

BRYOLOGY IN GERMANY (BRD AND GDR) AND AUSTRIA

By Ruprecht Duell

AUSTRIA AND GERMANY have two of the best histories in bryology. Interest started with J.J. DILLENIIUS in the early 18th century. Famous names are J. HEDWIG, W.P. SCHIMPER, K.G. LIMPRICHT, C. MÜLLER Hal., L. LOESKE, K. MÜLLER Frib., T. HERZOG and F. KOPPE. Latterly, after many years at a low level of activity - compared with what was happening in Great Britain - a new time of bryological investigation in Central Europe started with the foundation of the "Bryologisch - Lichenologische Arbeitsgemeinschaft" by F. KOPPE, W. SCHULTZE-MOTEL, G. FOLLMANN and J. POELT. More and more bryological and cryptogamic excursions were organized, also in adjacent areas, and some novices of the past have become well-known bryologists of today. Many new international contacts have been made with the increasing number of bryological congresses and greater circulation of information. Workshops for the determination of bryophytes are given by H. KAJA of Munster and H. MUHLE of Ulm.

The need for much more knowledge on bryophyte distribution, especially in the industrial areas of central Europe, has made bryophyte mapping an attractive activity for all bryologists with ecological interests. Progress in Germany has been really high. In 1974 we had only about 30,000 dots (one per Tk = topographical map, 1:25,000, covering c. 130 Km²) which were available in checklists. In 1977 we had about 60,000 and in 1984 about 80,000 (c. 15,000 more are not yet generally available because they are only in the lists of v. HÜBSCHMANN and the late J. FUTSCHIG). This bryological mapping was done at first by F. and K. KOPPE, P. and E. HEGEWALD, R. DUELL, H. LAUER, Gg. PHILIPPI, R. LOTTO, A. SCHAFER-VERWIMP and F. NEU and all their data are available in the author's checklists.

L. MEINUNGER is very intensively mapping in G.D.R.

At the same time J. FRAHM, the HEGEWALDS and Gg. PHILIPPI, started the production and publication of distribution maps of some species. Later also R. LOTTO, G. NORDHORN-RICHTER and the DUELLS published such maps for Central Europe.

Noteworthy taxonomic work in mosses has been done by W. SCHULTZE-MOTEL, J. FRAHM, E. HEGEWALD, J. POELT, SCHAUER, G. NORDHORN-RICHTER, W. KRAMER, STIPACEK, HAUSLER, H. NOWAK and R. DUELL, M. MENZEL, H. MUHLE, W. PROBST, A. SCHRIEBL, L. TACKE, and M. MÜLLER. I. DUELL has published the results of bio-statistical investigations on *Abietinella* and *Didymodon*. R. GROLLE is the most widely-known person working on hepatics. O. VOLK has also published papers on hepatics. S. HUNECK and R. MUES are active in chemotaxonomy. More than 20 bryologists are interested in anatomy, morphology, physiology, ecology, etc., e.g. M. BOPP, W. FREY, R. FRITSCH, M. KOPERSKI-NÖRR, K. MÄGDEFRAU, J. MASCHKE, L. STANGE and H. HASELOFF.

Many bryologists are interested in bryogeography and/or phytosociology. In recent years we have had publications by, e.g. K. ADAMEK, R. DUELL and I. DUELL-HERMANN, K. v. der DUNK, J. EGGERS, J. FRAHM, W. FREY, R. GROLLE, E. and P. HEGEWALD, v. HÜBSCHMANN, F. KOPPE, U. KLINGER, M. KOPERSKI-NÖRR, R. MARSTALLER, K. MÄGDEFRAU, W. PROBST, E. RICEK, R. RISSE, F. SCHABERG, A. SCHAFER-VERWIMP, A. SCHAEPE, W. SCHULTZE-MOTEL, L. TACKE, K. WALTHER, S. WINKLER and G. WITTENBERGER. More than 50 have an interest in bryofloristics, but only half of their real activities are known, especially in bryophyte-mapping (see above). Unfortunately some of the most active have died recently, i.e. F. KOPPE, F. NEU and J. FUTSCHIG.

In 1984 a questionnaire was sent to more than 80 German and
[contd. on page 2]

NOMENCLATURE* COLUMN

By Gea Zijlstra

A RELATIVELY LARGE NUMBER of proposals for conservation or rejection of names is under consideration by the International Botanical Congresses' Committee for Bryophyta. The proposals are enumerated here in three groups, and within each group in chronological order.

I. Nomina familiarum conservanda proposita

Lophoziaceae

The proposal to conserve *Lophoziaceae* (Jörg.) Vanden Berghen (1956) was approved by the Bryophyta Committee already, as well as by the General Committee, but not yet by an International Botanical Congress, hence the name appeared with an asterisk in the Sydney Code (1983).

In Sydney a change was made in Art. 63.3, however, stating that the name of a suprageneric taxon, which is based on the stem of a legitimate generic name, is legitimate, even though it might be incorrect at publication. This addition to Art. 63 was necessary because names above generic rank are essentially different in character from those at generic rank or below in that their type is obligatorily indicated by the stem of the name (Art. 10.4). Consequently the name *Lophoziaceae* Cavers (1910) is legitimate, and it can be expected that in the next Code the authority for *Lophoziaceae* will be changed to Cavers (1910).

II. Nomina generica conservanda proposita

Jubula

A proposal to conserve this name did not receive enough support to recommend conservation, (cf. Rep. Comm. Bryophyta, *Taxon*, 31: 316, 1982). A new proposal is being made.

[contd. page 3]

* Column Editor Gea Zijlstra.
For address see: *Bryol. Times*, 31:9.

Bryology in Germany (contd. from page 1).

Austrian bryologists, as well as people with bryological interests: 65 replies were received. Conclusions from a preliminary analysis were made by Birgit LAUBER (Duisburg). Here are some of the replies.

