BRYOLOGICAL RESEARCH IN HELSINKI 1976 - 1986
By Timo Koponen

A REVIEW of the bryological research carried out at the University of Helsinki was given some 10 years ago (Bull. Bryol. 5: 586-592). In the review, the Curator of the Cryptogamic Herbarium, in 1973, had noted that the present report covers the last 10 years and tells of the programs planned for this time. It also outlines current research projects.

There have been some changes in both the staff of the botanical Museum and in the research staff, with some younger bryologists emerging (Fig. 1). Prof. Hellki Rovainen, the Emeritus Head Curator of the Cryptogamic Herbarium, died in 1983 (Cryp. Bryol. Lich. 9: 77-78). The author of this report left the herbarium to take up the position of Professor of Botany from the beginning of 1986: at the time of writing (December 1986) his successor as Head Curator has not been announced. In any case, Dr. Pelka Pekari will remain as a curator in the herbarium. Doc. Sinikka Phippo was appointed as an assistant in the Department of Botany, but she continues as acting junior curator of the Museum until the office of Head Curator is settled. Prof. D.H. Norris from Arcata, California, has taken up semi-permanent residence in Helsinki, and in the Botanical Museum.


Young bryologists include Mr. Jaakko Kyöönen, M.Sc., who is studying the family Polytrichaceae, especially the genus *Pogonatum* for his Ph.D. thesis; Mr. Kristiina Kosonen, M.Sc., who is working on the nomenclature and biology of Finnish bryophytes and Johannes Smit, who is currently writing his thesis for a master's degree on the Neckeraeaceae of Western Finland.

In addition to the taxonomically-oriented research described above, others are working in the fields of bryophyte phsiology and bryophyte ecology in the Department of Botany of Helsinki University. Much of this work is centered around the pollution and contamination caused by heavy metals. Prof. Laila Simola has studied the heavy metal problems of the Sphagnum fimbriatum (e.g. Ann. Bot. Fenn. 14: 1-13; J. Hattori Bot. Lab., 34: 365-377) and fatty acid composition of this taxon (Physiol. Plant., 59: 74-77). Dr. Pelka Pekari has worked on ecological indicators and specia groups in northernland bryophytes, and on heavy metal distribution in the Sphagnum layer of bogs (e.g. Ann. Bot. Fennici, 15: 287-293). Ahti Apinainen has studied heavy metal monitoring using *Neylodium splendens* and air pollution monitoring using *Sphagnum moss-bags* (Acta Bot. Fennica, 2: 11: 1-2).

In the 1980's we have seen many visitors in Helsinki, some of whom have stayed with us for a long time. They include Dr. Lal Ming-Jou, Dr. Benito Tan, (Laugana, Philippines), Mr. Li Shu-hua (Guangzhou), Mrs. Li Xing-jian (Kunming), Mrs. Lou Jian-shing (Beijing), Prof. Gao Chuen (Shenyang) and Dr. Bronislaw Wozniak (Warsaw). Mrs. Lin Pan-juan from Guangzhou (South China Institute of Botany) will be staying with us from the beginning of January 1987. The visitors have been very successful in their research as exemplified by the following: B. Tan's revision of *Diceranoma* (Ann. Bot. Fennici, 20: 317-334), Lou's (continued on page 3).

TOWARDS AN ILLUSTRATED MOSS FLORA OF EGYPT
By Afaf A. Badawi

Up until now, there have only been about 25 different investigations of the Egyptian flora in which have been in any way comprehensive. Additionally, several of those that do exist still require bryological exploration. Taken together, these facts show that the preparation of an illustrated moss flora for Egypt still has a long way to go.

One of the essential requisites is to have available an appropriate herbarium. Much effort has, therefore, been made by Wajeeh El Saadawi and his associates to establish such a herbarium at Cairo (CAIA). This new includes about 2,000 samples representing about 200 different entities. The majority of specimens are of Egyptian mosses, but a few are European. Although it is beyond our present ambitions to develop an international moss herbarium, the exchange of specimens with other herbaria is being encouraged to establish a base of reference material to facilitate the identification of newly-collected bryophytes. The growth of mosses in Egypt is not luxuriant and as most of the area lacks sporophytes or even developed sex organs, most Egyptian moss samples at present available for exchange are not very encouraging due to their small quantity.

Phytogeographically, only the northern part of Egypt can be considered as part of the southern Mediterranean region. It gets ca. 200 mm annual rainfall and has many elements in common with the Algerian-Tunisian-Libyan angiosperm flora. But most of Egypt's area is almost a rainless desert. For example, the annual rainfall in Cairo is only ca. 20 mm and in El-Fayum about 10 mm. However, the limited areas of the Nile Valley, Nile Delta, El-Fayum Depression, as well as some Oases of the Libyan desert, claim comparatively abundant water (continued on page 2).
two major problems. The first results from the fact that Egypt is still very inadequately surveyed for mosses, while the second is that many taxa can only be identified regionally. Thus it seems that a flora can only be achieved in several stages involving some temporary phases.

The presentation of keys at each stage would not only be difficult, depending as they would have to on gametophytic characters, but be of limited use, since the discovery of additional keys unsatisfactory. For example, the conservation of Barbula holochlaena (L.) Fleisch. over Didymodon ehrenbergii (L.) Kindb., would require changes in the key to species of these two genera. It seems better to adopt a non-conventional approach and to present a descriptive account of part of the country as it is surveyed. This approach should suit our present-day knowledge of Egyptian mosses and accommodate any future additional information concerning new records or any nomenclatural changes that would allow for flexibility and provide the interested bryologist with a full description of each entity.

By using such a non-conventional approach a certain set of well-defined characters will be recorded for each moss for each area. At the time of writing, such a set of characters has been devised and is almost complete. In this way characters of all collected mosses can be presented in a tabulated form for each region investigated. These tables, with accompanying photographs, will give a detailed picture of each taxon and facilitate identification of material in the absentia. Furthermore, such tabulated presentations are prerequisites for computer assessments, or punch-card systems, which can be available at a future date. From such tabulated presentations, based on the same set of characters, of the mosses of each region in Egypt, a standard flora for the whole country can, in time, be prepared.

The second problem is the unavoidable necessity for some provisional identification of taxa until their true identity is discovered. The absence of the sporophyte in the majority of Egyptian taxa, the occurrence of intergrading species, inadequate literature and lack of an adequate sample of authentic specimens all impose difficulties in identifying mosses. But can we neglect the entities we fail to identify? Some of these may turn out to be new taxa.

