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BULLETIN

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J. F. (Joe) Gerrath
Guelph

ON THE INSIDE
À L'INTÉRIEUR

EDITOR'S COMMENTS
COMMENTAIRE DE LA PART DE L'ÉDITEUR

Patron

You have no doubt already noticed that CBA/ABC once again has been granted the patronage of the Governor General of Canada, His Excellency the Right Honourable Roméo Leblanc. I recently viewed a television interview with a film-maker who had completed a documentary on selected members of the more than 240,000-strong Leblanc family in North America, all of whom are descended from Acadian immigrants. The Governor General is part of this heritage, but was not included in the film. We must make an application for the granting of patronage each time a new Governor General takes office, and we are pleased that he has granted our request.

In this Issue

This issue contains the minutes of the Annual AGM at Guelph as well as citations for the awards presented at the Annual Meeting. Our usual October call for nominations is included. CBA/ABC provided financial support for the publication of **Canadian Biodiversity**, and you will find (on p. 61) an announcement of its

availability on computer diskettes to CBA/ABC members (for a nominal fee to cover costs of mailing out the diskettes).

The seventh in the "Poorly Known Economic Plants of Canada" series deals with the Pacific Yew. This series has proved to be popular and the authors have responded to those who have "filed" their previous issues of the Bulletin by making plans to place the series on the World Wide Web. More information on access will be available in future issues of the Bulletin when the Web pages are completed.

The book review process has been bearing "multiple fruit" this season and, although I have included four pages (!) of reviews, I still have a couple of reviews that have had to be delayed until the January issue. This issue is completed by the usual Plant Press and Meetings pages (sorry, only two pages available for the Plant Press this time).

C.D. Nelson Award (CSPP/SCPV)

I don't believe the Bulletin has ever commented on the C.D. Nelson Award (CSPP/SCPV) during my tenure as Editor. However, this year's award is special, since it was received by Gregory J. Taylor (University of Alberta), who is one of those few Canadian plant scientists who are members of both CBA/ABC and CSPP/SCPV. Dr. Taylor's research focuses on acid soil tolerance in higher plants, especially on the physiological basis of tolerance to aluminum and manganese toxicity. A more complete citation concerning this award can be found in the August issue of the CSPP/SCPV Bulletin.

Reviewer Needed

The following book (a compilation of several articles on urban ecology) was relayed to the editor by the office of the Canadian Journal of Botany (which does not publish book reviews). I am looking for a volunteer who would be willing to review this volume for the Bulletin's Book Review pages.

Urban Ecology as the Basis of Urban Planning. Edited by H. Sukopp, M. Numata and A. Huber. 1995. SPB Academic Publishing bv, The Hague. 217pp.

Joe Gerrath, Editor

Future Annual Meetings
Prochaines Réunions Annuelles

1996
University of Prince Edward Island
Charlottetown, PEI
June 23-27 juin

1997
Université de Montréal (Institut botanique)
(with/avec Botanical Society of America/AIBS)
Early August/au début d'août

1998
Arrangements not yet finalized.

1999
St. Lous, Missouri
(with XVI International Botanical Congress)
August 1-7 août

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Minutes of the Annual General Meeting
Monday, June 26, 1995
University of Guelph

1. The meeting was called to order at 5:23 p.m.

2. **Motion** (Jean Gerrath, Joe Gerrath): That the minutes of the 1994 Annual General Meeting held at the University of Calgary be adopted as circulated. Carried.

3. Business arising from the minutes:
The Secretary noted that the mail ballot to ratify the amendment to By-Law 12 (to change the Head Office to Dept. of Botany, University of Guelph) will be sent out shortly.

4. Reports of Officers:
a. President (K. Winterhalder) - circulated report was published in the July issue of the Bulletin.

b. Past President (U. Posluszny): - circulated report was published in the July issue of the Bulletin.

c. Vice President (Doug Larson): - reported that to date 250 people had registered for the meeting. There were 30 volunteers assisting with various aspects of the meeting.

Motion (Nancy Dengler, Hal Hinds): That the local organizing committee be thanked for their excellent work in organizing the meeting to date. Carried (accompanied by loud cheers!).

d. Secretary (Jean Gerrath): - report published in July issue of the Bulletin.

e. Treasurer (Christian Lacroix):

i. Membership: At the time of the AGM the membership stands at 290. In the Treasurer's contest for the most new members, there was a tie among Keith Winterhalder, Larry Peterson and Liette Vasseur, each of whom recruited 5 new members. A draw was held during the AGM for the winner of a free membership and the winner was Larry Peterson.

ii. Financial Statement - this was published in the July Issue of the Bulletin.

Motion (Christian Lacroix, Taylor Steeves): That Judith MacIntyre and James Kemp be appointed as auditors. Carried.

f. Section Reports: All section reports were published in the July issue of the Bulletin. The following Motions were brought forward and approved regarding the J.S. Rowe Prize (Ecology Section) and the distribution of the diskette form of **Canadian Biodiversity** (Systematics & Phytogeography).

Motion (Doug Larson, Joe Gerrath): That the Ecology Prize be called the J.S. Rowe Prize. Carried.

Motion (Doug Larson, Dianne Fahselt): That the above-mentioned prize be used as a vehicle to encourage new CBA/ABC members amongst Canadian ecologists. Carried.

Motion (Doug Larson, Bill Crins): That we accept Ernie Samll's generoous offer of 150 sets in diskette form of "Canadian Biodiversity". The distribution will be handled by Joe Gerrath. Postage will be charged. Carried.

g. Editor (Joe Gerrath): - this was published in the July issue of the Bulletin.

5. Conservation Committee Report (Heather Stewart): - circulated report was published in the July issue of the Bulletin.

6. Development Committee (Jean Gerrath): Tim Dickinson has had to resign from the Committee. New members are being solicited. There will be an auction held in Charlottetown.

7. Future Meetings:

i. 1996 Charlottetown *(see next page for announcement - Editor)*
ii. 1997 Montréal (with AIBS)
iii. 1998 ?Saskatoon (still tentative)
iv. 1999 St. Louis (Botanical Congress)
v. 2000 There are 2 offers on hand to host the meetings this year.

8. Call for Nominations (U. Posluszny): see elsewhere in this issue of the Bulletin.

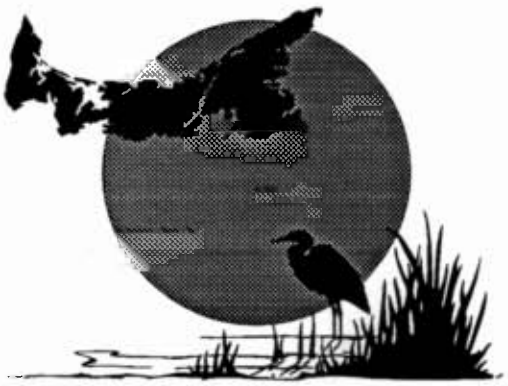
9. Canadian Journal of Botany Report - circulated report was published in the July issue of the Bulletin.

10. Other Business:
Motion (Doug Larson, Jim Kemp): Be it resolved that the executive of CBA/ABC consider the following:

The Canadian Botanical Association/L'Association botanique du Canada condemns the continuing degeneration of science at the Canadian Museum of Nature. The CBA/ABC deplores the hypocrisy of the Museum in pretending to advance the welfare of biodiversity in Canada, all the while decimating and demoralizing scientists and engaging in monumental ecosystem destruction. The people of Canada deserve far better than the Museum's overly simplistic policies that have endangered Canada's natural heritage. Carried.

11. **Motion** (Joe Gerrath, Liette Vasseur): That the meeting be adjourned. Carried.
The Meeting was adjourned at 7:10 p.m.

Canadian Botanical Association
L'Association botanique du Canada



ANNUAL MEETING
CONGRES ANNUEL
June 23 - 27 juin, 1996

University of Prince Edward Island
Charlottetown, P.E.I.

Preparations are well under way for next summer. Here is a sample of some of the activities that are being planned:

- oral presentations by general subject
- symposia on: conservation and biodiversity / structure and development of invasive plants
- poster display sessions
- field trips to unique habitats such as wandering dunes, salt marshes, and bogs
- social activities: evening harbour cruise, lobster dinner, deep sea fishing, and canoeing

Les préparatifs pour la rencontre annuelle de l'été prochain ont été amorçés. Voici un aperçu des activités qui sont prévues:

- présentations orales par sujet général
- symposia sur: conservation et biodiversité / structure et développement des plantes agressives
- présentation d'affiches
- excursions à des sites uniques: dunes mobiles, marais d'eau salée, et tourbières
- activités récréatives: croisière du port, repas de homard, pêche en haute mer, canotage

Sunday June 23 / Dimance le 23 juin	field trips / excursions registration / inscription reception / réception
Monday June 24 / lundi le 24 juin	symposium oral presentations / présentations orales lobster diner / repas de homard
Tuesday June 25 / mardi le 25 juin	oral presentations / présentations orales Weresub lecture / présentation Weresub harbour cruise / croisière du port
Wednesday June 26 / mercredi le 26 juin	oral presentations / présentations orales poster display / présentation d'affiches symposium et banquet
Thursday June 27 / jeudi le 27 juin	field trips / excursions deep sea fishing / pêche en haute mer canoeing / canotage

for more information / pour de plus amples renseignements

e-mail / courier électronique: CBA96@upei.ca
fax / télécopieur: 902-566-0740

PROPOSITION DE CANDIDATURES

BUREAU DE DIRECTION DE L'ABC

Les membres de l'ABC sont invités à proposer des candidatures pour les postes de directeurs de l'ABC.

secrétaire [de 1996 à 1998]
3 directeurs [de 1996 à 1998]

Un des directeurs doit habiter à l'est de la frontière provinciale du Manitoba et de l'Ontario et les autres n'importent où.

