THE CANADIAN BOTANICAL ASSOCIATION

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# BULLETIN

L'ASSOCIATION BOTANIQUE DU CANADA

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## ANNUAL MEETING - 13-17 AUGUST

Plans for the annual meeting, CBA-78, are proceeding apace. A preregistration package, with all details for field trips, programme, social events, photo salon, and symposium on The Subarctic was sent to all members in late February. Members are urged to register early to facilitate planning of the meeting.

Additional information can be obtained from the local organizing committee:
c/o Dr. G. Brassard, Dept. of Biology, Memorial University, St. John's, Nfld., A1B 3X9.

Special petitions are being circulated to demand good weather!

## CONGRES ANNUEL - 13-17 AOUT

L'organisation du congrès est bien avancée. A la fin de février tout membre devrait avoir reçu les détails du programme, ainsi que les formules pour les inscriptions, excursions, concours de photos, etc. Vous êtes priés de vous inscrire d'avance afin de faciliter l'organisation du congrès.

Si vous désirez d'autres renseignements, veuillez vous adresser au comité de planification: Dr G. Brassard, Dept. of Biology, Memorial University, St. John's T.-N. A1B 3X9

Veuillez aussi prier pour du beau temps!

Cabot Tower, Signal Hill, St. John's

Bauline, Conception Bay

Bauline, Conception Bay

Flatrock, about 5 miles N of St. John's

Note for those participating in the pre-meeting field trip: Dr. Teuvo Ahti of the University of Helsinki, the keynote speaker for our 1978 meetings, will take part in this field trip.

THE SYSTEMATICS AND PHYTOGEOGRAPHIC SECTION
(communicated by M. Barkworth and J. Gillett)

Nominations Committee

A nominations committee has been appointed in accordance with the by-laws. Its members are:
J. Gillett, National Museum, Ottawa
M. Barkworth, Biosystematics Research Institute Agriculture Canada, Ottawa;
J. Maze, Department of Botany, University of British Columbia, Vancouver.

The committee is looking for the names of people who are interested in serving on the section's executive in 1978-1979. The executive consists of six members, including the immediate past Chairman. Current members are J. Gillett (Chairman), M. Barkworth (Secretary), J. Morton (member), D. Lindsay (member), A. Legault (member), and D. Woodland (member). We would like to publish information concerning each nominee in the next issue of the bulletin so members are asked to send their nominations to one of the members of the nominations committee by May 15. The elections are held at the annual CBA/ABC meetings.

News from members:-

The last issue of the Bulletin contained a synopsis of some of the current botanical activities in the country that were thought to be of interest to members of the section. Since then we have received further news and information, a synopsis of which is provided below. Obviously there is not space to report fully on all activities but it is our hope that the information that is provided will help put people with similar interests in contact with each other besides increasing our familiarity with what is going on where. In some instances the information sent in has had to be considerably abbreviated. We can only hope that in so doing we have not inadvertently misrepresented anyone. If we have, we apologize. Work in bryology, mycology, and lichenology has been grouped together.

University of Toronto (contact: Mr. J.L. Riley)

P.F. Maycock is working on the phytosociology and floristics of Ontario in general. Other botanists are working in more restricted regions: T.J. Carlton on the phytosociology of the boreal forests; D. Gregory on the southern forests of northwestern Ontario, J.L. Riley on the Hudson Bay Lowlands. In addition, many of the botanists at U. of T. are involved with floristic studies in the province: J. Laudenbach (Peel County); J. Riley (The Rouge River Valley and Pierre-Montreuil Park Reserve); R.E. Whiting (Muskoka District); D. Hoy & E. Skelton (Haliburton District). A.A. Reznicek, now at Ann Arbor, Mich., (Simcoe County); W. Botham (Essex County).

P.W. Ball is studying the taxonomy of Carex in Canada. A.A. Reznicek, one of his students, has completed a dissertation on the biosystematics of the section Stellulatae in eastern North America and J. Laudenbach, another student, is working on part of the Ovales for the same region.

S.C.H. Barrett is conducting biosystematic studies on the Pontederiaceae and Turneraceae and ecological studies of the Echinochloa crus-galli complex. He is also examining the evolution of breeding systems and weeds.

D. Marchand is working on the systematics and autecology of Sisyrinchium in northeastern North America. V. Connelly is studying the Panicum lanuginosum complex in Ontario and S.M. McKay the Prunus pumila complex.

J. Laudenbach has completed a biosystematic study of Lycopus americanus and L. europaeus. P.M. Catling is working on the biosystematics of Spiranthes and Listera as well as on accounts of "The Orchids of Ontario" and "Common Wild Plants of Ontario".

University of Waterloo, Ontario (contact: Dr. J.K. Morton)

Dr. J.K. Morton is examining the biosystematics of the North American Caryophyllaceae, concentrating at this time on Cerastium, Stellaria, and Arenaria. He is also working on the genus Mentha and, in association with other botanists, on various genera of the Compositae. His floristic activities include work on the islands of Lake Huron, rare and endangered species in Canada, and a pollen flora of North America.

Dr. R.J. Hebda is studying the paleoecology of raised bogs in the Fraser delta of B.C., as well as working with sediment cores from Belize, Central America, to determine the extent and patterns of Mayan agriculture.

Dr. J.C. Semple's primary interests are in the evolution and systematics of Aster, Chrysopsis, Heterotheca, and Solidago. His work involves the use of morphological, cytological, ecological, and chemical data. His eventual goal is to publish revisions of the genera for Ontario that will be useful for environmental studies as well as assisting any taxonomic treatment based on a broader geographic region.

Professor H.C. Duthie is chiefly interested in the ecology of subarctic lakes, particularly phytoplankton primary productivity, but two of his current graduate students are doing studies related to our section. A. Anton is using the S.E.M. to examine the morphology of species of Cryptomonas in Canada, and J. Lee is investigating fossil pigments and diatoms in a sediment core from Stafford, England.

Dr. W.R. Hawthorn's research interests involve experimental plant ecology; population biology of plant species of successional environments: life-history strategies, resource allocation, demography; neighbour relationships among species and species co-occurrence; interaction of herbivores (defoliators and seed predators) and plants; germination behaviour of colonizing species; Plantago spp. (perennials) and Arcitum spp. (biennials) in southern Ontario.

The mycology lab, under the direction of Dr. B. Kendrick, is engaged in numerous activities among which are the preparation of an illustrated manual on the genera of Hyphomycetes (with Dr. J.W. Carmichael, U. of Alberta), a

monograph of the coelomycete genera, a revision of the Phacidiaceae and its anamorphs, an Atlas of fungal spores (with Drs. K.A. Pirozynski, National Museum, and D. Malloch, U. of Toronto), an account of the genera of Coelomycetes with appendaged conidia, a book on the Biology of Conidial Fungi (with Dr. G.T. Cole, U. of Texas) and another on The Sexual-Asexual synthesis in Fungi. This last will incorporate the proceedings of the Kananaskis II Conference. In addition, a computer aided comparison of the fungal floras of New Zealand, Argentina and the United Kingdom is being conducted as well as some ecologically oriented studies.

University of Saskatchewan (contact: V.L. Harms)

V.L. Harms, J.L. Hudson, and G.F. Ledingham are preparing a "Manual of the Saskatchewan Flora".

