

# **International Lichenological Newsletter**

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The opinions expressed in the Newsletter are not necessarily those held by the International Association for Lichenology.

The International Lichenological Newsletter is the official organ of the International Association for Lichenology (IAL). It is published three times a year in English with selected items in French, German or Spanish. Information and news intended for publication should reach the editor at least one month prior to scheduled production (February, June and October of each year).

IAL membership is open to anyone who has an active interest in the study and use of lichens. The subscription is US \$ 20.00 for the six-year period between successive International Botanical Congresses. Subscriptions should be sent to the Treasurer in US currency with cheques made payable to the "International Association for Lichenology (Robert S. Egan - Treasurer)".

IAL affairs are directed by an Executive Council of thirteen members elected during the last International Botanical Congress. Council members elected at the 14th Congress (Berlin, Western Germany, 1987) are listed below and will serve until the 15th Congress (Tokyo, 1993).

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Chairperson: M.R.D. Seaward, School of Environmental Science, University of Bradford, Bradford BD7 1DP, UK

##### Lichen Terminology Committee

Chairperson: Vernon Ahmadjian, Department of Biology, Clark University, Worcester, Massachusetts 01610, USA

#### Subscription payment

The current subscription for membership of the International Lichenological Association is US \$ 20 for the six-year period between two successive International Botanical Congresses. Members are therefore requested to pay their dues as soon as possible to one of the newly elected treasurers:

Robert S. Egan, Dept. of Biology, University of Nebraska, Omaha, NE 68182-0040, USA. Checks should be made out for US dollars, drawn on a US bank, otherwise it will cost the IAL US\$ 27 for each check!

Rosmarie Honegger, Inst. für Pflanzenbiologie und Cytologie, Zollikerstrasse 107, CH-8008 Zürich, Schweiz. In this case please pay SF 32.00 to the following bank account: Schweizerischer Bankverein (Swiss Bank Corporation, Société de Banque Suisse), Filiale Albisriederplatz, 8040 Zürich, Switzerland. Account nr. PI-560.486.0 on the name of IAL/Honegger. Those who wish to use the Postal Giro service may use the Postal Account number of the bank: 80-206-1.

According to Article 5 of the Constitution of the IAL, the Council is empowered to suspend any member who is more than one year in arrears with his payment. The difficult financial position of the IAL makes it necessary that the Council uses this power.

Traditionally, the IAL has had a very liberal subscription policy in order to support lichenologists who due to currency restrictions or otherwise are unable to pay. Our financial position now forces us to change this policy. Any members who have difficulties in paying their subscriptions directly are kindly requested to try to arrange them on a personal exchange basis, i.e. by contacting somebody who is willing to make their payment in return for receiving reprints, specimens or anything suitable for exchange. Those who are unable to find a person for such an exchange, are kindly requested to contact the editor (H. Sipman), both those who need somebody else to pay for them, and those who want to serve as paying exchange partners. He will then try to bring suitable partners into contact with each other.

## RESEARCH NEWS &amp; NOTES

Ahmadjian, Vernon (Clark University, Worcester, USA), together with S. Paracer and M. Chadeganipour, is developing techniques for isolating DNA and protoplasts from lichens and lichen symbionts. Long term goals include creating a gene library for selected mycobionts, with suitable markers such as pigment or lichen acid production and hybridization.

Boissière, Marie-Claude (Fontainebleau, France) continues the cultivation of cyanosymbionts from several *Peltigera* species and *Collema tenax*. She is investigating the phospholipid composition of *Nostoc* in order to assess whether, in view of the absence of clear morphological differences, metabolic parameters may explain the different ecological preferences in *Peltigera*.

Boonpragob, Kansri (Tempe, USA) completed her Ph.D. in May 1987, under the direction of T.H. Nash III at Arizona State University. Dissertation title: Seasonal effects of air pollution on the physiology of the lichen *Ramalina menziesii*. She will return to Thailand to resume teaching duties in Bangkok.

Brown, Dennis (Bristol, England) has been working recently with Carmen Ascaso and Sonia Rapsch on a joint physiological and ultrastructural study on the effects of short-term controlled desiccation events. This was supported by a grant from the Acciones Integradas Hispano-Britannicas programme for a one-year period. They are still completing the analysis of experiments conducted in Bristol in which physiological measurements were made on fresh material and material fixed for electron microscopy returned to Madrid for processing. Dennis Brown is also continuing his research on the effects of heavy metals on lichen physiology and is becoming involved in work on the effects of agricultural chemicals on lichens. He would be very grateful to hear from lichenologists with experience of such chemicals

and their effects on physiology, growth, floristics and structure. Reprints would be much appreciated but correspondence would also be welcomed.

Faltynowicz, Wieslaw (Gdansk, Poland) is preparing an Atlas of the Lichens of North-west Poland based on 10 x 10 km recording units. He is also continuing his work on the bibliography of the Polish lichen flora and would welcome reprints of papers containing information on Polish records, etc.

John, Volker (Bad Dürkheim, West Germany) has been engaged by the Pfalzmuseum für Naturkunde in Bad Dürkheim since 1985. He is revising the lichen herbarium [POLL], which includes about 15.000 specimens. A survey of the genera represented and their collectors and origins is in preparation. Since the end of 1984, the Pfalzmuseum has managed a mapping scheme for lichens in Rheinland-Pfalz. An atlas of distributions will be completed by 1990. Any information on the occurrence of lichens in the study area will be most welcome. He is also observing the development of lichens on permanent plots in Rheinland-Pfalz in cooperation with the Forstliche Versuchsanstalt and in Saarland with the Arbeitsgemeinschaft für Ökologie (investigation of 'Naturwaldzellen').

