

# IOP NEWSLETTER 16

## INTERNATIONAL ORGANIZATION OF PALAEOBOTANY

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES  
SECTION FOR PALAEOBOTANY  
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Vice Presidents: Prof. E. SOUREAU, FRANCE  
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IOP NEWS.....	1
XIII I.B.C., SYDNEY, AUSTRALIA 1981.....	3
FORTHCOMING MEETINGS.....	6
NOMENCLATURE.....	6
NEWS OF INDIVIDUALS.....	7
OTHER ORGANISATIONS.....	7
WORLD DIRECTORY OF PALAEOBOTOLOGISTS.....	8
BIBLIOGRAPHIES.....	8
BOOK REVIEWS.....	9

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PLEASE MAIL NEWS AND CORRESPONDENCE TO YOUR REGIONAL REPRESENTATIVE OR TO THE SECRETARY FOR THE NEXT NEWSLETTER 17. The views expressed in the newsletter are those of its correspondents and do not necessarily reflect the policy of IOP.

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### IOP NEWS

#### ELECTION OF OFFICERS, SYDNEY 1981

The postal ballot for election to the IOP Executive Committee was announced in newsletters 14 and 15. This was for a new President and a new Member-at-large for North America. The results are that W.G. Chaloner got 81 votes and S.V. Meyen got 23: W.G. Chaloner is elected; T.L. Phillips got 47 votes and T.N. Taylor got 57: T.N. Taylor is elected. The names and addresses of the new officers of IOP are printed on the last page of this newsletter.

According to the constitution the IOP Executive Committee has selected a Congress Member since the Sydney Congress confirmed that the next XIV International Botanical Congress is to be in West Berlin. It is unanimously nominated and agreed that Dr F. Schaarschmidt serve in that role to represent IOP in the organisation of that Congress.

#### NEWSLETTER DISTRIBUTION

There are now six world regions that duplicate and distribute the IOP newsletter, from a top copy supplied from the London office. They are Africa, Australasia, China (who translate it), East Europe, North America and USSR. An up to date list of regional representatives is printed on the last page of this newsletter.

#### PALAEOBOTANICAL EXTRACTS FROM 'The Sportophyte' (IOP Circular 7)

As announced in newsletter 15 this series of IOP Circulars is available free to members on request to the secretary. Number 7 is the latest to be printed, as the result of requests from Norwegian palaeobotanists. It is a set of facsimile extracts from Marie Stopes' "magazine" The Sportophyte thought by the compiler to be of special palaeobotanical interest. It was a lampoon of the subject in the spirit of some of the

intellectuals of early 20th Century England, and some think still holds some humour. Here are extracts from two of the poems included which show the magazine's characteristic flavour:

Origin of the Angiosperms, by A. Kryshstofovich, Odessa

When God was walking to and fro  
In Eden, where His might  
Had made created things to grow -  
God said, "All things are right."

The Gymnosperms then heard God's voice.  
"But we are naked - oh!"  
So in a moment on their scales  
Carpels began to grow.

A Botanical Dream, by E.M. Delf

Last night as I lay sleeping  
There came a dream so fair  
I stood mid ancient Gymnosperms  
Beside the Ginkgo rare.  
I saw the Medulloseae  
With multipartite fronds,  
And watched the sunset rosy  
Through Calamites wands.

Oh Cryptogams, Pteridosperms  
And Sphenophyllum cones,  
Why did ye ever fossilise  
To Palaeozoic stones?

A MESSAGE FROM THE NEW PRESIDENT

With some reticence, and struggling against well-founded modesty, I feel obliged to offer a brief comment following my election as President of IOP. This was the outcome of the election conducted for IOP officers announced at a pleasantly informal meeting of IOP members at the Sydney International Botanical Congress on August 25th, chaired by Ted Delevoryas. I am humbled both by the outcome of the election and by the attainments of my several immediate predecessors in the persons of Ted, Jim Schopf and Harlan Banks. I can only assume that the membership believe, as I do, that it matters little who the president is, as long as we have a secretary who runs our affairs as efficiently as our present incumbent. For without doubt, the success of the newsletter has contributed more than any other factor to the improved health of IOP since the Leningrad Congress. The newsletter, initiated by Hans Traiau and carried on with such vigor and devotion by Mike Boulter, has transformed the image of IOP. It has become a body with which we may all feel involved, rather than an abstraction lacking reality between botanical congresses. Our continued health as an organisation depends on that involvement of members. I hope that old and new contributors to these pages will continue to ensure our survival. Since IOP was founded (and indeed created) by Edouard Boureau at the Paris Congress in 1954, its character and its role have changed considerably. IOP was intended to function as a body giving continuity to the "Section of Palaeobotany" at successive Congresses. Boureau also had much in mind that occasional IOP conferences might be held between Botanical Congresses. This was indeed eventually realised with the First International Palaeobotanical Conference at Reading last year. In the meantime, the old "palaeobotany section" had faded from the