Areas of Saskatchewan that have been studied as part of an environmental study are -

1) Churchill River & Reindeer R. Area, Northeastern Saskatchewan:
   Heilman-Ternier, Judy & V.L. Harms. Plant Ecology-Taxonomy Section Final Report #4. Churchill River Study. Saskatchewan Dept. of Environment, 1974. (Available from Saskatchewan Dept. of Environment, Regina).
2) Western Side of Wollaston Lake, between Hidden Bay and Collins Bay, Northeastern Saskatchewan:
   Harms, Vernon L. Wildlife and Vegetation Survey at Gulf Minerals Uranium Operation at Wollaston Lake. III. Survey of the Flora and Vegetation. Saskatchewan Research Council, Report #C76-2; June, 1977. (Obtainable from Sask. Dept. Environment, Regina).
3) The Cluff Lake Area, Northwestern Saskatchewan:
   Harms, Vernon L. Review of the Vegetation Assessment of the Proposed Cluff Lake Uranium Mining Operation. Part II. A Baseline Survey of the Vegetation and Flora. Report for the Saskatchewan Department of Environment and the Cluff Lake Board of Inquiry. Oct., 1977. (Obtainable from Sask. Dept. Environment, Regina).
   Taxa that are the subject of particular study are -

(1) Western North American Heterotheca (Chrysopsis), Petasites, & Sparganium (by V.L. Harms, -- with broad biosystematic approach).
(2) Saskatchewan Grasses (by V.L. Harms & N.A. Skoglund).
(3) Saskatchewan Carex (by J.H. Hudson).

B.C. Government: Ministry of Environment:

Dr. Foster, who is co-ordinator for the province's ecological reserves, advises that a revision of "Ecological Reserves in British Columbia" by Krajina et al. (1974) is being revised and should be available later this year or early next year. It covers Reserves 1-55. Information on all the Reserves is contained in the original IBP survey sheets in his office in Victoria.

J.M. van Barneveld, Head of the Vegetation and Ecology Section of the Resource Analysis Branch, stated that information collected by his branch includes floristic lists with an estimate of cover for the plots they have studied. All their information is stored in computer cards and is readily accessible. He emphasized that their surveys are of a reconnaisance nature but, given that caveat, their information might be useful to those interested in distribution and major geographic variation. They are co-ordinating their work with the B.C. Provincial Museum.

University of New Brunswick (Contact H. Hines)

The major project at the present time is preparation of a Flora of New Brunswick. P. Roberts-Pichette, who used to be at the University, is working on a checklist of the provincial flora which should be ready later this year. H. Hines has obtained a grant to work on the woody flora of the province. At the same time the total flora is becoming better known as a result of extensive collecting. This has also resulted in a doubling of the size of the University herbarium in the last few years.

Bryology in Canada (report from R.R. Ireland, National Museum)

A Checklist of the Mosses of Canada has been completed by a committee of bryologists which includes R.R. Ireland, Chairman (National Museum of Natural Sciences, Ottawa), C.D. Bird (University of Calgary), G.R. Brassard (Memorial University of Newfoundland), W.B. Schofield (University of British Columbia), and D.H. Vitt (University of Alberta). The checklist reports 980 species, 23 subspecies, 311 varieties, and 51 forms in 222 genera and 53 families. The list reports the mosses known for each province and territory based on verified herbarium specimens or literature reports. The checklist will be published by the National Museums of Canada.

W.B. Schofield and D.H. Vitt are currently collaborating on an illustrated manual of the Mosses of Western Canada. G.R. Brassard continues his studies on the bryoflora of Newfoundland where he has made many interesting discoveries of bryophytes new to the province, as well as to North America. C.D. Bird has recently been publishing on his bryophyte collecting in the Yukon and Northwest Territories but he still specializes on the bryophytes of Alberta, Saskatchewan and Manitoba. R.R. Ireland is working on a Moss Flora of the Maritime Provinces which will cover New Brunswick, Nova Scotia and Prince Edward Island.

Lichenology in Canada (report from I.M. Brodo, National Museum)

It would be expected that Canada, being a northern country, would have a level of lichen research activity disproportionate to its population. This is indeed so, but it is a comparatively recent situation. Although most lichenologists in Canada are involved in taxonomic and floristic studies, there are some excellent ecologists here and, in fact, Canada is a world leader in the field of lichen ecophysiology. All aspects of lichen research are included in the following synopsis.

Catalogue of the Lichens of Canada, Alaska and Greenland:-

The computerized catalogue of Lichens, begun in 1967, now has a data base of information gathered from 492 articles. Although the listing is by published names exactly as published, a computer program to enable us to deal with the nomenclatural and taxonomic synonomy is now being constructed. The catalogue now lists all lichens reported in the literature from Canada, Alaska and Greenland. (Coverage of the old literature for Greenland is still not complete). Each name is followed by a list of all literature citations (by author and date) and the localities (by province or region) from which that taxon is noted. Partial catalogues for any particular province or region are easily obtained. A complete bibliographic listing for each catalogue is printed as a "by-product" to enable a user to find the original literature records.

There are no plans to publish the catalogue as a book. However, copies of the complete or partial catalogues can be ordered at cost by writing to me (Irwin M. Brodo), at the Museum of Natural Sciences, National Museums of Canada, Ottawa, Ontario K1A 0M8. Prices run from a few dollars for the smallest catalogues to close to $100 for the complete catalogue and bibliography. Because the synonomy is still not included, (and probably will not be complete for a few years) the catalogue, at this stage, is mainly of use to those with some knowledge of lichen taxonomy and the lichenological literature. (This catalogue is a project of the Lichen Checklist Subcommittee of the Systematics and Phytogeography Section. The subcommittee is headed by Dr. I.M. Brodo).

British Columbia:- Mr. George Otto (Univ. of B.C.) is preparing a new edition of a checklist of the lichens of B.C. (with Dr. Teuvo Ahti of Helsinki); as well as a guide to some common lichens of B.C.

Alberta:- Dr. Charles Bird (Univ. of Calgary) is working on lichen flora of the Mackenzie River Valley with Drs. John W. Thomson (Univ. of Wisconsin) and George Scotter (Envir. Canada, Edmonton). Dr. David C. Lindsay (Univ. of Calgary) recently moved from the University of Alberta to the Environmental Sciences Center at Kananaskis where he is doing ecological work. Mr. Mike Ostafichuk (Univ. of Alberta) is doing floristic work.

Saskatchewan:- Dr. John Sheard (Univ. of Sask.) is studying the crustose lichen genus Rinodina and continues to be interested in the ecology of lichens in central Canada. Dr. Jan Looman (Agr. Canada, Swift Current) is interested in ecology, floristics and taxonomy.

Ontario:- Dr. Kenneth Kershaw (McMaster Univ.) and Dr. Douglas Larson (Univ. of Guelph) are both doing studies on the ecophysiology of lichens. Dr. Kershaw is particularly interested in the effects of microclimate and cold adaptation on the distribution of lichens. Dr. Larson is working with "rock tripes", the genus Umbilicaria. Drs. David Richardson and Evert Nieboer (Laurentian Univ.) have collaborated on several papers dealing with the physiology of lichens in polluted environments and continue working in this area. Dr. Keith Puckett (Envir. Canada, Toronto) is also making contributions in this field. Dr. Irwin Brodo (Nat. Museum of Nat. Sciences) is engaged in several systematic studies (e.g., the Lecanora subfusca group, Ochrolechia) and is preparing lichen floras for the Queen Charlotte Islands, Bathurst Island, and the Ottawa Region. Mr. Pak Yau Wong (also of the National Museum) is investigating the lichens of southern Ontario.

Quebec:- Dr. Martin Lechowicz (McGill Univ.) is interested in the environmental response of various species of "caribou lichens" (genus Cladina) to different climates using physiological techniques.

Nova Scotia:- Dr. Wolfgang Maass (N.R.C., Halifax) is studying lichen chemistry, especially the chemistry of pulvimic acid derivatives and xanthones.

In future issues of the Bulletin, I will report on graduate studies in lichenology across Canada. I would appreciate having this information as soon as possible. Please send it to Dr. Irwin M. Brodo, Dept. of Botany, National Museums of Canada, Ottawa K1A 0M8.

THE GENERAL SECTION

On June 28, 1977, five members of the General Section assembled for the annual business meeting of the section at the University of Manitoba. There followed a vigorous, if somewhat disheartened, discussion of the status of the section and its probable future. The previous annual meeting (with seventeen members present) had voted to change the name to Structural Section, subject to approval by mail ballot of all section members. Since the ballot was not held, the name change had not been implemented. The section was left with only three directors, R.L. Peterson and T.A. Steeves until 1978 and A.D. Macdonald until 1979. No new directors had been elected. Under these circumstances it was deemed unwise to plan an ambitious program for the next annual meeting at Memorial University, or to proceed further with the name change for the time being. It was, however, agreed that the section should be kept active and that an attempt should be made to instill new life into it. Since the present membership of the section is in excess of 150, there does appear to be a need for it to continue.