In 1982, 1983, 1986 and 1987 he visited Turkey for a total of 14 weeks in order to study the lichen flora. In cooperation with Aysen Özdemir (Eskisehir, see also below), distribution maps are in preparation. Further field work in West Anatolia is scheduled for July/August 1987 and Spring 1988. A publication on the use of lichens as bioindicators in the area surrounding Izmir is in preparation. The lichenological studies are undertaken in close cooperation with Ege (Izmir), Istanbul (Istanbul) and Anadolu (Eskisehir) Universities. John and Özdemir would be most interested receiving literature references and information on herbarium collections of Turkish lichens.

Lumbsch, Thorsten (Marburg, West Germany) is revising the lichen herbarium of the Landesmuseum für Naturkunde in Münster [MSTR]. This herbarium mainly consists of

19th-century collections, which mostly originate from Nordrhein-Westphalen (West Germany). Its most important collection is the herbarium of Beckhaus. The revision is to be finished in 1988.

Matthes-Sears, Uta (Tempe, USA) completed her Ph.D. in May, 1985, under the direction of T. Nash III at Arizona State University. Dissertation title: The ecology of the lichen *Ramalina menziesii*. Several articles arising out of this research have (are) appearing in the Canadian Journal of Botany, New Phytologist, and Photosynthetica. She is continuing her postdoctoral studies at the University of Guelph (Ontario, Canada) with D.W. Larson.

McCune, Bruce (Corvallis, U.S.A.) was recently appointed as Assistant Professor at Oregon State University. He plans to continue his studies on the ecology and taxonomy of western North American lichens. His field studies of urban, industrial, and regional pollutants on lichen communities in the Ohio River Basin are nearing completion.

Mies, Bruno (Cologne, West Germany) is investigating the lichens of the Cabo Verde Islands for his Ph.D. He is concentrating on a floristic investigation, on the distribution patterns, and on the ecological factors, especially salt, influencing these. He will revisit the islands during the autumn of 1987.

Moberg, Ronald (Uppsala, Sweden) has spent a week in Switzerland in May 1987, together with Rolf Santesson and Mats Wedin, as a guest of the Systematisch-Geobotanisches Institut der Universität Bern. They were travelling around studying *Physcia* s.l. in e.g. Lugano and Wallis. In September 1987 he will spend one month in China within a scientific exchange program. Under the guidance of Prof. Wei, Academia Sinica, the mountains of southwestern China (Yunnan) will be visited. The monograph of *Physcia* s.l. in East Africa is finished now, with a paper in press. A similar treatment of South America is in progress and collections from that area are welcome.

Nagarkar, Mahdavi B. (Pune, India) has been awarded a

Postdoctoral Fellowship of the Smithsonian Institution, Washington, D.C., for a period of one year, starting from September 15, 1987. He will work on the Asian species of the family *Thelotrema* and their relatives in the New World tropics, and the cladistic classification of the family. Dr. Mason E. Hale will be the Principal Advisor for the project.

Nash III, Thomas H. (Tempe, Arizona) returned to Arizona State University in September 1986 after spending a sabbatical with L. Kappen (4 months), J.A. Elix (5 months) and O.L. Lange (4 months). Revisionary studies on South American *Xanthoparmelia* and allied genera were initiated with J.A. Elix. They would appreciate information on any South American collections which may be borrowed. Completion of his studies with O.L. Lange on salt tolerance by lichens is planned for the summer of 1987. Fascicles 3 & 4 of Tom Nash's Exsiccati are now complete and will be distributed during the 1987/88 academic year.

Özdemir, Aysen (Eskisehir, Turkey) is preparing a thesis on the lichen flora and vegetation of Eskisehir and surroundings, directed by Prof. Dr. Hüseyin Güner (E.Ü. Izmir) and supported by Volker John (Bad Dürkheim).

Rhoades, Fred (Bellingham, USA) is currently completing a resurvey of lichen/bryophyte communities on lower Douglas fir bark in Olympic National Park, Washington State. A series of elemental analyses has been run on a number of the common lichen species (*Alectoria sarmentosa*, *Hypogymnia enteromorpha*, *H. physodes*, *Platismatia glauca* and *Sphaerophorus globosus*).

Ryan, Bruce D. (Arizona State University, Tempe, USA) received a National Science Foundation award for working on *Lecanora* subg. *Placodium* in western North America. He is preparing a paper on the *Lecanora garovaglii* complex and reports of the discovery of "Wanderflechte" forms of *Rhizoplaca* in Idaho.

Tibell, Leif (Uppsala, Sweden) continues a regional revision of the Caliciales of South America. A rich material collected by Klaus Kalb is under study. During the winter 1988-89 he

will go to Patagonia, together with Mats Wedin. Other projects involve: lichen growth and biodegradation of lime-plastering of churches and other historical buildings; the dependence of the lichen flora of bark and lignum of boreal conifer forests on forest continuity.

Weber, William A. (Boulder, USA) attended the first Botanical conference on the Galapagos Islands in April, which dealt with problems of botanical conservation. A lengthy report with recommendations will soon be published. At the Third California Islands Symposium at Santa Barbara he presented a paper on the Lichen flora of Guadeloupe Island, Mexico. On 30 June 1987 he returns to Novosibirsk for another expedition to the Altai with Ivan Krasnoborov, this time to Mt. Byelukha, south of the Katun River, and the area around Abakan, in the Krasnoyarsk District. Emphasis will be on alpine vascular plants vicarious in the Rocky Mountains and Middle Asia. In the fall, Einar Timdal will be visiting him. The next fascicles of his *Lichenes Exsiccati* will probably be distributed in December, bringing the total to 700 numbers.

