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PALYNOS

Volume 8, No. 1 - June 1985

NEWSLETTER of the INTERNATIONAL FEDERATION of PALYNOLOGICAL SOCIETIES

CONSTITUTION AND BY-LAWS OF THE INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES (IFPS)*

CONSTITUTION

1. The Federation shall be named the "International Federation of Palynological Societies" (IFPS).
2. The International Federation of Palynological Societies (IFPS) shall be a federation of regional, national, linguistic and specialist palynological societies. The aims of the IFPS shall be to advance knowledge in palynology and related subjects by the promotion of international cooperation and meetings between scientists of all regions and countries.
3. Meetings of the IFPS may be organized independently or in conjunction with other international meetings such as those sponsored by the International Union of Biological Sciences and the International Union of Geological Sciences.
4. The General Assembly of the IFPS shall consist of those members present at a general meeting of palynologists for which notice of one year has been given by the IFPS officers to the federated societies.
5. Members belong to the IFPS through their membership in regional, national, linguistic and specialist societies. A subscription shall be paid annually by each of the federated societies to the IFPS Secretary-Treasurer on the basis of each society's membership numbers; the amount of subscription shall be determined by the IFPS Council; regional, national, linguistic and specialist society membership lists shall be sent to the IFPS Secretary-Treasurer. Members are kept in touch with the IFPS through their federated societies, to which IFPS newsletters will be sent for distribution.
6. Business of the IFPS shall be conducted by the elected Council of the Federation, and by committees appointed by Council.
7. The Council of the IFPS shall consist of the following members: a President, the Past-President, a Secretary-Treasurer, and Councillors to the number of one for each federated society (or two for any society with more than 200 members); two additional Councillors may be co-opted for purposes of subject or regional balance. There shall be three Vice-Presidents, and they shall include representatives of Actuopalynology and Paleopalynology.
8. ELECTIONS: The incoming President shall be elected by the retiring Council at least one month before the next regular General Assembly, at which the retiring President will preside. The incoming President shall take office at the closing plenary session of the General Assembly and shall remain in office until the closing plenary session of the next General Assembly. The Secretary-Treasurer shall be nominated by the incoming President, the nomination subject to confirmation by the incoming Council within three months after the General Assembly. Councillors shall be elected or nominated by the federated societies. The Secretary shall request nine months before a General Assembly that all of the federated societies elect or nominate their Councillors on the basis of Paragraph 7, so that they can take office along with the incoming President at the final plenary session of the General Assembly. If no General Assembly is held within five years of the previous General Assembly, elections of Councillors and officers shall be conducted as explained above, and the results announced by IFPS circular not later than five and one half years after the previous General Assembly. Two co-opted Councillors may be nominated by the President and confirmed by the incoming Council, in accordance with Paragraph 7. The three Vice-Presidents provided for in Paragraph 7 shall be elected

**As approved by the General Assembly of IFPS on 29 August, 1984 at the VI International Palynological Conference held in Calgary, Alberta, Canada.*

by the incoming Council from among the Councillors, in accordance with the requirements of Paragraph 7. The President may not stand for a second consecutive term in that office. Other Councillors may not serve more than two consecutive terms of office, with the exception that the immediate Past-President shall not be excluded from Council by this provision.

9. REPLACEMENT AND SUCCESSION OF COUNCILLORS: If the IFPS President dies, resigns, or is in the view of two-thirds of Council unable to carry out the duties of his office, he shall be succeeded in office, by the Secretary-Treasurer, who then must resign as Secretary-Treasurer. If the Secretary-Treasurer dies, resigns, or is in the view of two-thirds of Council unable to carry out the duties of his office, he shall be replaced in the manner provided in Paragraph 8. A Councillors who dies, resigns, or is judged incapacitated by the society which elected or nominated him, shall be replaced by that society. Inasmuch as Vice-Presidents are elected from among the Council members, a Vice-President who resigns as Councillor resigns also his vice-presidency. The society he represents shall replace him as Councillor as provided above, but Council must replace him as Vice-President by a new election in accordance with Paragraph 8. Constituent societies may replace their Councillors at any time, but the term of office for all Councillors is normally the full period between General Assemblies. If the area or subject for which a co-opted Councillor was selected forms a palynological society or group, the co-opted Councillor shall cease to be a Councillor, and that society or group shall elect or nominate a Councillor, as provided in Paragraph 8. The co-option of another Councillor for another area or subject, per Paragraph 7, is then possible.
10. Except as specified in paragraphs 11 and 13, any motions passed by a General Assembly shall be referred to Council and shall be considered by Council.
11. AMENDMENTS: The Constitution shall only be amended at a regular General Assembly or at an extraordinary General Assembly called by the Council. In either case the text of any proposed amendment shall be circulated six months before the meeting to all members through the federated societies.
12. AUDIT: The accounts of the IFPS shall be made up annually on 31 December and submitted to an auditor approved by Council. Abstracts of accounts shall be presented at each General Assembly and on request to the federated regional, national, linguistic and specialist societies.
13. DISSOLUTION: The Federation (IFPS) shall be dissolved only at a regular General Assembly, or at an extraordinary General Assembly which has been called for this purpose, by a majority vote of the members present. In the event of such dissolution, any property or assets of the Federation shall by decision of that General Assembly be disposed of by gift to one or more international organizations concerned with the furtherance of palynology.

