THE CANADIAN BOTANICAL ASSOCIATION

BULLETIN

DE L'ASSOCIATION BOTANIQUE DU CANADA

Patron / Président d'honneur
His Excellency the Right Honourable / Son Excellence le très honorable
Roméo Leblanc P.C., C.C., C.M.M., C.D.
Governor General of Canada / Gouverneur général du Canada

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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

Another spring -- another issue of the Bulletin. By my calculations, this is the 22nd issue that I have assembled. And, ... I knew this would happen one day ..., I can't think of a thing to write in my commentary.

All this blank space and not any thoughts to fill it. Let me see ...

I could talk about the upcoming Annual Meeting in Charlottetown. But I suppose anyone who is going has already registered and anything I say will not cause anyone else to attend. I did note (on page 21 of this issue) that we are going to have an auction of botanical collectibles again. The last one on the ranch near Calgary really went well.

And ... I was told recently by the PEI organizers to remind you not to try the bridge crossing yet, or you could get very, very wet. I am sure we are all looking forward to the events that are planned (and I promise not to do my imitation of Mr. Creosote at the lobster dinner).

Perhaps I could talk about rumors we are hearing about the Harris government in Ontario planning to save money by disbanding the system of Conservation Authorities and the Commission that oversees the protection of the Niagara Escarpment. It seems that, in the rush to balance budgets, the environment definitely is not a priority, but is very far down on the funding list. So we fear greatly the destruction of the unique habitat of the Escarpment which, according to the United Nations, is internationally recognized as an area of ecological importance. I have bad dreams about Premier Harris, a former golf pro, allowing a string of driving ranges to be built along the edge of the Escarpment. And, in my worst dreams, I visualize a TV ad like the one I saw on golf tournament coverage (promoting long distance drives) ... imagine an ad with golf balls hit from the Escarpment bouncing off Skydome and the CN Tower ...

More space to fill. Let me see ...

I suppose I could thank all those members who had an e-mail "feeding frenzy" over the list of review books in the last issue. Almost all of the books were claimed, but, surprisingly, the review copy of *Flore Laurentienne* is still awaiting a volunteer. I have listed more new arrivals and some old stock items on Page 21.

Another topic that springs to mind is that of finding a new Bulletin Editor. My plea in the last Bulletin has apparently been ignored. No one seems to want to step forward and take on this important task. The Secretary is issuing a call for volunteers (page 21). It has been suggested that perhaps a group of members at one location could get together to produce this publication? Give it some thought.

Wow ... still a lot of blank space to fill up, and still nothing that I can think of writing about...
Of course, I could just

fill up the
rest of this
column
with
giant
words ...

but that would be cheating, wouldn't it?

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 A.I.B.S.)
Early August/au début d'août

1998
University of Saskatchewan
Saskatoon, SK
Early July/au début de juillet

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

2000
University of Western Ontario
London, ON

2001
Okanagan University College
Kelowna, B.C.

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Development of a new national network for botanical conservation in Canada: the Canadian Botanical Conservation Network

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Botanical conservation efforts in Canada could be significantly enhanced by the development of a national network of botanical gardens. Despite several attempts to implement a network or association during the last three decades, Canada does not yet have a national botanical garden network.

Botanical gardens and arboreta around the world do much that is related to conservation (IUCN, 1989). Many botanical gardens are key points of public education about the importance of plants to human life and our natural heritage. In some places, botanical gardens have organized efforts to cultivate as many endangered species as they can, as "life-boats" in case of a catastrophic loss of the species in nature (Thibodeau and Falk, 1987).

The important role that botanical gardens can play in conservation was studied extensively during the 1970s and 1980s. In Canada, a series of conferences in 1971 led to a proposal for a national network of botanical gardens, in part to develop ways that botanical gardens could ensure the survival of rare and endangered plants (Taylor, 1972). A second attempt to develop a network was made in the mid-1980s (Currah *et al.*, 1987). Unfortunately, both efforts failed for lack of funding.

Internationally, however, several important programs have been successfully established. The International Union for the Conservation of Nature (IUCN) hosted a conference in 1985 on the Canary Islands that resulted in the publication of The Botanic Gardens Conservation Strategy (IUCN, 1989). An international organization of botanic gardens involved in conservation programs was also established about the same time, based at the Royal Botanical Gardens at Kew, in Great Britain.

The new project to develop a national network for Canada began during 1994, when the federal government of Canada held an extensive series of focus-group meetings in preparation for drafting the Canadian Biodiversity Strategy.

Among many other recommendations, the ex-situ focus group suggested that Canada needs a system to prioritize efforts for conservation of organisms in cultivation or captivity ("ex-situ" conservation, as opposed to "in-situ" conservation of a species in its natural habitat), to make sure that our resources for conservation are used effectively (Biodiversity Focus Groups, 1994). A stepwise procedure might be devised, they wrote, to inventory programs and resources for endangered native plants in cultivation and help with monitoring habitats to identify situations where cultivation would help. There then should be research into how to propagate species that need it, and finally, reintroduction of plants raised in cultivation.

They also wrote:

> "botanical gardens in particular should be encouraged to work together in a national ex-situ conservation program focused on native Canadian rare and endangered plants". (Biodiversity Focus Groups, 1994, pg 27).

Informal meetings during the consultations in 1994 led Dr Garry Watson, Director of Royal Botanical Gardens, Professor Bradley White, Chair of the Biology Department of McMaster University and member of the Board of Directors of RBG, and Dr Harvey Shear, regional science advisor to Environment Canada's Integrated Ecosystems Research Branch, to form a small committee to launch such a program.

Royal Botanical Gardens committed $25,000 to set up an office at RBG for the project. Environment Canada (Environmental Protection Branch - Ontario Region) a further $100,000 over the first two years. McMaster University then contributed $5,000 and assistance with computer resources. Pharmaceutical companies Merck-Frosst Canada, Inc., and Glaxo-Wellcome Canada, Inc., promised $15,000 and $2,000 respectively, because of the importance of conserving biological diversity for the future development of medicines.

