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BOTANY 80

11-16 JULY JUILLET 1980 ★

CBA / ABC

with

BOTANICAL SOCIETY OF AMERICA

AMERICAN FERN SOCIETY

PHYCOLOGICAL SOCIETY OF AMERICA

AMERICAN BRYOLOGICAL & LICHENOLOGICAL SOC

VANCOUVER

UNIVERSITY OF B.C.

ALSO AT UBC

ICSEB **JULY 17-24 1980 ★**

1980 CBA/ABC Annual Meeting/Congrès Annuel
Preliminary Notice

The CBA/ABC will host the third combined meeting of North American Botanists at the University of British Columbia, from Friday, July 11th to Wednesday, July 16th 1980. Other participating societies are the Botanical Society of America, the Phycological Society of America, the American Bryological and Lichenological Society and the American Fern Society. We expect 1100 delegates to attend.

Pre-conference field trips tentatively scheduled are Queen Charlotte Islands; the Intertidal West Coast of Vancouver Island; the Central Interior of B.C. These will end in Vancouver on July 11th. Several one-day and half-day field trips are planned during and after the meetings. In addition, there will be an opportunity to visit the many places of botanical and general interest in the vicinity of Vancouver.

Botany 80 will begin with a symposium entitled 'Plants and the Indigenous People of North America'. Papers will be presented by Dr. Richard Ford (Michigan), Dr. David French (Reed College), Dr. Thor Arnason (Ottawa), Dr. Richard Hebda (Waterloo), Mr. Timothy Johns (UBC) and Dr. Nancy Turner (Victoria). There will be a workshop on Laboratory Teaching in Botany, and several special events organized by the participating societies and their constituent sections. There will be a full programme of contributed papers and poster sessions. The meeting and its social programme will start with a salmon barbecue at the UBC Museum of Anthropology on the evening of Friday, July 11th.

In making plans to attend Botany 80, members should note that the Second International Congress of Systematic and Evolutionary Biology (ICSEB-II) takes place at UBC immediately following Botany 80. Arrangements are being made to allow delegates who plan to attend both meetings to coordinate their room reservations although registration must be made separately. It is also noted that Botany 80 begins 3 days before the Canadian Society of Plant Physiologists Meeting in Calgary, and we hope to see several members of CSPP who can get to both meetings.

Full details of Botany 80 will appear in the January issue of the Bulletin. The call for papers will be in January. Abstracts are due by March 1st.

NO PHOTO SALON AT 1980 CBA/ABC ANNUAL MEETING

The Board of Directors agreed that because of security problems in displaying members' photographs and organizational difficulties in judging, the photo contest should be suspended for the 1980 Vancouver meeting. If members feel strongly that this activity should be continued, please let Nancy Dengler, or another Board member, know, along with your suggestions for modus operandi.

CALL FOR NOMINATION OF OFFICERS FOR CBA/ABC 1980-81

The By-Laws for incorporation were adopted and became effective on August 15, 1978. The officers, their eligibility and terms and the procedures for their nomination and election are fundamentally the same as specified in the old constitution. The by-laws dealing with nominations and elections are as follows:

By-Law 41. "A call for nominations shall be made at the annual meeting of the Association for the year prior to that in which the nominees will serve. A call for nominations shall also appear in the Associations' Bulletin immediately following this annual meeting of the Association. All nominations must be delivered in writing to the Secretary of the Association by December 31st [changed from Nov. 30th]. Nominations must be signed by not less than three (3) members [changed from 6] in good standing. If the membership does not provide a sufficient number of nominations by the deadline of December 31st, then it should be the duty of the Nominating Committee to complete the slate of nominations".

By-Law 43. "All nominations must be accompanied by the consent of the nominee".

By-Law 44. "A ballot bearing the names of the nominees in alphabetical order by office with their addresses shall be mailed to each member in good standing not less than four (4) weeks in advance of the annual meeting of the Association. Ballots must be returned to the Secretary of the Association prior to the closing date which will be established fourteen (14) days before the date of the annual meeting of the Association. If the Secretary is a nominee, the President shall appoint a returning officer who is not a current nominee".

At the annual meeting at Carleton University a call for nominations for the following members of the Board of Directors was made:

1. President-elect (1 year)
2. Treasurer (2 years)
3. 3 Directors (2 years)

Les membres sont invités à retourner chaque mise en nomination au secrétaire pour le 31 décembre de cette année. Toute nomination doit être accompagnée du consentement écrit de la personne nommée, laquelle doit être membre régulier et en règle.

Members are requested to return nominations accompanied by the written consent of the nominee prior to December 31, 1979 to the Secretary:

Dr. David Cass
Secretary, CBA/ABC
Department of Botany
University of Alberta
Edmonton, Alberta
T6G 2E9

On behalf of the Nominating Committee.
J.M. Shay, Chairman

C'est un soleil radieux qui nous accueillit cette année dans la vallée de l'Outaouais, et ce, tout au long du congrès. L'excursion dans la région entre Ottawa et Almonte entraîna des réactions très favorables de la part des participants. La sortie de Mer Bleue, pour sa part, s'avéra plus mouvementée. La tourbière étant inondée, nous fûmes réorientés vers la forêt expérimentale, maintenant propriété de la CCN. C'est à cet endroit que notre autobus s'enlisa. C'est donc à pied, sous un ciel cependant splendide, que nous fîmes le reste du chemin.... Malgré les déboires mineurs de la matinée, la randonnée de l'après-midi, au magnifique Parc de la Gatineau, fut un franc succès. Ce fut dû, en grande partie, à l'excellence de nos guides, Mm. Daniel Gagnon et W.G. Dore. Cette excursion fut à la fois riche d'enseignements à propos des plantes et de leur distribution, et une excellente occasion d'admirer les paysages splendides qui s'offraient à nous du haut de l'escarpement d'Eardtley.