programme of the International Botanical Congress. At Sydney, palaeobotany was merged in Section 11, "Historical Botany" with a mix of Quaternary ecology, the history of man's influence on Australian vegetational history, other aspects of ethnobotany, climatology and plant geography. There were several joint cross-sectional symposia, and Prof John Raven's meeting on the "Physiological Evolution of a Land flora" brought together a most encouraging mixture of physiologists and palaeobotanists. Similarly a series of joint sessions with "Community Botany" (Section 6) on "Persistence and Change in Vegetation" brought together an interesting group of ecological topics with palaeobotanical involvement.

While some of us may regret the passing of a Section of Palaeobotany I think the Sydney Congress organisers are to be congratulated on their efforts to integrate palaeobotany with other areas of plant science. I am certain that for our science to develop vigorously, and above all that we may draw in young and active recruits, we must not only communicate with each other but must also project the outcome of our research into other related fields of biology. Palaeobotany will not prosper if we are seen to be preoccupied in a dialogue only with fellow palaeobotanists.

#### XIII I.B.C., SYDNEY, AUSTRALIA 1981

##### IOP CONGRESS MEMBER'S REPORT

Jack Douglas has sent the following comments on the Congress from his view inside Australia:

The Historical Botany (Section 11) part of the Sydney IBC was, we believe here, a success. Attendance was surprisingly good. No doubt you are used to well filled theatres at your local or European and North American conventions, but we were gratified to have large theatres overflowing on occasions, and equally surprising, interest sustained all the way through.

Assessment of the quality of the presentations would depend on the sessions attended, but I thought it was reasonable. Slides often consisted of indecipherable typed symbols, and there were a trifle too many general reviews put together in a minimum time that did not enhance the reputation of some workers, but again the efforts of others compensated. There were quite a lot of talks on ancient land plants and also on conifers, and attendance by botanists from other disciplines, particularly taxonomy and "general" botany teachers was a feature.

Getting to Australia proved dangerous to several. Peg Canright broke a leg on Bora Bora (not maddened by the throbbing native drums, but falling over a dust bin). Leo Hickey was involved in a train smash in New Zealand which had several fatalities, and more seriously Aureal Cross and son were in a bad motor accident in that same country. Aureal became the hero of the meeting when, he secured a temporary release from hospital, flew to Australia and gave two lectures, despite broken bones, fractures and heavy bruising.

The IOP, PPAA and ICP dinner was attended by more than 100, and was highly successful. Alan Moore, newly elected president of the PPAA, welcomed the guests, and Al Traverse responded for the visitors, and thanked Helene Martin who organised it.

##### REPORT ON FIELD TRIP 37

There were 20 participants on this trip which was led by Jack Douglas. Mike Garratt and David Christophel were guides and Les Williams and Anne Douglas assisted. They were welcomed in Melbourne on September 4th by Mr J.L. Knight, the Director of the Geological Survey. Early next

morning they took off for Yallourn and Morwell brown coal deposits with State Electricity Commission guides. Collecting was satisfactory and the party stayed at Warragul that night. Next day Forestry Commission guides described the Eucalypt sclerophyll forest on the road to the wildlife Sanctuary at Healesville, and after lunch collection commenced at the oldest Baragwanathia site known, at Yea. Some participants later transferred to another site, and all seemed satisfied with the day's haul from one or other of the localities. Mr Stan Kisler of the Municipality of Yea welcomed the visitors at dinner.

Next day a most surprisingly good haul of Gangamopteris was made at Bacchus Marsh, with possible new species. Anne Douglas disgraced herself in the evening by swimming in the heated outdoor pool in the rain in her corset.

The wild flowers in the Grampians next day were a little disappointing because of the wet weather, but the koalas and emus compensated. The National Parks guides gave great help at Melba Gully State Park (ferns and Nothofagus) and the collecting at Devils Kitchen proved controversial. Many enjoyed the site but found the access ride a bit trying. Next day the weather was unfortunately poor on the beautiful Ocean Road segment, but ultimately all were deposited as arranged, in the peak hour traffic, in Melbourne, and about 15 participants had a farewell meal at the Douglas's before departing next day for parts unknown.

