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Editor / Rédaction:
J. F. (Joe) Gerrath
Guelph

PATRON
His Excellency the Right Honourable / Son Excellence le Très Honorable
Ramon John Hnatyshyn P.C., C.C., C.M.M., C.D., Q.C.
Governor General of Canada / Gouverneur Général du Canada

ON THE INSIDE
À L'INTÉRIEUR

EDITOR'S COMMENTS
COMMENTAIRE DE LA PART DU RÉDACTEUR

This issue [another "20-pager"] begins another volume in the relatively short history of the CBA/ABC Bulletin and, as usual, I am a little late getting it to the printers. There are several reasons for this, but I won't bore you with the gory details.

Calgary Meeting Approaches

This frigid winter weather will end soon, I hope, and we can then set our sights on the Annual Meeting in Calgary at the end of June. Included in this mailing [to members only; subscribers do not have it sent to them] is the registration package for the meeting. The program and other activities arranged by Vice-President C.C. Chinnappa and his committee look very interesting. Take note of the major deadlines involved with the meeting [March 15th for abstracts and May 26th for registration]. You should also check that a last-minute correction slip has been included which lists a change in Field Trip #5 schedule (it should read, for the line giving the Date, "Thursday, June 30, 13:00 to Friday, July 1, 21:00") Anyone who wishes to present more than one paper, and who cannot convince non-attending colleagues to part with their abstract form, can obtain more copies by contacting C.C. Chinnappa or Billie Summers (see addresses and phone/FAX numbers given on the abstract form and on the back of the registration form). In a pinch you can submit any extra abstracts on a separate sheet of plain paper with a photocopy of the information printed in black on the abstract form (see #9 on back of abstract form for size details). Students (and their supervisors) should read the Bulletin pages which describe the Cinq-Mars and

Macoun Awards and take appropriate action if they wish to enter the competitions. We hope to have a good turnout of students, since their papers are often the most interesting ones at the Annual Meeting.

More on the CMN situation

The situation at the Canadian Museum of Nature continues to be a concern for CBA/ABC. It is discussed in the President's message and we have reprinted in this Bulletin a letter received by the President from Dr. Emery in response to a letter from CBA/ABC. We also include a news release issued by a lobbying group, True Friends of Nature, organized by the Sierra Club of Canada, which is attempting to maintain pressure on Ottawa mandarins concerning the Museum situation. Anyone wishing to support this lobbying group can contact them directly. We have also heard some disturbing rumors concerning the safety of systematic databases at the Museum, and we are trying to obtain more exact information on this for publication in the next Bulletin. From what we have heard so far, it appears that some of the important systematic databases are in danger of being destroyed (or perhaps already have been lost) or at least rendered inaccessible to researchers by changes being made in the computer operating system at the Museum. This brings up a whole series of questions about the maintenance and transfer of large databases when new computer systems are installed, whether this be at museums, universities or wherever.

By the way, our esteemed national TV (English language CBC) network finally got around to reporting on the situation at the Museum. Science reporter Eve Savory presented the concerns of biological systematists quite well, I thought. However, a measure of the Museum situation's importance as a news item for the CBC was its placement as the last item on Prime Time News' commentary section on December 31, New Years' Eve, ensuring a minimal audience which only included non-partying fogies like me.

New series of contributions

You will notice a bit of a departure from our normal fare on page 10. We have agreed to publish a short series of papers on economic plants being put together by Paul Catling and Ernie Small. We hope that these will prove to be interesting to at least some of our readers. If anyone else has short contributions which do no fit easily into the normal stream of refereed publishing, we would consider printing them in the Bulletin if space is available. In order to keep our costs down, we would ask that no photographs be included in any contribution. Please contact the Editor first before submitting anything in this category of contribution.

1994 Science Fair location

We have just learned that the Canada Wide Science Fair, which in a previous Bulletin we said would be held in the Yukon, will now be held in Guelph, May 15-22, 1994. Anyone who is close enough can have a chance to view the contributions of future scientists who are now in high school. As we do every year at this annual Science Fair, CBA/ABC will be awarding a special prize for the best botanical exhibit.

Philatelia Botanica

Some of you have pointed out the lack of any "Philatelia Botanica" contributions in the Bulletin for some time. When I began my term of servitude putting the Bulletin together (it seems ages ago!), I used this item as a convenient "filler". In recent Bulletins there has not been much need to have short space fillers. However, I promise to try to include a new series of Philatelia Botanica in future issues. To whet your appetite (if you collect stamps), I note that Canada Post will soon be jacking up the rates on letters for international destinations (March 1st, I think). As a result three more denominations in the "fruit tree" series are to be issued late in February. Two new stamps for mail to the United States are the 50 cent value for ordinary letters, showing the Snow apple, and the 68 cent value, showing the shagbark hickory. The 88 cent stamp for other countries shows the Westcot apricot.

Joe Gerrath
Editor, CBA/ABC Bulletin

P.S. Keep sending in those contributions that keep the Bulletin filled with information. We need more contributors who will send us lists of recent graduates in botanical sciences at their university or institute.

P.P.S. Absolutely Free! Important Executive Positions!
I am reminded by the current Executive that we have no nominations submitted for President-elect, Secretary and three Directors. Please nominate someone or volunteer your time.

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PRESIDENT'S MESSAGE

It's been another year of transition for the CBA/ABC. Much of what has transpired has been quite positive. At the Annual General Meeting in Ames, Iowa, the membership voted for a substantial decrease in dues, down from $65 to $45 for a regular member. As you know, we were able to decrease fees because we finally disentangled ourselves from CFBS/FCSB and the hefty surcharge that they required. I am, of course, hoping that many of you will consider putting some of the extra money that you now have in your pocket toward our many awards and grants. It would certainly be very much appreciated by the many students who are helped and encouraged by these awards.

Our primary task now is to work at re-establishing our membership base, which has been eroded by the past higher fees. We not only need to get back some of the members who left (it should be noted that many left for reasons other than higher fees, i.e. retirements, moving out of the country, etc.), but to attract new members, young botanists who represent the future of the Association. I am a realist, however, and I know that it will not be easy to maintain, let alone to increase, our membership. Botany in Canada, as in many countries that have had a long and rich tradition in the plant sciences, has been under attack from all sides. Many botanists at universities, research institutes and in government have retired or will soon retire. Most of those positions will either be frozen, changed to another discipline or cut. New graduate students are having a hard time finding jobs, even with several years of postdoctoral experience. Many have become so disenchanted that they've given up and gone on to pursue other, non-botanical careers. We are losing some of the best and brightest botanists in Canada. There seems to be very little to be optimistic about as we approach the second millenium; and yet, we are at the gateway of what could be a great renaissance in botanical studies, driven largely by the need to deal with very serious environmental issues (*i.e.* decline in biodiversity) and the closing gap between molecular and classical approaches in developmental biology. There will eventually be opportunities out there, but will it be too late for this generation of young botanists? We may in the future, as we did in the 50's and 60's, need to go outside of Canada to find individuals who are trained in the basics of plant taxonomy, morphology and anatomy, and who are familiar with entire plant phyla such as algae, lichens and mosses. It would seem a strange thing to do for a country that claims to rely so heavily on its natural and renewable resources.

As if we needed a reminder of how tenuous things are in botanical sciences, this past year we heard the shocking news of the cuts and re-organization that occurred at the Canadian Museum of Nature. Eleven positions were eliminated from the Research Division, including long-time CBA/ABC archivist Erich Haber and bryologist Dr. Robert Ireland (see Bulletin, Vol. 26:3). The AGM passed an emergency resolution condemning these cuts and many letters were sent by the executive and individual members to politicians and bureaucrats. But, it was not to be. The cuts stayed and the reply to letters simply revealed some of the inner workings of Ottawa's "pass the buck" machinery. As you can see from the letter of reply (see page 5) from Alan Emery, Director of the Canadian Museum of Nature, all the correct phrases are there ("biodiversity", "long-term well-being of our Country", "the future as a vibrant, national institution involved in providing essential information in the natural sciences for the resolution of national and international problems in the natural world"). But, when all has been said and done, we (the botanical and biological communities) are diminished and our ability to deal with biodiversity in Canada has been adversely impacted.

Even with all of this grim news about us, I still feel a sense of optimism and hope. There is a clear sense of purpose to what we are doing. The need for an organization like CBA/ABC has never been greater and the participation of all members is vital to our survival. May I add an important reminder at this point. We are still desperately looking for nominations for President-elect, Secretary and Directors for the 1994-96 term. Please nominate someone or stand for election yourself. We need your help.

All the best for the New Year and I look forward to seeing many of you in Calgary, June 26-30.

Usher Posluszny
CBA/ABC President, 1992-1994

MESSAGE DE LA PART DU PRÉSIDENT DE L'ASSOCIATION

L'ABC/CBA vient tout juste de compléter une autre année de transition. La majorité des événements qui se sont déroulés ont eu des retombées positives. À l'assemblée générale annuelle à Ames, Iowa, les membres de l'association ont voté pour une baisse importante des frais d'adhesion de $65 à $45 pour les membres réguliers. Comme vous le savez peut-être déjà, nous avons pu baisser les frais d'adhésion parce que nous nous sommes finalement désistés de la FCSB/CFBS et des surcharges élevées requises par cette Fédération. J'espère sincèrement que plusieurs membres vont considérer la possibilité de faire un don aux fonds qui supportent nos nombreux prix d'excellence avec le surplus d'argent qui résulte directement de la baisse des frais d'adhésion. Ces dons seront certainement appréciés par les nombreux étudiants qui bénéficient de ces prix d'excellence.

