THE CANADIAN BOTANICAL ASSOCIATION

BULLETIN

L'ASSOCIATION BOTANIQUE DU CANADA

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CBA/ABC ANNUAL MEETING 1981

The 1981 meeting of the CBA/ABC in Guelph was a great success. We thank the local committee for their fine organizational results.

A very important part of the annual meeting has always been field trips. People who come from afar are able to learn about the local flora and have guided tours to interesting areas. Local people may even learn something new about their own area. Our field trip to the Bruce Peninsula, led by Paul Keddy and Paul Catling with numerous assistants and specialists for various parts of the trip, was one of the best field trips we have had. Our special bus driver, geneticist Ron Subden, was very helpful and took us into the field from dawn until dark. We saw many different habitats, from forest to bog to sandy shore. Our leaders showed us plants, and even other aspects of natural history, such as birds, insects, salamanders and fish. In the evenings, we had the excellent hospitality of the Wildwood Lodge, and a review of the day.

After the field trip we returned to Guelph for the reception on Sunday evening. The local committee are to be commended for the efficient reorganization at the last minute.

Larry Peterson's conference symposium on "Approaches to Plant Structure: Then and Now", held on Monday morning, was very interesting and often exciting, with talks by Irene Manton, Margaret McCully, Nina Allen, John Lott and E. L. Thurston.

The contributed papers during the week were very stimulating, although there were often not enough seats available for all those interested. A high quality was found in student papers as well as in the poster sessions.

A Phycological Section symposium, "Nannoplankton: State of the Art", was held on Tuesday. The Ecology Section symposium on "Reclamation of Pits and Quarries" was interesting to those of us working with disturbed areas. The field trip to some of these pits and quarries (led by Roger Suffling) was very good. Other field trips, such as the Fern Foray and the Royal Botanical Garden at Hamilton, were equally successful.

At the banquet, the members were treated to a magnificent meal of several courses, followed by an after-dinner talk by George Setterfield. The following evening the first Luella K. Weresub Memorial Lecture was given by Bryce Kendrick. We all then adjourned to a wine and cheese tasting party at the Faculty Club. The wines included some from locally developed hybrid grapes.

After this fine meeting of CBA/ABC in Guelph, we are all looking forward to next year's meeting in Regina.

Janet R. Dugle

HISTORIC MEMENTO AVAILABLE

The Archivist, Dr. W.I. Illman, announces that copies of the program of the CBA/ABC Founding Meeting held at Carleton University, May 26-28, 1965, are available.

If anyone wishes to obtain a copy of this historic document, please contact Dr. W.I. Illman, ELBA, Carleton Univ., Ottawa, Ont K1S 5B6

CBA/ABC AWARDS 1981

GEORGE LAWSON AWARD

The George Lawson Award of the CBA/ABC was presented to Stanley Hughes at the Annual Banquet in Guelph. The citation read by the President, Michael Shaw, is reprinted below.

Stanley John Hughes

Stanley John Hughes is a member of the scientific staff of the Biosystematics Research Institute of Agriculture Canada. A Welshman by birth, he was educated at the University College of Wales, Aberystwyth and the University College of South Wales, Cardiff, and subjected to further "culturing" at the then Imperial Mycological Institute at Kew under E.W. Mason. He is the author of more than one hundred research papers in which are reflected a steady flow of original and enlightened ideas and which have established him as a mycologist of unparalleled international repute. His now classical paper, "Conidiophores, conidia and classification", published in the Canadian Journal of Botany in 1953, formulated a new approach to the classification of the Fungi Imperfecti and led to our present understanding of this once obscure and unyielding group of fungi. On a senior research fellowship with the Department of Scientific and Industrial Research in New Zealand in 1962-63, Dr. Hughes turned his attention to the "sooty moulds" and, once again, changed the course of mycological thought. This complex of fungi had defied mycologists for about two centuries. By systematic evaluation of the significance of previously unobserved or neglected characters, he demonstrated that the "sooty moulds" in fact represented three different families belonging to different orders of the fungi and thus exemplified an extreme case of parallel evolution achieved by diverse groups of fungi occupying the same ecological niche.

Stanley Hughes' contributions to mycology have been recognized by the Award of the Jakob Erikkson Gold Medal of the Swedish Academy of Science, by election to the Presidency of the Mycological Society of America, and by election to the Royal Society of Canada. It is, therefore, fitting that this modest and gentle Welsh Canadian, who Canadian botanists are proud to count among their scientific colleagues, has been chosen as the 1981 winner of the George Lawson Award for his record of distinguished contributions to Botany in Canada and, indeed, the world.

MARY E. ELLIOTT SERVICE AWARD

The Mary E. Elliott Service Award was presented to Janet Stein at the CBA/ABC Annual Banquet in Guelph. Jean Gerrath of the University of Guelph received the Award on behalf of Janet, who was unable to be present.

Janet R. Stein

Educated at the University of Colorado, Wellesley College and the University of California at Berkeley, Janet R. Stein is Professor of Botany at the University of British Columbia. She is an expert on the algae, author of many papers, mentor of many graduate students, co-author of two well-known introductory texts and a former editor of the Journal of Phycology. She is a founding member of the Association and has served it unstintingly since its inception. In all that she has undertaken - as a field trip leader on Vancouver Island - as first editor of the Bulletin - as a director - as Vice President - as President of the Association in 1971 and in other ways too numerous to mention - Janet Stein has set exemplary standards of leadership and service. It is therefore appropriate that she has been chosen as the 1981 recipient of the Mary E. Elliott award for outstanding service to the Canadian Botanical Association and to Botany in Canada.