The participants were: Hughes's, Stockey, Friis, Hueber, Matten, Tanai, Bartoo, Dettmann, Smiley's, Pedersen, Lundblad, Rigby, Schaarschmidt, Chandra, Surange, Pant, Nautiley and Canright.

J. DOUGLAS, MELBOURNE.

#### MINUTES OF THE IOP GENERAL ASSEMBLY

1. Silence for lost members: Tralau and Schopf were mentioned by name
2. Election of officers (see above)
3. Paleoservices Prize: its award is to be a matter for the Executive
4. The Role of the Botany & Mycology Division of IUBS: noted
5. Bibliography: the new Pfefferkorn & Gillespie publication was complemented
6. A vote of thanks was passed for the Secretary
7. Photo-reproduction problems were discussed
8. John Rigby proposed that the 3rd International Palaeobotanical Conference be held at Brisbane (with ICP?) in 1988. No decision was taken, but the offer was noted and thanked.

J. DOUGLAS, MELBOURNE.

#### ANOTHER REPORT ON FIELD TRIP 37

Sweden's poetess, palaeobotanist and pillar of patience, Britta Lundblad, towards the end of the excursion and unknown to the rest of the group, created a composition that had its world premiere performance at the occasion of Anne Douglas' sumptuous dinner party; the grand finale of the trip. Larry Matten at the piano supported the vocal efforts of a few of the brave who delivered the chorus as presented here. The verse is an addendum as well as the title, which with due respect emphasises the Australian patois equivalent of "name". Jack graciously received the tribute and the group felt that the moment should be shared with other members of IOP. Let your imaginations recreate the historical moment (should that "i" be "y" and the "o" be "e"?).

AND JACK DOUGLAS IS HIS "NIME"

Chorus by Britta Lundblad Verse by Francis Hueber  
 Music by Percy Montrose: "Oh My Darling Clementine".  
 Piano: Larry Matten.

In a quarry, in a road-cut  
 Excavating Fossils fine,  
 Stands an Aussie, dinkum Aussie,  
 And Jack Douglas is his "nime"

Chorus: Our Jack Douglas, our Jack Douglas,  
 Our guide and our friend  
 In Australia, in Victoria  
 Helped us fossils pick and send.

Our Jack Douglas, our Jack Douglas  
 Brought us to some dirty tracks,  
 Where at Morewell, we got fossils,  
 Which we put into our sacks.

Our Jack Douglas, our Jack Douglas  
 Found some tails within a rock,  
 But he said it was a clubmoss  
 For he likes so much to mock.

Our Jack Douglas, our Jack Douglas  
 Brought us to a hill so Bald  
 Where we found Gondwana fossils  
 In a weather rather cold.

Our Jack Douglas, our Jack Douglas  
 Brought us to a forest big  
 Where koalas, sweet koalas  
 Were a-sitting on a twig.

Our Jack Douglas, our Jack Douglas  
 Brought us on a slipp'ry way  
 Deep below us, deep below us  
 Was a fossil-bearing clay.

Our Jack Douglas, our Jack Douglas  
 Did not leave us on the bay.  
 Back to bus and car he took us  
 Though it was a slipp'ry way

Our Jack Douglas, our Jack Douglas  
 Led us to the Bachus Marsh.  
 To this god and to our leader  
 Should we, now, lift the glass.

THANKS FROM THE IOP SECRETARY

I was sorry to be unable to attend the Sydney Congress in August but was compensated by receiving a touching Greetings Card from the IOP dinner, signed by about 100 palaeobotanists. Very many thanks for your kind thoughts.

Many thanks also to Jack Douglas who served as secretary to the meeting and to Ted Delevoryas who managed the election from the chair. You know, it is not me, but the newsletter contributors, who make IOP what it now is. So get writing.

M.C. BOUTLER

## FORTHCOMING MEETINGS

### ORIGIN, EVOLUTION & MIGRATIONS OF AFRICAN FLORAS

This tenth plenary meeting of the AETFAT Congress will take place at the Conference Centre, C.S.I.R., Pretoria, South Africa from 18th January - 23rd 1982. The symposium has sessions on The Past Floras, vegetation, landscapes and climates of Africa during the PreCambrian, Devonian-Jurassic-Cretaceous Periods, the Tertiary and the Quaternary. Another deals with isotope evidence.

There are also three field trips to look at the modern vegetation of the country.

Contact Dr H. Anderson, Botanical Research Institute, Private Bag X101, Pretoria 0001, South Africa.

