new organization included: 1) Editors to be formally appointed every two years with re-appointments possible. 2) Spread out responsibility by selecting six Regional Editors from around the world who will do one main article for The Bryological Times per year among other things. Six persons have been asked to serve as editors but only three have answered yet. 3) Column Editors

will be appointed for two years only. The number will vary and new Column Editors can be added as needed. They should contribute at least once a year. 4) A literature column needs to be added, including book reviews. A motion was made by J.-P. Frahm that the arrangements for the above be made by the editor and these changes be printed in The Bryological Times. These changes were accepted.

5. Meeting in St. Louis in 1999: The program at the International Botanical Congress consists of symposia and a combined poster session. Deadline for subject of symposia is September, 1997. Suggestion was made by D. Vitt that a committee be set up to organize the symposia. R. Seppelt commented that we should co-ordinate with ABLs in arranging symposia. A proposal was made to select 3-4 persons to set up at least two (and up to several more) symposia. The committee suggested B. Mishler, M. Crosby, and M. Ignatov be asked to serve on this committee. They were to check if there were other costs involved besides the registration fees.

6. IAB Meeting in 2001: There was a proposal from India to host this meeting. Spain had been asked to put forth a proposal, but had not done so. Vitt made a motion for the meeting to be held in India, it was seconded and passes with 5 votes against 3. Delgadillo and Frahm will put together a proposal for the 2003 meeting in South America. In 2005 the meeting will again be held with the International Botanical Congress.

7. Nomination for Awards:

Stanley Greene Research Award: 1800 CDN to G. Dauphine from Costa Rica to study Lejeuneaceae and 2200 CDN to Fu Xing of China do research in Canada. They will have to submit receipts for usage of money and a report

within a time period of one year. They should also include a line crediting this support in their publication.

Richard Spruce Plaque: Recommendation to accept (secret) nomination and make presentation to recipient at the Business Meeting. Award given to Timo Koponen.

Hattori Prize: 400 CDN for "Prodromus Bryologiae Novo-Granatensis: An Introduccion a la Flora de Musgos de Colombia" by Steven P. Churchill and Edgar L. Linares C.

The President appointed committees for the nominations of recipients of IAB awards: Richard Spruce Plaque for the 2001 meeting (Timo Koponen {as 1997 winner} plus three others to be decided in St. Louis), the Stanley Greene Award (T. Koponen, H. Deguchi and C. Delgadillo, chaired by D. Vitt, Secretary-

Treasurer), and the Hattori Prize (B. Crandall-Stotler, M. Ignatov and L. Söderström, chaired by T. Koponen, President of IAB). The Hedwig committee (W. Frey, H. Ramsay, W. Reese and T. Pócs) will make the decision about the 1999 medal and should be set the same as the Richard Spruce Award committee in 2001 and 2003.

8. Archives for Bryology cancelled as no longer needed.

9. The IAB Home Page is currently being organized and will be linked to other organizations.

10. Endangered Species Committee Report by T. Hallingbäck: Contributions to the fund for research on endangered species began in Mexico. Geissler, Gradstein, Hallingbäck, Pócs, and Tan make up the committee to decide the best use of these funds and they will

appoint Belland as a new member if he agrees. They will produce an action plan for endangered Bryophytes with the most needed research listed in a booklet with the IAB symbol. Recommended that they have a proposal for use of the funds by the St. Louis meetings.

11. Advances in Bryology by Royce Longton (given by Vitt): Vol. 6 done. Suggestions for Vol. 7. 1) Tropical Bryology and 2) Biodiversity & Conservation with Floristics included were suggested. Molecular biology was suggested for a future issue.

12. Constitution: Motion to amend constitution as presented by Vitt and Söderström, seconded by Delgadillo. Decision made to submit the proposal to the general membership for their approval.

General Annual Meeting to be held on Thursday, May 29.

Meeting adjourned.

News from the Herbaria

News from the Herbaria. Send contributions to the column editor: A. R. Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP, Wales, United Kingdom

Department of Botany, National Science Museum, Tokyo, Japan, moved to Tsukuba from Shinjuku in 1995 (cf. *Taxon* 44: 268, 1995). In view of the time-consuming activities involved in moving and re-housing the collections, the herbarium of the department (TNS) was temporarily closed from June 1995, and opened from May 1996. We now invite loan requests from recognized botanical institutions. We have expanded the size of our herbarium to provide more space for herbarium-related research. A new guest-house was also built to accommodate short- and long-term visitors.

For further information, please contact Dr Masanobu Higuchi, Department of Botany, National Science Museum, 4-1-1 Amakubo, Tsukuba, Ibaraki 305, Japan. E-mail: higuchi@kahaku.go.jp

Publication years for Illustrated Flora of Nordic Mosses

I often get questions regarding the actual years of publication for the first three fascicles of Elsa Nyholm's *Illustrated Flora of Nordic Mosses*. According to information provided by P. H. Enckell (Editorial Office, Ecology Building, S-223 62 Lund, Sweden; from where the flora can also be ordered), the following years are the correct ones. Fascicle 1 was published in 1987, fascicle 2 in 1990, and fascicle 3 in 1993.

PS! Anyone interested in the contents of the latest issues of *Lindbergia* (and the other journals edited at the Editorial Office in Lund) could check the following home page:

<http://www.oikos.ekol.lu.se>

Lars Hedenäs, Swedish Museum of Natural History, Dept. of Cryptogamic Botany, Box 50007, S-104 05 Stockholm, Sweden. e-mail: lars.hedenas@nrm.se

Course on Tropical Mosses and Lichens in Ecuador

The Herbario QCA of the Catholic University of Ecuador invites you to the first course about Tropical Mosses and Lichens which will be in Quito on August 25th to September 5th. This course will be carried out with collaboration of: Dr. Harrie Sipman of Berlin University and Dr. Robert Gradstein of Göttingen University in Germany. We will have several field trips to important tropical rain forest in Ecuador.

For more information please contact:

Dr. Renato Valencia or Lcdo. Eduardo Barahona, Herbario QCA, Universidad Cartolica, Apartado 17-01-2184, Quito, ECUADOR. Email: rvalenci@pi.pro.ec, rvalenci@ecnet.ec or mcbarahona@puceuo.puce.edu.ec, FAX (593-2) 567 117, TEL/FAX (593-2) 371 788

New Constitution for the International Association of Bryologists

In the late 1980's, IAB Council decided to become independent from IAPT (International Association of Plant Taxonomists). This move gave us the opportunity to develop our own funds and budget them as we see fit. It also allowed us to better develop bryological interests outside of taxonomy. In other words, by being independent of IAPT, the Association can better serve all of bryology.

Also, the present constitution was formulated while IAB was affiliated with IAPT, and as a result our elections and terms of office were strongly tied to those of IAPT.

While the Council's decision to become independent from IAPT took effect some years ago, our constitution has never been updated to reflect these changes. Additionally, the constitution needs some 'house cleaning' to make it a more current document that we can all follow closely.

As a result of this background, Council discussed the constitution while at the Beijing meeting and unanimously recommends to the membership that we amend the constitution as proposed here. The Council presents an amended constitution; these amendments require a 2/3 majority acceptance by the voting

membership by mail ballot.

Below you find both the old and the proposed constitution. There are a number of small changes in the text. The main changes are marked as strike-through in the old text for deleted parts and underlined in the proposed text for additions and major changes.

Please review the old and the amended versions of the constitution as presented below and return your vote by mail before September 15, 1997, to Dale H. Vitt, Secretary-Treasurer.

Note: the ballot is on the same yellow form as the information for your new IAB address list request for information.

Old Constitution

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Article 2. ~~The Association shall be affiliated to the International Association for Plant Taxonomy (I.A.P.T.) on the basis of Article 3, section 4, of the Constitution of that Association.~~

Section 2. Objectives and Means

Article 3. The objectives of the Association shall be to promote international co-operation and communication among bryologists, whether amateur or professional.

Constitutional Changes as recommended by IAB Council May 27, 1997 in Beijing, for ratification by the membership

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Section 2. Means and Objectives

Article 2. The Association is an international, non-profit society whose financial records reside with the current Secretary-Treasurer.

Article 3. The objectives of the Association shall be to promote international co-operation and communication among persons interested in bryophytes.

Article 4. ~~The objectives of the Association shall be pursued by the same methods and procedures as those provided in the I.A.P.T., either jointly or independently, but normally under the aegis of that Association. The methods of the Association shall include:~~

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter, ~~the publication of a regular list of all new taxa, at every level, from the world's literature; the periodic publication of an up-to-date address list of the world's bryologists;~~ and issues that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary of the I.A.B. ~~or I.A.P.T.~~ and payment of the appropriate fee.

Article 7. ~~Membership of the Association shall be open without payment of an additional fee to any personal member of the I.A.P.T. in good standing, who may desire to become a member of the I.A.B.~~

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary, and ten Councillors. Normally not more than two members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office between two Business meetings of the Association and shall not be eligible for re-election to the same office. The Councillors shall hold office between three Business Meetings; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office between three Business Meetings and shall be eligible for re-election.

Article 4. The objectives of the Association shall be:

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter and items that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary-Treasurer of the I.A.B. and payment of the appropriate fee.

Article 7. Non-profit bryological societies can be affiliated to the I.A.B. Affiliated societies may use the newsletters and the other I.A.B. channels free of charge. Commercial journals or publishers may use the I.A.B. network by paying an amount decided at any time by the current Executive Committee.

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary-Treasurer, the Editor of The Bryological Times, and ten Councillors. Normally not more than three members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office for 4 years and shall not be eligible for re-election to the same office. The two Vice-Presidents shall not be elected simultaneously. The Councillors shall hold office for 4 years; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary-Treasurer shall hold office for 6 years and shall be eligible for re-election.

Article 11. The Editor of The Bryological Times shall be appointed by the council for two year terms and be eligible for reappointment.

Article 11. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President until the next Business Meeting of the Association.

Article 12. The Council may at any time co-opt additional members for special purposes; ~~for example, the Association will eventually need the services of an Editor and a Bibliographer.~~

Article 13. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5. Meetings and Elections

Article 14. The Association shall meet at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each International Botanical Congress or at an appropriate International Congress. The time interval between two Business Meetings shall normally be at least four years and not more than six years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings.

Article 15. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the offices of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 16. At least seven months prior to a Business Meeting of the Association, the President shall appoint an ad hoc Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 17. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chairman of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency.

Section 7. By-Laws and Amendments

Article 18. The Council shall have power to make by-laws for carrying into operation the terms of the Constitution.

Article 12. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President for the remaining term of office.

Article 13. The Council may at any time co-opt additional members for special purposes.

Article 14. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5 Meeting and Elections

Article 15. The Association shall meet biennially, including if possible at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each biennial meeting. The time interval between Business Meetings shall normally be every two years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings through the newsletter.

Article 16. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the office of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

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Article 18. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chair of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency. Ballots shall be sent to the election judge, appointed by the President.

Section 6. By-Laws and Amendments

Article 18. The Council shall have the power to make by-laws for carrying into operation the terms of the Constitution.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require favourable vote of two-thirds of the votes cast.

However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favourable decision is then obtained, they shall be voted upon by mail vote.

By-Laws for IAB Committees

1. Such Committees as may be required to fulfill IAB's purposes shall be created on a temporary or unlimited basis, upon the decision of the Council.
2. The Chairman and Members of each Committee shall be appointed (and can be dismissed) by the Executive Committee. Unless otherwise specified, their commission ends with that of the Council, during which they were appointed; it can be renewed. The President and the Secretary of the IAB are ex-officio members of each Committee.
3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.
4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary of IAB who shall circulate them and report back to the Committees any comments received from Council members.
5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chairman of that Committee, their use being fully accounted for in the Committee's reports.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require a favorable vote of two-thirds of the votes cast. However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favorable decision is then obtained, they shall be voted upon by mail vote.

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3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.
4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary-Treasurer of IAB who shall circulate them and report back to the Committees and comments received from Council members.
5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chair of that Committee, their use being fully accounted for in the Committee's reports.

The IAB Meeting in 1999

In 1999, IAB will meet in St. Louis, Missouri in connection with the XVI International Botanical Congress. This meeting will consist only of posters and organized Symposia. IAB will be suggesting symposia to the organizing committee. We need your suggestions now as the deadline for proposals is September 15, 1997.