Chaque nomination doit porter la signature d'au moins trois membres de l'association et doit être accompagnée du consentement de la personne nominée. **Les nominations doivent être reçues avant le 31 janvier 1996, par la secrétaire de l'association.**

Dr. Jean M. Gerrath
Department of Biology
University of Northern Iowa
Cedar Falls, IA 50614-0421, USA

LA MÉDAILLE GEORGE LAWSON

Les membres de l'ABC sont invités à proposer des candidatures pour ce prix, qui sera presenté à la prochaine réunion annuelle de l'association à Charlottetown. Il y a deux catégories d'éligibilité.

Catégorie A: Pour reconnaître une contribution unique et exceptionnelle à la botanique canadienne par un botaniste canadien. En pratique, ceci prendra la forme d'un livre, d'une monographie ou d'un article apportant une contribution significative ou exceptionnelle à la botanique.

Catégorie B: Pour reconnaître l'ensemble des contributions distiguées d'un chercheur, professeur ou administrateur senior qui a fait carrière au Canada la plus grande partie de sa carrière, et qui a fait des contributions importantes à la développement de la botanique canadienne.

Toute nomination doit être accompagnée d'un *curriculum vitae*, d'un exposé concis faisant état de la contribution du candidat à la botanique canadienne, et d'autres documents comme des lettres d'appui d'autres personnes. **Chaque nomination doit être reçue, avant le 31 janvier 1996, par le président du comité de sélection.**

Dr. Keith Winterhalder
Département de Biologie
Université Laurentienne
Sudbury, ON P3E 2C6

CALL FOR NOMINATIONS

CBA BOARD OF DIRECTORS

Members of CBA are invited to submit nominations for the following positions on the Board of Directors of the Association.

Secretary [term - 1996-1998]
3 Directors [term - 1996-1998]

One of the Directors must reside east of the Manitoba-Ontario boundary. The others may reside anywhere.

Nominations must be signed by at least three members of the Association and must be accompanied by the consent of the nominee. **All nominations must be received before January 31, 1996, by the secretary of the Association.**

Dr. Jean M. Gerrath
Department of Biology
University of Northern Iowa
Cedar Falls, IA 50614-0421, USA

GEORGE LAWSON MEDAL

Members of CBA are invited to submit nominations for this prestigious award, to be presented at the next annual meeting at Charlottetown. A maximum of two awards may be given, one in each of the following categories of eligibility.

A. Recognition of the cumulative, distinguished contributions of a senior researcher, teacher or administrator who has worked in Canada for most of his/her career and who has contributed notably to the advancement of Canadian botany.

B. Recognition of a single outstanding contribution to botanical knowledge, which may be a published paper of exceptional significance, a series of published papers, a monograph, or a book. Canadian botanists at any stage of their career are eligible in this award category.

Nominations should be accompanied by a *curriculum vitae*, a clear statement of the nominee's contribution to Canadian botany, and as much documentation as possible (including letters by others supporting the nomination.). **Nominations should be sent to the President of CBA, who chairs the awards committee, before January 31, 1996.**

Dr. Keith Winterhalder
Department of Biology
Laurentian University
Sudbury, ON P3E 2C6

PROPOSITION DE CANDIDATURES

LE PRIX MARY E. ELLIOTT

Les membres de l'ABC sont invités à proposer des candidatures pour ce prix, qui est donné à une membre pour service de mérite exceptionelle à l'Association. La présentation de ce prix aura lieu à la prochaine réunion annuelle de l'ABC à Charlottetown.

Toute nomination doit incluire les détails des contributions méritoires à l'ABC de la personne nommé. **Veuillez envoyer vos nominations, au plus tard le 31 janvier 1996, au président du comité de sélection:**

Dr. Keith Winterhalder
Département of Biologie
Université Laurentienne
Sudbury, ON P3E 2C6

Chaque nomination, soit pour la médaille Lawson, soit pour le prix Elliott, restera éligible pendant trois années avec le comité de sélection. Le comité demandera aux proposeurs de fournir de nouveaux détails ou des modifications pour le deuxième et le troisième année d'éligibilité.

CALL FOR NOMINATIONS

MARY E. ELLIOTT SERVICE AWARD

Members of CBA are invited to submit nominations for this award, which recognizes meritorious service to the Association by an individual member. If a suitable candidate is proposed, the award will be made at the next Annual Meeting in Charlottetown.

Nominations must include a citation of approximately 100 words and a statement detailing the service contributions of the nominee to CBA. **Nominations should be sent to the President of CBA, who chairs the awards committee, before January 31, 1996.**

Dr. Keith Winterhalder
Department of Biology
Laurentian University
Sudbury, ON P3E 2C6

Nominations for both the Lawson Medal and the Elliott Award are kept on file for three years after submission, but nominators are requested to provide updated information for the second and third years.

Student Awards at Guelph

Macoun Travel Bursaries

The 1995 Macoun Travel Bursaries were awarded to the following students to assist with travel expenses to the Guelph meeting of CBA/ABC.

Daniel Archambault, University of Alberta
Danilo D. Fernando, University of Alberta
Zichen Yu, Royal Ontario Museum

Lionel Cinq-Mars Award

Barbara Booth

The 1995 Lionel Cinq-Mars Award, given to the student judged to have made the best oral presentation of a contributed paper at the Annual Meeting of CBA/ABC at Guelph, was presented to Barbara Booth (University of Guelph). Her paper was entitled:

The role of seed rain, seed bank and seedling establishment in determining community structure on cliff faces of the Niagara Escarpment. (co-authored by D.W. Larson)

CBA/ABC Award at Canada-Wide Science Fair, Whitehorse, Yukon

A special award is given annually by the CBA/ABC for the best presentation involving experiments with plants at the Canada-Wide Science Fair, held this year in May in Whitehorse, Yukon. The winner of the award this year was **Tammy Rempel** from Austin, Manitoba, a Grade 10 student at MacGregor Collegiate.

The winning project centred on the grafting of potato and tomato plants (combinations of different varieties of each were tested). Experiments carried out over a 2-year period compared the grafted plants for vigor, time to maturity, yield, and resistance to blight and insect damage. Briefly, the best combination for the grafts was the Kennibe potato and the Starfire tomato (a late-maturing potato grafted with an early tomato). Grafted plants produced higher yields than control plants and were more resistant to blight , cutworms and potato beetles than controls. The potatoes from grafted plants had fewer "brown spots" and could be stored longer after cooking than those from control plants. Tomatoes from grafted plants were not noticeably different from those harvested from controls.

AWARDS AT GUELPH - MÉDAILLE GEORGE LAWSON MEDAL

Dr. T. R. Nag Raj
University of Waterloo

Citation read by CBA/ABC President Keith Winterhalder at the Awards Presentation in Guelph.

The 1995 recipient of the Lawson Medal (Category A) is Dr. T.R. Nag Raj, for his 1101 page book, **Coelomycetous Anamorphs with Appendage-bearing Conidia**, published in 1993 by Mycologue Publications.

Dr. Nag Raj has lived in Canada, and has been a Canadian citizen, for most of his academic life. He had already established some competence with anamorphic fungi in India when he came to Waterloo to do his Ph.D. with Professor Bryce Kendrick. He completed his thesis in record time, and it was subsequently published in its entirety as a book: **A Monograph of *Chalara* and Allied Genera**. This book remains the standard work on the group. After a short stay in India, he returned to Canada, and has been at the University of Wateroo ever since. He is certainly recognized as the North American expert on the Coelomycetes, and arguably the world authority on this group of fungi, his only real competition being Dr. Brian Sutton of the International Mycological Institute in London, England.

Dr. Nag Raj has worked assiduously for more than twenty years on his chosen group of organisms. He has published a very large number of papers, describing new taxa, and skillfully and patiently sorting out an incredibly complex mass of errors perpetrated by other, less competent mycologists. His illustrations are legendary. No other contemporary mycologist produces such elegant and artistic drawings. But they are not simply beautiful; they contain a wealth of biologically accurate information (on a cell-for-cell basis) about the anatomy of conidiomata, and the developmental stages of the conidiogenous cells, conidia and appendages.

Dr. Nag Raj has been a mentor to many of Professor Kendrick's graduate students, and was essentially the "*éminence grise*" behind the Ph.D. of Frank DiCosmo (who is now an Associate Professor at the University of Toronto). He has also taught mycological courses during Professor Kendrick's several absences on Sabbatical and as Visiting Professor.