### CARBONIFEROUS STRATIGRAPHY & GEOLOGY

This tenth International Congress will be held in Madrid from 12-17 September 1983. There will be sessions dealing with all aspects of Carboniferous palaeobotany and many of the field trips being organised will visit fossil plant localities. Write for details to: Comite Organizador del X Congreso Internacional del Carbonifero, Instituto Geologica y Minero de Espana, Rios Rosas 23, Madrid 3, Spain.

### INTERNATIONAL WORK GROUP FOR PALAEOETHNOBOTANY

The first circular for this 6th symposium was issued in July 1981. The meeting will be held in Groningen, The Netherlands from May 30th - June 3rd 1983. Write to W. van Zeist, Biologisch-Archaeologisch Institut, Poststraat 6, 9712 ER Groningen, The Netherlands.

### LONDON PALAEOBOTANY SOCIALS

Barry Thomas, Biology Department, Goldsmith's College at Rachel MacMillan, Creek Road, London SE8 3BU is organising monthly meetings at The Norfolk Hotel, London SW7, 100m to the west of South Kensington underground station. They take place regularly and all IOP members are invited on the last wednesday each month (except December). There is usually a meal and always a drink.

## NOMENCLATURE

Does Schlotheim 1820 serve well as a new starting date for palaeobotanical nomenclature? One of the important conditions for a specific name to be validly published is that it is connected with a validly published name of the genus (I.C.B.N. Article 43). The only exception is the combined generic and specific description or diagnosis in the monotypic genera (I.C.B.N. Article 42).

In Schlotheim's work, which was proposed by Dr D. Storch in IOP newsletter 15 page 8 as a new starting point we find absolutely no generic descriptions or reference to previously published diagnoses. So all the specific names (with the exception of Anthotopolithes ranunculiformis - the monotypic genus) would remain invalid even if the new starting point were to be accepted. So the whole procedure would not help.

Z. KVACEK, PRAHA.

The Nomenclature session of the International Botanical Congress at Sydney duly considered some 200 proposals for emendations to the International Code of Botanical Nomenclature, debated many of them heatedly, and finally made recommendations which were subsequently

ratified by the Congress Plenary Session. Al Traverse and Bill Chaloner are preparing a joint report for IOP newsletter 17 on the main items of concern for palaeobotanists. Meanwhile, it is understood that the three proposals (of Hughes, Meyen & Traverse and Boulter - see Taxon, 30(1), February 1981) dealing expressly with fossil plant nomenclature, were rejected.

W.G. CHALONER.

#### NEWS OF INDIVIDUALS

- G. ROSELT has changed his address to DDR 6300 Ilmenau/Thur., Am Lindenberg 47.
- G. RETALLACK has accepted an Assistant Professorship at the University of Oregon. His address is: Department of Geology, University of Oregon, Eugene, Oregon 97403, USA.
- P.R. CRANE has taken up a post doctoral fellowship with David Dilcher. His address is: Department of Biology, Indiana State University, Bloomington, Indiana 47405, USA.
- Y. OGURA, of Tokyo passed away in June of this year.
- M.J.M. BLESS, the Director of the Natural History Museum at Maastricht, has a new address at: Bosquetplein 6-7, 6211 KJ Maastricht, The Netherlands.
- B.A. THOMAS has been appointed Head of the Department of Biology, Goldsmith's College, University of London. His new address appears on page 6.
- L. HICKEY appeared on BBC television on November 16th wearing a funny hat. He was explaining that plants survived the catastrophe at the Cretaceous-Tertiary boundary which the dinosaurs did not.
- W.H. GILLESPIE, G.W. ROTHWELL & S.E. SCHECKLER published a paper on The Earliest Seeds in Nature 8 October 1981. Two of their coloured pictures appear on the front cover of that issue.
- H.P. BANKS is getting older and working like hell, according to the 1980 Bibliography of American Paleobotany.

#### NEWS OF OTHER ORGANISATIONS

ASOCIACION LATINAMERICANA DE PALEOBOTANICA Y PALINOLOGIA (ALPP)  
Bulletin number 7 has recently been published, as have three issues of the information circular. The last of these gives details of the December 1981 meeting of the ALPP. Write to the secretary of ALPP: T.S. Melhem, Instituto de Botanica, Cx. Postal 4005, CEP 01000, Sao Paulo, Brasil.