The project was formally opened on 27 June, 1995 by Burlington South MP Paddy Torsney in a brief ceremony at RBG. The goal of the project is to develop the national network concept. The proposed goal of the national network is to aid Canadian botanical gardens and arboreta in realizing their potential to contribute to the conservation of biological diversity. It is planned that the network will be a national program, dubbed the Canadian Botanical Conservation Network (CBCN).

Fifteen organizations, representing botanical gardens and arboreta, government departments, non-governmental organizations, commercial partners and universities have expressed interest in joining such a network.

While the development of the network is the main task at present, some details of the network's programs have also been sketched out. An important component might be one or more data bases on biological diversity and botanical gardens. A national plant conservation data base may include catalogues of collections of Canadian botanical gardens and arboreta, genetic resources of aquatic or terrestrial plants, and ecological diversity. Uses for information of this kind include studies of the viability of endangered plant populations, habitat restoration projects, studies of the traditional uses of plants, and research into the practical development of medicinal substances from plants.

The project has had a World Wide Web home page since May of 1995. The "Web page" provides information on the CBCN project, and numerous links to other sources of information on biodiversity, genetic resources, botany, biology, and sites at Environment Canada and McMaster University, among others. A directory of Canadian botanical gardens and arboreta is also accessible through the CBCN home page.

The CBCN home page can be reached through the Internet's World Wide Web protocol. The URL address (case sensitive) for the CBCN home page is:

http://www.science.mcmaster.ca/Biology/CBCN/homepage.html

In the future, a variety of information will be accessible through the Web page. It is hoped that the national network will permit botanists and conservation biologists to share in-situ and ex-situ data on plants needed for habitat restoration, endangered species in need of protection, files on biodiversity, and indexes to botanical genetic resources.

We are planning a workshop event for September 5-9, 1996 at Royal Botanical Gardens, Hamilton. The focus of the event will be the establishment of the national network itself, with emphasis on practical integrated conservation programs the network may be able to promote.

For more information on the project or the workshop, please feel free to contact me at the address above, or by email at:

David.Galbraith@freenet.hamilton.on.ca

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CHARLOTTETOWN AUCTION ALERT

Back by popular demand, our favourite auctioneer, Hugues Massicotte, will be leading us as we raise money for the Macoun Travel Bursary. To make the effort a real success, we need donations of auctionable items from members. These can be anything with a botanical flavour, such as old books, papers, artwork, or any other memorabilia you think your colleagues might be interested in purchasing.

If you have anything you would be willing to donate, please remember to bring it with you to the Charlottetown meeting. If you have any questions, or would like to donate but can't attend the meeting, please contact me at gerrath@cobra.uni.edu.

See you at the auction!

Jean Gerrath, Chair, Development Committee

BOARD VACANCIES
Nominations, Please!!

We have an interesting siutation this year with regard to Board vacancies. We have received nominations for the positions of Director and Secretary. However, there are still two important positions that need to be filled. The first is **President-Elect** (1996-98). The person that fills this position will take over as President for two years in 1998. I don't have to remind you of the importance of this position.

The other position is **Bulletin Editor** (1997-99). Joe Gerrath will be completing his sixth year as Editor at the end of 1996. By custom that is the maximum period anyone is expected to serve in this position (two three-year terms), which is an appointed one.

Please direct nominations for President-Elect (accompanied by signatures of two nominators and the nominee) either to myself or to Usher Posluszny by the end of May (addresses on last page of this Bulletin).

If you are interested in serving as Editor, please make that interest known to Usher Posluszny or any member of the Board within the next month.

Jean Gerrath, CBA/ABC Secretary

Reviewers Wanted

1. New Books. The following books are new arrivals on the Editor's desk. A book will be sent to anyone who volunteers to write a review of it for the Bulletin.

A new Key to the Wild Flowers. by John Hayward. Cambridge University Press. Revised Edition 1995. 278 pages. [Please note that this is a key to British wildflowers]

Control of Crop Diseases. by W.R. Carlile. Cambridge University Press. Second Edition, 1995. 145 pages.

Fire and Plants. by William J. Bond and Brian W. van Wilgen. Chapman & Hall. 1996. 263 pages.

Selection Methods in Plant Breeding. by Izak Bos and Peter Caligari. Chapman & Hall. 1995. 347 pages.

Tropical Forest Plant Ecophysiology. Edited by Stephen S. Mulkey, Robin L. Chazdon and Alan P. Smith. Chapman & Hall. 1996. 675 pages.

2. Last Chance! The following books appeared in previous lists of books available for review.

Amino Acids and their Derivatives in Higher Plants. Edited by R. M. Wallsgrove. Cambridge University Press. 1995. 280 pages.

Photosynthesis. by D.O. Hall and K.K. Rao. Cambridge University Press. Fifth Edition, 1994. 211 pages.

Perspective in Plant Cell Recognition. edited by J.A. Callow and J.R. Green. Cambridge University Press. 1992. 302 pages.

Plant Adaptation to Environmental Stress. Edited by Leslie Fowden, Terry Mansfield and John Stoddart. Chapman & Hall. 1993. 346 pages.

Plant Clonality. Edited by L. Soukupová, T. Hara and T. Herben. Opulus Press. 1994. 320 pages.

Plant Responses to the Gaseous Environment. Edited by Ruth G. Alscher and Alan R. Wellburn. Chapman & Hall. 1994. 395 pages.

Post-translational Modifications in Plants. Edited by N.H. Battey, H.G. Dickinson and A.M. Hetherington. Cambridge University Press. 1993. 310 pages.

Virus Diseases of Trees and Shrubs. by J.I. Cooper. Chapman & Hall. Second Edition, 1993. 205 pages.

Flore Laurentienne. Troisième Edition. Les Presses de l'Université de Montréal. 1995. 1083 pages.

BOOK REVIEWS

Vascular Plants of Russia and Adjacent States (the former USSR), by S.K. Czerepanov. 1995. Cambridge University Press, Cambridge, U.K. Price: US$ 100.00.

