INTERNATIONAL UNION OF BIOLOGICAL SCIENCES SECTION FOR PALAEOBOTANY

IOP NEWSLETTER 58

SEPTEMBER 1996

CONTENTS

PLEASE MAIL NEWS AND CORRESPONDENCE TO YOUR REGIONAL REPRESENTATIVE OR TO THE SECRETARY FOR THE NEXT NEWSLETTER 59.

The views expressed in the newsletter are those of its correspondents and do not necessarily reflect the policy of IOP.

THE PRESIDENT'S ADDRESS

With modesty and some reticence, as a non-anglophone, I wish however to follow the tradition and offer some thoughts and comments about IOP and Palaeobotany in general. First of all, after the extraordinary success of IOPC-V held in Santa Barbara I would like, in the name of all palaeobotanists, to thank again and congratulate Bruce Tiffney and Steve Manchester for organising such a magnificent meeting. Let me also express our thanks to our untiring Secretary, Mike Boulter, and my predecessor, Tom Taylor, for their continuous effort and stimulation to the cause of our discipline.

IOP may be considered by some as an old organisation; it was indeed created in 1954 on the occasion of the 8th International Botanical Congress in Paris during a colloquium organised by Edouard Boureau and presided by Rudolf Florin. For many years Professor Boureau has been in charge of the production of the World Report of Paleobotany. A landmark in the history of IOP was the decision, taken at the 12th IBC in Leningrad (1975), to publish a Newsletter and to develop a membership. As a matter of fact, for the last 20 years, the Newsletter has been the "cement" of our Organisation. Due to the vigour and initiative of Mike Boulter, this Newsletter has shown remarkable improvements. However the contributors and members must continue to provide material for its content. Simultaneously, there is a need for promoting IOP more by increasing membership of new colleagues to be involved in IOP life and this will help the financial base of IOP (The official membership list appended to this newsletter - and available on the internet - see below - is far smaller than the combined total membership of the regional associations). Most recently Mike managed to have IOP information on the internet and the Newsletter is now available there. This is a new step in our system of communication and may also help save money. Unfortunately, e-mail is not yet available to all palaeobotanists through the world and the "paper edition" of the Newsletter will still be produced for several years.

Another landmark in the history of IOP was the decision to organise the IOP Conference. Well before the creation of IOP and up until 1980 it was a tradition for palaeobotanists to meet as a "Palaeobotany Section" during each International Botanical Congress. At the 10th IBC in Edinburgh (1964) about 120 palaeobotanists attended a very successful meeting which was my first conference experience as a student in palaeobotany (I must confess that I have no official proof of that because I was in a nearby pub at the time of the official group photograph). The first IOPC was held at Reading in 1980 and the quadriennal organisation of these Conferences was an immediate success with numbers of participants largely exceeding 200 in Edmonton, Paris and Santa Barbara. This is a very positive point for IOP, confirming the need for palaeobotanists worldwide to meet regularly. However I believe it is still necessary for us to exchange with other related fields of biology and earth sciences. We must continue to make efforts to integrate palaeobotany with other areas of plant sciences as it is done in participating or even organizing symposia during IBC, AIBS and other meetings. From this point of view the Santa Barbara IOPC-V corresponded to a new step: for the first time, I believe, where an appreciable number of non-palaeobotanists have been invited to participate in a "pure" palaeobotany meeting (see symposia on early land plants and on modelling form and function). I interpret this situation as a reason to be very optimistic with regard to the vitality and the future of our discipline. Perhaps it is not merely a coincidence if, for the first time also, the new executive committee of IOP has been nominated/elected at the IOP Conference of Santa Barbara and, no more, during an International Botanical Congress. I wonder if this is symbolic of the "maturity" of our discipline just at the moment where we are worrying for palaeobotany is survival in these times of financial recession?