PALYNOLOGICAL & PALAEOBOTANICAL ASSOCIATION OF AUSTRALIA (PPAA)  
The third newsletter was distributed in July 1981 and contains an item on the need for a pollen flora of Australia. The secretary is John Rigby, Geological Survey of Queensland, PO Box 194, Brisbane, Queensland 4001, Australia.

WORLD DIRECTORY OF PALAEOLOGISTS

This latest edition was published in 1976 and is in urgent need of revision. Please help by sending appropriate details (see last edition) to V. Berg-Madsen, Department of Palaeobiology, Box 564, S-751 22 Uppsala, Sweden. The new directory will be distributed free to all paid up members of the International Palaeontological Association, who also receive Lethaia.

BIBLIOGRAPHYA BIBLIOGRAPHY OF CHINESE PALAEOBOTANY

The Institute of Geology and Palaeontology, Academia Sinica, Nanjing has just published (1981) a Bibliography of Chinese Palaeobotany, compiled by Professor Li Xingxue (H.H. Lee). It comprises both an English version and a Chinese version, bound as a single volume, and listing some 750 references. For those who think of the written Chinese language as cumbersome, it is interesting to note that while the English version occupies 80 pages, the Chinese section takes only 59! The English text gives all references in their original form, except for Chinese and Japanese papers where the title is translated into English.

The scope of the work includes palynology as well as papers dealing with macrofossil plants, and covers all references known to the compiler up to 1980. All foreign language papers dealing with Chinese material are also included. The bibliography extends back in time to the work of Shen Kuo (1029 - 1093 AD) who cited occurrence of what is now believed to be fossil Neocalamites which he interpreted as fossil bamboos.

For those still wrestling with the modernisation of the Chinese names of authors, it is particularly helpful that the 'old' (Wade-Giles) versions of names are given with cross reference to the 'new' (Pin-jin) version. For example, the familiar Hsu Jen now becomes Xu Ren.

The only possible regret for a reader outside China is that the bibliography is a lead only into published work. I hope that in the future, we may also see some report on work in progress to supplement what has already appeared. This, coupled with addresses through which correspondence can be effected, is a valuable aid to exchanging thoughts (and material) while the research is being carried out. Palaeobotanically speaking, there is indeed much going on in China. On a recent visit I was ashamed to realise that while the Chinese workers follow closely work which is published elsewhere, the western world is still relatively unaware of palaeobotanical work conducted in China. This admirable compilation by Li will help to restore the balance.

Copies of this bibliography can be obtained on request at a price of US \$6.00 (inclusive of surface mail postage and packing) from Mr Ma Zhen-gang, Librarian of Nanjing Institute of Geology and Palaeontology, Academia Sinica, Chi-Ming-Ssu, Nanjing, People's Republic of China. International Money Orders, payable in US \$ should be made out to Account no 94171033, Bank of China, Nanjing Branch, Nanjing, PRC.

W.G. CHALONER

BIBLIOGRAPHY OF AMERICAN PALEOBOTANY FOR 1980

This 81 page edition, edited in the usual format, is available from A.D. Watt, US Geological Survey, 10th and Constitution NW, Washington DC 20244, USA



BOOK REVIEWS

AN INTEGRATED SYSTEM OF CLASSIFICATION OF FLOWERING PLANTS A. Cronquist 1981. 1,262pp, Columbia University Press, New York. \$130.00.

This book was not written primarily for palaeobotanists but nevertheless makes a useful reference book for those who are interested in the evolution or relationships of flowering plant fossils. The "integrated system" of course provides the usual floral characters found in taxonomic works and a large number of families are illustrated. However, the unique contribution made by Cronquist is the inclusion under every family of details of wood or stem anatomy, leaf morphology, subsidiary cell arrangement ('stomatal type') and pollen morphology. In addition, at the end of each family description there is concise information (not always complete) of the earliest placing of an 'unknown' fossil before consultation of more specialised monographs or papers on anatomy, carpology, palynology, etc.

The stem and wood anatomical details have been gleaned from leading anatomists and are therefore highly reliable. With regard to leaves, some information is given on 'stomatal types', however, only rarely are glandular and non-glandular hair types recorded under individual families. Where details of leaf indumentum are illustrated, they are intended for the hand lens of herbarium botanists and are not expected to be useful to palaeobotanists looking at leaf cuticles.