This is not really a "book review" since this book is simply a massive list which compiles of all of the vascular plants which have been recorded in various published floras from the vast territory of the former USSR. It is a revised (English) version of the original Russian-language edition which was published in 1981. The present edition contains an alphabetical listing of 216 families, 1,945 genera, 21,770 species and 500 subspecies. A cross-referenced list of synonymous taxa is included within the main listing. The book covers both native and alien wild plants as well as cultivated plants that are becoming naturalized and 203 species from adjacent countries that may eventually be found in the former USSR. The distribution of each recognized taxon is listed according to the six major regions used in the 30-volume *Flora URSS*. An index to Family names and Genera is included.

The book will be invaluable to those who desire an up-to-date listing of vascular plants of the former USSR. Finding descriptions of the taxa and more details on distribution will be very difficult, however, since the taxa are not cross-referenced to their occurrence in *Flora URSS* or the major regional floras.

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Saltmarsh Ecology, by Paul Adam. 1990. Cambridge University Press, Cambridge, U.K. 461 pages. Price: US$ 37.95 (Paperback edition, 1993)

This book, part of the "Cambridge Studies in Ecology" series, makes a largely successful attempt at bringing together the disparate foci of saltmarsh plant ecological research. Its title is somewhat misleading: it centers almost entirely on vascular plants (animals are mentioned only briefly, and then primarily in the context of herbivory), and it would have been more appropriately called "Saltmarsh Plant Ecology". However, once I took this into account, I found it to provide an excellent introduction to saltmarshes, both because of the depth with which it covers some of the topics and because it consistently points out the areas in which our understanding of saltmarshes is still sorely lacking.

At the time of publication of this book, much of the published research in saltmarsh plant ecology concentrated on two areas: physiological effects of salinity on plants, and distribution of plant species. Not surprisingly, these topics consitute most of the book. The chapter on the effects of salinity on plants is particularly strong: Adam thoroughly reviews our current understanding of plant tolerance of and response to salinity, and the role of salinity in affecting species distributions, while also pointing out that other factors, particularly other effects of flooding, are likely to be much more important than the attention they have received suggests. This chapter would be especially useful in a plant physiological ecology course, as it integrates general concepts from plant physiology (allocation to above-ground versus below-ground growth, nitrogen economy, water economy, etc.) with a response to a stress factor most students may not have considered much.

The chapters on patterns of saltmarsh vegetation ("The Saltmarsh Biota" and "Variation in Saltmarsh Vegetation") are also strong, although there is a distinct bias towards temperate Europe in general and the U.K. in particular. There is a 22-page section on British saltmarshes which may be of little interest to many of the readers. The sections on individual species are likewise at times a bit long (e.g. nine pages on *Spartina anglica*), but can easily be skipped by the general reader.

The remaining five chapters cover the saltmarsh environment, plant life history studies, saltmarsh ecosystem ecology, and management and conservation. The first is a general introduction to the saltmarsh environment and paints a clear picture of the dynamic nature of a habitat type which tends to be thought of as very homogeneous. As such it would be useful to ecologists who simply want to know something about saltmarshes, or as part of a general ecology course. The life history chapter and the ecosystem chapter are fairly short, in part a reflection on the lack of available information. In the former chapter Adam uses case studies of two groups (*Plantago maritima* and *Salicornia* spp.) very effectively to illustrate both some of the unique features of saltmarshes and the need for more information on plant life histories in saltmarshes. Likewise, in the ecosystem chapter Adam raises more questions than he answers, and brings to the forefront some of the more modern techniques (e.g. stable isotope analysis) which will help answer some of these questions.

The book is generally well-written, with few typos. The illustrations in the book are clear and easy to interpret, and the index worked well for the terms I tested it with. As with other books in this series, the volume stood up well to the considerable physical abuse to which I subjected it. It's tolerance to salinity and flooding, for example, is high.

My greatest concern with using this book as the primary source of information for a course is that it is already somewhat outdated. This is of course not a reflection on the quality of the book as much as a happy comment on the speed with which saltmarsh plant research is progressing. In the past six years our understanding of interspecific interactions, including the relative importance of competition and facilitation in controlling species boundaries, has improved considerably, and already one could easily envision an additional chapter on this subject. Continued studies at La Perouse Bay (Canada) and elsewhere have also provided much more information on the role of herbivory in ecosystem functioning. This does not detract from this volume's usefulness as a broad introduction to saltmarsh plant ecology, and in general I recommend this book as a reference for the general ecologist, and as a good background book for anyone planning on working in saltmarshes. Individual chapters can also provide great material for courses in plant ecology and plant physiological ecology, and on the whole I expect this book will help inspire a new generation of researchers to continue work on this dynamic but frequently overlooked vegetation type.

Christa Mulder
Department of Biology and Wildlife
University of Alaska, Fairbanks

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Reap without Sowing. Wild Food from Nature's Cornucopia. by Erika E. Gaertner. 1995. General Store Publishing House, Burnstown, Ont. Price: Can. $18.95.

We all known how important crop plants are in the nutrition of humans. A select few of us also know how to utilise the vast resource of so-called "wild" plants. Perhaps the best known North American advocate for the eating of unusual plants was the late Euell Gibbons in his "Stalking ..." books. The present book is of the same genre, but I found it to be much better than anything of this ilk that I have previously read. This is probably because it was written by a person with a very special combination of talents and background. Dr. Erika Gaertner received her elementary and secondary education in Europe, absorbing the European "hunter-gatherer" traditions of using wild-collected plants and animals. In Canada she has taught at two universities as a professional economic botanist and, having raised a family, she obviously knows her way around a kitchen. What better background is there for writing a book such as this one?

The book has recipes which deal with wild fungi, fruit (and other parts) of vascular plants and a number of animals (anyone for barbecued muskrat?). The chatty style of the writing makes this book a joy to read. The author's skill as a hostess comes through, for example, when she recommends making a cake the day before it is to be eaten, so that you can try again if a disaster happens. The recipes dealing with plants mostly use fairly familiar ingredients; some are well-known, truly wild plants and others are "escapees" such as horseradish, asparagus and day-lily. The recipes run the gamut from wines, liqueurs, jellies and jams to salads, soups, cakes, pies and candies. Many recipes look like they would produce delicious additions to any meal, others are decidedly strange (day-lily pickle and balsam fir bread!). I had a real chuckle when reading about balsam fir bread because the first thing to do is "locate a logging operation where this tree is harvested". Jay Leno would kill for a line like that.

