

PALYNOLOGOS

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NEWSLETTER of the INTERNATIONAL FEDERATION of PALYNOLOGICAL SOCIETIES



Main building of the Faculty of Law, Aix-en-Provence—venue for the 8th International Palynological Congress

8th IPC UPDATE

Details of the organization of the 8th IPC are being resolved satisfactorily. At the present time more than 1,100 colleagues have responded to the First Circular. The Second Circular (to be distributed in June 1991) will include information about the General Sessions, plus the titles and Convenors of the 18 planned Symposia. Invited or volunteer contributors to Symposia are requested to send copies of their abstracts to both the main Convenor(s) and the Congress Secretary.

The next issue of *Palynos* (Vol. 14, No. 2, December 1991) will be devoted entirely to additional information about the 8th IPC, including details of the scientific and social programs. This issue will also contain specialized reports concerning the Provence Region of southern France, viz., tourism, vegetation, climate, geology, archeology, history, gastronomy, arts and folklore.

Due to generous financial support obtained for this Congress, the Organizing Committee will be able to propose (see details in 2nd circular) reasonable registration fees, particularly for young scientists, yet at the same time allow the provision of numerous excellent services for all Congress participants.

The Faculty of Law building shown here was designed by a local architect, V. Sardou, to resemble the Villa Medicis in Rome. The central hall of this building will be reserved for the exhibition of both general and scientific material. IFPS-affiliated palynological societies desirous of displaying their publications and/or publicizing their activities during the Congress are requested to contact the Congress Secretary for further instructions. Arrangements have been made for a Computer Society to present free demonstrations of IBM and Macintosh pro-

grams in the exhibit hall. Palynologists interested in these demonstrations should so inform the Congress Secretary. He should also be notified of any societal needs for meeting rooms or workshop space during the Congress.

A greatly-reduced copy of the 8th IPC poster is shown below. In addition to the official Congress logo of *Olea europaea*, the poster is framed by a representation of the porch of the Aix De Castillon Hotel (XVII-XVIIIth centuries). This poster is being distributed to major palynological laboratories throughout the world and will subsequently be made available to all Congress Members.

For questions concerning the 8th IPC Symposia, please contact:
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LETTERS TO THE EDITOR

Comments on Noteworthy Palynomorph (Vol. 12, No. 2, Dec. 1989)

by

G.K. Srivastava, D.D. Pant and Manju Srivastava

Botany Department, The University of Allahabad, India.

Maheshwari and Bajpai (1987) and Mishra and Tripathi (1989) have reported "tetra-lete" megaspores from Lower Gondwana (Permian) rocks of Tanganyika, Zaire and Umara (M.P.) India, respectively. However, similar megaspores have been described much earlier by Pant and Srivastava (1962) in *Isoetes dixitei* Shende and *I. indica* Pant and Srivastava. Spores with four-rayed marks have also been observed by us in a few species of *Pteris* L. (unpublished). However, the number of such "tetra-lete" spores per sporangium, if present, is very low (only 1-2 per sporangium).

Maheshwari and Bajpai (*loc. cit.*) have conjectured the possible manner in which such megaspores may have been formed, but the suggested mechanism is hardly convincing, since one is unable to understand how, after the first meiotic division, a larger spore is formed and it remains undivided; they postulate that subsequent mitotic divisions result in the formation of four abortive spores. In fact, these authors have completely failed to explain the unusual behavior of the spore mother cell and the factors responsible for the formation of more than four spores.

In this connection, we find that such spores having four-rayed marks have been observed in plants having an irregular spindle formation and "laggards" (see Pant and Srivastava, 1965) due to possible hybridity, which we now envisage as the possible ultimate cause of polyspory or the unusual formation of more than four spores. It is already known that the spores in such polysporic formations tend to be unequal (see Tackholm, 1922 as quoted by Sharp, 1934). In addition, some of them have been shown to possess five spores, with the smaller spore formed by chromosomal lag-

ging (see Sharp, 1934, Fig. 206, 8). Such a tetrad could show a larger spore with a four-rayed mark or "tetralete" on the proximal side.

REFERENCES

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- Mishra, S.N. and R.P. Tripathi. 1989. Noteworthy Palynomorph. *Palynos* 12 (2): 7.
- Pant, D.D. and G.K. Srivastava. 1962. The genus *Isoetes* in India. *Proc. Natl. Inst. Sci. India* (Pt. B.) Biol. Sci. 28:242-280.

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Cytology and reproduction of some Indian species of *Isoetes* cytologia. *Idem* 30: 239-251.

- Sharp, L.W. 1934. Introduction to cytology. McGraw Hill Book Company, New York, 3rd ed.