As a first step it would seem that the directorate should be replenished. This will require the election of five new directors, one for one year, two for two years and two for three years. Please consider this notice a call for nominations. Nominations should be sent to me by June 1, 1978, and a mail ballot will be held shortly thereafter. It will be appreciated if those who make nominations would obtain the approval of the nominees and indicate this in the nomination letters. A serious response to this request could go a long way towards revitalizing the section.

Hopefully attendance at the Memorial meeting will be large enough to permit a meaningful business meeting of the General Section. The question of the name change should be reopened and carried through to a final decision. Also to be considered is the alternative suggestion that less formal sub-sections or working groups be encouraged to organize around particular subjects, such as morphology and/or development, within the overall framework of the General Section. Activities for future meet-

ings should also be planned. If you have any ideas on these or other topics, and particularly if you cannot be at St. John's in August, please send them to me. All suggestions will be taken to the business meeting and discussed. Also, please remember to send nominations.

Taylor A. Steeves

TAXONOMY IN ECOLOGY - The Role of Taxonomy in Ecological Research - report of the National Environment Research Council of Great Britain, publication series B, No. 14, Feb. 1976. This report recently came to my attention through the courtesy of Dr. Roberts-Pichette. I found it to be very interesting reading and believe that most biologists may find it of interest. Though it deals with the stiuation in Britain, many of the statements apply equally in Canada where we have similar problems. Below are some quotations from the report:-

"With the growth of experimental biology, ecology, and cell and molecular biology in this century, taxonomy has become a relatively unfashionable discipline." Basic training in the systematics and identification of organisms is much curtailed if not omitted altogether in undergraduate courses, taxonomy is commonly regarded as not being a suitable subject for research degrees, and there are few posts for professional taxonomists. This decline in taxonomic activity and expertise is reflected in other European countries, and has reached the point of hampering the development of disciplines which rely on an adequate level of taxonomic support."

"Ecological research, for which the Natural Environment Research Council has a prime responsibility, is one such discipline, and concern about the dangers of this situation led to the establishment of this Working Party."

> "The primary task of taxonomy is the scientific classification of the animal and plant kingdoms and research into related fields of evolutionary biology, taking advantage of all available methods including recent technical and methodological advances.
>
> The secondary task is to assist experimental biology, ecology, and various branches of applied biology with critical identifications of organisms.

There is thus a broad sub-division into (a) systematics and (b) identification."

"NERC's main biological responsibility has been for ecology and not for the fundamentals of systematics, yet the ecology of many organisms cannot be understood unless they can be properly identified, and it is no historical accident that taxonomy and natural history developed before ecology.

This underlying problem is reflected in our remit:

> To identify the role of taxonomy in ecology, with a view to identifying specific areas where lack of knowledge or expertise hampers existing and forseeable research.

We have therefore looked at taxonomy as an essential supporting discipline for the science of ecology."

"Taxonomy,... does not lend itself to a parochial approach: proper understanding of elements of the British fauna and flora may well depend on studies of particular organisms in different parts of their geographical range."

Under "Ecological Needs" the report states:-

"In some studies, e.g. of succession phenomena,...detailed taxonomic knowledge may be necessary.

Indicator species. Members of certain groups... are taxonomically difficult to separate, but a detailed study of their taxonomy may be necessary because the ecological differences between apparently similar species may be useful as indicators of pollution, management practices, or other important ecological factors."

"Diversity indices. Various types of diversity index are in use, particularly in marine pollution studies, to categorise natural communities. Considerable taxonomic precision is needed, at least in principle, to make a full inventory of the flora and fauna and derive indices from it."

"Ecological variation within species. There is a wide range of ecological behaviour within many species so that knowledge of subspecific variation is as essential to ecologists as that of distinctions between species. Knowledge of infra-specific taxonomy of some species can be very useful in evaluating conditions in an ecosystem"

"Nature Conservation. Ideally decisions on nature conservation should be based on a full inventory of all the organisms in the site under consideration. While this can be compiled reasonably well for e.g. flowering plants and some animal groups such as birds and butterflies, it cannot yet be achieved for important plant groups such as fungi and algae, nor for many invertebrate animal groups. Difficulties here arise from shortage of scientists' time, as well as from inadequate taxonomy. Where the development of inventories depends on amateurs, taxonomic aids are required."

"Amenity species. Infraspecific variability is of particular importance in forest trees, amenity species, especially trees, and some larger animals. Taxonomic understanding is, for example, useful in assessing the resistance of different elms to Dutch Elm Disease."

"It is evident...that in many groups there are few competent taxonomists: they are scattered and the situation is made worse by lack of continuity and by demands placed upon them for much ad hoc identification."

Under "Possible lines of action" the following statements appear:-

"While it is important that advice from professional taxonomists should be available to ecologists for critical or particularly difficult identifications, this function must not be allowed to distract taxonomists from more creative activities. Instead we advocate one or more of the following approaches: Special assignments [for the production of] keys, handbooks, and monographs; faunas, floras and check lists; assembling of literature... and complemented in some instances through collections and new approaches."

"The necessary manpower can only be recruited from existing scientists with relevant interest and experience, though some assistance might be gained from young researchers who have appropriate interest if not experience. We therefore suggest the following sources of recruitment:

i) Temporary diversion of existing institute scientists with appropriate interests, from their present work.
ii) NERC Research Fellows.
iii) Research Grants or contracts to appropriate university scientists.
iv) Research Studentships under appropriate supervision. This would have the additional effect of increasing the number of scientists in the country with taxonomic experience."

"Taxonomic publications cost money but are of a once-only nature. In many branches of science the costs of publication may prove small compared with those of ongoing research, but we stress that taxonomic research, while itself often inexpensive, must frequently express its results in well-illustrated and therefore costly publications.

We are therefore in sympathy with the recommendation of the Swedish Natural Science Research Council that adequate funds for the preparation and publication of taxonomic findings should be guaranteed. Support for artwork, secretarial help and travel is probably needed and possible mechanisms might involve the award of short-term contracts, the underwriting of some of the proposed publications, or the agreements to buy a number of copies.

Council should therefore explore ways of supporting taxonomic publications, in consultation with other agencies, notably the Royal Society, who have funds for publications of this kind."

"We stress...that good taxonomic works have a much longer useful life than the majority of scientific papers; some in time may become self-financing or even profitable, so that funds provided for them may eventually be recouped."

"Ecologists should be encouraged to make representative collections, where appropriate, for deposition in e.g. museums where good curatorial facilities are available."

"The success of much work depends on the effective use of amateurs in both identification and more basic systematics. It is important to stress the high degree of skill of some amateurs who, within their special group, are often the acknowledged national experts."

"Taxonomists are scarce and many problems stem from this scarcity.

The present shortage is partly due to a failure over the last 30 years to recognise the continuing importance of taxonomy, leading to reluctance to encourage research in it or to fund university or museum posts, and lack of opportunites for employment."

"The long-term solution... probably lies in the better taxonomic training of biologists."

"Above all, we must stress the strong personal motivation of many taxonomists. Unfortunately not enough is done at present to encourage such taxonomists at schools, through field courses, and through the general availability of the kind of information they want to use. At present they are actively discouraged by the current attitude that taxonomists are second-class biologists, by the limited acceptability, especially in zoology, of taxonomic topics to Ph.D. students and by the lack of opportunity for more than a small number of taxonomy Ph.D.s to use their specialisation subsequently.

Taxonomic expertise can be developed in undergraduate courses. These should, in palaeontology as well as in microbiology, botany and zoology include basic systematic principles, a broad synopsis of important animal and plant groups, and formal training in identification and the use of keys."