I would highly recommend this book to anyone interested in this general topic. Throughout the book you will pick up snippets of the botany of many of the plants, some notes on the history of utilization, some warnings about dangers inherent in using wild plants, and many, many tips on improving your kitchen techniques. In my current status as a "born-again" chef, I would give this book a rating of "A+".

Joe Gerrath
Department of Botany, University of Guelph

If this book is not on the shelf at your local bookseller or library you may obtain it directly from the publisher using the following contact information:

General Store Publishing House,
1 Main Street, Burnstown, Ont. K0J 1G0.
Telephone: 1-800-465-6072
FAX: 613-432-7184

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Poorly Known Economic Plants of Canada - 9. Dandelion species, *Taraxacum* spp.

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Common names: Dandelion. French: pissenlit.

Notes: The English name Dandelion is a corruption of the French *dent de lion*, lion's tooth, generally interpreted as a reference to the coarsely toothed leaves. The French *pissenlit*, literally "wet-a-bed," reflects the reputation of Dandelion for stimulating the kidneys.

Species of *Taraxacum* are perennial herbs, mostly native to north temperate and Arctic regions of the Northern Hemisphere. *Taraxacum* is an extremely complex genus. Many of the species reproduce mostly apomictic and generate numerous intergrading microspecies. Some taxonomists outside North America have recognized many of the races as different species (over 1500 European species have been described), while others submerge most of the races into only a few species. To avoid the problem of recognizing many trivial apomictic species, rather than referring to species one can cite the sections into which *Taraxacum* is divided. Despite the apparent lack of sexual reproduction in North American weedy dandelions, there is considerable genetic variation present. Away from boreal and temperate regions native kinds of *Taraxacum* are usually sexual and these (about 100 species) are comparable in distinctiveness to the kinds of species recognized by most botanists. In North America the native species inhabit Arctic and alpine regions. These belong to sections *Taraxacum* or *Borealia* HM. In Canada 3-15 species have been recognized. The introduced *T. palustre*, only recently discovered in Ontario, has proven to be widespread. The classification of dandelions in Canada requires much additional work.

T. officinale Weber, the name that has long been applied to the so-called Common Dandelion, is not the correct name, but a solution to the problem requires more and possibly extensive study. Almost all North American weedy dandelions, introduced from Europe, belong to one of two sections: *T.* section *Ruderalia* Kirschner, Ollgaard & Stepanek and *T.* section *Erythrosperma* (Dahlst.) Lindb.f. Since identifying dandelions is an extremely difficult exercise, we simply refer to the genus *Taraxacum* in this note.

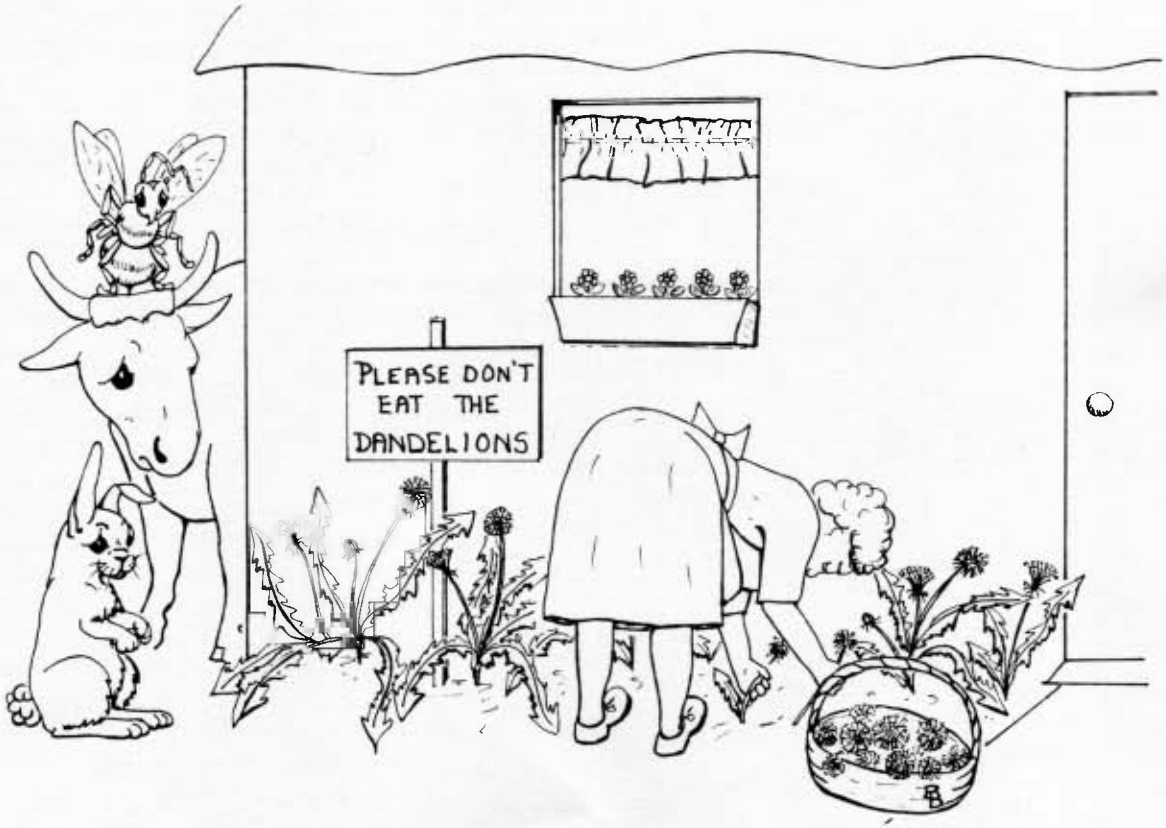
Dandelion is a herbaceous perennial with a rosette of jagged, irregularly lobed leaves produced from a long, thick, fleshy taproot that can descend more than 1 m. The leaves may be nearly smooth-margined, saw-toothed, or deeply cut. The single flowering stalk, sometimes over 50 cm tall, is hollow and bears a head of tiny yellow flowers, the whole head referred to as a flower by non-botanists. The flowering stalk is hollow and elongates with age. When the sun shines, the flower heads are open, and when the weather turns dull, the flower heads close up. Dandelions are "short-day plants," producing flowers when there are less than 12 hours of light. Flowers are produced mostly in mid-spring, with a much reduced second period of blooming in the fall up until the first frost. Fruiting heads produce tiny (3-5 mm) brown "seeds" (achenes), each carried by a "parachute" of white, fluffy hairs on a stalk. White, bitter, milky juice exudes from the plant where it is cut or broken; this stains hands brown and is difficult to remove. Cultivated selections differ in various respects from wild plants, some tending to have broader, more deeply-lobed leaves, others with a very high production of leaves, often semi-erect.