La première journée de congrès partit d'un très bon pied avac la causerie-thème donnée par le Dr. Walter Lewis (St. Louis, Mo.), un conférencier exceptionnel. Sa discussion sur l'utilisation des plantes à des fins médicinales nous aura sûrement tous fait réfléchir. Plus d'un d'entre nous sera alerte lors de sa prochaine visite au magasin naturiste du coin! Le symposium "Documentation sur la forme et le développement des plantes" fut ensuite suivi avec intérêt par les membres.

La journée et demi suivante fut des plus occuppée. En effet, toutes les communications, orales et en offiche, furent concentrées sur cette courte période. Malgré cela, l'intérêt et la qualité des contributions furent de haut calibre et l'auditoire nombreux et attentif. Mentionnons aussi la qualité des photographies et textes exposés.

C'est à la Ferme expérimentale centrale que nous fûmes reçus cordialement le jour suivant. Des visites guidées des différentes sections à orientation botanique de la Ferme, comme l'Arboretum, ainsi qu'un agréable déjeuner champêtre nous y attendaient. Quelle belle occasion pour rencontrer anciennes et nouvelles connaissances! Une visite des serres et de la résidence du Gouverneur Général (d'ailleurs patron du Congrès et de l'Association) occuppa la majeure partie de l'après-midi. Celui-ci se termina par une visite-éclair (c'est peu dire) de la section botanique du Musée national.

Le banquet annuel couronna cette journée bien remplie. Comme apéritif? Un pétillant concert de cloches interprété par le "Adult Hand-Bell Choir of Rideau Park United Church", dont fait d'ailleurs partie notre hôte du congrès, le Dr. W. Illman. Celui-ci mérite d'ailleurs d'être remercié pour tout le travail qu'il y a fait. Au cours du banquet, on présenta deux médailles Lawson, et les prix Mary Elliott et Lionel Cinq-Mars. Un groupe de professionels du spectacle, dont le style rappelait les années d'avant la guerre et qui en rendit plusieurs nostalgiques, nous servit enfin de digestif.

Le congrès fût clôturé par le symposium: "Evénements significatifs dans l'évolution des plantes", commandité conjointement par l'ABC et l'Association Canadienne des Palynologistes. De nombreux paléobotanistes réputés sont venus y présenter des communications stimulantes et nous attendrons avec impatience la publication des manuscripts.

Nous nous devons de remercier ici l'Université Carleton et les organisateurs du congrès pour leur accueil et leur diligence. Peut-être pourrions nous déplorer l'absence presque totale du français dans un congrès tenu dans la capitale nationale par un organisme bilingue. Pouvons-nous espérer un plus grand effort en ce sens dans le futur? Néammoins, des points-de-vue scientifique et humain, ce congrès fut un franc succès et témoigne de la vitalité de l'ABC. Un bon gage du futur!

Luc Brouillet

GEORGE LAWSON MEDALS AWARDED TO DR. B.R. BAUM AND MR. I.L. CONNERS

George Lawson Medal honours the memory of one of the significant pioneers in Canadian Science. George Lawson was a noteworthy botanist, published 107 scientific papers, was the founder of the first Botanical Society of Canada and a founding member of the Royal Society of Canada. He was the first professor of chemistry and natural science at Queens and later at Dalhousie. The purpose of the medal is *To provide a collective and formal expression of the admiration and respect of botanists in Canada for the excellence of the contribution of an individual to Canadian botany.*

As your President, I have the pleasant duty of announcing that for 1979, the Association has decided to make two George Lawson Medal awards for distinguished contributions to Canadian botany.

BERNARD R. BAUM

Bernard R. Baum was born in Paris, France in 1937. He continued his education after three years of military service and in 1963 received an M.Sc. in Taxonomy, Chemistry and Genetics. He then enrolled for a Ph.D. in the Hebrew University in Jerusalem, the focus of his studies being taxonomic botany, cytogenetics and statistics. He received his Ph.D. in 1966 and went to the Museum National des Sciences Naturelle in Paris for postdoctoral work. Dr. Baum and his family immigrated to Canada in 1966 when he joined the staff of the Plant Research Institute in Ottawa. He became a Canadian citizen in 1971.

Dr. Baum is a member of several professional societies including the Canadian Botanical Association, the International Association for Plant Taxonomists, the American Society of Plant Taxonomists, and is a fellow of the Linnean Society of London. He is the author of six books and is the author or co-author of 73 scientific papers. His first book, A monograph of the genus Tamarix, was published in 1966.

Recognizing his sustained and continuing contribution to science we are acknowledging the particular achievement of Bernard R. Baum in his book entitled Oats: Wild and Cultivated - a Monograph of the Genus Avena L. (Poaceae). This monograph provides a sound taxonomic basis for understanding and working with the world's

oats and will undoubtedly become a classic in its field. The genus is critically delimited and divided into seven sections and 27 species by Dr. Baum on the basis of his study of more than 5,200 accessions of wild oats, many of them collected by the author in the course of his wide travels; another 5,000 strains received from the USDA and grown for study in Ottawa; and 12,000 specimens deposited in herbaria. Two aspects of Dr. Baum's investigation of this large amount of material contributed markedly to the unusual character of his work. First, a great many of the samples were dissected and studied microscopically for characters not normally employed in the classification of higher plants. Second, the numerical analysis of these and other features of the plants, carried out with rigor and versatility by Dr. Baum have provided novel insights both into the relationships of the plants and their phylogeny.