One has only to read some of the reviews of Dr. Nag Raj's book to realize the impact that it has had on the mycological world. To quote one reviewer: "*I have seen few books that radiate as much scholarship as Dr. Nag Raj's treatise*", and another: "*Not only is it scientifically excellent and a distillation of a respected man's life, but it is also a beacon to those of us who would mourn the passing of monographic taxonomy*".

Canadian botany has been enormously enriched by Dr. Nag Raj's presence in this country. It was the unanimous decision of the Awards Committee that the *magnum opus* described above, which crowns Dr. Nag Raj's intellectually vigorous and productive career, richly deserves the Lawson Medal, and it is my honour and pleasure to ask Carol Peterson to accept it on Dr. Nag Raj's behalf.

Dr. Ernie Small
Agriculture and Agri-Foods Canada

Citation read by CBA/ABC President Keith Winterhalder at the Awards Presentation in Guelph.

The 1995 recipient of the Lawson Medal (Category B) for a life-time contribution to Botany was born and raised in Ottawa, and gained his B.A. in Psychology, and his B.Sc. (Hons.) and M.Sc. in Biology, at Carleton University. His Ph.D. at the University of California was in the area of plant evolution. He then returned to Ottawa, where he had previously worked as a student, to join Agriculture Canada's plant systematics group. He still works in Ottawa, where he is a senior researcher with Agriculture Canada's Centre for Land and Biological Resources.

I am speaking, of course, of Dr. Ernie Small. Ernie is the author of 125 publications on a diversity of subjects, and as early as 1982 he was found to have the highest cumulative citation record in his Division. He has used an exceptional range of techniques and tools in his research, from numerical taxonomy to haemolytic saponin chemistry, from scanning electron microscopy to chloroplast DNA analysis, and from phytogeography to microgametophyte plastid nucleoid content. His research subjects have also been diverse. Few of you may be aware that between 1969 and 1977, Ernie published numerous papers on bog ecophysiology, and that he has contributed extensively

to the protection of bog habitats like Mer Bleue near Ottawa. His work on the classification of economically significant plants has included the evening primrose and carrot families, and his extensive studies on marijuana and hemp, when he was a research associate with the Le Dain Commission on the non-medical use of drugs, has made him a world authority on ***Cannabis sativa***.

His work on alfalfa and the 62 papers that ensued have led to the creation of a valuable germplasm collection and many practical applications. For example, did you know that:

- Alfalfa varieties with gland-tipped hairs repel pests, thus reducing the need for insecticides?
- Coiled pods reduce the consumption of seeds by pests, again reducing the need for insecticides?
- Yellow-flowered varieties of alfalfa need less fertilizer than the purple-flowered varieties?
- Alfalfa seed costs can be reduced by providing the appropriate bees for pollination?

In 1993 Ernie received a CLBRR Merit Award and Ministerial Citation in recognition of his outstanding work on alfalfa.

Ernie's role in crop diversification has led to a 300-page book on vegetables and a 700-page book on culinary herbs, both in press, as well as short popular articles. In 1974 Ernie received the G.M. Cooley Award of the American Society of Plant Taxonomists, and in 1985 he was elected a Fellow of the Linnaean Society of London.

Ernie has a quiet, unassuming manner, but in terms of scientific leadership he is a giant. He has played a critical role in building one of the strongest plant systematics groups in the world, and has brought home to his fellow botanists, pure and applied alike, the value of systematics research in agriculture.

Last but not least, Ernie is a truly Canadian botanist, who has earned the respect of colleagues from both founding cultures. Never the ivory tower scientist, he is ready and able to interpret his research to the broader public, in English or in French. To quote his colleague, Jacques Cayouette: "*En plus d'être un chercheur accompli, il a le souci de rejoindre un plus large public en préparant des travaux de vulgarisation de haute qualité*". It is therefore my honour to present the Lawson Medal (Category B) for 1995 to Dr. Ernie Small.

MARY E. ELLIOTT AWARD

Luc Brouillet
Institut botanique, Université de Montréal

Citation read by CBA/ABC President Keith Winterhalder at the Awards Presentation in Guelph.

The 1995 recipient of the Mary E. Elliott Award for service to the CBA/ABC has been an active member of the Association since his student days. Indeed, in 1979 he was the winner of the Lionel Cinq-Mars Award. In the intervening years, he has played an important role in helping the Association to address the important issues of the day, such as the lengthy debate in Truro in 1992 over our membership in CFBS.

Luc Brouillet became a Director in 1983, was elected President in 1985, and was Vice-President in 1987 when he coordinated the organization of the CBA Annual Meeting in Montréal.

Luc has ensured, over the years, that Québec has a strong presence in CBA/ABC, and he has enriched our annual meetings by bringing his students and colleagues with him to participate. In these ways, he has enabled CBA/ABC to be a truly national association. Furthermore, beyond the CBA/ABC, Luc has represented the Canadian systematics community in national and international committees and review panels in an exceptional manner.

It is therefore my pleasure and honour to present the 1995 Mary E. Elliott Award, personally designed and hand-carved by Doug Larson to symbolize Luc's well-rounded skills and genial personality, to Liette Vasseur, who will accept it on his behalf.

Canadian Biodiversity: a Guide to Botanical Specialists and Literature. by E. Small, J. Cayouette, B. Brookes, and W. Wojtas, Agriculture and Agri-Food Canada.

[Electronic publication, available Fall 1995, on 4 diskettes and on World Wide Web (http://res.agr.ca/brd/home.html).]

This bilingual format work lists over 300 living (and a few recently deceased) Canadian botanists, particularly systematists, phytogeographers, ecologists, and foresters, and provides complete citation details of over 15,000 of their publications and reports related to biodiversity of vascular plants and bryophytes. Addresses, fax and E-mail information are also provided. An appendix lists recent key publications on Canadian biodiversity.

The diskettes (3.5") version comes with Acrobat Reader, a user-friendly retrieval software system that facilitates rapid location of individuals and words. The system is for computers with Windows. About 5 MB of storage are needed. The entire text (over 1,000 pages), can be printed out. Printed copies of the text will be deposited in the Ottawa library of Agriculture Canada.

In acknowledgment of the subsidization of this work by the CBA/ABC, 150 copies of the diskettes version will be contributed to CBA/ABC, and members (only) can obtain a copy on a first-come first-served basis.

As approved at the Annual Meeting at Guelph in June, Joe Gerrath has kindly agreed to distribute the 150 copies for CBA/ABC, with a nominal charge to cover distribution costs. Those wishing a copy should send a cheque for $5.00, made out to J. Gerrath, to him (address on page 54 of this issue).

Ernie Small
Agriculture & Agri-Food Canada

Biodiversité canadienne: répertoire des botanistes actuels et de leurs publications par E. Small, J. Cayouette, B. Brookes et W. Wojtas, Agriculture et Agroalimentaire Canada.

Document électronique disponible à l'automne 1995, sur 4 disquettes et sur la trame planétaire «World Wide Web» (http://res.agr.ca/brd/home.html).

Cet ouvrage bilingue répertorie plus de 300 botanistes canadiens contemporains (et quelques-uns décédés récemment), surtout systématiciens, phytogéographes, écologistes et forestiers, ainsi que la liste détaillée d'environ 15 000 de leurs travaux touchant la biodiversité des plantes vasculaires et des bryophytes. Leurs adresses, numéros de télécopieur et de courrier électronique sont disponibles. Une liste des principales publications récentes sur la biodiversité au Canada se retrouve en appendice.

La version sur disquettes (3.5") est pourvue du logiciel de recherche conviviale Acrobat Reader qui permet une localisation rapide de personnes et de mots. Le système opère sur la plateforme Windows et requiert environ 5 MO de mémoire. L'impression complète du texte couvre plus de 1 000 pages. Des copies imprimées seront disponibles à la bibliothèque d'Agriculture Canada à Ottawa.

Suite à la contribution financière de l'ABC/CBA, 150 copies sur disquettes iront à l'ABC/CBA. Seuls les membres pourront en obtenir une copie selon la règle du premier arrivé premier servi.

Tel que décidé en juin dernier à la réunion de Guelph, Joe Gerrath a accepté de distribuer les 150 copies moyennant une modique somme pour couvrir les frais de transport. Si vous êtes intéressés, envoyez un chèque de 5.00$ à J. Gerrath à son adresse (voir page 54 de ce Bulletin).