BY-LAWS

1. The Council shall organize an "International Palynological Conference" at intervals of four or five years, and a General Assembly shall be called at such meetings.
2. The annual membership subscription shall be US $1.00 per member per annum, payable through through the regional, national, linguistic and specialist societies by 1 May.
3. In addition to the officers mentioned in the Constitution, the President may appoint, Council concurring, an IFPS Newsletter Editor, who is responsible for preparation and distribution to member societies, of periodic newsletters about IFPS activities. The Secretary-Treasurer shall also have the right to appoint one or two Associate Secretaries to assist with such tasks as caring for the IFPS World List of Palynologists.
4. Amendments to By-Laws may be made by Council and will be considered effective six months after being notified to the membership in a General Circular.

ACRITARCHS — OF ALGAL AFFINITY?

The detection of a thin sporopollenin layer in some modern unicellular algae will probably help to solve the origin of some representatives of the group Acritarcha Evitt. Conspicuous similarities can be observed between several acritarch species of Lower Paleozoic age and modern freshwater Chlorococcales in surface sculpture, vesicle symmetry, etc. The empty sporopollenin layer of the modern species *Tetraedron caudatum* (Corda) Hans is closely similar to the acritarch species *Cheleutochroa gymnobrachiata* Loeblich & Tappan of Upper Ordovician age.
Submitted by:
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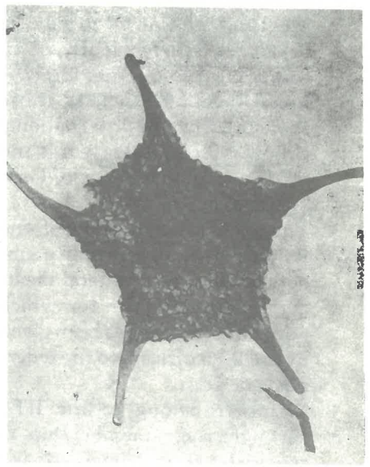

Tetraedron caudatum X 12,000
(SEM by T. Kalina & L. Kovacik)

List of organizations comprising the
INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES

AASP	American Association of Stratigraphic Palynologists
ACP	African Committee for Palynology
ALPP	Asociacion Latinoamericana de Paleobotanica y Palinologia
APLE	Asociacion de Palinologos de Lengua Espanola
APLF	Association des Palynologues de Langue Francaise
APP	Arbeitskreis für Palaobotanik und Palynologie
BMS	British Micropalaeontological Society (Palynology/Microplankton Groups)
CAP	Canadian Association of Palynologists
CIMP	Commission Internationale de Microflore du Paleozoique
CPS	Collegium Palynologicum Scandinavicum
GPSBI	Gruppo di Palinologia della Societa Botanica Italiana
OCP	Organization of Czechoslovak Palynologists
PK	Palynologische Kring
PPAA	Palynological and Paleobotanical Association of Australasia
PSC	Palynological Society of China
PSI	Palynological Society of India
PSJ	Palynological Society of Japan
PSP	Palynological Society of Poland
SPC	Soviet Palynological Commission (of the USSR Botanical and Paleontological Societies)
TCP	Turkish Committee for Palynology