MEET YOUR IFPS COUNCILLORS

Dr. Anna Sadowska, Professor of Paleobotany at the University of Wroclaw, is the new Councillor for the Palynological Society of Poland (PSP).

She was born in Lwow, but at an early age moved westward to Wroclaw, where she subsequently obtained most of her formal education. She earned a Master's degree in Botany from the Faculty of Natural Sciences at the University of Wroclaw. In 1962 she was appointed to a research assistantship in paleobotany at her alma mater, which soon led to her development of a keen interest in palynology. This research pursuit eventually led to her being awarded a doctorate in 1970 by the University of Wroclaw. Since 1974 she has been Professor and Head of the Department of Paleobotany at this university. Recognition of her research accomplishments was indicated by her award of a second doctoral degree from the Jagiellonian University of Krakow in 1978.

Palynological investigations of Professor Sadowska have been directed at the stratigraphy of the Neogene sediments in southwestern Poland. Her emphasis was on



Anna Sadowska

age determination and correlation of the Miocene brown coal seams, as well as reconstructions of the vegetation and floral evolution during the Neogene. She has also studied the Paratethys' Neogene formation occurring in Silesia and correlated these deposits with the continental deposits in the Polish Lowlands. In collaboration with a number of paleobotanists and geologists she published her investigations of several late Miocene and Pliocene localities, e.g., Ruzow, Gozdnica, Sosnica and Klodzko.

She also maintains a strong interest in pollen morphology, which is demonstrated by her work on the Tertiary taxa *Itea*, *Reevesia* and *Theligonum*. Commencing in 1962 under the direction of Professor A. Stachurska, and since 1973 while working independently, she has been responsible for the regular publication of the well-known *Palynological Card Index of Polish Plants*.

In addition to her palynological research, Professor Sadowska has been heavily involved with the teaching of paleobotany and palynology to students in Botany and Geology. A number of students have received their Master's degrees under her direction in the areas of Tertiary or Quaternary palynostratigraphy and pollen morphology.

Professor Sadowska is the Chairman of the Polish Botanical Society in Wroclaw, as well as a member of several other botanical and geological societies. Besides her professional interests, she enjoys cooking, entertaining, dancing and gardening. Her favorite type of holiday is travelling and visiting monuments of ancient civilizations.

FIRST CIRCULAR FIFTH NORTH AMERICAN PALEONTOLOGICAL CONVENTION (NAPC-V)

at Field Museum of Natural History, Chicago, U.S.A. Sunday, June 28th - Wednesday, July 1st, 1992. Sponsored by: Association of North American Paleontological Societies, Field Museum of Natural History, University of Illinois at Chicago, University of Chicago.

INVITATION - In 1992-93 the University of Chicago and the Field Museum of Natural History will celebrate their centenaries. As part of these celebrations the paleontologists at the Field Museum, the University of Chicago, and the University of Illinois at Chicago invite you to participate with your colleagues in the Fifth North American Paleontological Convention (NAPC.V). We hope that this meeting will stimulate an exchange of ideas and information among the diverse subdisciplines of paleontology, and we are especially keen to encourage the participation of students and non-professional paleontologists in the program. With your help, our goal is to make NAPC.V as intellectually exciting and socially memorable as the First North American Paleontological Convention held in Chicago in 1969—The Organizing Committee:

Peter R. Crane, *Field Museum of Natural History*

John J. Flynn, *Field Museum of Natural History*

David Jablonski, *University of Chicago*

Susan M. Kidwell, *University of Chicago*

Michael C. LaBarbera, *University of Chicago*

Scott Lidgard, *Field Museum of Natural History*

Roy E. Plotnick, *University of Illinois at Chicago*

PROGRAM - The program for NAPC.V will begin with a Reception on the evening of Sunday, June 28th, 1992. The scientific program will begin on Monday, June 29th and end on the afternoon of Wednesday, July 1st, 1992. On Sunday the Field Museum will host a public symposium "Global Change: Past, Present and Future" emphasizing the significance of paleontological data to current discussions of global change. This symposium with invited speakers will be open to all participants in NAPC.V as well as members of the public.

The scientific program for NAPC.V will be divided approximately equally between Symposia focusing on interdisciplinary themes in paleontology (20 minute presentations) and Contributed Paper Sessions (15 minute presentations). All Symposia will include both invited papers, and papers drawn from contributed abstracts. As far as possible, contributed papers will be grouped into theme sessions, some of which may be linked to relevant Symposia. We especially encourage presentations that are of interest to several subdisciplines within paleontology. To ensure the participation of as many paleontologists as possible, registrants will be limited to one oral presentation at the meeting (although they may be listed as coauthors on more than one paper). The scientific program will also include a short plenary session of invited presentations, and a major poster session (not conflicting with symposia or contributed papers) that will be held early in the meeting.