OFFICERS OF CBA/ABC 1981-82

President:	Dr. J.B. Phipps Univ. of Western Ontario
Past-President:	Dr. Michael Shaw Univ. of British Columbia
Vice-President:	Dr. M.V.S. Raju Univ. of Regina
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	Dr. K.L. MacInnes Yellowknife
	Dr. M.V.S. Raju Univ. of Regina
	Dr. B.A. Roberts Canadian Forestry Serv., Nfld
Editor *Bulletin*: (ex off.)	Mrs. Sylvia Taylor UBC Botanical Garden
Archivist:	Dr. W.I. Illman Carleton Univ.

CORRECTION

The phone number for Dr. Guy Brassard, the Treasurer of CBA/ABC, is 709-737-7511, not as was given in the July issue of the *Bulletin*.

NEWS FROM THE SECTIONS

Ecology Section

Chairman: Dr. P.B. Cavers, Dept. of Plant Sciences, Univ. of Western Ontario, London, Ont N6A 5B7

General Section

Chairman: Dr. I.E.P. Taylor, Dept. of Botany, Univ. of British Columbia, Vancouver, B.C. V6T 2B1

Mycology Section

Chairman: Dr. J.A. Traquair, Plant Pathology Section, Research Station, Research Branch, Agriculture Canada, Harrow, Ont N0R 1G0

The University of Guelph provided a beautiful setting for the Annual Meeting of the CBA/ABC, June 7-11, 1981. The main conference symposium, "Approaches to Plant Structure: Then and Now", presented a fascinating and stimulating review of microscopical techniques from 17th century single-lens microscopy to fluorescence, Allen Video-enhanced Contrast (AVEC), and electron microscopy.

Mycologists contributed to the paper and poster sessions of the meeting in areas of chytrid and rust ultrastructure, the ecology and morphology of aquatic hyphomycetes, and the ecophysiology of ectomycorrhizal agarics.

The Luella K. Weresub Memorial Lecture, given by Dr. Bryce Kendrick from the University of Waterloo, was most thought-provoking. This lecture was the first in a series of annual addresses initiated by the Mycology Section in memory of a distinguished and internationally respected mycologist. Dr. Weresub was a strong supporter of mycologists and their activities in CBA/ABC. She encouraged young scientists and emphasized the importance of precision and accuracy in communication. Her love for debate stimulated many of her colleagues.

It is fitting that the first Weresub Lecture was given by Bryce Kendrick, an internationally recognized fungal taxonomist, the author of numerous books and papers, recent Fellow of the Royal Society of Canada, and long-time friend and colleague of Luella Weresub. It was also fitting that he chose to speak on the delicate and profound subject of science, politics and reason, the role of the scientist in policy planning and public attitude, and the "forces of unreason" and sociological rationalization that affect science today.

James A. Traquair
Chairman

Phycology Section

Chairman: Dr. H.C. Duthie, Dept. of Biology, Univ. of Waterloo, Waterloo, Ont N2L 3G1

Structure & Development Section

Chairman: Dr. R.I. Greyson, Dept. of Plant Sciences, Univ. of Western Ontario, London, Ont N6A 5B7

Systematics & Phytogeography Section

Chairman: Dr. J. McNeill, Dept. of Botany, Univ. of Ottawa, Ottawa, Ont K1N 6N5

XIII INTERNATIONAL BOTANICAL CONGRESS

The XIII International Botanical Congress in Sydney, Australia, is now over. How quickly time flies! Approximately 3000 delegates from around the world attended, including a number of Canadians. The 16 adults and 1 child who travelled on the CBA/ABC organized travel via Air New Zealand to New Zealand and Australia would agree, I think, that that airline must be considered among the best in the world — free headphones and alcoholic refreshments and friendly stewards certainly helped to pass the hours very pleasantly.

Your Editor attended solely as an Associate Member, and participated only in Family Events, so can say nothing about the scientific aspects of the Congress. I heard that most people were pleased, and hope to have reports in the next issue of the *Bulletin*. The highlight of the trip for many people must have been the opportunity to visit the Sydney Opera House. A second highlight was the film "A Curious and Diverse Flora", which was made for the Congress.

TREASURER'S REPORT

1. Attached is a summary financial statement for the fiscal year ending May 31, 1981. Owing to the early date of the annual meeting, the audit is still in progress. When account is taken of fees now owing to B.C.C. and N.R.C., the real surplus is very similar to last year's, approximately $3,000.

2. Income from memberships was up by $2,352.79 from the previous 12-month period. Total paid-up memberships for calendar 1980 were 330 Regular, 75 Student and 25 Retired. Those for 1981 up to May 31 stand at 181 Regular, 60 Student and 20 Retired. Of these, 21 Regular and 30 Student members are new to the Association.

3. Some windfall receipts were:
   a. Proceeds of Conferences, which include $1171.71 from the 1976 Lennoxville meetings (approximately 1/3 of the originally projected figure) and $306.05 from the recent mycology workshop in Windsor.
   b. Transfer of $231.87 from an inactive account with the Bank of Montreal in Toronto.

4. Although costs of producing the *Bulletin* and Supplements were substantially higher, total expenditures remained at much the same level as in the previous year. The replacement of the mid-term Executive Meeting by a conference telephone call resulted in a saving of some $3,500 in travel expenses. This was partially offset by non-recurring expenditures for such items as the Lawson Medal cast and T-shirts.

5. In view of the small operating surplus, serious consideration should be given to a modest fee increase if any expansion of activities involving major expenditures is contemplated.