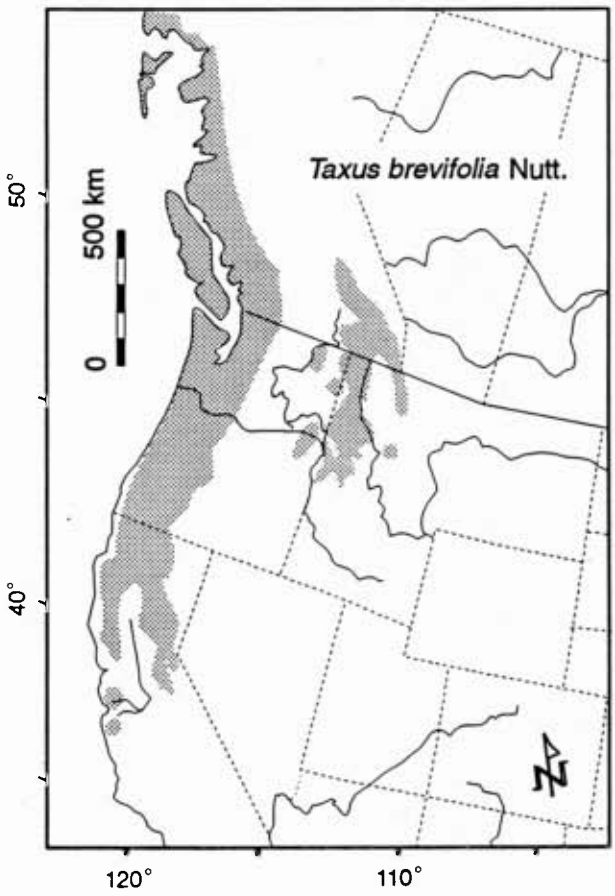
Ernie Small
Agriculture et agro-alimentaire Canada

Poorly Known Economic Plants of Canada. 7. Pacific Yew, *Taxus brevifolia* Nutt.

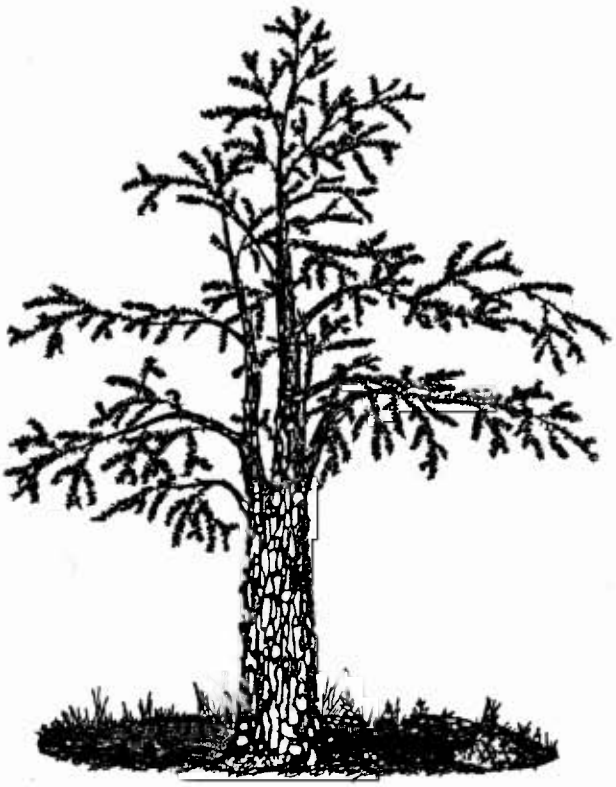
E. Small and P.M. Catling, Biological Resources Division, CLBRR, Agriculture and Agri-food Canada, Saunders Bldg., Central Experimental Farm, Ottawa K1A OC6

Common names: Pacific Yew, Western Yew. French: If de l'Ouest, If occidental.

There are 6 to 11 species of *Taxus*, depending on authority, with two species indigenous to Canada. The shrubby Canada Yew or Ground Hemlock (*T. canadensis*) occurs from Manitoba eastwards. Pacific Yew (*T. brevifolia*) is an evergreen, spindly tree, native to the mountains of western North America. It ranges from southeast Alaska to northern California, and from the Pacific coast to interior Idaho and Montana. Occasional trees are found as far south as San Francisco.



Pacific Yew normally grows inconspicuously and slowly beneath a conifer forest canopy, in dense shade, to a height of 6 to 10 m, and a diameter of 15 to 30 cm. One yew in western Washington has a record diameter of 1.4 m, and some trees are reported to have grown as high as 25 m. In drier, eastern parts of its range Pacific Yew is found in open areas as a shrub less than 2 m high. Pacific Yew is not abundant, generally occurring in small groups or single trees. The species grows best on moist flats along streams, in deep gorges and damp ravines, and where fires are relatively infrequent. Some trees may live for over 500 years, and it has been suggested that one tree reached the age of 1800 years. Male trees produce small but abundant yellowish flowers on the underside of the branches. Female trees produce seeds enclosed in pulpy, sweet, red or scarlet arils (fleshy, berry-like structures), not cones as do most other Coniferae. The single seed of the fruit often protrudes beyond its outer cover. The seeds are disseminated by birds. The foliage is relatively sparse. The trunk is tapered and usually fluted, and covered by scaly, reddish-brown to purplish-brown bark only 2-6 mm thick. Thin, purple scales of the outer bark are easily removed, exposing a reddish-purple under-bark. Lower branches contacting the soil will root, and cut stumps will sprout, producing clumps of trees.



Traditionally, Native North Americans valued the extremely hard, decay-resistant wood for tools like canoe paddles and fish hooks, weapons like archery bows and spears, and ceremonial and decorative items, and the bark, foliage and fruits for medicinal use. The wood is still used occasionally by craftsmen, and for firewood and fence wood, and the plant is sometimes grown as an ornamental. Until recently, Pacific

Yew has been considered a nuisance weed by modern forestry, insufficiently important to harvest for lumber or pulp. It was often burned along with logging slash that remained after timber harvest.

In 1962, the National Cancer Institute of the U.S. found that extracts from Pacific Yew bark showed *in vitro* activity against cancer cells. Thus began a period of stardom for this hitherto largely ignored "trash species," which was turned into "Cinderella of the Great Western Woods." Coincidentally, this period of celebrity overlaps that of another rare species of older western forests, the Spotted Owl. The owl unfortunately polarized environmentalists and loggers as to whether habitat or jobs is more important. An even more painful ethical dilemma was raised by the yew tree: whether saving trees or victims of cancer is more important. Of course, this is an artificial debate: the maximum yield from natural stands can only be obtained by limiting harvests to sustainable levels, and following habitat-conservation principles.

Although yew trees are now viewed as a tree of life, ironically they were once known as the tree of death. This is because all parts of all species of *Taxus*, except the fleshy arils, can be quite poisonous to humans and livestock (most references state that the "fleshy fruits" are edible, but it is unclear whether or not the seeds of some species contain appreciable toxins). The English Yew (*Taxus baccata*), frequently cultivated in Canada, has the distinctions of being known as the tree from which famous archers such as Robin Hood and William Tell made their bows, and as the most toxic plant in Britain.

The anti-cancer compound taxol (paclitaxel) is contained in most parts of yew trees, but is especially concentrated in the inner bark (i.e., the cambium). The word Taxol (with a capital T) is a registered trademark name for a drug formulated with paclitaxel (cf. "Coke" and "coke."). Taxol is active against advanced refractory ovarian cancer (for which treatment alternatives are limited), as well as breast cancer, and it is undergoing clinical trials for efficacy against a variety of other cancers. Taxol is therapeutic because it is a mitotic spindle poison which inhibits uncontrolled cancerous growths. Cancer is the second most frequent cause of death in industrialized countries, and improved treatments are urgently needed. It has been estimated that in the future over a quarter million people could be treated yearly with taxol, and that the drug could have a commercial value of the order of $1 billion annually. Taxol treatment is presently expensive, the drug costing between $10,000.00 and $100,000.00 for each patient, depending on number of treatment cycles (one to ten).

Yew bark is usually harvested by cutting the tree down, peeling the bark off the trunk and larger limbs using chisels or hatchets, and bagging the bark. Studies of damaged trees have suggested that killing entire trees, in many cases over 100 years old, is unnecessarily wasteful, and that removal of bark from one side allows the tree to survive without seriously affecting growth, and thus provides more bark for future harvests. The bark is chipped, dried, and its taxol extracted. Illegal harvest by poachers on public and private lands has become a major problem in the U.S. and Canada. Unfortunately the yield of taxol from the bark is extremely small: <0.02% dry weight. A single women suffering from ovarian cancer might need as much as 3 g of taxol, which would require the bark of 7.5 average yew trees. One study indicated an average requirement of six 100-year-old trees per cancer patient. About 7270 kg of bark is required to produce 1 kg of taxol. About 726 000 kg of Pacific Yew bark were harvested in 1991. Projected demands over the next 20 years could require sacrificing as many as a million trees a year, a figure which is well beyond the available supply of wild trees. Coupled with the facts that the Pacific Yew is rare and very slow growing, the expanding demand has made it clear that wild trees cannot provide adequate supplies. Decimation of trees led to the U.S. government in 1992 passing The Yew Act to ensure sustainable management of the yew harvest.

Several alternatives to harvesting wild Pacific Yew to obtain taxol are now being developed. These include: establishing yew plantations, not just of Pacific Yew, but of several cultivated species (all other species of *Taxus* of the world produce taxol, albeit in lower concentrations); breeding high-taxol cultivars of *Taxus*; production using tissue culture; production from *Taxomyces*, a newly-named genus of fungus isolated from *Taxus*, which also produces taxol (an apparent example of natural genetic exchange between higher plants and fungi); full synthesis; and synthesis of chemical analogues. These alternatives are currently being explored by numerous laboratories and intensive cultivation in forest tree nurseries has begun. However, at present the chief means of augmenting the supply of taxol obtained from bark is a partial synthesis of taxol starting with extracted chemicals from the foliage of species of *Taxus* (often collected abroad). This is a welcome development since the foliage can be harvested regularly without sacrificing the plants.