Where some families composed of several tribes or a large number of genera have been illustrated with reference to only one species, a few additional diagrams showing the appropriate contrasting structures would have been very helpful. Since tribal differences are often concerned with the fruit, carpels, endocarps and seeds, they are of great interest to palaeobotanists who frequently have to search for illustrations with which to compare their specimens. Even in some families such as the Apiaceae three or four diagrams showing the range of fruit morphology would have been appropriate. Likewise, in certain families seed morphology diagrams are absent, but very welcome where they are represented. With regard to the note on the fossil record at the end of each family, some records seem to be missing, e.g. endocarps and their contained seeds of Mastixia (at least) in the Cornaceae have been recognised with certainty since 1933 and now also the pollen of the same genus from the London Clay (Eocene); similarly at least Tetracera (Dilleniaceae) seeds and pollen and also Oncoba (Flacourtiaceae) fruits and seeds from the same strata.

It is very useful to have pollen grain types given in the text for each family but a few diagrams or s.e.m. micrographs for each family would have been very valuable indeed. Of considerable use to palaeobotanists is the phytogeographical information and also the indications of the relationship of each family to other families. This information often helps to guide an investigator into the right direction in making a diagnosis. It may also help a researcher to work out evolutionary trends and the palaeoclimatology/ecology.

It is always unfortunate that large works such as this book spend two or more years at the press, since this often means that valuable references are left out. This is especially regrettable with regard to some from 1978-1980, e.g. Ding Hou 1978: *Florae Malesianae Praecursores* LVI. Anacardiaceae. *Blumea* 24, 1 - 41; Menezes, N.L. 1980: Evolution in Velloziaceae, with special reference to androecial characters. In: *Petaloid Monocotyledons* (Editors C.D. Brickell, D.F. Cutler & M. Gregory) Linnean Society Symposium Series No. 8: 117 - 138; Metcalf & Chalk 1980: *Anatomy of the Dicotyledons* 1 (2nd edition), which contains, among other things, chapters on Trichome Description and Classification, the Plant Surface including cuticular characters

and especially the 'Lists' of families and their diagnostic characters among which are trichome types and 'stomatal types'. Cronquist has expressed a reluctance "to cite floras" because "The more significant (of) such works are well known to botanists generally." However, I think some exceptions could have been made, e.g. Flora Malesiana, where so much information is provided in what is sometimes a major article on a given family. Although botanists (and palaeobotanists) are aware of this type of flora they do not always know which families have been revised in them and which have not yet been worked upon.

Finally, although "The cupule of the Caytoniales is plausibly considered to represent a possible evolutionary precursor of the ovule (not the carpel) of modern angiosperms", I think the views and work of T.M. Harris and H. Hamshaw Thomas could have been acknowledged by inclusion in the Selected References at the end of the chapter entitled 'Magnoliophyta'. In spite of these criticisms, this is a fine book which will certainly be of use to those palaeobotanists interested in flowering plants.

H.P. WILKINSON, KEW, LONDON.

PHANEROZOIC STROMATOLITES: case histories. Ed. C. Monthly, 1981. 249pp., Springer-Verlag, Berlin. \$46.80.

Stromatolites are laminate carbonate (or manganese-rich) bodies of microbial origin. Some have been formed by a monospecific population, others by microbial communities, and either through physiological precipitation or "trapping and binding", or both. The term stromatolite has previously also been used in a wider sense to designate laminate bodies formed without the action of micro-organisms (a terminological sin committed also by the undersigned).

During the second International Symposium on Fossil Algae, in Paris 1979, a special section was devoted to stromatolites, to which 29 papers were presented. Out of these, 16, all of them dealing with Phanerozoic stromatolites, have been printed in this book. They are "case stories", arranged chronologically, and ranging from the Precambrian/Cambrian boundary to subrecent times.

Apart from short (five to thirteen lines) presentations of each article by the editor, there is nothing to bind the various contributions together. However, it is very useful to have access to these papers in a single volume. It is well printed and abundantly illustrated.

O.A. HØEG, OSLO.

PLANTE FOSILE I. Petrescu & O. Dragastan, 1981. Dacia, Cluj-Napoca. 471pp. Lei 27.00.