"At postgraduate level we welcome the existence of M.Sc. courses on aspects of taxonomy but would like to see Ph.D. students including palaeontologists better trained in natural classification and identification."

The address of NERC is Alhambra House, 27-33 Charing Cross Road, London WC2H 0AX, U.K. It may be possible to obtain copies of the report by writing to the Secretary of the Council.

## PERSONALIA

### FREDERICK HOWARD MONTGOMERY

Professor Emeritus Frederick Howard Montgomery died on February 7th in his 76th year. He is survived by his wife, Jessie M. (Smith), a son, Robert, a daughter, Patricia, (Mrs. Donald Mooney) and six grandchildren.

Professor Montgomery joined the staff of O.A.C. in 1947 after 16 years teaching high school. He was a native Ontarioan, born in Toronto, and obtained B.A. and M.A. degrees from McMaster University. He became Head of the Department of Botany in 1954 and retired from that post in October of 1967. His long years of service to the University and to the discipline of Botany were recognized in February 1975 when he was elected Professor Emeritus with the degree conferred at the Spring Convocation, 1975.

Professor Montgomery was the author of five books on the plants of Canada. On his retirement, he said that he would attempt to bridge the gap between the professional taxonomist working in the laboratory classifying plants, and the amateur naturalist who wished to identify and learn more about native plants in the field. His books on the "Native Wild Plants of Eastern Canada and Adjacent Northeastern United States," 1962, "Weeds of Canada and the Northern United States," 1964, "Plants from Sea to Sea," 1966, "Trees of Canada and the Northern United States," 1970, "Seeds and Fruits of Plants of Eastern Canada and Northeastern United States," 1976, helped greatly to fill this gap. At the time of his death he was still actively persuing his love of Botany and was working on yet another book.

Active in many organizations involved in appreciation and preservation of natural areas in Ontario, Professor Montgomery was honoured when one such nature reserve in Waterloo County was named after him. He was a keen photographer of plants, flowers and tiny seeds. Many audiences were treated to his illustrated talks and his books contain ample evidence of his skill with the camera.

The University community recognizes his achievements and extends to his family our sympathy at this time.

D.M. Britton and J.F. Alex

Dr. Porsild died whilst visiting Vienna, Austria, on November 13th 1977. His ashes will be taken to Disko, Greenland for burial in the family plot, close to the areas where he spent his youth and first acquired an interest in the arctic flora.

Born in Copenhagen, Denmark in 1901, and educated in that city, Dr. Porsild began his work on the botany of the arctic in 1922 when he joined the Danish Biological Station at Disko in Greenland as its assistant botanist. In 1926 he became botanist in the service of the Canadian Government and was placed in charge of a survey, in arctic Canada and Alaska, of suitable areas for the grazing of reindeer. This led to the establishment under his direction of the Reindeer Experimental Station in the Mackenzie Delta, and culminated with the great reindeer trek - a journey across the frozen wastes of the western arctic in which some 2400 reindeer were herded from Alaska to the Mackenzie Delta to become a source of income and food for the eskimo communities of that region. During the 10 years of preparatory research for this project Dr. Porsild spent 7 winters and 10 summers journeying extensively in the arctic by dog team, on foot and by canoe under conditions which modern day travellers in our northlands, with today's equipment, rarely have to endure - truly the intrepid explorer and pioneer. This work, besides leading to the establishment of the reindeer in Canada, produced large collections of animals and plants now housed in the National Museum at Ottawa, and also formed the basis for a series of publications on the flora, fauna and geography of the Canadian North and about the native peoples of that region.

In 1936, Dr. Porsild was appointed Chief Botanist in the National Museum of Canada and there, for 30 years until his retirement in 1966, he guided the development of the herbarium into one of the leading and most useful collections of arctic plants, including some 25,000 specimens of his own collection. As Chief Botanist, Dr. Porsild continued and intensified his studies of the Canadian flora, particularly those related to our northlands and to the Rocky Mountains. From his pen there flowed a series of now classic and authoritative papers and books on our flora - works which established his position as a leading world authority on the arctic and its flora.

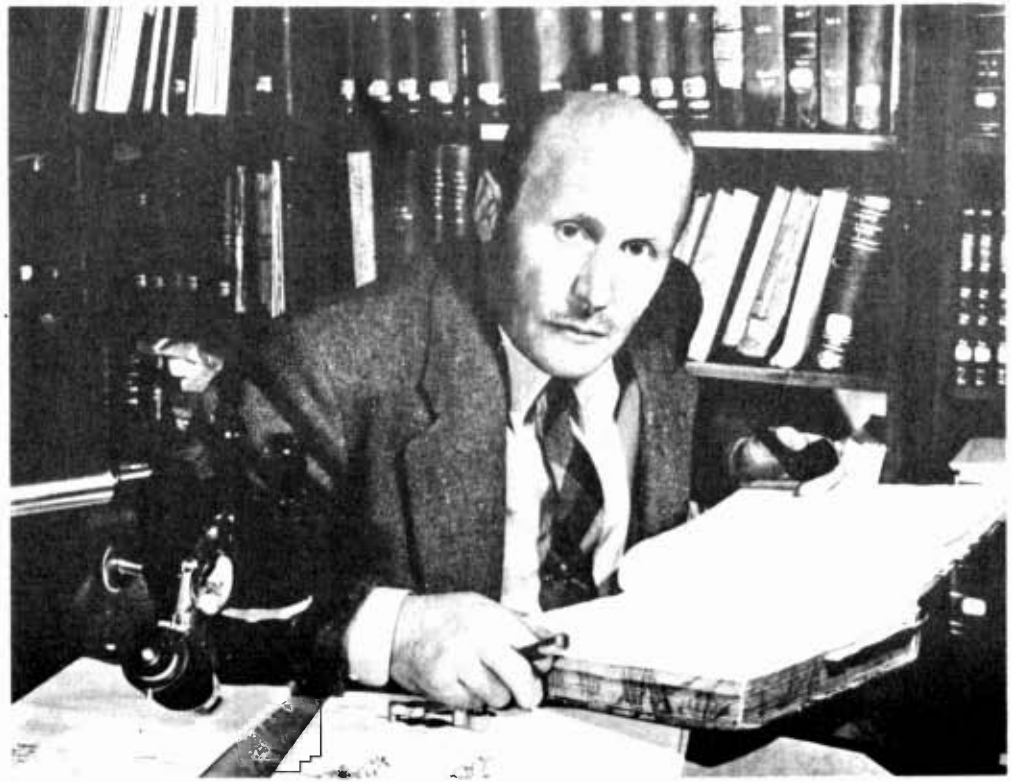
Porsild collected extensively and his collections included about 80 plants new to science, most of which he described himself and published. One, Calamagrostis robertii, he named in honour of his brother Robert Thorbirn Porsild who, until his death in December 1977, lived at Whitehorse in the Yukon and made extensive collections of plants in that territory. Many plants were named in Dr. Porsild's honour. These include:- Arnica Porsildiorum Boivin, Eriophorum X Porsildii Raymond, Draba Porsildii G.A. Mulligan, Lupinus Porsildianus C.P. Smith, Picea glauca var. Porsildii Raup, Poa Porsildii Gjaerevoll, Potamogeton Porsildiorum Fernald and Saxifraga punctata ssp. Porsildiana Calder & Savile. Antennaria Porsildii was named after his father, Morten P. Porsild who, like his sons, was also a botanist and naturalist.

During the war Dr. Porsild became, for several years, Canadian Consul in Greenland, a position which earned him recognition as a diplomat as well as enabling him to continue and broaden his studies of the arctic. During the war he was engaged on an investigation into the availability of emergency food in the Canadian arctic - a study which led to the realization that none of the flowering plants of our arctic north are poisonous and all can, in emergency, be used to supplement human diet.