The story of Pacific Yew is instructive. It demonstrates how research on biodiversity can uncover invaluable materials and information. It illustrates the need to preserve biodiversity options for future generations. It reminds us of how unchecked human greed can quickly threaten a natural resource. It also shows how wise stewardship of an ecosystem can be achieved to ensure sustainable harvest of an essential resource.

BOOK REVIEWS

Introduction to Plant Population Biology. by Jonathan W. Silvertown and Jonathan Lovett Doust. Blackwell Scientific Publications, 1993. 210 pages. Price: $46.95 [CAN].

The Jonathan's duo has provided us with a compact introductory text to a vigorous branch of research and knowledge: plant population dynamics and genetics. The book is intended to replace the earlier Jonathan Silvertown's *Introduction to Plant Population Ecology*. The distinguished authors, who are two well-known scholars, offer with this work the evidence that they master their subject.

Right from the introduction the reader is seduced by sentences such as: "There is enough sex and death in the plant kingdom to fill a thousand and one nights of storytelling, but the Sheherazade of botany has still not made her appearance". Of course, the reading of this book does not require 1001 nights. The reason for this is simple: the text is an example of conciseness and clarity. Each chapter is divided into numerous short sections explaining basic concepts and models with relevant examples and illustrations, and ending with a summary. Most of the work cited has been published in the last two decades, so the book can be considered a synthesis of contemporary plant population biology.

The coverage is remarkably wide for a 200-page book. After an introductory chapter dealing nicely with the specificity of plants as objects of population genetics and demographic studies, nine other chapters cover the following topics: variation and its inheritance (chapt. 2), ecological genetics (chapt. 3), intraspecific interactions (chapt. 4), population dynamics (chapt. 5), dynamics of structured populations (chapt. 6), metapopulations (chapt. 7), competition and coexistence (chapt. 8), life history evolution: sex and mating (chapt. 9), life history evolution: birth, growth and death (chapt. 10). The chapters are followed by an extensive bibliography of over 750 entries and an index of subjects and species names.

I feel a little shy to criticize this book, but I think my personal criticism can be useful to its potential audience. Even though I really enjoyed the book because of its obvious objective qualities, I would be reluctant to suggest it to my students if I were to teach a course in population biology or plant ecology. This is because I think the approach chosen by the authors is too academic. Throughout the book, they have emphasized the evolutionary aspects of population processes with a strong mechanistic perspective. For instance, in the first page of the introduction, they define population biology as an attempt to explain the origin of the genetic, spatial, age and size structures of populations, to understand how these structures influence each other, and how and why they change with time. This emphasis on evolutionary explanations and understanding has brought an emphasis on conceptual definitions and models rather than on operational definitions and applied predictive models. For instance, the authors define a population as "a collection of individuals belonging to the same species, living in the same area". Every plant demographer knows that, within the scope of a specific study, the terms "collection", "individuals", "area", and even "species" have to be operationalized in some arbitrary way. No clue of how this operationalization can be done is offered.

Ecologists of my generation, who have been trained during the last decade, have been taught to address fundamental problems typical of mainstream academic ecology. Works published in prestigious journals such as *Nature*, *Science*, *American Naturalist*, etc, have been shown to us as models. Simultaneously, we have seen the world outside universities urgently asking for solutions to less prestigious issues, such as the conservation of local or global biodiversity. In my opinion, such an issue should foster the development and valuation of strongly instrumental research programs that aim at predictive models.

Therefore, I would have liked to find in a textbook on plant population biology at least some examples of applications of principles of population genetics or dynamics to plant conservation. Population viability analyses and harvesting ecology are not even mentioned in Silvertown and Lovett Doust's book. Recent applied works by plant ecologists like Eric Menges, Peggy Fiedler, Bruce Pavlik, to name only a few, are not cited. Also, topics like minimum viable population, extinction dynamics, allometry and stochastic population projections do not appear in the index. Exercises and problems would have also been a good addendum to each chapter, if the textbook were intended for students. The text also lacks a glossary and an author index.

On the whole, for those who want to learn the conceptual issues and language of mainstream plant population biology, this is really a fine piece of work.

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Groupe de recherche en écologie forestière
Université du Québec à Montréal

Introduction to Plant Population Biology. by Jonathan W. Silvertown and Jonathan Lovett Doust. Blackwell Scientific Publications, 1993.

I have the distinct impression (and bookstore staff agree) that, on the whole, students are increasingly more reluctant to buy course texts. While some students simply can't afford the high prices, for others this reluctance to buy seems to reflect changing personal priorities. Books in general are valued less, and owning a textbook is not viewed as an essential prerequisite for academic success. Therefore, I am constantly having to promote course texts as being both great value and a necessary purchase. at $48 **Introduction to Plant Population Biology** by the two Jonathans, Silvertown and Lovett Doust, is extremely good value for money for any ecology student. It is currently the most up to date, in-depth textbook covering plant demography and related subjects. This book, which is a significantly revised and expanded version of Jonathan Silvertown's **Introduction to Plant**

Population Ecology, is ideally suited for use by upper year students. It is unlikely that students in a second year (plant) ecology course would cover material in the detail presented in the text. There are two new chapters covering genetics (Variation and its inheritance and Ecological Genetics) and the references on plant population biology have been updated. While the structure of this new book is completely reorganized, those familiar with its predecessors will recognize many of the excellent figures and diagrams which are one of its strengths. I particularly liked the new format, which is larger and less "cramped" to read than the **Introduction to Plant Population Ecology**.

The authors' general approach is to emphasize the relationship between the genetic structure of plant populations and changes in numbers (plant population dynamics), as well as to explain how and why these changes occur. The clear and easy to digest first chapter introduces concepts of demography, fitness, life tables, life history and plant behaviour. In the discussion of life tables, the example in the previous version of this text used ***Phlox drummondii***, which many students found impenetrable. In the new **Introduction to Plant Biology** this has been replaced with a clearer example for the shrub, ***Acacia suaveolens***. In addition, the authors' chatty, somewhat fireside style successfully conveys their enthusiasm for the subject. In this I was remined of John Harper's classic **Population Biology of Plants**, in which some hilarious "asides" really do convince the reader that the study of plant demography is not just intellectually fascinating but also fun! The next two chapters contain useful summaries and reminders about basic genetics (reactions norms, heritability, phenotypic plasticity, Hardy-Weinberg, etc.) which are more usually found in Plant Evolution courses, but which are of increasing relevance in Plant Ecology courses. These chapters provide a background for the remainder of the book and serve to emphasize the interdisciplinary nature of plant population biology and life history studies. Yes, Virginia, ecology and genetics ARE related!

Chapters four to eight give a very thorough and straightforward explanation of the theory and practice of plant population biology. Silvertown and Lovett Doust refer to many interesting studies to explain everything from intra-specific competition and Yoda's self-thinning rule, to the concept of metapopulations and Tilman's resource ratio hypothesis. Some of my favourite sections were those explaining density dependence and independence, how to cobweb recruitment curves and sensitivity analysis. This is stuff that mathematically-challenged biology students can really sink their teeth into. Students' eyes get glazed over during my lectures about quantitative aspects of ecology, and these sections make much of the theory and maths, which they have forgotten, easy to follow. These sections also convey why statistics and maths are so important in ecology.

The final two chapters are about life history evolution, and include much new information on plant mating systems, trade-offs and evolutionary stable strategies. They also introduce ideas about optimality which are more commonly associated with animal behaviour, and they leave many questions open ended. This is not a textbook which gives pat answers to all questions that are raised (something else disliked by students) and the authors challenge the reader to think about the issues and to "find [the loose ends] and tie them [up]".

In conclusion, while this book does not cover everything that might be touched upon in a plant ecology course (*e.g.* plant-herbivore interactions, patterns of primary production and trophic interactions), it addresses the area which has been a major growth industry during the last 20 years, and which for some (but not all) Harperians is, to a large extent, the most important aspect of plant ecology. The coverage is so thorough that, once you have read this book, you will have received much more than a mere "Introduction" to plant population biology.

Dawn R. Bazeley, Dept. of Biology, York University

Seeds of Woody Plants in North America. Revised and Enlarged Edition. by J.A. Young and C.G. Young. Dioscorides Press, 1992. 418 pp. Price: US$49.95 (hard cover).

This book is the long awaited revised and enlarged edition of Schopmeyer's 1974 classic, **Seeds of Woody Plants in the United States** (U.S. Forest Service, Agriculture Handbook 450). It has been expanded to include genera from all over North America (386 genera in all), but this has been at the expense of the general introductory chapters and some taxonomic detail (However, both are easily obtainable elsewhere). It also includes non-native, ornamental species. The focus remains seed germination, although seed production and nursery practices are also addressed.

Each genus is treated in its own chapter under the headings of "Growth Habitat, Occurrence and Use", "Flowering and Fruiting", "Collection, Extraction and Storage of Seeds", "Pregermination Treatment", "Germination" and "Nursery and Field Practice". Much of the detail is clearly presented in table form, successfully summarizing a large amount of information. Many chapters include a list of recent literature on germination requirements. Chapters are arranged alphabetically by genus.