Following the Melbourne IOPC (1988), a wide debate concerning the support of palaeobotany was opened by Charles Beck in the columns of this Newsletter (see IOPN 39, 41, 42, 46). I do not think it is useful to reopen it. The solution must come from the initiatives of individuals or groups in each country and IOP may be of some help. It is clearly our responsibility to fight, everywhere possible, to keep positions in palaeobotany but we must also try to take advantage of the interdisciplinarity of our field; the future of palaeobotany depends, in part, on our ability to adapt and relate our discipline to other areas of plant and earth sciences. I am confident that the new generation will be able to face this challenge.

I wish to conclude on another positive point and one that has already greatly improved the image of IOP: it is the Plant Fossil Record project initiated and entirely supported, since the beginning, by Mike Boulter. PFR has been selected as a model for a future system of database by *Species 2000*, an international programme supported by IUBS which plans to build and federate taxonomic databases of all living organisms. We need many more IOP members involved in this project which must continue to go ahead for the mutual benefit of all palaeobotanists and others, to increase the image of our discipline. We were well-represented at the "Disseminating Biodiversity Information" conference in Amsterdam, 24-27 March 1996 where we continued to influence the world of modern biologists: an interesting change of roles. We appear to be at the leading edge of using the internet - not awaiting developments, creating

them. Please contribute data to the project and help in other ways you can.
J.GALTIER, Montpellier, France

IOP NEWS

REGIONAL REPRESENTATIVES

After more than ten years representing the member-ship in China, Professor Zhou Zhiyan offers his resignation. He has been succeeded by Prof Sun Ge, Nanjing and Prof Li, Bejing. As well as contributing to, and distributing, the newsletter, they are also organizing the next IOP Conference in China, in 2000. This means they are Conference Members of the Executive Committee as well.

IOP GENERAL ASSEMBLY, July 3rd, 1996

The agenda was:-

1. Respect to deceased members
2. Presentation of Birbal Sahni Medal
3. Secretary's report
4. Requests for help: Gastaldo, Archangelsky, others
5. Plant Fossil Record Database project of IOP: planning group
6. Comments and Criticisms from members
7. Sixth IOP Conference
8. Other business

The following 65 members attended the meeting: S. Archangelsky, S. Ash, M. Boulter, J. Broutin, J. Van der Burgh, W. Chaloner, Shaila Chandra, M. Collinson, P. Crane, Jinzhong Cui, N.R. Cuneo, Li Daiyure, José Bienvenido Diez, D. Edwards, Jean Galtier, R, Gastaldo, C. Gee, P. Herendean, Alexey Herman, Yu Fan Hu, D.E.P. Jeyasingh, H. Kerp, Han van Cittert, Chong-Sen Li, Liyiu Liu, Yusheng Liu, Dieter Mai, Steve Manchester, Susana Mapes, Gene Mapes, Mei Metang, J. Mickle, Vasu Nambudivi, H. Nishida, Jeffrey Osborn, K. Pigg, Sun Ke Qin, Sergio R.S. Revallos-Ferriz, W. Riegel, G. Rothwell, A. Scott, R. Serbet, G.P. Srivastava, R. Stockey, Leon Stuchlik, Ge Sun, Edith Taylor, W.A. Taylor, Bruce A. Tiffney, Henk Visscher, Yubei Wang, Reinhard Weber, Hong Yang, Xuani Yaw, Wang Yi, Yu-Xing Zhou, Zhou Zhy, Yan-Ju Ziu.

IOP MEMBERS' ADDRESS LIST

You can find a new searchable database of IOP Members' names, addresses, e-mail addresses, telephone and fax numbers (where available) on the internet:

http://www.uel.ac.uk/palaeo/iop/iopmem.html

Please check your entry and send any alterations by e-mail to **fisher2@uel.ac.uk**

PLANT FOSSIL RECORD DATABASE

There have been many changes to our PFR presentation on the internet over the last year and a review of the main developments is overdue. The URL is **http://www.uel.ac.uk/palaeo/**

The IOP Home Page now gives you six options:-

- plant fossil record database
- IOP Newsletters
- the PalaeoTalk discussion group
- presentations of database applications
- access to the Species 2000 project
- related servers with biodiversity data

The database now contains about 100,000 records, still mainly from the palynological literature. Megafossil records of Aceraceae are more or less complete and give a good example of the potential of the technique (see Boulter et al., Phil. Trans. Roy. Soc. Lond. B (1996) 351, 589-603).