To the question, "Why are you working on bryophytes?" 20 people wrote: "Bryophytes are an important part of the vegetation in many areas, which means they have to be considered also in phytosociology, ecology and nature conservation." 15 replied: "I like bryophytes because of their beauty and many different forms.", and 10 thought: "There is a gap in our botanical knowledge if we don't know about bryophytes, therefore it is a special necessity to investigate them." Further arguments for studying bryophytes were: They are available throughout the year, easy to collect and to transport, and - last but not least - "I started to become a bryologist after contact with very likeable bryologists (as persons)".

About 25% of bryologists are not university biologists, most of them being teachers, working outside of universities. Sometimes it is difficult to be an engaged friend of little ("lower") plants! Without a broadly-based, qualified knowledge (and publications) in higher plant botany (when it is better to be a physiologist!), a university career is impossible. But permanent contact with progress in phanerogam science, especially in ecology, can be helpful for progress in bryology, that's for sure.

It is amazing that more than twenty universities arrange determination classes for bryophytes only (or for lichens too). On the other hand, the announcement of bryophyte excursions

in the universities is too low and the excursions are often of bad quality; some especially well-known universities have no qualified bryologist. Knowledge of 50 simple species qualifies you to be a "Mooskenner" (or Mooser!). The very important "Landesanstalten für Ökologie und Umweltschutz" has no bryologist. It is usual to eliminate the lower plants in phytosociological investigations.

We have in Germany about 1,000 bryophyte-species (a third of the number of higher plants). I believe that altogether in German herbaria there are about 1 million bryophyte specimens. The most important collections (those with >100,000) are M, B, DUIS, FR, JE and HAL. The most important collections in Austria are W and GJO. Some other herbaria also have very important collections e.g. GOET, BREM, HBG, KR or KASSEL. Unfortunately, most of these bryophyte collections have no professional bryologist to look after them, e.g. Munich, Senckenberg (FR) and Halle.

Membership of bryological organisations or co-operation with working groups is very helpful, especially for bryologists who work alone. Two-thirds are members of BLAM, and a quarter belong to the BBS, the latter being the best organized society I know. Less interest seems to exist for the other societies, e.g. the Dutch, the Nordic and the Swiss Bryological Societies.

In conclusion it can be said that in West Germany, bryology is increasing in popularity, and is well-developed and active. In GDR the situation is less hopeful, but not bad, but there are very few activities in Austria. Unfortunately Austria has no bryophyte-mapping and it is mainly due to the activities of J. POELT at Graz, and E. RICEK at Attergau that interest in the subject is kept alive.

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REVISED PUBLICATION DATES FOR THE BRYOLOGICAL TIMES, 1985.

DUE TO LATE DISTRIBUTION of the January issue of the Bryological Times, subsequent numbers are behind schedule. Accordingly, the Editor has decided to revise the expected dates of issue and the closing date for submitting material of Nos. 33-35 for 1985.

No. 33 to be issued August, with a closing date of 1 July.

No. 34 to be issued October, with a closing date of 1 September.

No. 35 to be issued December, with a closing date of 1 November.

Personalia

DR. RODNEY D. SEPPELT of the Antarctic Division, Department of Science and Technology, Channel Highway, Kingston 7150, Tasmania, Australia, has accepted a Visiting Fellowship to the National Institute of Polar Research, Tokyo. He will leave Australia for Japan on April 29, travelling from Japan to Europe on July 31 and returning to Australia around mid-September.

His address in Japan will be: National Institute of Polar Research, 9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173, Japan.

CURATION OF BRYOPHYTES AT NYBG

By Barbara M. Thiers

IN THE PAST SEVERAL YEARS, curation of the bryophytes has been emphasized at the New York Botanical Garden. Curation, as we define it, involves updating of nomenclature, segregation of types from the general collection (types are filed by basionym at the beginning of each genus), and arrangement of collections of each species by geographical area. We recognize 25 different geographical areas, and these are color coded.

Great strides forward have been made in the reorganisation of the moss herbarium (approximately 600,000 specimens). Initial work was carried out by W.R. Buck (Curator) and former Collections Manager Lois Brako, and was continued by Allison D. Slavick, Curatorial Assistant. During her tenure at the Garden (July, 1983 - October, 1984), Allison curated 49 families and removed several hundred types from the general herbarium. She also supervised a project of cross-referencing the 1,500+ bryophytes kept in bound exsiccate sets with the general collection.

Allison published an appreciation of Elizabeth G. Britton, the founder of the bryophyte herbarium at NY (Brittonia, 36:96-97, 1984), and has in preparation a manuscript on the African mosses described by William Mitten. Ines Sastre-De Jesus and Steven P. Churchill, graduate students of W.R. Buck, have also participated in the curation of the moss herbarium, and are preparing an index to the South American mosses described by Mitten.

Since September 1981, Barbara M. Thiers (at first Museum Intern, now Manager of Cryptogamic Collections) has been performing curatorial tasks in the hepatic herbarium (approximately 100,000 specimens). Genera have been brought in line with modern concepts, and specimen nomenclature has been updated where modern treatments are available.

Special attention has been given to historical material, and two publications dealing with the hepatic collections at NY have been published: An index to the genera and species of Hepaticae described by William Mitten in Brittonia, 35: 271 - 300, 1983, and an Index to taxa described in Hepaticae Amazonicae et Andinae [described by R. Spruce] in Contr. N.Y. Bot. Gard., 15:(1) - (14), 1984.

The New York Botanical Garden, Bronx, New York 10458, U.S.A.

[Nomenclature Column cont'd. from page 1.]