Please send your symposium proposals to the Secretary, Dale H. Vitt before September 1, 1997. **Symposium proposals must include the following:**

- at least two convenors, one of which is from outside of North America.
- a listing of seven speakers with the tentative title and abstract for a 20 minute presentation.

The IAB Council

The Current IAB Council is as follows (with end of term):

- President: **T. Koponen**, Finland (1999)
 Past President: Vacant
 1st Vice President: **W. B. Schofield**, Canada (2001).
 2nd Vice President: **R. E. Longton**, UK (1999).
 Secretary-Treasurer: **D. H. Vitt**, Canada (1999)
 Councillors: **H. Ando**, Japan (1999), **C. Delgado M.**, Mexico (1999), **P. Geissler**, Switzerland (1999), **N. Miller**, USA (1999), **L. Söderström**, Norway (1999), **B. Buck**, USA (2001), **T. Cao**, China (2001), **J.-P. Frahm**, Germany (2001), **M.**

- Ignatov**, Russia (2001), **R. Seppelt**, Australia (2001).
 Editors (appointed): **L. Söderström**, Norway (1999), **T. Hedderson**, UK (1999), **H. Weibull**, Sweden (1999).
 The Nominations committee seeks nominations for the following offices that are to be filled by general election at the 1999 St. Louis meeting
 President
 Second Vice-President
 Secretary-Treasurer
 5 Councillors
 Nomination can be done on the enclosed yellow form. Dale Vitt will pass it on to the Chair of Nominations committee.

The Bryological Times is a newsletter published bimonthly for the *International Association of Bryologists*. Items for publication are to be sent to the Editors (preferably HW), **except** for those for the regular columns, which may go **direct** to the column editors

Deadlines for material to the Bryol. Times will be January 15, March 15, May 15, July 15, September 15 and November 15 with the publication shortly afterwards. Shorter notes may be accepted later if there is still space.

Editors

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Terry Hedderson, Dept of Botany, University of Reading, Whiteknights, RG6 2AS Reading, UK. FAX +44 1 734 753 676.

T.A.J.Hedderson@reading.ac.uk

Column Editors

J.-P. Frahm & B. O'Shea (computer techniques); T. Hallingbäck (conservation); A. R. Perry (news from the herbaria); T. Pócs (tropical bryology); J. Vána (floristics and phytogeography).

The Bryological Times, founded in 1980 by Stanley Wilson Greene (1928-1989), is distributed from Beijing (China), Canberra (Australia), Edmonton (Canada), Eger (Hungary), Geneva (Switzerland), Hiroshima (Japan), Moscow (Russia), Praha (Czech Republic), St. Louis (USA) and Trondheim (Norway).

Production

Lars Söderström, Trondheim

For details regarding membership of to *International Association of Bryologists* (currently US \$ 11.- per year) write to Dale H. Vitt, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.

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DIARY

1997

July 5. Field meeting with DBLS. Bryophytes round Boxmeer. Contact person: L. Spier, Kon. Arthurpad 8, NL-3813 HD Amersfoort, The Netherlands.

July 26-August 4. BBS Summer Field Meeting in North Italian Alps. Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Universit, Viale Mattioli 25, I-10125 Torino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861

August 3 - 7. ABLs Annual Meeting in Montreal, Quebec. Information from: Brent D. Mishler, Dept. of Integrative Biology, University of California, Berkeley, CA 94720-2465 phone: (510) 642-6810 FAX: (510) 643-5390 Email: bmishler@garnet.berkeley.edu

August 8-10. Annual Meeting and Excursion with the Nordic Bryological Society on the Archipelago of Åland. Information from Hanna Jalkanen, P.O.Box 47, FIN-00014 University of Helsinki, Finland. Tel. +358 09 708 4725. Fax. +358 09 708 4726. Email hanna.jalkanen@helsinki.fi

August 13-20. BBS Summer Field Meeting in North-east Yorkshire. Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815

September 3-9. SVBL/BLAM Summer field trip. Sarnen (OW), Switzerland. Montane and subalpine forests and bogs on the northern slope of Central Alps. Contact Person: Dr. Engelbert Ruoss, Naturmus., Kasernenplatz 6, CH-6003 Luzern. Phone ++41-41-2285411; Fax 2285406; email: natur@centralnet.ch

September 12-14. BBS Annual General Meeting and Symposium in Chichester. Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

September 13-14. Field meeting with the Dutch Bryological and Lichenological Society at Zandpol, Z.O.Drente. Address: "De Zandpol", Stieltjeskanaal 14, 7764 A.J. Zandpol. Information: 0543-51 53 41 (The Netherlands).

September 17-20. XII Symposium on Cryptogamic Botany, Valencia, Spain. Information from: Felisa Puche, Dept. de Biologia Vegetal, Facultad de Ciencias Biologicas, Universitat de Valencia, Dr. Molinar 50, 46100 Burjassot, Valencia, Spain. Email: M.F.Puche@uv.es. Http://bioweb.uv.es/cripto97.

October 3-5. Annual Blomquist Bryological Foray. Contact Person: Molly McMullen, Cryptogamic Herbarium, Box 90342, Duke University, Durham, NC, 27708-0342, USA. Phone: (919) 660-7300. Fax: (919) 660-7293, email: mmcm@duke.edu

November 8. Field meeting with the Dutch Bryological and Lichenological Society around Soest. Lichens. Information: 035-601 85 41 (The Netherlands).

1998

March/April (date to be decided). BBS Spring Field Meeting in Basse Normandie, France. Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. email: J.Bates@ic.ac.uk.

August 31-September 4. 3rd European Conference on the Conservation of Bryophytes. The Scientific Basis for Bryophyte Conservation. Trondheim, Norway. Information from Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, N-7055 Dragvoll, Norway. Tel. +47 73596061. Fax: +47 73596100. Email: Lars.Soderstrom@chembio.ntnu.no.

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Additions to the World Red List of Bryophytes

Patricia Geissler*, Benito Tan** & Tomas Hallingbäck***

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Conservation column. Send contributions to the column editors: T. Hallingbäck, Swedish Univ. of Agric. Sci., P.O.Box 7072, S-75007 Uppsala Sweden

SUMMARY

Since 1994 more than a hundred species names have been submitted to the IAB Committee on Endangered Bryophytes. Of these we have preliminary accepted 41 new additions to the 1994 list of IAB world most endangered bryophytes. The total number of listed species in the IAB Red List list includes 91 most endangered bryophyte species world-wide at present.

METHODS AND RESULTS

For the first World Red List of bryophytes in 1994 (Tan et al. 1994), 50 species were proposed (24 mosses, 25 liverworts and 1 hornwort). The publication of this list did not upset bryologists much because of its length. None of the species has been proposed

to be excluded or downlisted. Instead more than 100 new species were recommended for inclusion in the list since then.

As before, the selection was based on the following five criteria, namely, the species 1) must be threatened world-wide; 2) must be confined to a threatened habitat; 3) must have a narrow range; 4) is not overlooked or undercollected; and 5) has a unique morphology/biology or occupies a special evolutionary position.

A bibliographical search on all these species was made and potential candidates were transmitted to several experts for consultation. The list of candidates was then presented for public comment via the bryological internet, the BRYONET. Consequently, we have received several responses, especially information on the local geography of the endangered species; for which we are most thankful.

Several of the disqualified entries are

taxa whose current range or distribution is difficult to assess world-wide. Others are small species of disturbed sites whose habitats do not appear to be threatened by human activities. Many are simply rare, local endemics whose habitat threat has not been observed or identified. Also some names represent very recently described new species whose total range and habitat threat will need more time to assess or document.

We are publishing the updated list here for further comments before its official acceptance by IUCN (International Union of Conservation of Nature).

All in all, preliminarily we accept 16 mosses, 24 liverworts and 1 hornwort as additions to the IAB world most endangered bryophyte list.

DISCUSSION

It was not an easy task to select further candidates among these new proposals. Even for European and Macaronesian species, where the actual distribution should be relatively well known, honest

threat assessment is difficult to establish. But for many others, particularly in tropical regions, floristic knowledge is even poorer. Where recent literature still reports large regions of presence with many localities within the distribution area, the species were provisionally relegated in the last section of species not considered to be threatened at this moment. Likewise, all taxa with problems of taxonomical delimitation are not yet included.

We expect your comments, criticisms and contributions to be able to present an improved proposal taking into account all available knowledge on species living in endangered habitats. We are impatient to have your participation in constructive discussions.

Please send your comments to T. Hallingbäck at Swedish University of Agricultural Sciences, P.O. Box 7072, S-750 07 Uppsala, Sweden (email: tomas.hallingback@dha.slu.se), P. Geissler, Conservatoire et jardin botaniques, Case postale 60, CH-1292, Chambésy/Geneva, Switzerland (email: geissler@cjb.unige.ch) or B. C. Tan at the Farlow Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts, USA 02138 (email: btan@oeb.harvard.edu).

Acknowledgments. We would like to thank all who kindly sent us information and suggestions, especially S. Churchill, J. Enroth, J.-P. Frahm, J. Hasegawa, L. Hedenäs, M. Ignatov, Z. Iwatsuki, S. Jovet-Ast, N. Konstantinova, D. Long, B. J. Muñoz, B. O'Shea, G. Pant, R.A. Pursell, W.D. Reese, P.W. Richards through S. R. Gradstein, W. B. Schofield, G. Smith-Merrill, T. Spribille, L. Söderström, P. Tixier, J. Váda, A. Whittemore, and R. H. Zander. The Red Data Book of European Bryophytes was published in 1995, and several new inputs and proposals discussed in this paper came thanks to this working group (ECCB).

NEW CANDIDATES FOR THE IAB WORLD RED LIST OF BRYOPHYTES

Musci

Aschisma kansanum Andrews (Pottiaceae)

A North American endemic of a oligotypic, disjunctive American-European genus. The species is known from "unusual habitat" in three counties of Kansas State in USA. Crum and Anderson (1981) described the habitat as quartz pebbles in sandy Pleistocene gravels covered partly by the persistent protonema of this species. Because of its rarity, the populations are very threatened these days by over collection and also by cattle grazing in the area. Sources: Crum and Anderson, 1981; Smith-Merrill, *pers. comm.*, 1997.

Bryoxiphium madeirense Löve & Löve (Bryoxiphiaceae)

A Madeiran endemic of a morphologically unique genus in a monotypic family, the species is found on moist and dripping volcanic rocks in shaded streams in Laurus forest on the island. There are only five known localities for the species. Habitat threatened by the recent logging of Laurus forest for agriculture and pasture. Sources: Löve and Löve, 1953; ECCB 1995.

Crassiphylum fernandesii (C. Sérgio) Ochyra [syn. *Thamnobryum fernandesii* C. Sérgio] (Thamnobryaceae)

A Madeiran endemic restricted to about 10 populations in permanently wet habitats, such as dripping rocks or waterfalls, in the inner part of the island at high elevation above 1000 m. Habitat is threatened by the expansion of agriculture and pasturing. Sources: Ochyra, 1991; Hedenäs, *pers. comm.*, 1997.

Ditrichum cornubicum Paton (Ditrichaceae)

Endemic to Cornwall, England, the species is known from copper mine-wastes in two granitic areas. Plants grow on compacted, well-drained peaty, loamy or gravelly soil where the vegetation is sparse and open. In recent

years, one population is known to have disappeared from one of the two original sites. Habitat threatened by encroachment of coarse vegetation and excessive human disturbance as well as vehicles going around the sites. Sources: Paton, 1976; ECCB 1995.

Echinodium renauldii (Card.) Broth. (Echinodiaceae)

Endemic to Azores, this species grows on rocks in forested, shaded ravines and craters above 500 m alt. The species is also known from a Pliocene fossil in the Canary Islands. Habitat of laurel forests is threatened by logging brought by the changing land use policy. Sources: Churchill, 1986; ECCB 1995.

Flabellidium spinosum Herz. (Brachytheciaceae)

The species represents a monotypic genus known only from the type collection made in 1911 from Santa Cruz Cordillera, Bolivia. According to Enroth (1995), the ascending branching system of this epiphytic pleurocarpous moss is characteristically frondose reaching 1 cm tall. The forest vegetation of the type locality and vicinity has been logged and cultivated over the years. Probably extinct. Sources: Enroth, 1995; idem, *pers. comm.*, 1997.