It seems imperative there-fore to follow Agnew’s (1974) attitude, as encouraged by Greene (1976), to use the taxonomic measure of giving numeric notations when referring to the descriptions of unknown entities (e.g. Dicranum sp., Pottsiopsidae 1, Pottsiopsidae 2) where the genus is unsure, rather than traditional binomials. This is mainly a precaution since some or all of these entities may be “species” (e.g. Agnew, 1976) and not true binomials in that the variation exhibited by the specimen is regional, and has no proper taxonomic significance. It is suggested that such temporary notations may be used in the descriptions of entities from regions not previously explored, or where very few specimens are available. Thus procedure should be retained for a suitable period (at least ten years?) after publication before a formal naming takes place, unless it can be proved that the entity represents a definite biogeographical taxon before that time. Once the entity is formally named, the provisional “numeric notations” can be discarded. Of course these entities would become recognized as normal taxa once they had been formally given binomials.

References


Botany Department, Faculty of Science, University of Ain Shams, Abbasiya, Cairo, Egypt.
[An earlier article by El-Saadawi (1981) reported the start of work on the moss flora of Egypt – see Bryol. Times, 11:5–6, Editor.]

NEW EXsicCAtES

Bryophyta Vosgesiana Exsiccata
Ser. 3, Ms, No. 51–100 Campylodrospora Malaccensis
Fasc. 5, Ms. No. 101–125 Campylodrospora Malaccensis

All exsiccate series in sets of 50 duplicates, available on exchange basis from: J.-P. Frahm, University Duisburg, Fachbereich 6, Botanik Postfach 101629, D-4100 Duisburg, F.R.G.
The Bryological Times


Bryological Research in Helsinki (continued from page 17)


In the previous paper there were 9 research projects listed, some of which have been completed or discontinued; others are being continued and some new ones have been started.

1. P. Isosivita continues his studies on the nomenclature of bryophytes and has enlarged his studies to groups other than Sphagnum.

2. An annotated checklist of Finnish bryophytes has been published (Flora Fennica, 6: 1–7) and with additions and records being filed continuously, an addendum will be published.

3. I. Järvinen's studies on the taxonomy, distribution and nomenclature of Finnish Flagiochila, Lycopodiaceae and Chilostomataceae (e.g. Ann. Bot. Fennici, 20: 87–99) have been completed.

4. A. Koponen continues his studies on the Sphagnaceae and Sphagnobryaceae.

5. The worldwide treatment of the taxonomy and nomenclature of the Mniumaceae has been completed by T. Koponen. The final monograph will, hopefully, be written one day.

6. As to the boreal and temperate floras, in addition to those of Finland, the East Asianic florae, especially those of China, are being focused upon.

7. The moss flora of Kymenlaakso in south-east Finland was completed by the late Prof. V. Kujala et al. (Acta Bot. Fennica, 109: 1–34).

8. Very little recent work has been done with the moss flora of Patagonia. However, a Finnish expedition which includes a bryologist (J. Hyvönen) has been exploring in Tierra del Fuego from December 1986 to March 1987.

9. The study of moss spores has been discontinued.

The most demanding task currently being undertaken by the Helsinki group of bryological taxonomists concerns a project we call "Bryophyte flora of Western Melanesia". The area we are studying includes Western New Guinea and the Solomon Islands. All published bryophyte names for this area are being checked.

The project was begun in 1981 when D. H. Norris and T. Koponen made an excursion to Papua New Guinea. This expedition was sponsored by the Academy of Finland and University of Helsinki and these institutions continue to fund the project. Funds were also received from the Finland–United States Educational Exchange Commission, and several Finnish foundations.

The 17,000 specimens collected have been studied, and the results are being published steadily. T. Koponen and D. H. Norris are responsible for the mosses and S. Pilippo for the hepatics. The colleagues who have helped us by identifying our material and co-authoring published papers include J.-P. Frahm, M. Geise, R. Grolle, J. Haut, H. Inoue, N. Kitagawa, M. Mizutani, N. Nishimura, N. Padberg, W. D. Reese, A. Tow, E. Vana, D. H. Vitt and Y. Yamada.

The results are appearing in Finnish botanical journals under 3 general titles:

(i) The Frieda River series, which contains floristic papers based on Koponen's collections in the Sepik area;

(ii) The Huon Peninsula series, which contains monographs and revisions.

When completed, the Huon series will form a bryophyte flora of the area. The humble name for the series was selected in the beginning of the revisions when we could not yet predict the scope of our findings. We estimate now that more than half of the work has been done. A total of 22 papers has been published so far (see the list below), several have been sent to press and 5 to 10 manuscripts will be completed soon.

The following papers have appeared so far as part of our Western Melanesian bryoflora project:

The ANNOTATED CATALOGUE series:


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The ANNOTATED CATALOGUE series:

The Bryological Times


4.

Bryological Research in Helsinki: (continued from page 3).

The HUON PENINSULA series:


The FRIEDA RIVER series:


Department of Botany, University of Helsinki, Unioninkatu 44, SF-00170, Helsinki 17, Suomi – Finland.

VLAAMSE WERKGROEP BRYOLOGIE

Report on the Annual General Meeting held at Meise, 14 February, 1987

I. Activities in 1986

1. A brief description was given of the activities of recent years.

II. Activities in 1986

1. A brief description was given of the activities of recent years.

III. Miscellaneous

1. A word from a nature reserve in Koerzel (Limburg) was asked for advice before starting some changes.

2. It was reported that a laundry near Antwerp has trouble in its cistern, caused by Rhagopogon raphani.

3. The Working Group is going to design an information document, and will ask members for suggestions.

IV. Activities for 1987

1. Attention was drawn to the changes in the dates of two meetings: Bugen about (3 March) and De Nation (now 3 October)

Further information for foreign participants can be obtained from Herman Stiepere, Nationale Plantontuin, Dommersheem, Belgium (Tel. 02/261905 or 02/261985 private).

IV. Projection diapositives by Theo Arts

One of the most active members of our Working Group presented us with the results of his trip to western Iran.

Ludo Smet, Secretary, Vlaams kerk- groep Bryologie, A. Van Dijckstraat 13, B-2360 Turnhout, Belgium.
A Bryohistorical Landscape of the German Democratic Republic

showing the main locations where distinguished bryologists have studied and worked

By

Ricolf Große

This paper is a modified version of a poster exhibited during the Fifth Meeting of CEBWG at Leipzig, 25–29 August 1986 (see Bryol. Times, 40: 7, 1986.). At the same time it provides some historical background for the meeting of bryologists from all over the world scheduled to take place during the XIV International Botanical Congress in Berlin (West) from 24 July to 1 August 1987.

On the map (Fig.1) 3 categories of places are distinguished, according to their bryohistorical importance, by the size of the numbers, i.e. 1-3, 4-9, 10-25. The lists are presented in alphabetical order within each category, e.g. Berlin, Jena and Leipzig in the first as these were the main centres of bryological research in the past. Otherwise the arrangement is thought to be self-explanatory.