(466) *Calypogeia*

A proposal from Grolle to conserve the orthography and type species of *Calypogeia Raddi* (1818) against *Calypogeja Raddi* (1818) (Grolle, *Taxon*, 28: 607-608, 1979) was "amended" by Grolle & Isoviita (Ann. Bot. Fennica, 20: 41-42, 1983). Conservation of *C. fissa* as the type appeared not to be necessary since an earlier lectotypification of the genus was found. Stotler (*Cryptogamie, Bryol. Lichenol.* 3 (3): 201-205, 1982) argues that Raddi's original spelling *Calypogeja* should be used.

(675-678) "Sprucean" genera of Lejeuneaceae

Proposals to conserve *Lopholejeunea* (Spruce) Schiffner (1893) against *Lopho-Lejeunea Stephani* (1890); *Acrolejeunea* (Spruce) Schiffner (1893) against *Acro-Lejeunea Stephani* (1890); *Trachylejeunea* (Spruce) Schiffner (1893) against *Trachylejeunea Stephani* (1889) and *Taxilejeunea* (Spruce) Schiffner (1893) against *Taxilejeunea Stephani* (1889), have been made by Gradstein et al. (*Taxon*, 31: 746-752, 1982). A summary of the problems with these "Sprucean" genera has been given by Gradstein in *Bryol. Times*, 19: 1-2, 1983.

(688) *Haplocladium*

A proposal to conserve *Haplocladium* (C. Müller Hal.) C. Müller Hal. (1896) against *Haplocladium Nägeli* (1862) (algae) has been made by Ochyra (*Taxon*, 32: 133-134, 1983).

(690) *Mannia*

Grolle (*Taxon*, 32: 135-137, 1983) has made a proposal to conserve *Mannia Opiz* (1829) against *Cyathophora Gray* (1821).

(691) *Pellia*

A proposal to conserve *Pellia Raddi* (1818) against *Pellia Gaertner* (1788) and against *Merkia Borckhausen* (1792) has been made by Grolle (*Taxon*, 32: 135-137, 1983). This is proposed to replace the *Pellia* item which appeared in the Sydney Code with an asterisk.

(731) *Callicostella*

The conservation of *Callicostella* (C. Müller, Hal.) Mitten (1859) against *Schizomitrium Schimper* (1851) has been proposed by Koponen & Isoviita (*Taxon*, 32: 112-113, 1984).

(775) *Rhodobryum*

Isoviita & Koponen (*Taxon*, 33: 736-739, 1984) have proposed to conserve *Rhodobryum* (Schim-

per) Limpricht (1892) against *Rhodo-Bryum Hampe* (1874).

III. Nomina rejicienda proposita (sub Art. 69)

(527) *Grimmia alpicola*

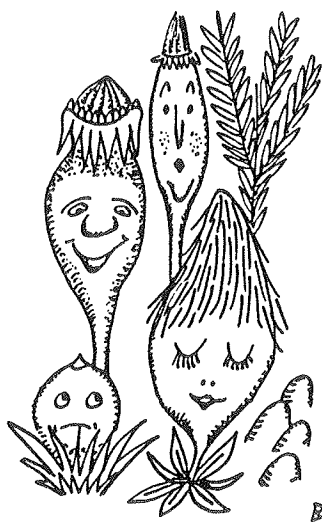
A proposal to reject *Grimmia alpicola* Sw. ex Hedw., and *Schistidium alpicola* (Sw. ex Hedw.) Limpr., has been made by Bremer (*Taxon*, 29: 337-339, 1980). In Sydney Art. 69 was rewritten to state that rejection of a basionym also implies rejection of all combinations based on it. So only the rejection of *Grimmia alpicola* has to be considered.

(686-687) *Mnium trichomanis*
and *M. fissum*

Proposals have been made by Stotler & Crotz (*Taxon*, 32: 64-75, 1983) to reject *Mnium trichomanis* L. and *Mnium fissum* L. For both specific names new lectotypes are designated. *M. fissum* is the basionym of the lectotype of *Calypogeia* (nom. cons. prop. under nr. 468).

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Nice Thoughts from Duisburg



Bryophytes
are
beautiful ?!

INVENTORY OF SWISS BRYOPHYTES

By Edwin Urmi &
Patricia Geissler

THE LAST COMPREHENSIVE works on the bryoflora of Switzerland were published by Amann & Meylan (1918) on the mosses and Meylan (1924) on the hepatics. Since then only a small number of local catalogues have been compiled, e.g. Greter (1936), Meylan (1940), Jaeggli (1950) and Bruengger (1980). As Amann and Meylan, and another contributor Culmann, collected mainly in the western part of our country, many regions of Switzerland, certainly the north-east and parts of the central and northern Alps, are badly under-represented in the floras. In addition, a census of the present distribution of bryophytes is urgently needed for purposes such as monitoring levels of air pollution and other environmental changes.

Consequently the Swiss Bryological and Lichenological Society has started a project of bryophyte mapping. For the first four years the project will be largely funded by the Federal Forestry Office (Dept. for the Protection of Nature). This allows the employment of three part-time assistants. The Head of the project is Edwin Urmi (Institute of Systematic Botany, University of Zürich) who will be assisted by Patricia Geissler (Geneva) and Klaus Ammann (Bern).

The main contribution of field and herbarium work will come from honorary collaborators. At the moment our team comprises 36 members, but with excursions and training courses, we hope to gain some more collaborators.

The production of provisional distribution maps for some 150 endangered species is the first priority. This means checking all the earlier collections. An additional survey in the field is planned for the following reasons:

1. To ascertain changes in our flora we need recent data to compare them with the previous situation.

2. A certain standard of exploration has to be achieved. The mapping committee has decided to use a 100 km² grid for the survey. A minimal program is prescribed for each square: 10 floristic standard relevés, 4 at given places chosen at random, and 6 in different vegetation types, each covering a surface of 100 m². A test in a well-worked area showed this method to yield about one third of the actual flora. Each

(Swiss bryophytes, contd. from last page.)

record has to be supported by a voucher herbarium specimen. Each locality will be indicated by co-ordinates of our national grid. The final version will be plotted by computer and will show natural regions as record units in the same way as Welten & Sutter (1982).