For this largely autogamous genus, Dr. Baum adopted a morphological species concept, and has characteristically provided a well-reasoned discussion of the principles he adopted in doing so. Because little is known about hybridization between species, and because there is little evidence for gene flow, the application of the "biological" species concept would actually have hindered, rather than facilitated, our understanding of the genus. The illustrations in this book are excellent; from the color photographs of habitats to the numerous photomicrographs of critical parts, to the handsome computer-generated maps. They, like the work as a whole, reflect the scholarly care that has contributed to its success. The study of the literature that preceded the production of this work was unusually thorough, with over 9,000 references examined. The analyses of the typification and nomenclature of the taxa are indicative of a master of these methods, and the highly explicit and critical style that Dr. Baum has used for the presentation of his observations and conclusions should provide a valuable model for others to emulate.

A decade of painstaking work by Dr. Baum has culminated in this excellent book, which will serve as an inspiration for many. It is a contribution of international stature which clearly qualifies Dr. Baum for the George Lawson Medal. For a single contribution to Canadian botanical knowledge of outstanding distinction, it gives me great pleasure to present you with the George Lawson Medal and to warmly congratulate you.

Dr. Baum receiving the Lawson Medal from CBA/ABC President Dr. Jennifer Shay

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IBRA LOCKWOOD CONNERS

Ibra Lockwood Conners was born in 1894 at Rodney, Ontario. In 1918 he received his B.A. from McMaster University and two years later his M.A. from the University of Toronto, his thesis entitled Biological Specialization with Special Reference to the Grass Hosts of Puccinia coronata.

From 1920-25 Mr. Conners worked for the Canada Department of Agriculture in Brandon studying rust and smut fungi, and spent the next four years in Winnipeg. In 1929 he moved to the Central Experimental Farm in Ottawa and served as the Curator of the National Mycological Herbarium and compiler of the annual reports of the Canadian Plant Disease Survey until 1953. From 1929-56 he served as Head of the Canadian Disease Survey, moving to the Canada Department of Agriculture in 1953 as Assistant to the Chief of Botany and Plant Pathology Division. He was remarkably successful from the beginning as Curator and compiler, despite many difficulties. Although he had no assistance with the survey for many years, he raised its reports to an unprecedented level of accuracy. His critical checking of entries was an heroic undertaking at a time when systematic mycology was not recognized as a discipline in the Department of Agriculture. The mycological herbarium was organized along modern lines, which allowed its

great expansion in later years to be achieved with minimal reorganization, and later curators have had good reason to bless Mr. Conners' sound foresight in this respect.

Time not consumed by the survey, the herbarium, and plant disease inspection trips, was fully occupied by identificaion of submitted specimens; mycological research was almost impossible. In 1951 there was an increase in mycological staff and the creation of a Mycology Section (as a result of Conners' recommendation) and a recognition of the need for mycological exploration in Canada. Consequently, the herbarium began to grow rapidly and to develop into a research facility of international importance.

Only one with Ibra Conners' experience and dedication could have assembled a checklist of the published reports of fungi growing on all plants in Canada. By the early 1960s he had compiled thousands of published and unpublished records of Canadian plant diseases of fungi on plants. The resulting monumental An Annotated Index of Plant Diseases in Canada and Fungi on Plants in Alaska, Canada and Greenland appeared in 1967. It can be claimed, with some justification, to be the most important book on the plant diseases of Canada. The task of compilation was formidable (an equivalent volume for the United States had half-a-dozen editors) but the result is far from a mere compilation, for Mr. Conners himself critically assessed many of the records, a task for which his early researches on rusts, smuts, and other fungi and the experience derived from a quarter of a century's service as Curator of the National Mycological Herbarium well fitted him. He completed the Index when he was 73 years old when many persons have either retired or contemplate retirement. But he then started a new project; the assembling of original descriptions and illustrations of new genera of fungi, a project that combines great utility with enormous scope. It now contains about 3500 generic names and their descriptions. In 1970 he accepted the job of "editing" a history of Plant Pathology in Canada. In actuality he wrote or rewrote most of the 250 page book. Apart from the two books already mentioned, Mr. Conners is the author or co-author of 64 scientific papers.

By nature, Ibra Conners is modest, retiring, and completely unselfish. He is an inspiration to his colleagues and peers by his dedication and meticulous attention to detail in everything he does. He is a highly distinguished and respected scientist and a most worthy candidate for the George Lawson Medal in recognition of his cumulative, distinguished contribution to the advancement of Canadian Botany. We are very sorry that Mr. Conners is unable to be with us this evening. As a founder member of the Canadian Phytopathological Society he had promised to attend their 50th Anniversary meeting in Lethbridge, June 25th. He asked that Dr. D.B.O. Saville be allowed to accept the award for him.

On behalf of the members of the CBA/ABC I have the greatest pleasure in presenting the George Lawson Medal to Ibra L. Conners.

Mr. Conners with the Lawson Medal presented to him at the 1979 Annual Meeting

MARY E. ELLIOTT SERVICE AWARD

The recipient of the Mary E. Elliott Award for meritorious service to the Canadian Botanical Association is Paul Raymond Gorham. Paul was one of the driving forces at the first organizational meeting of Canadian Botanists held in Ottawa in March, 1964. Together with Dr. R.A. Ludwig (then Director of the Plant Research Institute) he played a most active part in the meeting sponsored by the Royal Society of Canada. By June a Provisional Committee had developed a program and a draft constitution, compiled a list of over 400 botanists, and made arrangements for a founding meeting. As the Committee put it:-

The need in 1964 for, and interest in, an organization of botanists is greater now than it has been at any time in the past. Canadian botanists were formerly to be found in a relatively few institutions. There are now botanists in almost all of the many new universities that have sprung up over the past ten years. This complicates the kind of communication that is so essential to the development of a vigorous science. We need a means of exchanging scientific ideas and of presenting a united voice on matters of common concern. It is the reponsibility of botanists to see that their science is developed vigorously and in the best interests of the nation. This can only be done if we create public interest and confidence, encourage support of research and take an interest in our students - in short, if we shoulder our full professional responsibilities. The key obviously lies in a strong national organization.