Notre tâche principale et immédiate est le rétablissement d'un solide bloc de membres qui a été rongé par les frais d'adhésion élevés du passé. En plus d'attirer les membres qui nous ont quitté, (notons que plusieurs membres nous ont quitté pour des raisons qui diffèrent des frais d'adhésion élevés, *i.e.* retraite, déménagement à l'extérieur du pays, etc.) nous devons également attirer de nouveaux membres, des jeunes botanistes qui représentent le futur de l'association. Il faut réaliser toutefois qu'il sera difficile de maintenir, sans parler d'augmenter le nombre de membres. Comme dans plusieurs pays où la biologie végétale a une longue et riche tradition, la botanique au Canada est menacée de plusieurs façons. Plusieurs botanistes employés dans les universités, les instituts de recherche, et au gouvernement sont à la retraite ou vont bientôt se retirer. La plupart de ses postes sont gelés, redistribués dans un autre domaine, ou simplement éliminés. Les étudiants gradués ont de la difficulté à se trouver un emploi même après avoir accompli plusieurs années d'études post-doctorales. Plusieurs d'entre eux sont tellement déillusionnés qu'ils (elles) ont poursuivi des carrières qui n'incluent pas la botanique. Nous sommes en train de perdre certains de nos meilleurs botanistes canadiens. Il devient difficile d'envisager le deuxième millénaire avec optimisme. Parcontre, nous sommes à la porte d'une grande renaissance en biologie végétale, menée en grande partie par un besoin urgent de s'occuper de certains problèmes de l'environnement (*i.e.* déclin de la biodiversité) et un écart de plus en plus petit entre la biologie moléculaire et les approches classiques en biologie du développement. Il y aura éventuellement des possibilités d'emploi, mais sera-t-il trop tard pour la présente génération de botanistes? Dans le futur, devrons nous, comme durant les années 50 et 60, chercher à l'extérieur du Canada pour trouver des individus qui ont une formation de base en taxonomie, morphologie, anatomie des végétaux ou qui sont familiers avec des embranchements taxonomiques tels que les algues, les lichens, et les mousses. Cela semble étrange pour un pays qui dépend beaucoup de ses ressources naturelles et renouvelables.

Comme si nous avions besoin qu'on nous rapelle juste à quel point la situation est critique en biologie végétale, nous apprenions cette année la nouvelle bouleversante de coupures budgétaires et la réorganisation du personnel au Musée canadien de la nature. Onze positions ont été éliminées de la division de la recherche. Ceci inclut les postes de l'archiviste de l'ABC/CBA, Eric Haber, et du bryologiste Dr. Robert Ireland (voir vol. 26:3 du bulletin). À la dernière réunion annuelle, une résolution urgente condamnant ces coupures budgétaires a été acceptée et plusieurs lettres de protestation ont été envoyées par les membres du bureau de direction de l'ABC/CBA et certains membres réguliers aux politiciens et aux bureaucrates. Malheureusement, aucuns résultats. Les coupures budgétaires ont eu lieu et les répliques aux lettres de protestation nous ont simplement révélé le fonctionnement du méchanisme "pass the buck" à Ottawa. Comme vous pouvez le constater en lisant la réplique (voir p. 5) du Dr. Alan Emery, directeur du musée candien de la nature, les mots clés sont très lisibles: ("biodiversity", "long term well-being of our Country", "the future as a vibrant, national institution involved in providing essential information in the natural sciences for the resolution of national and international problems in the natural world"). À la fin, en tant que communauté botanique et biologique, nous sommes amoindris et notre capacité de pouvoir traiter du problème de la biodiversité au Canada a sérieusement été affectée.

Même avec tous ces problèmes qui nous entourent, je suis optimiste et rempli d'espoir. Nous avons un but bien précis. L'importance d'une organisation comme l'ABC/CBA n'a jamais été aussi claire et la participation de tous les membres est essentielle à sa survie. Veuillez noter que nous sommes toujours à la recherche de nominations pour les postes de President désigné, Secrétaire, et Directeurs pour la période 1994-96. Faites nous parvenir vos nominations ou considérer la possibilité de soumettre votre propre candidature. Nous avons besoin de votre aide.

Meilleurs voeux pour la nouvelle année. J'espère avoir l'occasion de vous rencontrer prochainement à Calgary, du 26 à 30 juin.

Usher Posluszny
Président de l'ABC/CBA, 1992-94

Traduction: Christian Lacroix

DR. EMERY REPLIES

Editor's note: - The following letter from Dr. Alan Emery, Director, Canadian Museum of Nature, was received by CBA/ABC President Usher Posluszny at the end of October 1993 and is reprinted here for your information.

Dear Dr. Posluszny:

Thank you very much for your letter concerning the recent changes which have taken place at the Canadian Museum of Nature (CMN). Your concern and interest in the Museum is appreciated.

These changes are part of an ongoing economic, organizational and results-oriented transformation that will eventually give a higher level of service to all CMN clientele, including the general public. In 1990 the Act which re-oriented the historical mandate of the Museum, coupled with the dwindling federal-funding, and the need to ensure the Museum's efficient operation, were critical factors that prompted this major re-engineering. Furthermore, the changing nature of the public's expectations of the Museum and its programmes has meant that some functions and skills are no longer as high a priority or are not required in the short to medium term. The changes represent the long-term vision and management plan approved by the Board of Trustees of the CMN. They affect all aspects of the Museum, from our collections and research to our public programmes and administration.

Support for research at the Museum is, in fact, being increased and plans are in place, as a direct result of the changes, to maintain this as a trend over the next few years. The Museum made specific strategic decisions aimed at focussing on those areas that are in greatest immediate need for the resolution of their taxonomy and systematics, and diminishing research in those areas where understanding was relatively greater. Systematics and taxonomy are now and will continue to be the primary goal of the Museum's research activities. The intent of the changes in the Museum are to ensure that the research we do will be properly supported, adequately funded and provide the essential knowledge on Canada's biodiversity and natural history that is so essential to the long-term well-being of our Country.

The collections of the Museum will be managed to ensure their appropriate development to meet the nation's needs, to foster their long-term preservation and to respond to the information needs of Canadians. The collections staff will provide expertise in collections management and conservation while researchers will continue to provide taxonomic expertise and guidance. The public programming of the institution is committed to vigorous educational initiatives for all Canadians and it will be much more interactive and relevant to the resolution of issues that affect us all.

As you can appreciate, this transition period has been fraught with challenges. The transformation the CMN is undergoing has been both exciting and stressful. It was necessary and worth it. The difficult decisions that were taken by the Museum will ensure its future as a vibrant, national institution involved in providing essential information in the natural sciences for the resolution of national and international problems in the natural world.

I apologize for the delay in responding to your letter. As you will understand, this is a very trying time as the Museum and we wished to provide clear information on the changes that have occurred. I have also enclosed three documents, the CMN Vision Statement, a Press Communiqué addressing the transformation and an information sheet, for your information.

Yours sincerely, Alan R. Emery, Ph.D.

The following dissenting viewpoint, in a news release entitled **CRISIS AT THE C.M.N.,** *was received in late November from* ***True Friends of Nature****, which calls itself, "a national coalition to save the CMN" , or more precisely, "a network of environmental organizations, museum professionals and concerned citizens, coordinated by the Sierra Club of Canada, whose aim is to save the CMN".*

The Canadian Museum of Nature is experiencing a serious and profound crisis, the result of more than eight years of poor management. A recent restructuring of the Museum led to 51 layoffs, 39 permanent and 12 term positions, together about 20% of the total staff of 267. Furthermore, there was a fundamental change in direction, affecting collections, research and public programming. The staff reduction was aimed predominantly at functions directly related to end products and represents a 31% decrease in this area. By comparison, less than 2% of the administrative complement was affected. The cuts include 9 researchers (7 scientists out of a total of 24, and 2 assistants), 6 collections experts, 3 library staff, 13 in the Education and Display Division and 6 in Business Operations and Publishing. Only two managers were laid off. Management blamed "functional" changes and reduced funding for the reductions in staff.

Research in ornithology, mammalogy, herpetology, bryophytes, isopods, ethology and paleomycology will be discontinued, and in vascular plants, research will be decreased. Technical support has been eliminated for the following collections: molluscs, mosses, osteology, crystallography, and no new bird and mammal specimens will be added to the existing collections. One has to question the rationale and judgement that eliminated virtually all expertise in living vertebrates while leaving that in fossil vertebrates intact; that cripples the ranks of producers, but left the mandarins and administrative staff largely untouched.

Deterioration in the general health of the institution accelerated in 1990, when the Museum became a separate Crown Corporation and changed its name. At this time, a counterproductive reorganization was imposed. The curatorships were abolished and collection and research

functions were split into separate divisions. Curators were converted into generic research scientists, no longer involved in collections. The development and care of the national collections are now in the hands of five collection managers, a chief and an programme director, most of whom were recruited from former support staff. For example, the programme director and chief responsible for collections were assistants in Palaeobiology and Mineral Sciences, respectively. Qualifications and experience of present collection staff are, in most cases, not commensurate with their new responsibilities.

In January 1992, an independent taskforce of prominent scientists and academics from outside the museum made 33 recommendations on research and on the structural organization of research and collections. These recommendations were either modified beyond recognition or rejected by the director, now President, Alan Emery. His most recent plan does not bear the slightest resemblance to the original recommendations of the taskforce. It appears, therefore, that the taskforce report, prepared at great cost (>$125,000), is a waste of effort and taxpayers' money.

In February 1993, a "transition team" was created by the director to speed up change and alter the course of the museum. Leadership of the team was delegated to a private consultant, Robert LeBlanc, who has no background whatsoever in museums or natural science. Other members of the team included a former secretary, a former exhibit researcher, the associate director (also without museum experience), a management consultant, and the director. The collective experience and expertise of the professional staff was not tapped and meaningful consultation did not occur. Proposals on human resources, research, collections and public programming, produced by the transition team have now been approved by the Board of Trustees and the lay-offs, enumerated above, are a direct consequence. The decision of the Board of Trustees will also have dire consequences for research, collections and public programming.