The dandelion is now a common plant throughout the world in temperate regions, often in pastures, meadows, gardens, and waste ground, and along roadsides. In

North America it is regarded as a serious weed of lawns. Most weedy forms of Dandelion, and probably most if not all cultivated selections, originate from Europe and Asia. Introduced dandelions occur in all provinces and territories of Canada.

For a plant with a reputation as a troublesome weed, Dandelion has a remarkable number of virtues. It has been consumed for thousands of years as food. Almost all parts of the dandelion can be eaten provided that the plants were not gathered from a location where they may have been sprayed with herbicide or insecticide. The nutritive value of Dandelion greens, particularly for vitamin C, is much higher than that of most other salad plants. In Europe, Dandelion was once widely used as a pot herb by the poor, who gathered it from nature. It was also grown in a blanched form and used in salads, and the roots were used as a coffee substitute. Hybrids of *T. kok-saghyz* Rodin., Russian Dandelion (from Turkmenstan), have been grown in Russia and elsewhere as a source of rubber, derived from the plant latex. Essentially abandoned as a crop, Russian Dandelion has been reconsidered recently in Russia as a source of rubber in order to reduce dependence on imports. Several species of *Taraxacum* are grown as ornamentals. Dandelion is a valuable bee plant because the flowers bloom early in the spring, and at that time may be the only major source of nourishment for bees. Dandelion is also considered to be an excellent, highly nutritious pasture plant for beef cattle.

As a medicinal plant, Dandelion has been used at least since the time of the Arabian physicians of the 10th and 11th centuries. Root extracts were once used extensively as a diuretic (to promote urination), and are still sometimes so employed. Dandelion has also been said to be useful for treating jaundice and other liver ailments. Both of these medicinal properties seem to trace to the Doctrine of Signatures, whereby aspects of plants are said to signal their medicinal



uses. The yellow of Dandelion flowers was interpreted as a sign that jaundice (which causes yellow colouration) and other liver diseases could be treated. The juiciness of the dandelion, suggestive of water retention, was interpreted as indicating usefulness as a diuretic. Dandelion has also been claimed to be useful as an appetite stimulant. Most of the claims for medical effectiveness of Dandelion are based on research that is pre-World War II, and there is a need for modern investigation. Nevertheless, medical usage of Dandelion remains fairly common. Despite widespread natural occurrence, the U.S. has imported over 45 t of Dandelion in some years for use in patent medicines, at least as recently as 1957. In Canada, over 50 commercially sold medicinal preparations contain Dandelion. The bitter taste of Dandelions is due to 11.13-dihydrotaraxine acid-1'O-B-D-glucopyranoside and similar awesomely- named chemicals. Salad cultivars are not as bitter as wild forms, but are likely less suitable medicinally, since the bitter principles are regarded as medicinally effective.

As well as having food, medicinal and industrial uses, Dandelions have proven to be valuable for research in evolution, ecology and population biology. Among the classical examples was the finding that genotypes from the most disturbed and ephemeral habitats produced the most seeds, adapting them to dispersal and colonisation. By contrast, genotypes from stable habitats produced less seeds but were superior competitors in their own habitats.

Dandelion is grown commercially as a food plant in Europe and North America. At least a dozen cultivars are available which are much tastier than Wild Dandelion. Centers of Dandelion cultivation in North America include the eastern seaboard states, Florida and Texas. The annual value of Dandelion sold in Canadian markets sometimes exceeds a half million dollars. Good yields are 18,800 kg/ha for leaves and 1,100 to 1,700 kg/ha for roots.

The Dandelion has been declared an endangered wildflower in England. While this may raise eyebrows, we too in Canada doubtless have native species of dandelions meriting protection. Despite their modern reputation as an undesirable weed, dandelions have great value, and it is important to learn more about them.

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LETTER TO EDITOR

The Globe and Mail, Canada's (self-styled) National Newspaper, regularly features stories with a biological content. When the scientific name of the organism concerned is given, it is printed in ordinary font. I have protested this practice through years of letter-writing and finally discovered the basis for this break with convention. In February, I sent the following e-mail to the editor-in-chief (wthorsell@globeandmail.ca) and encouraged my colleagues to do the same:

In the 1995 Globe and Mail style guide, under the topic of "italics", the statement "Legal or scientific terms do not require italics" is made, but the only example given of a scientific term is a Latin name (Castor fiber canadensis). This text also states "we use italics to flag foreign or French words". How many of your readers will know the equivalent English names of Latin names? I hereby respectfully request that the Globe and Mail observe the convention of printing the Latin names of biological organisms in italics.

Did the e-mail have an effect? Maybe, but it will take constant "reassurance" from biologists to ensure that convention is maintained in our daily newspapers. We all must do our part. After all, unhappy readers will not be happy subscribers!

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Editor's note: I also cringed recently when listening to our esteemed CBC. On several newscasts on both radio and TV, the newsreaders and reporters kept referring to "a drug-resistant bacteria". The correct usage of plural and singular names of scientific origin seems to be another blind spot of news media copy writers. CBC used to have a person who served as an advisor on proper language usage; perhaps his/her position has been eliminated as a result of recent cuts in funding.

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.

