International Organisation of Palaeobotany

Newsletter 50

(December 1993)

MINUTES OF THE IOP GENERAL ASSEMBLY

Yokahama, Japan, September 1, 1993

The meeting was called to order at 12.10 pm by Dr Jean Galtier in Room 402, Pacifico Conference Centre, Yokahama, Japan. Jean Galtier chaired the meeting as acting president in association with David Dilcher, IOP Vice President. Galtier announced that the procedure for the election of officers was decided at the IOP meeting held in Paris in 1992. According to this procedure, elections in the future are to be held at the IOP meetings rather than in conjunction with International Botanical Congresses. Therefore, the next election will take place at the next IOP meeting to be held in Santa Barbara, California in 1996.

Galtier announced the names of those IOP members and colleagues in paleobotany who have died since the last IOP meeting in Berlin six years ago. Those colleagues are: A K Ananiev, A Arutjunjan, Herman F Becker, Briger Bohlin, Cestmir Buzek, Michael A Cichan, Richard H Eyde, Richard Germer, Louis Grauvogel, James D Grierson, Eric Holttum, John Holmes, Ove Arbo Hoeg, Hsu Jen, Annie Lejal-Nicol, Eva Planderova, Edna P Plumstead, Arthur Raistrick, G Rajushkina, A Stanislavsky, Frederick M Wonnacott, E D Zaklinskaya. All members present stood for a moment of silence in remembrance of these friends and colleagues.

Galtier noted that our secretary, Michael Boulter, was also absent and asked Dilcher to prepare the minutes of this meeting. He continued by commending Mike Boulter for the excellent work that he has done as IOP secretary for more than 10 years. Those in attendance whole-heartedly agreed. On behalf of Mike Boulter, Galtier encouraged the members of IOP to read the IOP newsletter, contribute to the IOP newsletter and encourage other colleagues to read and contribute to the IOP newsletter. He also encouraged us to have our colleagues join this fine organisation stating that it was one of the best scientific bargains available.

Galtier discussed IOP's Plant Fossil Record database project. He stated that many tens of thousands of records are already recorded in a large database that the Secretary maintains. There is a need for more people to contribute to this database from all countries of the world as we want the database to be as complete as possible.

Bill Chaloner suggested that more people, especially area representatives, contribute to the IOP newsletter, report on national and international meetings and discuss various research programmes within their various countries.

Shyam Srivastava stated that he had sent several items to the IOP newsletter that were never published. He also said that in India the newsletter is not distributed to those interested in receiving it. He hoped that a system would be arranged where some could become life members of IOP and all could be assured of receiving the IOP newsletter. He wondered why the IOP Medal that was awarded at the IOP Paris meeting in 1992 was not written up and reported. Bill Chaloner commented that Mike Boulter does not censor any news sent to him for the IOP newsletter and suggested that Dr Srivastava send these news items. Apparently, it is now even possible for Mike to include some photographs in the newsletter. Shyam Srivastava requested that the new executive committee look into membership categories and distribution of the newsletter on an international scale to ensure that this newsletter is distributed to all individuals wishing to receive a copy.

Thanks was given to the past executive committee: President, C B Beck, resigned; Acting President, J Galtier; Vice Presidents, D L Dilcher and Z Zhou; Secretary, M Boulter. The announcement of election of new officers was made: President, T N Taylor; Vice Presidents, J Anderson, A Herman, K Uemura: Executive Committee, S Bande, J Kover-Eder, E Truswell.

Jean Galtier then asked the new President of IOP, Tom Taylor, to chair the remainder of the meeting.

IOP newsletter 48 announced the 1996 IOP meeting. In June of 1994 the first circular for this meeting will be mailed. Steven Manchester reported on the next IOP meeting. The tentative date is the first week of July, 1996*. He stated the meeting will be held at the University of California, Santa Barbara, California, USA. Bruce Tiffney and Steven Manchester will cooperate in the organisation of this meeting. They anticipate 4-5 days of contributed sessions and symposia. This would include two symposia being held each day. Soon they will be soliciting ideas and organisers for these symposia. They anticipate that field trips will be held. Two field trips are currently in the planning stage. One includes California and the west coast, the other is a mid-continent field trip which would include both Paleozoic and Eocene plant localities. Tom Taylor emphasized the importance of finding sponsors for this meeting and the need to raise money to help bring people to this meeting.