The new policy calls for research to be directed by the Board of Trustees, who are all political appointees, and none of whom is a natural history scientist or has actual experience running a museum. Research is to be "focused" through so-called Centres of Knowledge. Taxon-oriented research is not looked on favourably, despite lip service to the importance of systematics. "Team work" and "interdisciplinary studies" in "solution-oriented research" is what Alan Emery wants. To achieve this, six Centres of Knowledge are planned in: biodiversity, polar studies, inter-American studies, planetary origins, humans and nature, and science and society. The Centre for Biodiversity's scope will be severely restricted by the elimination of **all** taxonomic expertise in mammals, birds, reptiles, amphibians, mosses and fungi, and a reduction in expertise in vascular plants. At a time when the issues of biodiversity are prominent, especially with Canada's commitment to the Convention on Biodiversity, and the museum's desire to have a leadership role in biodiversity, the loss of basic taxonomic research in terrestrial vertebrates is crippling. The Centre for Polar Studies will also be severely handicapped by the loss of the museum's two chief arctic experts from the Ethology section, and the rumoured sale of the High Arctic Research Station.

Collection staff has been reduced, no preparation in vertebrates will take place and taxon-oriented biologists are no longer associated with the collections, jeopardizing their proper development and use. A plan approved by the Board of Trustees (Collections: The Canadian Museum of Nature's Role and Responsibilities, Fitzgerald, G.R., 1993) calls for the "regionalization" of collections and specimens are to be categorized in classes with "defined levels of importance" (permanent and working collections). "Collections managers will be delegated authority to manage the working collections", and it is anticipated that "... collections reviews will result in the ... disposal of significant numbers of surplus specimens". It is conceivable that the collections will end up scattered across the country or even outside Canada. Use of the collection by scientists is hampered by the introduction of unnecessary bureaucratic devices.

At a time when education regarding environmental issues is of critical importance to our survival, half of the museum's public education staff has been dismissed. Public programming has been directed to abandon reality for the new fad of "virtual reality". There will be a move away from "traditional" three-dimensional exhibits to interactive, more dynamic displays employing the latest electronic gadgetry. Emphasis is on the medium, not on the quality of the message. Productions of travelling exhibits, long a mainstay of the national outreach of the museum, are being severely curtailed or eliminated. A new "entrepreneurial spirit" will rule all programs, and the dissemination and pursuit of knowledge will be subject to the profit motive.

Fundamental flaws inherent in the governance of the museum, a crown corporation, are in large part responsible for the present developments. To state the problem succinctly: too much power is concentrated in too few hands, the director's and the chairman of the Board's, and there is no participation by stakeholders (*e.g.* groups interested in nature and the museum's own staff) in shaping the policies of the museum. The Board of Trustees, appointed by the government, is not sufficiently knowledgeable about natural history or natural science museums to do a proper job. A trustee still on the Board and a former trustee, both with backgrounds in natural sciences, have recently criticized the functioning of the Board and expressed their extreme frustration with the present system.

The staff of the Canadian Museum of Nature, through the Professional Institute of the Public Service of Canada and the Public Service Alliance of Canada, has asked the Minister of the new Heritage Department for a stay on current restructuring and a high level investigation of management at the museum and the Board of Trustees. Your support is crucial.

True Friends of Nature, 1 Nicholas Street, Suite 620, Ottawa, ON K1N7B7. Tel.: (613) 233-1906, FAX: (613) 233-2292.

PRIX LIONEL CINQ-MARS AWARD

Each year the Canadian Botanical Association gives an award for the best student paper presented at the CBA/ABC annual meeting. The award is made in memory of Lionel Cinq-Mars, a founding member of the Association and a widely admired teacher.

Any bona fide student enrolled at a Canadian institution of higher learning is eligible, as well as Canadian students at foreign institutions. The paper can be given at any session of the annual meeting. Every effort will be made to ensure that each student in the competition has a fair evaluation and an equal chance of winning the award.

Papers will be evaluated by a panel of judges (at least one from each of the sections of CBA/ABC) which is chaired by the President-Elect, Keith Winterhalder. The merit of each paper will be judged on the basis of content (60%) (originality, technical expertise, and associated subject knowledge) and presentation (40%) (lucidity, organization, use of visual aids, audibility and "presence").

The Lionel Cinq-Mars Competition is an important part of each annual meeting. We hope that there will be many participants at the University of Calgary and that the students will benefit, both from the experience of giving an oral presentation and from the comments which each student will receive from the panel of judges.

Please note that only those students who clearly indicate on their abstract form that they wish to enter the Cinq-Mars Competition will be placed on the list of participants. A copy of the abstract form should be sent to:

Dr. Keith Winterhalder
Department of Biology
Laurentian University
Sudbury, ON P3E 2C6
FAX: (705) 675-4859

Chaque année l'association canadienne de botanique décerne un prix pour la meilleure communication orale présentée par un étudiant [ou une étudiante] lors de la rencontre annuelle de l'ABC/CBA. La récompense est remise à la mémoire de Lionel Cinq-Mars, un des membres fondateurs de l'association et un professeur fort admiré.

Tout étudiant inscrit à une institution canadienne d'études supérieures, et tout étudiant canadien à une institution hors du Canada, est éligible. La communication peut être présentée à n'importe quelle session de la rencontre. Un effort sera fait afin d'assurer à chaque étudiant de pouvoir compter sur une chance ègale pour l'obtention de ce prix.

La décision finale sera rendue par jury de membres (au moins un membre de chaque section de l'ABC/CBA) dirigé par le président désigné, Keith Winterhalder. La qualité de la communication est jugée selon le contenu (60%) (originalité, techniques, connaissance du sujet) et la présentation (40%) (lucidité, organisation, utilisation de l'audovisuel, clarté du texte).

La compétition Cinq-Mars est une partie importante de chaque rencontre annuelle. Nous comptons sur une forte participation à Calgary et nous espérons que les étudiants bénéficieront autant de l'experience acquise à communiquer oralement que des commentaires qu'ils recevront de la part des membres du jury.

Veuillez prendre note que seuls les étudiants qui ont clairement indiqué sur le formulaire de résumé leur intention de participer à la compétition Cinq-Mars seront inscrits sur la liste des participants. Veuillez faire parvenir une copie de ce formulaire à:

Dr. Keith Winterhalder
Département de biologie
Université Laurentienne
Sudbury, ON P3E 2C6
FAX: (705) 675-4859

John Macoun Travel Bursary

The John Macoun Travel Bursary, named in honour of the man who served as official botanist on five major expeditions throughout Canada during the late 19th and early 20th centuries, is awarded to a graduate student who presents an oral paper in the Lionel Cinq-Mars Competition.

Eligibility:

1. Competition for the Bursary is open to **Canadian students both within and outside of Canada**. Eligible students are encouraged to apply, even if the CBA/ABC meeting is to be held at their own university.

2. Competitors **must present a paper in the Lionel Cinq-Mars Competition** at the 1994 CBA/ABC Annual Meeting at the University of Calgary.

3. No student may receive more than one award from the Macoun Fund while registered for the same degree.

Procedures:

1. Students applying for an award must do so **no later than March 1, 1994**.

2. The application must contain the following documents:

a) **a copy of the Abstract** of the paper to be given in the Lionel Cinq-Mars Competition at the CBA/ABC Annual Meeting.

b) a **supporting letter from the student's Supervisor** of research that also includes a statement that the student is engaged in a Ph.D. or M.Sc. programme.

c) a statement from the student outlining the **amount of money requested**.

d) the student's **curriculum vitae** (one page).

e) a **letter of recommendation from a member of the student's research committee** (not the Supervisor).

3. Send the complete set of application documents to the CBA/ABC President:

Dr. U. Posluszny
Department of Botany
University of Guelph
Guelph, ON N1G 2W1
FAX: (519) 767-1991

4. The CBA/ABC President will appoint a **Student Awards Committee** to screen all applications, to recommend the candidates for awards and the amount of each award. The sole selection criteria shall be those of academic merit.

5. Macoun Bursary winners will be notified before the registration deadline for the annual meeting, if possible, and awards will be paid at that time.

6. During the awards ceremony at the CBA/ABC Annual Meeting in Calgary, Macoun Bursary winners will be officially announced and presented with an award certificate.

NEW PUBLICATION

Dictionary of Natural Products. Chapman & Hall, 1993. 9,500 pages in 7 volumes. Price, not listed. ISBN 0-412-46620-1.

Skin of frog and bark of yew -- this sounds like the ingredients of a witches brew. However, the natural products isolated from these, and many other species, are finding applications as food flavourings and colours, cosmetic perfumes, natural pesticides and, perhaps most importantly, pharmaceuticals.

Flora and fauna species have been used for medicinal purposes for hundreds and sometimes even thousands of years. Historically the Chinese were the first to take advantage of medicinal plants, and over 11,000 plant medicines were used in China for thousands of years. Ephedrine, which is believed to be the oldest example of a pharmaceutical drug from medicinal plants, has been used to relieve asthma and hay fever in China for over 5,000 years.

With the increasing importance of natural products to human life and activities, scientists are intensifying their study on the 99% of 250,000 flowering plants (and the even greater number of fauna species) that have not been thoroughly investigated for natural product activity.

This comprehensive work, which will aid these scientists in their research, is the first dictionary to survey the whole field of natural product chemistry. It provides physical, structural and bibliographical data, including activity and use information, on over 100,000 natural products and related compounds. It covers products isolated from plants, animals, fungi and bacteria.

For a free 64-page sample and further information contact: **Alice Lu, Chapman & Hall Inc., One Penn Plaza, 41st Floor, New York, NY 10119. FAX: (212) 564-1505.**

La bourse de voyage John Macoun

La bourse de voyage John Macoun, établie en l'honneur de l'homme qui, dans l'exercice de ses fonctions en tant que botaniste, a participé à 5 expéditions majeures à travers le Canada de la fin du 19e siècle au début du 20e siècle, est alloué à un étudiant [ou une étudiante] gradué qui présente une communication orale dans le cadre de la compétition Lionel Cinq-Mars.