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Geological Survey of Canada
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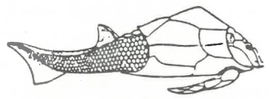
THE CSPG SECOND INTERNATIONAL SYMPOSIUM ON THE DEVONIAN SYSTEM



CALGARY, ALBERTA 1987

In 1967, the Alberta Society of Petroleum Geologists, predecessor of the Canadian Society of Petroleum Geologists (C.S.P.G.), hosted the very successful First International Symposium on the Devonian System. To mark the 20th Anniversary of that event and to highlight the many developments in Devonian geology in the interim, the C.S.P.G. will host the Second International Symposium on the Devonian System in Calgary, Alberta, August 17-20, 1987, under the general chairmanship of Dr. Digby J. McLaren.

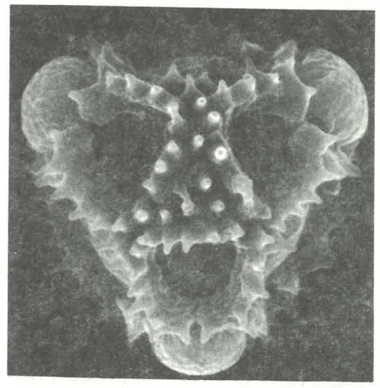
The technical program will include both invited and submitted papers on:

- Devonian paleogeographic reconstruction throughout the world.
- Special sessions on a variety of subjects including petroleum and economic geology, tectonics, global reconstructions, biostratigraphy, transgressive-regressive cycles, event stratigraphy, nonmarine-marine correlations, organic rich shales and carbonates and reefs.

Field trips will be organized before and after the symposium to Devonian expores in western and northern Canada. The proceedings of the symposium will be published as part of the C.S.P.G. Memoir Series.

A circular will be sent out in the Fall of 1985. Requests for circulars, and further information may be obtained from:

2nd Int. Symposium on the
Devonian System
Canadian Society of
Petroleum Geologists
#505, 206 - 7th Avenue, S.W.
Calgary, Alberta, Canada
T2P 0W7
(403) 264-5610



The smiling face shown above belongs to a fresh grain of *Taraxacum officinale* Wiggers (Asteraceae), commonly known as dandelion (although worse names have been applied to this European weed that is so difficult to eradicate from North American lawns).

SEM ca. X2000. Courtesy of D. J. Nichols, USGS, Denver, CO.

REPORT ON PALYNOSTRATIGRAPHY SYMPOSIUM OF THE 27TH INTERNATIONAL GEOLOGICAL CONGRESS, MOSCOW, AUGUST, 1984

For the first time in the history of palynology, scientists working in this field of paleobotany have had an opportunity to organize an intersectional symposium on problems of biostratigraphy.

This symposium was organized under the joint chairmanship of E. D. Zaklinskaya (USSR), J. Richardson (Great Britain) and N. Pantich (Yugoslavia). The program of the symposium included three main topics: (1) principles of palynological substantiation of stratigraphic subdivisions and palynological correlation; (2) methods of complex research of microfossils of plant and animal origin (spores, pollen, plankton algae and their cysts), essentially with the goal of establishing natural conditions of sedimentation; (3) methods of palynological studies in applied geology, primarily for forecasting and prospecting hydrocarbon deposits of different properties, as well as other commercial minerals.

The meetings were held on August 9, 10 and 13th in Moscow State University (Building II, Room 12) from 1:00 to 5:20 p.m. The sessions were attended by 25 to 45 scientists, who actively contributed to the discussion. The symposium included 29 reports, 12 of which were delivered by foreign colleagues (Great Britain, Bulgaria, France, Poland, Italy, Romania, India, Yugoslavia, Canada, and Czechoslovakia).

All the three aspects of the program were discussed in detailed reports read by specialists from different countries. Practically all the Phanerozoic epochs on the territory of the Northern Hemisphere were covered.

On August 9 and 10 the symposium began with the main reports: August 9, by J. Richardson on "Palynology of the Middle Paleozoic; Facies, Correlation;" and August 10, by E. D. Zaklinskaya on "Palynological Correlation."