We anticipate a total of approximately 12 Contributed Paper Sessions, each with about 16 presentations. Symposia currently scheduled are listed below with their convenors. We encourage suggestions for additional Symposia that will broaden the program further and increase the diversity of paleontologists participating in the meeting.

Paleozoic and Post-Paleozoic Benthos: Comparative Ecology and Physiology - M.C. Rhodes & G.J. Vermeij.

Phylogenetics and Rates of Evolution: Morphologic, Genomic and Taxic Rates - R. Cloutier & D.K. Elliot.

Early Metazoan Evolution: S. Conway Morris. Neogene to Recent Paleogeology and Evolutionary Dynamics in Tropical America - J.B.C. Jackson, A.G. Coates & A.F. Budd.

Environmental Patterns in the Origins and Fates of Major Groups - D.J. Bottjer & D. Jablonski.

Origin of Modern Terrestrial Ecosystems: Late Mesozoic and Cenozoic - G.R. Upchurch & R.K. Stucky.

Biomolecular and Isotopic Paleontology - J.D. Hudson, J.M. Hayes & D.M. Martill.

The Meaning of Higher Taxa in Macroevolutionary Studies - D.E. Fastovsky & J.M. Clark.

Late Paleozoic and Early Mesozoic Circumpacific Events and their Global Correlation (IGCP 272) - M. Dickens, D.W. Boyd & G.D. Stanley.

Long Records of Land Biotas: A Comparison of the Willwood-Wind River (Lower Eocene) and Siwalik (Miocene) Sequences - A.K. Behrensmeyer & T.M. Brown.

Molecular Paleontology and Exceptional Preservation - D.E.G. Briggs

Advances in Deep Sea Paleogeology - W.C. Miller.

STUDENT PARTICIPATION - Participation of students in NAPC.V is particularly encouraged. Registered students will be eligible for a reduced registration fee.

ACCOMMODATION - Accommodation has been reserved at reasonable rates at the Congress Hotel (10 minutes walk from Field Museum). Additional accommodation will be available in student dormitories at the University of Chicago.

FIELD EXCURSIONS - Several field excursions are anticipated, and will start either before or after the meeting. To assist the planning of these excursions please indicate your preferences in writing.

EXHIBIT SPACE - Limited space for commercial exhibits and display of specimens will be available at the meeting. Sale of specimens will not be permitted as part of NAPC.V.

PALEONTOLOGICAL COLLECTIONS - The Department of Geology at the Field Museum houses one of the preeminent collections of paleontological material in North America. These collections, totalling about 600,000 specimens, will be available for study during the meeting.

ACCOMPANYING FAMILY AND FRIENDS - The Field Museum is located close to downtown Chicago on the lakefront and within easy reach of numerous popular attractions and cultural institutions, including

the Art Institute of Chicago, The Shedd Aquarium and the Adler Planetarium. Chicago is also home to some of the greatest achievements in modern architecture, exceptional opportunities for shopping and a bewildering diversity of ethnic restaurants and nightlife. The campus of the University of Chicago is easily accessible from downtown and features many further attractions including the Oriental Institute, the Frank Lloyd Wright masterpiece Robie House and the nearby Museum of Science and Industry.

SECOND (FINAL) CIRCULAR - The Second (Final) Circular, including abstract forms and other details of the program, accommodation, and costs, will be mailed in September 1991 to those responding to the First Circular.

ABSTRACTS - Abstracts (camera ready, one full 8.5x11" page) will be due by February 1st, 1992. Abstract forms will be mailed with the Second Circular.

FURTHER INFORMATION - Please contact:

Peter R. Crane, NAPC.V

Department of Geology

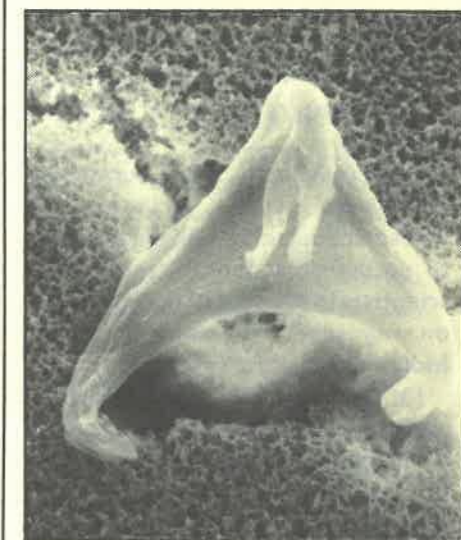
Field Museum of Natural History

Roosevelt Road at Lake Shore Drive,

Chicago, Illinois 60605-2496, U.S.A.