Wedin, Mats (Uppsala, Sweden) has studied the *Cladonia rangiformis*-*subrangiformis* complex on the island of Öland. The results will be published in *Graphis Scripta*. He has also been involved in a project to examine how fertilization influences N-fixating lichens. Next year he will begin studies on *Sphaerophorus* (for a Ph.D. thesis) under the guidance of Dr. Leif Tibell.

Yamamoto, Y. (Nippon Paint Co., Osaka, Japan) spent several days in the laboratory of Vernon Ahmadjian to share his unique method for lichen tissue culture. A number of local lichens were collected and processed by means of this technique.

### PC-TAXON, a key-generating computer program

During the past two years, Fred Rhoades has experimented with the use of synoptic keys in teaching. To create and use such keys, he has developed a key-generating program, PC-TAXON (actually two programs, TAXON and ASKATAXA) for IBM and compatible microcomputers. Hardware required: IBM PC, XT or AT or compatible with 128K memory, 80-column card, DOS 2.0 or higher.

The program is sold by COMPRESS, P.O. Box 102, Wentworth, N.H. 03282, USA. The price (US\$ 75.00) includes a master diskette, an archival diskette, and a User's Manual.

TAXON allows definition of 255 taxa (at any taxonomic level) and 99 characters, each with up to 99 character-states. Supplemental information can be stored for later viewing when a taxon is identified. TAXON also facilitates editing of keys: it can add, remove or rename taxa, redefine the characters and character-states, change spellings, rearrange the order of lists or edit supplemental information.

TAXON or ASKATAXA (which cannot edit keys) are then used to query the defined key. Because the entire key is held in computer memory, the programs work rapidly. A variety of questions can be asked: e.g. identify a taxon (with AND, OR or NOT qualifiers on character states, "allowance of errors in a search", "find best character" and "back up" options), describe a taxon, compare two taxa or print a "field-ready" version of a key. Programs are easy to use with context-sensitive messages available to help beginners.

Fred Rhoades has prepared several preliminary keys to the local crustose, fruticose and foliose genera and to local species of *Hypogymnia*, *Cladonia*, *Cetraria* and *Bryoria*. He will send a floppy disc with ASKATAXA, these keys and additional information about the editing program, TAXON, to anyone interested (send US\$ 5.00 to cover costs).

ASKATAXA and the keys mentioned will be included as an "Issue" of Flora Online, an electronic publication of TAXACOM: A Bulletin Board System for Systematic Botany. See below, or the August issue of *Evansia*, for details or contact Richard H. Zander, Flora Online Editor, The Clinton Herbarium, Buffalo Museum of Science, Buffalo, NY 14211, USA.

Address: Fred RHOADES, Biology Department, Western Washington University, Bellingham, WA 98225, USA.

---Fred Rhoades

### TAXACOM, an online service

The Clinton Herbarium (BUF) offers collection-oriented lichenologists an opportunity to communicate informally and share data-intensive textual information and computer programs inexpensively online. TAXACOM is a free online service for systematic botany and phytogeography, optimized for IBM-PC standard, MS-DOS software operating on an IBM-PC or IBM-PC compatible microcomputer. It may, however, be accessed by any computer system.

Several features (some already in existence and others projected) of probable importance to lichenologists include: Electronic mail for private communications and file transfer between individuals; several Conferences, including one on Bryology and Lichenology, allowing in-depth discussions and public file transfers; Flora Online, a new electronic journal (ISSN 0892-9106) publishing formal, scientific texts and programs; a Latin Translation Service providing taxonomists with renderings of descriptions and diagnoses of new taxa; notices of professional positions available or wanted; several searchable databases of collection data and bibliographies; bulletins for dates of society meetings and notices; computer programs for herbarium management, data manipulation, keys to taxa, numeric taxonomy; species lists (checklists, synonymy, type specimens, specialized collection inventories); floras, descriptive catalogues; taxonomic works (but new names and combinations not allowed); bibliographies; specialized glossaries and dictionaries; descriptions of herbaria; botanical magazines; comments and controversy, including requests for help and lively debate; reviews of electronic publications; specimen exchange lists; reports of symposia and field trips.

How to connect with TAXACOM: Dial 716-896-7581 at 2400, 1200 or 300 bps, use 8 data bits, 1 stop bit, no parity. Available between 5 pm and 9 am Eastern Standard Time weekdays, and 24 hrs weekends. New users may tour the system, read bulletins and download files; online registration and validation allows complete access. File download protocols offered include ASCII

(XON/XOFF) and Xmodem (both CRC and checksum). No subscription is presently required for TAXACOM. Long-distance AT&T phone charges are about \$10-12 hourly for evening access from anywhere in the USA (it does not matter how far you are from Buffalo!).