Grimmia curviseta Bouman (Grimmiaceae)

An endemic of Canary Islands and Sardinia, this species grows on dry, exposed north-facing rocks at altitudes of 2,000- 2400 m. The habitat is vulnerable at present. Source: Greven, 1993.

Gymnostomum boreale Nyh. & Hedenäs (Pottiaceae)

Known only from a single locality in the mountain of Kulmakkapus in Kuu-samo Region of NW Russia where it has not been recollected after 1938. It is a species of boreal montane habitat threatened by local human activities in recent years. Sources: Hedenäs, *pers. comm.*, 1997; Söderström, *pers. comm.*, 1997.

Hypnodontopsis apiculata Iwats. & Nog. (Rhachithecaceae)

A Japanese endemic confined mainly to Honshu, this species has a restricted

habitat found growing on the bark of *Cryptomeria japonica* (rarely on pine tree) in gardens of buddhist temples, shinto shrines and old castles. The population at the type locality has disappeared because trees were cut down or knocked over by typhoon. The species is sensitive to air pollution in human habitation. Source: Iwatsuki, *pers. comm.*, 1997.

***Mamillariella geniculata* Lazar.
(Leskeaceae)**

A rare Russian endemic, this monotypic genus is known only from 5-7 localities in the southern part of Russian Far East near Khabarovsk. It is officially listed in the latest Russian Red Data Book for endangered plants. The forests in Russian Far East are today seriously threatened by the on-going economic development in the region. Sources: Buck, 1981; Ignatov, *pers. comm.*, 1997

***Neckeropsis pocsii* Enroth & Magill
(Neckeraceae)**

An endemic species of Mayotte, Comoro Islands, this species grows on boulders in mesic evergreen forest threatened by excessive logging according to T. Pócs who collected the type specimen. Sources: Enroth and Magill, 1994; Pócs, *pers. comm.*, 1994).

***Orthotrichum scanicum* Grönv.
(Orthotrichaceae)**

A rare European endemic known from a few localities in central Europe, Italy, Scandinavia and Russia (Baikal Lake?). The species grows on trunks and branches of conifers as well as broad-leaf deciduous trees. Its overall range has been observed to decline in recent years in Europe and many local populations have become extinct. The survival of this species is threatened by the felling of host trees and the increasing problem of air pollution in Europe. Sources: ECCB 1995; Ignatov, *pers. comm.*, 1997.

***Ozobryum ogalalense* G. L. S.-
Merrill (Pottiaceae)**

This monotypic endemic genus from the American Great Plains is a rarity confined to unusual habitat - strongly calcareous, porous rock outcrop ledges

charged with moisture, surrounded by prairie. It is known only from a single locality in Kansas State. According Merrill (*pers. comm.*, 1997), the location is threatened by cattle grazing and human disturbance. Sources: Merrill Smith, 1992; *ibid.*, *pers. comm.* 1997.

***Pinnatella limbata* Dix.
(Neckeraceae)**

Known only from a single locality in SW India from the Uttar Kanad (formerly North Kanara) District of Karnataka State, this species is rather unique biologically among the congeners in being a rheophyte attached to rocks in streams. The flora of southwestern India, including the Western Ghats, is known for its rich diversity and high endemism. The fast destruction of forests in SW India owing to population expansion is also well documented today. Sources: Enroth, 1994; O'Shea, *pers. comm.*, 1997.

***Tayloria rudolphiana* (Garov.)
Bruch & Schimp. [syn. *Tayloria delavayi* (Besch.) Besch.]
(Splachnaceae)**

Restricted to subalpine environs in central Europe and disjunctively in SW China (Yunnan as *T. delavayi*), this species is unique in Europe growing epiphytically on the droppings of birds left on trees. Habitat in China is on *Quercus* tree trunk (Koponen 1992). Habitats in Europe are vulnerable to inappropriate forest management and the felling of old trees where populations were found. Sources: A. Koponen, 1992; ECCB 1995.

***Thamnobryum angustifolium* (Holt)
Crundw. (Thamnobryaceae)**

This is a rare moss known only from one locality in Derbyshire, England. The plants grow on shaded limestone rock-face beside a calcareous spring or on rock in the stream. Although the site is in a nature reserve today, there is public pressure to build a footpath next to the site. The population is also threatened by frequent collections made by botanists and pollution of the spring. Sources: Hodgetts & Blockeel, 1992; ECCB 1995, O'Shea, *pers. comm.*, 1997.

Hepaticae & Anthocerotae

***Andrewsianthus ferrugineus* Grolle
(Jungermanniaceae)**
(in litt.), Grolle (1966), Hattori (1975), Long & Grolle (1990).

***Bazzania bhutanica* Kitag. & Grolle
(Lepidoziaceae)**

Known from only one locality in S Bhutan. The subtropical zone of the Himalaya is especially threatened. Source: Long (in litt.).

***Cololejeunea azorica* V. All. &
Jovet-Ast (Lejeuneaceae)**

Known from less than 20 localities on Madeira and the Azores. Epiphyllous. Sources: ECCB 1995, Sjögren 1975, 1978.

***Cololejeunea magnilobula* (Horik.)
Hatt. (Lejeuneaceae)**

Endemic epiphyllous species from Taiwan and Zhejiang (East China). Zhu (1995) considers it as distinct species. Source: Piippo 1990.

***Dendroceros japonicus* Steph.
(Anthocerotaceae)**

Growing exclusively on trunks, branches or leaves of trees and known to occur sporadically along the Pacific coast from Taiwan to central Japan. Disappearing from the northern parts of its distribution range, probably due to changing forest growth conditions. Source: Hasegawa (in litt.).

***Drepanolejeunea bakeri* Herz.
(Lejeuneaceae)**

Known from three localities on Luzon (Philippines). Threatened by extensive logging. Source: Tixier (in litt.).

***Drepanolejeunea senticosa* Bischler
(Lejeuneaceae)**

Cuba. Only known from the type specimen, leg. Wright ca. 1860. The species may be extinct or not understood. Source: Bischler 1964.

***Drepanolejeunea spinosa* Herz.
(Lejeuneaceae)**

Colombia (2 localities, leg. Killip 1922). These two species (*D. senticosa* and *D. spinosa*) have probably never been collected since. The species may be extinct or not understood. Source: Bischler 1964.

***Geothallus tuberosus* Campb.
(Sphaerocarpaceae)**

A monotypic genus, notable for its isolated phylogenetic position and its adaptations to extremely xeric conditions. Its morphology has been the subject of two detailed studies (Campbell 1896a, b, Doyle 1962). Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) conducted extensive searches for this taxon in the wild, and found eight population in this small area. Since then, the population of the San Diego urban area has doubled. Consequently the whole native range of *Geothallus* has been subjected to rapid, intense urban development. Source: Whittemore (in litt.).

***Haesselia roraimensis* Grolle & Gradst. (Cephaloziaceae)**

Endemic distinct genus of Cephaloziaceae, restricted to the foot of Mt. Roraima (Guyana), growing on rotten log between 550 and 1550 m. Source: Grolle & Gradstein 1988.

***Herbertus borealis* Crundw.
(Herbertaceae)**

Endemic to NW Europe: A single locality in Scotland and three in SW Norway. Sources: ECCB 1995, Birks in Hill & al. 1991.

***Kurzia sinensis* Chang in Chang & Gao (Lepidoziaceae)**

Only known from type specimen (Chekiang: Mt. Nanyentang, 300 m). Sources: Chang & Gao 1984; Mizutani & Chang 1986.

***Lepidozia azorica* Buch & H. Perss.
(Lepidoziaceae)**

Epiphytic endemic to the Azores, recently also discovered in the Canaries by Dirkse et al. 1993. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Leptoscyphus azoricus* (Buch & H. Perss.) Grolle (Geocalycaceae)**

Epiphytic endemic to the Azores. Occurrence very rare and local. Threatened by destruction of the *Juniperus* cloud forest. Sources: ECCB 1995, Sjögren 1978.

***Radula jonesii* Bouman, Dirkse & Yamada (Radulaceae)**

Endemic to Canary Islands and Madeira, on wet shaded rocks in *Laurus* forests. Threatened by forest clearing. Source: ECCB 1995.

***Riccia atlantica* Sérgio & Perold
(Ricciaceae)**

Only known from a restricted area at the eastern end of Madeira. Threatened by urbanisation. Sources: ECCB 1995, Sérgio & Perold 1992.

***Riccia caroliniana* Na-Thalang
(Ricciaceae)**

Endemic Australian species known from few localities in the Northern Territory. Member of an isolated monotypic subgenus. Sources: Jovet-Ast (in litt.), 1984, 1987.

***Scapania sphaerifera* Buch & Tuomik. (Scapaniaceae)**

Representing a monotypic section characterized by spherical multicellular gemmae and pluriplicate perianth. Known from at least five localities in Russia in very small populations. Sources: ECCB 1995, Konstantinova (in litt.), Váda 1992, Konstantinova & Potemkin 1994.

***Scaphophyllum speciosum* (Horik.) Inoue (Jungermanniaceae)**

A monospecific genus with a disjunct distribution. Found in China, Bhutan, Taiwan, and recently in Nepal (by D. Long, unpubl.). In Taiwan it occurs on forest floor at 2000-2400 m. Sources: Váda & Inoue 1983, Long & Grolle 1990, Zhu & al. 1994.

***Schistochila macrodonta* W.E. Nicholson. (Schistochilaceae)**

Apparently the only two known localities are in Yunnan (Nicholson 1930) and Bhutan (Long & Grolle 1990). D. Long did not find it in Yunnan. Source: Long (in litt.).

***Sphaerocarpos drewei* Wigglesw.
(Sphaerocarpaceae)**

Endemic to the immediate vicinity of San Diego, California. Wolery and Doyle (1969) reported this taxon as an associate of *Geothallus tuberosus* at seven sites. Aside from the protologue

(Wigglesworth 1929), these are the only reports of *S. drewei* in the literature. Source: Whittemore (in litt.).

***Sphaerocarpos hians* C. C. Haynes
(Sphaerocarpaceae)**

Endemic to the United States. This taxon was described by Haynes (1910). Historically known only from near Pullman, Whitman County, Washington and Moscow, Latah County, Idaho; recently found in Corvallis, Benton County, Oregon. It grows on mud of river bank. Poorly known. A seasonal ephemeral which is evident in summer (Pullman) and fall (Corvallis), when the water levels are low. Ref. Frye & Clark 1937: 106, 107. Sources: Whittemore and David H. Wagner (in litt.).

***Stenorhrips rhizomatica* Herz.
(Jungermanniaceae)**

Only known from the type locality in Sarawak (G. Dulit). The habitat of *S. rhizomatica* is endangered or probably already destroyed. Source: Richards, Gradstein (in litt.).

***Stephensoniella brevipedunculata* Kash. (Exoromotheceae)**

Monotypic genus which is endemic to the Kumaon region in Western Himalaya, rapidly disappearing due to uncontrolled urbanisation. Not seen since 1986. Sources: Pant (in litt.), Pant & Tewari 1995.

***Tylimanthus azoricus* Grolle & Perss. (Acrobolbaceae)**

Endemic to the Azores. Growing preferably on rocks in threatened habitats in few localities. Sources: ECCB 1995. Grolle & Persson 1966, Sjögren 1978.

TAXA NOT INCLUDED

The taxa below have also been submitted for inclusion in the Red List. However, these did not fully meet our criteria because they A) are considered to not be confined to threatened habitat, or B) are probably very much overlooked, or C) are not threatened worldwide or D) have taxonomical problems and delimitations.

***Acrobolbus wilsonii* Nees**

(Acrobolbaceae)

Endemic to atlantic Europe from Faeroes to Macaronesia. No indication of threat known. Source: ECCB 1995.

Aphanolejeunea madeirensis

(Schiffn.) Grolle (Lejeuneaceae)

Epiphyllous endemic to Madeira, restricted to the cloud zone of the northern part of the island, and to the Azores, where it may become locally fairly frequent. Sources: Sjögren 1975, 1978.