Tel: (312) 922-9410 ext. 334

OUTSTANDING PALYNOMORPH



SEM of *Mancicorpus canadiana* (Srivastava) B. Tschudy from the Maastriechian (Upper Cretaceous), Edmonton Group, of Alberta. If your imagination is sufficiently active, the reticulated and cracked substrate shown here can impart the impression that this bizarre triprojectate pollen grain resembles a spaceship about to make a landing on some distant planet a la *Star Trek*. (Submitted by Dr. M. J. Farabee, Gordon College, Barnesville, Georgia 30204, U.S.A.)

BIRBAL-SAVITRI SAHNI FOUNDATION

Dr. Shyam C. Srivastava, Secretary of the Sahni Foundation, has recently announced a number of academic/research programs in palaeobotany, palaeopalynology and allied fields. This foundation was established by the late Padamsri (Mrs.) Savitri Sahni (1902-1985), wife of the distinguished Professor Birbal Sahni (1891-1949); she bequeathed her entire estate to the Indian nation through the Sahni Foundation. As requested in her will, her residence is being transformed into a Museum-cum-Guesthouse. In addition, an attractive and unique fossil garden is being developed on this property in Lucknow on the banks of the Gomati River.

To date, the Sahni Foundation has inaugurated the following programs and/or awards:

(1) *Birbal-Savitri Sahni Collaborative Research Program.*

This program will facilitate the exchange of scientists between the Birbal Sahni Institute of Palaeobotany, Lucknow and other palaeobotanical centers either in India or abroad.

(2) *Birbal-Savitri Sahni International Fellowship.*

These fellowships will be awarded to young palaeobotanists or earth scientists in support of their research on any aspect of palaeobotany in India.

(3) *Birbal-Savitri Sahni International Award for Fossil Botany.*

To be given biennially for outstanding research in palaeobotany or an allied field. Includes a cash award of Rs. 25,000, plus a gold or silver plaque. Nominations for these awards should reach the Foundation office between 10-26 April each year.

(4) *Savitri Sahni Samman.*

This award has been established by a number of friends and admirers of Mrs. Savitri Sahni for her dedication to the cause of palaeobotany. It carries a cash prize of Rs. 10,000 and an engraved medal; these will be awarded annually on January 22nd to an individual showing excellence in any of the arts or sciences.

(5) *Savitri Sahni Smarak Lectureship.*

This memorial lecture has been instituted by the friends of Mrs. Savitri Sahni with an honorarium of Rs. 5,000 to facilitate an annual lecture on the 19th of September on any specialized field in the arts or sciences.



Aglaida Andreevna Lubber (1900-1990)

Aglaida Andreevna Lubber, a well-known Soviet palynologist, passed away on July 5, 1990. Her scientific career, which occurred over a 40-year period, was mainly accomplished at the *A.P. Karpinsky All-Union Geological Research Institute (VSEGEI)* in Leningrad. Concentrating on the fields of palynology and coal petrography, she published over 100 papers, among them 3 individual monographs and more than 10 joint monographs of general character.

A.A. Lubber, together with **I.E. Waltz**, developed the first valid classification of Paleozoic microspores (1938) and also published the first atlas depicting the Paleozoic microspores and pollen of the USSR (1941). These two works for many years remained the principal books of Soviet palynologists working with Paleozoic strata; furthermore, these publications were well-received by palynologists all over the world.

A.A. Lubber introduced and developed in detail the parallelization and synonymy procedure for coal seams based on microspores in a number of major Paleozoic basins of the USSR, which served as an important theoretical background for the practice of geological prospecting.

A major contribution to paleopalynology was made by A.A. Lubber by her published research on the dependence of the character of spore and pollen assemblages on the composition of rocks of different origin. Interpretation of these patterns serves as a basis for reconstruction of different types of ancient bog vegetation, which is important for understanding the nature of coals of different quality.

She was the first in the history of studies on coal measures to compile a map for zonal types of Permian vegetation in the USSR territory based on palynological evidence.

Diverse studies accomplished by A.A. Lubber deal not only with stratification of the Carboniferous and Permian deposits, but also geologically younger sediments. She provided the first palynological grounds for the stratigraphic subdivision and correlation of the Lower Mesozoic coal measures in Central Tien Shan, as well as in the Upper Mesozoic sediments of the Ugolnaya Bay, Bureya coal basin, deposits of the Transbaikalian area and some other regions of the USSR.

During the course of her long-term scientific career, A.A. Lubber took an active role at international meetings and congresses both in the USSR and abroad; in 1955-1960 she was the regional secretary for the USSR in the International Commission on the Paleozoic Microflora.