David Ferguson announced that in September of 1995 there is expected to be a major paleobotanical meeting in Nanjing, China. This is in the early stages of planning at this time. Tom Taylor announced that in September, 1993, Remy and Taylor are planning a workshop on Lower Devonian organisms to be held in Munster, Germany. Other meetings were announced by David Ferguson.

Taylor mentioned that the next IOP election is scheduled for 1996 and the election process needs to be begun well in advance of those meetings. Taylor suggested that a call for nominations meetings and that a mail ballot should be sent by mail to each of the IOP members. In order to accomplish this we must to sure that we have the individual addresses of all of the IOP membership in each region of the world. The executive committee needs to work to develop a complete list of all individuals who are members promptly.

The IOP banquet for the Yokahama meetings was announced by Kazuhiko Uemura. It is to be traditional Shabu-shabu cooking.

The meeting was adjourned at 1.05 for group photograph of those members present at the meeting.

A special word of thanks is added to congratulate our Japanese hosts upon the excellent organisation and open hospitality enjoyed by those who attended. Our Japanese paleobotanical colleagues were wonderful hosts and the meetings contributed towards furthering our understanding of our field and a better appreciation of those who work in it. In addition, those who attended the IOP banquet can attest to the culinary excellence of this banquet and to the gracious hospitality of our Japanese hosts which we all enjoyed.

DAVID L. DILCHER

* it is now fixed for 29th June - 5th July 1996

FOSSIL PLANT NOMENCLATURE AT THE 15TH INTERNATIONAL BOTANICAL CONGRESS

The Nomenclature Section of the International Botanical Congress met in Yokohama between 23rd and 27th August, 1993 before the Congress itself, to consider 321 proposals for changes to the Code of Nomenclature. (The 27th August was the day made memorable by the arrival of "Typhoon No.13" to hit Tokyo!).

These amendments had all been published beforehand in Taxon, and were circulated to all members present. 76 delegates attended the Section, with representatives from all the major plant systematics institutes in the world.

For those who worry about the democracy of these procedures it may be of interest to note that a postal vote is conducted before the Congress with a ballot going to all paid-up members of the International Association of Plant Taxonomy (ie subscribers to Taxon). This brought some 202 ballot returns - nearly three times the number of those actually present. The outcome of this postal vote is important; any motion rejected by 75% or more of that ballot would not be considered further by the Nomenclature Section, unless specially requested by five members.

Six items were of particular interest to palaeobotanists. Two elements in the proposals related to validating new names and protecting the validity of existing ones. These were proposals to give protected status to approved lists of "Names in Current Use" (NCU lists) and to set up a procedure for "Registration of Names." For various reasons, many systematists were suspicious or worried about one or both of these. Action on both has been postponed until the next Congress (St.Louis, Missouri, 1999). A majority (including this correspondent) favoured setting up a procedure

leading to formal "protection" of NCU's, by 231 to 190. However, changes to the Code require a two thirds majority, so despite the positive vote this proposal failed.

Similarly action on Registration has been postponed until the Missouri Congress. A motion spelling out the procedure for Registration of new names (Proposed Art. 32D) was passed (and will be in the new Code) but with the proviso "subject to approval by the 16th Congress" (that of 1999). So no action here....yet. The chance to clear up a very untidy corner of plant nomenclature was lost.

The proposal (Art.36 Prop.A) to replace the requirement of a Latin diagnosis for new plant taxa with the option of an English language diagnosis was defeated on the postal vote, and subsequently by the Session on a show of hands. (You may recall that this would have been a restriction for palaeobotanists, who are currently entitled to make a new species with a diagnosis in any language). The Committee for Fossil Plants of the IAPT had favoured this amendment, believing it would make descriptions of new fossil plant taxa more accessible to a wider readership. They had supported it on a Committee vote by 12 to 1. I therefore proposed, on behalf of that Committee, that this "English or Latin" requirement be imposed for new taxa of fossil plants only. I found the necessary five supporters and this was approved, nem. con. So from 1995 nay new name of a fossil plant to be valid will require and English or Latin diagnosis. As few palaeobotanists will use the latter option, the language of this obscure island off North-west Europe will be the required language of fossil plant descriptions world-wide. (One unfortunate by-product will be that a younger generation of palaeobotanists will feel with increasing conviction - but no justification - that they have no need to learn any foreign language!).