Searching these records can be by genus or author; stratigraphic, geographic, and searches of other fields will be possible shortly. The results are plotted on palaeogeographic maps, based on Smith et al (1994 Atlas of Mesozoic and Cenozoic coastlines, Cambridge University Press) for which you select the ages. You can search by inserting short strings of letters from the full name you want (eg. "cun*" instead of cunninghamia, "tric*" instead of tricolpites, tricolporopollenites etc.). During the same routines you are also able to obtain information of the genera you select from the museum catalogue databases at Yale, Berkeley and the Smithsonian. One of the best examples to demonstrate the system is to search for "acer". As well as plotting the output on a map you can have a list of geographic, stratigraphic and bibliographic information.

The Home Page also allows you to select scanned index cards, photographs and taxa from the recently published indexes of Benton (The Fossil Record 2, Chapman & Hall) and Brummett (Vascular Plant Genera, Kew).

If you have Internet version 2 (or higher) on Windows 95 (or UNIX, NT etc.) you can also sample some demonstrations of interactive data analysis through programs written in the new language Java. Select the "data manipulation" option in the "presentations" section from the Home Page.

The major weakness of the system remains the lack of data. A much larger set of data, with more than a million records of fossil palynomorphs, is available from Palynodata Inc.

At the 5th IOPC in Santa Barbara a small working group was established to oversee the PFR project. It will discuss priorities, methods and content as well as share in the work needed to build up a lot of records.

The members so far are:-

- Jean Broutin, Paris
- David Greenwood, Melbourne

(**davidgreenwood@vut.edu.au**)
- Ben LePage, Philadelphia
(**blepage@sas.upenn.edu**)
- Jason Hilton, Cardiff (**hilton@cardiff.ac.uk**)
- Kirk Johnson, Denver (**kirkj@csn.net**)
- Una Smith, Yale (**una.smith@yale.edu**)
- Jim Mickle, Raleigh (**james_mickle@ncsu.edu**)
- Nan Arens, Berkeley
(**nanarens@violet.berkeley.edu**)

The group will be communicating mainly through the PalaeoTalk facility on the IOP Home Page and all IOP members are welcome to join any of the discussions and to contribute to the project.

NEWS OF A FORTHCOMING MEETING

THE THIRD SYMPOSIUM OF AFRICAN PALYNOLOGY, 7-13 September 1997, University of Witwatersrand, Johannesburg.

Titles of proposed papers and posters should be submitted as soon as possible. The deadline for abstracts of 200-500 words length will be given in the second Circular. Topics may span the entire range of palynological research in Africa, from palaeopalynology to aerobiology.

The Proceedings of the Symposium will be published in one volume as a special edition of Palaeontologia Africana. Instructions to authors will be included with the Second Circular. Contributing delegates are requested to present their final manuscript at Registration.

The Programme includes several trips:-
- Excursion to Gold Reef City, a taste of Johannesburg as it was in the early days of gold mining.
- Visit to Sterkfontein Caves, the world-renowned home of 'Mrs. Ples'.

And Post-Symposium Excursions:-
- Guided tour to Makapansgat Caves, site of palaeoanthopological and historical interest.
- Kruger Wildlife Park.