A.A. Lubber also made a significant contribution into the theory and practice of Soviet coal petrography. Since the early 30's she studied coal seams in the Karaganda Basin and was one of the pioneers in its investigation.

Aglaida Andreevna Lubber was a wonderful person, kind and sympathetic; her devotion to science and her brilliant erudition attracted many young investigators, so that it is possible to refer to the school of palynologists and coal petrographers trained by her.

M.V. Oshurkova (Leningrad)
L.V. Rovnina (Moscow)
SPC Councillors



PALYNOLOGY AT ABERYSTWYTH

Nestled among the remote valleys of coastal mid-Wales is the town of Aberystwyth, the home of the new Institute of Earth Studies of the University of Wales. Within the Institute is the **Palynological Research Centre (PRC)**, established in 1990 and staffed by Drs. **David J. Batten**, **Warren L. Kovach**, **Henry F. Lamb**, and **Bruce A. Tocher**. This centre was set up in the wake of a review of teaching and research in Earth Sciences at British Universities in order to establish, along with the existing micropalaeontology group, a centre of excellence in the study of plant and animal microfossils of all ages.

The research activities of the palynologists are diverse and cover the whole of the Phanerozoic Era. David's main interests are in Mesozoic palynology and palaeoenvironments, floral provinces and climate, palynofacies, organic maturation and petroleum source rocks. Warren studies the palaeoecology and systematics of Mesozoic plant megaspores, as well as the application of numerical methods in palaeoenvironmental and biostratigraphic research and the use of computers in palaeontology. Henry works on Quaternary vegetation and climatic history, with recent studies focusing on lacustrine palaeoenvironments and the environmental history of the Arctic and North Africa. Bruce is investigating Mesozoic and Cainozoic dinoflagellate biostratigraphy and ecology, and is also concerned with palaeoenvironmental interpretations and palaeoceanographic modelling. In addition, Dr. **Catherine Duigan**, a post-doctoral researcher, is working on the palaeolimnology of lakes in the High Atlas Mountains of Morocco, as well as on the taxonomy and palaeoecology of diatoms and *Cladocera*.

A new M.Sc. course in palynology was also initiated last year. This aims to give students a broad training in palynology, covering all ages and a range of topics from petroleum exploration-related biostratigraphy through Quaternary climatic studies and numerical methods

to forensic applications. There are currently five students in the course, including two who will shortly begin working towards Ph.D. degrees. There are also two other students within the Institute who are incorporating palynological studies into their Ph.D. work on Quaternary sediments, and three external Ph.D. students (one from Copenhagen, Denmark and two from Plymouth, England) who are working closely with members of the PRC staff.

The PRC is housed in a specially-designed suite of offices and laboratories, including two large palynological preparation labs supervised by Mrs. **Lorraine Morrison**. There are a number of IBM-PC compatible computers in the centre, linked by Ethernet to the University's DEC 5820 and VAX computers. We have recently installed hardware and software to turn some of these computers into stratigraphic workstations, where palynological data can be entered into a database through a 256 key touch pad, with the resulting diagrams being automatically drawn on a large format plotter.

We may be contacted at the:

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ORT II

Four years ago in *Palynos* 10(1), June 1984, your editor initiated a column called "ORT," a term beloved by crossword puzzle editors and usually defined as "worthless scraps or leavings." This original column included a number of "fractured" English statements taken from signs seen in European and Asian tourist hotels. This column received mixed reviews—one reader enthusiastically declared that the ort column was the best part of the newsletter. However, a member of the Executive Board expressed the fear that the column denigrated some of our international colleagues. Nevertheless, at the risk of offending some particularly sensitive individuals, I offer another series of English signs spotted in various parts of the world.

SOCIETAL HAPPENINGS

PALYNOLOGISCHE KRING (PK) - The Netherlands

Four formal meetings were held by the Palynologische Kring during 1990 as follows: 13 March (Utrecht), 25 April (Amersfoort), 4-5 October (Arcen), and 14 November (Amersfoort). The October meeting represented the 30th annual joint Belgian-Netherlandian "*Palynologendagen*." Lectures at this meeting were presented by: **M. van der Berg**, **W. Westerhoff**, **K. Koelbloed**, **J. de Jong**, **J. Broertjes** and **P. Cleveringa**.

The current officers of the Kring are: **P. Cleveringa** (Haarlem), President; **O. Brinkkemper** (Leiden), Secretary; and **J.A.A. Bos** (Utrecht), Treasurer. Councillors include **J.M. van Mourik** (Monnickendam), **S. Bottema** (Groningen) and **H. Hooghiemstra** (Amsterdam).

