IOP NEWSLETTER 6

INTERNATIONAL ORGANIZATION OF PALAEOBOTANY

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES
SECTION FOR PALAEOBOTANY
President : Dr. J. M. SCHOPF, U.S.A.
Vice President : Prof. E. BOUREAU, FRANCE.

Secretary : Dr. M. C. BOULTER
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APRIL 1978

CONTENTS

PLEASE MAIL NEWS AND CORRESPONDENCE TO YOUR REGIONAL REPRESENTATIVE OR TO THE SECRETARY FOR INCLUSION IN THE NEXT (AUTUMN 1978) NEWSLETTER.

IOP NEWS

MEMBERSHIP

At April 17th 1978 dues from 168 palaeobotanists had been received for the current year. Money is hopefully still to be obtained from another 50 members who paid dues for 1977, and this newsletter will be sent to them with the aim of attracting payment. IOP is still very short of money and is surviving as a distributor of this international newsletter through the generosity of the regional institutions which pay much of the postage for our communications. A separate sheet is available with this newsletter for distribution to your friends who might be prospective members; please pass it on to suitable people.

REGIONAL REPRESENTATIVES

Since the beginning of this year two palaeobotanists have offered to represent their countries as regional representatives for IOP. As is the role for all regional representatives they will be responsible for appropriate membership and newsletter distribution tasks; also, please write to them in the first instance if there is any matter of international palaeobotanical communication with which IOP may be able to help. The new representative for India is Prof B.F. Tridedi, Botany Department, Lucknow University, and for Japan, Prof T. Tanai, Geology Department, Hokkaido University, Sapporo.

RELATIONSHIP WITH ICP

For many palaeobotanists palynology is simply a branch of their subject dealing with a single organ rather than the whole plant. For others, it is seen (in the opposite extreme) as an adjunct to hydrocarbon exploration. The impact of palynology on palaeobotany in the last twenty years has been considerable and on the whole has been greatly beneficial to our science.

At the Seattle International Botanical Congress in 1969 the desirability of developing a formal link between IOP and the organising body of the International Palynological Conferences was publicly debated for the first time. It became clear that although many favoured such an alliance, others in both groups were opposed to it. It was hoped that the issue might have had further consideration at Leningrad in 1975, but the whole problem of IOP's constitution and future dominated the business meetings.

The palynologists have now formalised their status, in the International Commission of Palynology (ICP). The status of both IOP and ICP within the Division of Botany of IUBS is explained on page 2 of IOP Newsletter 5. IOP is in the fortunate position of having as its President one who is distinguished for his contribution to both palaeobotany and palynology, and it seems a very appropriate time to reopen consideration of a move towards some formal affiliation between palynologists and palaeobotanists. Our German colleagues have set a strong example in the formation of the virorously active Arbeitskreis für Paleobotanik und Palynologie. The opportunity for the two international bodies to consider the matter will arise at their respective international congresses in Cambridge 1980 and Sydney 1981. It is most important that the issues involved be given early consideration by all concerned, and that they should have a full hearing at these two meetings; an early canvassing of views is clearly desirable. Already, an important number of senior palaeobotanists have expressed their sympathy for some kind of co-operation, and some have written to support the idea of a full merger. In the sense that outside the function of the Congresses each body is particularly concerned with the production of a newsletter, there is every academic and administrative reason to join the two completely. On the other hand, many specialists are not concerned to encroach on the work of others in what can be very diverse fields - on the face of it, Quaternary and Recent palynologists have little need to be associated in terms of international organisations with those studying Silurian macrofossil plants.

It is planned that during both the ICP Cambridge 1980 and the IOP Sydney 1981 meetings there will be a chance for formal discussion of the consequences of such a partial or complete union. To increase efficiency at these meetings, and to open the debate to as wide an audience as possible, please write with your comments to the secretary of IOP or of ICP (Dr G. Norris, Department of Geology, University of Toronto, Toronto, Ontario M5S 1A1, Canada). These will then be transmitted to the membership within the newsletters.

IOP QUESTIONNAIRE

Through responses to the item in IOP newsletter 5 page 2, the result of the late Hans Tralau's questionnaire on research interests of IOP members has been sent to Dr O. Rösler, Universidade de San Paulo, dpe-041-78-cn, Caixa Postal 20.899, Sao Paulo, Brazil.

ADDRESS PRINT-OUTS

Computer print-outs of the names and addresses of 179 palaeobotanists who have joined IOP are available from the secretary free of charge for all who have paid their 1978 dues. East European palaeobotanists can receive copies without any central membership charge.

WEALTHY PALAEOBOTANISTS?

A long and individually typed letter has been received by the secretary from the London Convention Bureau, trying to persuade us of the advantages of holding a meeting in London. Part of their argument reads: "The value in monetary terms represented by overseas delegates' expenditure is quite considerable - they tend to spend four times as much as the average tourist."

FORTHCOMING MEETINGS

AMERICAN PROGRAMS OF PALEOBOTANICAL INTEREST, SPRING 1978.

A symposium on "Nonmarine Stomatolites" was presented at the Oklahoma City convention of the American Association of Petroleum Geologists (AAPG) on Wednesday April 12, 1978. Eleven papers discussing stromatolitic environment, algal structures and mode of deposition were scheduled. Abstracts of these papers are given in the AAGP Bulletin, Vol. 62 (3), March 1978.

In addition to scattered papers of paleobotanical interest at regional meetings of the Sections of the Geological Society of America (GSA), the following are of special interest:

A "Mazon Creek Symposium" is planned for the 12th Annual Meeting of the North Central Section at Ann Arbor Michigan, Monday May 1, 1978. Twenty-one papers are scheduled. Four papers deal with the Mazon flora for which the locality has been particularly noted, but most of the papers are concerned with the remarkably diversified representation and preservation of animal fossils as disclosed by recent collecting in an off-shore location. The Mazon biota may be the most completely known of any assemblage within the Pennsylvanian. Abstracts are published in Vol.10 (6) of GSA Abstracts with Programs, March 1978.

Four paleobotanical papers are being presented at the Provo meeting of the Rocky Mountain Section on Saturday, April 29, concerned with the Pilot Rock flora of Oregon, Eocene conifers from Amethyst Mt. in Yellowstone, Paraphyllanthoxylon, and palynology of Goose Greek lignite of southern Idaho. Abstracts are given in GSA Abstracts with Programs, Vol. 10 (5), March 1978.

PALAEOBOTANICAL SECTION OF THE B.S.A.

The annual meeting will take place at the State University in Blacksburg, Virginia, from June 25th - 28th 1978. The first day consists of a field trip to four Mississipian localities in the Price Formation near Blacksburg; it is expected that specimens of Lepidodendropsis, Protostigmaria, Chlidanphyton, Triphyllopteris Lagenospermum and Gnetopsis will be available for collecting. During the last three days, 49 reports will be presented covering a whole variety of palaeobotanical topics. The annual Palaeobotanical Section luncheon will be at noon on June 27th, and that evening there will be an informal gathering 'for shop talk' at the Marriott Inn. The organisers explain that 'to get things started Dr. Herman Becker and Dr J.M. Schopf will answer questions and discuss topics put to them by the rest of the Section. Thus we look forward to a lively session and would certainly welcome visitors from across the Atlantic.'

AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS, Texas, 1979

The 12th annual meeting of the AASP will be held in Dallas, Texas from October 31st to November 3rd 1979. A symposium entitled, "Kerogen Analysis - Visual and Geochemical Relationships" will be held on October 31. The formal technical session with a central theme, "Future Challenges and Innovations " will be on November 1-2. A field trip to the Dinosaur Valley State Park, Glen Rose, Texas, will be conducted on November 3. The symposium and the central theme are timely and it is felt that the program will be of interest and benefit to geologists and geochemists in addition to palynologists. Further details can be obtained from the co-chairman of the local committee, Dr. H.M. Simpson, Atlantic Richfield Company, Executive Plaza, P.O. Box 2819, Dallas, Texas, 75221, U.S.A.

2ND INTERNATIONAL SYMPOSIUM OF FOSSIL ALGAE, Paris, April 1979

The first circular for this symposium was available in February 1978 and gives details of the plans for lectures, excursions and expenses. The topics will include phylogeny and evolution, palaeoenvironment and palaeoecology, and biostratigraphy. There will be three excursions: southern Jura (Upper Jurassic algae), Paris basin (Paleogene Rhodophytes, Dasycladales and Charophytes) and the south of France (marine and lacustrine beds with algae). The second circular will be available during May 1978. For further details write immediately to Professor A.F. Poignant, Universite P. & M. Curie, Laboratoire de Geologie des Bassins Sedimentaires, 4, Place Jussieu, 75230 Paris cedex 05, France.

9TH INTERNATIONAL CARBONIFEROUS CONGRESS, Urbana, Illinois, May 1979.

A symposium on Carboniferous algae will be held at this congress, and Dr D. Toomey, Cities Service Company, Box 1919, Midland, Texas 79701, USA requests that titles for papers be sent to him as soon as possible. Another symposium on phytogeography at the end of the Cretaceous is planned; hopefully more details will be included in future newsletters

FIFTH INTERNATIONAL PALYNOLOGICAL CONFERENCE 1980, Cambridge, England.

The Fifth International Palynological Conference will be held in Cambridge, England, 29th June -6th July, 1980. The Organising Committee under the Chairmanship of Dr. N.F. Hughes, has already held two meetings. The first circular will go out in May 1978. The circulars will be mailed on the basis of appropriate Society membership lists, but if anyone fails to receive one within a reasonable period and wishes to do so they should write to the Conference Secretary, Mrs G.E. Drewry, Geology Department, The Sedgwick Museum, Cambridge.

INTERNATIONAL BOTANICAL CONGRESS, 1981, Sydney, Australia.

The Sydney congress organising committee has recently issued details of its early proposals for items of direct interest to palaeobotanists. This has been done now so that comments and constructive criticism can be received before the final plans are made. The information has been made available by the IOP regional representative for Australasia Dr. J. Douglas, to whom all comments should be directed as soon as possible.

A. PRELIMINARY LIST OF TOPICS

1. Origin of the Angiosperms: fossil evidence
   invited papers only
   one half-day session
2. Evolution of the Pteridospermae (some local flavour)
   skeleton of invited papers plus some other contributions
   one half-day session
3. Precambrian botany and the origin of life
   structure undetermined
   one half-day session
4. Palaeozoic palaeobotany
   offered papers
   one half-day session
5. Mesozoic palaeobotany
   offered papers
   one half-day session
6. Tertiary palaeobotany
   Offered papers
   one half-day session
7. Quaternary palaeobotany
   offered papers
   one half-day session

These four sessions are intended to attract the 'unforeseen' individual papers and to bridge the micro-macro dichotomy in palaeobotany. It is intended that they might be reorganised as a result of the papers offered and selected, perhaps merged or grouped around specific topics.

8. Global plant distributions at the close of the Mesozoic
   invited papers only
   one half-day session
9. The plant geographical results of the Quaternary breakdown of barriers
   skeleton of invited papers with some other contributions
10. The mechanism of migration and the ecological characteristics of successful migrants
   skeleton of invited papers with some other contributions
   two half-day sessions
11. The integrity of vegetation types under environmental stress (Quaternary, historical and experimental evidence)
   invited papers followed by structured discussion and short offered papers
   two or more half-day sessions
12. The synthesis of pre-Quaternary vegetation types and the development of provincialism
   structure undetermined
   one half-day session
13. Pre-agricultural ethnobotany: ecology of plant domestication, the environments of early plant utilization and modern analogues
   skeleton of invited papers plus some other contributions
   two half-day sessions
14. Methods in the study of plant domestication
   offered papers only
   one half-day session
15. Fossil, archeological and historical evidence for development within agricultural systems
   skeleton of invited papers plus some other contributions
   two half-day sessions
16. The emergence of non-grain crops
   skeleton of invited papers plus some other contributions
   two half-day sessions
17. Man's influence on plant distributions: introduction, hybridization, destruction and habitat modification
   structure undetermined
   two half-day sessions
18. The development of the plant-geographical pattern of Australasia
   (plenary) morning session of four invited papers, followed by (sectional) structured discussion in the afternoon
   two half-day sessions
19. The techniques of historical botany
   offered papers only
   one half-day session
20. The history of botanical exploration in Australasia
   structure undetermined
   one half-day session
21. The development of plant geographical concepts
   structure undetermined
   one half-day session
22. Aspects of Chinese historical botany
   structure undetermined

B. PROPOSED MAJOR EXCURSIONS

1. Pre-congress field trip

The tentative schedule is to start at Brisbane examining Triassic and Jurassic plant localities, and to proceed through rainforest areas to a Gold Coast beach resort. Nymboida (Triassic) localities would then be examined, as well as scenic areas and Nothofagus forest. On about the fourth day Armidale and Tamworth Devonian localities would be visited, followed by Mudgee Permian, the Blue Mountains and finally Sydney and the Congress after a six day excursion.

2. Day trips

There will be one day trips during the Congress to the Newcastle Permian and Carboniferous areas, then the northern Sydney Triassic.

3. Post-congress field trip

This six day trip will commence at Melbourne, and the first day will be spent in

the Early Tertiary brown coal fields of Central Gippsland. Then to the highlands examining the Baragwanathia flora, with old mining towns & Eucalyptus regnans forest as side attractions. The excursion will then proceed to Western Victoria, through classical but worked out Permian plant localities, the Grampians wild flower area, and the Western District volcanic plain with Recent volcanic features. The fifth day will be spent in good Albian plant localities and the fern gullies of the Otway Ranges, proceeding via the Anglesea brown coal measures and scenic Ocean Road, to return to Melbourne.