The accolade of recognition and achievement in a distinguished career was frequently bestowed on Dr. Porsild. In 1946 he was elected a Fellow of the Royal Society of Canada, and of the Institute of North America, and in 1947 of the American Academy of Arts and Sciences. Other honours and distinctions included fellowships of:- the Swedish Phytogeographical Society, Uppsala (1958); the Societas pro Fauna et Flora Fennica (1948), Societatis Zoologica-botanica, Vanamo (1948), the Finnish Academy of Science (1957), and the Norwegian Academy of Sciences (1964). For his wartime services to the nation he was awarded the OBE and in 1966 the Canadian Geographic Society bestowed on him its Massey Medal for distinguished contributions to arctic botany and to the Canadian scientific community. In 1971 the Canadian Botanical Association awarded him its Lawson Medal for notable contributions to the advancement of Canadian botany, and the Botanical Society of America, in the same year, bestowed on him its annual merit award - the citation reading "famous for his share in the Great Reindeer Trek, intrepid arctic explorer and distinguished student of the flora of Canada: and a Canadian diplomat as well". In 1967 and 1973 respectively, the Universities of Acadia and Waterloo conferred on him honorary Doctor of Science degrees in recognition of his remarkable achievements and distinguished career.

Erling Porsild was a quiet and reserved man with a droll sense of humour and a strong love of the out-of-doors. He will be sorely missed by his many friends and by botanists and students of our northlands in Canada and throughout the world, for he was a remarkable man of such diverse talents and achievements - a distinguished botanist, authority on the Canadian arctic, geographer, intrepid explorer, pioneer and diplomat - these are but some of the attributes and achievements which have marked the career of this outstanding Canadian.

J.K. Morton



Photograph courtesy of the National Museum, Ottawa.

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(compiled by Dr. J.H. Soper and Mr. W.J. Cody)


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## PROFS CAN TRADE JOBS FOR A YEAR

A new kind of exchange programme for professors has been set up by the Association of Universities and Colleges of Canada and the Canadian Association of University Teachers.

It will involve pairs of professors at different universities trading places for a year. Each professor will be paid as usual by his or her home university, and "in all other ways participants will be treated by the home university as if he or she were on full-time service."

The first exchanges, on a "trial" basis, will be for 1978-79.

The exchange programme has been set up "to enhance the intellectual vitality of Canadian universities in a period of stable faculty numbers".

CAUT and AUCC will pay travel expenses; the professors involved are responsible for finding their own housing. For the first year at least, the programme is only open to tenured faculty.

Professors who are interested in taking part in the programme are being invited to write to CAUT or AUCC. The organizations are hoping to receive applications from pairs of professors who want to trade places, but will also do their best to find a suitable exchange partner if a professor doesn't have one in mind.

## DUTCH ELM DISEASE IN SCOTLAND

There are over 28,000 elms in Edinburgh, most of these being the principal trees of the City's public parks, gardens and open spaces. In the New Town area, through the influence of the landscape gardeners of over one hundred years ago, the elm is the major component of the gardens that provide the setting for its world famous architecture. Sadly, this mature landscape is now threatened by the ravages of Dutch Elm Disease.

Late in 1976 a single outbreak of this disease was identified in the western outskirts of the City. During the winter the probable source of the outbreak was traced to a nearby, heavily wooded but abandoned estate, where there were signs of a major outbreak; this being only five miles from the city centre.

Almost four hundred trees have already been condemned within the Green Belt and the City. However, since the major disease centre occurs in the highly-wooded areas where it will be impossible to destroy all breeding grounds of the beetle, the threat to Edinburgh's elms will be an annual one. The greatest fear is that new breeding centres will be established in the extensive wooded areas within the City. These would speed up the rate of disease spread and make its control even more difficult to manage. Next year the co-operation of the general public in reporting new outbreaks will be vital if the disease is to be controlled and new breeding centres prevented from establishing.

There are now known to be two strains of Ceratocystis ulmi, the cause of Dutch elm disease: the non-agressive strain which has been present in Britain since the late 1920s and the aggressive strain which is believed to have been introduced from Canada in the late 1960s and which has caused such devastation in southern Britain in the last few years.

Prior to the discovery of the aggressive strain in Glasgow in summer 1975, the non-aggressive strain was known to have been present in the Coldstream-Kelso-Jedburgh area since 1938. This was the centre for quite a serious outbreak and cases were recorded as far north as Edinburgh. Virtually nothing was known of the distribution of the vector beetle (Scolytus scolytus) except that it was present in the Borders outbreak area. However, we know of one record near Stirling in 1972. Was the disease present as well? It seems likely, because examination of tree ring evidence last year showed that the disease was present, but apparently unreported, in Fife and West Lothian as early as 1971 and in the Perth area by at least 1972.

Thus the apparently rapid spread since 1976 has to be seen against a background of previously unknown outbreaks of what was probably the non-aggressive form of the disease, an imperfectly known distribution of S. scolytus and a recent increase in public awareness which has resulted in an unprecedented scrutiny of elms.

By autumn 1976 the aggressive strain was known to occur widely in an arc from Dundee-Perth-Stirling-Falkirk-Dunfermline and Edinburgh, with outlying outbreaks in Glasgow, the Clyde Valley and in the Borders. The non-aggressive strain was recorded as far north as Dunkeld.

So far this year (30th August 1977) the aggressive strain has been recorded in four "new" areas: (a) at Dunkeld and Blairgowrie, (b) Forfar, (c) between Fettercairn and Laurencekirk, and (d) between Annan and Moffat. It has also been recorded in Edinburgh and East Lothian.

The non-aggressive strain has been recorded at Kenmore on Loch Tayside and within the last few days the disease has been found in the Trossachs but we have not yet identified the strain.

As already intimated, it is difficult to estimate the rate at which the disease is spreading but there are probably more trees affected this year than there were last year and over a wider area.

Compiled from two articles, by Drs. Redfern and Sheldon, published in the Botanical Society of Edinburgh News No. 23, October 1977.

## LINNEAN LIMERICK

There once was a chap called Linnaeus
Who discovered all nature was chaos
He set out to describe
every species and tribe
so that chaos would no longer dismay us

By F. Scott, Nova Scotia Museum, and left on Pierre Taschereau's desk after his visit to the Linnean Herbarium in London to study the "chaos" of Atriplex sp. From Botanical Society of the British Isles Newsletter No. 17, Dec. 1977.

## THE BIOLOGICAL FLORA OF CANADA - A new series

There is a new forum to publish information on the biology of the Canadian flora. The Canadian Field-Naturalist has agreed to publish, in a continuing series, papers that describe and interpret the role of particular vascular plant species in the vegetation of northern North America. These accounts, to be written by various authors, will follow the guidelines outlined by Dr. G.H. LaRoi in "The Biological Flora of Canada - A new series", Can. Field-Naturalist 91(3): 269-272. The format is similar to that in The Biological Flora of the British Isles, published regularly by The Journal of Ecology.

Decisions on the acceptance of a particular species will be influenced by i) its ecological and economic (?potential or realized) importance in Canada and, ii) the extent of its geographical range in Canada. Species already registered with the two other Canadian series, The Biology of Canadian Weeds and The Biological Flora of the Canadian Prairie Provinces, published by the Canadian Journal of Plant Science will not be accepted for this new series. Offers of contributions should be made to Dr. G.H. LaRoi, Department of Botany, University of Alberta, Edmonton, Alberta, T6G 2E9; acceptance of a species is subject to approval by a committee. Species that have received treatment elsewhere but for which significant new material has been accumulated may be published as "Supplementary Accounts" to avoid needless repetition.

Dr. LaRoi has urged contributors to put information obtained from the literature into tabular form. This will make each account a reference document that is easy to handle and to extract information. Series such as this identify the areas of ignorance as much as those of knowledge; the breadth of their coverage helps us focus on the topics that should be studied further in order to more fully assess the role of particular species in the Canadian vegetation.