Dr. **Cleveringa** represents the Palynologische Kring on the Council of both the International Federation of Palynological Societies (IFPS) and the *Koninklijke Nederlands Geologisch en Mijnbouwkundig Genootschap (KNGMG)*. Dr. **J.H.J. Joosten** (Bakel) represents the Kring on the commission for vegetation research in the *Koninklijke Nederlandse Botanische Vereniging (KNBV)*.

It was announced that the current membership in the Kring has now increased to 162.

(cont. on page 6)

Japanese hotel: You are invited to take advantage of the chambermaid.

Hong Kong supermarket: For your convenience, we recommend courteous, efficient self-service.

Zurich hotel: Because of the impropriety of entertaining guests of the opposite sex in the bedroom, we suggest that you use the lobby for this purpose.

Moscow hotel room: If this is your first visit to the USSR, you are welcome to it.

Norwegian cocktail lounge: Ladies are requested not to have children in the bar.

CIMP WORKSHOP IN KRAKOW

Following the establishment of the *Commission Internationale de Microflore du Paléozoïque (CIMP)* in 1958, its members spent more than a decade carrying out detailed systematic reviews of a number of genera, which appeared to have particular relevance in Carboniferous palynostratigraphy. In the 1970's and 80's the tendency to provide better stratigraphical precision in correlation led to a reduction in systematic studies. In August 1990 this process was in part reversed, when 13 palynologists from the Soviet Union, Poland, West Germany, Belgium, France, Ireland and the United Kingdom met in Krakow, Poland to discuss a number of taxonomic problems relevant to early Carboniferous palynostratigraphy.

The workshop organised by **Elzbieta Turnau** at the Institute of Geological Sciences, Polish Academy of Sciences, was called to resolve a number of problems concerning the taxonomic concepts relating to the genera **Vallatisporites**, **Prolycospora**, **Grandispora** and the species **Verrucosporites nitidus**. The

entire meeting was devoted to the microscopic examination of material recovered from early Carboniferous deposits across Europe (from Ireland to the Soviet Union). Considerable progress was made in rationalising the synonymy between European and Soviet taxonomic concepts of these groups. It is now planned to prepare a comprehensive documentation of these groups in the near future, but before doing so, we would be glad to receive comments and contributions from palynologists around the world who have an interest in these taxa.

The five days of the workshop (August 20-25) were interrupted for a short geological excursion to examine the Cretaceous sections of the Tatra Mountains, and to allow the participants to enjoy the hospitality of the Turnau "family." The workshop was highly successful; everyone benefitted from the open discussions and also enjoyed the wide variety of Polish cakes baked each day by **Sonja** and **Monika Jachowicz**.

Bernard Owens



CIMP Workshop Participants Outside the Institute of Geological Sciences, Krakow. L-R: **Ken Higgs** (Cork); **Violetta Avkhimovich** (Minsk); **Sonia Dybova-Jachowicz** (Sosnowiec); **Marzena Stempien** (Warsaw); **Monika Jachowicz** (Sosnowiec); **Bernard Owens** (Nottingham); **Maurice Streele** (Liege); **Geoff Clayton** (Dublin); **Elizabeth Golombek** (Hannover); **Stan Loboziak** (Lille); **Tamara Byvsheva** (Moscow); **Elzbieta Turnau** (Krakow). Missing from photo: **Anna Gorecka** (Wroclaw).

CANADIAN ASSOCIATION OF PALYNOLOGISTS (CAP)

The 1991-92 CAP Executive includes:

Graham L. Williams (Atlantic Geoscience Center, Dartmouth, N.S.) - President;

Elliott T. Burden (Memorial University, St. Johns, NF) - Pres. Elect;

Martin J. Head (University of Toronto, Ont.) - Secretary/Treasurer;

Alwynne Beaudoin (Prov. Museum of Alberta, Edmonton) - Newsletter Editor.

Past practice has been for CAP meetings to be held in conjunction with AASP annual meetings, including the most recent (and highly successful) event chaired by **Dave McIntyre** at Banff last October. Although this type of organizational cooperation will probably continue for the foreseeable future, President **Williams** is currently exploring the feasibility of holding a one-day CAP-sponsored symposium on palynology at the May 1993 Edmonton meetings of the Geological and Mineralogical Associations of Canada (GAC/MAC). If these plans materialize, **Dave McIntyre**, **Bert van Helden** and **Alwynne Beaudoin** have agreed to be the convenors of this symposium.