We shall greatly appreciate any information about Swiss bryophytes in private collections or in herbaria of foreign institutes. Even the smallest contribution, e.g. a single record, is of value and will be most welcome. Anyone interested in helping with field work or who can send records, is asked to contact Dr. E. Urmi, Institut für Systematische Botanik der Universität, Zollikerstrasse 107, CH-8008 Zürich.

References

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- Conservatoire et Jardin botaniques, Chemin de l'Imperatrice 1, Case postale 60, CH-1292 Chambesey GE/Switzerland.
- Inst. für Syst. Botanik der Universität, Zollikerstr. 107, CH-8008, Zürich, Switzerland.

BRYOLOGICAL BOOK OF RECORDS

The hottest mosses?

MR. H. HIGUCHI, Botanical Institute, Hiroshima University, has sent the following data from two articles he has translated from Japanese about bryophytes growing in hot springs in Japan.

In the Japanese Journal of Botany, 35 (7): 12, 1960, the following note by Shoichiro Hirabayashi entitled "Notes on *Bryum argenteum* growing in the hot spring" is published.

* Column Editor S.W. Greene

SUMMARY OF ACRONYMS IN USE IN THE BRYOLOGICAL TIMES

ABLS	American Bryological and Lichenological Society	IBS	Indian Bryological Society
ABWG	Australasian Bryological Working Group	NBS	Nordic Bryological Society
BBS	British Bryological Society	OPTIMA-BWG	Organisation for the Phytotaxonomic Investigation of the Mediterranean Area - Bryophyta Working Group
BLAM	Bryologische-Lichenologische Arbeitsgemeinschaft für Mitteleuropa	PBS	Polish Bryological Society
BSJ	Bryological Society of Japan	SBLS	Swiss Bryological and Lichenological Society
CEBWG	Central and East European Bryological Working Group	SLAB	Sociedad Latinoamericana de Briología
DBLWG	Dutch Bryological and Lichenological Working Group	VWGB	Vlaamse Werkgroep Bryologie
IAB	International Association of Bryologists	WGMBE	Working Group for Mapping the Bryophytes of Europe.
IAPT	International Association of Plant Taxonomists		
IBC	International Botanical Congress		

Further information on the bryological societies and working groups will be found in the article by Mr. B. O'Shea in Bryol. Times, 31: 7-8, 1985.

Working Group for Mapping the Bryophytes of Europe

DETAILS HAVE NOW been circulated regarding the next meeting to be held at Mont Rigi, 30th October - 3rd November, 1985.

The Meeting will examine:

- (i) the current state of bryophyte mapping in each European country (or group of countries);
- (ii) the progress made on the planned distribution maps;
- (iii) the mode of publication of a first set of completed maps.

It is planned to spend the 2nd and 3rd of November in the field with bryological trips in Belgium, Grand Duchy of Luxembourg, Northern France, or near Western Germany.

The number of bryologists actively preparing maps is still rather low and disappointing, and it is hoped that the meeting will stimulate further interest.

For details about the meeting, the list of species being mapped, etc., write to Professor R. Schumacker, Université de Liege, Station Scientifique des Hautes Fagnes, Mont Rigi B-4898, Robertville, Belgique.

Watanabe (1957, Misc. Bryol. Lichenol., 13: 1-2) reported some bryophytes, such as *Bryum cyclophyllum*, *Philonotis laxiretis* and *Bryum japonense*, growing in a hot spring. In December 1955, the author [i.e. Hirabayashi] found *Bryum argenteum* Hedw. growing in a hot spring, at Kutsuta spa, which is situated in the North Japanese Alps at 36° 29' 20", N. Lat., and 943 m alt. The spa is located on the Takase River about 12 km west of the centre of Ohmachi City, and is a sulfurous, carbonated hot spring. The forest vegetation of the area is dominated by *Fagus crenata*, and some *Tsuga sieboldii* and *Chamaecyparis obtusa* are mixed with the *Fagus*. *Bryum argenteum* occurred on muddy soil mixed with humus in one of the carbonated hot springs, 1 m in diameter, 20 cm in depth, temperature 38.5°C. The *Bryum argenteum* occurring in the hot spring had slender stems as compared with those found in usual habitats. Those found in the hot spring were characterized by pale apical portions, light-brown basal portions, and sterile conditions.

In the Misc. Bryol. Lichenol. article, referred to above, Watanabe had reported the *B. cyclophyllum* and the *p. laxiretis* as growing in hot springs in Nasu, central Japan, at a temperature of 38°C. The *B. japonense* was found in a hot spring at Tsuchiyu spa, Fukushima City, northern Honshu, at a temperature of 40°C.

Cluster Analysis*

By Jan-Peter-Frahm

THROUGH CLUSTER ANALYSIS, the interrelationships among the taxa of a systematic group can be processed by computer and the result shown by a dendrogram.

In the program described here, the user dialogue is controlled by a five option 'menu' illustrated in Figure 1. To insert new data, the system requests a list of all character states, numbered consecutively.

As an example the following character states were used in a cluster analysis of the genus *Pilopogon*.