TAXACOM solicits from research lichenologists text files of programs for publication. These may be uploaded directly to TAXACOM; or, contact editor R. Zander by voice (716-896-5200), or send us a 5.25-inch diskette (MS or IBM DOS). The journal Flora Online is restricted to data-intensive textual works, computer programs dealing with botanical topics, reviews of electronic publications or botanically oriented programs, descriptions of herbaria, and other material similar to that published in "Taxon" but with emphasis on lengthy compilative material difficult to publish in hardcopy or appropriate for searching with a word processor or text data manager. Text and programs on Flora Online may be modified or expanded by the author as sequential "versions". We will consider for general posting in TAXACOM Cyclopedia (a "newsletter"), however, any informal text or program unrestricted by copyright or licence and of possible interest to the systematics community. Flora Online is now available on disk by subscription. The first two diskettes (5.25-inch, DSDD, MS-DOS format) include Issues 1 through 8. Contact Shaun Hardy, Research Library, Buffalo Museum of Science, Buffalo, NY 14211, USA, for information on how to order.

### == TAXACOM MAIN MENU ==

#### CONFERENCES:

1. Open Confr. 2. Latin Confr. 3. Niagara Frontier 4. Exchange 5. Bryol. & Lich. 6. Online Communic. 7. Bot. Techn. 8. Offers

## DOWNLOAD LIBRARIES:

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| A. read All new messages | D. Databases           |
| E. Electronic mail       | F. Feedback to SysOp   |
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| X. eXpert level          | Y. Your status         |
| M. Member list           | N. News                |
| H. HELP!                 | I. system Info         |
| V. Validation            | L. Leave system        |
| !. Macro                 |                        |

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---Richard H. Zander, Curator of Botany and System Operator; Patricia M. Eckel, Research Fellow and Associate SysOp, Buffalo Museum of Science, Buffalo, NY 14211, USA.

## A culture collection of Caliciales

A culture collection of non-lichenized Caliciales as well as mycobionts of lichenized Caliciales has been built up in Uppsala. It comprises about 40 species in *Calicium*, *Calycidium*, *Chaenotheca*, *Chaenothecopsis*, *Cyphelium*, *Mycocalicium*, *Phaeocalicium*, *Sclerophora* and *Sphaerophorus*. Many of the isolations originate from a visit to New Zealand last autumn, where isolations were carried out at Plant Diseases Division, D.S.I.R., in Auckland. Thus comparisons are made of populations from the Southern and Northern Hemisphere for widely distributed species. Many of the cultures produce anamorphs, almost all of them never described and not observed in nature. Quite a variety of anamorph types has been obtained, and taxonomically the distribution of different anamorph types is quite exciting. The cultures are kept at the Culture collection of the Institute of Systematic Botany in Uppsala, headed by Dr. O. Constantinescu.

---Leif Tibell

## Lichen literature list on microfiche

An index of the library of the British Lichen Society has been produced on microfiche. It contains about 5000 titles and covers a good deal of recent lichen literature. Copies were sent free to all BLS members, and others may purchase them from Dennis Brown at £1.00 (including postage), payment to be made in pounds sterling. Dennis Brown is also willing to exchange copies with people donating books or c. 10-15 reprints to the BLS library. Those wishing such an exchange should mention this explicitly, since any reprints donated are always gratefully accepted. Authors donating reprints with non-English titles or complex references would greatly assist by providing translations. The address is: Dr. Dennis Brown, Department of Botany, Woodland Road, Bristol BS8 1UG, England.

## Back issues of ILN

A limited number of copies is still available from the following issues, published by Irwin Brodo: 9(1), 9(2), 10(1), 10(2), 11(1), 11(2), 12(1), 12(2), 13(1), 13(2), 14(1), Index to Vol. 9-13. Obtainable from H. Sipman, Botanischer Garten & Botanisches Museum, Berlin. Price DM 3 per item.

### British Lichen Society meeting February 1987

The British Lichen Society held a three-day meeting on 19-21 February 1987. The bicentenary of the Linnean Society of London falls in 1988, and as part of the celebrations of this event a joint symposium was organised by the two societies on the first day. It was entitled "Horizons in Lichenology" and took place in the Linnean Society premises. The papers presented will be published in the Botanical Journal of the Linnean Society. On the second day, the British Lichen Society organised another symposium entitled "Variations in Lichens" which also took place in Linnean Society rooms. On the third day, the Annual General Meeting of the BLS was held at the British Museum (Natural History); it was followed by a display of exhibits mounted by members of the Society, and a Workshop Meeting on the new Flora of the Lichens of Great Britain and Ireland now being prepared.

#### Horizons in Lichenology

Prof. D.L. Hawksworth (Kew), President of the British Lichen Society: The variety of mutualistic fungus-alga associations and their evolutionary significance. Prof. Hawksworth spoke about mutualistic associations between fungi and algae and/or cyanobacteria. He pointed out that as well as "two-biont" systems, "three-biont" and even "four-biont" systems exist. He went on to show that in some fungus groups, mutual adaptation in these kinds of association is evolving in the direction of greater complexity, while in others the bionts are becoming more independent and mutualism is being lost. These observations lead to a better understanding of evolutionary relationships in the ascomycetes.

Prof. Dr. H. M. Jahns (Frankfurt am Main): The establishment, individuality and growth of lichen thalli. Prof. Dr. Jahns described observations on the early growth and development of lichen thalli, both in the field and in culture. The early stages have a low degree of organisation, which shows considerable variation. Development does not follow a uniform course, but is considerably affected by environmental conditions. When several very young plants grow close together, fusion between them and the formation of chimaera-like thalli is common.

Prof. D.H.S. Richardson (Dublin): Horizons in the understanding of pollution sensitivity in lichens. Prof. Richardson

reviewed the ways in which lichens are used to monitor atmospheric pollution, and pointed out the problems in interpreting of the effects observed. A deeper understanding of the effects of pollution on lichens is required.