Eligibilité:

1. La compétition pour la bourse est ouverte **aux étudiants canadiens au Canada ou à l'étranger**. Les étudiants qui sont éligibles sont encouragés à remplir une demande même si la rencontre annuelle de l'ABC/CBA se tient à leur université.

2. Le concurent doit présenter **une communication dans le cadre de la compétition Lionel Cinq-Mars** à la rencontre annuelle à l'Université de Calgary.

3. Un étudiant ne peut recevoir plus d'un prix de fonds Macoun pour la période durant laquelle il est inscrit à un programme spécifique de degré universitaire.

Procédure:

1. Les étudiants doivent faire parvenir leur demande pour la bourse de voyage **au plus tard le 1er mars 1994.**

2. **La demande doit contenir les documents suivants:**

a) **une copie du résumé de la communication** pour la compétition Lionel Cinq-Mars à la rencontre annuelle de l'ABC/CBA.

b) **une lettre d'appui de la part du directeur de thèse de l'étudiant** qui doit également incluire une déclaration que l'étudiant en question est inscrit à un programme de maîtrise (M.Sc.) ou de doctorat (Ph.D.).

c) **un compte rendu des dépenses** prévues par l'étudiant.

d) **le curriculum vitae** de l'étudiant [une page seulement]

e) **une lettre de référence** d'un membre du comité de direction de l'étudiant [directeur de thèse exclu]

3. Veuillez faire parvenir la demande complète au président de l'ABC/CBA:

Dr. U. Posluszny
Département de botanique
Université de Guelph
Guelph, ON N1G 2W1
Télécopieur: (519) 767-1991

4. Le président de l'ABC/CBA nommera les membres d'un comité de sélection de prix estudiantins. Ce comité examine les demandes et recommande les candidats pour certains prix et le montant alloué pour chaque prix. Le seul critère d'évaluation sera celui du mérite académique.

5. Les gagnants de la bourse Macoun seront avisés avant la date finale d'incription pour la rencontre annuelle, si possible, et les prix leur seront remis à ce temps.

6. Durant la remise officielle des prix à la rencontre annuelle à Calgary, les gagnants de la bourse Macoun seront annoncés et un certificat leur sera présenté.

Traduction: Christian Lacroix.

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POSTDOCTORAL OPPORTUNITY

University of Saskatchewan
Saskatoon, Canada

A postdoctoral position is available to study the involvement of plant hormones in male sterile and homeotic floral mutants of ***Arabidopsis*** and tomato. The project will involve tissue culture and hormonal analysis of developing flowers and vegetative tissues.

Candidates with a strong background in the areas of plant hormones and genetics, and expertise in plant tissue culture and current techniques of plant hormone analysis, including HPLC, GC-MS and ELISA, are invited to apply. Experience with light and electron microscopy would be desirable.

The position is available immediately; initially for one year with the possibility of renewal for the second year. Salary range is $25,000 - $27,500.

Applications, including *curriculum vitae*, copies of any published work and three letters of recommendation, should be sent to:

V.K. Sawhney
Biology Department
University of Saskatchewan
Saskatoon, SK S7N 0W0
Telephone: (306) 966-4417
FAX: (306) 966-4461

Poorly Known Economic Plants of Canada - 1. Seneca Snakeroot (*Polygala senega* L.)

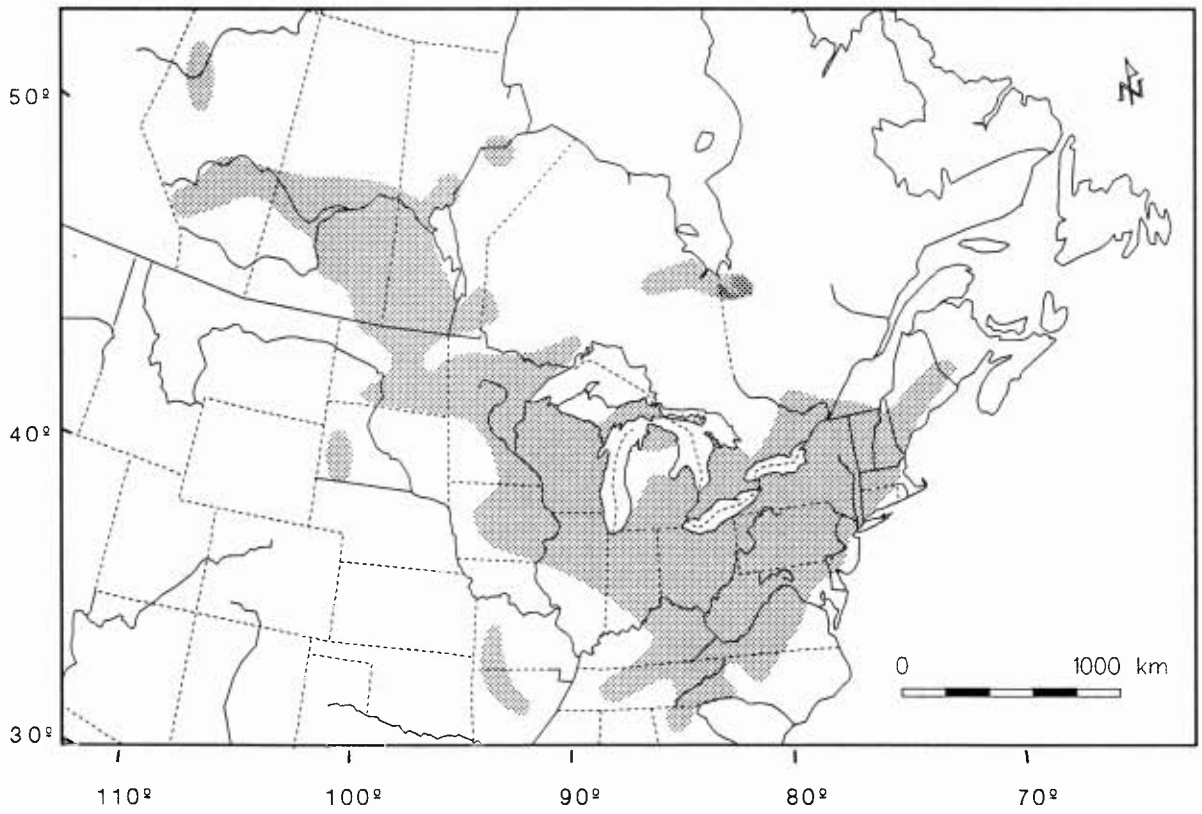
P.M. Catling & E. Small
Biological Resources Division, CLBRR
Agriculture Canada, Ottawa, ON K1A 0C6

Common names: seneca snakeroot, senega root, rattlesnake root, mountain flax, white snakeroot (a name more generally applied to ***Eupatorium rugosum***), polygala sénéca (fr.). Several species have the common name "snakeroot", and are sometimes confused with seneca snakeroot.

The plant has a broad range in Canada, extending from the St. John River system of New Brunswick, southwestern Québec, Ontario, Manitoba and Saskatchewan to southern Alberta. It also occurs throughout much of the eastern and midwestern United States south to Georgia. Habitats include prairies, savannas and periodically dry, often somewhat open, woods. The habitats vary from open to partially shaded.

The 10-50 cm tall perennial herb is distinctive with its lance-shaped leaves and spikes of roundish white flowers which appear in June and early July. The breeding system of seneca snakeroot requires study, but related species are pollinated by bees. The capsules ripen in July and August. Seeds have long white appendages (arillodes). These appendages may be utilized as food by ants which disperse the seed over short distances. Dispersal over longer distances is probably by birds.

The root (pharmaceutically referred to as *Senegae radix*) contains triterpenoid saponins (notably senegin) and other compounds (such as polygalitol) which act as a severe and serious irritant when too much is consumed. Seneca root was utilized by the Seneca Indians in treatment of rattlesnake bite. Canadian botanist Frère Marie-Victorin suggested that the resemblance of the knotty root crown to a rattlesnake's tail may have contributed to its use by the Seneca as an antidote. Its use, however, was not confined to the Seneca, for it was considered to have medicinal properties, expecially in relation to respiratory ailments, among other tribes including Ojibwa, Huron, Chippewa, Menomini and Iroquois. Walpole Island Ojibwa of southern Ontario used the root for headache, nasal congeston and stomach ache. It was utilized as a general cure by the Chippewa Indians and carried by them on their journeys for general health and safety.



Seneca snakeroot was sent to Europe in the early 1700's and held a regular place in European drug stores during the 1800's for use in treatment of pneumonia. It was once cultivated to a limited extent in parts of Europe, and is still cultivated in Japan, India and Brazil. Up until the early 1960's Canada was the chief supplier of seneca snakeroot with exports worth several hundred thousand dollars a year. Most of the exported material originated from plants collected from the wild in Saskatchewan and Manitoba. Although there has been a relative decline in its value as a Canadian export, it is still used in about a dozen drug products in Canada and it supplies an ingredient sold in some prescription drugs used in the treatment of bronchitis and asthma. It is also used in veterinary medicine.

Early experimental work in North America suggested that seneca snakeroot can be grown in soil suitable for ordinary field crops, and without shade. The plants are set 40 cm apart in rows at least the same width. Seedlings may be protected with straw during the first winter. About 4 years are required to produce roots of marketable size.

Although little, if at all, cultivated in Canada, seneca snakeroot is still gathered from the wild, especially by indigenous people of Manitoba and Saskatchewan, for sale to commercial pharmaceutical companies. Wild plants are sufficiently plentiful that the wild resouce can continue to be harvested, but since collecting mature roots sacrifices the plant, cultivation is a potentially desirable alternative. Seneca snakeroot is under consideration in several provinces as a new or alternative crop, especially to enhance its economic value to indigenous people. Interestingly the most frequent admixture involves the North American ginseng (***Panax quinquefolius***) which has recently become a valuable Canadian crop.