CANADIAN BOTANICAL ASSOCIATION/L'ASSOCIATION BOTANIQUE DU CANADA

FINANCIAL STATEMENT FOR FISCAL YEAR 1 .10/81

BALANCE OF FUNDS - June 1, 1980			$3,160.94
RECEIPTS			
Membership Dues			
Full	$4,989.14		
Retired	183.65		
Student	426.00		
		$5,598.79	
Canadian J. Botany subscriptions		3,217.00	
B.C.C. Fees		1,435.00	
Sale of Publications		272.00	
Proceeds of Conferences		1,477.76	
Sale of T-Shirts		315.25	
Advertising		215.00	
Bank Interest & Exchange		191.49	
Gifts & Miscellaneous		246.87	12,969.16
			$16,130.10
EXPENDITURES			
Canadian J. Botany subscriptions		2,775.00	
B.C.C.		770.00	
Bulletin & Supplements		3,077.87	
Office Services & Supplies		1,212.24	
Conferences		624.87	
Awards		1,406.12	
T-Shirts		949.30	
Bank Charges		11.40	10,826.80
BALANCE OF FUNDS - 31 May, 1981			$5,303.30

RECONCIALIATION

ASSETS			
Cash in bank			
Current Account		$4,063.17	
Savings Account		1,615.29	
Cheques Deposited (awaiting credit)		840.21	
			6,518.67
LIABILITIES			
Cheques Outstanding		1,215.37	1,215.37
SURPLUS of Assets over Liabilities			$5,303.30

David Punter, Treasurer

CALL FOR NOMINATIONS - GEORGE LAWSON MEDALS AND MARY E. ELLIOTT SERVICE AWARD 1982

Each year the CBA/ABC invites its entire membership to make nominations for the George Lawson Medals and for the Mary E. Elliott Service Award.

George Lawson Medal

The purpose of the award 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*. Any botanist working permanently in Canada or having spent the greater part of his/her career here is eligible.

In any year, a maximum of two (2) awards may be made, one in each of the two categories outlined below, although a single award, or no award, may be made as the Awards Committee judges appropriate. The two categories are:

1. A single contribution to botanical knowledge of oustanding distinction. Commonly this would take the form of a published paper, a series of papers, a monograph, or a book by a botanist at any stage in his professional career. The contribution should be of singular significance to the discipline at large.
2. Recognition of the cumulative, distinguished contributions of a senior investigator and/or teacher and/or administrator who has worked in Canada for the greater part of his career, and whose influence has contributed notably to the advancement of Canadian botany.

In order that the Awards Committee may learn of botanists who are eligible for these awards, all members of the CBA/ABC are invited to submit nominations, and to consult with their colleagues for suggestions. Nominations should be accompanied by a clear statement of the nominee's contribution to botany in Canada and as much documentation as possible. Letters by others supporting the nomination would also help the Awards Committee in reaching its decision.

Mary E. Elliott Service Award

This award was established in 1978 for *meritorious service to the Canadian Botanical Association*. The award may be made from time to time as the Awards Committee may recommend at its discretion.

Members of CBA/ABC are invited to submit nominations for this award to the Awards Committee. A citation of approximately 100 words should accompany the nomination.

Nominations for either the George Lawson Medal or the Mary E. Elliott Service Award should be submitted to the Chairman of the Awards Committee before December 31, 1981, with all necessary documentation:-

Dr. J.B. Phipps
Department of Plant Sciences
University of Western Ontario
London, Ont N6A 5B7

CALL FOR NOMINATIONS OF OFFICERS AND DIRECTORS FOR CBA/ABC 1982-1983

At the Annual Meeting at the University of Guelph a call for nominations for the following members of the Board of Directors was made:

1. President-Elect (1 year)
2. Secretary (2 years)
3. 3 Directors (2 years)

In accordance with By-law 14, one of the 3 Directors must reside east of the Ontario-Manitoba Provincial boundary.

Nominations must be signed by not less than three (3) members in good standing. All nominations must be accompanied by the consent of the nominee.

Les membres sont invitées retourner chaque mise en nomination au secrétaire pour le 31 decembre de cette annee. Toute nomination doit être accompagnes du consentement écrit de la personne nommée, laquelle doit être membre régulier en règle. Chaque mise en nomination doit porter la signature d'au moins trois membres en règale.

All nominations must be delivered in writing no later than December 31, 1981, to the Secretary of the Association:

Dr. Iain E.P. Taylor
Secretary, CBA/ABC
Department of Botany
University of British Columbia
Vancouver, B.C. V6T 2B1

On behalf of the Nominating Committee.

Michael Shaw, Chairman

MEMBERSHIP RENEWAL

Membership renewal forms will be sent out to all members in November. The By-laws state that dues for the calendar year are due on or before January 1 each year.

If you have not received a renewal form by the beginning of January 1982, please notify the Treasurer immediately: Dr. Guy R. Brassard, Dept. of Biology, Memorial Univ., St. John's, Nfld A1B 3X9

FORTHCOMING MEETINGS

23rd Annual Meeting, The American Society of Pharmacognosy will be held on August 1-6, 1982, at the University of Pittsburgh, Pittsburgh. The main Symposium will be "Topics in Biotransformation and Metabolism". The speakers and their subjects include: Ronald Bentley, "Vitamin K Biosynthesis"; Iain M. Campbell, "Secondary Metabolism in Fungi"; and, Ivan A. Veliky, "Biotransformation by Plant Cell Tissue Cultures". There will also be contributed papers.

The deadline for submission of abstracts for papers and posters is June 15, 1982. Further information may be obtained from: Dr. Joseph E. Knapp, Department of Pharmacognosy, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA 15261.

CBA/ABC ANNUAL MEETING 1982

The 1982 Joint CBA/ABC and CSPP/SCPV Meeting will be held on the campus of the University of Regina, Regina, Sask., on June 20-24. Field-trips are being arranged so that participants may get an idea of the flora and landscape (and maybe fauna also) in some interesting regions of southern Saskatchewan. Half-day field-trips are planned during the meeting on Tuesday June 22. Some half-day field-trips will also be repeated post-session, as well as one- and two-day trips. Some details about field-trips follow. More details will be mailed separately to all members of the two associations for the purposes of advance registration. Please note that some field-trips are subject to cancellation in the event of inadequate numbers.

Field-trips

No. 1 Avonlea Badlands (approx. 290 km trip) — Half-day, Tuesday June 22. Cost $19 per person. A hike through community pasture to the top of the Missouri Coteau in southern Saskatchewan.