The Organizing Committee is:-
- Dr. Ann Cadman, Univ. Witwatersrand
- Dr. Rudi Verhoeven, Univ. Orange Free State
- Dr. Marion Bamford, Univ. Witwatersrand
- Mrs. Sue de Villiers, Univ. Witwatersrand

For further information please contact Dr. Ann Cadman at **106caa@cosmos.wits.ac.za**

MID-CONTINENT PALEOBOTANICAL COLLOQUIA IN THE UNITED STATES

For thirteen years Mid-Continent Paleobotanical Colloquia have been held as a weekend spring meeting of paleobotanists in the Mid-Continent and the Mid-Atlantic regions of the United States. These colloquia start on Friday night, followed by talks all day Saturday, a key-note address on Saturday night, and a field trip on Sunday. Everybody leaves at the end of the field trip. Due to the large distances, such a meeting can only be regional in nature and as the location shifts different people are excluded because time and/or cost to attend would increase dramatically. However, for the area within an eight-hour driving radius around the meeting place, this has been a marvelous opportunity to gather, test new ideas and to look at some local paleobotanical outcrops. The attendance at these meetings has ranged approximately from 20 to 100.

Even though there is no organization behind it and the meetings are handed from colleague to colleague, the next three meetings have already been planned. The attached list shows where the meetings have been and where the meetings will be held through 1999.

The last meeting in Blacksburg, Virginia, was organized by Stephen E. Scheckler of Virginia Polytechnic and State University. Oral presentations and posters, mostly by younger paleobotanists, were featured during the technical program. In addition, there was a panel discussion about the term "geobiology" which is now being introduced into the field of paleontology *sensu lato*. The panel discussion was led by Steve Scheckler with Gar Rockwell, Richard Bambach (an invertebrate paleontologist) and Hermann Pfefferkorn as co-panelists. The keynote address at night was given by Nick Frazier of the Virginia Museum of Natural History (a vertebrate paleontologist) who described the vertebrate and insect fauna but also the flora of the Triassic lake beds that occur in the graben structures along the east coast of the United States. On Sunday he and Steve Scheckler guided us to a locality right on the Virginia-North Carolina border, the Solite quarry which ranks with other "Fossil-Lagerstaetten" like Solnhofen or the Burgess Shale (see publication in Nature, 18 April 1996).

I want to use this short report and the listing to thank Steve Scheckler and all those who organized the meetings before him. I also want to express my appreciation for those who are willing to organize the future meetings. These meetings have been and will

be an important place for the exchange of ideas for the paleobotanical community.
H.W. PFEFFERKORN, Philadelphia, USA

LIST OF MID-CONTINENT PALEOBOTANICAL COLLOQUIA

1983 - 1st Chicago (Illinois), Illinois Field Museum of Natural History
Peter R. Crane & Gar W. Rothwell
1984 - 2nd Lawrence (Kansas), University of Kansas
David F. Brauer & Gar W. Rothwell
1985 - 3rd Carbondale (Illinois), Southern Illinois University Larry C. Matten
1986 - 4th Ann Arbor (Michigan), University of Michigan Charles B. Beck
1987 - 5th Bloomington (Indiana), Indiana University
David L. Dilcher & Steven R. Manchester
1988 - 6th Urbana-Champaign (Illinois), University of Illinois Tom L. Phillips
1989 - 7th Cleveland (Ohio), Cleveland Museum of Natural History
Shyamala Chitaley & Gar W. Rothwell
1990 - 8th Chicago (Illinois), Field Museum of Natural History
Peter R. Crane & Andrew N. Drinnan
1991 - 9th Columbus (Ohio), Ohio State University
Tom N. Taylor, Edith L. Taylor, & Gar W. Rothwell
1992 (--) East Lansing (Michigan), canceled because of death of Arthur Cronquist who was invited to give keynote address
1993 - 10th East Lansing (Michigan), Michigan State University
Aureal T. Cross & Ralph E. Taggart
1994 - 11th Morgantown (West Virginia) Geological Survey and West Virginia University
William H. Gillespie & Bascombe Mitchell Blake
1995 - 12th Philadelphia (Pennsylvania), University of Pennsylvania
Hermann W. Pfefferkorn & Diane M. Erwin
1996 - 13th Blacksburg (Virginia), Virginia Polytechnic and State University
Stephen E. Scheckler
*1997 - 14th Athens (Ohio), Ohio University
Gar W. Rothwell & Gene Mapes
*1998 - 15th Denver (Colorado), Denver Museum of Natural History Kirk R. Johnson
**1999 - 16th Lexington (Kentucky), Kentucky Geological Survey Cortland Eble