I find this book a useful reference, although I do have several misgivings. First, some factual information is incorrect. They have mixed up ***Acer saccharum*** (sugar maple) with ***Acer saccharinum*** (silver maple); however, their use is not consistently wrong. The photos are labeled correctly, but the text tends to mix up ***A. saccharum*** and ***A. saccharinum***. Table 1 (p.14), which outlines the phenology characteristics of mature trees and seed weights, is very mixed up. The right four columns are correct, while the left four columns are incorrect. Common names are used incorrrectly. It's an understandable mistake, but frustrating none the less. I do not know the accuracy of other genera with which I am less familiar.

My second misgiving is the use of photos where line drawings may have been more appropriate. The line drawings they did use successfully show the shape and texture of seeds, whereas the photographs are often difficult to interpret. On page 334, the line drawing (figure 3) of the bald cypress (***Taxodium distichum*** var. ***distichum***) clearly shows the seed characteristics, whereas the photograph (figure 2) is blurry and impossible to interpret. Photographs are successful for the larger, more distinct seeds (*e.g.* ***Carya*** spp. and ***Cornus*** spp.), but small (*e.g.* ***Vaccinium*** spp.) or winged seeds (*e.g.* ***Pinus*** spp.) appear unclear.

As a general reference I find this book thorough and easy to use. The information for each genus is presented in a consistent fashion. Much of the detail is present in tables, making it easy to obtain the information and compare within and between genera. I would highly recommend this volume to anyone dealing with seed germination or identification, although I look forward to a new, more accurate and visually improved, edition.

Barbara Booth, Dept. of Botany, University of Guelph

Address of Publisher: Dioscorides Press (Timber Press, Inc.), 9999 S.W. Wilshire, Suite 124, Portland, OR 97225.

General Microbiology, by Hans G. Schlegel (1993, 7th edition, translated by M. Kogut, Cambridge University Press) is a sturdy, pocket size book (13 cm x 19 cm), written with 2 goals in mind: survey and demarcate the field of microbiology from other fields, and provide a broad and deep, yet concise, coverage of microbiology. It is not intended to compete with thorough treatments such as Brock & Madigan (1991 Biology of microorganisms, 6th ed.) or others, but rather attempts to give a brief presentation to a diverse array of topics that "would transmit the basic knowledge of microbiology" to a diverse audience of agriculture, medical, nutrition and biochemistry students. To attain these objectives, Schlegel presents 17 chapters in almost 600 pages, and provides in addition a list of abbreviations, a reading list for each chapter, a vocabulary chart (with Latin and Greek roots of words) and a detailed index. The second goal outlined here is certainly one with which anyone teaching classes to non-microbiology stream students (i.e. forest biology) is confronted at every lecture, students whose background is not thoroughly microbiological, but for whom exposure to microbiology paradigms is essential and should be encouraged.

The book begins with a brief overview of the place and importance of microorganisms in nature, with adequate microbial ecology examples which are exemplified in further details in later chapters. Chapter 2 is a huge chapter (72 pages) offering a bonanza of topics using numerous sub-headings to give an overview of cell structure, prokaryotic and eukaryotic cells. Several drawings, diagrams and B&W photographs (although very small!) are additionnally provided. Every topic is condensed to the limit and is given minimal space: bacterium nucleus, membranes, cell walls, capsules and slimes, bacterium flagella, fimbriae and pili, reserve materials, endospores, pigments. I am so used to peruse through textbooks in micro with extensive coverage, it is refreshing to see an attempt to condense everything (the bare essentials, so to speak!).

The following several chapters appear in the same condensed fashion: grouping of prokaryotes, including classic (artificial) and phylogenetic approaches (Chap. 3), viruses (Chap. 4), fungi (Chap. 5). Chap. 6 is devoted to the vast topic of growth and is very informative (nutrition, physiology, parameters, etc). Chap. 7 offers a review of basic metabolism and energy conversion, with well-illustrated biochemistry pathways (and redox systems) and in my opinion, is very well done. However, I am left wondering how the students would "digest" all this information. They may learn to hate small diagrams! Special fermentations, electron transport under anaerobic conditions, incomplete oxidations, chemolithotrophic bacteria, phototrophic bacteria, nitrogen fixation, and natural substances degradation are among other topics covered in the remaining chapters. The final trilogy of chapters covers genetic information (constancy, change, transfer, etc.), regulation of metabolism and microorganisms and the environment.

Although of a pocket book size, I was truly amazed by the amount of coverage it gives. This is a strong point if you want to introduce a given microbiology topic in a limited amount of time (the reality of teaching in the 90's?). Also, the digest format of this book would give it an advantage to anyone wishing to assemble a multi-media package for this course (the contents of the book have already been distilled, and are delivered in information "packets"!).

There are a few shortcomings, however. I was disappointed to find several typos and mispellings (this is a 2nd ed. in English after all!), a picture is printed upside down (p. 163) and some sentences may have greatly benefited from an editing point-of-view, as the translation from German appears rough in some parts.

All and all, an appealing and informative book for anyone sharing Schlegel's goals of delivering information. I tried to use it last winter in preparing some lectures for non-microbiology forestry students (with some success, I hope). There is still an enormous quantity of information which may need to be tested at the school bench (especially the chapters on biochemistry!), but for the time being, we can still appreciate the most "palatable" portions!

Hugues Massicotte, University of Northern B.C.

J. C. Lovett and S. K. Wasser (editors). 1993. Biogeography and ecology of the rain forests of eastern Africa. Cambridge Univ. Press. 341 pp.

Prior to reading this book, I was most familiar with studies of tropical rainforests which were carried out either in central or south America or in southeast Asia. So I was curious to learn something about African forests. There is certainly a lot to learn from this important book, which covers the "biogeography" of the forests of eastern Tanzania (and some in Kenya) in the fullest the sense of the term. By collecting

disparate information on different taxa, climate, soils etc. from this major geographic region in one place, this book acts to unify and synthesize data that would otherwise be scattered throughout the literature. One drawback is that the information is not always easily digestible. This is due to the inclusion of vast amounts of descriptive data, which would normally be greatly summarized in order for journal publication. This is simultaneously the great strength and weakness of the book.

The eastern African forests are unique. They are highly fragmented "islands" due to their geological and climatic history and they are greatly isolated from more extensive forests. Consequently, extremely high levels of endemism occur within their flora and fauna. About 25-30% of the moist forest plant species are endemics, while endemism is even greater among some of the faunal groups such as the millipedes. In addition to the focus on endemism, other major themes include an examination of the migration patterns of various taxa in and out of the forests, an exploration of the affinity of the flora and fauna with that of forests in other geographic regions and, finally, behavioural ecology, conservation biology and natural history.

The book conveys its wide-ranging themes and their associated take-home messages to the reader with varying levels of success, mainly because each theme is best served by a different writing style. For example, descriptions of plant and animal community composition involve biological inventories and extensive cataloguing of species, while natural history writing is associated with a more "chatty" style, which is in turn in contrast to prose dealing with theoretical questions of biogeography. As the reader moves between chapters, the prevailing "voice" often switches, depending on the content and no doubt, the authors, so that it was sometimes difficult to keep the objective of a particular chapter (and sometimes the whole book) in focus. In addition, I recommend reading this book with an atlas at your elbow; I would have liked to have seen more maps showing all the locations covered.

The book is basically organized along taxonomic lines. The introductory section of three chapters explains the geology and climatic history of the region in a good deal of technical detail. In section 2, with its two chapters giving detailed forest composition data, it was confusing to encounter chapter 5 on the botany of coastal forests - a different area/ecosystem altogether from the "eastern Arc montane forests" emphasized earlier. The inclusion of coastal forests had simply not been made clear before then. My advice is to skip the detailed community descriptions of the two botanical chapters and go straight to the discussions (unless you are intimately acquainted with all of the species). Nevertheless, the historical background and human influence sections in the introduction to chapter 5 make fascinating reading. Although the presence of much "almost raw data" about plant community composition is rather tedious to wade through, I recognize that it is a vital part of the book.

In Section 3, the montane forest fauna are described and discussed. The written treatment of a particular taxonomic group seems to depend on how well it is collected and described. Not surprisingly, the more "sexy" taxa, birds (chapter 10) and butterflies (chapter 8), are much better known than millipedes, spiders and herps! So, for millipedes (chapter 6), we mainly get information about some species' distributions. Similarly, for spiders, Scharff (chapter 7) concentrates on the family Linyphiidae, the best known group, stating that in general, the spider fauna is not well known for that region. Chapter 9 includes a very informative section on the biogeographical origins of the herpetofauna (also not well described or collected). In chapter 11 on mammals we see once again a listing of species, although other issues are addressed by Kingdon and Howell, such as whether the Tanzanian montane forests are more similar to oceanic islands (and were colonized), or broken land bridges, in their patterns of mammal distribution The chapters by de Jong and Congdon on butterflies, and Stuart et al. on avifauna, move beyond mere description to address theoretical questions directly. In de Jong and Congdon's chapter, I particularly liked the explicit statement of the biogeographical questions which provide the framework for their study, and the map(!) They take a phylogenetic approach to patterns of butterfly distribution, and conclude that dispersal and local extinction have led to the observed patterns. In addition, montane species most likely evolved from species with other habitat preferences. Consequently, the butterfly fauna of the eastern region has no affinity with that of the butterfly fauna in other montane regions. In contrast, the avifauna of the east cost escarpment montane forest is a mix of endemics derived in situ or from West Africa, Asian, or lowland species, and non-endemics, some possibly from Cameroun. In chapters 12 and 13 the focus changes sharply to the behavioural ecology and sociobiology of primates, specifically (1) behavioural variation among sub-species of red colobus in terms of diet selection and group structure, and (2) interspecific associations among primates in the Uzungwa forest which are compared with those of primates from the Guineo-Congolian forest block (that's west from Lake Victoria, through Zaire to Liberia). For me, the best chapter was the final one on forest conservation. Both the history and present state of human use of forests are discussed. The concept of forest value and population issues are addressed. This chapter makes excellent background reading for an applied plant ecology course.