Wayne R. Hawthorn

## PROPOSITION DE CONSORTIUM DES HERBIERS DE L'EST DU CANADA

Il a été suggéré par Dennis Woodland qu'un consortium des Herbiers de l'est du Canada devrait être formé. Par l'échange d'information entre les conservateurs, ce consortium viserait à faire reconnaitre l'importance de l'herbier pour les recherches botaniques, à augmenter les relations entre les conservateurs dans le but d'améliorer et de développer les échanges, les prêts, l'inventaire des spécimens types, l'achat d'équipement etc.

Une rencontre pour discuter de ce sujet aura lieu pendant le congrès le l'Association botanique du Canada à St-Jean, Terre-Neuve, cet été. Les conservateurs des herbiers de l'est du Canada sont donc particulièrement invités (les représentants des autres herbiers sont également bienvenus). Ce que nous projetons, c'est la formation d'un consortium parallèle à celui récemment formé par les herbiers du nord-ouest.

## PROPOSED CONSORTIUM OF EASTERN HERBARIA

Dennis Woodland has suggested that a 'Consortium of Eastern Herbaria' should be formed. This consortium would, through exchange of information among the curators, attempt to gain an increased recognition of the importance of herbaria to botanical research, to increase liaison between herbarium curators in order to improve procedures and to come to agreement on such matters as exchange, loans, equipment purchases, and so forth.

A meeting to discuss the concept will be held during the CBA/ABC meetings at St. John's this summer to which curators of eastern herbaria are particularly invited (but representatives of other herbaria are welcome too). We have in mind the formation of a consortium parallel to that recently formed by the northwestern herbaria.

## THE NATIONAL INVENTORY PROGRAMME

The National Inventory Programme is one of five National Programmes offered by the National Museums of Canada to the Canadian museum community. Its objective is to create a central inventory of collections of Cultural and Scientific Heritage for the purpose of facilitating management of collections, exhibit planning, research and education. To achieve this objective, a network is being created, consisting of a central computerized data bank and remote input and retrieval centres.

After several years of development, the system became operational in 1975 and at the end of 1977 there were 65 participating museums and a network of 20 computer terminals across Canada. More than 550,000 artifacts, paintings and specimens have already been recorded in the data bank.

In the first phase of operation, only five disciplines were covered in the Inventory: Fine & Docorative Arts, History, Ethnology, Archaeology and Ornithology. In 1977 Botany was added and there are now three museums entering data about herbarium specimens: National Museum of Natural Sciences, Ottawa (the National Herbarium; CAN and CANA); Manitoba Museum of Man and Nature, Winnipeg (MMMN); New Brunswick Provincial Museum, St. John (NBM). In the future, other disciplines will gradually be included, such as Mammology, Herpetology & Ichthyology, Paleobiology, Earth Sciences, and some or all of the subdivisions of Invertebrate Zoology.

As each discipline is added to the Programme, a special committee or Task Force is set up to list and define the fields of information relevant to the collections of that discipline, to propose standards for minimum information to be recorded, to compile data on the location and size of major collections in Canada, to estimate the time required to enter those major collections and to suggest priorities for input, if possible.

Botany Task Force - A Botany Task Force met in Winnipeg on June 28, 1977, concurrently with the Annual Meeting of the CBA/ABC and was composed of: G.R. Brassard, Memorial Univ. (Bryophytes); K.L. Johnson, Manitoba Museum of Man and Nature (MMMN); A. Legault, Univ. of Sherbrooke (Vascular Plants); J.A. Parmelee, Mycological Research Institute, Ottawa (Fungi); J.R.

Riley, Univ. of Toronto and Royal Ontario Museum (Vascular Plants); R.F. Scagel Univ. of British Columbia (Algae); J.W. Sheard, Univ. of Saskatchewan (Lichens); Valerie Simpson, N.B. Provincial Museum (NBM); J.H. Soper, National Herbarium of Canada (Chairman); and three observers: D. Jenkins, Manitoba Museum of Man and Nature (Computer Programming Project); P. Choquette and C. Shaw, National Museums of Canada (National Inventory Programme).

A report of the Botany Task Force was prepared after the meeting and submitted to the Advisory Committee of the National Inventory on October 18, 1977; it was accepted and approved for implementation and circulation. The report contains a list of 53 proposed fields (with names and definitions) available for input of information about botanical specimens. From this list, 13 fields were selected as "Essential Fields". A preliminary listing was made of some 70 Canadian Herbaria and their holdings for all groups of plants: it yielded a total of over 5,000,000 specimens. If we assume a rate of input of specimen records somewhere between 50 and 150 per day for a single operator, it would require between 33,000 and 100,000 operator-days (130-400 years) to record all these collections in the data bank. These figures do not include specimens being added annually to the collections in Canadian herbaria. Obviously, the expectation of completing such a job in the near future is not very great. The Task Force therefore decided not to propose any priorities for the recording of particular botanical collections at the present time. However, it was suggested that where a collection is very large, it might be advisable to develop first the capacity to handle current accessions before tackling the backlog. For collections of less that 25,000 specimens, it would be feasible to input the records for the whole collection in two years or less. Regardless of the size of a collection, priority could be given to the input of data concerning TYPE specimens and VOUCHERS for monographic and floristic studies, surveys of national and provincial parks, or for checklists of special significance, e.g. rare and endangered plants.

Participation - Information will be accepted for the National Inventory's Data Bank from those institutions which: adhere to the standards developed by the Task Forces; agree to provide access for other participants; are non-profit federally or provincially chartered organizations. Input to the data bank may be through a remote terminal and/or by entry of data directly at the Inventory's Data Entry Centre in Ottawa. The latter case applies only where records can be sent for input, since specimens are not handled by the input operators at the central location.

Application for a terminal can be made to the National Inventory Programme and will be assessed on the following criteria: relatively large collection of significance; an established and on-going Registration Programme to professional curatorial standards; a significant volume of information to provide high equipment utilization. In order to satisfy the last criterion, a terminal can assist other institutions in the vicinity by acting as a Regional Centre by agreement between the institution and the National Inventory. There may be more than one Regional Centre in the province.

Botanical Implications - In addition to becoming a valuable source of information on botanical collections, the National Inventory Programme could become a medium for the development of co-operative projects and for the communication of botanical information among participants. It should be remembered, however, that any data bank yields only the data which have been entered and that all records must be proof-read if their accuracy is to be at an acceptable level. Participants will be able to obtain lists of taxa, collectors, localities, etc., sorted in different ways, as well as catalogue cards, labels, accession cards, or data in a variety of pre-designed formats.

Investigations in Europe - A group comparable to the Botany Task Force has been actively investigating similar problems in Europe. At the conclusion of an international NATO-sponsored conference held at Kew in 1973, a "Working Party" was set up to investigate possible application of E.D.P. methods in major European plant taxonomic collections and, in particular, to look at the feasibility of a co-operative project to produce a TYPE-register. The results of the meetings of the Working Party were published in 1975 (ADANSONIA, ser. 2, 15(1): 7-24). A pilot project carried out on the Papaveraceae showed that, although the task of producing a TYPE-register is a large one, it is feasible.

Copies of the list of fields for the National Inventory's BOTANY DATA BASE and/or further information on the Programme may be obtained by writing or calling the Director of the Programme: Peter Homulos, National Museums of Canada, Ottawa, K1A 0M8 (Tel. (613)996-8501).

James H. Soper

## POLITICIANS AND SUPPORT FOR RESEARCH & DEVELOPMENT

It has not, in the past, been the policy of the Bulletin to become a forum for politicians and I hope that we shall not change in this respect in the future. However, the scientific community in Canada (including members of the CBA) has, for some years, been petitioning the government of this country to provide greater support for research and has put up a spirited fight against the inadequate and all too frequently diminishing level of funding for scientific research in Canada. The policies of the present government and their effects are all too well known to most of our members and have been the subject of debates at our annual meetings and reports in the Bulletin. At a time when a federal election appears imminent it is appropriate that we should be aware of the position of the political opposition in so far as it relates to research and development. Accordingly, extracts are printed below from a speech made by the Honourable Joe Clark M.P., National Leader of the Progressive Conservative Party of Canada, at the nomination meeting in Essex-Kent Co., Ontario on March 2nd, 1978.