The founding meeting of the Canadian Botanical Association took place at Carleton University in 1965, attended by 179 delegates. As Head of Plant Physiology Section, NRC, and as convenor of Section III of the Royal Society of Canada, Paul had the foresight to see that if Botany was to play an active role in the Canadian scene it must be organized. Since 1965 Paul's dedication and faith in the CBA/ABC has never waivered. He has participated in all offices of the organization, giving unstinting service on many committees, culminating in his successful term as president in 1977/78. During his Presidency Paul guided the CBA/ABC through the procedures for Incorporation.

Paul's achievements in the field of Botany are impressive. Besides numerous publications, he is a member of eleven societies and was on the editorial board of Plant Physiology (1973-78). He achieved distinction in 1961 by being elected a Fellow of the Royal Society of Canada, was awarded the Centennial Medal in 1967 and given an honorary D.Sc. by the University of New Brunswick in 1973. He has been Chairman of the Department of Botany at the University of Alberta since 1971. As a person, he is highly thought of by his colleagues, graduate students and association members. It is with great pleasure that on behalf of the members of the CBA/ABC I present the Mary Elliott Service Award to Paul Gorham and offer him my sincere congratulations.

Dr. Gorham receiving the Mary Elliot service award from CBA/ABC President Dr. Shay

THE RUTH ARNOLD FUND

A fund has been established at the University of Western Ontario to the memory of the late Ruth Horner Arnold. It will provide for an annual fellowship for post-graduate study in mycology or a closely related area of microbiology, and a book prize for excellence in this field in the graduate year. Contributions may be made to the University (Ruth Horner Arnold Fellowship Fund) through the Department of Alumni Affairs, University of Western Ontario, London, Canada N6A 5B9.

FORTHCOMING MEETINGS

Third International Mycological Congress

The Executive Committee of the International Mycological Association has accepted the invitation of the Mycological Society of Japan to hold the Third International Mycological Congress (IMC3) in Japan in 1983. The congress will be based at either Kyoto or Tokyo, most probably in late August. Further information will be circulated when detailed arrangements have been finalized.

D.L. Hawksworth, Secretary, IMA

President-elect Dr. Nancy Dengler congratulates Luc Brouillet, winner of the Lionel Cinq-Mars award for the best paper presented by a student at the 1979 meetings

REPORTS FROM THE SECTIONS

The Systematics and Phytogeography Section

The annual general meeting of the S & P Section, held on July 18, 1979, at Carleton University, Ottawa, chaired by Mary Barkworth, was attended by about 65 members. The constitutional amendments proposed by John McNeill (distributed March 7, 1979) were passed. Members of the Executive Committee for 1979-80 are: V.L. Harms (Chairman), S.P. Vanderkloet (Secretary), M.E. Barkworth (Immediate Past Chairman), F.R. Ganders, C. Hamel, J. McNeill, and D.H. Vitt.

Highlights of the meeting included the various subcommittee reports: 1) I.M. Brodo reported for the Lichen Subcommittee that the computerized "Catalogue of the Lichens of Canada, Alaska and Greenland" has now become an available working tool for lichenologists in various institutions; a major improvement is an input of synonyms that is now underway; 2) G.W. Argus reported for the Rare and Endangered Species Committee that the National Museum's rare plant lists have now been published for Ontario, Alberta, Nova Scotia, and Saskatchewan, with the Manitoba list shortly available; the preparation of rare plant lists for Yukon, N.W.T., New Brunswick and Quebec are underway; 3) J.M. Gillett reported for the Local Floras and Checklists subcommittee on various projects underway especially in Central Canada; the feasibility of setting up a national depository for checklists was brought up by the Chairman, but after considerable discussion was tabled because of inadequate time; 4) J.M. Gillett also reported that the Flora North America project has been revived but was presently rather in limbo while funding was being sought within the United States for the appointment of editors; Canadian participation on the editorial board would be welcomed if the necessary funds were to be found here; 5) V.L. Harms reported for the CBA Northern Licensing and Plant Collections Subcommittee (see subsequent article).

Later at a separate meeting of herbarium curators and associates, Dennis Woodland presented the preliminary "Index to Canadian Herbaria" that he had prepared at the request of the 1978 meeting. This was reviewed, amended and supplemented by those present. The final document will be distributed to the membership. The frequent lack of nonpermanent preservation of voucher specimens for recent botanical surveys and environmental impact studies was brought up for discussion. Also briefly discussed were criteria for determining where such specimens - especially those collected in the Canadian North - should be deposited, but no specific recommendations were made. Dr. Tony Reznicek was asked to chair a committee to draft a statement of criteria for defining adequately curated herbaria for the permanent disposition of important collections.

After some discussion, the question of revising or reissuing the "Code of Ethics for Herbarium Users" was referred to the S & P Section's executive for further action.

Vernon L. Harms

The General Section

On June 19, 1979 at 1:00 p.m., in the context of the Annual Meeting of CBA/ABC at Carleton University, 23 members of the General Section assembled for a business meeting presided over by the Chairman, T.A. Steeves. The minutes of the previous meeting (August 14, 1978 at St. John's, Newfoundland) were approved as published in the October 1978 issue of the Bulletin.