A new concept in the field of "types" was introduced, and duly adopted. This gives formal recognition to a "Protype" - defined as "a specimen or illustration selected to serve as an interpretive type when the holotype, lectotype or previously designated neotype, or all original material associated with a validity published name, is demonstrably ambiguous and cannot be critically identified for purposes of the precise application of the name of a taxon. When a protype is designated, the holotype, lectotype or neotype that the protype supports must be explicitly cited". This could be of great importance in palaeobotany. A protype does not displace a type, but merely supplements an inadequate or ambiguous type specimen. It means that a fossil species based on a poorly preserved type could be enhanced in its clarity by the designation of a well preserved protype, to sit alongside and compliment the original type.

Two other small changes: one allows Conservation of the names not only of Families and Genera, as now, but species names of plants. (Hitherto only species names of plants of "economic importance" eg Lycopersicon esculentum, the tomato, could be conserved!).

An amendment was also passed which opened a crack in the door for use of the term Phylum of zoologists (equivalent of Division of botanists) to come into botanical usage. The Code will in future sanction use of Phylum as an acceptable alternative to Division.

In brief review, the Nomenclature Section has stalled on recognition of NCU and name Registration, but has accepted the requirement of Latin or English, only, for

diagnosis of new fossil taxa, and recognised Protypes. I believe this at least was progress for palaeobotany.

W.G. CHALONER, (Retired) Secretary of the Fossil Plant Committee, London, UK

NEWS OF FORTHCOMING MEETINGS

INTERDISCIPLINARY CONGRESS "PLANT BIOMECHANICS" 5-9 SEPTEMBER 1994, MONTPELLIER (FRANCE)

The symposia of this congress will cover biomechanical aspects of all types of living and fossil plants and all levels of scale (molecular, cellular, tissue, organ, whole organism). For paleobotanists especially two topic may be of interest:

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Adaptive mechanical design of plants
        - Phylogenetic and morphogenetic constraints
        - Evolution of habits, form, shape and support structures

Further details and the first announcement may be obtained at the
following address:
        Dr Bernard Thibaut
        LMGC "Bois" CP 81
        U Montpellier II
        Place Eugene Bataillion
        F-34095 Montpellier Cedex,
        France
        Tel: (0033) 67143431
        Fax: (0033) 67544852
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THE BIOLOGY AND EVOLUTIONARY IMPLICATIONS OF EARLY DEVONIAN PLANTS

Munster Germany September 15-17. 1994

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Forschungsstelle fur Palaobotanik
Westfalische Wilhelms-Universitat Munster
Munster, Germany
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This three day workshop is for all persons interested in the biology and evolutionary implications of Early Devonian plants and other organisms. The meeting will include one day for short papers and posters that will consider any biological or paleoecological aspect of the Early Devonian. A second day will be devoted to the examination and discussion of interesting specimens from this time frame, including, but not limited to, new discoveries and interpretations from the Rhynie chert. Participants will have the opportunity to discuss specimens, and to examine thin sections of Rhynie chert organisms. The final day will include all workshop members participating in a series of focused discussions on Early Devonian paleobiology.

It is hoped that persons from diverse backgrounds will participate in this meeting/workshop. New information is rapidly accumulating about the Early

Devonian, and this information is important to biologists and geologists across a broad spectrum of disciplines whether interests are principally teaching, or focus primarily on new areas of research.

Individuals interested in attending this workshop are asked to contact either Professor Winifried Remy (Forschungsstelle fur Palaobotanik, Westfalische Wilhelms-Universitat-Munster, 57/59 Hindenburgplatz, D-48143 Munster, Germany) or Professor Thomas N Taylor (Department of Plant Biology, The Ohio State University, 1735 Neil Ave., Columbus, Ohio 43210, USA) for a registration form.

Registration: Approximately $75,00 US or equivalent DM will be required of all participants.

Housing: Housing will be the responsibility of all participants and information on hotels and prices will be sent to all persons who register.

Meals: There are a large number of excellent restaurants close to the meeting site. A dinner for all workshop participants will be held one evening: coffee etc. will be provided during the sessions.