Richardson represents the palynological school that significantly broadened the range of microfossil studies, having deviated from exclusively paleobotanic objects and included into the studies different microscopic remains of both fauna and flora. This method may be called micropaleontological to distinguish it from the palynological one as being related exclusively to fossil spores and pollen of higher plants. Without dwelling upon this controversial aspect of the problem, we should stress the extreme efficiency of the combined studies of microfossils. The author, while studying sediments of the British Isles, western Europe and the Atlantic coast of North America, has established three megafacies: continental shelf and oceanic (continental and abyssal parts) distinguished by specific microfossil assemblages, with converging taphocoenosis areals, related to those megafacies, in marginal parts.

Assemblages of microfossils (spores, acritarchs, cysts and cells of planktonic algae and benthos cysts) appeared to be indicative of the sedimentary environment. Every megafacies of the middle Paleozoic has its own assemblage of mirofossils. Quantitative and qualitative indices of microfossil assemblages were recommended by the speaker as reliable markers of stratigraphic subdivision and correlation between marine and terrestrial middle Paleozoic deposits.

The data presented by a group of Soviet scientsts — V. A. Fedorova, A. S. Gryazeva, K. L. Lyubomirova, and M. S. Stanichnikova — "The Role of Anastostrophic and Transit Microfossils in Palynostratigraphical Phanerozoic Sedimentary Deposits" were well in agreement with concepts advanced by Dr. Richardson. The authors showed the effective application of palynological data combined with fossil remains of cysts and cells of flagellate algae with organogenic vessels. This provides a basis for correlation between sediments of marine and continental facies, as well as for establishing environments of a sedimentary basin. The research by these authors also covered Mesozoic and Early Cenozoic deposits.

The Soviet palynologists draw a hard and fast line between different fields of paleobotany (palynology) and general micropaleontological studies, which include as objects of study of microremains in different size ranges equal to spores and pollen. Many palynologists throughout the world gradually depart from the term "palynology" as defined by G. Erdtman, who regarded palynology as studies of all microfossils within the 20-120 micrometer size interval of animal, plant or unknown origin. We will not dwell on that debatable side of the question, but should stress that the combined study of microscopic paleontological remains is undoubtedly extremely useful in biostratigraphy and paleogeography.

In the paper entitled "Palynological Correlation," E. D. Zaklinskaya suggested major principles of application of palynological data for detailed subdivision of sedimentary deposits and described methods of their palynostratigraphic correlation, starting with local and regional, up to interregional wider scales. This paper emphasized the floristic principle of analysis of palynologic data, especially helpful in establishing distinct palynochromes of different length, within which chromostratigraphic subdivisions may be delineated according to different groups of fossils.

Of great interest were palynostratigraphical papers by Hungarian scientist Yukhas, "Palynostratigraphy of Middle Mesozoic Sediments in Hungary," by V. I. Ilina (USSR) "Subdivision and Correlation of Continental and Marine Crusts of Siberia," by N. A. Timoshina and N. M. Menshikova (USSR) "Jurassic Palynostratigraphy of Western Kazakhstan," by L. A. Panova (USSR) "Palynostratigraphy of Paleogene Deposits of the Caucasus," and by V. S. Volkova, I. A. Kulkova, A. F. Fradkina (USSR) "Palynostratigraphy of the Continental Neogene in Northern Asia." M. Yukhas read the paper on the significance of pollen of early angiosperms (slides were shown with photomicrographs of different pollen species of early angiosperms). Together with accompanying species of spores and pollen, the author used these palynomorphs to subdivide the Middle Mesozoic of Hungary into zones (oppel-zones). In the above-listed papers, the Soviet scientists expressed their doubts over the possibility of establishing oppel-zones only on the basis of palynological data. V. I. Ilina showed the efficiency of combining floristic analysis, with the account of floral differentiation in the Mesozoic, with data on faunistic orthogroups of ammonites. This provided the basis for zonal subdivision of marine Jurassic deposits of Siberia. In papers by Siberian palynologists on palynostratigraphy of the Paleogene and Neogene, the emphasis of palynological material, which helps to establish different groups of taxa, important for defining the floristic succession of events.

The subject of the paper, "Palynostratigraphy and Correlation on the Basis of the Study of Development of Mesozoic and Cenozoic Floristic Areas Characterized by Different Floras" by M. Pantich (Yugoslavia), is very similar to the above reports.