Dr. D.J. Galloway (London): Plate tectonics and the distribution of cool-temperate Southern Hemisphere macrolichens. Dr. Galloway used the Lobariaceae and Pannariaceae to demonstrate the spectacular speciation that has occurred in these families in the southern hemisphere. Plate tectonics can be used to explain the distribution patterns that are observed.

Mrs. V. Winchester (Oxford): Developments in lichenometric dating technique and its application to historic structures. Mrs. Winchester explained how lichenometry had been used in dating two neolithic stone circles. In spite of growth variations in different microhabitats, promising results have been obtained.

Dr. E. Sérusiaux (Liège): Foliicolous lichens: ecological and distributional preferences. Dr. Sérusiaux said that foliicolous lichens are especially common in tropical and subtropical primary lowland rainforest, but also have a relict distribution in Europe. Six ecological groups of these lichens can be recognised.

Dr. F. Rose (Liss, Hampshire): Phytogeographical and ecological aspects of Lobarion communities in Europe. Dr. Rose showed on the basis of surveys in forests from Norway to the Pyrenees and northern Italy that although Lobarion communities are still widespread in montane regions, they are restricted to the Atlantic coastal zone in the lowlands. He attributed this to forest management practices and air pollution.

Dr. M.R.D. Seaward (Bradford): Progress in the study of the lichen flora of the British Isles. Dr. Seaward gave an historical account of the study of the lichen flora of the British Isles, leading up to a description of the network recording programme currently in progress. He assessed its strengths and weaknesses, and speculated on the consequences to be expected from improvements in computer database techniques.

#### Variations in Lichens

Dr. D.H. Dalby (London): The nature of morphological variation in some macrolichens. Dr. Dalby illustrated variation in a number of species by means of colour slides. He then considered the possible explanations for these variations, and came to the conclusion that to attribute them entirely to ecological factors would be too simplistic a view.



Dr. B.J. Coppins (Edinburgh): Colour variation in lichen ascocarps. Dr. Coppins pointed out that in suitably thin sections various dark colours could be observed, but never black. These colours, which are not due to "lichen substances", as usually understood, are also sensitive to pH, and may change in sections over periods of time of up to an hour or more.

Dr. A. Pentecost (London): Chemical and morphological variation in yellow Rhizocarpon species. Dr. Pentecost approached the taxonomy of the yellow Rhizocarpon species by considering variation within species which are separated from one another by fairly small differences. Such studies may lead ultimately to the recognition of a smaller number of species.

Mr. H.T. Lumbsch (Marburg): Taxonomy and biology of the genus Diploschistes. Herr Lumbsch discussed the taxonomy of the genus Diploschistes in Europe, taking into account the biology of the species, and providing a preliminary key to the species.

Dr. O.L. Gilbert (Sheffield): (1) Long-term observations on the re-invasion of Parmelia saxatilis into Sheffield. Dr. Gilbert described the progress over a period of nine years of colonisation of a wall-top by Parmelia saxatilis from isidiate non-fertile transplants. Colonisation ceased after some years, but recommenced when the second generation plants became isidiate. (2) The epidemiology of Lichenocodium erodans on Lecanora conizaeoides. Dr. Gilbert showed that the fungus Lichenocodium erodans, commonly regarded as a perennial parasite on Lecanora conizaeoides, exhibits highly seasonal growth, commencing development in December and ceasing in March.

Dr. A. Fletcher (Maryland): Community analysis of lichens on Bardsey Island. Dr. Fletcher demonstrated various ways in which the distribution of lichen communities on Bardsey Island may be analysed statistically. He admitted, however, that it is difficult to draw firm conclusions about causal influences from these analyses.

Dr. D.H. Brown (Bristol): Do heavy metal tolerant Peltigera populations exist? Dr. Brown explained that the degree of heavy metal tolerance shown by some populations of Peltigera species was affected by their previous history (for instance, exposure to cadmium induces resistance to zinc). However, perfusion with potassium ions appears to remove such effects.

In the evening there was a buffet supper, followed by a book sale.

### Flora Workshop

After a brief introduction on how the Lichen Flora is progressing, Dr. William Purvis outlined some of the problems facing him and the Flora Committee and how they are trying to deal with them. He discussed the programme of work as planned at present and outlined the sequence of events leading to the completion of the Flora in 1990. A number of preliminary keys to the species of various genera were available, and the meeting took the opportunity of trying them out, and offering comments on them.

### Meeting in Kyoto

A symposium on the laboratory culture of lichens and bryophytes, sponsored by the Nippon Paint Co. Ltd, was held at Kyoto University, Japan, on April 23rd, 1987. The main invited lecture was "Laboratory culture of lichens and lichen symbionts" by Prof. Vernon Ahmadjian, Clark University, Worcester, USA. Two additional lectures were on "Tissue cultures of lichens" by Mr. Yoshikazu Yamamoto, Nippon Paint Co. Ltd, and "Cell culture of bryophytes" by Dr. Susumu Takio, Hiroshima University. The symposium was organized by Prof. Yasuyuki Yamada, Director of the Research Centre for Cell and Tissue Control, Kyoto University, and three others. Twenty-three researchers, mainly biotechnologists concerned with plant cell culture, as well as lichenologists and bryologists, from universities and research organizations in Japan attended the symposium.