This is clearly an important book covering many other aspects of the biology of Tanzanian forests in addition to their biogeography. The most important take-home message regarding the high levels of endemism is effectively conveyed, along with the need to deal with conservation issues sooner rather than later. Not only biogeographers, ecologists and conservationists will find the book valuable, but so will taxonomists and students, as well as visitors to the area with an interest in natural history.

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Address of Publisher for last 2 reviews: Cambridge University Press, 40 West 20th Street, New York, N.Y. 10011-4211.

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.

Tsk! Tsk!

Let's start this issue's Plant Press with the Booby Prize [or the I-don't-really-know-my-Botany Prize], which goes this time to the editors of The Times of London for allowing the following item to slip through: "A rare cactus has delighted botanists by flowering for the first time in 99 years". O.K., you say, what's wrong with that? Well, if the "delighted botanists" examine the accompanying photo, which is captioned: "The cactus in flower", it is immediately evident that the plant being discussed is the Century Plant (***Agave americana***), most definitely NOT a cactus. The flowering is believed to have been triggered by overheating due to a breakdown in the ventilation system at the Oxford University Botanical Garden greenhouse.

The Times of London, June 9, 1995

Tracing *Cacao* Parentage

In a recent article in *Nature*, researchers have destroyed a commonly held belief that modern cultivars of ***Cacao*** are descended from the plants grown by the ancient Mayans. A study of molecular markers showed that two modern cultivars, 'Criollo' and 'Forastera', are genetically more similar to wild South American plants than to today's wild ***Cacao*** from Mexico. The wild Mexican plants probably represent the genetic line leading back to the Mayan ***Cacao***.

Vicki Cheng, New York Times, June 20, 1995

Hidden Trees

In the context of the recent discovery of a new large tree, the Wollemi pine, in Australia, the author of this short commentary notes that Oliver Rackham once said that "nothing in a wood hides so well as a tree". Even in Britain, "the most thoroughly botanised country in the world", botanists have overlooked some large and rare tree specimens. As an example the author cites the recent discovery of ***Sorbus domestica***, the whitty pear, on limestone cliffs on Gower. Another example concerns a giant specimen of large-leafed lime (26 feet in girth), which was unknown to botanists until the 1970s, on Box Hill, which "botanists have been tramping up and down for a couple of centuries at least". [Thanks to Carolyn Bird for submitting this item.]

The Countryman, Vol. 100(4), 1995

Aspirin's Target

A report in *Nature Structural Biology* presents the latest information on how aspirin works to alleviate your headache. According to the researchers it blocks access to the active site of the enzyme, prostaglandin H2 synthase, so that raw materials cannot be linked up to form prostaglandin molecules. Prostaglandins are often what cause headaches, fever or inflammation.

New York Times, August 1, 1995

Outlook on Loosestrife Control

Preliminary results from the introduction of a beetle, ***Galerucella pusilla***, to stands of purple loosestrife in 1992 are "promising", according to researchers at the University of Guelph. The beetles are definitely feeding on the loosestrife and seriously damaging its ability to produce seeds (up to 99% fewer). Researchers anticipate that, within a decade after introduction of the beetles, the incidence of loosestrife in the test plots will be reduced by 90%. Best of all, feeding tests on 50 native plant species indicates that the beetles will not transfer their voracious appetites to the consuming of these plants.

Derek Baldwin, Toronto Star, August 5, 1995

Fossil Forest Washing Away

A 290-million-year-old fossil forest containing remains of the conifer, ***Walchia***, which resembles Norfolk Island pine, has been discovered on the northwest coast of Nova Scotia. That's the good news; the bad news is that each passing tide is destroying the site, which also contains trackways of an early reptile, ***Seymouria***. Winter storms last year washed away a large amount of the trackway (the fossils are in crumbly sandstone). There is nothing that can be done to protect the site and a race is on to make casts of the trackway and collect fossil specimens. A geologist predicts that the site will be completely eroded away within five years.

Kitchener-Waterloo Record, August 5, 1995

Possums Devour N.Z. Forests

Brushtail possums are disappearing in central Australia, but in New Zealand, where they were introduced in 1837 in an ill-fated scheme to start a fur industry, they are now considered "the greatest threat to New Zealand's natural environment" because there are no predators to control them. There are now about 70 million possums festooning New Zealand's trees and scientists estimate that every night they consume about 20,000 tonnes of plant tissue. Unfortunately,

the national tree, the pohutukawa, is one of their favourite foods. New Zealanders are being encouraged to kill as many possums as possible and the fur trade idea is being reinvestigated. Local magazines are also promoting the eating of possums by publishing recipes such as possum stew, possum fajitas and various possum casseroles. Meanwhile scientists are trying to devise ways to kill large numbers of possums efficiently (and safely), or to inhibit their rapid reproductive rate, before they completely devastate New Zealand's forests.

Jo Andrews, The Times of London, August 7, 1995

DHA may aid Dyslexics

Docosahexaenoic acid (DHA), an omega-3 fatty acid found in fish and vegetable oils (canola, linseed), may benefit dyslexics, according to a recent report in *Lancet*. Dyslexic subjects tested after taking DHA supplements for a month reported improvement in night vision and in reading skills. The results of this preliminary study are not surprising, according to Jacqueline Stordy, University of Sussex. DHA is a key fatty acid which is present in large quantities in the retina and the brain. Stordy will now investigate why dyslexics seem to have lower than normal levels of DHA.

K.-W. Record, August 4, 1995

75-Million-Year-Old Ginger Rhizomes

Researchers excavating a hadrosaur skeleton in Alberta's Dinosaur Provincial Park noticed an unusual fossil that "looked like a 15-centimeter, reddish-brown Michelin Man". Dennis Braman and Kevin Aulenback of the paleobotany lab at the Royal Tyrrell Museum recognized the "Michelin Man" as the rhizome of a ginger-like plant, making it the earliest known fossil monocot rhizome (by about 40 million years). The site also yielded unusual fossilized swollen corms, ***Ginkgo*** leaves and horsetail shoots. The fossil corms were found to be almost identical to modern water chestnuts. Since water chestnuts grow in areas with alternating wet and dry conditions, their presence in the Late Cretaceous supports a theory that the earliest monocots grew in seasonally dry environments.

Globe & Mail, July 29, 1995

Botanical History in a Thatched Roof

John Letts, a Canadian studying for a Ph.D. at Reading University, has found that some cottages dating from the 14th and 15th centuries are providing him with "the richest source of medieval plant remains in western Europe". The innermost (and earliest laid down) plant materials in these thatched roofs were so well preserved from decay by smoke rising from the centrally placed fireplace commonly used in medieval times that they have never had to be replaced during subsequent repairs and rethatchings. Letts has botanized among the inner parts of the roofs of about 250 cotttages (mostly in Devon) and among the plants identified as thatching material is rivet wheat, a Mediterranean species that may have been introduced to Britain by the Normans (but is no longer grown). Some of the earliest thatching layers are a mixture of rivet wheat, bread wheat and rye, indicating that medieval farmers may have grown them together in the same field to minimize the risk of crop failure in Britain's changeable climate. In a wet season the wheat would grow best, whereas in a dry season the rye would grow well. Letts has also found remains of weeds in the thatch. These weeds are often wetland species that are now much less common. Unfortunately Letts is gradually losing his database cottages since new owners often decide to completely strip off the old thatched roof and replace it with water-reed thatch or with more modern roofing materials.

Nigel Hawkes, The Times of London, August 12, 1995

It's "Corny", but ...

The "maize maze", constructed in a corn field covering 3 acres near Shippensburg, Pennsylvania, has established a new record for the world's largest maze. The path through the "maize maze" is more than 2 miles long.

The Times of London, August 19, 1995

Project may Destroy South American Wetland

The $1.3 billion, 3,200-km-long Hidrovia waterway will join the Paraná and Paraguay Rivers and provide better access for inland ports of several South American countries to the Atlantic Ocean. However, a study by the World Wildlife Fund in Brazil has concluded that the massive dredging and diking which are required for the project may lead to irreparable damage to the Pantanal, one of the world's largest wetlands. The Pantanal is estimated to contain more than 90,000 plant species, as well as hundreds of kinds of mammals, birds and fish. The WWF study says that the project could lead to the gradual desertification of the huge swamp and increase the risk of downriver flooding.