*announced, **tentatively planned

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FOSSIL PLANTS FOR SALE

Recent announcements offering Patagonian fossil plants for sale appeared in scientific journals of a wide circulation. The fossils are mostly specimens found at the Santa Cruz Petrified Forest, and they include seed cones, seedlings, fungi, woods and cycad trunks, among other items (dinosaur bones etc.). We all know that for many years "fossil hunters" are devoted to devastate sites that were poorly known (or indeed unknown) to palaeobotanists. In this way information about extinct taxa is evidently lost. Most probably, in the Patagonian case, vital information related to plants that are currently under study will be lost (for instance the cycad trunks on sale by the kilogram).

I don't know how this material was smuggled out of the country: this traffic is strictly prohibited by Law (Argentine National Law 9080), and for this reason we are very careful when dealing with the international exchange or cooperation with visiting palaeobotanists. During several years of successful relationships with many colleagues we never had problems because exchange or study of Argentinian fossils were done according to the law.

I firmly believe that the conservation of fossil sites is necessary. In this particular case, national and local authorities have been alerted. I am now addressing the international palaeobotanical community: we must help to stop in any possible way the devastation of fossil sites. It is a priority, because fossils are not "renewable" items. They are important scientific evidence and, at the same time, they are a cultural legacy for humanity.

This is about all I can say at the moment. I may add that this case had a wide press coverage and broadcasting interviews, including the BBC in Spanish.
S. ARCHANGELSKY, Argentina

RECENT PUBLICATIONS

FOSSIL FLORAS OF CHINA THROUGH THE GEOLOGICAL AGES (English Edition). Editor-in-Chief: Li Xingxue, 1995.
Hardcover 695pp. 144pls. ISBN 7-5359-1537-X/Q14. Published by Guangdong Science and Technology Press.

This book summarizes the principal achievements of palaeobotanical study since the middle half of the nineteenth century, especially during the forty-odd years after the founding of New China. The whole text comprises 12 chapters. Taking geological time as the linking line, this book discusses in separate chapters the overall features and evolutionary history of floras in different geological

periods ranging from Silurian to Quaternary, with particular emphasis laid on the systematic analysis and summary of composition, nature, characteristics and correlations, division, evolution and phytogeographical provinciality of those floras (based on megafossil plants supplemented partly with fossil sporo-pollen evidence) in different periods, together with a certain number of palaeobotanical study displaying the distinguishing features of China.

Price: US $80.00 per copy plus $6.00 per copy for sureface mail or $25.00 per copy for airmail. Place orders to the following address:-

Mr. Ma Zhengang,
Nanjing Institute of Geology and Palaeontology,
Academia Sinica,
39 East Beijing Road,
Nanjing 210008,
People Republic of China.

GLOBAL ENVIRONMENT AND DIVERSIFICATION OF PLANTS THROUGH GEOLOGICAL TIME (Ed. D.D. Pant. Society of Plant Taxonomists, Allahabad, India. 480pp. US$110.

This substantial work includes papers presented at the 1991 centenary celebration in Allahabad. There are also presentations from members of the Pant school of palaeobotany. Some of the articles appear to concern very unusual topics: "Science and Society: a plea in defence of pure science and palaeobotany without change of labels", "A mass of facts is no more science than a heap of bricks is a building: Professor Birbal Sahni's theoretical contributions", "World's oldest tree".

BOOK REVIEWS

K.R.M. Beuning *Modern pollen rain, vegetation and climate in lowland East Java, Indonesia.* Modern Quaternary research in Southeast Asia: 14. A.A. Balkema, Rotterdam, 1996. 51 pp + 49 plates; Dfl 120 (cloth).