As well as these official excursions, the committee will be pleased to facilitate visits of individual delegates to areas of particular interest, but would like to be notified of suggestions as early as possible. For any item of Congress palaeobotanical interest contact IOP Australasian regional representative Jack Douglas, or Rod Gould, Department of Geology, New England University, Armidale, New South Wales.

NEW DUTCH OIL PAINTING

A new reconstruction of the floral landscape of the Dutch Tiglian has been unveiled in the Rijksmuseum van Geologie en Mineralogie at Leiden. The oil painting measures 4m x 2m and gives the detail of 30 species of plants, including 5 Tertiary relics. The scientific advisor was Dr H.G.W.G. Schalke, National Museum of Geology and Mineralogy, Hooglandse Kerkgracht 17, Leiden, The Netherlands, from whom postcard copies can be obtained.

VALIDITY OF MICROFORM PUBLICATIONS

The International Code of Botanical Nomenclature 1972 states in Article 29 that "publication is not effected by .... the issue of microfilm made from .... type-scripts or other unpublished material." This statement can only be interpreted as an invalidation of taxa first described in a microform publication. I think that times have changed and that this ban on microform publications has to be reconsidered.

The Geological Society of America (GSA) has just announced that the major part of its Bulletin will appear on microfiche only, starting January 1979. The GSA Bulletin is one of the leading journals in the earth sciences, and other journals will certainly follow its example. The reason for this change is the drastic increase in printing costs, which is responsible for ever increasing annual dues, page charges for the authors, and backlogs of manuscripts. Publication on microfiche will reduce cost so dramatically that the negative effects cited above will be eliminated. This in itself is worth the slight inconvenience of having to use a reader.

We should recognise that the microfiche produced in a large run of identical copies is today a medium of publication and we should change the ICBN before it begins to obstruct progress.

- H.W. Pfefferkorn, Department of Geology, University of Pennsylvania, Philadelphia 19174, USA.

CHRONOPHENETIC RELATIONSHIPS OF FOSSIL TAXA

A new publication: "Relations chronophenetiques entre taxons fossiles" has recently been published. It is the work of Marcel V. Locquin and is of interest to palaeobotanists for its taxonomic and stratigraphic treatment of fossil fungi from the Palaeozoic and the Precambrian. Comments are made on the relationship between the fossils and changing atmospheric components, and much of the information is summarised in table form. There are plans to review this work in a future edition of the IOP newsletter, but in the meantime copies of the work can be obtained from: Dr M.V. Locquin, Laboratoire de Micropaleontologie, Ecole Pratique des Hautes Etudes, 8 rue Buffon, 75005 Paris, France, for ten Francs.

NOMENCLATURE

In response to the secretary's introductory item on NOMENCLATURE on page 9 of IOP Newsletter 5, Dr J.M. Schopf has written: "I do think your advice for Proposals for the I.A.P.T. Committee to be submitted to Taxon 'as soon as possible' is entirely premature. The new edition of the Code has not yet been distributed - it is in page proof and will be published right on schedule this spring. Until people have consulted the new Code they scarcely can have any idea of what they are proposing to emend.

"I think it would be very appropriate and sensible for you to make some correction about this advice in the next Newsletter 6. You should also call attention to the article in Taxon (volume 26, page 309, May 1977) on "Advice on proposals to amend the Code". I have served on the Committee for Fossil Plants for a long time and am fairly sensitive to proposals that are very poorly put together and chiefly serve to waste time. Some palaeobotanists seem to think that they are the only ones who have ever submitted a proposal and do not take the time or trouble to provide essential data for the Committee to handle. It would be easy to look in back numbers of Taxon to see the proper way in which this is done."

BIBLIOGRAPHIES

REPORT ON BRITISH PALAEOBOTANY AND PALYNOLOGY

The latest edition of this report covering 1976 and 1977 is now in press. It is hoped to mail it to all who have subscribed before the end of April. It includes details of over 160 papers published during the period and records the current research and addresses of over 100 workers engaged in palaeobotanical or palynological research in Britain. Anyone who normally exchanges offprints with the Botany Department at Birkbeck College will receive a free copy. Anyone else who wishes to obtain this report whould send 50p (UK subscribers) or US $2.00 (overseas subscribers) as cheque payable to 'The Botany Department', Birkbeck College, Malet Street, London, WC1, England.

WORLD REPORT ON PALAEOBOTANY

The Vice President of IOP Prof E. Boureau has written the following comments:

Both the 'World Reports' and the subsequent 'Regional Reports' were of considerable help to palaeobotanists, particularly those who are geographically isolated. Nevertheless there are still too many articles published without a full bibliography particularly of literature in foreign languages or that is very old. It is not uncommon to find that some of the older periodicals are passed over in complete silence so that facts are often announced as being new or unpublished when they have already appeared a long time ago in old publications in other languages. Though it is an intense and often difficult effort of documentation, the collection of such references is more than ever necessary. When the IOP was founded in 1954 it was one of its aims to contribute with such bibliographic aid.

In the first statutes of this organisation, published jointly in German, English and French, and which appears in the volume of Reports of the 8th International Congress Paris, 1954 (8e Congrès C.R.Seances, Rapports et Communications déposés lors du Congrès dans les Sections 3, 4, 5 et 6, pp 112 - 122, Paris, 1954), it states that in particular the aims were:

- to encourage international cooperation in palaeobotanical studies
- to establish liason betweeen general meetings of palaeobotanical branches in the different international Botanical Congresses and to put their resolutions into effect
- to ensure a permanent liason between palaeobotanists and palaeobotanical organisations in every country
- to ensure the regular publication of reports on international Palaeobotanical literature and of all other activities aimed at the development of palaeobotany, both pure and applied.

Let us remember that because of the earlier situation the 'World Reports on Palaeobotany' gave lists of addresses of palaeobotanists beside their bibliographic references, and that these were being constantly brought up to date. It must be remembered that O.M. Selling published "Report I on European Palaeobotany" in 1948 and assembled references from 1939 to 1947. In 1950 his "Report II on European Palaeobotany" covered the years 1948 to 1949. It was only in 1956 that the first "World Report on Palaeobotany" was published, the first volume of which covered the years 1950 to 1954.
Finally, one must establish on the other hand that many palaeobotanists do not always adhere to the IOP. It is essential that everyone is aware that they cannot remain isolated and that they need to cooperate in every respect in the large international society of palaeobotanists, to follow the common objectives that are particularly dear to them.

(This item has been translated from the French by the monolingual secretary; xerox copies of the French language original are available on request.)

OTHER INSTITUTIONS

INTERNATIONAL ASSOCIATION OF ANGIOSPERM PALAEOBOTANY

The proceedings of the meeting of IAAP in Czechoslovakia during June 1977 (see IOP Newsletter 4 for the report of the meeting) was published in March 1978 as volume 30 of the Courier Forschungsinstitut Senckenberg. Details can be obtained from Dr F. Schaarschmidt, Forschungsinstitut Senckenberg, Senckenberganlage 25, Frankfurt 1, West Germany.