Five papers: "Ordovician System of Acritarchs of Western Bulgaria" by R. Kolvacheva (Bulgaria); "Carboniferous Palynostratigraphy in the Marginal Parts of East European Platform on the Territory of Poland" by H. Kmiecik (Poland); "Dinoflagellate Cysts in Jurassic Deposits in Kachi [?] Province of India" by A. Kumar (India); "Dating of Phyllites by Acritarchs in the Agordo Province (South Alpine basement of the Eastern Alps)" by F. L. Sassi, A. Zaneferrari (Italy) and R. Kolvacheva; and "Palynostratigraphical Zonation of the Carboniferous of Canada" by J. K. Lentin and J. P. Bujak (Canada) were based largely on cells of acritarchs and cysts of dinoflagellates. Their assemblages outlined during subdivision of marine deposits with different genesis give an opportunity to restore chronological change in the regime of the basins.

All the papers were illustrated by wonderful slides of photomicrographs, part of which were made by a scanning electron microscope. Photos shown by J. K. Lentin were particularly impressive. Photomicrographs made with a phase-contact device, in combination with changing filters, look rather different from standard slides on the reversible film. Images of microorganisms had an exceptionally bright range of colours.

An ample palynological description of Devonian deposits in Siberia was given by Yu. S. Nadler (USSR). The author demonstrated a series of distinct and continuously alternating palynocomplexes, which included correlative taxa for regional and interregional correlation.

The paper by L. V. Rovnina, L. G. Markova and S. I. Prutova (USSR) — "Palynology in Oil Geology of West Siberia," was based on long-term studies of heterofacies marine and continental deposits of commercial hydrocarbons and relatively poor fauna and dealt with palynological studies of oil- and gas-bearing deposits. The speakers noted the role of palynology in establishing criteria for the stratigraphy of narrow stratigraphic intervals responsible for the formation of productive oil beds.

Palynology as a paleobotanic science in its essence has become an extremely useful method for studying oil- and gas-bearing deposits of Siberia, when combined with reconstructions of ancient paleoclimates and occasionally "paleolandscapes," i.e., it helps to restore the natural environments which favoured formation and accumulation of hydrocarbons.

During the last day of the session, the symposium concentrated on problems of development of biostratigraphic palynology and its methods.

V. P. Grachuk (USSR) emphasized the efficiency of palynological studies of the Pleistocene. His paper, "Stratigraphic Subdivision of Quaternary Deposits on the Territory of the USSR," touched the main principles of floristic analysis of palynological data, represented by lists of fossils defined to species and genera. Using well-illustrated material on key sequences of Pleistocene series studied through different physical-geographical zones, the author described the methods of detailed subdivision and correlation of deposits on the basis of comparison of the chronologically replacing boundaries. He showed basic and irreversible changes in composition of dendrofloras during "cold" and "warm" Pleistocene phases in different floristic provinces. The author recommended the approbated method of arealogical analysis of the main faunistic indicators whose migration is recorded through the palynology of dendrofloras. Following major methods of palynological studies, N. A. Shatilova (USSR) described palynostratigraphy of Late Cenozoic deposits in the Western Transcaucasus.

Using the paleoecological method of interpretation of palynological data, N. Bantesh (Romania) (the paper was read by the co-author, K. Stenkulescu) provided material on "Conditions of Accumulation of Sedimentary Complex of Moldavian Molasse." The report by M. C. Adloff, J. Doubinger, S. Appia and M. Linar (France), "Palynostratigraphic Zonation of Triassic Deposits Recovered by Holes Drilled in the Jura and Baden" (the paper was read by J. Chateauneuf) deals with a specific problem of palynostratigraphy.

Much attention was given to the paper by Kabailene (USSR) on, "Correlation Between Palynozones of Marine and Continental Upper Quaternary Deposits of the Soviet Baltic Province," which gave important details of sedimentation in the shelf zone, with the bulk of palynological correlatives whose composition and preservation are in direct relation to the water regime of the relatively shallow-water area.

The paper by B. Patsitova (Czechoslovakia), "Results of Micropaleontological and Palynological Studies of Metamorphic Rocks in Bohemian Massif," also deals with problems of methodology. The author showed the efficiency of combined studies of microfossils of marine origin. The author demonstrated the efficiency of the so-called "humane" methods for preparing stone material for extracting microremains by scraping the rock and then treating the resulting silty mass with a water and sodium carbonate solution. Using this method without any application of "macerating" chemical elements, the author extracted not only palynologic material, but also the finest fragments of algite which retained the cell structure.