No. 2 Valeport/Last Mountain Lake (approx. 322 km) — Half-day, Tuesday June 22 & Friday June 25. Cost $24 per person. A rare opportunity to witness one of North America's oldest wildlife sanctuaries and some areas of native prairie vegetation, relatively undisturbed.

No. 3 Fort Qu'Appelle Geology (approx. 250 km) — Half-day, June 22 & June 25. Cost $23 per person. Tour through a scenic area of the valley with diverse and interesting flora contrasting the surrounding agricultural lands. Excellent guide-book will be provided. Features the surficial geology of the Qu'Appelle valley, a glacial meltwater channel.

No. 4 Big Muddy Tour (approx. 490 km) — Half-day, June 22 & June 25. Cost $36. In southeastern Saskatchewan. The Big Muddy Badlands are a glacial meltwater channel carved into Cretaceous, Paleocene and Miocene sedimentary strata. The tour features the geology and biology of the area, as well as its interesting history of occupation by native and white people.

No. 5 Buffalopound/Douglas Provincial Park (approx. 410 km) — One day, June 25. Cost $29. Includes a visit to a productive prairie marsh at Buffalopound Prov. Park, a hike in stabilized and active sand-dunes, and a visit to a saline seepage area on the shore of Diefenbaker Lake. Excellent booklet on the environment of Douglas P.P. provided.

No. 6 Estevan Coal Fields (approx. 500 km) — One day, June 25. Cost $31. An opportunity to view strip-mining for coal, old spoil piles, modern equipment, and reclamation.

No. 7 Battersby Homestead/Good Spirit Lake Provincial Park (approx. 480 km) — One day, Saturday June 26. Cost $30. The aspen parkland area of eastern Sask. The Homestead includes 160 acres of unbroken land in pothole (Knob and Kettle) country. The Park features a lakeside sand-dune habitat in which the delicate interrelationships between soil, water, plants, and animals are dramatically illustrated.

No. 8 Grasslands National Park Tour (approx. 1020 km) — Two days, Saturday & Sunday, June 26 & 27. Cost $110. Includes a visit to a variety of ecosystems, which, we hope, will be preserved in the National Park.

M.V.S. Raju
Biology Dept.
Univ. of Regina

CITES: CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES

Canadian botanists, who have occasion to borrow herbarium specimens from institutions in the United States, will see the packages bearing the legend "CITES" and a five-digit code in the form of two letters and three numbers. This represents the number of the certificate issued by the U.S. government to the "exporting" institution permitting the "scientific exchange" of plant (or animal) specimens that might otherwise be prohibited under the Convention on International Trade in Endangered Species (CITES).

The question is often asked: Do, or will, Canadian herbaria require a similar coded certificate in order to send and receive loans and other shipments of specimens to and from the United States and other countries?

The short answer is that Canada is a signatory to CITES and hence Canadian institutions must abide by the terms of the Convention. The labelling of packages with a CITES code is, however, only part of the guidelines for facilitating loans and exchanges between scientific institutions. Such coding is not recognized under Canadian law; including such a code would not obviate the need for a list or description of the specimens being imported or exported.

A more detailed answer requires some explanation of what CITES is and how it is implemented so far as Canada is concerned. The Convention stemmed from an attempt to prevent commerce in illegally obtained wildlife and wildlife products. This was conceived as an important conservation mechanism, particularly for animals in underdeveloped countries that have far too limited resources to control effectively lucrative poaching for export.

This concern was voiced at the Stockholm Conference on the Human Environment in 1972, and in 1973 a conference on the subject was convened in Washington. The Convention stems from this, and was approved in general by about 80 nations. Since then over 70 nations have ratified or acceded to it. Canada ratified the Convention in 1975.

The Convention regulates international trade in over 1000 species of plants and animals that are listed in the appendices. Appendix I deals with species that "are rare or endangered" and trade is "not permitted for primarily commercial purposes". Species in Appendix II "are not presently rare or endangered but could become so if trade is not regulated". Appendix III lists species that "are not endangered but are managed within the listing nation". The Convention is administered in Canada by the Canadian Wildlife Service (CWS) of Environment Canada. All regu-

lated species require export permits before being exported from Canada (Canada lists one mammal in Appendix III). For plants, these are issued by Agriculture Canada (except in Quebec). For import, all regulated species require the appropriate Convention export permit from the country of origin and, in addition, species in Appendix I require a Canadian import permit, issued by the CWS.

What species are involved? The original thrust of the Convention was toward endangered animals, principally vertebrates, but there are 56 plant species in Appendix I from a wide range of families, mostly, but not all, tropical. A number of *Aloe* species and several orchids are included, as are a group of Caryophyllaceae endemic to the Peoples Republic of Mongolia! Appendix II lists 10 entire families including the Orchidaceae and Cactaceae; of the 11 genera also listed, one is *Euphorbia* although, in this case, the non-succulent species are excluded. In addition to these omnibus listings of families and genera, 35 plant species are named in Appendix II. Appendix III is much shorter, with only 1 genus and 4 species, all from Nepal.

The wide extent of taxa included in Appendix II is such that very many apparently "innocuous" herbarium loans and exchanges will include regulated species. This is where a "Scientific Imprt/Export Certificate" becomes important. It is valid for one year and gives blanket permission for the import into or export from Canada of catalogued herbarium and museum specimens and live plant material, that would otherwise require permits under CITES, provided these represent loans, gifts or exchanges between scientists or scientific institutions. I understand that it is accepted that the normal herbarium accessioning procedures, in which the origin of each batch of accessioned material is recorded, and an accession number usually given to each specimen, is regarded as adequate cataloguing. To have catalogued fully every specimen in the world's major herbaria would have forced such diversion of resources as to put a stop to all taxonomic research at these institutions for some years to come!