This is a very odd little volume indeed.

The author's stated intentions were to investigate the relationship between the pollen in lowland tropical lakes, the surrounding vegetation, and the climatic régime, to lay foundations for paleostudies to come. These objectives are attained - after a fashion; but this publication raises all sorts of questions about the publication of some kinds of academic monograph.

Most pollen analysts working in a new area start by getting to know the flora, collecting and preparing reference material, and only then start work on preparing and counting unknown material. There is no reason why the order should not be reversed, however, nor is there any reason why the results should not be good. It would seem that time has been one of the major constraints on this study: sampling was done in August 1992, and here it all is in print within four years. Unfortunately, promptness — if there have not been political or other problems as well — has been bought at considerable cost. Although everything that should be there is present, none of it ties up into a satisfying story; and one is left with the impression that the author is one of those people who is more interested in pollen grains and microscopes than plants and ecology; or (alternatively) that Cushing, having got the money for a study, found difficulty in finding someone to work in Java.

About half of the volume is taken up by brief descriptions and rather indifferent photographs of the 184 unknown pollen types encountered. Of the remainder, almost half is devoted to the 14 lakes studied (the term 'maar lake' is frequently used without a clear explanation of its exact meaning — if it is not a tautology), their sediments, and methodological issues. The associated vegetational surveys are dispatched in 4 1/2 sides. It is typical of this book that the sedimentological and other characteristics of the sediments sampled are described over a couple of pages, and the information is then repeated in a table; and that absolute pollen concentrations were determined, but the crucial relationship between pollen concentrations and sedimentology is hardly touched upon. Laborious manipulations are carried out to try to relate the 'localness' of the pollen in the lakes to theoretical studies of air-borne pollen distribution — yet 20 years ago studies showed that 90% of pollen in lakes is water-borne.

The crowning touch — for which blame must be shared by author and publisher — is Figure 6, the final, crucial, pollen diagram summarising Beuning's work. This appears to have been prepared from a battered photocopy in which the names of the lakes are well-nigh undecipherable, and whose presentation is such that rare elements are hardly detectable: there are six columns that appear to be blank, and two of these remain cryptic after scrupulous examination. I discovered 29 minor records that might easily be missed by a reader with less good eyesight — how much more was there that I have missed? For good measure, the diagram has been landscaped across two pages in the middle of a signature, so that the binding and adhesive leaking through it make the Cyperaceae column irretrievable.

I doubt whether anyone wanting to attempt to reconstruct past climates would be able to extract information satisfactorily from this volume. To start with, the graphs are impossible to back-read with adequate precision: the basic test of any graphical representation. This study seems to me to epitomise the sort of thing that will be best distributed electronically, rather than published as a book in the traditional way. True, electronic transmission of graphic material is still of dreadful quality unless one has very fancy equipment; but that will probably change quite rapidly. I doubt if more than a dozen people will read this book; and (for the reasons mentioned), most of them will probably have

to get hold of the raw data (which are not published). I think the day will soon come when the publication of scholarly monographs will be done by desk-top publishing, offset lithography, and small binding facilities in the basements of museums and institutions, using electronic files swapped between co-operating organisations. That should be quick, cheap, and non-wasteful. If a worker in Novosibirsk wants a monograph on Amazonian beetles originating in an entomological museum in Manaos, they'll go to their nearest museum or scholarly institution, and get them to download a file for printing and binding. The museum in Manaos will hold half a dozen copies on its shelves if that's the likely demand in the next couple of years. There will always be some scholarly works (such as Gardiner's *Ancient Egyptian Grammar*, and the *Flora of Iraq*) for which the demand will be sufficiently persistent or widespread to justify traditional printing, binding, and distribution; but most are needed desperately by about a dozen workers.
R.N.L.B. HUBBARD, London, UK.