This volume has been assembled based on the lectures in paleobotany by the authors at their respective universities, and represents the first paleobotany book printed in Roumanian. The volume is divided into three major sections. The first (pp. 13 - 130) is concerned with an introduction to palynology, anatomy of vascular plants, acritarchs, carpology and foliar morphology. Perhaps the most interesting features of this section are several pages that are devoted to the structural details of diatoms and calcium carbonate precipitating algae. Section two (pp. 131 - 452) presents a brief consideration of the major groups of fossil plants beginning with the thallophytes and extending through the flowering plants. Although most of the major groups are mentioned, the classification of a number of groups does not reflect our current understanding of the plants. For example, the ferns are separated on whether they are eusporangiate or leptosporangiate; progymnosperms are included as a subclass of the ferns. Asteroxylon is included as a member of the Psilopsida. The seed ferns include the lyginopterids,

medullosans, corystosperms and peltasperms as members of the Pteridospermales; the Glossopteridales and Caytoniales are identified as distinct orders within the Gymnospermatophyta, while the seed fern Callistophyton is not mentioned. Perhaps this is because as the authors note in the introduction some of the less important groups are not included or those that are not found in Roumanian sediments. Section three (pp. 453-463) is a very brief treatment of floras for selected segments of geologic time and includes little new information and no generic names. The book contains no half tone illustrations. The figures that are presented are relatively simple line drawings that have been taken from the original source. Perhaps the most unfortunate feature of the book is the absence of a bibliography directed at studies of fossil plants from Roumania and the immediate area. The entire bibliography includes twenty six citations titled selective general bibliography. Many of the generic names found in the text are not included in the index, further reducing the value of this component of the volume.  
T.N. TAYLOR, OHIO, USA.

PALINOLOGIE: Cu aplicatii in geologie. O. Dragastan, J. Petruscu & L. Olaru, 1980. Editura didactica si pedagogica, Bucuresti. 419 pp. Lei 21.80.

Palaeopalynological textbooks in the major world languages are still rather few. A textbook in the relatively small linguistic area of the Rumanian is therefore worth noting. Rumania has an industrious population of applied palynologists, quite well-known in the west because of the lesser language barrier as compared to their Slavonic neighbours. The strength of Rumanian palynology is not so surprising when one considers that country's long tradition in exploration for fossil fuels. Rumania was among the pioneer oil producing countries of Europe until the recent advent of North Sea producers. "Palynologie" is divided into two main parts: the first (about 300 pages) presents the historical, morphological and stratigraphic material in a systematic fashion of a normal textbook; the second part (about 100 pages) is made up of four annexes presenting theoretical, methodological and practical aspects of palynology as applied to geoscience. In my view the latter part is the more successful because its subject material is more exciting and richer in problems and perspective, and therefore offers more to the reader's mind than to the memory.

The real virtue of the book lies in its stratigraphic emphasis with a strong bias towards Rumanian material. It presents in an easily accessible form a wealth of information on the palyno-stratigraphy of geological formations of Rumania, which cover an impressive part of the entire geological column. The way in which the spore/pollen stratigraphy is set on a rather extensive background of palaeobotanical knowledge for the individual formations, and presented in charts and diagrams is highly commendable. The authors should also be commended for assembling such a large number of highly informative diagrams and illustrations related to stratigraphic and other geological applications of palynology. A profusion of line drawings is an outstanding feature of the book. There are 112 plates illustrating morphological aspects and representative palynomorphs from various geological formations, and in addition there are close to 200 text figures, diagrams and tables. These are mostly related to geological or stratigraphic topics, many of them quite elaborate. The illustrations have obviously for a greater part been redrawn from a large variety of sources, which are however rarely named. It is difficult to evaluate properly the effort involved in the compilation and selection, drafting, editing and checking of this vast number of illustrations. Most of the text-figures

are good, the plates, however, present a broadest range in quality, the bottom rank ones may best be viewed as caricatures. The top rank are excellent, and generally from fine sources.

In spite of one of the major chapters being labelled morphology, the text proper is rather short on this subject. Apparently the philosophy of the authors has been that illustrations will convey the message. Here I find that the students receive little guidance towards understanding the morphology of the various groups of palynomorphs, particularly as a basis for sound taxonomic work and for producing good descriptive work themselves.

As a guide to the Rumanian literature the bibliography of the book is disappointing. Many Rumanian references used in the text have not been included in the bibliography of 120 entries; only 20 or so of the quite numerous non-Rumanian references in the text have found their way into the bibliography.

On the whole, the book presents an impressive amount of information on nearly every aspect of palaeopalynology. It is apparently designed for an obligatory course for geology students, and I suspect they will find it hard to digest without the guidance of an experienced teacher. The book ought to find its way into palynologists' libraries outside Rumania because of its useful information on palynostratigraphy and the state of the art of palynology in that country.

S.B. MANUM, OSLO.

VERSTEINERTE URKUNDEN. E Thenius, 1981 (3rd edition), 202pp, Springer-Verlag, Berlin. \$9.60.