L. Olaru (Romania) in the paper, "Palynostratigraphy of Metamorphic Suites in the West Carpathians," gives reliable data for subdividing such complex (in respect to palynological studies) into units containing microfossils, which were subjected to the intense effect of complex sedimentation processes.

To remind of the significance of the representatives of some groups of palynologic taxa for palynological studies, A. F. Khlopova (USSR) showed a number of schemes of vertical distribution of angiosperm pollen characteristic of Cretaceous floras and chronological persistence of changes in morphologically-isolated forms of pollen of plants belonging to the class of angiosperms in the floras of the later Early and Late Cretaceous.

The palynofloristic part of the symposium was completed with the paper by G. M. Levkovskaya (USSR) and co-authors, and the report by A. Leroi-Gourhan and J. Renault-Miskovsky (France), "Palynostratigraphy of the Oldest Paleolithic Monuments of Europe and the Caucasus." They showed that the floristic method for the interpretation of palynological data obtained from the rocks with cultural remains can help to restore not only the natural environments of the ancient man, but to define the geological age of the camp sites.

The methodological part of the symposium was completed by the paper, "Trustworthiness of Biostratigraphic Information is a Single Way for the Application of Computer in Palynology" by E. A. Gluzbar (USSR). He called on the palynologists from the USSR and other countries to unite their efforts to create a distinctly formalized record of major data on palynological, paleoecological and other branches of palynology, as well as to revise the available taxa used to describe assemblages but without nomenclatural justification.

The speaker stressed that the vast summarized material available in publications often cannot be used, due to the absence of unified terminology and shortcomings in accuracy of registering the stratigraphic position of the finds of palynoassemblages that are indispensible for correlation. All this is interfering with a wider application of computers and therefore decreases the effectiveness of quick solution of practical tasks.

In general, the symposium showed a growing maturity of palynological schools in different countries. The persistent and active participation of palynologists in the solution of applied tasks in stratigraphy favoured the development of new methods of palynological studies in biostratigraphy. At present, palynologists have not enough experienced specialists in paleoecology and are therefore forced to develop a complex approach to all microfossils all by themselves.

Modern palynologists nowadays pay a great deal of attention to the reconstruction of natural environments of sedimentation. New methods have been developed for rock enrichment to extract the most complete assemblages of fossils. Palynologists also pay much attention to regional paleogeographic environments. Correlation between palynological and geophysical data, and correlation of the latter within the intervals established according to palynological data became traditional.

The most pleasant aspect of this symposium was the palynological unity in understanding the main problems with which the experts in palynostratigraphy are faced. This unity should promote further successful development of palynology as a branch of the earth sciences.

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REPORT ON EISENACK ISSUE

This special issue of *Bull. Sci. Geol.* (Vol. 35, no. 3, pp. 95-181, 1982) is devoted to the science of palynology and is dedicated to the memory of the distinguished German palynologist, Alfred Eisenack (1891-1982). The six papers in this issue are concerned with Cretaceous and Tertiary dinoflagellates, pollen and spores from the Triassic and Tertiary, as well as chitinozoans and acritarchs from the Ordovician. Four of the articles are based on Moroccan sediments; the others concern horizons in Italy and France.

The Moroccan phosphates, ranging from the Maestrichtian (U. Cretaceous) to the Lutetian (M. Eocene), contain rich associations of dinocysts (see also *Sci. Geol.* 32, 1-2, 1979), but spores and pollen grains are relatively rare. Rauscher and Doubinger's paper deals with biostratigraphy based upon dinoflagellate cysts at the very beginning of phosphatogenesis (upper Campanian and Maestrichtian) in this region. Identification of more than 90 species allowed a four-zone subdivision of this sequence (especially in the Ouled Abdoun basin), as well as correlation with the Ganntour basin. The systematic study of Tertiary pollen in the latter basin by Ollivier-Pierre permitted her to distinguish well-differentiated

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NEWS FROM THE AFFILIATED SOCIETIES

British Micropalaeontological Society (Palynology Group)

REPORT ON CAMBRIDGE MEETING

A two-day lecture/poster display meeting was held at the Department of Earth Sciences, University of Cambridge, 17-19 December, 1984. The theme was "Pollen and Spore Biostratigraphy of the Phanerozoic in Northwest Europe." Approximately 85 palynologists attended, including 18 overseas representatives from Norway, Sweden, Holland, Germany, Ireland, Belgium and France. There was a good mix of industrial and academic palynologists.