The most recent issue of the *CAP Newsletter* (Vol. 14, No. 1, May 1991) contains a fascinating, well-written account by **Svein Manum** (Oslo, Norway) of the history of the Second Norwegian Arctic Expedition to the Sverdrup Islands in the vessel "Fram" some 90 years ago. Manum first became interested in these explorations back in the early 60's, when he and **Isabel Cookson** published some pioneering research on the dinoflagellates isolated from a late Cretaceous shale that had been collected on Graham Island by **Per Schei**, the geologist on this *Fram* expedition. Manum's painstaking research on the history of this expedition enabled him to establish the lithostratigraphic provenance of this ancient fossiliferous sample from Graham Island in the Canadian Arctic.

BOOK REVIEW

NEPHELIEAE POLLEN (SAPINDACEAE): FORM, FUNCTION, AND EVOLUTION.

R.W.J.M. van der Ham. 1990.

Leiden Botanical Series, Vol. 13.

Rijksherbarium, Leiden, 255 pages.

ISSN 0169-8508; ISBN 90-71236-

07-2 (Rijksherbarium/Hortus

Botanicus).

This volume continues the tradition of outstanding palynological research conducted at the Rijksherbarium, Leiden, The Netherlands. In keeping with the longstanding research focus of this herbarium on problems related to the evolution and systematics of Malesian plants, this investigation deals with a tribe (Nepheleae) of the modern family Sapindaceae that is centered in tropical and subtropical regions of Africa, Asia, and Australia. The detailed observations presented on sapindaceous pollen also represent a continuation of the comprehensive studies on this complex initiated by staff members of the Rijksherbarium (**J. Muller** and **P.W. Leenhouts**) over twenty years ago.

This study, unlike more traditional pollen morphological surveys, supports a concept in which each pollen grain is regarded as a multifunctional unit. Not only is descriptive morphology and the taxonomic usefulness of pollen characters thoroughly considered, but often overlooked functional, evolutionary, phylogenetic and geographical interpretations are presented as well. Descriptions of immature grains are also provided. All twelve genera and 75 out of a total of 78 species comprising the tribe were examined.

The volume begins with a careful review of methodology and a glossary of terminology and is followed by detailed generic pollen descriptions derived from light, transmission and scanning electron microscopy. An extensive and thoughtful discussion with a supporting literature review is devoted to the following topics: considerations of pollen form and function, harmomegathic types and the role of

apertures, pollen as an attractant, evolution of aperture and ornamentation type, and phylogeny and geographical distribution of the Nepheleae. The final third of the study consists of 61 full page plates. Genera are illustrated by light, TEM and SEM photomicrographs. Extensive use is made of sectioned acetylated grains viewed with SEM to show wall structure. Figures are of uniformly high quality and completely document the range of pollen variation within this complex.

Nepheleae aperture types range between colporate, (para)syncolporate and brevicolporate. Surface patterns include rugulate, striate, psilate, scabrate, and reticulate. Analysis of this major variation has revealed some noteworthy results of widespread interest. It is suggested that aperture condition within the tribe is a reflection of harmomegathic function. Changes in grain volume reduction among colporate and parasyncolporate grains are accommodated by wall folding (i.e., invagination of ectoapertural membranes). Volume change in brevicolporate types is interpreted as peristatic in nature (*sensu Muller*) accompanied by intine invagination. The principles described as the "Wodehouse effect," in which pollen size and shape are thought to directly influence harmomegathy, are rejected since they cannot explain deviating harmomegathic mechanisms in larger grains.

Comparisons are made between Nepheleae pollen and the fossil pollen form genus *Cupanieidites*. The author interprets *Cupanieidites* to represent a primitive (para)syncolporate sapindaceous grain type of late Cretaceous origin in the African part of Gondwana. From this presumed ancestral pollen form and geographical site of origin, three separate tribal lineages are envisioned to have evolved, resulting in the independent origin of the tricolporate and brevicolporate aperture conditions. The author suggests that this morphological transition occurred by the progressive coherence of apo- and mesocolpia, resulting from deposition of muri in and over the separations between the apocol-

pium and the surrounding mesocolpia.

The recognition that the colporate grain was probably derived from the (para)syncolporate condition contradicts earlier opinions on the major trends of pollen specialization in Sapindaceae. This conclusion is of additional significance in view of suggestions that the transition from colporate to syncolporate is a general evolutionary trend among dicotyledons. The most primitive type of surface ornamentation is believed to be rugulate, from which striate and subsequently psilate to scabrate patterns are derived through all possible intermediate states. The reticulate exine is considered advanced and is correlated with the derived peristatic harmomegathic function. It would be informative to further test these hypotheses by subjecting the Nepheleae to cladistic analysis, using a large number of morphological and anatomical characters and the principle of parsimony.

This study contains much useful information and insightful discussions that have implications beyond the Sapindaceae. I recommend this volume to all persons interested in the functional and evolutionary significance of pollen.