- Upper laminal cells
 - oval 1
 - subquadrate 2
- Nerve with
 - lamellae 3
 - ridged 4
 - smooth 5
- Nerve excurrent in a
 - hyaline awn 6
 - not hyaline 7
- Basal laminal cells
 - thin walled 8
 - incrassate 9
- Alar cells
 - not differentiated 10
 - differentiated 11
- Peristome teeth
 - not split 12
 - split 13
- Calyptra
 - ciliate 14
 - non ciliate 15

For every species the number of the character state appropriate to each attribute is noted and entered in the data input. Following input, a complete listing of all data is then printed (Figure 2).

```

Number of taxa      8
Number of attributes 7

01 04 07 08 010 014 015
01 04 07 08 010 012 015
01 03 06 08 010 013 015
01 04 07 09 011 012 015
01 04 07 08 010 012 016
01 03 06 08 010 013 015
01 05 07 08 010 012 015
02 04 07 08 010 012 015
    
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Fig. 2. Listing of data input

The data can be erased or changed using the menu options. Another menu option starts the computation, for which there is

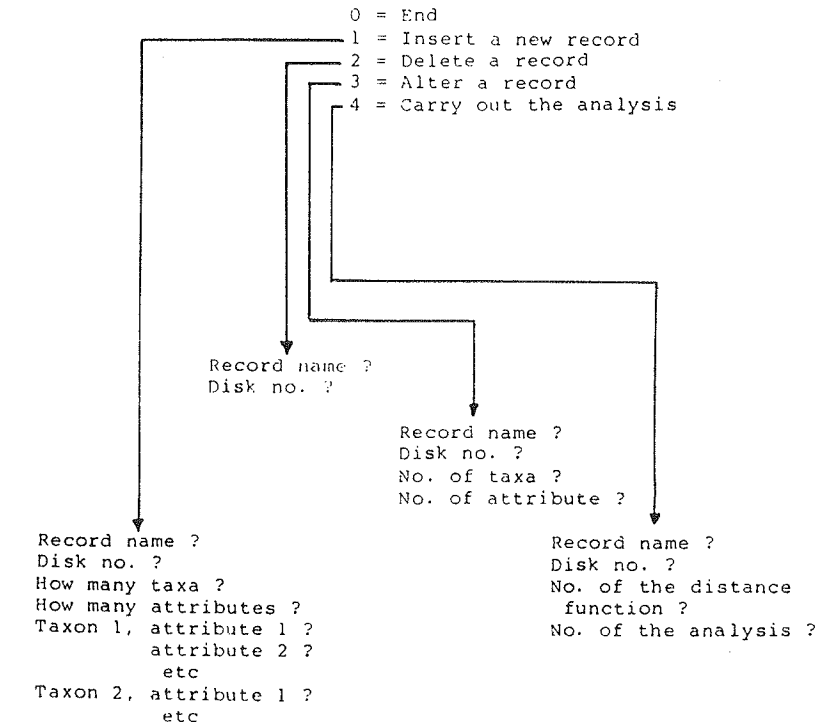


Fig. 1. Cluster analysis menu options

a choice between several different methods of analysis. The results of each computation are listed on the printer and drawn on the plotter (Figures 3 & 4).

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D < 1 , 2 > = .181818182
D < 1 , 3 > = .272727273
D < 1 , 4 > = .307692308
D < 1 , 5 > = .25
D < 1 , 6 > = .272727273
D < 1 , 7 > = .25
D < 1 , 8 > = .25
D < 2 , 3 > = .3
D < 2 , 4 > = .181818182
D < 2 , 5 > = .1
D < 2 , 6 > = .3
D < 2 , 7 > = .1
D < 2 , 8 > = .1
D < 3 , 4 > = .416666667
D < 3 , 5 > = .363636364
D < 3 , 6 > = 0
D < 3 , 7 > = .363636364
D < 3 , 8 > = .363636364
D < 4 , 5 > = .25
D < 4 , 6 > = .416666667
D < 4 , 7 > = .25
D < 4 , 8 > = .25
D < 5 , 6 > = .363636364
D < 5 , 7 > = .181818182
D < 5 , 8 > = .181818182
D < 6 , 7 > = .363636364
D < 6 , 8 > = .363636364
D < 7 , 8 > = .181818182
    
```

Fig. 3. Results of analysis in tabular form showing the measure of distance between pairs of taxa.

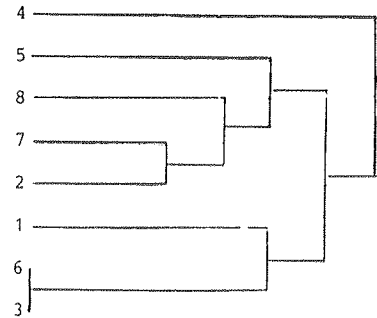


Fig. 4. Results of analysis in diagrammatic form.

A copy of these programs in BASIC for a Commodore 4/8000 desk top computer can be obtained from either of the column editors. Dr. Janice Glime (Houghton, Michigan, U.S.A.), also has a FORTRAN program for cluster analysis which can be used on a Univac 1100 series mainframe computer. News of any other such programs would be welcome, and will be publicized in this column.

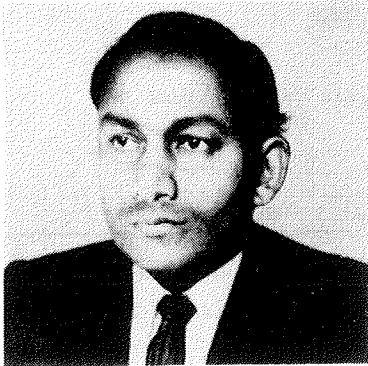
* COMPUTER TECHNIQUES COLUMN

Column Editors J.-P. Frahm and B.J. O'Shea. For addresses see *Bryol. Times*, 31:9.

Professor Ram Udar (1926 - 1985)

THE UNTIMELY DEATH of the distinguished Indian Bryologist, Professor Ram Udar, F.N.A., at the age of 58 years, came as a bolt from the blue on the morning of March 12, 1985. He was ill for about one year, but with his strong willpower and determination, he continued working in the Department until his death.

Professor Ram Udar was born on December 1, 1926, in the village Bellari of District Basti (U.P.), India. He was educated at Basti and Faizabad. He came to Lucknow University in 1944 where he studied botany with great interest. After receiving his Masters degree in 1948, he taught botany at Shia Degree College, Lucknow, for a few months and later returned to his parent University as Lecturer. Through his devotion to academic pursuits he finally rose to the position of Professor of Botany.