The meeting was structured such that speakers were invited to give talks on their particular sphere of specialization and so cover the Phanerozoic time period. The intention was to have a limited number of talks over a two-day period to enable open discussion to develop. This proved extremely effective. The lecture sessions were interspersed with many long coffee breaks, which again encouraged much informal and useful discussion.

No abstracts were requested, instead a series of range charts submitted by the contributors were compiled to form a conference handout. John Richardson began on Monday afternoon with a preview of a shortly to-be-published biozonation for the Silurian and Devonian. The 19 megazones described in the paper are not only applicable to Northwest Europe, but enable comparison with the Silurian and Devonian of North America and China. John also commented on the need for greater collaboration between the various specialist palaeontological groups in the definition of stratotypes, and that palynology has much more to offer in the selection of appropriate stratotypes than it is at present contributing. This comment was reiterated many times by other contributors throughout the meeting, and the suggestion was made by John Marshall that palynologists should adopt a more public profile in the international stratigraphic commissions.

Geoff Clayton, Mavis Butterworth and Geoff Warrington provided comprehensive reviews of miospore biostratigraphy in N.W. Europe for the Lower Carboniferous, Upper Carboniferous and Permo/Trias, respectively. They each highlighted recent advances and refinements in established zonations, pointing out the intervals over which further work is currently being undertaken.

Dorothy Guy-Ohlson described Hettangian to Bathonian miospore distributions in Sweden and showed how ranges of selected taxa, together with assemblage characteristics could be used to define broad palynological zones. James Riding noted that the British ranges of certain Hettangian/Sinemurian taxa were different to the Swedish ranges, but in broad terms were similar.

The problems of miospore biostratigraphy in the Upper Jurassic and Cretaceous of N.W. Europe were outlined by David Batten and the potential stratigraphic use of selected miospore groups, including *Trilobosporites, Classopollis,* and *Normapolles,* was discussed.

Mike Boulter described the problems ofmiospore stratigraphy in the Tertiary and discussed less conventional stratigraphic applications of Tertiary miospores, including the identification and correlation of climatic and/or eustatic events. Martin Head spoke briefly about his research on Tertiary palynology of Spitzbergen.

John Marshall gave a few useful tips on palynological processing techniques and apparatus before Norman Hughes drew the meeting to an end with some closing comments. He emphasized the problem of lack of acknowledgement of palynology at international stratigraphic meetings, and also suggested that palynologists should be utilising computers more in our data handling, and moving away from conventional journals and publications for the storage and transmittal of taxonomic information.

Two informal poster sessions were held, the details from which are listed below.

Social activities included a sherry reception and a group dinner in Queens' College. The latter, attended by over 40 people, was a particular success.

My thanks go to Mike Boulter in his capacity as Chairman, to all contributors, (lectures, discussion and posters), and especially to Norman Hughes and his colleagues at Cambridge for all their hard work as local organisers.

LIST OF POSTER CONTRIBUTIONS:

Paul Grant — (Imperial, London).
Correlation by assemblage similarity.

Ian HARDING — (Cambridge).
(1) The Hauterivian-Barremian boundary in Warlingham borehole.
(2) Lonely dinocyst from the Warlingham Barremian.
(3) Additional angiosperm pollen — Barremian.

Chris HUNT — (Sheffield).
Miospore biostratigraphy of the Purbeck Formation. (Portlandian to Berriasian).

Audrey McDOUGALL and Norman HUGHES — (Cambridge).
(1) Angiosperm pollen near the Hauterivian-Barremian boundary.
(2) New pollen types from current Scan-search.

James PENNY — (Cambridge).
(1) Early Cretaceous examples of *Stellapollis* from the Western Desert of Egypt.
(2) *Afropollis*.

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(continued from page 6)

assemblages of Montian, Thanetian and Ypresian age, including the same stratigraphic markers as those recognized in European horizons of equivalent age.

Weiler's paper reports a discovery of calcareous dinoflagellate cysts in the marine middle Oligocene from the Southern Rhinegraben; these dinocysts include some of the same species reported from the Northern Mainz basin.