A proposed revision of the General Statutes of the Section, designed to simplify an overly complex administrative machinery had been published in the April, 1979 issue of the Bulletin and was now brought before the meeting. The Chairman reported that he had received only one comment upon the proposal and that this was favourable. The revision was then adopted by the unanimous vote of those present.

There followed a lively discussion of possible General Section participation in the program of the Vancouver meeting next year. There was general agreement that a presentation on botanical teaching would be entirely suitable. Accordingly, a motion was passed to the effect that the General Section, in collaboration with appropriate sections of the Botanical Society of America, undertake to organize a workshop on teaching in which participants would have an opportunity to see (and, where possible, try out) materials and procedures which contributors have found to be particularly successful in their own teaching. Dr. Iain Taylor agreed to contact representatives of the B.S.A. sections, to solicit suggestions and contributions from CBA members and to make local arrangements. He was assured the whole-hearted support of those present. Dr. Taylor was also asked to urge the Local Committee to make every possible effort to place the program of the meeting in the hands of members well before the time of the meeting.

The election of officers was carried out in accordance with the new statutes. Drs. R.I. Greyson and R.E. Dengler were chosen Chairman and Secretary-Treasurer respectively for one year terms by acclamation.

The meeting concluded with a discussion of the role of the General Section and of possible means of improving its effectiveness. The official membership of 266 does not reflect the actual strength of the Section since members of CBA who do not indicate any section preference are automatically assigned to General. In order to increase interest in the Section it was suggested that one or more articles might be prepared for the Bulletin outlining the fields of Botany represented by the General Section and inviting the formation of special interest groups under its auspices. A motion was passed asking the Treasurer of CBA in future to include in the sectional membership list only those who have specifically indicated their interest by checking the appropriate box at the time of payment of the annual membership fee. The intent of the motion was primarily to eliminate unnecessary costs when the officers communicate directly with the membership by mail; but it was also felt that it would be an advantage to identify those who have a positive interest in Section activities.

The meeting adjourned at 2:00 p.m.

R.I. Greyson

BCC/CCB REPORT

The "Spring" meeting of Council was held during the first week of April, with representatives from all our member societies, the Agricultural Institute of Canada and SCITEC.

Following the example of the Medical Research Council, the NSERC is also well on the way to finalizing its own 5-year plan. Some aspects of this plan give cause for concern, such as the lack of a clearly defined role for the biological sciences and a very strong emphasis on both new areas of national concern involving engineering and technology.

On the positive side, a proposal to fund up to 100 new "Research Assistant Professorships" annually for up to 15 years will go some way to ensure that a whole generation of young scientists, including biologists, are not entirely lost to the universities because of lack of normal tenure-stream positions.

Looking to the future, Council unanimously agreed to hold a BCC/CCB Congress in 1983 at which all our member societies would hold their own annual meetings and join with each other in a few plenary meetings. Approval and support from societies will be sought at the society AGM's this summer and, if agreed, planning will commence next fall. It is probable that the International Union of Biological Societies (IUBS) will be meeting in Canada in 1985, and the BCC/CCB has expressed interest in hosting the meeting.

Council also approved in principle the establishment of an annual award, to be known as the Biological Council of Canada Medal, to be given to those who had made "an outstanding contribution to the advancement of the biological sciences in Canada". The criteria for selection will be approved by Council in the fall with a call for nominations by December 1st, 1979. The first award will be in 1980. Further details will be communicated to all societies.

The negative impact of the Royal Society's report, "Press of Knowledge", continues to give concern and has been instrumental, in at least one case, in denying financial support from NSERC for a biological journal. Council unanimously approved resolutions calling for the NRC to retain control of the publication of their present journals and for the transfer from NSERC to NRC of responsibility for grants-in-aid of publishing, thus consolidating all aspects of federal support for scientific journals with one agency. The new NRC Advisory Board on Publishing has recently circulated a questionnaire to societies on their interest in becoming involved in the publication of their appropriate journal. We hope that this will not become necessary and view a strong central control of publishing, such as is possible by the NRC, as being critical as a number of biological journals continue to evolve, including the establishment of new journals in specialist fields. The uncertainty presently surrounding the future of the NRC journals is a major concern not only for biologists but all scientists interested in developing first-class Canadian scientific publications.

D.F. Mettrick, President

EPIPHYTES

During the June '79 CBA meeting in Ottawa, I presented a paper concerning Diapensia lapponica L. and its positions within successional processes of an alpine site. When displaying the following diagram I stated that plants which germinate and grow upon a Diapensia dome could properly be called epiphytes. My use of this term brought forth more debate than any other aspect of my paper. The discussion was surprising and I feel it illustrates a need for further mention.

The epiphytic strategy may be permanent or exist only during "youth" until roots are sent down into ground soil. Both conditions are abundantly exhibited in tropical communities as well. Most of the discussion centred on the application of the word epiphyte. Many in the audience seemed to display the mental picture of an epiphyte being a tropical, vascular, tree-living plant. This may be the common concept but it imposes an unjustified narrowness. In fact epiphytes are probably ubiquitous. They may be parasitic or non-parasitic. They are found from the tropics to the polar regions. The major change seems to be one of floristics. Lichens and bryophytes are predominant but by no means exclusive in the arctic and boreal zones and vasculars (orchids, bromeliads, ferns, etc.) are more apparent in certain tropical and subtropical areas (Janzen, 1975). Phycologists have long referred to epiphytic algae growing upon other species of many sizes.

The discussion presented in Ottawa and here should make it clear that the work epiphyte is a broad and general term for the classification of a certain type of living position. The term may be qualified depending upon the circumstances. For example, arctic-alpine vascular epiphytes, or boreal-bryoid epiphytes.