1 BERLIN

1756-1812 Willdenow: physical professor of natural history (1796-1810) and of botany (1810-1812) in Berlin.

1764-1835 Floerke: 1799-1815 compiler of the 'Encyclopädisches Dictionarium' in Berlin, see under Rostock and Jena.

1767-1851 Link: 1815-1852 professor of natural history in Berlin.

1769-1859 A. von Humboldt: born and died in Berlin, student in Frankfurt/O., Berlin and Göttingen, living mainly in Berlin, but for some time also in Jena (1797) and other places. Collected bryophytes in the Neotropics and the Urals.


1788-1859 Ruthe: twice deserted from military service under the Westphalian King Jérôme, stu-
The Bryological Times

No. 43, 1937.

A bryohistorical landscape [continued from page 5.]


2 JENA

1542-1583 Thal: 1561 student of medicine in Jena, physician. Author of 'Flora Hercynica' (1588), which includes lower cryptogams.

1688-1719 Ruppius: author of 'Flora Jenensis' (1718) where the generic name Jungermannia is established.

1718-1792 Schimmel: student in Jena and Halle, physician, professor of pharmacy in Bayreuth and Erlangen. His thesis 'De Psasia (1759) and 'De Jungermanniæ charactere' (1760) was the first ever published exclusively dealing with bryophytes.

1761-1802 Ratsch: born and died in Jena, physician, 1786 Dr. phil. and Dr. med. in Jena, 1797 professor of medicine, from 1792 professor of philosophy and from 1794 also director of the Jena Botanical Garden. Author of 'Dispositio generum plantarum Europaeae synoptica' (1794) which includes lower cryptogams.

1764-1835 Floerke: 1797 student and 1802 with Ratsch, see under BERLIN and ROSTOCK.

1765-1850 F.G. Dietrich: born in Jena-Ziegenhain, see under EISENACH.

1771-1839 Funch: student in Jena with Batsch, pharmacist. Published the important exsiccati 'Cryptogamische Gewächse des Fichtelgebirges' (1801-1838).

1775-1813 Wibel: 1796 student in Jena with Batsch, physician. Author of 'Primitiae floriae Werkemmis' (1799), which includes lower cryptogams.

1776-1858 Nees von Esenbeck: 1796 Student in Jena with Batsch, physician, professor of botany in Erlangen (1817). Born (1818- 1851) in Breslau (1833-1851), 1818-1851 president of the Leop.-Carol. Academy, 1846-1849 involved in the revolution, in 1851 dismissed from his position with the death of his son, at the age of 75, living his last years in poverty.

1779-1864 Treviranus: 1798 student in Jena with Batsch, see under ROSTOCK.

1792-1860 Lehmann: 1814 Dr. phil. in Jena, 1820-1860 professor of physics and natural history in Hamburg, from 1820 additionally director of the Hamburg Botanical Garden; his very important collection of exotic hepatics now in S.

1795-1837 Zenker: 1810 student in Jena, 1816 Dr. phil. and Dr. med. in Jena from 1828 until his death there. Professor of the philosophical faculty at Jena. Published "Die Exsiccati 'Musci Thuringici' (1821-1825).

1799-1838 J.D.N. Dietrich: born in Jena-Ziegenhain and died in Jena, 1828-1837 academical gardener in Jena. Published exsiccati of bryophytes together with Zenker (see above).

1804-1881 Schleiden: student and Dr. phil. (1839) in Jena, 1839-1863 professor of botany in Jena, 1863-1864 professor in Dorpat (Estonia), founder of cell theory and author of 'Grundzüge der wissenschaftlichen Botanik' (ed. 1, 1843).

1806-1881 Babenhorst: 1841 Dr. phil. in Jena, see under DRESDEN.

1844-1912 Strasburger: born in Warsaw, student (1864) and Dr. phil. (1866) in Jena, 1869 university teacher in Warsaw, professor at the age of 25 in Jena (1869-1888), discovered melosis, founder of the 'Lehrbuch der Botanik für Hochschulen' (ed. 1, 1894).

1848-1919 Stahl: student in Halle (1878) and Strasburg, 1881-1899 professor of botany in Jena. Collected bryophytes in Java.


1905- Stodiek: student and Dr. phil. (1936) in Jena with Herzog. Her thesis was entitled 'Soziologische und ökologische Untersuchungen an den xerophytischen Mooseen und Flechten des Mischwaldes in der Umgebung von Jena'.


1907- Hilpert: student (1927-1929, 1930-1932) and Dr. rer. nat. (1932) in Jena under Herzog, with a thesis entitled 'Studien zur Systematik der Trichostomaceae'.

1908- Carl: born in Kissenach, student and Dr. rer. nat. (1931) in Jena with Herzog, with a thesis entitled 'Die Artenzahlen und die systematische Gliederung derGattung Piaigialecta Dum.'

1908- Zwickel: student (1927-1929, 1930-1932) and Dr. rer. nat. (1931) in Jena with Herzog, pharmacists. His thesis was entitled 'Studien über die Ocellen der Lebermoosbe'.

1908- Degenkolbe: student in Halle (1931-1933) and Jena (1934-1936), Dr. rer. nat. (1937) in Jena with Herzog, pharmacists. His thesis was entitled 'Brutorgane bei beblätterten Lebermoosbe'.

1910- K.H. Walther: student (1929-1933) and Dr. rer. nat. (1933) in Jena with Herzog. His thesis was entitled 'Die Variabilität innerhalb des Formenkreises von Polytrichum juniperinum Willd.'

1910- G.R.W. Hoffmann: student (1931-1934) and Dr. rer. nat. (1934) in Jena with Herzog. His thesis was entitled 'Monographische Studien über die Indomalayischen Arten von Tasiisleuene'.


1914-1983 Benedix: student in Dresden (1934) and Jena, Dr. rer. nat. (1947) in Jena with Herzog, later mycologist in Dresden. His thesis was entitled 'Indomalayische Cololejeuneae' was published in 1953.

3 LEIPZIG

1723-1803 Boehmer: professor in Wittenberg, editor of 'Definitiones generum' ed. 3 (1760), by C.G. Ludwig. He validity established the generic name Sphaerocarpus Boehmer.

1730-1799 Hedwig: born in Kronstadt (Siebenbürgen, Rumania), student (1752) and Dr. med. (1759) in Leipzig, physician. In Chemnitz (1762-1781) and Leipzig (1781-1786), 1786 professor of botany and directeur of the botanic garden in Leipzig. 'Theoria generationis' ed. 1 (1784) appeared at Petropolii (Petersburg). His 'Spezies Muscorum frondosorum' (1801) is the starting point for names of Musci, especially Sphaegus. Commemorated [continued on page 7.]