Prof. Ahmadjian summarized his research on lichen culture and synthesis during the past thirty years. He pointed out that the last remaining hurdle in lichen culture was to obtain mature fruiting bodies, perhaps from different mating types of mycobionts. In the discussion, the growth factor as well as morphology control factors of lichens and bryophytes were highlighted. In addition, the reason why cyanophilous lichens are difficult to culture in the laboratory was also discussed. The Nippon Paint Co. Ltd is currently researching the possibilities of using lichens to produce useful substances by means of biotechnology.

--- Isao Yoshimura

## INTERNATIONAL BOTANICAL CONGRESS XIV

### Summary of the IAL Business Meeting 26 July 1987

This meeting was attended by about 50 persons. The Council was represented by Mason E. Hale, Mark R.D. Seaward and Harrie J.M. Sipman.

Mason Hale took the chair and presented a report on the Foray in southern Africa and a presidential report (to be published in the next Newsletter). Minutes of last meeting (Sydney, Australia 1981) were lacking. A report of the Secretary was present as a letter (text will be published in the next issue of the Newsletter). The Treasurer had sent a short note indicating that the balance of the IAL account per 25. July 1987 was Can.\$ 2107,40 (no liabilities).

Afterwards several proposals for new activities were discussed. Tom Nash had a proposal for a guide to lichen terminology. He has in mind an illustrated glossary, with terms given in several languages. He also offered to organize a field meeting to Baja California. A further proposal was received for a field meeting in Spain, to be organized by Eva Barreno and Ana Crespo. A letter of Dennis Brown was read, in which he proposes a.o. to raise the dues. David Hawksworth recommended that contacts of IAL with the International Mycological Association should be strengthened and that registration with IUBS needed attention. Leif Tibell proposed to organize a lichen symposium in Lund. Further local correspondents for the Newsletter and the participation of lichenologists from Eastern Europe and Asia were discussed.

The proposed officers for the new Council were elected, with a few additions, as follows:

President: David Galloway (UK)

Vice-president: Margalith Galun (Israel)

Secretary: Lars Arvidsson (Sweden)

Treasurer: Robert Egan (USA)

Deputy Treasurer: Rosmarie Honegger (Switzerland)

Editors: Harrie Sipman (FRG) and Mark Seaward (UK)

Members-at-large: Jack Elix (Australia), Ana Crespo (Spain), Josef Poelt (Austria), Ingvar Kärnefelt (Sweden), Rudolf Schubert (GDR).

### Meeting of the new Council

On the evening of 27 July the newly elected Council gathered

to discuss some urgent matters. Present were: Jack Elix, Rosmarie Honegger, Ingvar Kärnefelt, Josef Poelt, Mark Seaward and Harrie Sipman. It was decided to leave the question of subscription charges until the next IAL general meeting, which will be an interim one before the next IBC, in Regensburg or Lund. A chronological sequence was worked out for the lichen symposia and field meetings proposed during the IAL business meeting.

## Announcement of the Organization for Flora Neotropica: Publication of Lichen Monographs in Flora Neotropica

The Organization for Flora Neotropica (OFN) is a non-profit organization set up by a Commission of UNESCO to prepare and publish a complete flora of the tropical American region. It fosters the use of the services and skills of specialized botanists and the cooperation of botanical institutions throughout the world. It was established in São Paulo in 1964 as a UNESCO Category C non-government organization, and up-graded to Category B on June 11, 1976. Besides the production of a flora, OFN has as objectives to promote training of promising young plant taxonomists, encourage botanical exploration, strengthen herbaria which house important tropical collections, promote the protection of natural tropical vegetation, and to aid in the establishment and protection of biological preserves. The OFN holds an annual meeting to which all members are invited. Membership consists of a.) Members of the OFN Commission, elected by the Executive Board to represent countries and organizations; b.) Members of the executive board; c.) General Members, without voting privileges. General membership is open to all interested persons for a nominal fee.

Since 1967, over 45 volumes of its official publication, Flora Neotropica, have been published and many more are in preparation. Monographs published so far deal primarily with angiosperms, with some on fungi. To facilitate the publication of treatments of small neotropical groups of non-vascular cryptogams (bryophytes, lichens, fungi, algae) Flora Neotropica has begun the publication of special volumes devoted to each of these groups. Each special volume will consist of at least 100 printed pages and contain one to several taxonomic treatments. Authors may purchase reprints of

their articles and will receive a complimentary copy of the entire volume.

Publication of the special volumes will be coordinated by S. Rob Gradstein (University of Utrecht, Deputy Director of Cryptogams of the OFN, Institute of Systematic Botany, P.O. Box 80.102, 3508 TC Utrecht, The Netherlands).

Information about treatments now in progress which would be suitable for publication in *Flora Neotropica* should be directed to the above. Guidelines for publication and other specifics may be obtained from him.

### Lichenology in Mexico

Dr. Gastón Guzmán, INIREB, Apartado Postal 63, Xalapa, Veracruz 91000, Mexico, has sent in the following contribution on the state of lichen research in one of the lichenologically most interesting countries of the world:

Knowledge of Mexican lichens is still poor and the study of them is proceeding slowly, as there are no specialists in this country. Between 1970-1980 I assembled an herbarium of lichens in Mexico City [ENCB], with more than 5,000 specimens, and published 5 papers with students. However, I am not a lichen specialist (I work on mushrooms). Now I work in Xalapa, I have a new lichen herbarium, but no specialist to assist me. However, in Jalisco and in Baja California there are two colleagues who like me are studying the lichen flora of Jalisco and Baja California and instructing students. They are:

1. Laura Guzmán-Dávalos, Instituto de Botánica, Universidad de Guadalajara, Apartado Postal 139, Zapopan, Jalisco 45110, Mexico
  2. Nahas Ayala, Escuela de Biología, Universidad de Baja California, Ensenada, Baja California, Mexico.
- They would very much appreciate receiving reprints and herbarium specimens.