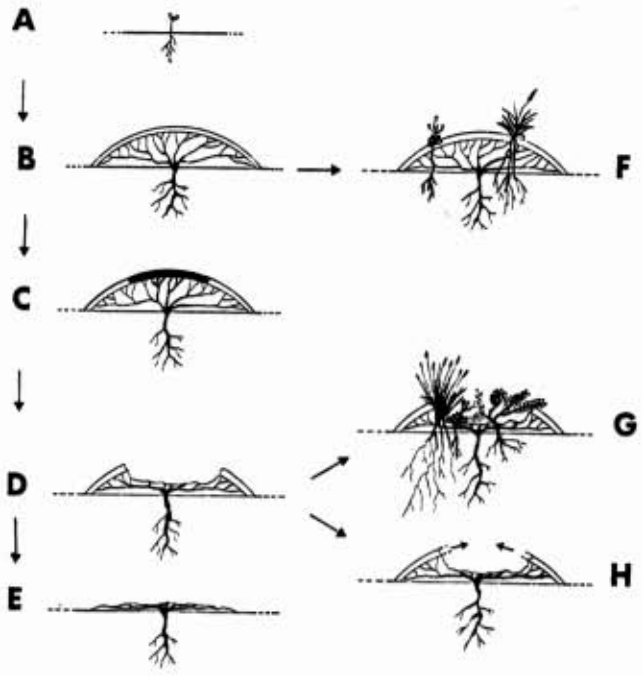
I am unaware of the person or publication where the word epiphyte was first coined. If any reader could inform me of this I would be grateful.

References

Janzen, D.H. 1975. Ecology of Plants in the Tropics. Studies in Biology No. 58. Butler & Tanner Pub., London. (Epiphytes p. 13-14).

Robin T. Day, Biology Department, University of New Brunswick

The life history of Diapensia lapponica L. A = germination, B = maturation, C = damage, D = degeneration, E = death. F and G = colonization by other species, permanent or temporary epiphytes.



RECENT PUBLICATIONS

Plantae Occidentalis: 200 Years of Botanical Art in British Columbia. 1979. House, Maria Newberry. Technical Bulletin, The Botanical Garden, The University of British Columbia, Vancouver, Number 11. 132 pages, illustrations. Price $8.95.

This publication, designed to accompany the major art exhibition produced by the Botanical Garden and now showing at the UBC Museum of Anthropology, details the historical development of botanical and floral illustration in British Columbia during the last two hundred years. Beginning with an account of the early exploration voyages to the west coast of North America, PLANTAE OCCIDENTALIS outlines the important role played in the discovery and development of British Columbia by explorers, botanists and plant collectors. Their depictions of the new species of plants they encountered, made initially to provide a visual record for the voyage backers and the European scientific community, represented the beginnings of botanical art in the province. The images of the new land that were transmitted to the rest of Canada and Europe stimulated scientific and popular interest in the collection and description of the vegetative resources of the Pacific coast.

As settlement of the province increased, floral illustration began to flourish among the many women painters of Victorian Canada. Influenced by prevailing cultural attitudes that designated flower painting as an appropriate occupation for Victorian ladies, their delicate and often sentimental treatment of the flora provides a striking contrast to purely scientific drawings. Their large volume of work, as documented in this publication, represents a unique contribution to Canadian art.

The book also outlines the various techniques and methods, such as woodcuts, silk-screen and watercolor, used by contemporary botanical artists to depict flowers and plants. Another section contains an ethnobotanical commentary that describes the appearance, growth habit, and cultural and economic value of each of the many native British Columbian plants illustrated in the accompanying art exhibition. Often these plants provided not only food, but also herbal remedies for the native Indians of the Pacific Northwest, many of which have been verified by modern medicine.

In addition, there are 45 full-color illustrations, and a catalogue containing the biographies of the fifty-three historical and contemporary artists and 109 small black and white photographs of their work. PLANTAE OCCIDENTIALS is both an informative reference book and a beautifully illustrated documentation of the fascinating union between the disciplines of science and art.

A Guide to the Literature on the Herbaceous Vascular Flora of Ontario by James L. Hodgins. 73 pages. Published in 1978 by the Botany Press, 90 Wolfrey Avenue, Toronto, Ontario, M4K 1K8. Price $4.00 per copy.

Literature is listed under the main headings of Books, Papers, Maps, Botanical Surveys and Journals. Books are sublisted under flora, food-medicine-crafts, ecology, history, horticulture and miscellany. Papers are similarly sublisted but there is also a taxonomic listing which will prove of interest to many of our members. Inevitably this latter is incomplete for it is difficult to determine what papers to include and what to exclude, for many deal with species occurring in Ontario but not with Ontario per se. A section giving an alphabetical listing of counties, districts and municipalities and the names of authors who have carried out botanical surveys in these areas will prove a useful guide for people with regional interests. At the end of the booklet there is a computer printout of a provisional checklist of the herbaceous flora of Ontario. However, the exclusion of grasses, sedges and many aliens makes it of only limited value.

The booklet will prove to be a useful reference guide to anyone interested in the flora of Ontario and to workers in other parts of the continent where many of the same species occur.

J.K. Morton

Theoretical Plant Morphology edited by R. Sattler. Acta Biotheoretica. Vol. 27 (1978). Supplement: Folia Biotheoretica No. 7. Leiden University Press. 142 p. $17.50.

Ce livre regroupe quatre conférences présentées lors d'un symposium sur la morphologie théorique, dans le cadre des activités du XII^{e} Congrès international de botanique, tenu à Léningrad en 1975.