***Aphanolejeunea teotonii* V. All. &**

Jovet-Ast (Lejeuneaceae)

Endemic to Macaronesia. Epiphyllous species in mature *Laurus* forest. No indication of threat known. Source: ECCB 1995.

***Calypogeia fusca* (Lehm.) Steph.**

(Calypogeiaceae)

The only European member of the subgen. *Caracoma*. Outside the Azores the species is known from scattered localities from Ethiopia to South Africa. No information on threats is available. Source: Bischler 1970.

***Bazzania azorica* Buch & H. Perss.**

(Lepidoziaceae)

Endemic to Madeira and the Azores, on all type of substrates (Sjögren 1978). As reported in Grolle (1983), the species is closely related to the tropical Asiatic *B. praerupta* (Reinw. et al.) Trev. Needs further taxonomic studies. Source: Grolle 1983.

Brachythecium appleyardiae

McAdam & AJE Smith

(Brachytheciaceae)

A local endemic restricted to only 8 sites in Somerset, Wiltshire and Derbyshire in England. The species grows both on calcareous rocks and acidic sandstone wall. Habitat threatened by recent road construction and stone wall repair work. Needs further taxonomic studies. Source: McAdam and Smith 1981; ECCB 1995, M. Ignatov (*pers. comm.*).

***Calypogeia azorica* Bischl.**

(Calypogeiaceae)

Endemic to the Azores, closely related to African species, known from 5 locali-

ties only. Habitat requirements are badly known. Needs further taxonomic studies. Sources: Bischler 1970, Sjögren 1978

***Cephaloziella nicholsonii* Douin & Schiffn. (Cephaloziellaceae)**

Apparently endemic to SW England (Paton 1984), but commonly considered to be conspecific with *C. massalongi* (Spr.) Müll. Needs further taxonomic studies. Source: Paton 1984, ECCB 1995

***Cheilolejeunea cederkretzii* (Buch & Perss.) Grolle (Lejeuneaceae)**

Endemic to the Azores, growing on small twigs, leaves and mosses, very rare. The taxonomic relationships to African species of the tropical genus should be investigated. Sources: ECCB 1995, Grolle 1983, Sjögren 1978.

***Cololejeunea schaeferi* Grolle (Lejeuneaceae)**

Endemic to Macaronesia. No indication of threat known. Source: Dirkse & al. 1993.

***Forsstroemia stricta* Lazar.**

(Cryphaeaceae)

The species is known only from the type collection from Primorskij Territory in the Far East Siberia of Russia. Closely related taxa are found in S India and Taiwan. The forests in Russian Far East are today seriously threatened by forestry going on in the region. Needs further taxonomic studies. Sources: Ignatov and Czerdantseva, 1995; M. Ignatov (*pers. comm.*).

***Fossombronina fimbriata* Paton**

(Fossombroniaceae)

Described in 1974, it has been found since in scattered localities on damp soil and similar substrates in Ireland, Scotland and Wales, not yet on the European mainland. No indication of threat known. Source: Preston in Hill & al. (eds.) 1991.

***Fossombronina incurva* Lindb.**

(Fossombroniaceae)

Occurring on damp, sandy soils with a scattered distribution in western Europe. Mostly found along the sea coast and at shores of larger lakes. Not frequent but apparently not threatened everywhere. Sources: Müller 1954, Ludwig & al. 1996.

***Frullania illyrica* Grolle**

(Jubulaceae)

Known from 2 localities, one in Albania, the other in Slovenia. Needs further taxonomic studies. Source: Meyer & Grolle, 1963.

***Frullania polysticta* Lindenb.**

(Jubulaceae)

Probably endemic to Macaronesia. Closely related to the *F. tamarisci*-complex, but distinct. No indications on threats available. Sources: Hattori 1972, Vanden Berghen 1976.

***Herbertus azoricus* (Steph.)**

Richards (Herbertaceae)

Endemic to the Azores, related to African species. Growing on soil and bark. Common above 900 m. Sources: Sjögren 1978, Grolle 1983.

***Heteroscyphus denticulatus* (Mitt.)**

Schiffn. (Geocalyceaceae)

Macaronesian endemic, closely related to African and Australasian species. These relationships need further studies. Source: Grolle 1983.

***Jungermannia breviperianthia* Gao in Gao & Zhang**

(Jungermanniaceae)

Known from 3 localities in north-eastern China. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Jungermannia flagellalioides* (Gao)**

Piippo (Jungermanniaceae)

Only known from the type specimen. Needs further taxonomic studies. Sources: Gao & Zhang 1981, Piippo 1990.

***Lejeunea hibernica* Grolle**

(Lejeuneaceae)

Growing over mosses in Ireland, also reported from the Azores, Canaries and Madeira, also in wet shaded crevices in cliffs. No indication of threat known. Sources: Müller 1958, Birks in Hill & al. 1991.

***Lejeunea mandonii* (Steph.) Müll.**

Frib. (Lejeuneaceae)

On wet rocks and trunks in Scotland, Ireland, England, Spain, Portugal, Madeira, Canaries. Rare, but probably

overlooked. Sources: Müller 1958, Birks in Hill & al. 1991.

***Marsupella andreaeoides* (Lindb.) Müll. Frib. (Gymnomitriaceae)**

Reported by Jørgensen (1934) from at least 30 localities in SW Norway. It is also known from a few localities in northernmost Sweden. No indication of threat known. Source: Jørgensen 1934, Våda and Hallingbäck, *pers. comm.*

***Marsupella fengchengensis* Gao & Chang (Gymnomitriaceae)**

Only known from the type specimen. Needs further taxonomic studies. Source: Piippo 1990.

***Metzgeria liaoningensis* Gao (Metzgeriaceae)**

Known from type locality and another locality. Source: Gao & Zhang 1981

***Plagiochila allorgei* Herz. & Perss. (Plagiochilaceae)**

On several substrates in mature *Juniperus* cloud forest. Endemic to the Azores. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Plagiochila atlantica* F. Rose (Plagiochilaceae)**

On rocks and trunks in western Scotland, also known from Ireland, north Wales and north-western France. No indication of threat known. Sources: Jones & Rose 1975. Averis in Hill & al. 1991.

***Plagiochila carringtonii* (Balf.) Grolle (Plagiochilaceae)**

Reported from western Scotland, Orkney and Faeroe islands in dwarf shrub communities. The variety *lobuchensis* Grolle occurs in Nepal and China. Sources: Long (*in litt.*), Müller 1956; Averis in Hill et al. 1991.

***Plagiochila norvegica* Blom & Holten (Plagiochilaceae)**

Only known from Norway (2 localities) and Sweden (1 locality). Needs further taxonomic studies. Sources: ECCB 1995, Blom & Holten 1988.

***Porella inaequalis* (Gott. ex Steph.) H. Perss. (Porellaceae)**

Closely related to *P. pinnata* L. Endemic to Madeira. Needs further taxonomic studies. Sources: Grolle 1983, Persson 1955.

***Radula carringtonii* Jack (Radulaceae)**

Occurs in small quantities on shaded rocks from western Scotland to SW Ireland, NW Spain and Macaronesia. No indication of threat known. Source: Birks in Hill et al. 1991.

***Radula holtii* Spruce (Radulaceae)**

On wet rocks in SW Ireland, Spain, Portugal and Macaronesia. Everywhere rare. No indication of threat known. Source: Birks in Hill 1991.

***Radula visianica* Mass. (Radulaceae)**

Known from the type locality near Padova in Italy and a second locality 100 km farther north. Neither taxonomy nor occurrence have been recently investigated. Sources: ECCB 1995, Müller 1956.

***Radula wichurae* Steph. (Radulaceae)**

Rare but perhaps overlooked Macaronesian endemic. No indication of threat known. Sources: ECCB 1995. Sjögren 1978.

***Riccia breidleri* Steph. (Ricciaceae)**

Endemic to the Alps region in Europe, presently known from less than 20 localities between 2100 and 2650 m on damp, weakly acidic soil of temporary pools of melting snow. Perhaps not conspicuous every year (shuttle species) and therefore overlooked. Listed on Appendix I of the Bern Convention (conservation of European natural habitats) and Annex 2 of the EC Habitats and Species Directive. Sources: ECCB 1995. Geissler 1984.

***Riccia gothica* Damsh. & Hallingb. (Ricciaceae)**

Only known from Sweden. However, relatively recently described taxon which presently not occur in any threatened habitats. Source: Damsholt & Hallingbäck (1987).

***Trichocoleopsis tsinlingensis* Chen ex M. X. Zhang (Neotrichocoleaceae)**

Known from at least four provinces in China. Source: Gao & Cao 1988, Zhu & al. 1994.

***Tylimanthus madeirensis* Grolle & Perss. (Acrobolbaceae)**

Endemic to Madeira. According to Jones (1981), close or even conspecific with *T. ruwenzorensis* S. Arn. Similar ecology as *T. azoricus*. Needs further taxonomic studies. Sources: ECCB 1995, Grolle & Persson 1966.

REFERENCES

Bischler H. 1964. Le genre *Drepanolejeunea* Steph. en Amérique Centrale et Méridionale. *Revue Bryologique et Lichénologique* 33: 15-179.

Bischler H. 1970. Les espèces du genre *Calypogeia* sur le continent africain et les îles africaines. *Revue Bryologique et Lichénologique* 37: 63-134.

Blom H.H. & J.I. Holten 1988. *Plagiochila norvegica*, a new hepatic from West Norway. *Lindbergia* 14: 8-11.

Buck, W. R. 1981. A re-interpretation of the Fabroniaceae, III: *Anacamptodon* and *Fabronidium* revisited, *Mamillariella*, *Helicodontiadelphus* and *Bryobartlettia* gen. nov. *Brittonia* 33: 473-481.

Campbell D.H. 1896a. A new California liverwort. *Botanical Gazette* 21: 9-13.

Campbell D.H. 1896b. The development of *Geothallus tuberosus* Campbell. *Annals of Botany* 10: 489-510.

Chang K.-C. & C. Gao 1984. *Plantae novae hepaticarum sinarum*. *Bulletin of Botanical Research* 4, 3: 83-99.

Churchill, S. P. 1986. A revision of *Echinodium* Jur. (Echinodiaceae: Hypnobryales). *Journal of Bryology* 14: 117-133.

Crum, H. A. and L. Anderson 1981. *Mosses of Eastern North America*, vol. 1. Columbia University Press, New York.

Damsholt K. & T. Hallingbäck (1987). *Riccia gothica*, a new species of Hepaticae from Sweden. *Lindbergia* 12: 100-102 "1986".

Dirkse G.M., A.C. Bouman & A. Losada-Lima 1993. Bryophytes of the Canary Islands, an annotated checklist. *Cryptogamie, Bryologie-Lichénologie* 14: 1-47.

Doyle W.T. 1962. The morphology and affinities of the liverwort *Geothallus*. *University of California Publications, Botany* 33: 185-268.

ECCB 1995. Red Data Book of European bryophytes. European Committee for the Conservation of Bryophytes, Trondheim, 291 pp.

Enroth, J. 1994. A taxonomic monograph of the genus *Pinnatella* (Neckeraceae, Bryopsida). *Acta Botanica Fennica* 151: 1-90.