--- Gastón Guzmán

### The Rio Grande do Sul Highlands (Planalto Riograndense), Brazil

A few years ago the authors initiated a long term project in connection with the study of the lichen flora of the Rio Grande do Sul Highlands (Planalto Riograndense) in Brazil.

This region, with an area of 150.000 sq. km, is largely covered with *Araucaria angustifolia* forests. The elevation oscillates between 500 and 1000 m. A large number, perhaps thousands, of wooded ravines lodge a practically unknown lichen flora. G. Malme during the First Regnell Expedition made some collections in the westernmost part of this region.

At present we have collected in five Municipalities (Cambara do Sul, Esmeralda, Gramado, Santa Maria and Sao Francisco de Paula) and issued the results in six short notes. We have only scratched the surface of this rich region!

The genus *Stereocaulon* was added to the state flora through two species and the occurrence of *Cladina* was confirmed. The rare *Cryptothelium octosporum* was collected in many sites, always growing on "canela" trees (*Ocotea* or *Nectandra* species). The third collection of *Campylothelium puiggarii* was recently made, being the first record of this species outside São Paulo State, Brazil.

The foliose lichen flora is mostly represented by *Parmeliaceae* and *Stictaceae*. In this latter family, many *Sticta* and *Lobaria* gatherings are awaiting identification at species level. The branches of the *Araucaria* usually exhibit a rich pendulous lichen flora (mostly *Usneae*) with *Tillandsia usneoides* as companion. Among the introduced tree species, *Melia azedarach* always supports a luxurious lichen flora, being by far the best phorophyte.

Many years of work are needed to obtain a more or less representative knowledge of the region.

--- Héctor S. Osorio (Uruguay) and Mariana Fleig (Brazil)

### A LICHENOLOGICAL SYMPOSIUM IN LUND COMING

After Bristol and Münster, a third lichenological symposium is planned, to be held in Lund in 1992. The main purpose of the symposium will be to gather specialists in morphology, physiology, ecology, chemistry and taxonomy and provide them with an opportunity to discuss their scientific problems in lichenology. Parallel workshops in specialized fields are planned. As a break in the scientific programme an excursion to a classical lichen locality

will be organized.

The meetings will be arranged at a modern student centre called Sparta, located not far from the centre of academic Lund. This centre offers a large modern auditorium, which can accomodate up to 300 participants, adjacent rooms for poster sessions and conference secretariat, an associated hotel and a large but not expensive restaurant. Besides reasonably-priced hotel rooms, cheap accomodation with cooking facilities will be available. For the more demanding, a number of hotels and restaurants are available in the city centre of Lund.

### IMC IV REGENSBURG 1990

The Fourth International Mycological Congress (IMC IV) will be held at the University of Regensburg, West Germany, from 28 August to 3 September 1990. Traditionally, the international mycological congresses pay considerable attention to lichenized fungi, and Regensburg will be no exception, since Prof. Josef Poelt is on the organizing committee. Besides the scientific programme, forays, excursions and sightseeing tours will be offered before and after the congress, to give an opportunity to visit the best sites of Bavaria and the Alps. A lichenological fieldtrip is also being planned. All scientists working on (non-lichenized or lichenized) fungi in different fields of biology are invited to join. Further information can be obtained from Prof. Dr. A. Bresinsky, Institut für Botanik, Universität Regensburg, Universitätsstrasse 31, Postfach 397, 8400 Regensburg, West Germany (telephone (0941)9431 3108; telex 65658 unire d).

### NEW LITERATURE

Reino Alava, Edvard August Vainio's journey to Brazil in 1885 and his Lichenes Brasilienses Exsiccati. Publications from the Herbarium, University of Turku 1, 1986. 174 pp. (Contains a numerical and a taxonomical list to this important exsiccata, and a list of Vainio's Brazilian Cladoniae)

W.O. van der Knaap & H.F. van Dobben, Veranderingen in de epiphytenflora van Rijnmond sinds 1972. RIN-rapport 87/1, Rijksinstituut voor Natuurbeheer, Leersum, 1987. 24 pp, 12 figs. (A comparison of the epiphytic lichen flora of a heavily industrialized area in 1986 with that in 1972; 91 species recorded; in dutch)

Eva Kupfer-Wesely & Roman Türk, Epiphytische Flechtengesellschaften im Traunviertel (Oberösterreich). Stapfia (Publikation der Botanischen Arbeitsgemeinschaft am OÖ. Landesmuseum Linz, Austria) 15, 23 February 1987. 138 pp. (A treatment of 22 associations)

Manuel López Figueiras, Censo de Macrolíquenes Venezolanos de los estados Falcon, Lara, Mérida, Tachira y Trujillo. Universidad de los Andes, Facultad de Farmacia, Mérida, Venezuela, 1986. 521 pp. (A list of ca. 500 species, based mainly on collections made by the author; all pertinent collections are cited)

P.L. Nimis & J. Poelt, The lichens and lichenicolous fungi of Sardinia (Italy), an annotated list. Studia Geobotanica (Dipartimento di Biologia, Sezione di Geobotanica ed Ecologia vegetale, Università di Trieste) 7, 1987, suppl. 1; 269 pp. (An annotated list of 901 taxa recorded in literature, but mostly discovered during recent fieldwork, including description of 13 new taxa, 11 new combinations and general chapters on Sardinia and its lichenological exploration)

G. Nell Stevens, The lichen genus Ramalina in Australia. Bulletin of the British Museum (Natural History), Botany Series 16(2): 107-223, 25 June 1987. (20 species are dealt with, keys, descriptions, illustrations, distribution maps and indications of chemistry given)

Leif Tibell. Australasian Caliciales. Symbolae Botanicae Upsalienses XXVII:1, 1987, 279 pages. Distributor: Almqvist & Wiksell International, Stockholm-New York. (A treatment of 78 species in 18 genera, containing descriptions, illustrations, keys and statements of chemistry, occurring in New Guinea, Solomon Islands, New Caledonia, Australia and New Zealand).