[The full text continues with detailed information about various scientists and their contributions to the field of bryology.]
A byrohistorical landscape (Continued from p. 6.)


The Bryological Times

4 BLANKENBURG

1795-1880 Hampel: 1825-1876 apothecary in Blankenburg, who despised many of his exotic bryophytes. His herbarium is now at BM.

5 DRESDEN


1806-1881 Rabenhorst: apothecary, 1841 Dr. phil. in Jena, 1840-1875 living in Dresden, founder and editor for many years of Hedwigia, of the famous "RABENHORST'S Kryptogamenflora von Deutschland etc." and of various excisates.

1868-1940 Stolle: gardener at various places, later green grocer in Dresden. Published excisata of Hepaticae, together with Schade (see next entry).

1874-1966 Riehmer: teacher who studied the Bryofloristics of Central Europe, especially Saxonia. Schade & Stolle (Mecklenburg) for three years, 1793-1860 Compiler in Berlin, 1861-1865 professor in Rostock.

7 HALLE/S


1765-1837 C.F. Schulze: 1791 Dr. med. in Halle, see under NEUBRANDENBURG.

1766-1833 Sprengel: 1785-1787 student in Halle, 1787 Dr. med., 1787-1833 professor in Halle.

5 NORDHAUSEN

1542-1583 Thal: born in Erfurt, 1561 student of medicine in Jena, 1571 physician in Stendal, Stolberg and from 1581 onwards in Nordhausen.

1792-1857 Walloth: born near Stolberg, student in Halle and Gottingen, from 1822 a physician in Nordhausen.


9 ROSTOCK

1764-1835 Floerke: student in Donitz, Mecklenburg (Blankenburg) for three years, 1797 student in Jena, 1799-1815 Compiler in Berlin, 1816-1835 professor in Rostock.

7 HALLE/S


10 AUE

1878-1928 Eil, mainly Sphagnologist. Author of 'Die Torfmoose und Lebemose', (1915).

11 EISENACH

1765-1850 F.G. Dietrich: born in Ziegenhain near Jena, accompanied Goethe on a tour from Weimar to Karlsbad in 1785, 1792-1801 ducal gardener in Weimar, from 1807 ducal gardener in Eisenach and later appointed as professor of botany there. Author of 'Vollständiges Lexicon der Gatt ungen, Echten und Botanik' (ed. 1, 1805-1811), which includes lower cryptogams.


1893-1939 Mosura: 1895-1929 professor of the 'Forstakademie' in Eisenach.

1908- Carl: born in Eisenach, see under JENA.

(continued on p. 8.)
12 GEISA
1842-1909 Gebeeb: pharmacist for many years at Geisa, living his last years in Freiburg i.Br.

13 GERA
1841-1902 Taumann (naval)physician, 1868-1871 on board the corvette 'Medusa', 1874-1876 on board the corvette 'Gazelle', 1877-1902 living in Gera.

14 GREIFSWALD
1793-1850 Hornschuch: apothecary at various places, 1820-1850 professor of natural history in Greifswald.

15 HERRNHUT
1786-1875 Breutel: Bishop of the 'Erzdiözese in Herrnhut' - important collector of bryophytes in the Lesser Antilles and South Africa.

16 KAHLA
1835-1881 Lorentz: born in Kahla, Dr. (1850) and high school teacher at Munich, 1870-1881 professor botany in Cordoba (Argentina). Collected bryophytes in Argentina and Uruguay.

17 MALCHIN
1734-1805 J.C. Timo: pharmacist and botanist, from 1760 pharmacist (later also burgomaster) in Malchin (Mecklenburg), associated with Hedwig. Author of 'Pl. Megapol. Prodr.' (1788).

18 NEU BRANDENBURG
1765-1837 C.F. Schulte: born in Stargard (Mecklenburg), 1791 Dr. med. in Halle, physician in Neubrandenburg until his death. Author of 'Rerum Genus Var. bulbac et Syntrichiae' (1823).

19 NEUSTRELITZ
1778-1810 Blaknow: born and died in Waren (Mecklenburg). Published the exsiccate 'Musci (Fodonis) Exsiccati' (1804-1810).

20 SCHENEPFENTHAL
1821-1873 Röse: teacher in Schenepenthal.

21 SCHWERIN
1821-1882 Brockmüller: country teacher, later inspector of butcher's meat in Schwerin till his death. Published the exsiccate 'Heckenburgische Kryptogamen' (1862-1869).

22 SIEBENLEHN
1821-1891 Amalie Dietrich: born in Siebenlehn (Saxonia), 1863-1873 research traveler in Australia and the South Pacific, later curator of the botanical garden at Hamburg. Collected bryophytes in Australia.

23 WALDAU
1834-1913 Schliepachke: born in Halberstadt, pharmacist and owner of a factory in Waldau near Osterfeld, died in Dresden-Blasewitz. His large and important herbarium is in J.E.

24 WEIMAR
1838-1903 Hausknrecht: born in Bennungen near Herzburg, lived for a long time and died in Weimar, outstanding botanist. Collected bryophytes e.g. in Persia.

25 KYFFHAUSER
About 4,000 years ago, people of the Bronze Age spread mats of Physidites davidii triquetra on the bottom of deep caves in the Kyffhäuser Mountains for their comfort during cannibalistic rites.

ELECTIONS I.A.B. COUNCIL 1987-93
1987-93
Ballot Results
Number of ballot forms received 109
President: Greene, 71 votes (elected)
V. J. Z. And, 74 votes (elected)
Vice President: Crosby, 58 votes (elected)
Koponen, 63 votes (elected)
Ramsay, 44 votes
V. A. N. A., 44 votes
Councillor: Ando, 68 votes (elected)
Buck, 65 votes (elected)
Delgadillo, 68 votes (elected)
Frahm, 75 votes (elected)
Geisser, 62 votes (elected)
Miller, 67 votes (elected)
Schumacher, 60 votes
Wu, 53 votes

Based on the ballot results, the 1987-1993 Council is as follows:
President: S. W. Greene (Great Britain)*
Fast President: R. H. Inoue (Japan)*
First Vice-President: T. Koponen (Finland)*
Second Vice-President: M. R. Crosby (U.S.A.)*
Secretary: D. H. Vitt (Canada)*

26 WITHOUT DEFINITE LOCATION
1679-1737 Micheli: born and died in Florence, outstanding pre-Linnean botanist who devoted his special interest to lower cryptogams. According to his biographer, Targioni-Tozzetti 1858 (not. Vita Micheli), he was sent by the Grand Duke of Florence as a spy to Turin, through Austria and Silesia under the cloak of collecting plants to learn about the production of tin, plate-escaping from threatened arrest only through rapid flight.