The Canadian Management Authority (i.e., the CWS) have issued annually about 30 of these Scientific Import/Export Certificates to Directors and Curators of systematics collections. The only Canadian herbaria whose curators have such certificates appear to be CAN, MMMN, and TRT. Strictly speaking, all others would require to obtain an export permit from the Plant Products and Quarantine Directorate of Agriculture Canada before sending, for example, a batch of *Spiranthes* specimens to a collaborating scientist in the U.S. So far as I am aware, no Canadian herbarium has had any problems with Canadian or foreign customs authorities over such shipments. Nevertheless, this is always a possibility, and the directors or curators of herbaria who are regularly sending material out of Canada would seem well advised to obtain a Scientific Import/Export Certificate.

These certificates are available from:
The Administrator
Convention on International Trade
in Endangered Species
Canadian Wildlife Service
Department of the Environment
Ottawa, Ontario K1A 0E7

The Administrator is Mr. John B. Heppes (phone no.: 819-997-1840). Scientists and scientific institutions that are granted certificates are registered with CWS. A copy of the certificate and a list or description of the specimens being imported or exported must be deposited with Canadian Customs at the Canadian point of entry or exit. This would be done by the usual description of contents that Curators use at the moments (e.g., "dried herbarium specimens for scientific study") plus the attachment of a copy of the certificate.

I will be happy to provide any clarification of this that I can, but more detailed information, including the *CITES Reports*, is available from Mr. Heppes, the Canadian Administrator (address above). *CITES Reports No. 4* (Dec. 1978) is an article by George W. Argus, "List of Canadian flora affected by CITES" - 73 species are involved, all but 5 (*Panax quinquefolius* and the four native cacti) members of the Orchidaceae.

John McNeill, Chairman
Systematics & Phytogeography
Section, CBA/ABC
Departmentof Biology
University of Ottawa
Ottawa, Ont K1N 6N5

DIRECTORY OF CANADIAN MYCOLOGISTS - 1981

The Mycology Section of CBA/ABC has prepared a Directory of Canadian Mycologists - 1981. All members of the Mycology Section should have a received a copy of the Directory with this issue of the *Bulletin*. There are a limited number of extra copies available for other members of CBA/ABC who may wish to have the Directory available for their use. Please contact the Editor of the *Bulletin* if you wish a copy.

CBA/ABC T-SHIRTS

The Secretary still has available a few CBA/ABC T-shirts, price $8.00 (including postage and handling) for adult sizes (S, M, L and XL). The shirt has short sleeves, round neck, and is white with the Association logo (maple leaf and samaras) in green and red on the front.

Cheques (payable to CBA/ABC) or money orders for the T-shirts should be sent to: Dr. Iain E. P. Taylor, Secretary, CBA/ABC, Dept. of Botany, Univ. of British Columbia, Vancouver, BC V6T 2B1

J. FRANKLIN STYER AWARD OF GARDEN MERIT

The Pennsylvania Horticultural Society has announced the establishment of the J. Franklin Styer Award of Garden Merit to select and promote ornamental plants with exceptional garden merit. The plants must be hardy in the mid-Atlantic States, and should be species or cultivars not widely used for ornamental purposes. They may be new developments resulting from selection or breeding or plants newly introduced to the area from other parts of the U.S.A. or abroad.

Any member interested in the Award should contact the following for further information: The Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106.

1ST LUELLA K. WERESUB MEMORIAL LECTURE

The Luella K. Weresub Memorial Lecture is organized by the Mycology Section of CBA/ABC to commemorate Dr. Luella K. Weresub.

Dr. Bryce Kendrick, Department of Biology, University of Waterloo, Waterloo, was invited to give the first of the annual lectures at the Association's Annual Meeting in Guelph. We are pleased to be able to print the text of Dr. Kendrick's lecture for the interest of those members who were unable to be there.

"Imagination is given to Man to compensate him for what he is. A sense of humour is given to Man to console him for what he is not." Luella Weresub was only too aware of both sides of the human condition, and, as compensation and consolation, was rich in imagination and humour.

Perhaps it was these qualities, allied to her keenly analytical mind, that made her the finest teacher I have ever known. But I suspect the blend was subtler, with such extra ingredients as warmth, generosity, enthusiasm and sheer humanity. Only those who spent time with her can fully appreciate her unique qualities.

Luella was not simply my teacher — she was my close and loyal friend for many years, though I always held her in considerable awe. I hope she would approve of my being chosen to give this first memorial address, though I am by no means sure that she would, because her standards were very high. Nevertheless, I dedicate it to her in all humility, and with a continuing sense of loss at her untimely death. I hope this annual lecture will in some small way help to perpetuate her refreshing and often iconoclastic approach to life.

Western culture did a truly remarkable thing a few hundred years ago — it invented science. It is the only one among all human cultures to have done so. It did not invent technology, which is a different thing — almost all cultures have had this to a greater or lesser extent.

What I am calling science might be better called the scientific method, or the experimental method. This is a way, a very specific way, of finding out, and, as we have seen, it can revolutionize technology.

Much of the present confusion between science and technology is generated by the fact that technology now revolutionizes science, too. But let me clearly and firmly establish the difference.

Technology is a way of doing things — of achieving preselected ends. It was technology which achieved a soft landing on Mars, but it was science that attempted to determine whether life existed there. Technology is a bit like Holiday Inns — not too many surprises. No one who engages in scientific research really knows what he or she is going to find out. If they think they do, they are deluding themselves.

Some years ago C.P. Snow wrote of the two cultures — science and the humanities — and the dangers that lay in their mutual misunderstandings, their lack of communication.