R. Türk & H. Wittmann. Flechten im Bundesland Salzburg (Österreich) und im Berchtesgadener Land (Bayern, Deutschland) - Die bisher beobachteten Arten und deren Verbreitung. Sauteria, Schriftenreihe für Systematische Botanik, Floristik und Geobotanik 3, Institut für Botanik, Salzburg, 1987, 313 pages. (A list of 1267 species, most of them with a distribution map). Obtainable from: Abakus Verlag, Pezoltgasse 50, A-5020 Salzburg, Austria.

## PERSONALIA

George OTTO (Canada) died at his home in Vancouver, B.C., in September, 1986, after a long illness. He had been Honorary Curator of Lichens at the University of British Columbia for many years, contributing his efforts, collections, and good humour to the U.B.C. herbarium. He will especially be remembered for his discovery of *Tholurna dissimilis* in North America, and his periodic updates on the species' distribution, as well as co-authoring the first checklist of the lichens of B.C. (with Teuvo Ahti in 1967). A second edition of that Checklist, again with George as one of the authors, is due for publication within the next few months. Hundreds of his collections from the mountainous parts of B.C., especially from the Garibaldi Mountains and Revelstoke National Park, have been deposited in UBC and CANL. George was in his eighties when he died. He will be sorely missed by his many friends and colleagues.

---Irwin Brodo

William A. WEBER, Prof. Emeritus and Curator of the Herbarium COLO, Boulder, USA, was given the Certificate of Merit by the Division of Science and Humanities of Iowa State University. Last year he received the Robert L. Stearns Award from the University of Colorado for meritorious service.

Sharon P. GOWAN, Duke University, Durham, USA, received the A.J. Sharp Award for her paper on "Evolution of secondary natural products in the lichen genus *Porpidia*". This award was made by the American Bryological and Lichenological Society.

**Changes of address**

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**New members**

Sieglinde OTT, Botanisches Institut I, Universität Düsseldorf,  
Universitätsstrasse 1, D-4000 Düsseldorf, West Germany

Aysen ÖZDEMİR, Anadolu Üniversitesi, Fen-Edebiyat Fakültesi,  
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William SANDERS, Department of Botany, University of  
California, Berkeley, Ca 94720, USA

**Deceased**

George F. OTTO, Vancouver, Canada (September, 1986) (see note  
above).

Masami SATO, Mito City, Japan (August 30, 1984)

**LIST OF THE SOCIETIES**

**Australasia:** Society of Australasian Lichenologists (SAL). Info: Dr. J. A. Elix, Dept. of Chemistry, The Australian National University, GPO Box 4, Canberra ACT 2601, Australia.

**Central Europe:** Brvologisch-Lichenologische Arbeitsgemein-schaft für Mitteleuropa (BLAM). Info: Dr. G. Philippi, Landes-sammlungen für Naturkunde, Erbprinzenstrasse 3, Postfach 3949, D-7500 Karlsruhe 1, Western Germany (FRG)

**France:** Association Française de Lichénologie (AFL). Info: Dr. Jean-Claude Boissière, Laboratoire de Biologie Végétale, Route de la Tour Dénécourt, F-77300 Fontainebleau, France.

**Great Britain:** British Lichen Society (BLS). Info: Secretary of the British Lichen Society, Botany Department, British Museum (Natural History), Cromwell Road, London SW7 5BD, UK.

**Japan:** Lichenological Society of Japan (LSJ). Info: Dr. M. Nakanishi, Dept. of Biology, Faculty of Education, Hiroshima University, 3-1-33-Shinonome-cho, Minami-ku, Hiroshima-City 734, Japan.

**Netherlands:** Brvologische en Lichenologische Werkgroep der KNNV (BLW). Info: P. Hovekamp, Eiberoord 3, NL-2317 XL Leiden, The Netherlands.

**Nordic Countries:** Nordisk Lichenologisk Forening (NLF). Info: Ulrik Søchting, Institut for Sporeplanter, Ø. Farimagsgade 2 D, DK-1353 København K, Denmark.

**Poland:** Lichen Section of the Polish Botanical Society (Polskie Towarzystwo Botaniczne). Secretary: Dr. W. Faltynowicz, Department of Plant Ecology, University of Gdansk, ul. Czołgistow 46, 81-378 Gdynia, Poland.

**Switzerland:** Schweizerische Vereinigung für Brvologie und Lichenologie (SVBL). Info: K. Ammann, Systematisch-Geobotanisches Institut der Universität Bern, Altenbergrain 21, CH-3013 Bern, Switzerland.

**USA:** American Brvological and Lichenological Society (ABLS). Info: Dale M.J. Mueller, Dept. of Botany, Texas A & M University, College Station, Tx 77843-3258, USA.