WN Phytotaxonomie, Friedrich- Schiller-Universität, Jena, DDR- 6900, German Democratic Republic.

27 AUGUST 1987 ISSUE PLANNED
THE NEXT ISSUE OF The Bryological Times will not appear until October 1987! The reason there will be no August issue is that the Editor expects to be moving house during the coming summer, following his retirement from the University of Reading on 31 March, 1987. This move, combined with his attending the International Botanical Congress in Berlin, and the need to engage a new Secretary, has necessitated this announcement.

The Editor will give his new address in the October issue. In the meantime all correspondence should continue to be sent to him in the normal way at the Department of Botany, University of Reading, London Road, Berkshire RG1 5AQ, England (Telex: RULIB 847813).

Vive le Bryological Times!
The Bryological Times

9.

Spreadsheets: powerful statistical tools for biologists

by M.G. Kelly

It is a truism that the business world ultimately holds sway. It has long been true that the spreadsheet software is far more than the relatively small and specialised needs of the scientific community. This is reflected in the software market and it is, perhaps, a fruitful exercise for the former has to offer. This article examines one such application, the spreadsheet, and particularly that large spreadsheet is often part of the software "bundled in" with the initial purchase of other software packages such as the Sinclair QL. They are relatively recent innovations and are rapidly being adopted by scientists, particularly in finance and budgeting.

The spreadsheet, a packet of programs based around a matrix, to enable a businessman to make financial calculations quickly and efficiently, becomes, in the hands of a scientist, a powerful statistical tool, plugging a gap in complexity between the pocket calculator and the purpose-built statistical package. The former is ideal for such statistics, standard deviations and linear regressions, the latter complex and requires large amounts of computer memory. The spreadsheet offers a further advantage over a mainstream statistical package which may not be apparent at first: the spreadsheet is essentially an empty matrix within which the calculations are made and consequently there is no soft option of selecting a statistical test because that is there as is the great temptation with a large package. Obviously a package such as SPSS-X is essential when multivariate techniques are required but for many smaller, less complicated tests the spreadsheet is an adaptable tool but not perfect, so long as the individual has to set up the cells, the master. In addition there may be facilities within the spreadsheet for automatic calculation of such basic quantities as sums, means, standard deviations and logarithms.

To illustrate this I shall use an example from my own work. As part of a study on heavy metal accumulation by the aquatic bryophyte Rhynchosciadium riparioides I was interested to compare regression coefficients by an analysis of variance (ANOVA). I could find no subroutine in any of the statistical packages available to me which would do this and my attempts to perform the calculation manually were time-consuming and prone to mistakes. This was when I turned to the spreadsheet which was provided with a Research Machines (RM) Nimbus - Microsoft Multiplex. The easiest way to set up the cells was to follow an example in a statistics textbook. Each column of data was entered into the matrix and the calculation was performed in the cells below. Once the answer from the spreadsheet tallied with that in the book then it was a simple matter to enter my own data and read off the results at the bottom. The time per calculation, once the cells were set up, was a matter of seconds and using the "Save" and "Lock" facilities in the package the skeleton could be saved to repeat the procedure at later dates with no fear of erasing vital parts of the formula.

A different type of use is simple modelling. I have used the spreadsheet to calculate Nernst potentials quickly over a range of concentrations of ions and from this estimated the potential for diffusion into plant cells. Again, once the spreadsheet had been set up, the calculation took a matter of minutes.

These two examples illustrate the potential value of spreadsheets in many statistical and biological applications. It is the DIY approach which makes it so versatile. Very little foreknowledge of computers is required and the application does not have to be 'shoe-horned' into the subroutines available commercially.

Acknowledgements

I thank BP International Limited for financial support and D.J. Kelly for help in preparing this article.

Department of Botany, University of Nottingham, University Park, Nottingham, England.

Column Editor's note: it is hoped to include more on spreadsheets in the continuing 'Purchasable Software' series in a later column.

Computer Survey

The computer questionnaire distributed with no. 34 of the Bryological Times in June 1985 gave very little feedback. Discussions with colleagues provided several reasons for this: firstly, the announcement of the circular was made in a previous issue of the Bryological Times; secondly, the purpose of the questionnaire probably was not explained well enough; thirdly, many recipients of the questionnaire were put off by the technical details asked for; fourthly, some people just don't like filling in forms; fifthly, it was not made clear that the questionnaire was addressed to every computer user and not only to those with personal experience of programming.

We feel nevertheless that such an IAB computer user survey will allow us to get an overview of who is using computers, and of which kind they are, and which people are working with the same or compatible computers. This information can then be fed back to those who complete the questionnaires. In more detail, we should be able to determine:

- with whom an exchange of programs, text and data files is possible, e.g. for preparing manuscripts, building up lists of literature, herbarium records etc. The advantages of such computer communication are potentially enormous.

- who else has experience with the same computer model, the same system or certain software applications.

- with whom direct communication between computers is possible, via modems and data communication links.

- who can use or distribute software without copyright, as announced in the "Software" section of the Bryological Times.

A similar survey has been made for the phanerogamists by Ch. Stirton (Kew Gardens) in a special insert to Herbarium (continued on page 10.)

* This article, and the one on spreadsheets are contributions to the Computer Column edited by J.-F. Prahan and B.J. O'shea. For addresses, see Bryological Times, 31:9.
Computer Survey (continued from page 9.)

News 5(4/5). 1985. The results will also help to further the activities of bryologists in such ways as encouraging international access to the ABLIS bibliography (which has recently been made available online and will allow bryologists to download the quarterly bibliography and quickly incorporate individual listings in their own files.), and also to the bryological bulletin board (TAXACOM) recently set up by Richard Zander at Buffalo, NY.

Thus we are taking the liberty to enclose a second, altered questionnaire. Please return this questionnaire, even if not all the details are completed: at least let us have your name, address and model of computer. Colleagues who returned the first questionnaire need not complete this form again (unless they have more to add). The forms will be evaluated via a database program and every sender will get a list of those using the same (or compatible) system.

Jan-Peter Frahm, Universität Duisburg, Fachbereich 6, Botanik, Postfach 10 16 29, D-400 Duisburg, Federal Republic of Germany.

Brian O'Shea, 131 Norwood Road, London SE24 9AF, UK.

**IAB Meetings in Berlin**

IT IS ANNOUNCED that there will be a meeting of the IAB Council during the XXIVth International Botanical Congress in Berlin, July 1987. There will also be a Business Meeting of the Association open to all members.

Any member wishing to bring a topic before either meeting should write to the undersigned by 30th June 1987.