Please note: The workshop will precede the 4th European meeting of paleobotanists and palynologists which will be held in Heerlen, The Netherlands, September 19-23, 1994.

4th PALEOBOTANICAL-PALYNOLOGICAL CONFERENCE

Heerlen, The Netherlands, September 1994

The fourth European meeting of paleobotanists and palynologists will be held in Heerlen, The Netherlands, September 19-23, 1994. The chosen location is the Rolduc Congress Centre in Kerkrade near Heerlen which offers excellent and reasonably priced facilities for lectures and accommodation.

The region Belgium-Germany-The Netherlands offers many excursion sites for various purposes. The following field trips are planned:

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1 - Devonian-Carboniferous of Belgium and Germany: two days
2 - Upper Cretaceous of southern Limburg and Belgium: one day
3 - Miocene brown coal pits in Germany: one day
4 - Plio/Pleistocene in the Dutch/German border area: one day
5 - Archaeology: one day
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An abstract volume and excursion guides will be distributed during the conference. The congress volume will be published in the 'Mededelingen Rijks Geologische Dienst' (Official publication of the Geological Survey of the Netherlands).

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INTERNATIONAL CONFERENCE ON DIVERSIFICATION AND EVOLUTION OF TERRESTRIAL PLANTS IN GEOLOGICAL TIME (ICTPG)

Nanjing China, 4-9 September 1995

This will take place at Nanjing, China from September 4-9, 1995 (with four post-symposium excursion routes around the country in September 10- 19, 1995) to provide a forum for discussions and promoting the progress in palaeobotanic research and its implications. The topics are mainly of megafossil plants: origin and early evolution of terrestrial plants; taxonomy, anatomy, diversification and evolution of terrestrial plants in various geological periods; gigantopterid plants; origin and early evolution of angiosperms; palaeophytoecology, - geography and - taphonomy; applied palaeobotany; synthetical research on mega - and microfossil plants and new technique and methods in palaeobotanic study etc. Further information and first circular can be obtained from Secretariat of the ICTPG, Dept of Palaeobotany, Nanjing Institute of Geology & Palaeontology, Academia Sinica, Nanjing 210008, People's Republic of China. Dr Yusheng S. Liu, Nanjing, China.

ARCTO-TERTIARY '93

This NATO Advanced Research Workshop was held in London (November 11 & 12) and Hampshire (November 14 - 16). It concerned the "Reconstruction of North Atlantic Climate Change over the Last 70 Million Years, using Extinct Plant Data".

The objective of the workshop was "to accumulate evidence from extinct plants that impinge on climate change during the Tertiary in the Arctic, to make data more readily available, to interpret it and to actively manage it". The following summary introduces the Final Report on the Workshop. The Appendices are available from the IOP Secretary.

1. Selection of Participants; Programme Philosophy In the spirit of the NATO Advanced Research Workshop programme this event was to review progress and set an agenda for future work. It was also able to bring together specialists from North America and Europe with others from Russia, for the first time. This was to open up data and ideas previously available only to one side or the other. Leading specialists who are active in Tertiary palaeobotany or Arctic palaeoclimatology were invited by the Director. In this and other policy matters he consulted Professor D.L. Dilcher, University of Florida, USA and Dr Z. Kvacek, Charles University Prague, Czech Republic. As well as wisdom they were looking for a range of experience from different disciplines and for positive activity to work cooperatively over the next few

years. The invited participants are listed in Appendix 1 and those attending the open London sessions in Appendix 2.

2. Review of Previous Work London November 12-13 The public presentations at the University of East London followed the programme in Appendix 3. Each speaker had been asked to consider principles and not to list facts that can be better shared informally. Consequently only 15 minutes was allowed for each speaker and there were long breaks for coffee lunch and tea. Also, the chaired discussion of the presentations was held at the end of each session, all papers being discussed together to allow more comparative comments. This structure had the desired effect of stimulating various interpretations and arguments. The discussions between each block of presentations were unusually active and small groups covered the Great Hall and surrounding corridors.