A.H. Gentry ***Field guide to woody plants of northwest South America.*** University of Chicago Press, 1996 (distributed by J. Wiley). xxii + 895 pp; £60 (cloth), £36 paperbacked.

Scientists ¾ and artists ¾ need to be curious and inquisitive. Geological botanists, in particular, need to take an interest in the botany of far corners of the globe, as an ecological knowledge of the origin of past plant migrations may provide crucially important keys to understanding fossil ecologies ¾ one thinks of the southern hemisphere Restionaceae pollen from the European Tertiary, and (of course) the Malaysian *Nypa*. What we need are 'serious', systematic, comprehensive synopses of major botanical regions; and scientists with the expertise and courage to attempt such stratospheric *hautes vulgarisations*. I knew of three such admirable volumes: Polunin's *Flowers of Europe* (O.U.P. 1964, long out of print); Polunin and Stainton's *Flowers of the Himalaya* (O.U.P. 1984, reprinting 'under consideration' for the last three years); and Keith Coates Palgrave's *Trees of southern Africa* (Struik, Cape Town 1977, 3rd. impression of 1987 revision 1990, *ca.* £20). Now I have encountered a fourth: Gentry's *Field guide to woody plants of northwest South America*. In many ways, it is the most astonishing of all.

Each of these works are octavo-sized volumes of 1000 pages or so, which are thus capable of being carried in one hand, or stuffed into a capacious pocket. Each has keys (of some sort), each has illustrations to help one from straying, and each (of course) leaves a lot out.

Flowers of Europe is the 'easy' one (though it preceded the completion of the *Flora Europaea*): it has top-down keys to take one to the families and genera, and sketchy keys thereafter. Rather less than a fifth of the species are covered, and there are about 1500 colour photographs and line drawings of taxa. The coverage is fairly comprehensive, though grasses and sedges (as usual) get a rather poor deal. Not surprisingly, the companion *Flowers of the Himalaya* is similar in character, but it only has keys to the genera discussed: you have to get to the right family first (since so many European garden and greenhouse plants come from this region, this is not so unreasonable in a volume presumably intended for trekkers). The line drawings are clearly based on herbarium material. Apart from half a dozen bamboos, grasses and sedges are totally ignored, as are ferns. Unlike the European volume, there is a useful review of Himalayan phytogeography and ecology ¾ but then we all know all about Europe, don't we? In both cases, a very clever selection has been made of the plants that catch the eye; and quite a lot of ecological, distributional, and ethnobotanical information is given for the species described. Both volumes indicate how many species each genus contains, so one has a clear idea of how likely it is that the plant one sees is not described. For obvious reasons, *Flowers of the Himalaya* is of particular interest to Palaearctic Tertiary botanists.

Trees of southern Africa is an astounding volume. By ruthlessly excluding herbaceous plants ¾ though 'trees' is interpreted quite generously ¾ comprehensive treatment to specific level, with excellent keys, is achieved. There are very good line drawings, some colour photographs, distribution maps, and a lot of ecological and ethnobotanical information. It must be admitted that some of the drawings of the plants' habits sacrifice scientific detail to artistic expression; but they are successfully 'atmospheric' in a way that few photographs and no computer graphics can achieve.

Gentry's *Field guide to woody plants of northwest South America* was first published in 1993 by Conservation International. This new edition has been photographically reduced and printed on thinner paper to make it portable. It addresses a challenge that is significantly more ambitious than any of the preceding heroic undertakings. Peru, Ecuador, and Colombia encompass almost as much ecological and botanical diversity as the Himalaya and southern Africa combined, and with a rather less well-known flora to boot. Gentry simplifies his task by excluding all marsh plants, and gives little information at the specific level. On the other hand, there are top-down vegetative keys to take one to the families, and some lower-level directions. There are also tabulations of characteristic features such as genera with stilt roots or spines. Ecological and distributional information is given, and there are line drawings (by Rodolfo Vasquez) of a good proportion of the genera. The illustrations, it must be admitted, could be improved:

they have suffered by the reduction. (One appreciates the financial and other imperatives involved, but Figure 29 (Orchidaceae) and Figure 273 (Sterculiaceae) to give only two examples, are well on the way to turning into black blobs.) There are indexes of common and Linnean names. The book is well-produced ¾ proper sewn binding, good archival standard paper, decent typography, and so forth.