The greatest current interest in seneca snakeroot is in Japan, where it is cultivated on a modest scale. Japanese scientists have recently reported on various experiments with cultivation, and they have also done the most recent and comprehensive work on chemical composition of the saponins. Last year 72 farmers produced about 10 tonnes of commercial root in Japan, suggesting that there is appreciable potential for the cultivation of seneca snakeroot in Canada.

Opportunité d'emploi
Botaniste-traducteur

Fleurbec, un groupe spécialisée en vulgarisation de la botanique, désire faire traduire un de ses guides d'identification portant sur les plantes sauvages de l'est de l'Amerique du Nord. On a estimé que ce livre compte de 30 000 à 35 000 mots. La réputation d'excellence de Fleurbec est basée sur la haute qualité de ses guides et il désire que la version anglaise soit de même qualité. Cette première traduction constitue un test de marché et si le test réussit, Fleurbec envisage la traduction de l'ensemble de ses sept autres guides.

Fleurbec est à la recherche d'une personne ayant une formation universitaire en botanique et une formation ou une expérience en traduction du français à l'anglais. Une expérience en traduction dans le domaine de la vulgarisation en botanique constitue un atout certain; on considérera aussi une expérience de traduction en botanique non vulgarisée.

Pour plus d'informations, communiquer avec Sylvain ou Gisèle Lamoureux, avant le 15 février 1994, au 418-882-0843; 198 chemin de la Grande-Grillade, Saint-Henri-de-Lévis, Québec G0R 3E0.

Agriculture Canada Awards

Recently Dr. Ernie Small and Mr. William J. Cody of the Economic Plants Team of Agriculture Canada's Biological Resources Division received merit awards. Both scientists have been active in CBA/ABC. Dr. Small presented a symposium paper regarding the value of plant systematics to agriculture during our annual meeting in Truro in 1992 when botanical science in agriculture was the theme. Mr. Cody has been a member of CBA/ABC since its beginning in 1965. He attended the organizational meeting in Kingston and became our first Treasurer. The citations for the awards they received read as follows:

MR. WILLIAM J. CODY

"During the past few years as an Honourary Research Associate Mr. Cody has completed an extensive and very comprehensive book on the **FLORA OF THE YUKON**. This work will make current and detailed information on all the plants of the Yukon available for the first time, thereby providing an essential reference for landscape planning and research in the fields of forestry, agriculture and resource protection. The manuscript is 1292 pages long with 1200 distribution maps and contains hundreds of excellent illustrations, many by Dr. Marcel Jomphe. A characteristically meticulous review of this mammoth work was provided by Dr. Jacques Cayouette.

In addition to this very valuable work Bill has continued to contribute thousands of valuable specimens to the DAO collection, to contribute to the type index, to contribute extensively to the national identification service with over 1000 identifications a year, to assist staff, visitors, other researchers with help, advice and critical reviews, and to contribute to safety and maintenance in the Saunders Building by acting as a contact person (previously Bill was Chief Fire-Safety-Security Officer for the building). Bill has also continued to provide nationally essential expertise on the vascular flora of northern Canada."

DR. ERNIE SMALL

"Dr. Small has done some excellent classification work on alfalfa and its wild relatives, this work providing plant breeders with the essential means of identifying species and races that are useful for crop improvement, but in doing this work Ernie has used many different techniques and perspectives which have had some remarkable spin-offs. For example, he has published papers on: (1) the functional significance of gland-tipped hairs and coiled seed pods in repelling insect pests, thus providing a basis for improving pest resistance in the crop and reducing insecticide use; (2) the balance of homolytic saponins that must be maintained in the crop to optimize pest resistance but at the same time permit the broadest use as forage; (3) the use of yellow-flowered alfalfa, which has lower sulphur requirements, to reduce fertilizer applications; (4) the alfalfa leafcutter bee and native wild bees to optimize seed production. All of his publications on alfalfa, now numbering 64, have in common the potential to substantially increase the compatibility of agriculture and nature.

In addition to his outstanding accomplishment with alfalfa, Ernie has completed a book on Canadian vegetables and nearly completed another on Canadian herbs and spices, both with Mr. Derek Munro. These two books and others in preparation on fruits, nuts and Canadian biodiversity literature will provide a sound basis for crop diversification and research, and will have a very broad spectrum of users ranging from farmers to teachers and scientists."

Paul M. Catling, Team Leader, Economic Plants
Biological Resources Division, Agriculture Canada

Are you reading someone else's copy of this Bulletin?

Would you like to have your very own copy so that you can linger longer over those bits or bytes that interest you?

It's easy. All you have to do to receive an application form to become a member of CBA/ABC is contact:

Dr. Christian Lacroix, Treas. CBA/ABC
Department of Biology
University of P.E.I.
Charlottetown, PEI C1A 4P3

Telephone: 902-566-0974
Fax: 902-566-0740
e-mail: lacroix@upei.ca

BOOK REVIEWS / ÉVALUATIONS

Guide de Crucifères sauvages de l'est du Canada. by A. Sabourin. 1991. Société d'animation du Jardin et de l'Institut botanique de Montréal.

This is a very useful volume that bridges the gap between the complete but sparsely- or unillustrated and geographically broader technical regional floras (Fernald's **Gray's Manual** and Gleason and Cronquist's **Manual of Vascular Plants**) and the very incomplete popular field guides to wildflowers and weeds. Crucifers, which frequently have tiny flowers, have always been a weak spot in wildflower guides and the most inclusive, Peterson and McKenny's **Field Guide to the Wildflowers**, accounts for just 48 species, only 45 of them illustrated. The weed guides are even sparser, **Weeds of Canada** listing 34 species and **Weeds of Ontario,** 30. None of these guides effectively combines both "showy" natives and Eurasian weeds. Sabourin and his collaborators, in contrast, have brought together all reported (through 1990) local species for the eastern provinces and adjacent federal islands, about 140 of them, and only 26 are not illustrated.

Each full page species account is accompanied by a separate page of illustrations (with a habit drawing, at least, and occasional extra details) and a documented distribution map. Shading is used instead of, or in addition to, dots on a few maps and it is too bad that the shading is used for two entirely different situations, widespread abundance or vague literature distributions. Sabourin follows the (to my mind undesirable) tradition of requiring every species to have a common name and translating the Latin name into French and English when it doesn't. The descriptions are generally brief, but uniformly cover stems, leaves, flowers and fruits, followed by a capsule summary of key features, too rare economic notes, and notes on infraspecific taxonomy. The descriptions conclude with flowering seasons, habitat descriptions, and lengthy accounts of distribution, including sources.

One misses "biological flora" style notes on chromosome counts, reproductive biology, etc. Some of these extras are addressed in interesting short summary paragraphs in the appendices. The unillustrated species are mostly briefly presented under a "related species" heading and are mapped, but a few cultivated species not known to be naturalized are inserted separately in the overall alphabetical sequence without either illustrations or maps. A few bits of crucifer poetry are also peppergrassed into the text at these points.

The volume begins with a helpful introduction to crucifer terminology, to itself, and to the following key. The key seems well constructed, clear, and generally with pretty sharp contrasts. It avoids the traditional trichome characters embraced by most specialists on the family and this might lead to difficulties with a few things, such as ***Draba***s, where they could have been used as supplements to the main characters. Luckily we don't have any ***Leavenworthia***s in our flora.

Although one could always wish for a little more, I highly recommend this book. It could serve as a fine basis for laboratory sessions and workshops on the family in eastern Canada and adjacent states. Most of the text is in "botanical French" and so is fairly transparent, even to the uniliterate anglophone. The volume would be even more useful if the format were altered from 21.5 cm x 28 cm pages to make it field guide size.

J. E. Eckenwalder
Department of Botany, University of Toronto

Common Poisonous Plants and Mushrooms of North America. By Nancy J. Turner and Adam F. Szczawinski. 1991. Timber Press, Portland, Oregon. US$55.00.

This is a well-researched volume whose information on identification characteristics, toxins, and treatments of the included taxa appears reasonably complete and generally accurate. It makes good nightmare reading for parents with young children, the latter most frequently mentioned here in relation to fatal ingestions. The book seems to be best suited for looking up a known plant and finding out whether it is poisonous, what the symptoms would most likely be if you happened to eat it, and what they'll do to you when you get to the hospital. It has a good chapter on types of plant poisons and far broader than usual coverage of poisonous plants among books with colour illustrations. Good mushroom field guides identify more poisonous species of this group but typically have less information about toxins. The appendices, basically annotated lists of poisonous plants lurking among foods and herbal medicines, contain many additions to the species discussed more fully in the main body of the text, and the glossary, bibliography and index are all effective. I like the book, but the remainder of my review will be critical, the criticisms positive, I hope, in showing how it could be improved if revised.