Dans l'introduction ("What is theoretical plant morphology"), Sattler définit la morphologie théorique, expose ses buts et décrit sommairement les problèmes susceptibles de former son champ discursif. La citation suivante rend bien compte de toute la portée épistémologique de cette discipline qui, à plusieurs égards, recoupe les objectifs d'une morphologie pratique qui va plus loin que la simple accumulation de données:

> "Theoretical morphology deals with the discovery (invention), formulation, and analysis of morphological concepts, models, theories, and their test implications. It also focuses on the logical relation between theoretical constructs and deals with conceptual frameworks and paradigms as a whole. Finally, it is concerned with the implications (sic) theoretical constructs and their logical relations (sic) may have for general philosophy." (p. 6).

De là, on peut entrevoir les deux grandes orientations de la morphologie théorique: la construction de modèles et l'analyse épistémologique du discours morphologique lui-même. Mais comme le note Sattler, il est difficile de tracer une limite nette entre morphologie théorique et philisophie de la morphologie. Les trois essais que nous commenterons portent sur le premier aspect, c'est-à-dire la construction de modèles théoriques et la formulation de lois morphologiques.

Toujours selon Sattler, la morphologie théorique devrait, entre autres, se pencher sur les sujets suivants:

- -le sens des termes employés en morphologie descriptive;
- -la valeur épistémologique des concepts d'homologie et de type;
- -les relations entre la morphologie comparée et l'évolution;
- -la construction de modèles mathématiques qui pourraient rendre compte de la diversité des patrons morphogénétiques;
- -les relations entre forme et fonction.

C'est là un vaste champ de recherche qui a déjà donné des résultats fort probants.

L'article de Lindenmeyer ("Algorithms for plant morphogenesis") touche un domaine qui connaît un essor considérable depuis quelques années: l'application du formalisme mathématique aux études morphogénétiques. Lindenmeyer se pose deux questions en abordant la morphogenèse d'un organisme ou d'un organe:

> "in what sense is the observed process due to cell lineages and in what sense is it due to interactions among the cells?" (p. 37).

Il en vient à la conclusion que le formalisme mathématique employé par ses prédécesseurs n'est pas applicable à la morphogenèse parce que les organismes sont complexes, non homogènes, et qu'il faudrait en réalité autant d'équations différentielles qu'il y a de cellules. Pour résoudre ce problème, il utilise la théorie des algorithmes. Les algorithmes sont des ensembles d'opérations logiques formalisées qui permettent de faire une suite d'actions en vue de parvenir à un but. Les algorithmes utilisés pour décrire le développement d'un organisme sont de deux types: ceux qui expriment la durée et l'emplacement des divisions cellulaires et ceux qui rendent compte du mouvement et de la mort des cellules. Après avoir exposé les prémisses de sa méthode, Lindenmeyer construit des algorithmes pour différents organismes et structures: le patron de division d'Abanbaena catenula, le développement de la feuille d'Athyrium filix-femina, le développement de l'inflorescence d'Aster novae-angliae et les patrons phyllotaxiques. Naturellement, l'emploi d'un ordinateur s'avère obligatoire pour l'étude des structures complexes. Les exemples apportés par Lindenmeyer nous montrent que les algorithmes constituent un instrument approprié et efficace pour décrire la morphogenèse réelle d'un organisme, contrairement aux constructions mathématiques qui ne tiennent compte que de la forme externe. Lindenmeyer souligne aussi, en terminant, que l'utilisation des algorithmes élimine en quelque sorte les ambiguïtés inhérentes aux descriptions morphologiques.

L'article de Givnish ("Ecological aspects of plant morphology: leaf form in relation to environment") traite, comme le titre l'indique, des relations entre la forme d'un organe et son milieu. Givnish se demande, en premier lieu, quelle peut être l'influence de la forme et de la grandeur des feuilles sur le taux de photosynthèse. Il construit donc un modèle de feuille aux caractéristiques optimales pour un environnement donné, en ce qui touche la forme, la dimension, l'épaisseur et la nervation. Pour bien montrer comment les différentes composantes de la feuille interagissent entre elles et avec l'environnement, il déduit des équations permettant de calibrer et de quantifier les variables impliquées. Toutes ces équations sont basées sur la relation coût-bénéfice: une plante doit avoir un gain photosynthétique net qui dépasse ses pertes dues à la transpiration si elle veut survivre et croître. Ceci lui permet d'expliquer la présence de tel ou tel type de feuille dans un milieu donné. Il s'agit en fin de compte d'une morpho-écologie par laquelle Givnish tente d'expliquer la valeur adaptative de certaines formes.

L'article de Meyen ("Nomothetical plant morphology and the nomothetical theory of evolution: the need for crosspollination") pose les jalons d'une morphologie théorique qui aspire à trouver les régularités structurales du règne végétal:

> "in other words, I postulate that there are inherent (immanent) nomothetics (i.e. a subjection to certain laws) in evolution, taxonomy and meronomy (morphology, ecology and physiology) which are mutually irreductible."

Constatant les variations morphologiques qui existent dans le règne végétal, Meyen a développé, à partir des travaux de Vavilov, le concept de "repeating polymorphic set" désigné sous le terme de "refrain" dans le texte de 1978. Un "repeating polymorphic set" (R.P.S.) ou "refrain" est un ensemble de modalités présentées par une structure donnée, placées dans un ordre précis, observables dans différents taxons, indépendamment de leur rapport phylogénique, de leur niveau taxonomique et de leur environnement. Chez les Apiaceae et les Ranunculaceae, par exemple, les feuilles présentent les mêmes "repeating polymorphic sets". Ceux-ci constituent, au niveau morphologique, des propriétés intrinsèques du règne végétal. Et, comme Meyen l'a noté, la succession des membres dans un ensemble de variations peut ou non coïncider avec une série ontogénétique ou phylogénétique. Comme ces gammes de variations (R.P.S.) se répètent à différents niveaux taxonomiques, il devient possible, en se basant sur des formes observées dans un taxon d'ordre inférieur, de prévoir l'éventail de formes qui pourra exister à un niveau supérieur. De l'avis de Meyen, la découverte d'équations méronomiques (décrivant un "refrain") donnera une valeur de prédiction aux "repeating polymorphic sets". Mais en attendant, il faut se contenter de faire des extrapolations empiriques.