ASOCIACION LATINAMERICANA DE PALEOBOTANICA Y PALINOLOGIA (ALPP)

Bulletin number 5 was published in February 1978 and includes papers on the fossil plants from Brasil, Chile, Mexico and Argentina. The May 1978 edition will include the 1977-8 Bibliography and the first part of the census of all palaeobotanical and palynological collections of Latin America. Details can be obtained from Prof S. Archangelsky, CIRGEO, Velasco 847, 1414 Buenos Aires, Argentina.

The first meeting of the Latin American Congress of Palaeontology and Biostratigraphy took place from April 2nd - 6th 1978 in Buenos Aires. There were two symposia on geological boundaries in South America - the Carboniferous - Permian and the Jurassic - Cretaceous. About 30 papers on palaeobotanical and palynological topics were included. The proceedings of the meeting will be published in two volumes, for which orders should be sent to II Congreso Argentino de Paleontogía y Biostratigrafíay I Congreso Latinamerico de Paleontología, Maipú 645, 1er piso, 1006 Buenos Aires, Argentina.

INTERNATIONAL GEOLOGICAL CORRELATION PROGRAMME

Members of the working groups of projects 42 (Upper Paleozoic of South America) and 145 (West African Biostratigraphy and its Correlation) met at Buenos Aires in April 1978. The palynology working group of project 124 (N.W. European Tertiary Basins) met in Brussels during March 1978 and plans to report on its work in London during November 1978.

PALAEONTOLOGICAL ASSOCIATION LONDON

Palaeobotany has at last been acknowledged on the front cover of Palaeontology, after a sucession of the inevitable trilobites and ammonites. The present cover

picture (Palaeontology 21, 1, February 1978) shows a reconstruction of the fertile apex of Asteroxylon mackiei based on the under-publicised work of Dr A.G. Lyon, who demonstrated its basically lycopod-like organisation. The illustration is from a model in a new exhibit on the Rhynie flora in the Royal Scottish Museum, Edinburgh.

'FRIENDS OF THE ALGAE'

At the Geological Society of America meeting in Denver, Colorado in November 1976, thirty algal enthusiasts met under the auspices of the 'Friends of the Algae' to discuss mutual interests and the current state of algal research. Since then the group has appointed a president, Dr J. Wray, and a vice-president, Dr D. Toomey, and has produced its first newsletter which is called 'Friends of the Algae'. Among other items the first edition contains a list of people working on Recent and fossil algae, and a brief description of their work. It also lists forthcoming events, and is due to be distributed once a year. For further details write to Dr D. Toomey, University of Texas, Odessa, Texas 79762, USA.

BRITISH MICROPALAEONTOLOGICAL SOCIETY (BMS)

A symposium of the BMS entitled 'The Micropalaeontology of Shelf Seas, Fossil and Recent' is to be held at the University of Hull, England, from July 19 - 25th 1980 (following the IGC meeting in Paris). The preliminary programme is:

July 19 & 20 various field excursions including the Carboniferous of northern England, the Jurassic of Lincolnshire and the Cotswolds and the collection of living material.
July 21 & 22 Sessions for the reading of papers.
July 23 Local excursions to Mesozoic localities
July 24 & 25 Sessions for the reading of papers.

There will be an accompanying demonstration during the meeting and it is proposed to publish the proceedings of the symposium. Further details can be obtained from Dr M.D. Brasier, Geology Department, The University, Cottingham Road, Hull HU6 7RX, England.

The 'Paleoservices Award' for 1977 has been made to the author of the paper: 'Distribution de Conodontes dans le Dinantien de la Belgique' by E. Groessens, Int. Symp. Belg. Microp. Limits Namur 1974 nos. 16 - 17, 209pp., Ministry of Economic Affairs, Geological Survey of Belgium. Details of the Paleoservices Award for 1978, which carries a substantial financial prize, can be obtained from The Secretary of BMS, Department of Geology, University of Sheffield, Sheffield S1 3JD, England.

INTERNATIONAL PALAEONTOLOGICAL ASSOCIATION

The third edition of 'Directory of Palaeontologists of the World' was published in January 1978. It is compiled by E. Gerry and is available from Global Book Resources Ltd, 109 Great Russell Street, London WC1B 3ND, England,; price £6.50. Material for this third edition was received during 1971 to 1973 and includes names and addresses of palaeontologists in the Soviet Union for the first time. There are about 6,000 entries which are listed alphabetically by surname and are cross referenced with a taxonomic and geographic index.

GONDWANA PERMIAN PALYNOLOGY

'The Biostratigraphy of the Permian and Triassic, Part 3' by J.M. Anderson, 1977, was reviewed in IOP Newsletter 5. The following additional comments have been received from Dr N.F. Hughes, Sedgwick Museum, Cambridge, England:

This fine monograph results from a bold and very welcome decision by the author to construct a reliable stable taxonomy and data base that could be used throughout Permian Gondwana, at the same time as he was re-examining and greatly amplifying knowledge of Northern Karoo palynology.

The author's more controversial activity begins with his selection and photographic illustration of 'populations'. A 'population' is as large a set of specimens as possible or convenient, selected from a single assemblage of the Karoo Permian (single sample), and taken to represent a single breeding gamodeme by adequately indicating the range of natural variation encountered. 'In view of the present confused state of Gondwana Permian miospore taxonomy, the 250 populations were arranged into specific taxa independent of earlier conclusions'. The degree of morphological overlap between 'populations' that was considered to fall within the compass of a single genus was assessed as 'none, slight, intermediate or extensive'; adjacent populations with extensive overlap were considered conspecific. In the light of this delineation of Karoo species, all illustrations from 253 Gondwana Permian published references were compared with the prepared catalogue of 'populations'; most 'Gondwana' species could be accommodated in the 133 Karoo species, and others were clustered. The best preserved and most adequately represented Gondwana 'population' available was selected as 'reference population'; in only four cases was it possible to nominate such a 'reference population' from the literature. The (new) description of the species was then based on the 'reference population' alone, emphasising characters pertinent to distinction of species in the genus concerned. The names were selected according to the rules of priority from those originally applied to specimens within the hypodigm of the (new) species.

This procedure is of course a sharp change from tradition that is fully envisaged by Anderson but only as an interim measure. He suggests that 'a stable taxonomic scheme can be achieved only through internationally co-ordinated effort according to a standardised procedure----------more explicit than are the ICBN rulings at present'. He then makes some precise proposals about 'populations' (which could be palaeodemes or biorecords), about species, and about genera. These proposals merit very serious consideration by all palaeopalynologists concerned with stratigraphy, with of course the thought that anything done here has to be equally applicable to all fossils.

Apart from this major controversial action, normal criticisms are minor, as for example in preparation of material. The author describes his methods in some detail but does not say how long the critical oxidation sector of the treatment lasted; he implies that the interest was to clear other organic matter although to judge from his photographs he must have controlled closely the state of the palynomorphs themselves. Perhaps as he was not yet using SEM, this did not prove to be a serious matter.