3. Innovations for Work to 1996 Hampshire November 15-17

3.1 Reports of Working Groups Five discussion groups covered the following topics and the first draft minutes of each groups follow as Appendices 4-10:

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Major Events
Crane, Bassinger, Wolfe, Stuchlik, Eder-Kovar, Fotyanova, Kvacek,
Lavrenko
 general effects of environmental events on plants
 terminal Eocene and other events
 Oligocene rise in sea level
 igneous episodes
 Tertiary consequences of K/T event


Climatically Sensitive Factors
Dilcher, Wilde, Akhmetiev, Tiffney, Williams, Budantsev, Hubbard
 types of environment
 objective and subjective methods
 lists of taxa
 localities for further comparative study

Language, Taxonomy, Jargon and other Assumptions
Chaloner, Collinson, Walther, Mai, Zhilin, Uemura, Lhotak
 making jargon from east and west compatible
 names of fossil plants
 names and ages of sediments
 data acquisition, processing, analysis, presentation
 do stratigraphic boundaries reflect natural or artificial
differences

Physiological Factors
Spicer, Harland, Manum, Tanai
 plants and the atmosphere
 leaf shape and size, polar light intensity
 ocean temperatures and currents and carbon cycle
 Late Miocene C3 ----> C4 plants
 land and ocean interactions
 taphonomic considerations

Routes of Plant Migration.
Europe - Asia
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         Collinson, Kvacek, Zhilin, Stuchlik, Edar-Kovar,
Fotyanova
Europe - North America
         Tiffney, Williams, Dilcher, Mai, Walther
Asia - North America
         Basinger, Wolfe, Uemura, Budhantsev, Akhmetiev, Tanai,
Fotyanova, Lavrenko, Fisher
 southern migrations and refugia
 topography, palaeogeography and climate
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3.2 Activities of 1996 Planning Group From the recommendations of the 3.1 discussions a sixth group was established to help plan a final product in 1996. The draft minutes follow in Appendix 11. Spicer, Crane, Manum, Herman, Harland

3.3 ListServers for International Communication

An e-mail listserver has been established to continue communication within these groups on the many issues which were raised. Group members without e-mail services will receive print-outs from the listserver manager and should send written messages by mail to the University of East London; these will then be written into the server.

PHOTOGRAPHIC COLLECTION AT THE HUNT INSTITUTE FOR BOTANICAL DOCUMENTATION

Over the years Henry N Andrews (R 1 Box 146, Laconia, New Hampshire, USA 03246) has collected a fair quantity of photos of paleobotanists. When he brought out his book The Fossil Hunters he sent many of the photos to the Hunt Institute. He continued to collect them, with much help from several other paleobotanists. This resulted in four rather large volumes and after much thought on the matter Henry decided that the collection would be best placed in the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, Pennsylvania 15213-3890, USA The list of photographs included in this collection can be obtained from the IOP Secretary.

NEWS OF INDIVIDUALS

Jean Galtier enjoyed spending a quarter as Distinguished Visiting Professor at Ohio State University, Columbus, just enough time to become familiar with the Permian and Triassic vegetation from Antarctica and very suspicious with the palaeoclimatic models proposed for this area.

Jean Broutin has recently been made Professor in Palaeobotany at the Universite de Pierre et Marie Curie, Paris. He was also seen recently eating a hamburger in a London cafe

Barry Thomas has recently been made Professor in Palaeobotany at the University of Wales. That means there are four professors of palaeobotany in that country - the

highest number of palaeobotany professors per head of population for any country in the world. Professor Thomas hopes to be nominated for citation in The Guinness Book of Records.

Dr Ram Shankar Tiwar has assumed the charge of new Director of the Birbal Sahni Institute of Palaeobotany, Lucknow, UP India on 29th March, 1993. Subsequent to his postgraduation from Bhopal University, Bhopal, M.P., he joined the Birbal Sahni Institute of Palaeobotany in the year 1959 and was admitted to the degree of PhD in Botany from lucknow University in the year 1964 and later proceeded on Alexander von Humboldt Fellowship to work with Dr F Schaarschmidt at Frankfurt Museum, Frankfurt, Germany. Dr Tiwari is a well known palynologist and has worked extensively on Palaeozoic and Mesozoic microfossils, specially Permian/Triassic boundary. Besides being a member of various national/international Societies he is also the Secretary of the Palaeobotanical Society, Lucknow.