Recently the Organization for Economic Cooperation and Development (OECD) published a list of the 110 most important technical innovations since Word War Two. Not one of those 110 innovations originated in Canada.

That illustrates one of the most disturbing problems facing our country. In an age when progress depends on technology, Canada has discouraged research and development.

Innovation is crucial to all our national economic objectives. It is the key to new growth and new job opportunities. It is the key to industrial efficiency and thus to more stable prices. It is the key to better trade performance and to a stronger Canadian dollar.

First, we [the Progressive Conservative Party] will ensure that R and D funding has a much larger priority in the allocation of our national resources. We now invest less than 1 per cent of our Gross National Product in innovation -- the worst record of any western nation. The Senate Committee on Science Policy set 2.5 per cent of GNP as a proper national objective. Our goal will be to achieve that target by the mid-1980's.

Second, while government has an important continuing role in R and D funding, especially in areas like agriculture, we need a special effort to increase investment in innovation by Canadian industry. The sad fact is that General Motors, IBM and Ford each spend more on R and D in the United States than do all Canadian Companies taken together. Yet even with that record the U.S. government provides a more generous tax credit for research and development than does the present government in Ottawa. A significant increase in the R and D tax credit will be a first priority of a PC government.

Third, since our ability to produce food is a precious national asset, we will give particular priority to strengthening our agricultural research and development program. The federal government now allocates barely one-tenth of its R and D funding to agriculture; the Agricultural Institute of Canada has warned us that this situation "threatens Canada's position as a major world producer and supplier of food." We will ensure that agricultural research receives the emphasis it deserves -- and we will ensure, too, that more of that research is done in the fields, farms and feedlots across the country rather than in urban laboratories.

Fourth, as the Science Council of Canada has pointed out, "in high technology industries the strength of a company is it employees, not its physical assets." The key to innovation is to build and maintain an effective team of human talent. Yet current policies ignore this essential fact. We will recognize it by extending the tax credit system to provide special incentive for new employment in industrial research, design and development.

Fifth, an effective national policy on innovation must take into account the fact that, whatever its benefits, the high proportion of foreign ownership and control of our industries has been a significant factor behind our poor R and D record. Most branch plants in Canada are miniature replicas of their parent companies; their R and D programs often consist of little more than adopting parental technology to Canadian tastes. If all we have are passive government programs...programs which merely respond to requests rather than actively stimulating activity in areas where it is best for Canada, we run the danger of having little more than "colonial status" in research and development. Our policies will be more than passive or responsive; they will be geared to promote innovation where Canada is best equipped to compete with the rest of the world and by companies who have a clear and unfettered commitment to Canada's interests.

This is the age of technology and we must have that technology if we are to succeed as a country.

We don't lack in creativity and imagination as a people. Our investment in education ranks with the best in the world; so do our achievements in basic research in fields from medicine to nuclear energy. The creative talent is there. What isn't there -- and what must be there -- is national leadership to match that creative potential with our economic objectives.

## FORTHCOMING MEETINGS

Canadian Nature Federation Conference, P.E.I. August 16-21, 1978. This year Canadian naturalists will gather in Charlottetown for the Annual Conference; a pot-pourri of talk sessions, field trips, socal activites and a photography workshop. The hosts will be the Prince Edward Island Natural History Society, with the assistance of the New Brunswick Federation of Naturalists in the field trip program. The Conference will start with field trips in New Brunswick on August 16th and then continue in Prince Edward Island. Field trips are planned to take you through inland and coastal habitats; social activites will offer opportunities to sample Island specialties. All activities promise to add up to 6 days of stimulation, adventure and fun. Emphasis will be on natural history and the environment in Prince Edward Island and the Maritimes in general and how they relate to our agricultural and marine environment.

The program will begin with a historical review of the original habitat and its wildlife species and how these have changed the settlement and cultivation of the land. Perhaps more than any other province, human activities have dramatically modified the natural systems of Prince Edward Island. The results of these habitat changes are amplified by our being an island, we lost all our large mammals and today's flora and fauna have adapted to a habitat which is extensively cultivated or otherwise disturbed. The vast fisheries reserves of the Gulf of St. Lawrence are dwindling in wake of fishing fleets. As recreational, agricultural and marine pressures increase, available wildlife habitats are reduced. Serious planning for protection and in some cases restoration is required now. You and your naturalists groups are becoming very important in implementing this protection. Come to Charlottetown to hear, see and enjoy more of a unique Island. FOR FURTHER INFORMATION CONTACT CANADIAN CONFERENCE FOR NATURE 1978, BOX 2346, CHARLOTTETOWN, PRINCE EDWARD ISLAND.

The Third International Congress on Plant Pathology will be held 16-23 August 1978 in Munich, Germany. Contact Congress Plant Pathology, Biologische Bundesanstalt, Messeweg 11/12, D.3300 Braunschweig, FR Germany.

Thirteenth International Botanical Congress - Sydney, Australia. 21-28th August, 1981.
The Programme will consist of 12 sections - molecular, metabolic, cellular and structural, developmental, environmental, community, genetic, systematic and evolutionary, fungal, aquatic, historical, and applied botany. There will be plenary sessions, symposia, and sessions for submitted contributions (papers and posters). Chairman of the Programme Committee:- Dr. L.T. Evans.
Field Trips will include visits to arid and semi-arid regions, eucalypt forest, rain forest, heath, coastal vegetation (e.g. Great Barrier Reef, mangroves) etc., and specialist trips. Chairman of the Field Trips Committee:- Prof. L.D. Pryor.
First Circular, containing details, will be mailed in August, 1979. Send your name and full address, preferably on a postcard, to ensure your inclusion on the mailing list.
Enquiries should be sent to the Executive Secretary, Dr. W.J. Cram.
Congress address - 13th I.B.C., University of Sydney, N.S.W. 2006, Australia.

The Fourth International Congress on Plant Cell and Tissue Culture will be held 20-25 August 1978 at the University of Calgary, Canada. Contact International Association for Plant Tissue Culture, Conference Office, University of Calgary, Calgary T2N 1N4, Alberta, Canada.

Plant Sciences Conference - June 25-30, 1978 at Virginia Polytechnic Institute & State University, Blacksburg, Virginia.

This year several plant oriented societies are meeting jointly at VPI & SU which is acting as the host institution for this Plant Sciences Conference. The participating societies include AFS (American Fern Society), ASPP (American Society of Plant Physiologists), ASPT (American Society of Plant Taxonomists), BSA (Botanical Society of America), IAWA (International Association of Wood Anatomists), and PGRWG (Plant Growth Regulator Working Group). The ABLS (American Bryological and Lichenological Society) may also meet at VPI. The meetings are being arranged by University personnel and local and national representatives of each society. In addition to regular paper sessions, demonstrations and field trips, tours of local points of interest and special functions for spouses and families are being arranged. Several field trips are presently being planned.
Further information from:- Plant Sciences Conference, Donaldson Brown CEC, VPI & SU, Blacksburg, VA 24061, U.S.A.

American Association of Botanical Garden and Arboreta.

The 1978 meeting is being held at the Royal Botanical Gardens in Hamilton, from Sunday, May 28 through to Thursday, June 1. The theme of the meeting is "Living Plant Collections - Accident or Design". It will provide a comprehensive overview of all the problems that are associated with living plant collections, including the questions of, use of collections; why they are assembled; evaluation of collections; how collections should serve the public; trade; planners; and also, the responsibility of development and control of living plant collections, including a symposium talk by Dr. Peter A. Thompson on the place and role of gene banks as part of a plant collection policy for botanical gardens and arboreta. We will also be discussing interface between botanical gardens and commercial nurseries with respect to the use and development of plant collections. Dr. Roy Taylor writes - "I believe that it will be a most important meeting to set some standards, and we would certainly welcome participation by members of the Canadian Botanical Association who wish to come to the meeting. Details and program information can be obtained by contacting Dr. Leslie Laking, Director, Royal Botanical Gardens, Hamilton.