S.R. Gradstein, Hon. Secretary, International Association of Bryologists, Institute of Systematic Botany, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands.

**Deaths**

IT IS WITH SADNESS that Madame Professeur Claudia Ştefureac announces the death of Professor Dr. TRAIAN I. ŞTEFUREAC of the University of Bucuresti on the 4th of October, 1986.

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**IAB BRYOLOGICAL TECHNIQUES WORKSHOP - MAINZ, GERMANY, 17 - 23 JULY, 1987**

**Tentative Programme**

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<td>18 July</td>
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<td>9.00-12.00</td>
<td>Development and Genetics</td>
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<td>Procedure used for the axenic culture and experimental treatment of bryophytes</td>
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<td>Rudolph</td>
<td>Sphagnum culture techniques</td>
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<td>2.</td>
<td>14.00-15.45</td>
<td>Effect on sugar in the callus formation and the regeneration of liverworts</td>
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<td>Konrad</td>
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<td>Ashton</td>
<td>Medium acidification by Physcomitrella patens</td>
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<td>2.</td>
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<td>Electroblootting and immuno-detection of nitrate reductase from Sphagnum</td>
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<td>Bhatia</td>
<td>Analysis of differentiation-specific-proteins by electrophoresis and immunofluorescence focusing, using hormone-sensitive mutants of Funaria hygrometrica</td>
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<td>Krazakowa</td>
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<td>17.30</td>
<td>Posters and practical demonstrations on sessions 1 &amp; 2</td>
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<td>19 July</td>
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<td>Departure for Excursion - Rhine Valley, Wispertal, Monastery Eibebach, moss sampling</td>
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<td>20 July</td>
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<td>Thin-layer chromatography (TLC) of flavonoid compounds from bryophytes</td>
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<td>Separation and isolation of terpenes from liverworts and their analysis</td>
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<td>Raaymaekers</td>
<td>Chlorophyll extraction in mosses through dimethyl sulfoxide (DMSO)</td>
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<td>Tube</td>
<td>Method for the determination of the entire photosynthetic pigment composition of bryophytes</td>
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<td>Beutelmann</td>
<td>Analysis of bryophyte lipids</td>
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<td>Paffmann</td>
<td>Analysis of phospholipids and assay for lipases in mosses</td>
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<td>Lewis-Smith</td>
<td>Recording bryophyte microclimate in remote and severe environments</td>
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<td>Russell</td>
<td>Microclimate and growth measurements</td>
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<td>Noakes</td>
<td>Growing mosses on a water gradient</td>
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<td>14.00-17.30</td>
<td>Posters and practical demonstrations on sessions 1, 2 &amp; 3</td>
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<td>15.30</td>
<td>Posters and practical demonstrations on session 4</td>
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| 17.30-19.00 | Gottwald: demonstration of the moss collections of "Naturhistorisches Museum."
| 19.00-21.30 | Visiting an old wine cellar; tasting wine and eating |
| 21 July | 9.00-10.35 | Pollution |
| Empain | A posteriori detection of heavy metals pollution |
| Kirchhoff | Heavy metal analysis (Cd, Pb) in Sphagnum |
| Brown | Sequential elution technique for determining the cation location of cations |
| Sarosiek | Air pollution - cation location |

[continued on page 11.]
INTERNATIONAL PSE-SYMPOSIUM

Chemistry and Chemical
Taxonomy of Bryophytes

ADVANCE NOTICE

A symposium on chemistry and chemical taxonomy of bryophytes will be held at the Universität des Saarlandes, Saarbrücken (Federal Republic of Germany) from August 31 to September 2, 1988. By this meeting a comprehensive review of research on bryophyte chemistry including most recent developments will be made. The programme provides sections on structural chemistry, biochemical aspects, biological and pharmaceutical active compounds, accumulation of xenobiotics in context with air pollution, chemical capacity of bryophyte tissue cultures and chemo-taxonomical aspects. Lectures are given by many authorities working in these fields. There will also be the possibility of poster presentation and a limited number of additional lectures. The definite programme with all details will be issued latest at the beginning of 1988. Further enquiries will be given by the organizers.

Prof. Dr. H.D. Zinsmeister
Fachrichtung Botanik, Universität des Saarlandes, D-6600 Saarbrücken, B.R.D.

BRYOLOGISCHE EN
LICHENOLOGISCHE

WERKGROEP KNNV (DBLWG)

THE TENTH ANNUAL combined meeting of the Dutch Bryological and Lichenological Working Group, and the professional bryologists organized through BION, took place on 7 March 1987.

The first speaker, Bries Touw, gave an account of the state of the new flora to be published soon, and looked back on the years of work that had gone into it.

Next, Hans Cornelissen (speaking also for Gea Karsseneyer) reported on their studies on the succession on decaying fir-trunks in the highest parts of the Belgian Ardennes. Both the degree of decay and the surrounding environment turned out to be factors of importance.

Hinjo During gave an account of moss patch dynamics in various plots near Barcelona. Surprisingly, large shifts apparently occur in 1.5 months.

Dirk Blok reported on a recently-started inventory of a number of polders in the north-east of The Netherlands, near the Dolard Estuary, all reclaimed after 1800 A.D. The fascinatingly empty area (especially now that all elms are being cut for reasons of hygiene) supported some 100 species of mosses and liverworts.

Han van Dobben gave by far the most technical lecture on the effects of NH4 on epiphytic lichens in an area with much intensive cattle farming. Through counteracting the acidifying effects of SO2 the increasing NH4-emission (the actual mechanisms seem to be more complicated than this) gave rise to an increase in the number of epiphytic species compared to the barren years of the sixties—early seventies.

Finally, we were regaled with a slide show by Ben van Zanten, about his recent travels through Tanzania.

P.H. Hovenkamp, Secretary, Bryologische en Lichenologische Werkgroep KNNV, Elberoord 3, 2371 XL Leiden, The Netherlands.

PERSONALIA

JAAKO NYVONEN has a new address.
It is:-
Knopps, 02400 Kirkkonummi, Finland.
Recent Publications


This is a continuation of the flora, started many years ago, by the author’s late husband. It consists of a treatment of 3 families, the Neckerciae by the author and P.A. Florschütz, the Hookeriaceae by the author alone, and the Plagiotheciaceae by R. Kielman and the author. A third part to include the accounts of the Thuidiaceae, the Schizochitonaceae, and the Hynepaceae, a general index and a key to genera, will complete the work.

The presentation follows the layout of the previous part (Flora of Surinam Vol. VI, Part I) with the descriptions being supported by line drawings, details of the type specimens, synonymy, distribution throughout the Americas, habitat details, lists of species, synonyms, and comparative notes. Within each family keys to genera and species complete the taxonomic treatment. Some new combinations are made in Schizochitum.