The botanical organisation of the book follows the 'old' Englerian system, but families are listed alphabetically. Families are discussed in some detail, after which genera are outlined, with an indication of how many species they contain.

Incidentally, don't take the title too seriously: quite a few herbaceous groups of ecological or other importance (*e.g.* grasses, sedges, Polygonaceae, Chenopodiaceae, Orchidaceae, Caryophyllaceae) are treated.

This is an admirable volume, from which I have already learned a great deal. It reflects most creditably on all involved with it, and deserves to be a great success. It is to be hope that it will have a long life, with regular revisions and improvements, like Keith Coates Palgrave's book. I can make some suggestions for the second edition: the margins of the pages with the illustrations could easily be narrower, and the titles to them could take up far less space ¾ that would allow the illustrations to be at least 10% bigger. Maybe a little re-jigging of the layout of the originals would save a bit more space that would allow them to be shoe-horned into the current format with less reduction. Similarly, the font used for the text could be a tad smaller without losing legibility, which would allow more information to be packed in! Also, try to eliminate avoidable botanical jargon: a lot of it isn't really necessary, and it can be a significant disincentive to buyers and users (even ones as plant-mad as me). Cartoons accompanying the keys help a lot. In preparing the next edition, the team would do well to look at Polunin's *Flowers of Europe* to see what can be achieved by way of squeezing lots of information into a small space in legible form, and in producing keys and descriptions that avoid jargon.

Juicy stuff.

R.N.L.B. HUBBARD, London, UK.

Historical Perspective of Early Twentieth Century Carboniferous Paleobotany in North America. Edited by Paul C. Lyons, Elsie Darrah Morey, and Robert H. Wagner. Geological Society of America Memoir 185. 404pp. ISBN 0-8137-1185-1. $??.

It will soon be 16 years since I lazed on a canal boat reading Henry Andrew's book on The Fossil Hunters. There were times when mooring alongside a pub made me stop reading it, but it really was compulsive reading and it enthused me to get on with writing my own biography of the Colliery Manager and amateur palaeobotanist David Davies.

It was, therefore, with some anticipation that I agreed to review this book tinged only with some regret that I would have to manage without the boat and the canal-side pubs. So one evening, with my wife away at a conference, I picked it up and started to read. At 10 o'clock that was a really bad move! I just had to finish the first three chapters on Darrah.

At a more reasonable hour I later delved into the portraits of the selected European and North American palaeobotanists. Here was a wealth of fascinating facts about the work of such people as Jongmans, Bertrand, White, Noe, Bell and Arnold most of whom had been previously only names on publications I have wrestled with in the past. Now I understand more clearly the logic behind their reasoning. I particularly enjoyed the chapter on Marie Stopes recalling my time in the British Museum library reading her letters. The snippets of information on other palaeobotanists revealed in Darah's correspondence were fascinating as were their new photographs. While on the subject of photographs wait until you see those of the contributors!

The chapters on Early and Mid-Twentieth century thought on Pennsylvanian and Stephanian stratigraphy were skillfully written and will help future workers on these subjects to understand the former differences of opinion that can so easily confuse the unwary.

My wife's reaction when she saw the book was to ask who on earth would possible want to read such a boring book. But she is wrong (just this once of course). The book is both informative and a good read, so buy it. But while you are reading it think how difficult it will be for future writers to attempt such a volume. Where will the raw information be? On an out of date computer disc if they are lucky. More likely it will have been on e-mail and not even saved. But let me look forward with anticipation. Has this volume enthused me to finish my work on the history of palaeobotany in Wales? Only time will tell.

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