- Enroth, J. 1995. Commentary on the moss genus *Flabellidium* (Brachytheciaceae). *Fragmenta Floristica Geobotanica* 40: 743-747.
- Enroth, J. and R. E. Magill 1994. *Neckeropsis pocsii* (Neckeraceae, Musci), a new species from Comoro Islands. *Bryologist* 97: 171-173.
- Gao C. & T. Cao 1988. A study of *Trichocolea* Dum., *Trichocoleopsis* Okam. and *Netotrichocolea* Hatt. (Hepaticae) in China. *Investigatio et studium naturae* 8: 24-37.
- Gao C. & G.-C. Zhang 1981. Flora hepaticarum Chinae boreali-orientalis. Beijing, 220 pp.
- Geissler P. 1984. A propos de *Riccia breidlerii* Jur. ex Steph. en Suisse et Haute-Savoie. *Cryptogamie, Bryologie-Lichénologie* 5: 63-67.
- Greven, H. C. 1993. Proposal for a red data list of European *Grimmia* species. *Cryptogamie, Bryologie Lichénologie* Vol. 14: 401-404.
- Grolle R. 1966. Die Lebermoose Nepals. *Khumbu Himal. Ergebnisse des Forschungsunternehmens Nepal Himalaya* 1: 262-298.
- Grolle R. 1983. Hepatics of Europe including the Azores: an annotated list of species, with synonyms from the recent literature. *Journal of Bryology* 12: 403-459.
- Grolle R. & S.R. Gradstein 1988. *Haeselia*, a new genus of Cephaloziaceae (Hepaticae) from Mt. Roraima, Guyana. *Journal of the Hattori Botanical Laboratory* 64: 327-334.
- Grolle R. & H. Persson 1966. Die Gattung *Tylimanthus* auf den Atlantischen Inseln. *Svensk Botanisk Tidskrift* 60: 164-174.
- Hattori S. 1972. *Frullania tamaricifolia* complex and the species concept. *Journal of the Hattori Botanical Laboratory* 35: 202-251.
- Hattori S. 1975. Anthocerotae and Hepaticae. In: H. Ohashi (ed.), *Flora of Eastern Himalaya. Third Report. Bulletin University Museum, University Tokyo* 8: 206-242.
- Haynes C.C. 1910. *Sphaerocarpus hians* sp. nov., with a revision of the genus and illustrations of the species. *Bulletin of the Torrey Botanical Club* 37: 215-230.
- Hill M.O., C.D. Preston & A.J.E. Smith 1991. Atlas of the bryophytes of Britain and Ireland. Vol. 1. Liverworts (Hepaticae and Anthocerotae). Colchester, 351 pp.
- Hodgetts, N. G. and T.L. Blockeel. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observation on *T. angustifolium* and *T. fernandesii*. *Journal of Bryology* 17: 251-262.
- Ignatov M.S. & V.YA. Czerdantseva 1995. The families Cryphaeaceae, Leucodontaceae and Leptodontaceae (Musci) in Russia. *Arctoa* 4: 65-104.
- Jones E.W. 1981. African Hepatics XXXII. *Journal of Bryology* 11: 311-323.
- Jones E.W. & F. Rose 1975. *Plagiochila atlantica* F. Rose, sp. nov. *Journal of Bryology* 8: 417-422.
- Jovet-Ast S. 1984. *Riccia* (subg. *Viridiquamata*) *caroliniana* Ne-Thalan, espèce endémique rélictuelle d'Australie. *Cryptogamie, Bryologie-Lichénologie* 5: 389-402.
- Jovet-Ast S. 1987. Vers une classification phylogénétique des espèces du genre *Riccia*. *The Bryologist* 90: 321-330.
- Jørgensen, E. 1934. Norges levermoser. *Bergens Museums Skr. Nr. 16*. Bergen. 343 pp.
- Konstantinova N. A. & A. D. Potemkin (1994). Studies on *Scapania sphaerifera* (Hepaticae). *Annales Botanici Fennici* 31: 121-126.
- Koponen, A. 1992. European-Asiatic connections in *Tayloria* (Splachnaceae, Musci). *Bryobrothera* 1: 57-62.
- Long D. G. & R. Grolle 1990. Hepaticae of Bhutan II. *Journal of the Hattori Botanical Laboratory* 68: 381-440.
- Ludwig G., R. Düll, G. Philippi, M. Ahrens, S. Caspari, M. Koperski, S. Lütt, F. Schulz & G. Schwab 1996. Rote Liste der Moose (Anthocerotophyta et Bryophyta) Deutschlands. *Schriftenreihe für Vegetationskunde* 28: 189-306.
- Löve, A. and D. Löve 1953. Studies on *Bryoxiphium*. *The Bryologist* 56: 183-199.
- McAdam S.V. & A.J.E. Smith 1981. *Brachythecium appleyardiae* sp. nov. in southwest England. *Journal of Bryology* 11: 591-598.
- Merrill, G. L. S. 1992. *Ozobryum ogalense* (Pottiaceae), a new moss genus and species from the American Great Plains. *Novon* 2: 255-258.
- Meyer F.K. & R. Grolle 1963. Eine neue *Frullania*-Art aus Albanien. *Feddes Repertorium* 68: 101-107.
- Mizutani M. & K. C. Chang 1986. A preliminary study of Chinese Lepidoziaceae Flora. *Journal of the Hattori Botanical Laboratory* 60: 419-437.
- Müller K. 1951-58. Die Lebermoose Europas. In: Dr. L. Rabenhorst's *Kryptogamen-Flora von Deutschland, Österreich und de Schweiz*. Band 6, 3. Auflage. Leipzig. 1365 pp.
- Nicholson W.E., T. Herzog & F. Verdoorn. Hepaticae. *Symbolae Sinicae* 5: 1-60.
- Ochyra R. 1991. *Crassiphylllum* (Thamnobryaceae), a new moss genus from Madeira. *Fragmenta Floristica Geobotanica* 36: 71-79.
- Pant G. & S.D. Tewari 1995. Additional, up to date notes on Red list monotypic endemic liverwort taxa of Kumaon (Western Himalaya). *The Bryological Times* 83/84: 7.
- Paton J. 1984. *Cephaloziella nicholsoni* Douin & Schifffn. distinguished from *C. massalongi* (Spruce) K. Müll. *Journal of Bryology* 13: 1-8.
- Paton J. A. 1976. *Ditrichum cornubicum*, a new moss from Cornwall. *Journal of Bryology* 9: 171-175.
- Persson H. 1955. Remarks on the *Porella pinnata* group. *Archivum Societatis Zoologicae Botanicae Fennicae "Vanamo"* 9, suppl.: 225-231.
- Piippo S. 1990. Annotated catalogue of Chinese Hepaticae and Anthocerotae. *Journal of the Hattori Botanical Laboratory* 68: 1-192.
- Sérgio C. & S. M. Perold 1992. A new species of *Riccia* L. from the island of Madeira, *Riccia atlantica* sp. *Journal of Bryology* 17: 127-132.
- Sjögren E. 1975. Epiphyllous bryophytes of Madeira. *Svensk Botanisk Tidskrift* 69: 217-288.
- Sjögren E. 1978. Bryophyte vegetation in the Azores Islands. *Memórias da Sociedade Broteriana* 26: 1-283.
- Tan B., Geissler, P. & Hallingbäck, T. 1994. Towards a World Red List of Bryophytes. *The Bryological Times* 77: 3-6; 78: 4-5.
- Váða J. 1992. Phytogeographically important hepatics from the Altai Mts. (Russia). *Novitates Botanicae ex Universitate Carolina* 7: 27-32.
- Váða J. & H. Inoue 1983. Studies in Taiwan Hepaticae V. *Jungermanniaceae*. *Bulletin of the National Science Museum, Tokyo, Ser. B*, 9: 125-142.
- Vanden Berghen, C. 1976. *Frullaniaceae* (Hepaticae) africanae. *Bulletin du Jardin Botanique National de Belgique* 46: 1-220.
- Wigglesworth, G. 1929. A new Californian species of *Sphaerocarpus*. *University of California Publications, Botany* 16: 129-137.
- Wolery M.G. & W.T. Doyle 1969. The distribution of *Geothallus tuberosus*. *The Bryologist* 72: 413-417.
- Zhu, R.-L. 1995. *Cololejeunea* (Hepaticae) in China. *Journal of the Hattori Botanical Laboratory* 78: 83-109.
- Zhu, R.-L., Hu, R.-L. & Ma, Y.-J. 1994. Some comments of rare and endangered liverworts in mainland China. *Arctoa* 3: 7-12.

Frullania as epiphyll

My name is Matt von Konrat and I am studying for a PhD at the University of Auckland. Dr John Braggins is my main supervisor. The title of my thesis is "a study of the liverwort genus *Frullania* in New Zealand". The focal point of this study will be to examine the relationship between the New Zealand taxa and overseas taxa in order to help resolve the taxonomic problems in the genus. The information obtained from the taxonomic study will provide the foundation for research investigating the ecology, conservation and biology of *Frullania* species.

On a recent field trip I collected some *Frullania* growing as an epiphyll at high altitude from several locations (1000m and 1300m). I was wondering if this is an aspect of its growth previously undescribed? I am unable to find any publications describing this growth habit. I am interested in publishing an account of this. I was wondering if anyone knew of any published records existed and/or unpublished records.

Thanks, Matt von Konrat

Email: MVONKONRAT@sbsnov2.auckland.ac.nz

New literature

“GENERA OF HEPATICS” by O. Yano and S. R. Gradstein

This booklet provides a quick reference to all accepted generic names of hepatics, synonyms and families to which they belong. A taxonomic arrangement of the genera according to families is also provided. The booklet should be a very handy tool for use in herbarium management and other purposes. This publication (paper bound, 29 p.) is distributed by the “Systematisch-Geobotanisches Institut der Universität Göttingen”. Those interested in obtaining this publication should write to the address below, enclosing US\$ 3 (in cash) or DM 6 (in Eurocheque, please note cheque card number on reverse side) per copy, US\$ 25 (in cash) or DM 40 (in Eurocheque, please note cheque card number on reverse side) per 10 copies. Price includes postage. Because of the high bank charges, payments can not be made in other type of cheques.

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Shelyah-Sosonko, Yu. R. (ed. in chief). 1996. *The Red Data Book of Ukraine. Vegetable Kingdom. Kyiv: Ukrainska Entsyklopediya. 608 pp.* [In Ukrainian with English summary].

The second edition of the Red Data Book of Ukraine was prepared some years ago but published last year. It is divided into five sections to include reviews of 541 plant and fungi taxa: vascular plants (439 species), bryophytes (28), algae (17), lichens (27), and fungi (30). The reviews are compiled by leading Ukrainian specialists for every group involved. Species reviews are arranged in systematic order and designed in the following format: plant (fungus) name, family name, scientific importance, population status according to the IUCN Red Data Book and European Red List categories, distribution in and beyond Ukraine, habitats, causative factors, general morphological characteristics and conservation measures. Each review is supplied with a colour illustration and distribution map in the country. The book also provides the official legislative documents.

V. Virchenko, Inst. of Botany, Tereshchenkivska 2, 252 601 Kyiv, Ukraine

MOSS GARDENING, including lichens, liverworts, and other miniatures by George Schenk

At last, a comprehensive, up-to-date, sensible book on growing mosses and similar things. The perfect answer to those frequent queries from gardeners about how to grow mosses, or for that matter to those who want an introduction to mosses, including what's not a moss. Sections include transplanting, propagating, and growing mosses in containers, for bonsai, and as ground covers.

261 pages, 97 beautiful color plates. Hard cover. 1997. Prices, postpaid: \$38.50 U.S. addresses; \$39.50, all other addresses.

The 3rd European Conference on the Conservation of Bryophytes

The Scientific Basis for Bryophyte Conservation
in

Trondheim, Norway

31 August — 4 September 1998

The symposium will cover the following main topics

- What is a rare species
- Where do we find rare species
- How do we select species for conservation and how to conserve them

There will also be two days of excursions during the conference.

There are a number of possibilities for accommodation in Trondheim, from high standard hotels to fairly inexpensive hostels. Details will follow in the 2nd circular.

Pre-registration: Please send the Name, Address (incl. email if possible) to Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, Trondheim, Norway, not later than **1 February 1998**. Indicate (with preliminary title) if you intend to give a presentation/poster.

Bryology at the Rijksherbarium, Leiden

During his latest visit to Leiden W. Meijer celebrated his return to bryology (with which he is to be congratulated) and enthusiastically inaugurated himself "in a short ceremony crowned with a calyptra made by MRS Schreuder, the only person there left on the Bryology payroll". Fortunately, however, the present bryological conditions at the Rijksherbarium are not as poor as it may look.

It is true that no bryologist occupies a permanent staff position, and none can be appointed because all vacancies remain blocked by the university. This is a matter of grave concern to the bryologists and the management of the institute alike, but bryology at Leiden is not dead!

At present three bryologists are working here. Niels Klazenga is the one only who gets paid for it. He holds a temporary position (for 4 years) and is working on *Dicranoloma* for the area covered by Flora Malesiana, consisting roughly of Malaysia, Indonesia, the Philippines, and Papua New Guinea. He has completed a revision of the species and is now preparing a cladistic analysis of *Dicranoloma* and *Dicranum* in an attempt to clear the relationships between these and other genera of the Dicranaceae. At present he is doing field work in Borneo. Thereafter, he will attend the Beijing meeting and present some results of his work.