A Small Victory

Thanks to Miguel Molinari, a Venezuelan GP and amateur naturalist, and John Vanderplank, a British botanist with a passion for *Passiflora* species, the Venezuelan passion flower, *Passiflora lourdesae*, described fewer than five years ago, still exists. Acticipating its demise (because of the destructive actions of developers) in its natural habitat in the forests of the Andes about 240 km from Caracas, Molinari collected seeds and cuttings, and sent them to Vanderplank, the world expert on passion vines. The single plant that Vanderplank managed to grow and flower may be the only one now living, since (as Molinari predicted) its only known natural locality has been destroyed by developers. Vanderplank hopes to distribute cuttings of his plant to several botanical gardens and to supply cuttings to attempt to repopulate suitable Venezuelan sites.

Michael Hornsby, The Times of London, January 19, 1996

Sausage Tree attracts Attention

Kigelia africana, the sausage tree, one of many African plants that have been used for a long time by traditional healers, is attracting the attention of the pharmaceutical industry. A natural health products company in Zimbabwe already sells an ointment (made from the sausage-shaped fruit) which may be useful in treating certain types of skin cancer. Traditional healers have used the fruit for treatment of ulcers and sores, and as an antidote for snake bites.

China Daily, January 15, 1996

Raspberry of the Future

Dr. Derek Jennings, the semi-retired British plant breeder who created the tayberry, has produced a new raspberry which bears fruit which is almost twice as large (averaging 7 grams) as that from the usual raspberries grown today (averaging 4 grams). He has named the new cultivar 'Terri-Louise', after his 4-year-old granddaughter. The new berry is a cross of 'Glen Moy' (another Jennings introduction) with 'Autumn Bliss'. An 8-acre test plot with 25,000 plants is expected to yield between 24 and 32 tonnes of berries this year. A contract to introduce the new variety to North America is expected to be signed later this year.

Robin Young, The Times of London, January 30, 1996

Iron vs Global Warming?

A Dalhousie University oceanographer is quoted in this article as saying, "The Earth's thermostat might lie in a species of microscopic ocean plant called phytoplankton". Oops! ... I suspect that this quote has gone through several non-scientist writers and editors at Canadian Press. However, the oceanographer also said that there are "interesting couplings between the growth of ocean plants and climate". Detailed studies of Pacific Ocean sediments suggest that huge blooms of oceanic phytoplankton may have contributed greatly to the start of the last Ice Age some 12,000 years ago. These blooms would remove a large amount of carbon dioxide from the atmospheric and cause a chilling of the climate. This research leads to the real thrust of the article, the control of current carbon dioxide levels in the atmosphere. Researchers think that if large phytoplankton blooms could be induced, they would remove large amounts of carbon dioxide from the atmosphere so that the dangers of global warming would be reduced (or perhaps eliminated or reversed). The method of choice for inducing blooms is to fertilize the ocean with iron. Previous studies have shown that there are several large areas of the world's oceans in which the growth of phytoplankton is limited by the supply of iron. Some small-scale fertilization experiments have, indeed, produced blooms. The oceanographers hope to obtain funding from insurance companies by convincing them that the reversal of global warming would reduce the damaging storms, floods, droughts, etc. which seem to related to the current global warming episode.

Kitchener-Waterloo Record, February 26, 1996

Ginkgo Info

Perhaps the only remaining natural *Ginkgo* forest is in Changxing County of China's Zhejiang Province. Situated on a mountain saddle called "Ba Duxie", the Changxing *Ginkgo* Reserve in a belt shaped area about 5 km long. Trees range from 12 to 32 meters high. All *Ginkgo* specimens outside China are believed to have originated from this forest. *Ginkgo* seeds are important to the local villagers because eating them is believed to retard aging. The seeds are also used as a medicine for colds and asthma. Preparations containing *Ginkgo* sold in Canadian stores are supposed to improve brain function by increasing blood flow to the brain. The local villagers in China make a tidy sum from the sale of the seeds. The tree's reputation as a survivor was greatly enhanced by the fact that it was the only tree to withstand the Hiroshima A-bomb and regrow.

Tang Zhang, China Daily, January 13, 1996

Tobacco Targets Brain Enzyme

According to a recent *Nature* article about brain chemistry, smokers' brains contain 40% less monoamine oxidase B (MAO B) that those of non-smokers. One of the main targets of MAO B is dopamine, a neurotransmitter involved in the brain's reward system and in two important diseases, schizophrenia (too much dopamine) and Parkinson's (too little dopamine). Smokers have less MAO B to break down dopamine; hence there is more dopamine than normal, which is why smokers have a reduced risk of Parkinson's disease. However, the increased dopamine may contribute to the pleasurable feelings induced by smoking and increase the effect of nicotine addiction. What is in tobacco smoke that causes reduced MAO B levels is as yet unknown (it is not nicotine). The enzyme level rises after a person quits smoking.

Jay Ingram, Toronto Star, March 17, 1996

Unexpected Danger in Transgenic Plants

Those persons with diet-related illnesses and food allergies have more reason to worry about the steady production of transgenic crops. Since genetic engineers mix genes from unrelated species, there is a chance that people who are allergic to one type of food may suddenly find they are allergic to many more. This is not idle speculation. Researchers from the University of Nebraska report (in the *New England Journal of Medicine*) that soybeans which have had genes introduced from Brazil nuts to increase the protein level will be dangerous to anyone with an allergy to the nuts. The research involved testing blood serum from nine persons known to have a Brazil nut allergy against extracts from Brazil nuts, conventional soybeans and transgenic soybeans containing Brazil nut proteins. All serum samples reacted to the nuts, none reacted to the conventional soybeans, and 8 out of 9 reacted to the nut proteins in the transgenic soybeans. Since the transgenic soybeans ordinarily cannot be distinguished from conventional ones they could be used in the preparation of a wide range of food products, resulting in a greatly increased range of dangerous foods for those persons allergic to Brazil nuts.

Doug Sanders, Globe & Mail, March 16, 1996

What the heck did ya think it was made with?

This slogan from an annoying cereal commercial could soon apply to some homes built in the Phillipines. A Canadian company, Syri-Con Corp. of Woodstock, Ontario, has developed a way to produce a concrete substitute that utilizes waste rice hulls (a major disposal problem in rice producing countries). With funding from CIDA, the technology will be applied initially to the building of 900 homes near Manila. The key to using rice hulls is to treat them with a special chemical to make them bind with cement. The resulting material is strong and lighter than concrete. It will be tested in the Phillipines because gravel from the volcanic rock there makes poor-quality concrete.