Gangulee, H.C. 1986. Handbook of Indian mosses, pages unnumbered, 50 colour plates and 4 text figures in addition to total of 127 pp., 220 x 140mm., hard covers, ISBN 90-6191-449-3. Indian edn., Series 11, A.A. Balkema, Postbus 1675, NL-3000 BR, Rotterdam, The Netherlands. Price £17.55 or Dfl.65. The same text was published a year earlier, i.e. in 1985 as ISBN 91-205-0026-1 with no reference to the Indian edition by A.A. Balkema, Postbus 1675, NL-3000 BR, Rotterdam, The Netherlands. Price £17.55 or Dfl.65. The same text was published a year earlier, i.e. in 1985. The work concludes with a detailed index to taxa and a comparative table of contents. Although written in French, French and English summaries are given. The whole work is produced to the commendably high standards associated with Cryptogamic, Bryologique LichenoLogique.


Crum, H.A. 1986. Sphagnumaceae. In Mogensen, G.S. (ed.). Illustrated moss flora of Arctic North America and Greenland. The forerunner of the present project started many years ago as the cherished brainchild of William C. Steere of New York who was joined in the mid-60’s by the late Kjeld Holmen of Copenhagen. Since 1982 the project has been in the hands of Gert Mogensen of Copenhagen.

The area covered by the flora is that part of the U.S.A. north of the 32nd parallel (Florida and certain islands excluded) as is the whole of Greenland: Iceland is not included. The moss flora of this area is estimated to contain approximately 500 species. Treatments of genera, families and orders will be published in the sequence in which they are ready rather than in taxonomic order. Once the work is complete it is planned to republish all the families in taxonomic order in 5 volumes: Each taxon is to be illustrated by a detailed drawing to show its habit and microscopical details. The majority will also be accompanied by a map showing known distribution throughout the region.

46 species are described in the two fascicules under review, 17 in 6 genera in the Polytrichaceae and 29 in Sphagnum. Keys to genera and species are provided in the fascicules. Synonyms, are clearly cited and alternative names of taxa, habit and distribution data are well summarized. Helpful criticism.

[continued on p. 13.]

The Bryological Times


texts were printed in India. In spite of the hopes raised by its title the purpose of this little book is, according to its preface, "to provide a simple text book and a guide book for the advanced botany practical classes." What is offered are a few comments on the moss life cycle, an outline classification of the orders of Indian mosses, notes on collecting and preserving moss, a key to the genera treated and descriptions, supported by colour illustrations of 100 species, each from a different genus and a summary of each taxon's worldwide distribution. Thus not even a representative of each genus known to occur in India is included, there is no indication of the likely number of taxa in each, there are no synonyms and no notes about variation, comparisons with neighbouring taxa, etc. The colour plates are the best part of the book, but the colours are crude and the detail more hincted at than clearly revealed.

Introductory handbooks have a very important part to play in encouraging beginners to delve more deeply into a subject. With a little more thought, a better selection of representative taxa and a better text, e.g. one with an account of the distribution of mosses, a list of further reading - even an index! - the author could have produced a more inspiring book that was more useful and easier to consult.


The author, after outlining the geographical limits and the range of climates of the Mediterranean region, considers the place of Riccia in the classification of the hepaticae. There then follows an account of the phases of the Riccia life cycle, the morphology and anatomy of the plants, their caryotrophic and chemical characteristics, and a summary of their biology, ecology and distribution throughout the Mediterranean.

Keys to the 31 species known from the region are based on thallus and spore characteristics. For each taxon detailed descriptions of the morphology, distribution and ecology are presented as well as the collecting details and location of the type specimen, synonyms, the number of chromosomes and notes covering a variety of topics. 65 plates illustrate the morphology and anatomy of the thallus, ornamentation of the spore exine and details of the spores as revealed by the SEM. The work concludes with a detailed index to taxa and a comprehensive table of contents. Although written in French, French and English summaries are given. The whole work is produced to the commendably high standards associated with Cryptogamic, Bryologique LichenoLogique.
The Bryological Times

Recent Publications
[Continued from p.12.]

notes on variation are appended as an appendix. The observations are of a high standard and the distribution maps are large with different localities clearly shown. A list of selected specimens is included in each species treatment.

All involved are to be congratulated on a pleasing production.

Available through Antiquarian and New Booksellers - Price DM 60; £17; US $24.

The treatment in German covers all the 256 species of Campylopus that have been described or reported from the continent of Africa, its offshore and neighbouring islands in the Atlantic, South Atlantic, and Indian oceans, including Madagascar, Mauritius and Rodrigues. After excluding 12 species from the genus, 49 are recognised together with one other species described as new by the author.

The descriptions are concise, being prefaced by sometimes lengthy lists of synonyms with details of the types. Habitat and distribution data are provided as are critical notes on variation etc. The lists of specimens examined are arranged by country or island group. The illustrations of each taxon include a habit drawing as well as more technical details. A map showing the area of distribution in Africa, sometimes expanded to cover the whole world, is included. A key to the 50 species is provided.

The work ends with some annotated lists of taxa that for one reason or another have been excluded, an extensive bibliographical and an index to species, including synonyms.


No matter how poorly developed a person's sense of humour may be, reading the first article in this publication is liable to render the reader helpless with laughter. For it is an excellent.

In spite of the levity of the opening article, the publication as a whole is not intended to be humorous. The 22 authors of the remaining 17 contributions range over a variety of bryological topics. Some are written by former graduate students, while others are colleagues who have collaborated with the author, E. Li. Anderson: it is written by another of them - Howard Crum. It has to be read to be appreciated - neither E. Li. Anderson can be summarized in a few words!

The "tone" of the whole publication reflects the interests of an inquiring, restless, inquisitive, eclectic character who continues to contribute to the well being and development of North American bryology. Long may it be so.


A delightful pocket-guide to two hundred common species of mosses and liverworts from Japan. Each page illustrates one species by means of two or three colour photographs of usually excellent quality. In addition, there are a few small line drawings of diagnostic characters and a brief explanatory text in Japanese.

The species are grouped in four broad habitat categories: the sub-tropical evergreen forest, the temperate deciduous forest, the boreal forest and the urban environment (gardens, rock walls and ruderal places).

In all, this is very nice and handy picture book for those interested in the Japanese bryophyte flora. The price is a bargain.

S. R. Gradstein
Department of Botany
University of Michigan
Ann Arbor, Michigan 48109-1048, U.S.A.

T. I. Štufereac
1908-1986

Professor Dr. Traian Ion Štufereac, great personality of Romanian and European bryology, died on 4th October, 1986.