OBITUARIES

SUZANNE LAWLESS DUIGAN (1924-1993)

Australian palaeobotanists mourn the death in mid-May 1993 of Melbourne University Botany Department taxonomist Sue Duigan. In the lat 40's and 50's she contributed greatly to knowledge of the Tertiary flora of eastern Australia and collaborated with Isobel Cookson on several papers. She had taken her PhD at Cambridge under Prof Godwin and published on the Quaternary. In the 50's she joined the Brown Coal Research Unit at Melbourne University Botany Department and two especially useful palaeobotanical works result from that involvement, namely her Catalogue of the Australian Tertiary Flora (Proc. Roy. Soc. Vict. 69, 5-13, 1951) and the brown coal flora from Yallourn (Palaeobotanist 14, 191, 1966)

For the last three decades she was a Senior Lecturer principally dealing with plant systematics working on the Gramineae, and refining her valuable contribution "The families and genera of Victorian plants".

Niece of the famous Australian aviator John Duigan, she was inspired to take up flying 20 or so years ago, and became the proud owner of her own aircraft. She also enjoyed weekends at her beachside home on the Great Ocean Road, an area of spectacular coastal scenery. Although Sue had long left regular involvement with paleobotany she was an inaugural member of the Australasian IOP, and unlike a great many always remembered to pay her dues. She regularly attended geological and palaeobotanical functions in addition to being a great supporter of systematic botany. Overseas visitors may have met her at the 3IOP Conference in Melbourne in 1988.

We will miss a dedicated scientist and friend.

JACK DOUGLAS & MARY DETTMANN

OVE ARBO HXEG (1898-1993)

Dr. Ove Arbo Hxeg, one of palaeobotany's grand old men, an honorary member of the IOP, and also the nestor of Norwegian botany, died on July 7th 1993 in his 95th year.

He was an extremely versatile botanist who had produced well over A hundred research papers, about 1/3 of them on fossil plants. The others are on subjects ranging from lichenology, mycology via pollination in Arctic plants, palynology and dendrochronology, to ethnobotany. The last subject was to become his main occupation during the last 30 years of his life; the last publication from his hand appeared two years ago.

Dr. Hxeg's palaeobotanical studies started with a series of papers on Palaeozoic algae in the 1920's, but field expeditions to Spitsbergen in 1924, 1928 and 1939 turned his interest to Devonian floras and early land plants. No palaeobotanist working in the Devonian can avoid consulting his monograph on *"The Devonian and Downtonian flora of Spitsbergen"* from 1942. In 1929-30 he made an extensive collecting tour of central and South Africa and brought home a large and fine collection of Permo-Triassic plants (now in the Palaeontological Museum, Oslo). His intended work on this collection was initially deferred by his occupation with the Devonian studies, and subsequently by the World War II and moving job from Trondheim to Oslo in 1947. Ultimately, he gave up the idea to work on this collection; others (Townrow, Bose, Pal) have subsequently worked on it.

After 1945 he produced only a few palaeobotanical research papers, the most notable being M*"The Glossopteris flora of Belgian Congo"* (1960, with M.N. Bose). But he wrote a number of short notes and review papers, such as *"Ordovician algae in Norway"* (1961) and several dealing with the advancements in early land plant studies, of which he kept himself well updated. Thus he felt honoured by being offered to write the Psilophyta-part in the Traite de paleobotanique (1967).

Like most other palaeobotanists, Dr. Hxeg served in botanical academic positions, first as curator (1926-47) in charge of the botanical collections in the Science Academy Museum in Trondheim, and subsequently as Professor of Botany in the Department of Pharmacy in Oslo, where among bottles of drugs one would find large collections of fossiliferous rocks. Many palaeobotanists from around the world have visited the top floor of the Pharmacy building in Oslo.

Dr. Hxeg pioneered palaeobotany in Norway and was responsible for establishing a palaeobotanical section in the Institute for Geology in Oslo which was inaugurated in 1958. He had also been a pioneer in pollen analysis in being the first to make such studies in Norway in 1920. He made a special service to international palaeobotany, and in India in particular, when following Dr. Sahni's untimely death he received a UNESCO assignment to become the first Director of The Birbal Sahni Institute of Palaeobotany in Lucknow. He thus supervised the building of the Institute during the critical early years (1951-53) after it's establishment. In 1950 he undertook an exciting collecting expedition to the Himalayas, accompanied by a newly appointed scientific assistant at the Institute, Dr. M.N. Bose, who was later to become its third Director (1980-85).