Tonight I will speak of what I might call the two anticultures that threaten science today. These may well be what caused Louis Dudek, the Canadian poet and critic, to write: "Intellectual superiority is a hazard to survival among humans, not a help". We may question the cynicism of this statement, but surely we are all aware of the prevailing anti-intellectual climate in North America. Bronowski suggested that science is now a central activity, woven irreplaceably into the fabric of human culture. Obviously, I agree with him, but many people just as obviously do not. And they belong to my first anticulture. They may well constitute a majority of the human race, or, more specifically, of the Canadian population. These people are led, or represented, by those who make claims to exclusive revelation of truth: they are the moral majority, the fanatics, cultists, bigots, reactionaries. Those who espouse such themes as racism and creationism, for which there is no objective evidence. Those who would place a categorical ban on abortion, irrespective of the conditions under which conception took place, or under which the child would be brought up. Those who oppose contraception, even in the face of the population explosion which is stripping the planet of its resources, and, if unchecked, will lead to some unimaginable apocalypse. Those who place their faith in magic, superstition — or the ultimate defence of not thinking at all. These are the armies of unreason. Their ignorant or distorted perception envisages science as a dehumanising force, as a threat to the myths in which they have invested so heavily. They do not know or care how science really operates. They confuse science with technology.

They have the vote; and we who practise science cannot expect any support from them. They represent the greatest educational challenge anyone could wish for, and I will return to them later.

I don't suppose I've surprised anyone with my first anticulture. I won't surprise anyone who knows me, with my second. It has far fewer adherents than the first, but they are often, unfortunately, in positions of power, especially in our beloved Canada. They would be surprised to hear me brand them as belonging to an anti-scientific subculture, because they are those who believe in the rationalization of science. They believe this would be for the good of the country. They seek, in the words of J.D. Babbitt, to "organize and systematize all human activities, and would have all science deliberately directed to designated social goals." In Canada this has led us toward something called a National Science Policy. But let me repeat something I said earlier. No one who engages in scientific research ever really knows what he is going to find out — or, I might add, its potential significance. Some part of the bureaucracy apparently is not aware of this, and tries to manipulate the practitioners of science as if they were technologists, with a specific, definable end-product for sale. A science policy implies an overall plan for something that is essentially unplannable.

Just as no one could have forecast the emergence of great symphonic music in the 19th century (though this was made possible by improvements in the technology of instrument making), so no one could have forecast the emergence of much of 20th century science. I like some kinds of science fiction, because we have to imagine things before we can strive to create them. But most of the futures predicted by even the most brilliant and imaginative authors (and the most pedestrian futurists) have not come to pass, while other futures, equally improbable, are already flourishing, though absent from the annals of science fiction. The ancient Greeks

were science fiction freaks — they made colorful guesses about lots of things, and sometimes they were wonderfully right; though, unlike scientists, they almost never checked to find out. But I feel reasonably sure they didn't foresee radio, TV, X-rays, antibiotics, or a host of other 20th century commonplaces. Neither did another science fiction type, Leonardo da Vinci, much closer to our day.

So, just as no one could have foreseen the brilliant creative outburst of impressionist and post-impressionist painting, so no one can tell where the next great scientific breakthrough will come. No one: neither the most creative scientist nor the most high-powered mandarin — though the Reader's Digest and the National Enquirer vie for the privilege of pointing it out to the rest of us. And the Government, in its collectivizing wisdom, by applying the management techniques of systems theory, operational research, and cost-benefit analysis, thinks it can choose and bring about such monumental events. The fact, of course, is that the progress of science depends on individual imagination and initiative; on inspired guesswork and serendipity. Despite the current proliferation of authors on scientific papers, the idea being tested has usually originated with one person — and even he or she probably doesn't see all of its implications. Let me give you a couple of examples I've gleaned from Gerhard Herzberg, our Noble Laureate, who is outspoken in his defence of curiosity-directed reasearch, and who has for this sin been largely excluded from the decision-making process.

Faraday had just discovered electromagnetic induction, the principle on which all modern electric power generation is based. After he had given a lecture on his discovery the Prince of Wales went up to him and asked, "Of what practical use is this new discovery?" Faraday replied, "Sir, of what use is a new-born baby?" Quick-witted though this reply was, it was essentially a cop-out. Farady, although he had made the discovery, had absolutely no idea what it would lead to. Lord Rutherford, the founder of nuclear physics, stoutly maintained, right up to his death in 1937, that nuclear energy had no useful potential. Five years later, Enrico Fermi produced the first self-sustaining chain reaction, and the nuclear age had begun.

Now a couple of examples from my own discipline. Chemists isolate many compounds from fungi each year. Most of these remain curiosities: some few find specific roles. Cyclosporin A, a cyclic polypeptide isolated in 1972 from the mold *Trichoderma polysporum*, was initially tested as an antibiotic, but it has subsequently been found to have much more exciting potential as an immunosuppressant, and is now helping organ-transplant patients to stay alive.

The taxonomist who discovered and described the rust fungus *Puccinia chondrilla* on *Chondrilla argillacea*, an undistinguished mediterranean plant, was certainly unaware of what the future held for this obscure fungus. *Chondrilla*, accidentally introduced to Australia 60 years ago, became an extremely noxious weed of wheatfields, and was called Skeletonweed. 640,000 hectares had to be sprayed with 2,4,5-T every year in an effort to control it. After the highly host-specific parasitic fungus was deliberately released in Australia, the area that needed spraying was soon reduced by 75%. This is one of the most spectacular successes ever achieved by biological control techniques.

It is clearly possible and desirable for Governments to plan better systems of roads, or traffic control, or social security, or many other worthy societal aims. But science is different. As Dr. Steacie of NRC said, "For creative work in Science, complete freedom is required."

There, I've finally said it. Freedom. A cause dear to Luella Weresub's heart. No time-clocks, no programme reviews, no cost-benefit analyses — essentially no control. Scientists, once it has been established that they are responsible and competent — and perhaps imaginative — must be given their heads. Many politicians, as you may imagine, are outraged by this idea. "What!" they say, "You want us to give you all this money, then just go away and not ask any questions about how you spend it? And you can't even promise us any results? Are you crazy? What will the taxpayers say?" And so on.