It will be necessary to clarify the purpose of, and audience for, the book. It cannot really be used to identify poisonous plants because the descriptions are too sketchy and many illustrations are not particularly diagnostic, but mostly because there aren't enough comparisons for the included species. How can you be sure of the identity of a putatively poisonous plant unless you know how it differs from other similar-looking plants? The organization of the plants is also not conducive to identification, in two ways. The divisions among plants of wild places, gardens and houses, followed by subdivision into trees and tall shrubs, low shrubs, vines and herbaceous plants, is too fine for some 120 entries, especially when it requires arbitrary and questionable assignments. For instance, ***Allamanda***, most common as a houseplant except in the subtropics, is included among plants of the open garden, while ***Arum*** and castor bean are included among the houseplants and subtropicals, even though they are much more commonly grown outdoors than as houseplants in

colder climes. It would be better to retain the life-form subdivisions but simplify (outdoor vs. indoor) or eliminate the "habitat" distinctions. The arrangement within these categories, alphabetical by common names also makes little sense. If you already know what it is, you could look it up in the index, which you would have to do anyway if the common name you know is not the one by which it is alphabetized. Dare I say that a taxonomic arrangement would be preferable and could lead to economies of description through mentioning shared elements under families. The goal, presumably, would be to promote identification and this would best be served by placing similar plants together. This, in turn, would often mean placing members of a single family together. Aroids, for example, are found both in the wild areas and houseplants sections. In the latter they constitute 8 of the 15 herbaceous entries (which include, for some reason, nutmeg), but are scattered through the section by common names, despite their resemblances and shared properties. Space saved by not repeating redundant toxicities and treatments could be used to expand the species covered. Likewise, the photographs, despite the decision to place them in the text, are too sparse at fewer than one per page for adequate comparison and would be much better for identification if they were grouped in plates of similar species. Generally speaking, the attempt to make the work "popular" seems to have failed and the audience is likely to be people with at least some experience with plants, so the book should be optimized for such an audience.

The toxicity and treatments sections present a similar dilemma, too detailed for the ordinary reader and not technical enough for professional care-givers. For any audience, it would be helpful to give more information on the range of dangerous doses, keeping in mind the varied circumstances of size and age of masticatory experimenters, and organ and state of the ingested plant. Considerations of legal liability aside, it would be good to clearly separate recommendations for first aid at home while awaiting medical attention from the treatments that will be delivered professionally. A little more information about the rationale for these treatments might also help settle the minds of victims and their families. The book wisely repeats at intervals the disclaimer that it is no substitute for medical attention, so some reform in these sections is necessary.

There are, as always, errors and omissions, but not so many as to be detracting. Here are a few that engaged my interest. Coyotillo is the only main entry lacking a photo and the description alone is certainly not adequate for identification. East and west are reversed in the distributions of the baneberry species (and a recipe for my favourite baneberry jelly is omitted). The ***Ipomoea*** of the photograph is ***I. purpurea*** rather than the ***I. tricolor*** of the entry and the text entry wrongly uses the misapplied ***I. violacea***. It is described as a "vigorous annual perennial vine". There are native tulips in Europe as well as the Middle East and Asia. Smoke from burning chili peppers was not just used as a form of torture but also by the Aztecs as punishment for naughty children. And surely thistles belong in the appendix on skin irritation and injury when much less prickly things, like holly leaves, are here.

In short, the book suffers uncertainty about its mission. At present it is most like a desk reference for gardeners, teachers and poison control workers. It would be even better at this if it dropped the concessions to its pretence of being an identification manual. If, on the other hand, the authors want to emphasize the latter, they need to go a long way to make their book a usable field guide. Both directions are admirable goals, but the authors need to make a firm choice.

J.E. Eckenwalder
Department of Botany, University of Toronto

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«Quelle peut bien être, dans ces conditons; la logique du végétal? Sans tomber dans le finalisme, on peut la rechercher en termes de stratégie fonctionelle et d'adaptation.»

Ainsi débute l'avant-propos du livre **Biologie végétale, caractéristiques et stratégie évolutive des plants. Tome 1, organisation cellulaire, par D. Robert et J.-C. Roland (1989, 220 F, 265 pp., Doin éditeurs, Paris, ISBN 2-7040-0604-0).** Ce livre moyen format (18 cm x 24 cm), plutôt fragile à la reliure cependant, est le premier volume d'une série de trois qui se donne pour objectif de faire le point sur un domaine essentiel du monde vivant que sont les végétaux, du niveau moléculaire, où la transformation d'énergie photonique s'effectue, jusqu'au niveau de l'organisme qui, pour capter le maximum de lumière, doit édifier la plus grande surface d'exposition possible.

Ce premier tome se consacre aux caractéristiques cellulaires et s'intéresse particulièrement aux compartiments propres aux végétaux. Les tomes 2 et 3 nous promettent d'analyser les modalités de construction de l'appareil végétatif et reproducteur, des organismes les plus simples aux plus complexes. Cette série s'adresse aux étudiants du premier cycle et second cycle, mais constitue sans doute une référence valable pour toute personne impliquée dans l'étude des sciences botaniques.

Tome 1 débute avec une courte introduction générale puis se subdivise en 5 chapitres (La cellule, Les parois, Les plastes, Les vacuoles, De la cellule aux tissus) et se termine avec quelques tableaux-résumés et un index alphabétique par sujets. Les références bibliographiques sont absentes à la fin du bouquin; une modeste sélection est cependant disponible à la fin de chaque chapitre.

Le livre est sobre: il n'y a pas de couleur sauf sur la page couverture, possiblement pour maintenir les coûts de fabrication au minimum. Chaque chapitre débute avec une table des matières et une courte introduction avant le texte

principal et un paragraphe final avec références sélectionées. Le texte est bien écrit, mais dense, accompagné de documents photographiques bien imprimés, de diagrammes et formules biochimiques adéquats. Une lacune, à mon avis, provient du manque de référence dans le texte à la litérature primaire. Toutefois, l'effort soutenu d'intégration des connaissances structurales et fonctionelles demeure un point fort de ce livre, particulièrement dans le chapitre sur les parois (*i.e.* constituents de base, textures hélicoïdales, flux exocytaire et assemblage, extension et consolidation, lignification, cutinisation, subérification) et le chapitre sur les plastes (*i.e.* types et fonctions, filiations plastidiales, origine en termes évolutifs). Ces deux chapitres représentent presque 60% de l'ouvrage et on y trouve un éventail de données récentes (structurales, biochimiques et physiologiques). Le dernier chapitre, court, sert de transition pour le prochain volume, qui élaborera sur la construction d'un organisme. Il y a donc dans ce premier tome une énorme quantité d'information et il semble indiqué de soumettre ce livre au test sur le champ (*i.e.* en classe), afin de discerner les portions du livre qui sont les plus «digestibles» dans un contexte didactique.

Donc, par son approche intégrée, ce livre ne remplace pas les classiques d'anatomie végétales comme Esau, mais constitue plutôt une addition heureuse à la documentation fragmentaire en langue française des sciences botaniques. Avec la prolifération quasi exponentielle des données sur la biologie végétale ces jours-ci, l'enseignement de la connaissance botanique demeure un défi constant. L'effort d'intégration, mis de l'avant par les auteurs dans ce tome 1, se doit d'être applaudi. Nous attendons donc avec impatience les prochains épisodes!

Hugues B. Massicotte
Département de sciences forestières, Université de C.B.

*Editor's note: Dr. Massicotte sent me also a «**version anglaise**» of his review, but I do not have enough room for it in this Bulletin. Any anglophone members who feel too "language-challenged" to read Dr. Massicotte's excellent review can obtain a copy of the English version by contacting the Bulletin editor.*

More Reviewers Wanted

The editor has received (hot off the press) the following book for review by anyone who would like to delve into African ecology.

An African Savanna. Synthesis of the Nylsvley Study. By R.J. Scholes and B.H. Walker. Cambridge University Press. 1993. 306 pp.

We are still looking for reviewers for the last three volumes listed in the previous issue of the Bulletin.

CALL FOR RESOLUTIONS FOR THE ANNUAL GENERAL MEETING, CALGARY, JUNE 29

Members who wish to submit Resolutions to be included on the agenda of the CBA Annual General Meeting in Calgary should take note of the following rules (extracted from By-Laws 68-77).

Resolutions require a mover and 4 seconders, all of whom must be CBA members in good standing. They must be submitted to the Secretary of CBA at least 10 weeks before the Annual General Meeting (by April 20, 1994). All resolutions must be accepted by the Board of Directors before they are placed on the agenda of the Annual General Meeting, and may be returned for revisions if they do not conform to the guidelines for Resolutions specified in By-Laws 68-77.

PROPOSITION DES RÉSOLUTIONS POUR L'ASSEMBLÉE GÉNÉRALE ANNUELLE, CALGARY, LE 29e JUIN

Les membres qui désirent proposer une résolution pour inscription à l'ordre du jour de l'assemblée générale annuelle de l'ABC à Calgary doivent prendre note des règlements suivants (extrait des règlements 68 à 77 de l'Association).

Les résolutions requièrent un proposeur et quatre secondeurs tous membres en règle de l'Association. Elles doivent être soumises au secrétaire de l'ABC au moins dix semaines avant l'assemblée générale annuelle (au plus tard le 20e avril 1994). Toute résolution doit être acceptée par le Bureau de direction avant d'être incrite à l'ordre du jour de l'assemblée générale annuelle. Si la résolution ne répond pas aux exigences requises dans les règlements 68 à 77, elle sera retournée au proposeur avec indication des revisions à faire.

The Plant Press / La Presse Botanique

These pages are intended as a chronicle of news items about plants (or about CBA/ABC members) appearing in newpapers or in the popular science magazines. Contributions from your local newspapers are invited. Send the editor a clipping, photocopy or simply a note about the item and don't forget to indicate the source and date.

Ces pages sont consacrées aux nouvelles concernant les plantes (ou certains membres de l'ABC/CBA) qui paraissent dans les journaux. Les contributions en français sont également encouragées. Faites parvenir vos soumissions au rédacteur en chef ou au rédacteur adjoint, section francophone, et n'oubliez pas d'indiquer la source de l'article et la date de publication.