Dr. Hxeg's rooms in the Pharmacy Department also for a while contained large piles of slices of tree trunks from archaeological sites and collections of radial wood cores from ancient logged buildings and standing trees. These were the material for a major dendrochronological research project which he directed in the 1950's and 60's.

One aspect of Dr. Hxeg's research originated from this: it has for a major part been carried out in areas where botany borders on other subjects, such as geology, archaeology and folklore. His ethnobotanical work by its very nature lacks international flavour. Nevertheless it should be mentioned since it has a great deal to tell about him as a scientist and humanist, and the love he felt for his work. He started to collect notes on vernacular plant names and plant use when on botanical field work in the early 20's. Eventually, he had collected in excess of 100,000 notes from about 1000 persons from all parts of Norway. A few years before retirement he turned to the work on this enormous amount of data, and let us be reminded that this was before the age of PCs! This resulted in a major monograph (750 pp.) on *"Plants and traditions"* (1974) and four smaller ones on more special topics, the last one (1991) being on children's games with plants. Through this work he saved for the future a national heritage; a generation later, and it would have been lost for ever.

As a person, Dr. Hxeg would appear shy to most people who did not get him to know more closely. But he was a loyal and generous friend and genuinely interested in the well-being of his students and associates. A noble gentleman and a great spirit of botany and palaeobotany has left us.

S.B. Manum, Oslo

A bibliography on Hxeg was published by Lkken (1988: in Blyttia vol. 46: 164-169).

BOOK REVIEWS

[All members of IOP are invited to submit reviews to the secretary or their regional representative. Please do not wait to be invited.]

Erdtman's Handbook of Palynology (2nd. edition by S. Nilsson & J. Praglowski). Munksgaard, Copenhagen, 1992. 580 pp., 150 plates, 70 figures. 650 DKr (ca. #68, US$107)

The last couple of years have seen two memorable palynological resurrections: first, Ffgri & Iversen's admirable Textbook of Pollen Analysis (reviewed in IOP Newsletter 42 (Sept. 1990) by Phil Holmes), then Moore & Webb's equally indispensable Pollen Analysis (reviewed by me in IOP Newsletter 47 (July 1992)). Now we can welcome a complete Trinity, as Erdtman's classic is now back in print, in an augmented second edition by Nilsson and Praglowski. In all three cases, it is `the same mixture as before' (for better or for worse), but more of it - and that is really all that palfobotanists familiar with the earlier versions need to know. Much more radical revisions have been undertaken in the preparation of the new editions of the other two books. In this case, the various accretions have not been incorporated into one seamless structure. One deleterious consequence is that references are given in different styles in different

sections, and there are several bibliographies. References, consequently, can be difficult or even impossible to trace. There is even a page reference (on p. 389) to a bibliography that has been moved from the place indicated (pp. 155-61) - apparently to page 389!

Erdtman's book was always the odd man out of the three. Indeed, it always was a bit odd and the oddity can perhaps be pursued back to Erdtman's earlier publications. The distinctive character is essentially simple in nature, and of great relevance to IOP members; for while the other two textbooks are firmly focused on Quaternary palynology in North-west Europe, Erdtman's compass was less parochial more abstract. In consequence the book is, in some respects, of particular interest to geological palynologists - for evolution and continental drift enforce a global perspective as the palfontologist retreats further into the distant past. In happy consistency with this, it is the only book of the three to give much serious attention to pre-Quaternary palynology (30 pp, 11 plates). In fact, one of the book's considerable attractions was (and is) the collection of supplementary reviews of other microfossils of relevance to palynologists. Thus this book offered the only readily accessible introduction to dinoflagellate studies - which re-appeared in an expanded form in Sarjeant's 1974 book on the topic. It is good to see it once more.