Shirley Rennie, K.-W. Record, March 7, 1996

This Khat doesn't purr

For centuries Somali men holding all-night talk sessions have kept the conversations flowing by chewing on khat, the leaves of *Catha edulis*, a small tree or shrubby plant native to East Africa and the Arabian Peninsula. The men obtain a mild euphoria from the active ingredient in the leaves, cathinone, which has a chemical structure similar to that of amphetamines. According to a paper in the *Journal of Substance Abuse* khat increases energy, alertness, self-esteem and the ability to communicate. On the down-side excessive use can cause depression, anxiety, irritability and paranoid delusions. Cancer of the mouth and heart disease may also be linked to chewing khat. However, there appears to be no consensus among scientists or among Somalis about the dangers. Britain allows its use but it is banned in the U.S.A. In Canada Somali immigrant users are worried because a bill to ban the sale (but not the use) of khat was introduced in Ottawa. It died on the order paper at the end of the last parliamentary session, and there is no indication of it being introduced again in the current session. So Somali men in Canada can still indulge in their traditional, but expensive pastime. The unfortunate fact about *Caltha* leaves is that they begin to lose their "kick" about 48 hours after picking. Buying and using the fresh leaves flown into Canada can often cost a user $30 - $60 for one talk-filled night.

Jacquie Miller, Ottawa Citizen, February 8, 1996

Transgenic Corn now in Canada

Ciba Seeds (Plattsville, Ontario) will plant about 6,000 hectares of transgenic corn that contains a gene from *Bacillus thuringiensis* (Bt) that produces a "natural" insecticide that will target the European corn borer. Bottles of Bt have been available for many years at garden stores and these insecticidal preparations have proved to be effective against the plant-eating larvae of several insects. The Bt insecticide also appears to be completely safe for humans. The seed company hopes that the new corn variety will effectively combat the ravages of the European corn borer, which destroys about $1 billion worth of corn annually in North America. Critics warn that the insects probably will quickly develop resistance to the levels of Bt insecticide in the transgenic plants. The Bt gene is also present in Canada's first genetically altered food, the 'Newleaf' potato, which is already being marketed.

Kitchener-Waterloo Record, February 29, 1996

Vitamin E helps the Heart

A Cambridge University research team has found that daily doses of Vitamin E (400 or 800 I.U.) given to 2000 patients with heart disease produced a 75% reduction in the risk of heart attacks. The article recommends eating asparagus, the vegetable highest in Vitamin E content.

Thomas Stuttaford, Times of London, March 22, 1996

Explorer Rose Program Axed

The Canadian-bred Explorer series of rose cultivars have become well-known for their beauty and hardiness, receiving rave reviews from growers in several countries. All but one of the 17 roses is named after a Canadian explorer (that odd one is named after J.P. Connell, a senior public servant). From the time of release of the first cultivar, Agriculture Canada has refused to accept any royalties, stating that "government isn't in the business of making money". The foregone royalty dollars are estimated to be in the several tens of thousands. Now (as of the end of March) as part of the federal government's cost saving effort, the entire breeding program is being cut and the lab in Assomption, Quebec, is to be sold to private interests (probably international consortiums). The rationale for the cut was, predictably, that it does not support itself. Asked about the possibility of continuing the research at the St. Jean, Quebec, lab, Agriculture Canada's Dr. Denis Demers is quoted as saying, "How many rose varieties do you want? A rose is a rose."

Laura Robin, Ottawa Citizen, February 25, 1996

Trees of Life

Various trees have provided humans with drugs and other chemicals, ranging from quinine and salicylates to camphor and taxol. Now scientists are studying a tree known to the Chinese as Xi-Shu (*Camptotheca acuminata*) which has been planted for generations by Asians as a source of firewood and for its beautiful white flowers which appear in August. It is a rapid grower, reaching 30 metres high in 20 years. Two pharmaceutical firms have discovered a bioactive alkaloid from the tree and have used it to produce drugs (Irinotecan and Topotecan) which are undergoing trials as a treatment for cancer of the colon and rectum. Early results suggest that these drugs may benefit 15-30% of patients once current standard treatment (5-fluorouracil) has failed.

Thomas Stuttaford, Times of London, March 12, 1996

"Dietary Supplement" with a Buzz

Ma huang (*Ephedra*) is a Chinese herbal medicine used for centuries to treat upper-respiratory problems. Now it is becoming "the drug of the 90s" in the U.S., thanks to a 1994 law (The Dietary Supplement Health and Education Act) which classes herbs as "dietary supplements" and excludes them from regulation as drugs. Pills made partly or wholly of *Ephedra* are now marketed in natural food stores as being a way to get a "legal high" from the "FDA-approved" ingredients (in fact, no testing has ever been done by the U.S. Food and Drug Administration). Advertisements for such products as Herbal Ecstacy, Cloud 9 and Ultimate Euphoria promise a pleasant buzz without side effects, heightened sexual feelng and tingly sensations. However, overdoses of ephedrine, the active ingredient, can cause irregular heartbeat, heart attack, stroke, seizures, psychosis and even death. Such adverse reactions (and deaths) are increasingly being recorded. The FDA cannot regulate the sale of the pills because of the Dietary Supplement Law.

Marian Burros/Sarah Jay, N. Y. Times, April 10, 1996

Tea and ..... Apples?

A 15-year study of 552 Dutch men suggests that long-term consumption of black tea (i.e. the ordinary stuff) and of flavonoid-rich fruit such as apples can significantly reduce the risk of strokes. High flavonoid intake, equivalent to an average of 4.7 cups of tea per day, reduced the risk of stroke by 69% when compared to men drinking fewer than 2.6 cups per day. About 10% of flavonoid intake in the study came from apples. Flavonoids are already known to reduce heart disease and the risk of certain cancers because of their antioxidant properties. They also make blood platelets less prone to clotting. An apple a day, anyone?