Globe & Mail, August 12, 1995

Forests and Global Warming

An examination of C-12/C-13 ratios in a large number of air samples from the Northern Hemisphere and Australia has been carried out by scientists at NOAA. Contrary to most previous estimates regarding the absorption of carbon dioxide by land plants, these researchers have concluded that land plants absorb at least as much as the oceans. This result would mean that the promotion of reforestation projects might be an important strategy to combat global warming.

Nigel Hawkes, The Times of London, August 28, 1995

Glowing Plants

Researchers in Edinburgh hope to produce plant strains which will alert farmers to pest damage by glowing in the dark. The project involves the transfer of jellyfish genes, which produce the bioluminescence system, into the plants. The transfer to tobacco plants has been successful but the experimental plants do not yet glow enough to be easily seen in the dark.

Steve Newman, London Free Press, Sept. 16, 1995
(Thanks to Madhur Anand for sending in this item)

THE UNIVERSITY OF WESTERN ONTARIO
Department of Plant Sciences

MOLECULAR GENETICIST. The Department of Plant Sciences at The University of Western Ontario is seeking applications from highly qualified candidates for an Assistant Professor (tenure-track) position(s) beginning approximately July 1, 1996 (start date negotiable). The successful candidate(s) will have considerable experience and expertise in molecular genetics as applied to plants, fungi, algae or photosynthetic prokaryotes, and would join other faculty from Plant Sciences and Zoology in a joint Molecular Genetics Unit. The unit contains modern, purpose built laboratories and a large Molecular Genetics core facility, very well equipped for analyses of nucleic acids and proteins. The Department has one of the strongest groups of young faculty in the country and has excellent research facilities including a nearby large multidisciplinary Environmental Science field station with facilities for growing crops and an on-site laboratory for genetical research, extensive campus greenhouse/growth chamber space, a new electron microscope and a wide range of modern experimental equipment.

The criteria we will look for include a Ph.D. in genetics or a related discipline and appropriate postdoctoral training in an internationally respected research laboratory, a proven research record including publications of high quality, the ability to work well with others, and evidence of interest, enthusiasm and ability in teaching. The successful candidate will be expected to develop a vigorous and innovative research program, well supported by external funding, and contribute to the department's commitment to excellence in graduate and undergraduate training. For the initial years of the appointment the undergraduate teaching duties will primarily be in our large Honors Genetics program.

Applications including a c.v. and copies of recent significant papers should be forwarded to Dr. A. W. Day, Chair, Department of Plant Sciences, The University of Western Ontario, 1151 Richmond Street, London, Ontario N6A 5B7. Telephone (519) 661-2111 ext. 6465; Fax: (519) 661-3935. Arrangements should be made for 3 letters of reference to be sent to the same address. Applications will be accepted until November 30, 1995, or until a suitable candidate is found.

Positions are subject to budget approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian Citizens and Permanent Residents of Canada. The University of Western Ontario is committed to employment equity, welcomes diversity in the workplace, and encourages applications from all qualified individuals including women, members of visible minorities, aboriginal persons, and persons with disabilities.

THE UNIVERSITY OF WESTERN ONTARIO
Department of Plant Sciences

The Department of Plant Sciences at The University of Western Ontario is seeking applications from highly qualified candidates for one or two Assistant Professor (tenure-track) positions beginning approximately July 1, 1996 (start date negotiable). The successful candidates will preferably have research interests in the general area of Environment and Plant Biology and would be able to complement existing research programs in plant physiology, genetics, or ecology.

The criteria we will look for include a Ph.D. and appropriate postdoctoral training in an internationally respected research laboratory, a proven research record including publications of high quality, the ability to work well with others, and evidence of interest, enthusiasm and ability in teaching. The successful candidate will be expected to develop a vigorous and innovative research program, well supported by external funding, and to contribute to the department's commitment to excellence in graduate and undergraduate training.

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MEETINGS / CONGRÈS

Plant Cell Metabolism

A conference on **Plant Cell Metabolism and its Regulation** will be held in Villard de Lans, France, **January 25-27, 1996**. Information: **Dr. Jacques Joyard, DBMS/PCV, Grenoble, France [FAX: +33 76 88 50 91]**.

Plant Reproduction '96

This is the title of the **14th International Congress of Sexual Plant Reproduction**, to be held in Lorne, Australia, **February 18-23, 1996**. Information: **C. Suphioglu, School of Botany, University of Melbourne, Parkville, Victoria 3052, Australia.**

GIS Conference

The Air & Waste Management Association will hold a conference on **Geographical Information Systems in Environmental Resource Management** on **March 13-15, 1996** in Reno, Nevada. The Air & Waste Management Association, a non-profit technical and educational organization (with more than 16,000 members in over 60 countries worldwide), provides a neutral forum where all viewpoints of an environmental management issue (technical, scientific, economic, social, political and public health) receive equal consideration. For further information, contact: **Scott Johnson, Ventura County Air Pollution Control District, 669 County Square Drive, Ventura, CA 93003 [E-mail: scottj@fishnet.net]**.

Fungal Genetics

The 3rd European Congress of Fungal Genetics will be in Muenster, Germany, **March 27 - 30, 1996**. For further information, contact: **Prof. Dr. Paul Tudzynski, Institut für Botanik, Westfäl. Wilhelms-Universität, Schlossgarten 3, 49149 Muenster, Germany [E-mail: tudzyns@uni-muenster.de]**.

Lupins

The **8th International Lupin Conference** will at Asilomar (Monterey), California, **May 11-16, 1996**. Obtain information from: **International Lupin Conference, Conference & Event Services, University of California, Davis, CA 95616-8766.**

EnviroAnalysis '96

EnviroAnalysis'96 (Biennial Conference and Exhibition on Chemical Measurement and Monitoring of the Environment) will be held in Ottawa, **May 13-16, 1996**. For information, contact: **EnviroAnalysis'96 Secretariat, Chemistry Department, Carleton University, 1125 Colonel By Drive, Ottawa, ON K1S 5B6.**

Chlamydomonas Conference

The 7th International Conference on the Cell and Molecular Biology of *Chlamydomonas* will be in Regensburg, Germany, **May 27 to June 1, 1996**. Information: **Dr. Rüdiger Schmitt, Institut für Biochemie, Genetik und Mikrobiologie, 93040 Regensburg, Germany.**

Root Symposium

Jerusalem, Israel, is the site for the **2nd International Symposium on the Biology of Root Formation and Development, June 23-28, 1996**. Obtain information from: **The Secretariat, P.O. Box 50006, Tel Aviv, 61500 Israel [E-mail: 100274.2665@compuserve.com]**.

Plant-Microbe Interactions

The **8th International Symposium on Molecular Plant-Microbe Interactions** will be in Gatlinburg, Tennessee, **July 14-19, 1996**. Information: **Gary Stacey, Center for Legume Research, M409 Walters Life Science Bldg., University of Tennessee, Knoxville, TN 37996-0845 [E-mail: gstacey@utkvx.utk.edu]**.

ASPP Annual Meeting

The 1996 Annual Meeting of the American Society of Plant Physiologists will be in San Antonio, Texas, **July 27-31, 1996**. Information: **ASPP, 15501 Monona Drive, Rockville, MD 20855.**

European Phycological Congress

The **First European Phycological Congress** will be held in Cologne (Köln), Germany, **August 11-18, 1996**. Anyone interested in participating should contact: **Michael Melkonian, Universität Köln, Botanisches Institut, Gyrhofstr. 15, D-50931 Köln, Germany [E-mail: mmelkonian@biolan.uni-koeln.de]**.

ECO-Summit '96

A meeting bearing the title, **Ecological Summer Summit '96**, will be held in Copenhagen, Denmark, **August 19-23, 1996**. Obtain further information from: **Gill Spear, ECO-Summit '96 Secretariat, Elsevier Science Ltd. Conference Dept., The Boulevard, Langford Lane, Kidlington, Oxford, U.K. OX5 1GB.**

Phytoremediation Symposium

A symposium will be held in Orlando, Florida, **August 25-30, 1996,** on the use of plants for remediating wastes (metals, organics, nitrates) in soil and water. The symposium will be sponsored by the American Chemical Society, and is being organized by **Ellen Kruger** of Iowa State University. Researchers interested in participating in the symposium should contact Ellen at the following address: **Pesticide Toxicology Laboratory, Iowa State University, Ames, IA 50011-3140 [E-mail: ekruger@iastate.edu].**

Plant Molecular Biology

This is extra-early notice of the **5th International Congress of Plant Molecular Biology** which is scheduled for **September 21-27, 1997**, in Singapore. Researchers inerested in participating or attending the meeting may contact: **ICPMB Business Office, Department of Biochemistry, University of Georgia, Athens, GA 30602 [E-mail: Ldure@uga.cc.uga.edu]**.

Issued quarterly (January, April, July, October) and sent to all members of CBA/ABC. Non-members and institutions may subscribe at a price of $45.00 per annum post free (Overseas airmail: add $10.00). Cheques and money orders (in Canadian funds ONLY) should be made payable to "**The Canadian Botanical Association**" and addressed to the Editor.

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