Professor Ram Udar inherited the high traditions set by his teacher Dr. S.K. Pande, the student of Professor S.R. Kashyap, and established a very strong school of bryology at Lucknow. He published 200 research papers, monographs and reviews. His two books entitled *An Introduction to Bryophyta*, for undergraduate students, and *Bryology in India*, which highlighted the contributions made in Indian bryology up to 1976, are an asset to students of bryology. He instituted 63 taxa new to science and made many new reports for the bryoflora of India. Some of his major contributions include the discovery of two orders, Calobryales and Buxbaumiales, new to the bryoflora of India. He also made monographic studies on Indian taxa of Ricciaceae, Metzgeriaceae, Aneuraceae, Fossonbroniaceae, Frullaniaceae, Notothylaceae, Ptychanthoideae, Porellineae, and Radulaceae, and contributions on sporeling development and regeneration patterns of

many members of the Marchantiales, Metzgeriales and Jungermanniales. His recent monograph on 'Palynotaxonomy of some selected Indian liverworts' is shortly due for release.

Professor Ram Udar was instrumental in organizing the Indian Bryological Society and was its Founder-President. He was elected Fellow of the Palaeobotanical Society and was its Vice-President. In January 1985 he was elected Fellow of the Indian National Science Academy, the highest academic achievement for a scientist in this country. He was associated with several societies, scientific bodies and laboratories related to bryology around the world. Thus he was a member of the American Bryological and Lichenological Society, the Nordic Bryological Society, the British Bryological Society, the Indian Botanical Society, and was closely connected with the Hattori Botanical Laboratory in Japan and the Laboratoire de Cryptogamie in France.

Professor Ram Udar was an extremely enthusiastic plant collector. He undertook many collecting trips year after year, in all parts of the country, and each time he returned with highly valuable collections as is evident from his contributions on Indian bryology.

He devoted his entire life to the cause of bryology in India, and worked tirelessly in the Department of Botany until his death. Professor Ram Udar combined the rare quality of being an excellent teacher and a dedicated researcher. His amiable disposition and charming personality made him a likeable person. He was always held in high regard by his students, colleagues and friends.

I am very proud to have been associated with him for over 22 years and to have accompanied him on almost every field excursion he undertook. I learnt from him the practical knowledge of bryophytes in the field and the laboratory. He always inspired us and evinced keen interest in the plants we collected. His profound knowledge and authority of his subject was a great strength to his students. I am confident that his spirit of scientific devotion shall long continue to inspire his students. I shall always endeavour to keep up the high traditions of bryology at the laboratory in Lucknow - the leading centre of bryological research in the country - so ably established by him.

S.C. Srivastava, Reader in Botany, Bryology Laboratory, University of Lucknow, Lucknow 226007, India.

Bryological Working Group Duisburg (1985)

By Ruprecht Duell

Members of the group: R. DUELL, J.-P. FRAHM (in own responsibility), G. NORDHORN-RICHTER and the newcomers B. LAUBER and R. MAY.

Co-operation with: I. DULL-HERMANN; R. SCHUMACKER - Robertville; R. RISSE - Velbert; R. LOTTO - Garmisch; G. SCHWAB - Darmstadt; B. KAISER - Velden; H. LAUER - Kaiserslautern; E. SAUER and M. MUES - Saarbrücken.

Journal: *Bryologische Beiträge*, started in 1982. Co-editors: J. SZWEYKOWSKI - Poznań, T. PÓCS - Vácraót and J. Vaňa - Prague. The Journal is subscribed to by nearly 100 bryologists all over the world, and may be exchanged with bryologists in socialist countries.

Herb. DUIS: This herbarium is based on the private herbaria of F. KOPPE (ca. 70,000 packets), R. DULL (ca. 40,000 packets), F. NEU (ca. 10,000 packets) and J.-P. FRAHM (ca. 30,000 packets). The material comes mainly from Central Europe, the Mediterranean, Macaronesia, North and Central America. Loans to institutions and personally-known bryologists is possible.

Library: Besides the bryological literature of the University Library, there exists a large amount of bryological literature in the possession of FRAHM and DUELL, the latter possessing the library of F. KOPPE since his death. There is also a large card index of literature and localities where bryologists have collected, with UTM-codes and TK-codes

Projects: The following 8 projects are being undertaken:-

Project 1: Mapping bryophytes in BRD by DUELL (on the basis of the distribution of single species), of special regions, or for all parts of Germany. The mapping of NRW has been completed north of Rheinland-Pfalz and Westfalia and the results published. For the small area of the Ruhrgebiet there exist 9,000 bryophyte data; a moss flora of Pitztal/Tirol will soon be finished.

Project 2: For the bryophytes of Europe and Macaronesia, ecological and life-form data are being checked in addition to the distribution of all species (published in part in *Bryol. Beitr.*). This work is being done with the help of a micro-computer.

Project 3. The results of excursions in the Mediterranean region in Italy and Yugoslavia are being prepared for publication. Information on Crete has already been published. The bryoflora of Macaronesia will be further investigated, using the rich, unpublished data of KOPPE. Co-workers are welcome.

Project 4. Biostatistical methods are being used for investigations of mosses by Döll-Hermanns.

Project 5. A bryogeography of the Rhineland using EDP has been finished by Nordhorn-Richter.

Project 6. Taxonomical investigations are being done on *Campylopodioideae* (Frahm: Europe, America, Macaronesia); *Pohlia* (Nordhorn-Richter: bulbiferous sp. C. Europe); *Thuidium abietinum* (Döll-Hermanns: C. Europe); *Didymodon* (Döll and Döll-Hermanns: Europe, Macaronesia); *Barbuleae* (Döll-Hermanns: Africa); *Bryoerythrophyllum* (Döll: Europe, Macaronesia); *Orthotrichum* (Lauber: Germany); and *Tortella* (May: C. Europe).