Hans Kruijer (Hypopterygiaceae) and Dries Touw (Thuidiaceae) continue their bryological research at the institute in honorary position. Finally, curatorial assistant Mrs. Birgitta Schreuder-Sternemark takes care of specific bryological jobs.

Bryology at Leiden is weak, but not dead, and we keep working towards a full recovery!

Niels Klazenga (klazenga@rulhb.LeidenUniv.nl), *Hans Kruijer* (hkruijer@rulhb.LeidenUniv.nl), *Dries Touw* (touw@rulhb.LeidenUniv.nl)

Iwatsukia jishibae on Lava Flows

Iwatsukia jishibae (Kitagawa 1964) is a species of an interesting genus which has a brief taxonomic history (Kitagawa 1964, Grolle 1965, Schuster 1968). But the ecology and life strategy of this species have not really been examined.

During our expedition to Reunion Isle we collected this species from different areas and surfaces. The most interesting habitats were the young (10-20 years old) lava flows of the volcano called Piton de la Fourmese, where this species has a large cover on the rough and porous surface of the lava. On these areas, which are in the early stages of succession, *Iwatsukia jishibae* prefers the deeper parts. It can be found 70 cm deep in the lava. We have some data of *I. jishibae* collected in Borneo, Madagascar and Reunion. On the basis of these specimens this species occurs on dead trunks, living trunks (most frequently), sometimes on rocks or soil. However, they were collected mainly in elfin or rain forests, not open lava flows. Considering these facts the most interesting question is whether this species has an invasive or a pioneer character on these areas?

In order to examine this phenomenon more exactly we would be glad to get some information (publications or other data) about *Iwatsukia jishibae* occurring on lava.

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Teachers College, H-3301 EGER, Pf.:
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E-mail: novtan@gemini.ektf.hu

Insider Tip-Off

The famous bibliography "Current Contents" is accessible through Internet. All records since 1994 can be searched for online. Current Contents include since some years also some bryological journals (Journal of Bryology, The Bryologist). The importance of Current Contents is, however, to search for bryological items in journals which are not so known amongst bryologists.

Flora of Australia

Australian Biological Resources Study (ABRS) will publish the first of the three bryological volumes in the Flora of Australia series in 1998. This volume will contain chapters on the history of Australian bryology, the biology of mosses, the ecology and biogeography of mosses, the fossil record, a key to genera and taxonomic treatments of several families. At short notice new authors have to be found for a number of these families:

Splachnaceae

Splachnobryum (2) *Tayloria* (6-8)

Mniaceae

Orthomnion (1) *Plagiomnion* (1)

Bartramiaceae

Bartramidula (1) *Breutelina* (8-11)

Conostomum (4) *Philonotis* (8-12)

Rhizogoniaceae

Bryobrothera (1) *Goniobryum* (1)

Hymenodon (1) *Leptotheca* (1)

Mesochaete (2) *Pyrrhobryum* (6)

Rhizogonium (5)

Here is an opportunity to contribute to a prestigious Flora series. ABRS would greatly appreciate hearing from any bryologists interested in preparing a flora treatment of any of these families or parts of these families. All authors will receive a complimentary copy of the Volume valued at about AUS\$80.

Because of the short time available, we are looking for a 'status quo' treatment. There is likely to be little time for in-depth new research.

If you are interested in contributing, please contact either:

Dr A.E. Orchard, ABRS, GPO Box 636, Canberra, ACT 2601, Phone: +61 6 2509442, Fax: +61 6 2509448, Email: tony.orchard@dest.gov.au

or

C. Grgurinovic, Phone: +61 6 2509 446, Email: cheryl.grgurinovic@dest.gov.au

Current Contents can be accessed in Internet through the University of Toronto: <http://utcat.library.utoronto.ca8002/db/CCBACK/search.html>

Jan-Peter Frahm (frahm@uni-bonn.de)

Future meetings of the British Bryological Society

The following meetings are planned by the BBS over the coming year. Contact local secretaries if you are interested in attending. Members are reminded to read the BBS Safety Code, which is published in Bulletin 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

Summer Field Meeting 1997 (I), North-east Yorkshire, 13-20 August.

Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815.

The headquarters hotel will be the Beansheaf Hotel, Malton Road, Kirby Misperton, Malton, YO17 0UE (Tel. 01653 668614). This hotel is 2½ miles south of Pickering and has been chosen because it has a good mix of accommodation, all en suite. Pickering is a popular tourist area, 20 miles from Scarborough, so early booking is recommended. There is plenty of varied accommodation available in the area, details of which will be supplied on request.

The last meeting of the Society in north-east Yorkshire was held in 1967, based in Northallerton, when most sites visited were in the western part of vc 62. This meeting will visit several sites covered on that occasion, but concentration will be more easterly. The sites to be visited will be varied. At least two days will be spent on acidic sandstone uplands and will include broadleaved woodlands, gills and griffs, as well as two bogs. Species in the wooded valleys could include *Discelium nudum*, *Dicranella subulata*, *Harpanthus scutatus*, *Herzogiella seligeri*, *Bazzania trilobata*, *Calypogeia integristipula*, *Hygrobiella laxifolia*, *Jungermannia hyalina*, *J. obovata*, *J. paroica*, *J. pumilum* and *J. sphaerocarpa*, and also *Radula complanata*, *Scapania umbrosa* and *Tritomaria exsectiformis*. Fen Bog has thirteen *Sphagnum* species and *Philonotis*

caespitosa, *Barbilophozia atlantica*, *Cephalozia macrostachya*, *Cladopodiella fluitans* and *Trichocolea tomentella*, whilst recent finds in the gills and griffs include *Brachydontium trichodes*, *Pohlia lutescens*, *Seligeria recurvata*, *Nowellia curvifolia* and *Jungermannia subelliptica*.

Several days will be spent in limestone country, where *Apometzgeria pubescens*, *Porella arboris-vitae* and *P. platyphylla* may be found. Further westwards, Duncombe Park NNR and Ashberry Meadows should be visited. If there is sufficient interest, a visit to Ingleby Greenhow can be arranged to see *Mielichhoferia elongata*. It would be nice to refind *Coscinodon cribrosus*, *Discelium nudum* and *Dicranella subulata* from here, not seen for many years. If time permits, we could visit Wass Bank to look for *Seligeria diversifolia*. Other bonuses would be *Acaulon muticum* and *Phascum floerkeanum* in stubble fields, not seen since the 1967 meeting.

Summer Field Meeting 1997 (II), North Italian Alps, 26 July-4 August.

Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Università, Viale Mattioli 25, I-10125 Turino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfur-long Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861.

The Italian Western Alps are not well known from the bryological point of view. There are many different habitats with a very interesting vascular flora, rich in endemic species, and probably also an interesting bryoflora, but there have been few bryological studies. It is hoped to visit a varied selection of habitats, including some well studied alpine bogs rich in bryophytes and the Valli di Lanzo, Susa and Chisone (Alpi Graie e Cozie). The bryophyte flora of most of these is sure to be rich but is at present unknown.

Annual General Meeting and Symposium Meeting 1997, Chichester, 12-14 September.

Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

This meeting will take place in the Chichester Inst. of Higher Education at Bishop Otter Campus. This is a college in a pleasant location with excellent modern accommodation and facilities. The city centre is within walking distance. Chichester is a very historic and attractive city and the Festival Theatre is also a major feature. There are other interesting places to visit in the Chichester area such as the open-air Weald and Downland Museum and Fishbourne Roman Palace. The College has indicated that any member who wishes to stay an extra night(s) may do so.

The field meeting on Sunday will be to one of the richer bryophyte areas in West Sussex, probably near Midhurst. On the Saturday night, it is proposed to have a celebration dinner to mark the 80th birthday of Dr. Harold Whitehouse

Members who wish to make their own arrangements for accommodation may like to know that there is a good selection of B & B places (ca 215 per night) within easy walking distance of the College.

Speakers will include (among others): Prof. Jeff Duckett (London Univ) - On protonemata, propagules, peristomes and phylogeny (or some mosses seem to be wrongly placed).

Mr. Malcolm Watling (Margate, Kent) - Bryology in Kent since Trudy Side.

Dr. Harold Whitehouse (Cambridge) - A presentation of stereoscopic slides.

Bryological Workshop 1997, London (date to be announced).

Local secretary: Dr. Ken Adams, Dept of Biology & Biochemistry, Univ of East London, Romford Road, London, NE15 4LZ. Tel.: 0181 5907722.

Topic to be arranged.

Spring field meeting 1998, Basse Normandie (Lower Normandy), France, March/April (date to be arranged).

Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. e-mail: J.Bates@ic.ac.uk.

The meeting will be of one-week's duration and organised along similar lines to the Brittany Field Meeting in 1993, probably in the week preceding the main Easter holiday and running from Saturday to Saturday. The headquarters hotel will (provisionally) be in the seaside town of Granville, which is probably the most central and pleasantly situated of the possibilities. There are convenient ferry crossings to Cherbourg, Caen and even St Malo.

The excursions will be into the departments of Manche, Calvados and Orne and include the rugged Cotentin Peninsula with similarities to Brittany, and the undulating and pleasantly wooded bocage countryside which has been likened to the English landscape as it was 50 years ago. There have been many Atlantic species recorded on this extension of the Armorican Massif and preliminary investigations by Jeff Bates suggest that there is still a lot to find. The main previous work is the flora for Manche by Corbiere (1889) and recent studies by Alain Lecoite of Caen University. It is hoped that the party will be able to visit coastal cliffs and dunes near Granville and further north on Cotentin; the main forest and heath areas in Calvados and Orne including the Normandie-Maine Regional Park area; the sandstone gorges of the Orne valley which have some Mediterranean-Atlantic species and the granite ravine of the Vire; bogs in Manche (peat is used to fire a power station here); rocky hillsides; and a day trip to the French Channel Islands – Iles Chausey. There will many opportunities to study epiphytes on town trees and stubble fields, and to visit interesting sites like Mont St Michel.

Tropical Bryology course in Merida, Venezuela

Yelitza Leon V., Centro Jardin Botanico, Facultad de Ciencias, Universidad de Los Andes, Merida-Venezuela.

Twenty participants from eight countries met in Merida-Venezuela for the Tropical Bryology course that was held from February 24 to March 7 this year. The course was organized by the Centro Jardin Botanico of the Universidad de Los Andes, Merida, Venezuela and taught by the visiting professors Dr. Tamas Pócs (Eger, Hungary) and Dr. Jan-Peter Frahm (Bonn, Germany). This event was partially financed by CONICIT and FUNDACITE-Merida and the Postgraduate Studies Office of the University in Merida. In bilingual lectures (English-Spanish) the participants learned about morphology, taxonomy, and ecology of tropical bryophytes. Dr. Pócs talked about hepatic morphology, dispersal, diversity in the most stimulating way and Dr. Frahm, always enthusiastic, told us about morphology, taxonomy, ecology and distribution of mosses. Fieldtrips were made to the cloud forest just behind the university campus and (by cable car) to the paramos and subparamos of the Sierra Nevada. All enjoyed a great atmosphere with a group of experienced bryologists and bryology students.

The course the participation of Dr. Raymond Stotler and Dr. Barbara Crandall-Stotler (USA). Barbara gave us the most wonderful lecture on branching patterns.

In our fieldtrips we learned from Dr. Pócs and Frahm techniques for ecological studies, how to study plots and phytosociological relevés and how to measure climatic conditions such as light intensity, temperature and humidity as well as the use of dataloggers.

The most attractive topic was experience in tree climbing techniques, which was provided by a graduate student from Bonn University.

Once in the computer room Dr. Frahm demonstrated how to use software to process ecological data and other programs for cladistic, phenetic and community studies.

In the Sierra Nevada de Merida we visited the type locality of *Ruizanthus venezuelanus* Schust. (the logo plant of our course, which appeared also on the course T-shirt) and found many other interesting species. A very weird *Fossombronia* found at 4000 m will keep Drs. Stotler busy for some time.