The monograph is undoubtedly a lavish production and other authors and their institutions may feel that they cannot compete. The lesson however is not in the expense of production but in the careful method of presentation and handling of data which one hopes will inspire competition. These presentation principles apply equally to data that is, instead of being printed in a publication, stored or deposited for retrieval on call; such a mode of 'publication' may well soon be the fate of all our systematic works.

For all these reasons this excellently produced and most efficiently organised new source of Gondwana information should be in all palynological and indeed all palaeontological libraries.

Dr Anderson has posed sharply a central problem for all palaeopolynologists, who one hopes will be stimulated by this presentation and grateful to the author for his courage. The work is so carefully done and so obviously useful that there will be no going back. Doubtless other ideas and other solutions to the problems raised will emerge in international discussion, but the whole question of data handling has been advanced by this work.

BOOK REVIEWS

MEERE UND LÄNDER IM WECHSEL DER ZEITEN DIE PALÄOGEOGRAPHIE ALS GRUNDLAGE FÜR DIE BIOGEOGRAPHIE. E. Thenius. 1977. Springer, Berlin, Heidelberg, New York. 200 pp., 74 figs., £5.30

This small popular book is dedicated ALFRED WEGENER, whose centenial birthday is imminent (1980). His theory of continental drift which became recognised more and more during the last decade in the new version of Plate Tectonics is the heart of this book.
The very good introduction to the basis and the methods of Palaeogeography represents the major significance for Palaeobiogeography. Therefore biogeographical appearances and problems are extensively discussed. Beyond the different fields of Palaeogeography the book describes related research such as Sedimentology, Climatology, Geomorphology, Geophysics and Palaeoastronomy.
Starting from the youngest geographical and climatological changes in historical and prehistorical time, and from the distribution of living plants and animals, the author demonstrates on the basis of the Plate Tectonics the origin and the movement of continents and oceans during the history of the earth. He also describes the different theories of the reasons for the glacial periods. There are descriptions of many examples from the plant kingdom, as in connection with the origin of coal and the distribution of plants and climatological problems. But unfortunately a palaeobotanist will find many inadequacies. For instance: Alethopteris is assumed to be a real fern; in the Gondwanaflora the Lepidophytes were totally absent (with the exception of a questionable Cyclodendron, Lycopodiopsis is not mentioned) and Metasequoia is said to have been indigenous in the European Tertiary, as was Glyptostrobus.
Other problems are described more completely, such as disjunction of the Taxodiaceae. But the important views on the close relationships between the European Tertiary flora and the living flora of SE Asia, due to the repeated fluctuation of the climate during the Tertiary (Axelrod, Mai), are not mentioned. Nevertheless I find the book very instructive, especially for a palaeobotanist who wishes to get an over-view of the recent knowledge and theories of the fields of palaeogeography and palaeobiology, as well as their methods and problems.

F. Schaarschmidt, Frankfurt, West Germany.

EVOLUTION AND BIOSTRATIGRAPHY. V.A. Krassilov, 1977. Nauka, Moscow. 256pp., 5 tables, 41 text-figs, 1rouble 45 kop.

As far as I am aware, Krassilov's book is the only source in the world literature where the reader can find a very full review of the modern ideas linking stratigraphy and biological evolution. In the preface Krassilov argues that in spite of a very close interweaving of interests, there is no full harmony between evolutionism and stratigraphy. On the contrary, as early as in Darwin's time serious conflict arose which could not be regulated without discrediting either stratigraphy (Darwin's theory of imperfection of the geological record) or Darwinism (the sudden appearance of higher taxa). This has resulted in biologists and evolutionists having, as a rule, very superficial ideas on the palaeontological records, and in stratigraphers not always being interested in the modern state of biological disciplines of vital importance to them. Nowadays a swift re-evaluation of the conceptual basis of both geology and evolutionary biology is needed to prevent an irreversible break between them. If a new synthesis of ideas and their assimilation by the theoretical biostratigraphy will not be attempted, however imperfectly, a dangerous situation will result.
Krassilov's book may well be estimated as a very successful attempt at such a synthesis. After two historical chapters (devoted to evolution and biostratigraphy) he outlines fundamental principles of stratigraphical classification. Here he raises the main alternative: chronostratigraphy (sensu Hedberg) or ecostratigraphy. The latter term has been variously treated in the literature. Krassilov's understanding seems to be the most promising. He does not mean a trivial palaeoecological observation used for

stratigraphical purposes, but a very broad ecosystem approach to stratigraphy. For him every stratigraphical boundary is an ecosystem event instead of an arbitrary level of appearance or disappearance of some fossil taxa. On the other hand, evolution is not an abstract phylogenetical process occuring in an ideal space, but an irreversible ecosystem transformation where climatic, genetic and other factors intergrade and interact. In other words, the concept of ecosystem links two main components of the book - biostratigraphy and evolution.
Krassilov's main ideas were recently published in 'Lethaia' (1974, vol. 7 : 173-179). Now they are given fully. The breadth of the approach may well be seen from a simple enumeration of the chapters and minor subdivisions of the book: morphological, caryological and biochemical phenoclines, recapitulation, biogeographical analysis, chronoclines, imperfection of records, quantuum evolution, pachyphyly, parallelism, covergency and reticulation, orthogenesis, progress, periodical nature of both geological processes (tectogenesis, transgressions, climate) and organic evolution (metagenesis, polymorphism, molecular clocks), specification (allo-, para-, and sympatric models), megaevolution, syngenesis, stratotype, reference beds, catenas and cliseries, concept of palaeobiospheres, stratoecotones etc.
I cannot say that I like everything in the book. For instance, my attitude to restore in detail both paths and factors of evolution in the geological past is much more pessimistic than Krassilov's. I do not agree with his treatment of concepts such as time and homotaxis. But I think that a book containing only undisputable data would not be a scientific one but would be a telephone directory instead.
This book should be translated into English.

S.V. Meyen, Moscow, USSR.

THE MEANING OF FOSSILS 2nd Edition. M.J.S. Rudwick, 1977. Neale Watson Academic Publications Inc., New York. 287pp., $6.95 paper, $15.00 cloth.