K.-W. Record, March 25, 1996

Green Pharmaceutical Factories

Transgenic canola strains able to produce interleukin-1, an important chemical in human immune response, and hirudin, a blood anticoagulant, produced crops for researchers at the University of Calgary last year. More important is the fact that Dr. Maurice Moloney's team has developed efficient methods for extracting the pharmaceuticals from the harvested seeds. About 10 grams of interleukin can be obtained from 10 kg of the transgenic canola seed. This is considered a good yield, since therapeutic doses are measured in milligrams. The University has set up a company, SemBioSys Genetics Inc., to develop the technology into a variety of commercial applications.

Diane Bailey, Globe & Mail, January 27, 1996

Genes Go Wild

Transgenic plant strains are being produced at an increasing rate and it is pertinent to include this story immediately after the one decribed above. Critics of the Calgary successes and of others warn of the possibility of the transfer of introduced genes to wild or weedy relatives of the transgenic plants. Molecular biologists have largely ignored such warnings or have answered by claiming that such a transfer of genes is only a remote possibility. Two recent papers, however, (in *Nature* and *Journal of Applied Ecology*) report the transfer of genes introduced into oilseed rape (that's canola to Canadians) to nearby weeds by hybridization. French researchers report hybrids between canola and hoary mustard and Danish researchers found hybrids with weedy *Brassica campestris*. Both hybrids contain the gene that was supposed to stay in the canola. Mother Nature has embarrassed scientists again (or perhaps it's those pesky indiscriminate pollinators).

The Times of London, March 11, 1996

MEETINGS / CONGRÈS

ABLE '96

The 18th Annual Workshop/Conference of the Association for Biology Laboratory Education (ABLE) will be held at Boston University (Boston, Massachusetts), **June 11-15, 1996.** ABLE was founded in 1979 to promote information exchange among university and college educators actively concerned with teaching biology in a laboratory setting. At ABLE meetings, biologists present interesting and innovative laboratory exercises. This year's meeting provides 20 hands-on workshops, each approximately 3 hours in duration. For more information about ABLE '96 contact: **Dr. Elizabeth Godrick (Host), Dept. of Biology, Boston University, 5 Cummington St., Boston, MA 02215-2406 [godrick@bio.bu.edu].** The conference program can be accessed at the following website: **http://www.zoo.utoronto.ca/zooweb/able/able96.html**

Plant Lipids

A conference on **Plant Lipids** will be held in Toronto, **July 7-12, 1996.** For information: **John P. Williams, Dept. of Botany, University of Toronto, Toronto, ON M5S 3B2** or e-mail: **lipids96@botany.utoronto.ca**

Polysaccharide Symposium

A **Plant Polysaccharides Symposium** will be held in Nantes, France, **July 7-12, 1996.** Obtain information from: **PPS Secretariat, INRA, B.P. 1627, 44316 Nantes Cedex 03, France [e-mail: lefer@nantes.inra.fr]**

ICSEB - V

The Fifth International Congress of Systematics and Evolutionary Biology will be in Budapest, Hungary, **August 17-24, 1996.** Information: **ICSEB - V, Ferencsek 2, H-1053, Budapest, Hungary.**

Biological Collections

A Linnean Society conference entitled **Systematics and Biological Collections** will be held in Belfast, Northern Ireland, **August 27-30, 1996.** Obtain information from: **C.R. Tyrie, Dept. of Botany, Ulster Museum, Botanic Gardens, Belfast, Northern Ireland BT9 5AB.**

INTECOL '96

The 1996 International Ecological Congress, to be held in Voronezh, Russia, **September 22-28, 1996** is hosted by Voronezh State Academy of Technology, assisted by Kansas State University. The goal of the Congress is to facilitate efforts to realize the main recommendations of the Memorandum from the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, as they relate to environmental development, education and protection. To achieve this goal, representatives of Academic, Business, Industrial, Political and Governmental organizations, are urged to attend and participate. Special sessions will address environmental problems facing areas geographically similar to Kansas, USA, and Voronezh, Russia, i.e., great plains regions. For further information, contact: **Dr. Bettie Minshall, Program Coordinator, Conferences and Non-Credit Programs, Division of Continuing Education, 254 College Court Building, Manhattan, KS 66506-6006 [FAX: 913-532-5637; e-mail: minshal@dce.ksu.edu]** or visit the conference website: **http://www.dce.ksu.edu/dce/conferences/ecology.html**

Vegetation Science

The 39th Symposium of the International Association of Vegetation Science, entitled **Vegetation Science and Landscape Ecology,** will be held in Lancaster, U.K., **September 10-16, 1996.** Obtain information from: **Unit of Vegetation Science, Lancaster University, Lancaster, U.K. LA1 4YQ.**

I.U.C.N. Congress

The International Union for the Conservation of Nature is holding a **World Conservation Congress** in Montréal, **October 14-23, 1996.** Information: **John Burke, Director of Communications, I.U.C.N., 28 rue Mauverney, 1196 Gland, Switzerland.**

EnviroEd '96

The North American Association for Environmental Education is organizing their 25th Annual Conference: **Environmental Education for the Next Generation: Professional Development and Teacher Training.** The date is **Nov. 1-5, 1996.** The location is the Hyatt Regency in Burlingame, CA. Part of the program will be an Environmental Education Summit. Partners in this Summit thus far include National Wildlife, Global Network of Environmental Education Centers, Ecological Society of America, National Audubon Society, Project WILD, Project WET, ZPG, WRI, WREEC, and others. Obtain further information from: **Lori Mann, 1509 Newlands Ave. #1, Burlingame, CA 94010 [lmann@igc.apc.org].**

Monocot Symposium

The Second International Symposium on Ornamental Palms and other Monocots from the Tropics will be held in Tenerife (Canary Islands, Spain), **February 3-7, 1997.** The emphasis will be on horticultural uses of tropical monocots. Field trips are planned to palm nurseries and gardens, and to wild populations of Phoenix canariensis. Information: **mcaballero@icia.rcanaria.es**

Royal Society Symposium

The Royal Society is sponsoring a symposium with the title, **Vegetation-Climate-Atmosphere Interactions: Past, Present and Future,** which will be held in London, U.K., **May 21-22, 1997.** For information, contact: **Science Promotion Section, The Royal Society, 6 Carlton House Terrace, London, U.K. SW1Y 5AG.**

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