Project 7. The use of bryophytes as monitors of air pollution will be investigated in the future. A new edition of the Rote Liste of the bryophytes of NR-Westfalia is in press.

Project 8. In his own responsibility Frahm organized, with the help of other bryologists, the BRVOTROP-project to investigate tropical bryophytes, (see *Bryol. Times*, 13:3, 17:6).

Culture of bryophytes: Besides the special cultures of some species (*Pohlia*, some *Barbuleae* and *Campylopus*), a large number of bryophytes from Germany are cultivated, not only for demonstration, but also to study changes in characters under culture conditions.

Excursions and workshops: Student courses at the University can be attended by other interested persons. Excursions are offered every autumn and spring. Together with the British Bryological Society, an excursion to the Alps will take place in July-August, 1985 (see *Diary*, p.8). A bryological workshop was held in Duisburg/Robertville at the end of November 1984, and bryologists from more than ten countries participated.

Fb. 6, Fachgebiet Botanik, Universität-GH-Duisburg, Lotharstrasse 65, 4100 Duisburg 1, B.R.D.

Recent Publications

Bryologist, 87(4): 293-396, 1984.

Crypt. Bryol. Lichen., 6(1): 1-94, 1985.

Lindbergia, 10(2): 65-132, 1984.

Taxon, 34(1): 1-190, 1985.

Taxon, Index to Vols. 1-30: Personal names compiled by Richard M. Lowden. 816pp., 1985.

Dyer, A.F. & J.G. Duckett (eds.) 1984. The experimental biology of bryophytes. London, Academic Press, Inc. [Experimental Botany Monographs, Volume 19.] Hardback, 296pp. Price £47.50 (US \$68.50).

This latest volume in the series of monographs on experimental botany is fully up to the standards of scientific quality, and excellence of presentation, that is characteristic of this well-known series.

There are 14 contributors to the 11 review articles: P.W. Richards provides an "Introduction" to the special characteristics of bryophytes and the part they play in the ecosystems of the world. M.C.F. Proctor writes about "Structure and ecological adaptation", while R. Wyatt & L.E. Anderson deal with "Breeding systems in bryophytes". M.E. Newton considers "The cytogenetics of bryophytes" and M. Lal discusses "The culture of bryophytes, including apogamy, apospory, parthenogenesis and protoplasts". D.J. Paolillo, Jr., treats "Cell and plastid cycles" and B. Knoop the "Development in bryophytes". D.J. Cove & N.W. Ashton give an account of "The hormonal regulation of gametophytic development in bryophytes" while E. Hartmann & G.I. Jenkins furnish an account of "Photomorphogenesis of mosses and liverworts". D.H. Brown's contribution is on "Uptake of mineral elements and their use in pollution monitoring" with N. Valanne reviewing what is known about "Photosynthesis and photosynthetic products in mosses".

The aim of the book is to make as many botanists as possible aware of the experimental work being carried out on bryophytes, and to encourage an increase in experimentally-based studies. That the various authors have responded well is without doubt. But whether this very over-priced volume will be as successful as it deserves to be remains to be seen as much of its contents has already been incorporated into some of the wide-ranging, up-to-date, review volumes on bryophytes that have come on the market in the last few years.

THE FOURTH MEETING OF CENTRAL AND EAST EUROPEAN BRYOLOGISTS 1985

Third Circular, 1 May 1985

I AM PLEASED TO ANNOUNCE that we have received about 30 abstracts.

I should like to let you know that the registration fee is to be paid upon your arrival. You can register in student hostel on the 11th August from 10.00 a.m. to 8.00 p.m., or at the place of meeting on the 12th August, from 8.00 a.m. to 9.30 a.m. All participants can only pay their fee in Hungarian forints.

I am delighted to inform you that the costs of hotel accommodation are the following: in Hotel Eger one double room is about \$25, in Hotel Park about \$20. Participants from the Rouble monetary zone can pay their costs of hotel accommodation in Hungarian forints, but others can pay in U.S. Dollars or equivalent hard currencies. We are sorry to say that we can only accommodate you in double rooms in the Eger hotels.

Further information is that 15/maximum 20/minutes are available for the lectures and the manuscript of your lecture has to be handed in for publication at the time of the meeting, or no later than 1 October. Your manuscript can contain no more than 16 typewritten pages/inclusive of line drawings/, each page with a maximum 30 lines and 60 letter spaces per line. The heading should consist of the title and the author's name and address.

The abstracts and the programme of lectures of our meeting will be posted to participants by the middle of June.

Dr. Sándor Orbán, Botanical Dept. of Ho Chi Minh Teachers' College, EGER pf. 43, H-3301, Hungary.

DIARY

For explanation of acronyms, see this issue, p.4.

1985

May 31st - June 2nd. SBLS. Central Wallis (steppe vegetation types). Annual assembly with paper-reading sessions and excursions. Further information: K. Ammann, Syst.-Geobot. Institut, Altenbergrain 21, CH-3013, Bern, Switzerland.

June 10-14. AETFAT. St. Louis. Symposium on Systematics and floristics of African Bryophyta on Friday 14th. Further information from Dr. R.E. Magill, AETFAT Secretariat, Missouri Botanical Garden, P.O. Box 299, St. Louis Missouri 63166, U.S.A.