The participants were: Margarita Escobar (Medellin, Colombia), Oscar Orrego Santa (Bogota, Colombia), Virginia Freires (Guatemala), Rosa Isela Meneses (Bolivia), Amalia Beatriz Biasuso (Argentina), Ines Sastre D-J. (Puerto Rico), Carmen Reyes (Puerto Rico), Abeliz Rosado (Puerto Rico), Sobeida Escoria A. (Puerto Rico), Patxi Heras (Spain), Marta Infante (Spain), Javier Estrada (Spain), Claudia Horning (Venezuela), Claudia Garbiso (Venezuela), Yrene Davila (Venezuela), Ana Escalona (Venezuela), Ricardo Rico (Venezuela), and myself.

This experience enriched us not only bryologically but also personally, tightened relations among bryologists of neighboring countries in Latin America, and with Europe and the USA. In addition, the course allowed young Latin American bryologists to learn the world of tropical bryophytes in our own surroundings.

Minutes for IAB Council Meeting

Beijing, May 27, 1997

The Chairman called the meeting to order at 7:30 p.m.

Present were T. Cao, C. Delgadillo M., J.-P. Frahm, T. Hallingbäck, M. Ignatov, T. Koponen, R. Seppelt, L. Söderström, D. Vitt.

1. Minutes from the Mexico meeting in 1995: Read and accepted with change to item eight.

2. Treasury Report by D. Vitt

Income

*Dues (incl. NBS & Arctoa)	15869.89
Interest	613.12
Capital Gains	1371.98
Sphagnum Symposium	4500.00
Mutual Fund Increase	3560.27
Total Income	25915.26

Expenses

Postage	1673.65
Photocopying	445.00
Salaries	1100.00
Secretarial Supplies	46.23
S. Greene Award (1995)	1000.00
Hattori Prize	400.00
NBS (pd)	266.00
Arctoa(pd)	400.00
Total Expenses	6238.41

BALANCE MAY 25, 1997

INCL. COMMITMENTS **42895.15**

Commitments (1997)

Endangered Species Fund	388.00
Hattori Prize	400.00
Stanley Greene Award	4000.00
Arctoa	1426.23
NBS	1518.56*
Next Sphagnum Symposium	4500.00
Total Commitments	12232.79

*IAB and NBS are collecting money for each other. Balancing with NBS was not done prior to this report.

There was some discussion of whether funds were invested to the best ability and the responsibility given to one person as the treasurer. A financial committee will be set up and chaired by the Secretary-Treasurer. A proposal was made by Frahm to consider raising fees to \$15 US with the extra \$4 going to research. Vitt suggested having donations, but it was felt this would not work. Delgadillo suggested \$1 raise and

Koponen suggested no raise. Decision made to not raise fees but to add a phrase to the dues notice and in The Bryological Times that persons "please contribute to the research fund".

3. Membership Report: Membership in IAB by regions in 1997 was:

Africa	5
Asia	23
Australia & New Zealand	27
China	30
Europe	239
E Europe	83
Japan	40
N & C America	140
S America	6
Total paying members	593.

This compares to 422 in 1993 and 495 in 1995. (At this time some of the persons who received The Bryological Times were not paying members). There was discussion over the small number of South American and African members. It was concluded that there are a number of bryologists in South America who are potential members, while in Africa the number of members probably reflects the actual number of bryologists. C. Delgadillo will take prospectus and copies of The Bryological Times to the Latin American Society to see if he can encourage members. S. Vitt is to send copies to him plus the names of current members.

4. The Bryological Times Report by L. Söderström: Six issues of The Bryological Times were not always possible due to lack of material. Suggestions for new organization included: 1) Editors to be formally appointed every two years with re-appointments possible. 2) Spread out responsibility by selecting six Regional Editors from around the world who will do one main article for The Bryological Times per year among other things. Six persons have been asked to serve as editors but only three have answered yet. 3) Column Editors

will be appointed for two years only. The number will vary and new Column Editors can be added as needed. They should contribute at least once a year. 4) A literature column needs to be added, including book reviews. A motion was made by J.-P. Frahm that the arrangements for the above be made by the editor and these changes be printed in The Bryological Times. These changes were accepted.

5. Meeting in St. Louis in 1999: The program at the International Botanical Congress consists of symposia and a combined poster session. Deadline for subject of symposia is September, 1997. Suggestion was made by D. Vitt that a committee be set up to organize the symposia. R. Seppelt commented that we should co-ordinate with ABLs in arranging symposia. A proposal was made to select 3-4 persons to set up at least two (and up to several more) symposia. The committee suggested B. Mishler, M. Crosby, and M. Ignatov be asked to serve on this committee. They were to check if there were other costs involved besides the registration fees.

6. IAB Meeting in 2001: There was a proposal from India to host this meeting. Spain had been asked to put forth a proposal, but had not done so. Vitt made a motion for the meeting to be held in India, it was seconded and passes with 5 votes against 3. Delgadillo and Frahm will put together a proposal for the 2003 meeting in South America. In 2005 the meeting will again be held with the International Botanical Congress.

7. Nomination for Awards:

Stanley Greene Research Award: 1800 CDN to G. Dauphine from Costa Rica to study Lejeuneaceae and 2200 CDN to Fu Xing of China do research in Canada. They will have to submit receipts for usage of money and a report

within a time period of one year. They should also include a line crediting this support in their publication.

Richard Spruce Plaque: Recommendation to accept (secret) nomination and make presentation to recipient at the Business Meeting. Award given to Timo Koponen.

Hattori Prize: 400 CDN for "Prodromus Bryologiae Novo-Granatensis: An Introduccion a la Flora de Musgos de Colombia" by Steven P. Churchill and Edgar L. Linares C.

The President appointed committees for the nominations of recipients of IAB awards: Richard Spruce Plaque for the 2001 meeting (Timo Koponen {as 1997 winner} plus three others to be decided in St. Louis), the Stanley Greene Award (T. Koponen, H. Deguchi and C. Delgadillo, chaired by D. Vitt, Secretary-

Treasurer), and the Hattori Prize (B. Crandall-Stotler, M. Ignatov and L. Söderström, chaired by T. Koponen, President of IAB). The Hedwig committee (W. Frey, H. Ramsay, W. Reese and T. Pócs) will make the decision about the 1999 medal and should be set the same as the Richard Spruce Award committee in 2001 and 2003.

8. Archives for Bryology cancelled as no longer needed.

9. The IAB Home Page is currently being organized and will be linked to other organizations.

10. Endangered Species Committee Report by T. Hallingbäck: Contributions to the fund for research on endangered species began in Mexico. Geissler, Gradstein, Hallingbäck, Pócs, and Tan make up the committee to decide the best use of these funds and they will

appoint Belland as a new member if he agrees. They will produce an action plan for endangered Bryophytes with the most needed research listed in a booklet with the IAB symbol. Recommended that they have a proposal for use of the funds by the St. Louis meetings.

11. Advances in Bryology by Royce Longton (given by Vitt): Vol. 6 done. Suggestions for Vol. 7. 1) Tropical Bryology and 2) Biodiversity & Conservation with Floristics included were suggested. Molecular biology was suggested for a future issue.

12. Constitution: Motion to amend constitution as presented by Vitt and Söderström, seconded by Delgadillo. Decision made to submit the proposal to the general membership for their approval.

General Annual Meeting to be held on Thursday, May 29.

Meeting adjourned.

News from the Herbaria

News from the Herbaria. Send contributions to the column editor: A. R. Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP, Wales, United Kingdom

Department of Botany, National Science Museum, Tokyo, Japan, moved to Tsukuba from Shinjuku in 1995 (cf. *Taxon* 44: 268, 1995). In view of the time-consuming activities involved in moving and re-housing the collections, the herbarium of the department (TNS) was temporarily closed from June 1995, and opened from May 1996. We now invite loan requests from recognized botanical institutions. We have expanded the size of our herbarium to provide more space for herbarium-related research. A new guest-house was also built to accommodate short- and long-term visitors.

For further information, please contact Dr Masanobu Higuchi, Department of Botany, National Science Museum, 4-1-1 Amakubo, Tsukuba, Ibaraki 305, Japan. E-mail: higuchi@kahaku.go.jp

Publication years for Illustrated Flora of Nordic Mosses

I often get questions regarding the actual years of publication for the first three fascicles of Elsa Nyholm's *Illustrated Flora of Nordic Mosses*. According to information provided by P. H. Enckell (Editorial Office, Ecology Building, S-223 62 Lund, Sweden; from where the flora can also be ordered), the following years are the correct ones. Fascicle 1 was published in 1987, fascicle 2 in 1990, and fascicle 3 in 1993.

PS! Anyone interested in the contents of the latest issues of *Lindbergia* (and the other journals edited at the Editorial Office in Lund) could check the following home page:

<http://www.oikos.ekol.lu.se>

Lars Hedenäs, Swedish Museum of Natural History, Dept. of Cryptogamic Botany, Box 50007, S-104 05 Stockholm, Sweden. e-mail: lars.hedenas@nrm.se

Course on Tropical Mosses and Lichens in Ecuador

The Herbario QCA of the Catholic University of Ecuador invites you to the first course about Tropical Mosses and Lichens which will be in Quito on August 25th to September 5th. This course will be carried out with collaboration of: Dr. Harrie Sipman of Berlin University and Dr. Robert Gradstein of Göttingen University in Germany. We will have several field trips to important tropical rain forest in Ecuador.

For more information please contact:

Dr. Renato Valencia or Lcdo. Eduardo Barahona, Herbario QCA, Universidad Cartolica, Apartado 17-01-2184, Quito, ECUADOR. Email: rvalenci@pi.pro.ec, rvalenci@ecnet.ec or mcbarahona@puceuo.puce.edu.ec, FAX (593-2) 567 117, TEL/FAX (593-2) 371 788

New Constitution for the International Association of Bryologists

In the late 1980's, IAB Council decided to become independent from IAPT (International Association of Plant Taxonomists). This move gave us the opportunity to develop our own funds and budget them as we see fit. It also allowed us to better develop bryological interests outside of taxonomy. In other words, by being independent of IAPT, the Association can better serve all of bryology.

Also, the present constitution was formulated while IAB was affiliated with IAPT, and as a result our elections and terms of office were strongly tied to those of IAPT.

While the Council's decision to become independent from IAPT took effect some years ago, our constitution has never been updated to reflect these changes. Additionally, the constitution needs some 'house cleaning' to make it a more current document that we can all follow closely.

As a result of this background, Council discussed the constitution while at the Beijing meeting and unanimously recommends to the membership that we amend the constitution as proposed here. The Council presents an amended constitution; these amendments require a 2/3 majority acceptance by the voting

membership by mail ballot.

Below you find both the old and the proposed constitution. There are a number of small changes in the text. The main changes are marked as strike-through in the old text for deleted parts and underlined in the proposed text for additions and major changes.

Please review the old and the amended versions of the constitution as presented below and return your vote by mail before September 15, 1997, to Dale H. Vitt, Secretary-Treasurer.

Note: the ballot is on the same yellow form as the information for your new IAB address list request for information.

Old Constitution

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Article 2. ~~The Association shall be affiliated to the International Association for Plant Taxonomy (I.A.P.T.) on the basis of Article 3, section 4, of the Constitution of that Association.~~

Section 2. Objectives and Means

Article 3. The objectives of the Association shall be to promote international co-operation and communication among bryologists, whether amateur or professional.

Constitutional Changes as recommended by IAB Council May 27, 1997 in Beijing, for ratification by the membership

Constitution of the International Association of Bryologists

Section 1. Name and Affiliation

Article 1. The Association shall be called the International Association of Bryologists (I.A.B.)

Section 2. Means and Objectives

Article 2. The Association is an international, non-profit society whose financial records reside with the current Secretary-Treasurer.

Article 3. The objectives of the Association shall be to promote international co-operation and communication among persons interested in bryophytes.

Article 4. ~~The objectives of the Association shall be pursued by the same methods and procedures as those provided in the I.A.P.T., either jointly or independently, but normally under the aegis of that Association. The methods of the Association shall include:~~

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter, ~~the publication of a regular list of all new taxa, at every level, from the world's literature; the periodic publication of an up-to-date address list of the world's bryologists;~~ and issues that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary of the I.A.B. ~~or I.A.P.T.~~ and payment of the appropriate fee.