"The Meaning of Fossils" was first published in 1972. This issue that I am reviewing claims to be a "second edition", but it is really a facsimile reprint of the first edition, with a new preface and a new publisher. As the author admits, nothing is changed but for the correction of a few misprints "and one or two small factual errors". It is printed in America rather than in Britain, on paper that is thicker and rougher in the original, and the paper-bound version that I have is not properly bound at all but stuck together in that infuriating style inappropriately called "perfect" - and my copy is already falling apart.
The second edition is no improvement, then, on the first. But at least the need for another printing shows that it has sold well. And so it should, for this book does not only appeal to historians of science, it has something important and interesting to say to palaeontologists. The subtitle is significant. "Episodes in the History of Palaeontology". Some reviewers of the first edition were apparently critical of its episodic nature, for Rudwick spends most of his new preface defending himself. There is no need for defence. The structure of the book is in many ways its strongest point. There are five chapters, and each is a separate episode. Each starts with an historical event which sets the scene. The first in 1565, the second in 1666, the third in 1797, the fourth in 1829 and the fifth in 1857. In each of these five periods, the author shows how palaeontology was used for a particular purpose, to test the theories and suppositions that formed the paradigms of the period. Viewed in this way, the history of palaeontology has a fascination that is exciting. The study of fossils can be seen to have a pronounced effect on what Rudwick calls 'new science'. It is a record then of five 'revolutions', when palaeontology played a crucial part in the overthrow of old ideas and the adoption of new.
The first chapter deals with the Renaissance and with a background of Neoplatonism. The term 'fossil' at that time included any 'figured stone', and was applied equally to minerals and to organic remains. 'Natural magic' was regarded as an important property of 'things dug up'. To the followers of Aristotle, any resemblance between fossils and living animals and plants was laid at the door of a 'moulding force'; a theory of spontaneous generation suggested that they were the product of growth, in situ, maybe initiated by some form of seed, which in water would generate a fish, but in rock would generate a form made of stone. Others believed that fossils recorded the remains of Noah's flood, and were testimony of its universality.

In chapter 2 we find that, one hundred years later, the same theories are being debated. By now the infant Royal Society had been formed in Britain. Before, the centre of scholarship had been firmly on the continent, and especially in Italy. Now, new ideas, although often still emanating from Italy, were debated all over Europe. Rudwick especially examines the work of Steno, a Dane employed in the Experimental Academy of Florence. Steno's ideas were developed or opposed by a number of Fellows of the Royal Society, by Hooke, and Lister; by John Ray, James Ussher and John Woodward. These ideas, although often violently antagonistic to each other, gave rise to a new synthesis culminating in Buffon's great Histoire naturelle and its supplement, Des Epoques de la Nature. This was a true theory of the Earth, conceiving seven epochs, one for each day of the scriptural account. "Beyond the epoch of man there stretched a long earlier development, which in principle it was possible to reconstruct by deciphering the clues of rocks and fossils."
With Chapter 3 come Cuvier and Lamarck, Hutton and Buckland, revolution and extinction. It is an exciting chapter, in which the theory of catastrophism begins to take shape. It leads naturally into Chapter 4, in which the ideas of Lyell, and the steady state, conflict not only with those of the catastrophists, but also with Robert Chambers and his Natural History of Creation, an account of evolution that was laughed out of court by men like Thomas Huxley and Hugh Miller, although it was later to prove immensely important as a source of inspiration for budding naturalists like Wallace and Bates. The chapter finishes with an intriguing account of Owen's theory of archetypes.
The final chapter is appropriately an account not only of the theory of evolution, but of the establishment of various evolutionary 'laws'. This chapter is very well worth reading. It has much application to controversies that today still rear their ugly heads. This was the time when 'gradualism' and 'punctuation' were first debated in detail as evolutionary mechanisms, as were problems of the teleological control of evolutionary directions. The chapter closes with some mention of the influence that the theory of evolution had, via Herbert Spencer, on the philosophy of materialism.
This book is immensely satisfying; it is much more than that: it is invigorating and stimulating. Sometimes I wish that Rudwick had written a sixth chapter, and dealt with palaeontology today. But then I think again, and realise that he was wise to stop where he did. For it is for each of us, his readers, to write that final chapter. What has palaeontology to say to science now? What theories should be tested, questioned, contravened? What new laws lie just hidden round the corner, laws which might well influence the future of man, the future of life, the future of the universe itself? How can palaeontology be used to explore new ideas, new theories? Surely the answer is here, in Rudwick's book. It is through our fossils that we can read the history of life. They give us the data we need to armour us for controversy and debate. And it is only through argument that new ideas are born. Rudwick's treatment is above all the history of argument. It can be highly recommended to every lover of fossils who wants to think about what the fossils mean.

P.C. Sylvester-Bradley, University of Leicester, England.
(This review was first published in the March 1978 Palaeontological Association Circular, and is reproduced here with thanks.)

CHEMICAL EVOLUTION OF THE EARLY PRECAMBRIAN Ed. C. Ponnamperuma, 1977. Academic Press. 214 pp., £11.40.

This book is the proceedings of the second colloquium organised by the Laboratory of Chemical Evolution of the University of Maryland, USA, held in the autumn of 1975. As would be expected from its title, the book presents an interesting review of chemical evolution theory as it may apply to the Precambrian. A colloquium that sets out to bring together well-known geologists, chemists and biologists to attempt to answer such questions as: "When did life begin?", "Is there any evidence for prebiotic processes on the earth?", "What was the origin and composition of Precambrian atmospheres?", is an important event.

Such a publication will be read enthusiastically, but at the same time must be critically assessed and seriously evaluated, since Chemical Evolution Theory is now at the stage where it can be tested experimentally. It is no longer a series of carefully designed subjective laboratory experiments, as we are now able to examine samples of early Precambrian rocks (up to 3.85×10^9 years old), carbonaceous chondrites (still our source of extraterrestrial organic matter) and study the spectra of organic compounds present in interstellar matter. By these direct and indirect chemical, physical and geological studies, we are now able to examine the nature, amounts, composition, properties and possible origin of the organic matter present in the early Precambrian and in meteorites. Many of the contributors to the book have attempted to do just this and have approached the question of Chemical Evolution via examination of the geochemical and geological evidence contained in Precambrian rocks.

There are 22 contributions to the book involving a total of 36 authors, who are all experts in some aspect of the field of study. There is, however, a great variation in the significance of the articles and in the scientific effort represented by the contributions.

Examination of the book's contents will encourage the reader to quickly turn to various well-known authors on topics that readily attract attention. Be warned!

A number of "chapters" in the book are nothing more than abstracts or, at best, extended introductions. For example:- "Very Old (> 3100 million years) Rocks in North America" by R. Hurst et al. has only two pages. It should also be noted that this chapter is listed as (> 100 million years) on the contents page. "Earliest Evidence of Fossil Eucaryotes" by J.W. Schopf has two pages. "Evidence of Archaen Life" by J.W. Schopf has three pages. "The Stable Isotopes of Hydrogen in Precambrian Organic Matter" by T.C. Hoering has five pages. "Comparison of Laboratory Silicified Blue-green Algae with Precambrian Microorganisms" by E.S. Barghoorn et al has two pages. "Eoastrion and the Metallogenium Problem" by E.S. Barghoorn has one page. "Evolution of Mitosis and the Late Appearance of Metazoa, Metaphyta and Fungi" by L. Margulis has two pages. "Low Oxygen Levels and the Palmitoyl CoA Desaturate of Yeast: Relation to Primitive Biological Evolution" by N.S. Whitaker and H.P. Klein has four pages. "Carbon Contents of Early Precambrian Rocks"by C.B. Moore and D. Welch has six pages.

The reader will soon discover that although about half the topics are presented and discussed in some detail, the content of the above listed articles is very disappointing. If your major interests are within the topics listed above, this book is not for you unless you value your reading at a high price premium per page.