[Diary continued from last page]

- June 30 - 6 July. NBS. Annual Meeting and Field Excursion, Knaben, Vest-Agder, SW Norway, Local Sec.: Arne Pedersen, Snippen 7F, N-0566, Oslo 5, Norway. Further information from A. Pedersen.
- July 4 - 10. Brighton, England. Third International Congress of Systematic and Evolutionary Biology. Bryophyte symposium in collaboration with the BBS. See Bryol. Times, 27: 8 and 31:6.
- July 21 - 23. BSJ. Daisenji, Japan. Paper-reading and field meeting. Further details from: Prof. H. Ochi, Biol. Inst., Faculty of Education, Tottori Univ., 101, Minami 4-chome, Koyamacho, Tottori 680, Japan. For preliminary details, see Bryol. Times, 29:6.
- July 28 - 4 Aug. BBS. Bavarian Alps. Summer field meeting. Local Sec.: Prof. Dr. R. Dd11, Lehrstuhl f. biologie (Botanik), D. Pädagog, Hochschule, 4100, Duisburg 1. Lotharstrasse 65, B.R.D. Mr. A.R. Perry, Dept. of Botany, National Museum of Wales, Cardiff CF1 3NP, has agreed to co-ordinate bookings for participants from Great Britain.
- Aug. 2 - 4. BLAM. Harz Mtns. Leader: W. Heimhold. Further information from W. Heimhold, Rottenweg 4, 3394 Langelsheim 1, B.R.D.
- Aug. 5 - 10. IAB. Budapest and Vácrátót. Conference on Bryoecology. For 3rd circular, see Bryol. Times, 30:9.
- Aug. 7 - 11. SBLS. Field work in Engelberg (northern Alps) in relation to mapping programme. Further information from: Dr. K.A. Ammann, Syst.-Geobot. Institut, Altenbergrain 21, CH-3013, Bern, Switzerland.
- Aug. 10 - 14. ABLs. Gainesville, Florida. For details see Bryol. Times, 30:3. Further information from: Dr. Norton G. Miller, New York State Museum Science Service, State Education Department, Cultural Education Center, Albany, New York 12230, U.S.A.
- Aug. 12 - 14. CEBWG. Eger, Hungary. 4th Biennial Meeting. For 3rd circular, see Bryol. Times, 32:7.
- Sept. 7 - 8. SBLS. Romont (Canton Fribourg, limit plateau prealps). Bryophyte mapping weekend. Further information from Dr. K. Ammann, Syst.-Geobot. Institut, Altenbergrain 21, CH-3013 Bern, Switzerland.
- Sept. 16 - 21. Edinburgh, Scotland. 2nd Symposium on plant life in SW Asia. For preliminary details of bryological programme, see Bryol. Times, 27:8.
- Sept. 21 - 22. BBS. Paper-reading Meeting and AGM. National Museum of Wales, Cardiff. Local Sec.: Mr. A.R. Perry, Department of Botany, National Museum of Wales, Cardiff CF1 3NP. Preliminary details in Bull. BBS, 45:17.
- Sept. 20 - 22. 4th Midwestern bryological Foray, Cusino Lake Field Station of Northern Michigan University. Professionals, students and amateurs are cordially invited to participate. Further information from Dr. Maynard Bowers, Department of Biology, Northern Michigan University, Marquette, Michigan 49855, U.S.A.
- Sept. 20 - 22. Tenth Annual LeRoy Andrews Foray. Craftsbury Center, northern Vermont. Further details from Nancy Slack, Russel Sage College, Troy, New York, U.S.A.
- Oct. 4 - 6. First Blomquist bryological Foray, Roan Mtn. State Park, Tennessee. For details see Bryol. Times, 31:6.
- Oct. 31 - 3 Nov. WGMBE. Mont-Rigi. 3rd Meeting of lectures and field work in Hautes Fagnes region and in the Eifel. Further particulars from: Prof. Dr. R. Schumacker, Directeur, University of Liège, Station Scientifique des Hautes Fagnes, B-4898 Mont-Rigi, Robertville, Belgium, see p.4.
- Nov. 2 - 3. BBS. Taxonomic Workshop, Gilbert White Museum, Selborne, Hants. Local Sec.: Dr. J.E. Chatfield, The Gilbert White Museum, The Wakes, Selborne, Alton, Hants GU34 3JH. For details see Bull. BBS, 45:17.

1986

Spring, BBS. Norfolk. Spring field meeting. Local Sec.: Mr. R. Stevenson, 111 Wootton Road, King's Lynn, PE30 4DJ. Preliminary details in Bull. BBS, 45:18.

July or Aug. BBS. West Scotland. Summer field meeting. Local Secs.: Mr. D.G. Long, Royal Botanic Garden, Edinburgh EH3 5LR and Mr. G.P. Rothero, Benmore Centre, by Dunoon, Argyll, Scotland. Preliminary details in Bull. BBS, 45:18.

Sept. BBS. Paper-reading Meeting and AGM. University of Leeds. Local Sec.: Prof. D.J. Cove, Dept. of Genetics, University of Leeds, LS2 9JT.

Nov. BBS. Workshop. Details to be announced.

1987

July 24 - 1 Aug. XIVth IBC Berlin (West). Preceded by IAPT Nomenclature Sessions, July 20-24. For preliminary notice see Bryol. Times, 23:9. Congress Address: XIV IBC. Bot. Garden & Museum, Königen-Luise-Strasse 6-8, D-1000, Berlin (West) 33, Germany.

July-Aug. IAB. Mainz. Bryological Methods Workshop. For further information see Bryol. Times, 26:6.

THE INTERNATIONAL ASSOCIATION OF BRYOLOGISTS publishes The Bryological Times every two months, and the Advances in Bryology every two years. Material for The Bryological Times can be sent at any time, but submission dates for the Advances should be discussed with its Editor, Dr. Norton G. Miller (Albany) U.S.A. The Editors do not accept responsibility for the views of authors.

For details regarding membership of the International Association of Bryologists (currently U.S. \$ 8.00 p.a.), write to the Honorary Secretary, Dr. S.R. Gradstein, Instituut voor Systematische Plantkunde, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands.

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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 RULIB) by 1st July at the latest. Items for the regular columns should be sent direct to the column editors, whose names and addresses will be found in Bryol. Times, 31:9, 1985.