Article 7. ~~Membership of the Association shall be open without payment of an additional fee to any personal member of the I.A.P.T. in good standing, who may desire to become a member of the I.A.B.~~

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary, and ten Councillors. Normally not more than two members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office between two Business meetings of the Association and shall not be eligible for re-election to the same office. The Councillors shall hold office between three Business Meetings; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office between three Business Meetings and shall be eligible for re-election.

Article 4. The objectives of the Association shall be:

- (i) The facilitation and encouragement of fuller co-operation between individual workers;
- (ii) The establishment of committees for special purposes;
- (iii) The organization of meetings and symposia relating to bryology, in which bryologists should be involved and to which they can contribute;
- (iv) The publication of a regular newsletter and items that are of general interest to bryologists other than original research papers.

Section 3. Membership

Article 5. All persons actively interested in any phase of bryology are eligible for membership of the Association.

Article 6. Membership is acquired by application in writing to the Secretary-Treasurer of the I.A.B. and payment of the appropriate fee.

Article 7. Non-profit bryological societies can be affiliated to the I.A.B. Affiliated societies may use the newsletters and the other I.A.B. channels free of charge. Commercial journals or publishers may use the I.A.B. network by paying an amount decided at any time by the current Executive Committee.

Section 4. Council

Article 8. The affairs of the Association shall be controlled by a Council which shall consist of a President, a First and Second Vice-President, the Immediate Past-President, a Secretary-Treasurer, the Editor of The Bryological Times, and ten Councillors. Normally not more than three members of the Council shall be residents of the same country when elected.

Article 9. The President, Vice-Presidents, Past-President and Secretary shall constitute the Executive Committee whose role will be to maintain general control over the affairs of the Association and carry out the duties that may be delegated to them by the Council.

Article 10. The President and Vice-Presidents shall hold office for 4 years and shall not be eligible for re-election to the same office. The two Vice-Presidents shall not be elected simultaneously. The Councillors shall hold office for 4 years; five of them shall retire by rotation at each Business Meeting and shall not be eligible for immediate re-election to the same office. The Secretary-Treasurer shall hold office for 6 years and shall be eligible for re-election.

Article 11. The Editor of The Bryological Times shall be appointed by the council for two year terms and be eligible for reappointment.

Article 11. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President until the next Business Meeting of the Association.

Article 12. The Council may at any time co-opt additional members for special purposes; ~~for example, the Association will eventually need the services of an Editor and a Bibliographer.~~

Article 13. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5. Meetings and Elections

Article 14. The Association shall meet at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each International Botanical Congress or at an appropriate International Congress. The time interval between two Business Meetings shall normally be at least four years and not more than six years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings.

Article 15. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the offices of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

Article 16. At least seven months prior to a Business Meeting of the Association, the President shall appoint an ad hoc Election Committee to conduct the election of Council. The Election Committee shall consist of at least three and not more than five members.

Article 17. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chairman of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency.

Section 7. By-Laws and Amendments

Article 18. The Council shall have power to make by-laws for carrying into operation the terms of the Constitution.

Article 12. Any vacancy occurring during the term of office of a Council member, other than that of President, shall be filled by the Council. In the case of a vacancy in the presidency, the Past-President shall fill the remaining term of office. If the Past-President is unable to serve, the First Vice-President shall act as President for the remaining term of office.

Article 13. The Council may at any time co-opt additional members for special purposes.

Article 14. The Council shall have power to appoint committees to further the objectives of the Association and shall define the composition, duties and powers of such committees.

Section 5 Meeting and Elections

Article 15. The Association shall meet biennially, including if possible at each International Botanical Congress. Other meetings may be arranged by the Council when deemed appropriate. A Business Meeting shall be held at each biennial meeting. The time interval between Business Meetings shall normally be every two years. Notice of the Business Meetings shall be sent to members at least four months before the date of the meetings through the newsletter.

Article 16. The Council shall be elected by a majority of the votes cast by members in a mail ballot conducted at least four months prior to the Business Meeting of the Association. The votes cast for nominated candidates for one of the office of the Executive Committee shall count for their election as Council Members if they are not elected for an office.

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Article 18. The Election Committee shall call for nominations of candidates for the ensuing period from the membership of the Association. Nominations shall be sent to the Chair of the Election Committee and they shall form the basis of the ballot. If nominating additional candidates, the Election Committee shall strive, as far as possible, to take account for the diverse interests of bryologists as well as the varied geographical areas of candidates residency. Ballots shall be sent to the election judge, appointed by the President.

Section 6. By-Laws and Amendments

Article 18. The Council shall have the power to make by-laws for carrying into operation the terms of the Constitution.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require favourable vote of two-thirds of the votes cast.

However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favourable decision is then obtained, they shall be voted upon by mail vote.

By-Laws for IAB Committees

1. Such Committees as may be required to fulfill IAB's purposes shall be created on a temporary or unlimited basis, upon the decision of the Council.

2. The Chairman and Members of each Committee shall be appointed (and can be dismissed) by the Executive Committee. Unless otherwise specified, their commission ends with that of the Council, during which they were appointed; it can be renewed. The President and the Secretary of the IAB are ex-officio members of each Committee.

3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary of IAB who shall circulate them and report back to the Committees any comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chairman of that Committee, their use being fully accounted for in the Committee's reports.

Article 19. Amendments to the Constitution may be proposed in writing by any members of the Association. Such amendments receiving the approval of a majority of the Council shall be submitted to the members for a mail ballot. Adoption shall require a favorable vote of two-thirds of the votes cast. However, amendments rejected by the Council may be re-submitted by the mover for discussion at the next Business Meeting of the Association, and if a favorable decision is then obtained, they shall be voted upon by mail vote.

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3. Within the limits of their tasks and competencies, as defined by the Council, the Committees are autonomous in their action.

4. Every January, the Committees shall submit annual reports of their activities to Council through the Secretary-Treasurer of IAB who shall circulate them and report back to the Committees and comments received from Council members.

5. Funds that may be put at the disposal of a Committee shall be administered under the personal liability of the Chair of that Committee, their use being fully accounted for in the Committee's reports.

The IAB Meeting in 1999

In 1999, IAB will meet in St. Louis, Missouri in connection with the XVI International Botanical Congress. This meeting will consist only of posters and organized Symposia. IAB will be suggesting symposia to the organizing committee. We need your suggestions now as the deadline for proposals is September 15, 1997.

Please send your symposium proposals to the Secretary, Dale H. Vitt before September 1, 1997. **Symposium proposals must include the following:**

-at least two convenors, one of which is from outside of North America.

-a listing of seven speakers with the tentative title and abstract for a 20 minute presentation.

The IAB Council

The Current IAB Council is as follows (with end of term):

President: **T. Koponen**, Finland (1999)

Past President: Vacant

1st Vice President: **W. B. Schofield**, Canada (2001).

2nd Vice President: **R. E. Longton**, UK (1999).

Secretary-Treasurer: **D. H. Vitt**, Canada (1999)

Councillors: **H. Ando**, Japan (1999), **C. Delgado M.**, Mexico (1999), **P. Geissler**, Switzerland (1999), **N. Miller**, USA (1999), **L. Söderström**, Norway (1999), **B. Buck**, USA (2001), **T. Cao**, China (2001), **J.-P. Frahm**, Germany (2001), **M.**

Ignatov, Russia (2001), **R. Seppelt**, Australia (2001).

Editors (appointed): **L. Söderström**, Norway (1999), **T. Hedderson**, UK (1999), **H. Weibull**, Sweden (1999).

The Nominations committee seeks nominations for the following offices that are to be filled by general election at the 1999 St. Louis meeting

President

Second Vice-President

Secretary-Treasurer

5 Councillors

Nomination can be done on the enclosed yellow form. Dale Vitt will pass it on to the Chair of Nominations committee.

The Bryological Times is a newsletter published bimonthly for the *International Association of Bryologists*. Items for publication are to be sent to the Editors (preferably HW), **except** for those for the regular columns, which may go **direct** to the column editors

Deadlines for material to the Bryol. Times will be January 15, March 15, May 15, July 15, September 15 and November 15 with the publication shortly afterwards. Shorter notes may be accepted later if there is still space.

Editors

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Terry Hedderson, Dept of Botany, University of Reading, Whiteknights, RG6 2AS Reading, UK. FAX +44 1 734 753 676.

T.A.J.Hedderson@reading.ac.uk

Column Editors

J.-P. Frahm & B. O'Shea (computer techniques); T. Hallingbäck (conservation); A. R. Perry (news from the herbaria); T. Pócs (tropical bryology); J. Vána (floristics and phytogeography).

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DIARY

1997

July 5. Field meeting with DBLS. Bryophytes round Boxmeer. Contact person: L. Spier, Kon. Arthurpad 8, NL-3813 HD Amersfoort, The Netherlands.

July 26-August 4. BBS Summer Field Meeting in North Italian Alps. Local secretaries: Italy: Dr. Luca Miserere, Dipartimento di Biologia Vegetale del Universit, Viale Mattioli 25, I-10125 Torino, Italy. Fax: 00 39 11 655839. UK: Tom Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN, UK. Tel. 0114 2366861

August 3 - 7. ABLs Annual Meeting in Montreal, Quebec. Information from: Brent D. Mishler, Dept. of Integrative Biology, University of California, Berkeley, CA 94720-2465 phone: (510) 642-6810 FAX: (510) 643-5390 Email: bmishler@garnet.berkeley.edu

August 8-10. Annual Meeting and Excursion with the Nordic Bryological Society on the Archipelago of Åland. Information from Hanna Jalkanen, P.O.Box 47, FIN-00014 University of Helsinki, Finland. Tel. +358 09 708 4725. Fax. +358 09 708 4726. Email hanna.jalkanen@helsinki.fi

August 13-20. BBS Summer Field Meeting in North-east Yorkshire. Local secretary: Mr. J. Blackburn, 6 Bylands Grove, Fairfield, Stockton-on-Tees, Cleveland, TS19 7BG. Tel.: 01642 583815

September 3-9. SVBL/BLAM Summer field trip. Sarnen (OW), Switzerland. Montane and subalpine forests and bogs on the northern slope of Central Alps. Contact Person: Dr. Engelbert Ruoss, Naturmus., Kasernenplatz 6, CH-6003 Luzern. Phone ++41-41-2285411; Fax 2285406; email: natur@centralnet.ch

September 12-14. BBS Annual General Meeting and Symposium in Chichester. Local secretary: Mr. Rod Stern, Botany Bay, Main Road, Fishbourne, Chichester, West Sussex, PO18 8AX. Tel.: 01243 574318.

September 13-14. Field meeting with the Dutch Bryological and Lichenological Society at Zandpol, Z.O.Drente. Address: "De Zandpol", Stieltjeskanaal 14, 7764 A.J. Zandpol. Information: 0543-51 53 41 (The Netherlands).

September 17-20. XII Symposium on Cryptogamic Botany, Valencia, Spain. Information from: Felisa Puche, Dept. de Biologia Vegetal, Facultad de Ciencias Biologicas, Universitat de Valencia, Dr. Molinar 50, 46100 Burjassot, Valencia, Spain. Email: M.F.Puche@uv.es. Http://bioweb.uv.es/cripto97.

October 3-5. Annual Blomquist Bryological Foray. Contact Person: Molly McMullen, Cryptogamic Herbarium, Box 90342, Duke University, Durham, NC, 27708-0342, USA. Phone: (919) 660-7300. Fax: (919) 660-7293, email: mmcm@duke.edu

November 8. Field meeting with the Dutch Bryological and Lichenological Society around Soest. Lichens. Information: 035-601 85 41 (The Netherlands).

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March/April (date to be decided). BBS Spring Field Meeting in Basse Normandie, France. Local Secretary: Dr. Jeff Bates, Dept of Biology, Imperial College at Silwood Park, Ascot, Berkshire, SL5 7PY. Tel.: 01344 23911. Fax: 01344 294339. email: J.Bates@ic.ac.uk.

August 31-September 4. 3rd European Conference on the Conservation of Bryophytes. The Scientific Basis for Bryophyte Conservation. Trondheim, Norway. Information from Lars Söderström, Dept. of Botany, Norwegian University of Science and Technology, N-7055 Dragvoll, Norway. Tel. +47 73596061. Fax: +47 73596100. Email: Lars.Soderstrom@chembio.ntnu.no.