The rest of the chapters are mostly reviews of the current state of the science and are all worthwhile contributions (containing useful references) and some papers are original and quite interesting. The book can be divided into more or less equal parts, dealing with the biological, geochemical and palaeontological aspects and with the geochemical and geological studies of Precambrian materials.

S.M. Awramik reviews the "Paleobiology of Stromatolites", where he describes the known Archean stromatolites; the origin and evolution of stromatolites; stromatolite biostratigraphy; and discusses in detail the paleobiology of the microfossiliferous stromatolitic cherts of the Gunflint Iron Formation in Canada, some 2000 million years old.

E. Barghoorn, M. Rambler and L. Margulis discuss the "Natural Mechanisms of Protection of a Blue-Green Alga against U-V Light" and show that UV tolerance of Lyngbya sp. (a common genus of blue-green algae, often found as the surface component of algal mat communities) can be extended by the addition of sodium nitrate and nitrite salts. They suggest that nitrate - and nitrite-mediated UV light protection may have preadapted Precambrian microorganisms for the anaerobic respiration of these substances, thus leading to the origin of nitrite and nitrate reduction.

"A Review of Kakabekia and its Physiological and Environmental Features and their Relation to its Possible Ancient Affinities" is given by B.Z. Siegel which discusses the cytological, physiological and environmental parameters of living Kakabekia with respect to its possible ancient affinities as well as to its status as a highly unusual microorganism, whatever its affinities prove to be.

M.D. Muir and her colleagues present "A Discussion of Biogenicity Criteria in a Geological Context with Examples from a Very Old Greenstone Belt, a Late Precambrian Deformed Zone, and Tectonized Phanerozoic Rocks" in which they have carefully applied stringent morphological and statistical tests to assemblages of micro-organisms present in Precambrian rocks. These tests, using 57 criteria support previous studies that microorganisms from the Onverwacht Group (3.355×10^9 years old) are biogenic and consideration of presented geological evidence supports this contention.
C. Folsome presents an alternative viewpoint in "Synthetic Organic Microstructures as Model Systems for Early Protobionts", by describing some of the microstructures of the South African Onverwacht Group and Fig-tree Series (about 3.0×10^9 yo), which seem to be abiotic in origin.
D. Hall and his associates present a detailed paper on "Iron-Sulphur Proteins and Superoxide Dismutases in the Evolution of Photosynthetic Bacteria and Algae" in which they present the valid argument that a combination of biochemical and morphological evidence will probably ultimately be the most convincing evidence for studying the early stages of evolution in the Precambrian.
Other subjects presented in the book include "Origin of the Atmosphere: History of the Release of Volatiles from the Solid Earth" (J.C.G. Walker); "Early Precambrian Weathering and Sedimentation: An Impressionistic View" (R. Siever) "Three Arguments for Continual Evolution of Sial Throughout Geologic Time (J.J.W. Rogers); "Archean Geology and Evidence of Ancient Life in the Slave Structural Province, Canada" (J.B. Henderson); "Evolution of the Terrestrial Oxygen Budget" (M. Schidlowski and R. Eichman) and "Hydrocarbons and Fatty Acids in Oil Shale of Permian Irati Formation, Brazil" (D.W. Nooner and J. Oro). This latter paper, although containing some very interesting and detailed geochemical analyses, is apparently out of place in the book, since it deals solely with the Permian and contains no reference to Precambrian studies or Chemical Evolution.
It is now over 50 years since the theories of Chemical Evolution were first presented and over 20 years since the first reports of the presence of microorganisms in early Precambrian rocks. The bringing together of scientists from different disciplines to discuss these topics was a good idea. Often, however, "interdisciplinary symposia" have most to offer through presentation, discussion and exchange of ideas within the meeting. If this Colloquium on Chemical Evolution of the Early Precambrian produced such stimulating discussion and exchange of ideas, then such have not been translated to the Proceedings Volume.
As a collection of individual review papers, the book has something to offer the reader, but if the intention of the Editor was to produce a reference book that will be continually referred to, then it has failed. If your library can be persuaded to purchase a copy of the book, you may find some interesting and useful comments within its pages. Purchase of a personal copy of this "camera ready" book reproduced directly from the author's typed manuscript cannot be very highly recommended at the relatively high price of £11-40. There are various other books that will provide an interested reader with an up to date account of Chemical Evolution and the Precambrian in a much better format and detail than the review book and many of them at a much more competitive price.

J. Brooks, British National Oil Corporation, Glasgow, Scotland.
(This review was first published in March 1978 Palaeontological Association Circular, and is reproduced with thanks.)

SOME RECENT RUSSIAN LITERATURE

MIDDLE KEUPER FLORA OF THE DONETS BASIN F.A. Stanislavskiy, 1976. Izdat. "Nauk. Dumka", 168pp, 1,000copies. 2 roubles 59 kopeks.

Sixty plants from two localities of early and late Norian age (Protopivskaya suite) including 29 new species are described. The flora includes representatives of the Peltaspermaceae and Cycadocarpaceae (both triovulate and biovulate forms). The beds at the Nikolayevka locality may be a little younger than the Carnian flora of Lunz. This material is illustrated by 87 good half-tone plates and 61 text-figures.

J.M. Schopf, Columbus, Ohio, USA.

The following references and descriptions of some recently published palaeobotanical works have kindly been supplied by Dr S.V. Meyen:

DEVELOPMENT OF FLORAS AT THE MESOZOIC/CENOZOIC BOUNDARY. Ed. V.A. Vakhrameev, 1977. "Nauka", Moscow, 131pp, 1 rouble 21 kopeks.

This is a collection of papers by S.I. Shumenko, A.S. Andreeva-Grigorovich, N.G. Musylev (calcarious nannoplankton), Z.I. Gleser (silicoflagellates), K.B. Korde (charophytes and Dasycladaceae), V.A. Vakhrameev, M.A. Akhmetiev (plant megafossils) and E.D. Zaklinskaya (angiosperm pollen).

TSAGAYAN FLORA OF THE AMUR AREA. V.A. Krassilov, 1976. "Nauka", Moscow, 92pp., 43 pls., 1 rouble 16 kopeks.

Bureja Tsagayan is one of the best localities of plant megafossils in Asia, and is located in the Amur area. The Tsagayan flora is interesting in two respects: 1, as a possible ancestor to the Arcto-Tertiary forests, and 2, in its stratigraphic position near the Mesozoic/Cenozoic boundary. Krassilov presents a revision of the systematic composition of the flora and describes 50 species. He analyses the problem of the Danian stage in continental deposits and the Mesozoic/Cenozoic transitional floras.

CYCADOPHYTES OF THE LATE TRIASSIC AND JURASSIC OF MIDDLE ASIA AND THEIR STRATIGRAPHIC SIGNIFICANCE. Y.K. IMINOV, 1976. "FAN" Uzbek SSR, Tashkent, 72 pp., 48 pls., 1 rouble 1 kopek.