This small and easily intelligible book, "Petrified Documents", gives a good overview of the main problems and methods in modern palaeontology: how fossils originated, how to prepare them, and many other aspects of evolution, stratigraphy, palaeoecology and palaeogeography. In the philosophy of the general conception several palaeobotanical examples are included: cuticle analysis, the first land plants, the co-evolution of flowers and insects, palynology and biostratigraphy, the reconstruction and palaeoecology of Lepidophytes, brown coal vegetation and the Glossopteris flora and plate tectonics. I am sure that the book will stimulate students and enthusiastic amateurs, and it may be a good model for all scientists to follow when writing in an understandable style to a high scientific standard. F. SCHAARSCHMIDT, FRANKFURT.

VICARIANCE BIOGEOGRAPHY: a critique. (Ed.) G. Nelson & D.E. Rosen, 1981. 593pp., Columbia University Press, \$45.50.

The editors of this difficult book have a passionate desire to make biogeography scientific. Through Popper and Hennig they believe that cladistic methods can do to our knowledge of dispersal and distribution and migration what some think it can do to that of taxonomy. If this book itself is a test of those views, they must continue to be busy men. It is too early to make firm conclusions about the matter, for the problems are difficult to define, let alone test. So this book is an exciting introduction to a very new approach; perhaps it is published before its time.

The book makes a pretty good start for those palaeontologists who do not understand vicariance concepts, but it doesn't answer much and makes few conclusions; but then, problem formulation is the essence of Popperianism. The business of the book is highly relevant of course to the "Cladistics at the British Museum" debate (IOP newsletters 14 and 15). It is about paradigm leaps, and introduces the new Vicariance Biogeography as "current distributional patterns reflect(ing) the existence of previously widespread biotas that have since become modified by tectonic events, speciation and extinction." The editors

reject the alternative "centre of origin hypothesis" which "envisions that the place of origin of a taxon is that area in which it is most diverse" (page 40) as unscientific. We are back again with the defence of Biogeography as a science; some authors think it can be and others are accused in the text of being subjective and metaphysical. So what? One thing is for sure: there are few enough conclusions yet by any approach. This book adds little concrete; it is an intellectual and philosophical compendium.

The two exclusively palaeobotanical contributions, R. Melville's 'Vicarious plant distributions and palaeogeography of the Pacific region' and J.A. Wolfe's 'Vicariance biogeography of Angiosperms in relation to palaeobotanical data' are very much in the old school and rather out of context with these new philosophies. Melville argues for "Pacifica" on the basis of the Cathaysian Gigantopteridae, Central American Bontia (Myoporaceae), Nothofagus, Oreomyrrhis, Coriaria and others. He responds to those who continue to support the popular hypothesis of Pangea: "in the final analysis it will be the geologist who is proved naive for his gullibility in swallowing these dogmas - hook, bait, and sinker." As I said, this is a book about paradigms. Melville's finds little support and he in turn is not supporting the cladists - but he does settle for two dendrograms. Wolfe's chapter is about the 5 sub-genera of Acer. What a funny title. Does it imply that Acer is typical, or something? His "narrative" and subjective approach is attacked in the published discussion and is arguably insulted in the Introduction chapter. Niklas's section in this discussion turns 3 geofloras into 4, and speaks of phytochemical work (paradigms again) but does agree with Wolfe that there is evidence for "stepwise migration of angiosperms". C. Patterson gives the only cladistic interpretation of plant biogeography. His figure 11.9B on page 484 has the legend: "Fagaceae, after Melville (1973) and Hanks and Fairbrothers (1976), omitting New Zealand (tetrachotomy with austral areas) and Asia (s-a of North America and/or Europe)" and figures a dendrogram:

Here is scientific progress.

But it easy to be dismissive of this book in objective terms. In its totally new approach, lively style and serious content it makes you think more than most books.

Croizat's chapter arguing strongly against Darwin's "geographical distribution" is particularly fierce and clever and should be read by all palaeobotanists. But then, so should the whole book.

M.C. BOULTER, LONDON.



#### NEW BOOK

Yet another new textbook of palaeobotany has just been received for review by IOP newsletter. It is our Vice President's, S.V. Meyen, Vestiges of Indian Herbs, published in Moscow for 45 kopeks, with 160 pages, 25 figures and 14 plates. 50,000 copies have been printed since the book is expected to appeal to "the man in the street". The strange title is VERY misleading, as the book appears to cover all groups of fossil plants on a world scale, and palynology too. The cover drawing alone is worth £1, let alone 45k. The book will be reviewed by a Russian language reader in a forthcoming newsletter.

# IOP

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