Marhoumi, Rauscher and Vanguestaine describe and illustrate acritarchs and chitinozoans of Lower Ordovician age from the Moroccan Tazekka schists; these rocks were previously assumed to be of Lower Carboniferous age.

East of Marrakech in the southern High Atlas Mountains of Morocco, Le Marrec and J. Taugourdeau were able to determine that the detritic series overlying the Carboniferous was of Carnian (Upper Triassic) age.

A Middle Triassic formation in the Alpine Dolomites of northern Italy was investigated by Cros and Doubinger. The hemipelagic or terrigenous and tuffitic facies revealed rich pollen and spore associations of upper Ladinian age. In relation to the lithology of these facies, the variation of palynological assemblages indicates the dynamics of both eolian and marine influence on the dolomitic basin area.

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FUTURE MEETINGS OF INTEREST TO PALYNOLOGISTS

"Palynologie et Milieux Tropicaux"

The IXth A.P.L.F. Symposium will be held in Montpellier from October 1 to 3, 1985. This symposium is devoted to "Palynology and Tropical Environments." Topics to be treated include: pollen morphology of tropical plants in relation to their evolution and geographic distribution; aeropalynology in tropical areas; pollen analysis and vegetational history of tropical regions; ancient tropical landscapes in modern temperate regions; marine cysts and palynomorphs of tropical seas; etc.

Two introductory lectures will be given — F. Blasco ("Tropical Modern Ecosystems") and R. Bonnefille ("Inference of Palynological Data for the Vegetational Past Knowledge in Africa"). Contributions on any other palynological topic will also be welcome.

A botanic and geologic excursion will close the meeting; the emphasis on this trip will be twofold: (1) present and Holocene vegetational associations from the Roussillon Plain to the peaks of the Pyrenees; and (2) geological history of the Roussillon Basin (including paleobotanical aspects).

For further information, write to:

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October 16-19, 1985
AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS (AASP), 18th Annual Meeting, El Paso, Texas. (Dr. William C. Cornell, Dept. Geol. Sci., U. Texas, El Paso, TX 79968)

August 19-23, 1985
GONDWANA (6th Symposium), Columbus, Ohio, U.S.A. Sponsored by IUGS and Geological Society of America. (D. Elliott, Institute of Polar Studies, Ohio State University, 103 Mendenhall, 125 South Oval Mall, Columbus, OH 43210, U.S.A.)

September 19-21, 1985
GEOLOGICAL SOCIETIES OF THE BRITISH ISLES (6th Meeting), Birmingham, U.K. (Prof. P. A. Garrett, Department of Geological Sciences, The University of Birmingham, P.O. Box 363, Edgbaston, Birmingham B15 2TT, U.K.)

October 9-12, 1985
LATIN AMERICA (6th Geological Congress), Bogota, Colombia. Languages: Spanish, English, French, and Portuguese. (VI Latin American Geological Congress, INGEOMINAS-AGID, Diagonal 53 No. 34-53, P.O. Box 4865, Bogota, D.E., Colombia)

October 28-November 1, 1985
COAL SCIENCE (International Conference), Sydney, Australia. Sponsored by IEA (R. W. Hinde, CSIRO Div. of Fossil Fuels, Box 136, North Ryde, NSW 2113, Australia)

APRIL 7-14, 1986
LATE DEVONIAN EVENTS AROUND THE OLD RED CONTINENT, Aachen, FRG. (Prof. Jacques Thorez, Soc. geol. de Belgique, 7 place du Vingt-Aout, B-4000 Liege, Belgium)

August 4-6, 1986
SPOROGENESIS IN ARCHEGONIATES (both living and fossil), Stockholm, Sweden. (Dr. E. Sheffield, Dept. of Botany, Univ. of Manchester, Manchester M13 9PL, U.K.)

August 6-9, 1986
3RD INTERNATIONAL CONFERENCE ON AEROBIOLOGY, Basel, Switzerland. (Dr. Ruth M. Leuschner, Dept. of Research, Div. Dermatology/Allergology, Kantonsspital, CH-4031 Basel)

September 7-11, 1987
CARBONIFEROUS STRATIGRAPHY AND GEOLOGY (11th International Congress), Beijing, People's Republic of China. (Prof. Yang Jing-zhi, Nanjing Institute of Geology and Palaeontology, Chi-Ming-Ssu, Nanjing, People's Republic of China)

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