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The Secret Sauce

Although about 25 million liters of Lea & Perrins Worcestershire Sauce are consumed in over 140 countries each year, only 4 persons, all working at the red-brick factory in Worcester, England, know the formula for making it. These are the general manager, the production chief, the sauce supervisor and the head maker. The basic ingredients can be discovered by watching workers unload barrels of shallots, garlic, onions, anchovies, chili, tamarinds and vinegar. The original recipe was brought back from India by Lord Sandys, a governor of Bengal. He asked two druggists, John Lea and William Perrins, to make a batch. They also made a batch for themselves, but found it tasted terrible, and put it away in their cellar. A few years later they came across the concoction again. Before throwing it out, they tasted it and found that it had matured into a delicious sauce. First sold commercially in 1837, it was an immediate success. It could be shipped long distances and, even in the tropics, would not spoil. There are many stories associated with the sauce, such as the one about Colonel Younghusband, who made a pioneering visit to the forbidden city of Lhasa in 1903. He must have been somewhat surprised to find a bottle of Lea & Perrins on the refectory table of an order of monks.

Kitchener-Waterloo Record, Nov. 17, 1993

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400th Anniversary

The 1993-94 growing season marks the 400th anniversary of the cultivation of tulips in northern Europe. Jules-Charles de l'Écluse is said to have been the first northern European to grow the tulip in a garden. He is memorialized by the small-flowered, carmine and white species, ***Tulipa clusiana***.

Francesca Greenoak, The Times of London, Nov. 6, 1993

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Tree Vigilantes

This article describes two grass-roots organizations which are attempting to ensure that trees will continue to beautify their respective cities. In Winnipeg, **Coalition to save the Elms** is a group founded in 1992 to monitor and protect the city's American elms (Winnipeg has over 200,000 elms, many as boulevard trees). The group negotiates with private owners to permit spraying and pruning of diseased trees, and to allow banding to combat canker worm and the elm bark beetle. Red Deer, Alberta, has a group (**Trees by 2000**) with an ambitious urban reforestation plan. Formed in 1990, the group has already planted more than 14,000 trees and shrubs. It has a goal of planting one tree for each of the 60,000 residents of Red Deer by the end of the century.

Marjorie Harris, Toronto Globe & Mail, Nov. 21, 1993

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Grape Juice as good as Wine

The beneficial effect of red wine in reducing cholesterol levels is also available to anyone who drinks (dark) grape juice. Resveratrol, an antifungal compound formed by the grape, is the active principle in reducing cholesterol levels in humans. Drinking 2-3 cups of juice per day is recommended for the best effect.

The Health Show, CBC-TV, December 1, 1993

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Sir George Taylor, FRS (1904-1993)

This well-known botanist, former Keeper of Botany at the British Museum (Natural History) and former Director of the Royal Botanic Gardens at Kew, died November 13, 1993. Born in Edinburgh on February 15, 1904, Taylor was educated in Scottish schools, receiving a first in Botany at Edinburgh University. In 1928 he joined the Botany Department at the British Museum and worked his way up to the Keepership. He participated in several important botanical collecting expeditions to various parts of Africa, as well as to Nepal and Bhutan. In 1956 he was appointed Director of the R.B.G. at Kew and he supervised the post-war restorations of Kew's plant houses and grounds, making Kew a much more attractive place for the public to visit. He retired in 1971, but continued to sit on the Ministry of Transport's advisory committee on the landscaping of trunk roads (he was chair from 1969-1981), and also chaired the management committee of the Chelsea Physic Garden. He received an honorary degree from the University of Dundee (1972) and in 1984 was awarded the Scottish Horticultural Medal by the Royal Caledonian Horticultural Society.

The Times of London, November 16, 1993

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"What's in a Neem?"

Finally, a nature program on TV that has featured a good old, sedentary, not-fuzzy-and-cute, cold-blooded plant, the neem tree (***Azadirachta indica***). CBC's The Nature of Things devoted a full hour to discussing the current and possible uses of this tropical tree. This native of India is a very good plant for growing in hot dry areas on poor soils, and it has been spread by humans to various areas in Africa, the Middle East and the Caribbean. In India almost every village has its neem tree and the villagers call it their "village pharmacy". There is a use for all parts of the tree [to repel insects, to treat skin

infections, to kill internal parasites, to treat fevers, to clean teeth, as a contraceptive, etc.]. Neem tree seeds can be processed to produce neem oil and neem cake [solid residue]. Neem cake is used as a fertilizer (it is said to improve nutrient uptake by plants and to repel insects in the soil) and can be fed to livestock (it combats intestinal parasites). A major use of neem oil in India is in the manufacture of soaps, toothpaste and other toiletries [such products are now being sold in Germany and other countries]. The effect of neem oil and of aqueous extracts of neem cake on insects has attracted the attention of large chemical companies. Concerted efforts are under way to synthesize the main active ingredient, azadirachtin, which can act [with remarkable specificity to insects] in several ways. It is an antifeedant, causing insects to stop feeding on whatever the compound is sprayed on. It can also act as a hormonal substance, interfering with the normal development of the insect [there are problems with molting to produce the adult reproductive stage]. Both effects would enable third world grain producers to combat the massive losses of stored grain that currently occur. A small amount of neem oil sprayed on the stored grain is effective in deterring feeding by bruchid beetles [major destroyers of stored grain]. Aflatoxins, potent carcinogens causing liver cancer in humans eating certain seeds infected with two species of ***Penicillium***, could be controlled by the neem extract. Experiments with cotton show that the neem extract prevents the seed-infecting fungi from producing the aflatoxins. There is one problem with the neem extract, however. It is unstable with respect to heat and light. For those of you who did not view this program, a research team from U.B.C. which was featured on the program has published an excellent review of neem tree usage in the Canadian Journal of Botany [**86(1): 1-11, 1990**].

The Nature of Things, CBC-TV, December 1, 1993

More Java Jive

Surgery patients are told not to eat or drink anything before any operation. For daily coffee drinkers this often leads to symptoms of coffee withdrawal [headaches, fatigue, myalgias (muscle pains), and fuzzy thinking]. An experiment at the Mayo Clinic, however, has shown that if such patients are given a caffeine pill before the operation, they are ready to be released from the recovery room about 40 minutes sooner than those given a fake pill.

Toronto Star, November 13, 1993

Science Defeated by Fern

The fiddlehead (or ostrich) fern [***Matteuccia struthiopteris*** var. ***pensylvanica***] has long been known as a rather fussy and stubborn plant to cultivate. Most commercially sold fiddleheads are still collected from wild populations. Now scientists in New Brunswick seem to have given up on attempts to use genetic engineering, cloning and various methods of artificial culture to increase fern growth and annual production. After many years of experiments, there is still one basic problem: "they can't make the darn fern grow faster". Young ferns need 7-8 years growth before they are ready for commercial harvesting, and no one has been able to shorten this required period of growth. Chalk one up for Mother Nature (obviously, in this case, "Mother grows best").

Kitchener-Waterloo Record, November 11, 1993

Vaccinations via Veggies

Mitch Hein, from the Scripps Research Institute, is tending an unusual crop of medicinal plants. They are alfalfa seedlings he has genetically engineered to produce just enough cholera toxin to (he hopes) confer immunity on anyone who eats enough of them. Two other scientists are doing similar research. Charles Arntzen (Texas A&M) has already produced a potato that could prevent gastroenteritis, and is trying to develop a banana that could prevent hepatitis B. Just to prove it could be done, Roy Curtis (Washington University, St. Louis) developed a tobacco containing a vaccine against the bacteria causing tooth decay [he has no intention of ever marketing it]. Curtis is currently working on putting vaccines into broccoli, turnips and brussels sprouts. All three researchers emphasize that their studies are still at a very preliminary stage. Delivery to humans of vaccines by means of edible plants is still years away, but this preliminary research offers a ray of hope for an affordable and safe way to prevent several serious illnesses that affect thousands of people in developing countries. If successful, the cost of a hepatitis vaccination (via plants) could drop to less than a penny per person (the cost of simply delivering seeds of these vaccine-containing plants). Currently vaccinations by injection can cost as much as $100 per person to deliver in certain Third World countries.

Toronto Star, November 28, 1993

Depressing Environmental Report

Countryside Survey 1990, a "modern Domesday Book" on the British environment, is available from the British Dept. of the Environment [Publication Sales Unit, Government Buildings, Lime Grove, Eastcote HA4 8SG, U.K. Price, £12]. This survey, conducted by the Institute of Terrestrial Ecology and the Institute of Freshwater Ecology at a cost of £3 million, enumerates changes in various features over a 12 year period [1978-1990]. It is a depressing read for botanists. An overall decline of about 14% in the number of plant species is estimated. Some arable fields had up to 25% fewer weed species in 1990 compared to 1978, a condition which could have a serious effect on wild animals (especially birds). Some woodlands had as much as a 40% decline in numbers of plant species. The survey, which made extensive use of satellite imagery, estimated a loss of 20% of hedgerows (*i.e.* total length -- the 1990 value is estimated at slightly more than 465,000 km), a 10% loss of dry stone walls and a 10% loss of freshwater ponds. Tree cover is estimated at 8% in 1990 [compared to 10% in 1978], which is one of the lowest values for any European country [less than half the values for France and Germany]. There are plans to conduct an identical survey of the state of Britain's environment in the year 2000.

Michael Hornsby, The Times of London, Nov. 18, 1993

Fathoming Flatus

Why would anyone study rectal gas, or flatus (or, if you prefer good old Anglo-Saxon terms, the fart)? It is certainly not Nobel Prize material. However, according to the doctor who writes this syndicated medical column, "none of us should turn up our nose at this unique study" by Dr. Albert Tangerman, a Dutch gastroenterologist. "Rectal emissions" are a problem for some people, such as a man unable to metabolize lactose, who is recorded as having 141 such emissions within 4 hours after drinking milk. Another thing you might not realize is that rectal gas is potentially explosive. The article cites a case of a patient who had ignored the doctor's advice to have an enema before an operation to remove polyps from the bowel. When the cauterizing instrument was inserted and turned on, the resulting blast blew the doctor across the room and tore a 6-inch gash in the patient's intestine.