## PUBLICATIONS

Zlaki SSSR (Grasses of the U.S.S.R.) by N.N. Tzvelev. Nauka Leningrad, 1976, 788 pp. Price: 5.26 rubles.

Tzvelev's book is the first monograph treating all grasses in the U.S.S.R. since the publication of the second volume of Flora SSSR in 1934. It deals with 1011 species (a total of 1407 specific and infraspecific taxa) found in 177 genera. In a short introduction the author discusses the relation of his treatment to previous treatments (namely, Flora SSSR). Then follows a brief description of the anatomy and morphology of grasses as well as a chapter on the evolution of grasses.

The main part of the book is the systematic treatment of grasses. The author follows the format of the recently published Russian floras (e.g., A Flora of the European Part of the U.S.S.R., A Flora of the Northeast of the European Part of the U.S.S.R., and A Key for the Vascular Plants of Sakhalin and Kurile Islands). The treatment of a species includes the listing of its synonomy, notes on the ecology and distribution of the species, its chromosome number and notes on infraspecific variation, problems relating to the nomenclature of the species, etc. The actual description of the species is contained in bracketed identification keys, where each lead usually consists of several lines of small print. It is often difficult to distinguish the diacritical characters from the descriptive part of the key, and it is a pity that the author did not follow the example of the Flora of the Northeast of the European Part of the U.S.S.R. (to which he was a contributor), which printed the diacritical characters in italics. Each supraspecific taxon is described in detail, and its nomenclatural type is given.

The concept of species applied by Tzvelev is broad; it uses the subspecific category extensively. On the generic level, Tzvelev follows the example given by Nevski and breaks "bulky" genera into smaller, "more natural" genera. This resulted in substantial changes, especially within the genera Elymus and Agropyron, where additional genera such as Elytrigia and Leymus are used together with the non-traditional concept of the former genera. Only time will show whether this concept can replace the more conservative concept found in works on American floras.

It is a pity that the book does not contain more illustrations. Only a fraction of the genera are illustrated, each genus being represented by only one species. Only the spikelets, floral parts and ligules are drawn; pictures of the habit and details of the inflorescence are not given. The Russian language is a considerable obstacle for most Canadian readers and I hope that an English translation of this book will appear soon because Tzvelev's treatment of many circumboreal taxa would be of great interest in Canada.

Adolf Ceska

Vascular Plant Families by J.P. Smith, published by Mad River Press Inc. California.
Price: US$ 7.25.

This book is intended for the student who is taking an elementary plant taxonomy course or for anyone who is interested in learning about the families of vascular plants.

It provides a useful treatment of the families of vascular plants of North America. All of the families with native species are treated. In addition, it includes a few other families of ornamental or economic importance.

A brief description is given of the characters of all the main families and the "recognition" (diagnostic) characters are listed together with a flora formula. A brief indication of the size of the family, its principal range of distribution and economic importance complete the account of each family. Selected genera are mentioned and a line drawing of one or two of these is given. The choice of genera to represent the families has obviously been done with considerable care so as to ensure that students almost anywhere in North America will find familiar examples amongst those listed. In some cases this is accompanied by a drawing of the half flower and/or floral parts, and a floral diagram.

A table is given with each class summarizing in a single line the basic information for each family.

A brief introduction introduces the student to the taxonomic hierarchy, the use of scientific names and the international code of nomenclature. At the end of the book there is a list of regional and state floras and a short chapter on collecting and preparing herbarium specimens. A glossary is provided to explain the meaning of botanical terms used in the account of the families.

The author is to be commended on producing an excellent and modestly priced account of our flora for use in university and college laboratory classes on vascular plant taxonomy. More and better diagrams of floral structure would have enhanced the value of the book but it will be a very useful laboratory text for our students.

J.K. Morton

## RESTOCKING THE GENE BANKS

Success in producing new high-yielding crops has reduced the possibilities for improved strains in the future, according to a British plant biologist. The high performance of hybrid strains that has done so much to improve world food resources, has also resulted in a much-depleted genetic bank to draw on for any further improvement.

Speaking to the British Association for the Advancement of Science recently, University of Birmingham plant biologist Professor J.G. Hawkes outlined the paradox. He said plant gene sources that had seemed inexhaustible were drying up, and that diversity for some crops had almost disappeared in Asia and Africa. Related wild species were also vanishing as their natural environment in forest and scrub were cleared, so less and less material for the genetic pool would be available from them.

Professor Hawkes said that despite the colossal problems of organization and financing involved, a well-organized world body was needed to oversee the problem of maintaining plant diversity. A start had been made, he said, with the establishment of the International Board for Plant Genetic Resources in 1974, and it seemed that a reasonable part of the heritage of crop plant diversity could be saved.

In order to save the world's plant genetic bank from liquidation, resources should be surveyed and all possible material collected, stored and made available to breeders. Scientists - particularly those from developing countries where most genetic capital still exists - should be trained in this field. Training programs should cover all facets of the problem including genetics, seed and tissue culture, and information handling, he said.
From International Development Research Centre Report Vol. 6, No. 4, 1977.

## GINSENG

The status of ginseng (Panax quinquefolius) is to be reviewed to determine whether or not the plant should be listed as Endangered or Threatened (F.R. 8/11/77) in the U.S. Federal List of Endangered Species.

Ginseng has been observed in the wild in at least 32 States (all in the eastern half of the United States), as well as in the Provinces of Quebec, Ontario, and Manitoba, Canada. In some areas, ginseng has been severely depleted in the wild as a result of both overcollecting and habitat modification.

Ginseng currently is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Although this treaty does provide for control over export of ginseng, it does not contain specific provisions for conservation of the plant in the wild. Most U.S. States do not have such provisions, nor do they have uniform controls for the harvesting of the plant in the wild. Consequently, the Service believes that it is important to determine whether or not the plant qualifies for protection under the Endangered Species Act of 1973.

Meanwhile, the plant is already included in numerous State lists of endangered, threatened, and rare plants. Furthermore, it is included in the Smithsonian Institution's compilation entitled "Endangered and Threatened Plants of the United States."

In addition to inviting responses from any interested parties, the Service is seeking the views of the Governors of the States where the plant is known to be found, as well as the Government of Canada.

Comments received will be used by the Service to determine the proposed status of the plant. In addition, the information will be used by the Endangered Species Scientific

Authority (ESSA), in developing its findings concerning exports of ginseng that have been obtained from the wild. It is emphasized that this is a status review and not a proposed rulemaking.

Ginseng is on the lists of rare and endangered species for Ontario and for Canada.

## POSITIONS AVAILABLE

University of Saskatchewan. Applications are invited for a one-year, temporary appointment at the rank of Assistant Professor, beginning July 1, 1978. Teaching duties will include introductory biology and plant anatomy and development. Applicants should submit a curriculum vitae and have two letters of reference sent to: Head, Department of Biology, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

Université de Montréal. Département de sciences biologiques. Professeur adjoint ou agrégé selon expérience. Ph.D. ou D.Sc., spécialiste en taxonomie végétale ayant une bonne connaissance de la flore de l'est de l'Amérique du Nord, avec une ouverture sur les méthodes modernes de taxonomie. Poste à demi-temps en tant qu'assistant-conservateur de l'Herbier Marie-Victorin, et à demi-temps pour l'enseignement en français de la taxonomie végétale et de la taxonomie générale au 1er cycle, et l'enseignement dans sa spécialité aux 2ème et 3ème cycles. Salaire selon la convention collective. Le curriculum vitae et deux lettres de recommandation doivent être adressés le plus tôt possible par courrier recommandé au Dr Raymond McNeil, directeur, CREM, Université de Montréal, C.P. 6128, Succ. "A", Montréal, Québec, H3C 3J7, Canada. Le poste doit être comblé le plus tôt possible à partir du 1er juin 1978.

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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. Janet R. Dugle, Environmental Research, Whiteshell Nuclear Research Establishment, Pinawa, Manitoba R0E 1L0.