So, you are probably thinking, we know there's a problem. But Luella wouldn't have left it at that. She'd have pointed us toward a solution or at least toward a course of action. She didn't believe in sitting around and taking it on the chin. My solution is probably simpler and less subversive than hers would have been, but I will pass it on anyway.

I am a mycologist, a student of the fungi — as fascinating and poorly known a group of organisms as you could hope to find. I and some of my mycological colleagues perceive very clearly the actual and potential importance of the fungi in human affairs. But how many other people see it? How many have more than the haziest notion of what a fungus is, or what it does? I think in the long run (if there is a long run) our only hope is to talk it up everywhere we go — ultimately to do such a good job of educating people about science that they will never join the first of my anticultures.

How to deal with the second? There are two schools of thought about the way politicians and voters interact. The first school maintains that elected Governments give the majority of voters what they want, most of the time. If this is true, we should pursue our aim of an educated public with all possible vigour. In this context, people like David Suzuki and David Bellamy, who proselytize for science through the medium of television, are worth their weight in gold. In my own small corner I have put on some correspondence courses — taped lectures, illustrated by colour transparences, microscope preparations, and a specially written textbook — which are being taken by many high school teachers. If students are introduced to fungi at high school, my job later on is easier and more rewarding; and many people who will never come to University at all will have had some exposure to Mycology. But we must do better: many young people are still growing up with little or no understanding of how science works; of how it must be allowed to work.

There is a second thought about politics, which holds that politicians are supposed to be better informed than the electorate, know what's good for the people, and often impose it on them with or without their approval. If this is true, we must lobby as hard as we can, in the hope of educating the politicians in the mysteries of science.

Scientists have remained aloof for too long. Taylor and Barron have characterized these

strange people in some detail. Listen and see if you recognize your colleagues, or even yourself.

1. A preference for mental manipulations involving things rather than people.
2. A somewhat detached attitude in interpersonal relationships.
3. A preference for intellectual challenges rather than social ones.

Little wonder scientists have not sold themselves well!

The activities of human beings are a strange mixture of the rational and the irrational. So it is with societies. Even science, in some ways the most rational of our activities, has its roots in the unpredictable and capricious imagination. As Peter Medawar said, "What scientists do has never been the subject of a scientific enquiry. It is no use looking to scientific papers, for they not merely conceal, but actively misrepresent the reasoning that goes into the work they describe." Small wonder science is misunderstood!

We may not know what makes scientists tick, but we do know that science works when applied to appropriate problems. "Anticulture one" must be made aware that science cannot be blamed for the fact that the scientific method is incapable of addressing certain kinds of questions — moral questions, ethical questions, political questions — in fact, many of humanity's most urgent problems. Science must also clearly disassociate itself from the many misapplications of technology.

"Anticulture two" must be made aware that any attempt to direct all science can succeed only in stultifying the best of it. It is my responsibility, and yours, to explain this to all who will listen.

Relevant Reading

Babbitt, J.D. 1976. Science Policy as ideology: the collectivization and socialization of research. Canad. Research 9(4):22-25,28-29

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ENDANGERED SPECIES

At the recent meeting in New Delhi, India, of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the following U.S. proposals for plants were adopted (Appendix I - critically jeopardized by trade; Appendix II - potentially threatened):-

Transferred from Appendix II to Appendix I — *Ariocarpus agavoides, A. scapharostrus, Aztekium ritteri, Echinocereus lindsayii, Obregonia denegrii, Pelecyphora aselliformis, P. strobiliformis.*

Listed in Appendix I — *Nepenthes rajah, Sarracenia alabamensis* ssp. *alabamensis, S. jonesii, S. oreophila.*

Listed in Appendix II — *Darlingtonia californica.*

A proposal to list *Panax ginseng* roots in Appendix II for control purposes was withdrawn, as were proposals to list *Drosera regia* in Appendix I and *Dionaea muscipula* in Appendix II.

Among other actions taken by CITES were:- the adoption of a uniform import/export and re-export permit form; development of standard permit requirements for use in trade with non-party countries; adoption of guidelines for the preparation and transport of live animals and plants; and, approval of security paper for permits and a new CITES security stamp, these will be available for use by member countries in the near future.

The following publications relating to Endangered Species are available:-

Rare Plant Conservation: Geographical Data Organization, 1981, by The New York Botanical Garden. It contains 24 papers based on lectures and discussions at a November 1977 symposium. $25.00 U.S. + $2.00 U.S. post & packing. Order from: Rare Plant Conservation, Publications Office, The New York Botanical Garden, Bronx, N.Y. 10458

Threatened and Endangered Plants of Nevada: An Illustrated Manual, published jointly by the Fish and Wildlife Service and the Bureau of Land Management. Free. Order from: Bureau of Land Management, Nevada State Office, 300 Booth St., Reno, Nevada 89509.

DR. FRANS VERDOORN

The Editor has received notification that Dr. Frans Verdoorn celebrated his 75th birthday on July 24, 1981. Dr. Verdoorn may be known to CBA/ABC members as the Emeritus Chairman of the Utrecht University Biohistorical Institute and, prior to that, as Managing Editor of the Chronica Botanica series, editor of Annales Bryologici and of the Manuals of Bryology and Pteridology, and as the organizing director of the Los Angeles State and County Arboretum. He was the Botanical Secretary (1935-53) of I.U.B.S, and during this time co-founded I.A.P.T. He is now the Chairman and General Editor of the I.U.B.S. Interdisciplinary Biohistorical Commission, and 'Membre Effectiv' of both the International Academy for the History of Science and of the History of Medicine. His name is commemorated in the generic plant names *Verdoornia* Schuster and *Verdoornianthus* Gradstein.

BARGAIN!

The BOTANY 80 Committee at UBC still has available some BOTANY 80 T-shirts. They would like to sell them so that the books can be closed.