THE FLORA OF THE LOWER AND EARLY UPPER PERMIAN OF SOUTH PRIMORIE. V.G. Zimina, 1977. "Nauka", Moscow, 127 pp., 1 rouble 20 kopeks.

South Primorie is in the maritime province of the Far East of the USSR, and is interesting in its location close to the boundary between the Angara and Cathaysia areas. The book includes descriptions of 40 species (sphenophylls, alleged glossopterids, cordaites, vojnovskayas and plants of uncertain affinities), plant assemblages and their taphonomy and stratigraphic correlation with other regions of the Angaraland.

PALAEOGENE FLORA OF WEST KAZAKHSTAN AND THE LOWER VOLGA EMBAYMENT. N.M. Makulbekov, 1977. Institute of Zoology of the Academy of Sciences of the Kaz SSR, Alma-Ata, 234pp., 42 pls., 3 roubles 10 kopeks.

A total of 45 species are described, including Palaeocene and Eocene conifers (including Podocarpus) and angiosperms.

RATIONAL COMPLEX OF PETROGRAPHICAL AND CHEMICAL METHODS OF INVESTIGATIONS OF COALS AND OIL SHALES. S.I. Ginsburg, A.V. Lapo & I.A. Letushova, 1977. "Nedra", Leningrad, 168pp., 6 pls., 1 rouble 66 kopeks.

The book covers mega- and microscopic studies of coals and oil shales, petrogenetical taxa, facial analysis of coal seams, correlation of coal seams and maps of their composition etc.

STOP PRESS - LATE NEWS

The following items were recieved as the rest of this newsletter was being duplicated:

FORTHCOMING MEETING

OHIO ACADEMY OF SCIENCE, Dayton, Ohio, USA, April 21 - 23 1978.
One session of this meeting will be devoted to palaeobotany, and the abstracts for these presentations are published in the Ohio Journal of Science, 78, supplement pages 20 - 23. The authors include:
G. Rothwell, Ohio University, Athens: a new genus of Sermayaceae
E.L. Smoot & T. Taylor, Ohio State University: a new species of Etapteris
G. Grove, Ohio University: anatomy of Mitrospermum in the Upper Pennsylvanian
S.P. Stubblefield, Ohio University: fertile marattiaceous foliage
E.L. Smoot, Ohio State University: phloem anatomy in Etapteris
J.E. Mickle, Ohio State University: fertile Ankyropteris.
It is planned that the results being presented at the meeting will be published; details will be announced in IOP newsletter 7.

OTHER INSTITUTIONS

ARBEITSKREIS FÜR PALÄOBTANIK UND PALYNOLOGIE
The eighth annual meeting of APP was held in Heerlen, south Limburg, The Netherlands, from April 6th - 8th 1978, under the guidance of Dr H.W.J. van Amerom and the support of the Rijks geologische Dienst and the Palynologische Kring. Members from Austria, Belgium, Denmark, The Netherlands, Norway, Sweden and West Germany attended.
The lectures given at the meeting were concerned with morphological problems (including a new view on the dichotomy of Stigmaria), Carboniferous floras and with Mesozoic and Tertiary palynology. There was also a discussion on nomenclatural problems which was inspired by the items included in IOP newsletter 5. Dr Friedeman Schaarschmidt's report on this is reproduced below. The meeting included a field trip to the mining area of the Limburg region, though because all the coal mines are now closed it was only possible to collect from one tip there. Other localities were visited, near Liège and Aachen, thus giving good comparative material of Westphalian A age.
The next meeting of APP will be held at the Geological Survey in Hannover during March 1979.

"During the eighth meeting of the APP in Heerlen we had many discussions about the problems related to the question "Bring Back the Organ-genus?" which was raised in the last IOP Newsletter 5. I have the impression that most members present agree with my own opinions, so I present here a summary of my own understanding of the problem:
1. With the exception of the algae, fossil plants are nearly always preserved as organs. Therefore it is not necessary expressly to declare a genus based on fossil plants as an organ-genus, and so this term is superfluous. However, in Tertiary palaeobotany it may be useful to distinguish a genus based on living plants from one based on fossil plants. I suppose that this was the original sense of the term. The term form-genus may be useful for practical reasons in the sense of the Amsterdam and Paris Codes. It should be included in special formal morphographical systems beyond the natural system, as is usual with pteridophylls, sporomorphs and cuticles (as proposed by Faegri in 1963).
2. The Code is made to describe living plants, and it is also used for fossils even though we know that we never have species and genera in the same sense as in modern botany. It is therefore not easy to apply all the Articles of the Code to fossils

as was appreciated by Potonie in 1975 when he proposed to write an entirely separate Code for palaeobotany. But I think that this is now neither necessary nor practicable. Perhaps it would be better to produce a comment to the Botanical Code for the instruction of palaeobotanists seperately. This would define the concept of the fossil genus and the fossil species, and would give instructions on how to use some of the Articles in the special cases of fossil material. These new details would answer some of the following points:

how to proceed when fossil species become united,

should the principal of priority be followed strongly, of should the concept of the form species be exluded,

should there be a special way of conserving some of Brongniart's species names, as well as others,

what should be done for those taxa based on material which is very badly preserved or figured?

It might even be possible to work out the scale of the problem by arranging through IOP to collect examples and suggestions from palaeobotanists that can be formally discussed at some future congress or international meeting."

THIS NEWSLETTER WAS MAILED SURFACE MAIL RATHER THAN AIRMAIL TO THE U.S. FROM ENGLAND RESULTING IN SOME DELAY IN DISTRIBUTION.

May 25, 1978

IOP

INTERNATIONAL ORGANIZATION OF PALAEOBOTANY

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES
SECTION FOR PALAEOBOTANY
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Vice President : Prof. E. BOUREAU, FRANCE.

Secretary : Dr. M. C. BOULTER
N. E. London Polytechnic,
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IOP PROMOTES INTERNATIONAL COOPERATION IN THE STUDY OF PALAEOBOTANY AND PALAEOPALYNOLOGY

Membership is open to any palaeobotanist who subscibes to this aim and enables communication through a newsletter which is distributed at least three times a year. This gives details of international and national meetings of interest to palaeobotanists, reports on their proceedings, describes regional bibliographies and gives news of individuals and institutions. In addition there are regular book reviews and other items of current debate.

IOP plays a substantial role at each International Botanical Congress and cooperates with other international organizations having interests allied to palaeobotany. Its constitution as adopted in August 1977 sets out a frame-work for many possible initiatives. Address lists, bibliographies and other devices to help with the exchange of information within the subject are of central concern to its development.

New members are urgently required to help with the work of this new organization.

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INDIA: Prof B.F. Trivedi, Botany Department, Lucknow University, Lucknow, India.

JAPAN: Prof T. Tanai, Department of Geology, Hokkaido University, Sapporo, Japan.

PEOPLE'S REPUBLIC OF CHINA: Prof Chao King-koo, Nanking Institute of Geology and Palaeontology, Academia Sinica, Chi-Ming-Scu, Nanking, China.

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APRIL 1978