His PhD thesis, presented in 1940, was entitled: "Synchronological and sociological inves-
tigation of Old Forest Sphagnum (Bucovina)." It represented a pioneering work for Romanian and world bryology that is still in use and appreciated to-day. In his scientific work, bryological studies occupied a partic-
ular place, some such as "Bryological studies in some veget-
al formations from Romania" and "Bryophyte Conspicuous from Bucovina, Moldova, Bucovina, etc., representing papers of major interest for Romanian bryology.

Recognising his merits, he was sponsored as a member of the International Association of Bryologists (Utrecht) and of the Bryophyte Mapping Association for Europe (Leiden). The initiative of editing the exsiccata "Bryo-
theca romania" also represented a work of national and international interest.

Dr. G.H. Mohan, Grădina Botanicii din București, Mr. 32, București-România.

[An appreciation of Prof. Štufereac, on the occasion of his 60th birthday, with a list of his bryological publications thus far, will be found in Rev. Bry.
ol. Lichénol., N.S., 36(1-2):300-
301, 1968.]

DIARY

For explanation of acronyms, see Bryol. Times, 11: 7-9, 1985.


Mid-July. NBS. Annual business meeting and excursion. Isle of Pyn. Further information from G.S. Mogensen, Botanical Museum, Gothersgade 130, DK-1123, Copenhagen K, Denmark.


[contd. over]
DIARY (contd.)


Aug. 3-7. BLAM. Field excursions to the Allgäu, Southern Bavaria. For further information, see Beryl. Times 41:9.

Aug. 5-19. BBS. Summer field meeting Achill Island, Co. Mayo (1st week) and Westport (2nd week). Local Sec.: Dr. D. M. Synnott. National Botanic Gardens, Glasnevin, Dublin 9, Ireland. For preliminary information, see Bull. BBS., 47:14.

Aug. 7-9. ABLIS, Forsy in Ohio, Leader J. A. Slade, Dept. of Biological Sciences, University of Cincinnati, Ohio, 45221, U.S.A.

Aug. 9-13. ABLIS. Annual Meeting in conjunction with AIBS Meeting, Ohio State University, Columbus, Ohio, U.S.A.

Aug. (2nd half) SBLIS. Inventory of cryptograms in the Alluvial deposits of the Gauli Glacier. Further information from Dr. W. A. Ammann, Syst.-Geo-bot. Institut, Altenberggruen 21, CH-3013, Bern, Switzerland.

Aug. 21-23. BSJ. 16th Annual Meeting at Zao, Yamagata-ken, with paper-reading sessions and field study on Mt. Jizo- gadake, Zao mountains. Further information from Mr. Sh. Ono, Yonezawa Higashi High School, Marunouchi 2-chome, Yonezawa-shi, Yamagataken 992, Japan.

Aug. 26-30. SBLIS. Annual field trip in Sapporo, Japan. Further information from Dr. K. A. Ammann, Syst.-Geo-bot. Institut, Altenberggruen 21, CH-3013, Bern, Switzerland.

September. The 12th Annual Andrews Foray will be held in Maine, U.S.A. Write to: Dr. Nancy Black, Biology Dept., Russell Sage College, Troy, NY 12180; or Dr. Robert Thomas, Dept. of Biology, Bates College, Lewiston, ME 04240, for further information and to be added to the mailing list.

Sept. 6. VMGB. Field trip to Braaksma/Terneuzen (Netherlands) nearest recreational area 10.00 hrs.


Oct. 2-4. 3rd Annual Blomquist-Bryological Foray, North Carolina, U.S.A. Based on Pontane Village, close to the Pontana Dam. Application forms and further information from the organizers: Brent Misher, Department of Botany, Duke University, Durham NC 27706; or Marie Hicks, Department of Biology, Appalachian State University, Boone NC 28608, U.S.A.

Oct. 1. VMGB. Field trip to De Maten/Genk (Prov. of Limburg). Meet at entry reserve 09.30 hrs.

Nov. 8. VMGB. Field trip to Herselt/Westerlo (Prov. of Antwerp). Meet at Herselt Church at 09.30 hrs.


November. John Child Memorial Foray to northern part of South Island, New Zealand. Further details from Mr. H. G. Warr, Department of Agriculture of New Zealand, Department of Agriculture of New Zealand, Department of Agriculture of New Zealand.

April 6-13. BBS. Spring field meeting, Cirencester. Local Sec.: Miss K.A. Searle, The National Trust, Spitalgate Lane, Cirencester, Gloucestershire GL7 2DE, U.K.


July 24-30. BBS. Summer field meeting, Algas Field Centre, Beaul, Invernesshire. Local Sec.: Dr. P. J. Lightowers. Participants at the BBS ecological symposium (see July 19-23) will be most welcome.

Aug. 7-11. ABLIS Annual Meeting in conjunction with AIBS meeting, University of California, Davis, U.S.A.

Aug. 31-2 Sept. Phytochemical Society of Europe Meeting, Saarbrücken. International Symposium on the Chemistry and Chemical Taxonomy of Bryophytes. Further information from Prof. H. D. Zinsmeister or Dr. R. Meier, Fachrichtung Botanik der Universität der Saarlandes, D-66600 Saarbrücken 11, B.R.D. (see this issue p.11.)

Sept. 12. 6th CEWBG Meeting, Liblice (Village near Mlnik), Czechoslovakia. For preliminary announcement of this 4-5 day meeting, see Beryl. Times 40:10.


Aug. 6-10. ABLIS Annual Meeting in conjunction with AIBS Meeting, Univ. of Toronto, Canada.

1989


The International Association of Bryologists publishes The Bryological Times every two months, the Bulletin of Bryology twice a year, and the Advances in Bryology irregularly. Material for the Bryological Times can be sent at any time, but submission dates for the Bulletin and the Advances should be discussed with the Editors. Write to: Dr. G. K. Hearn, The National Trust, Spitalgate Lane, Cirencester, Gloucestershire GL7 2DE, U.K.

The Bryological Times is published in Utrecht and distributed from Beijing (China), Eger (Hungary) Reading (U.K.), St. Louis (U.S.A.), Tokyo (Japan) and Utrecht (Netherlands) correspondences concerning mailing to: Rob Kruitj, Institute of Systematic Botany, Heidelberglaan 2, 3508 CS Utrecht, The Netherlands.

Items for the next issue to be with the Editor, Dr. S. W. Greene, Department of Botany, The University of Reading, London Road, Reading RG1 5AQ, Berkshire, England (Telex 847813 RUBEL). Items for the next column should be read before the end of the manuscript. Correspondence concerning items for this issue should be sent to the column editors, whose names and addresses will be found in Bryol. Times, 31:9, 1985.