This, then, is probably the textbook for budding micropalfontologists. Is it sufficient in itself? Definitely not! The same considerations that make the Erdtman approach so appropriate for geobotanists also restrict it to the periphery of practical palfoecology. Indeed, it seems to exist in a time-warp, isolated from the advances (and pseudo-advances) of Quaternary palynology over the past three decades. This is A Very Bad Thing indeed, as some of the developments are of crucial significance to the future of geological pollen analysis. A student depending on this book alone would be semi-crippled. To know nothing about absolute pollen determinations, R-factors and isopollen maps might be unfortunate but not disastrous. To be ignorant of any preparation technique other than acetolysis - there are only three pages on the topic and a mini-hint on p. 325 - would be catastrophic for a geological pollen analyst. Maybe most applications of computer technologies and fancy statistics to palynological problems have been misdirected, or used sledge-hammers to crack nuts - but not all of them. I cannot find any reference to any such methods. Computers simply don't exist. Conversely, there is quite a lot of space devoted to electron microscopy, and in particular to TEM: yet, while palynology would undoubtedly be the poorer had the electron microscope never been invented, I think it would still have been very much the same discipline. An essentially dispensable topic is thus given more attention than an essential one (preparation techniques).

The sections on the relationship between palynology and taxonomy manage to combine being intriguing and fascinating (for the abstruse observations that spring to one's attention) and frustrating and maddening (for the necessarily enormous lacunf in the coverage). Quit one of the best bits. At the same time, despite discussions of intra-specific variation (p. 139), there is a frequent implicit acceptance that identification to the specific level is generally practicable (e.g. pp. 302, 339). Some Quaternary pollen analysts believe that they can identify certain cereal species by their pollen, but most have observed that the vagaries of the chemical environment in which the sample has lain - let alone the vagaries of chemical processing - make such fine distinctions quite untenable.

Geological palynologists would do well to heed the observations on nomenclature, and the tribute to Edward Lear, on pages 347-8! Of course, one of the delights of Erdtman's publications always were the illustrations. That is true of this volume. The photographs are numerous, well-reproduced, and accompanied by occasionally provocative captions. The drawings should remind the credulous and trendy that there are things that a computer will NEVER do as well as a human being. It's rather a pity that the opportunity wasn't taken to re-publish the excellent drawings of modern pollen types in his 1943 book.

All in all, therefore, this book can only be described as a mixed bag. It contains many excellent bits, which one is delighted to have available, and is very well-produced; but any further editions will call for major reconstruction. R.N.L.B. HUBBARD, London, UK

Paleoethnobotany.

Deborah Pearsall. Academic Press, 1989. xii + 470pp. $60

Why should geological botanists take an interest in archfological botany? No reason in particular; but if one is concerned with the behaviour of the plant kingdom over tens or hundreds of millions of years, and the phytogeographical consequences of continents separating and colliding, then it is not unreasonable to feel some curiosity about the exploitation of plants by man. After all, the results surround one almost everywhere one goes, and they are spectacular. The rather inconspicuous Zea mexicana has been transformed into a seminiferous behemoth cultivated in every continent other than Antarctica. Wheaten bread is a staple of the Americas, just as a European diet devoid of potatoes and tomatoes would now seem very peculiar.

Deborah Pearsall's Paleoethnobotany ought to tell one all about this. Unfortunately, it doesn't. At best, it tends to be a catalogue of recipes for preparing pollen samples, collecting plants, describing phytoliths, and so on. Little or no effort is made to draw the extant information into a coherent picture. Still more irritatingly, the author stresses the importance of integrating several lines of ecological evidence and the extra interpretational dimension that can emerge from such syntheses -and gives no examples of this whatever, whether from first-hand experience or from the literature. Pie in the sky. (Actually, it is true; but scientists should be in the business of disbelief, not credulity.)

So why bother to review a mediocre textbook on a topic of peripheral interest? Well, having curbed my natural urges for intemperate character-assassination and penned a discreetly critical review of this book for J. Nat. Hist., I was astounded to learn from an American friend that this volume was regarded as the cutting edge of archfobotanical research in North America. If that is so, then the blade is so blunt as to be closer to a cudgel. For once in a while, Europe seems to be miles in front of America. Any competent geological botanist ought to make mincemeat of the subject; so, if you have an opportunity to study plant remains from an archfological site, take it. Archfology isn't quite as simple a subject as some people sometimes think, but it is easy to pick up. You've already got the botany and the experience of fossilisation -

give it a bash: on the showing of this book, you can hardly fail to make a useful contribution.

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