The shirts are chlorophyll green with white piping around the neck and armbands, and the white BOTANY 80 logo on the front. They have round necks and short sleeves. They wear well, and attract attention, even on the beach in Fiji! The T-shirts are available in children's (S and M) and adult (S, M, L and XL) sizes. The price is $5.75 for children and $6.75 for adults, including postage.

Send a cheque or money order (Canadian funds) to: BOTANY 80, Dept. of Botany, Univ. of British Columbia, Vancouver, B.C. V6T 2B1

NEW PRODUCTS

For those members with large amounts of money available, the Editor has received flyers advertising the following products. It may be nice to dream a little!

Optronics OASIS — (Optronics Application Support Interactive System). A fully integrated image processing system for all user applications. Offers high-resolution with power and flexibility. There are 3 components - a C-4500 Colormation high-resolution scanner/film recorder; a PDP-11-based central processing unit operating under RSX-11M; and, an interactive color display. Price for a typical configuration — "in the $300,000 range". Delivery, 120 days.

Optronics X-4040 Digital Argon Laser Recorder/ Scanner for Landsat Images — A large format scanner/laser capable of generating continuous tone and screened black-and-white images on photographic film. Writes 1300-1500 lines of data per minute. Price "in the $300,000 range." Delivery, 9 months.

For more information, contact: Sales Dept., Optronics International Inc., 7 Stuart Road, Chelmsford, Mass. 01824.

NEW BOOKS

International Code of Nomenclature for Cultivated Plants - 1980, published by Bohn, Scheltema & Holkema, Emmalaan 27, Utrecht, Netherlands. (Regnum Vegetabile Vol. 104). 32 pp.

The code is formulated and adopted by the International Commission for the Nomenclature of Cultivated Plants of the International Union for Biological Sciences. The last edition was published in 1969.

Copies of the International Code of Nomenclature for Cultivated Plants - 1980 made be obtained from: The International Bureau for Plant Taxonomy and Nomenclature, Tweede Transitorium, Uithof, Utrecht, Netherlands. Price: H.fl. 12.50 or $6.25 U.S. + a 12% postage and handling charge. Or from: Crop Science Society of America, 677 South Segoe Road, Madison, WI 53711. Price: $5.00 U.S. (addresses in U.S.), $6.00 U.S. (addresses outside U.S.).

BOOK REVIEWS

Petite fleur (collection 3-8 ans) par Le groupe Fleurbec. 1981. Le groupe Fleurbec, Saint-Augustin-de-Portneuf, Québec. $2.95.

Ce petit livre destiné aux enfants de 3 à 8 ans comprend 11 illustrations de 10 plantes communes du Québec, accompagnées d'une brève note sur un aspect particulier de chaque plante. La présentation du livre avec de belles photographies couleur sur fond rose vif et écriture en gros caractère, s'annonce très attrayante pour le groupe d'âge auquel le livre est destiné. Il est peut-être quelque peu regrettable que la nom latin des plantes n'ait pas été inclus, ce qui aurait pu satisfaire la curiosité des jeunes botanistes les plus ardents.

Cette brochure représente une contribution très intéressante à la littérature de langue française pour enfants, et une de ses principale qualité est qu'elle décrit la flore locale du Québec. A $2.95, elle devrait être accessible à toute les bourses.

Brin d'herbe (collection 3-8 ans) par Le groupe Fleurbec. 1981. Le groupe Fleurbec, Saint-Augustin-de-Portneuf, Québec. $2.95.

Brin d'herbe est le compagnon du livre Petite fleur publié par le groupe Fleurbec (collection 3-8 ans). Le format et la présentation en sont similaires. Onze différentes plantes du Québec sont illustrées par de très belles photographies couleur et accompagnées d'une brève note en gros caractère, le tout présenté sur fond de vive couleur vert-jaune. Tout comme dans Petite fleur les noms latins ont été omis. Ce charmant petit livre fournira un outil utile pour initier les enfants à la beuté des plantes qui les entourent.

Hélène Contant
Dept. of Botany
Univ. of British Columbia

EXHIBITION

The National Museum of Natural Sciences in Ottawa announces the following exhibition.

Images of the Wild, Robert Bateman — an exhibition of 73 paintings by the noted wildlife artist, who was chosen American Artist for 1980 by the prestigious *American Artist Magazine*. He has also just completed a painting, Loons in an Arctic Setting, that was one of Canada's official gifts to the Prince and Princess of Wales. The exhibition will be open to the public from September 9 to November 29, 1981. It will then begin a tour of various major Canadian museums.

In conjunction with the exhibition, the Museum of Natural Sciences is also hosting a season of programs dealing with wildlife art from September through November 1981. In addition, Penguin Books Canada is publishing a book about Bateman and his work. The Art of Robert Bateman is scheduled for release in early October.

The itinerary for the exhibition tour is: Musée du Québec, Québec City, December 16 1981 to mid-March, 1982; Museum of Man and Nature, Winnipeg, April to June, 1982; Alberta Provincial Museum, Edmonton, July to September, 1982; Vancouver Centennial Museum, Vancouver, October to December, 1982 (tentative).

FUTURE MEETINGS OF CBA/ABC

1982 — Regina, June 20-24.
Joint meeting with Canadian Society of Plant Physiologists.

1983 — Whitehorse, tentatively July 11-15.

1984 — Fredericton, June.

1985 — Biological Council of Canada Sponsored Meeting. Site and date not yet determined.

1986 — Open. Suggestions welcomed.

PERSONALIA

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Missing Persons

Over the last year the Editor has received back issues mailed to the following people. If you know them, would you please ask them if they still wish to be members of CBA/ABC. If so, the Editor and Treasurer would appreciate receiving their new address!

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The Bulletin of the Canadian Botanical Assoc.
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Material for inclusion in the Bulletin should reach the Editor at least one month prior to the date of publication of that issue.

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. I.E.P. Taylor, Department of Botany, University of British Columbia, VANCOUVER, B.C. V6T 2B1