Well, now that you have picked yourself up off the floor, back to Dr. Tangerman's study of the composition of farts. He managed to convince 6 adults to collect their emissions in 60 cc syringes, and the contents were later analyzed by gas chromatography (the columnist, a Toronto doctor, admitted that he "would love to have been a fly on the wall watching this experiment"). Tangerman found that there were four main sulphur-containing compounds in the flatus emissions. Methanethiol and dimethylsulphide were present in all emissions and were assumed to contribute most of the odor. Unexpectedly, hydrogen sulphide was present in only 75% of emissions and dimethyldisulphide in only 25% of emissions. Another compound, propanethiol, with "an extremely pungent and repulsive odor", was detected in one subject after he had eaten a meal of Greek-style food (onions in the meal were fingered as the probable culprit).

Finally, we come to the botanical connection for this story (so that you guys in Alberta don't have to write me about it). We all know the gas-producing effect of baked beans (there was an item about beans in a previous Plant Press) and many of us remember the catchy verse that your editor, at least, learned from his long-departed mother:

> Beans, beans, the musical fruit,
> The more you eat, the more you toot.
> The more you toot, the better you feel,
> So let's have beans at every meal.

To a depression-era child this little ditty made the eating of inexpensive bean dishes daily almost bearable. However, this newspaper article also lists several other plant foods which are labelled as being "flatogenic" (what a beautiful word to try to work into party conversations). Such plant foods include corn, onions, several Brassicaceae (brussels sprouts, cabbage, cauliflower) and prunes (including prune juice). Forewarned is forearmed, as they say.

Kitchener-Waterloo Record, December 9, 1993

Not-so-Safe Sex

Dr. Ronald Brancaccio, a New York University dermatologist, reports a marked increase in persons having allergic reactions caused by contact with natural rubber latex. The AIDS epidemic has resulted in a sharp increase in human contact with latex, with health-care workers now always wearing latex gloves when examining each patient, and safe-sexers using latex condoms for every sexual encounter. Even people blowing up balloons (by mouth) have reported reactions. Condoms can produce an allergic reaction in either sexual partner, the most common effect being oedema, or swelling, of the genitals. Cases of life-threatening, anaphylactic shock have also been reported, along with less severe, asthma-like attacks and hives. Brancaccio says that the substance causing the problem is believed to be a protein, produced by the rubber tree, which remains in the final latex product. The rubber industry is trying to identify the protein so that it can be removed during the manufacturing process.

Toronto Star, December 11, 1993

Saffron Facts

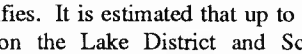
At dawn during the last few days of October, villagers from Consuegro, near Toledo, Spain, harvest what is probably the most expensive plant product known, the stamens of ***Crocus sativus***, commonly known as saffron. About 160,000 flowers are needed to produce one kilo of saffron, all hand-picked. Now mainly used in cooking, a pinch of saffron adds colour (because of the red filament), and a distinctive fragrance and taste (it goes especially well with fish or shellfish). It used to be used as a colouring for butter and cheese, and Shakespeare, in A Winter's Tale, refers to its use in colouring pear pies. Saffron cakes (especially at Easter) are still made in Devon, Cornwall, Northumberland and Ireland. The saffron crocus was introduced into Britain in the 14th century and saffron used to be harvested and sold at large autumn fairs, such as the great October fair at Saffron Walden (I often wondered how this village got its name) and Newport Fair at Gwent (formerly Monmouth). Saffron has always been a very scarce and very expensive commodity. It was the traditional gift to visiting royalty from the Corporation of Saffron Walden. The cost of a pound of saffron at fairs progressed from £1 5s in 1561, to £3 10s in 1661, to £4 11s in 1717. This does not sound too expensive in today's inflated money, but was probably equivalent in value to today's price per pound, which works out to about £560.

Frances Bissell, The Times of London, November 6, 1993

Acid Rain linked to Algal Blooms

It is reported that "significant levels of acid rain are being caused by giant blooms of plankton in the northeast Atlantic and the North Sea", which are being aggravated by pollution. The massive blooms, covering 422,000 km^2 of ocean during spring and summer, are dominated mainly by several prymnesiophytes (e.g. coccolithophorids), which produce large quantities of dimethylsulphide. This chemical enters the atmosphere and comes to earth again in the raindrops which it acidifies. It is estimated that up to 10% of the acid rain falling on the Lake District and Scotland may be traceable to algal blooms, while in Ireland and Norway, 30-75% of the acid rain may have this origin at certain times.

Nick Nuttall, The Times of London, Dec. 9, 1993



MEETINGS / CONGRÈS

Fungal Genetics

The **Second European Conference on Fungal Genetics** will be held in Lunteren, The Netherlands, from **April 28th to May 1st, 1994**. Information from: **E.C.F.G.-2, Department of Genetics, Wageningen Agricultural University, Dreyenlaan 2, NL-6703 HA, The Netherlands.**

Tree-Ring Conference

An **International Conference on Tree Rings, Environment and Humanity: Relationships and Processes** will be held in Tucson, Arizona, **May 17-21, 1994**. Obtain information from: **International Tree-Ring Conference, Laboratory of Tree-Ring Research, Building 58, University of Tucson, Tucson, AZ 85721.**

Benthological Society

The **42nd Annual Meeting of the North American Benthological Society** will be in Orlando, Florida, **May 24-27, 1994.** Meetings often include papers on benthic algae and aquatic vascular plants. For information, contact: **Dr. Nick Aumen, S. Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680.**

Plant-Microbe Interactions

The **7th International Symposium on Molecular Plant-Microbe Interactions** will be in Edinburgh, U.K., from **June 26th to July 1st, 1994**. Information from: **Dr. M.J. Daniels, The Sainsbury Laboratory, John Innes Centre, Colney Lane, Norwich, U.K. NR4 7UH. FAX: +44 0603 250024.**

IUMS Congress

The **7th Congress of the International Union of Microbiological Societies (IUMS)** will be in Prague, Czech Republic, **July 3-8, 1994.** Information from: **B. Sikyata, Institute of Microbiology, Czech Academy of Science, Videnska 270, Prague 4, Czech Republic.**

Prairie Conference

The **14th North American Prairie Conference** will be held at Kansas State University, **July 12-16, 1994.** The conference theme is: **Prairie Biodiversity: from molecules to landscapes, from the past to the future.** Contributed papers and posters will cover a wide range of topics relevant to grassland ecosystems. For information, contact: **North American Prairie Conference, Conference Office, Division of Continuing Education, College Court Building, Kansas State University, Manhattan, Kansas 66506-6006.**

NATO Workshop

A NATO Advanced Research Workshop bearing the title, **Prospects for Carbon Sequestration in the Biosphere**, will be held in Edinburgh, U.K., **July 18-22, 1994.** Obtain information from: **Prof. O. Heal, Institute of Terrestrial Ecology (North), Edinburgh Research Station, Penicuik, Midlothian, U.K. EH26 0QB.**

ISEP-10

Thanks to Carolyn Bird for sending us the brochure announcing **The Tenth Biennial Meeting of the International Society for Evolutionary Protistology [ISEP-10]**, which will be held at Dalhousie University, Halifax, **August 4-10, 1993.** Protistology encompasses the traditional fields of protozoology, phycology and mycology, and this meeting would be of interest to anyone using molecular or cytological techniques on experimental organisms belonging to lower eukaryotic groups. The titles of planned symposia include: (1) **The Cytoskeleton in Protist Evolution: A Molecular Perspective**, (2) **Metabolic Evolution in Early-branching Protists: Sequences and Organelles** and (3) **The Early Fossil Record.** Special Workshops are planned on: (1) **Aquatic Parasites and Pathogens**, (2) **Analysis of Molecular Sequence Data** and (3) **Evolution of Specialized Molecular Processes in Protists.** An event not to be missed is the **President's Address**, by Michael Melkonian (Universität Köln), entitled **Endosymbioses and Algal Evolution.** To obtain the First Announcement, contact: **ISEP Secretariat, NRC Institute for Marine Biosciences, 1411 Oxford St., Halifax, NS B3H 3Z1, FAX: (902) 426-9413**, or e-mail to Mark Ragan, Chair of the Organizing Committee [mark@imb.lan.nrc.ca].

Protein Phosphorylation in Plants

This is the title of a meeting in Bristol, U.K., **September 12-14, 1994.** Information: **Prof. P.R. Shewry, Dept. of Agricultural Sciences, University of Bristol, AFRC Institute of Arable Crops Research, Long Ashton Research Station, Bristol, U.K. BS18 9AF.**

Paleobotany Workshop

A three-day workshop, **Early Devonian Plants**, will be held **September 15-17, 1994** at the Forschungsstelle für Paläobotanik, Westfälische Wilhelms Universität Münster, in the city of Münster, Germany. The workshop will include short papers, discussion sessions and posters, and a day will be devoted to examining and discussing specimens, including some new discoveries from the Rhynie chert. North Americans interested in participating should contact: **Dr. Thomas N. Taylor, Department of Plant Biology, Ohio State University, 1735 Neil Ave., Columbus, OH 43210.**

Congreso Latinoamericano de Botánica

If you can understand the following text, you might be interested in attending this meeting. Simultaneous translation into English may be available for some of the major sessions.

El Comité Organizador invita a los colegas interesados en las diferentes áreas de la Botánica a participar del **VI Congreso Latinoamericano de Botánica** que se llevará a cabo en la ciudad de Mar del Plata (Argentina) entre los dias **2 y 8 octubre de 1994.** Los idiomas oficiales del Congreso serán el Español y el Portugués. Si Usted desea recibir la Primera Circular, puede solicitarla a la Secretaría Ejecutiva del Congreso, **Renee H. Fortunato, VI Congreso Latinoamericano de Botánica, Instituto de Recursos Biológicos, INTA Castelar 1712, Provincia de Buenos Aïres, Argentina.**

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Les soumissions pour le bulletin d'avril doivent arriver au plus tard le 1 avril 1994.

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