Certains seront peut-être portés à voir chez Meyen une recrudescence de la typologie goethéenne ou trollienne. Or, à notre avis, la typologie de Meyen, qu'il définit comme une théorie générale de la diversité, n'est pas fondée sur l'idée de type au sens goethéen, car chez Goethe:

> "cette idée correspond parfaitement à l'organique dans l'organisme, c'est l'idée de l'organisme primordial, le type de Goethe...Ce n'est pas un simple concept intellectuel, elle est ce qui, en chaque organisme, est l'organique véritable et sans quoi cet organisme ne serait pas. Elle est même plus réelle que chaque organisme effectivement existant, parce qu'elle se manifeste en chacun. Elle exprime aussi l'essence d'un organisme plus pleinement, dans une plus grande pureté que chacun en particulier". (Steiner, Introduction, In: Goethe, Métamorphose des plantes. Triades, 1975, p. 47).

Chez Meyen, le type se trouve réduit à n'être qu'un membre ordinaire d'un ensemble polymorphe (R.P.S.).

Les trois articles que nous venons de résumer ont au moins un point en commun: ils visent à traduire la diversité des phénomènes morphologiques dans un système rationnel qui nous permette d'expliquer le réel. Nous sommes en présence d'une morphologie qui cherche à élaborer des théories, voire des lois, à partir desquelles il devient possible de faire des prédictions. A cet effet, on s'oriente de plus en plus vers l'utilisation d'un appareil-

lage mathématique souvent fort complexe. Or, il faut prende garde de considérer le modèle comme le phénomène lui-même, car le modèle étant une représentation schématique de la réalité, il n'épouse pas toujours parfaitement les données fondamentales. De plus, il reste souvent au stade de description sophistiquée et, en réalité, n'explique pas le phénomène qu'il schématise. Pourtant, cette tendance à appliquer le formalisme mathématique aux phénomènes morphologiques demeure quand même une voie à suivre pour tester certaines théories morphologiques et découvrir les lois du règne végétal.

Il est malheureux que l'autre aspect de la morphologie théorique, celui qui porte sur les règles et la structure du discours morphologique lui-même, n'ait pas été traité dans ce livre. Ce dernier, malgré son originalité, ne rend pas vraiment compte de tout le champ d'intérêt de cette discipline. Peut-être un colloque international, consacré exclusivement à la morphologie théorique, permettrait-il de voir toute son étendue.

Pour terminer, mentionnons que le nombre de pages (142) et le type de présentation du livre ne justifient pas son prix élevé.

Denis Barabé, Jardin
botanique de Montréal

An Atlas of Pollen of the Trees and Shrubs of Eastern Canada and the Adjacent United States, Part IV. Clethraceae to Caprifoliaceae by R.J. Adams and J.K. Morton. Published in the University of Waterloo Biology Series number 10 and obtainable from: The Department of Biology, University of Waterloo, Waterloo, Ontario, N2L Price $2.50 post free if prepaid. Parts I (Gymnospermae to Fagaceae), II (Ulmaceae to Rosaceae) and III (Leguminosae to Cornaceae) are still available at the same price. Part IV completes the publication. All four parts may be purchased as a set for the special price of $6.90 post free, prepaid.

CURRENT CONTENTS

A recent issue of Current Contents (No. 39, September 24) announces that the Canadian Journal of Botany will no longer be one of the journals listed by them. We believe that their decision to drop the leading Canadian journal dealing with plants will be a matter of concern to members of the CBA/ABC. Accordingly, it is suggested that members write to Current Contents to express their concern: The Director, Current Contents, Institute for Scientific Information, 325 Chestnut St., Philadelphia, PA 19106, USA.

DR. LUELLA K. WERESUB

It is with deep regret that we have to announce the recent death of Dr. Weresub. A full appreciation of her work will appear in a forthcoming issue of the Bulletin.

POSITIONS AVAILABLE

A Plant Systematicist is being sought by the Department of Plant Science, Macdonald College, McGill University for a tenure-stream position. Teaching duties will include undergraduate courses in Plant Systematics, Morphology and General Biology of Organisms (plant oriented), and a graduate course in Advanced Systematic Botany or other as developed by the appointee. The appointee will also hold the position of Curator of the McGill Herbarium with approximately 100,000 specimens. Appointment will be made at the Assistant Professor level. Applicants must have a Ph.D. or expect to receive it shortly in plant science with a major in plant systematics/botany. A complete curriculum vitae, a short statement of research interest and names of three referees should be sent to Prof. W.F. Grant, Chairman, Selection Committee, Department of Plant Science, Macdonald Campus, McGill University, Ste. Anne de Bellevue, Quebec, H9X 1C0, Canada. Closing date for application, 1 November 1979 or later if position not filled.

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To ensure prompt delivery of the Bulletin please notify the Editor of any change of address as soon as possible.

Enquiries about membership of the CBA/ABC should be addressed to the Secretary of the Association Dr. D.D. Cass, Department of Botany, University of Alberta, EDMONTON, AB. T6G 2E9.