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NEW JOURNAL

The Canadian Museum of Nature in Ottawa announces the publication of a new quarterly bulletin, "*Canadian Biodiversity*." Volume 1, Number 1, consisting of 48 pages, has an issue date of Winter 1991. Subscription rates are \$15 to individuals and \$30 for libraries; a reduced rate is available to those in less-developed countries. A French edition is also produced simultaneously—"Bulletin de la Biodiversité Canadienne." For further information, contact the editor: **Don E. McAllister**, Canadian Museum of Nature, P.O. Box 3443, Ottawa, Ontario K1P 6P4, Canada. Fax: (613) 996-9915.

FUTURE MEETINGS

1991

June 27-28

OPEN WORKSHOP FOR PALYNOLOGISTS IN ORGANIC MATTER CLASSIFICATION, Hugo de Vries Laboratory, University of Amsterdam, (Dr. M.A. Lorente, Univ. Amsterdam, The Netherlands. Phone (31)(20)5257950; Fax: (31)(20)52577154

July 23-26

EVOLUTION OF THE EAST ASIAN ENVIRONMENT SINCE THE MIDDLE-TERTIARY (3rd International Conference), Kunming, China. (Dr. Nina Jablonski, Dept. Anatomy, Univ. Hong Kong, 5 Sasson Road, HK).

August 2-9

QUATERNARY RESEARCH (13th INQUA International Congress), Beijing, P.R. China. (Secretariat, 13th INQUA Congress, Chinese Academy of Sciences, 52 Sanlihi, Beijing 100864, People's Republic of China)

August 12-15

MESOZOIC TERRESTRIAL ECOSYSTEMS AND BIOTA (5th Symposium), Oslo, Norway. Symposium will deal with Mesozoic terrestrial floras and faunas, their evolution, ecology, taphonomy, and stratigraphy. (Dr. Natascha Heintz, Paleontologisk Museum, Sarsgate 1, N-0562 Oslo 5, Norway)

August 25-30

ORIGIN, SEDIMENTATION AND TECTONICS OF LATE MESOZOIC TO EARLY CENOZOIC SEDIMENTARY BASINS IN THE EASTERN MARGIN OF THE ASIAN CONTINENT and WORKSHOP OF IGCP 245: NONMARINE CRETACEOUS CORRELATIONS (International Symposium), Fukuoka, Japan. (Organizing Committee, 1991 Fukuoka International Symposium, Department of Earth and Planetary Sciences, Faculty of Science, Kyushu University 33, Hakozaki, Fukuoka-shi, 812 Japan)

September 1-6

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES (IUBS), XXIV GENERAL ASSEMBLY & International Symposium "Biological Diversity and Global Change." Royal Netherlands Academy of Arts & Sciences, Amsterdam, Netherlands. (Dr. H.M. Emden, Biologische Raad KNAW, P.O. Box 19121, 1000GC Amsterdam, Netherlands. Tel: 31-20-222902; Fax: 31-20-204941)

September 3-6

CIMP SYMPOSIUM ON ACROTARCS AND CHITINOZOA, British Geological Survey, Nottingham, U.K. (S.G. Molyneux, BGS, Keyworth, Nottingham NG12 5GG)

September 6-11

PALEOECOLOGY (2nd International Congress), Nanjing, P.R. China. (Ma YuYing, Nanjing Institute of Geology and Palaeontology, Academia Sinica, Chi-Ming-Ssu, Nanjing 210008, P.R. China)

September 22-27

CARBONIFEROUS-PERMIAN STRATIGRAPHY AND GEOLOGY (12th International Congress), Buenos Aires, Argentina. Language: English. (Dr. S. Archangelsky, Museo Argentino de Ciencias Naturales, Av. A. Gallardo 470, Buenos Aires 1405, Argentina)

September 22-29

JURASSIC STRATIGRAPHY (3rd International Symposium), Poitiers, France. (Dr. P. Hantzpergue, Universite de Poitiers, Faculte des Sciences, Laboratoire de Geologie stratigraphique et structurale, 40 Avenue du Recteur Pineau, 86022 Poitiers Cedex, France. Phone: 49 46 26 30)

October 20-23

TRIASSIC STRATIGRAPHY (Symposium), Lausanne, Switzerland. (Dr. Aymon Baud, Musee de Geologie, UNIL-BFSH2, CH-1015 Lausanne, Switzerland. Phone: 21/692.48.20; Telefax: 21/692. 48.99)

October 21-24

GEOLOGICAL SOCIETY OF AMERICA (Annual Meeting), San Diego, California, USA. (Meetings Department, GSA, P.O. Box 9140, Boulder, CO 80301, USA)



October 21-23

AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS (24th Annual Meeting). Held in conjunction with Geological Society of America meeting, San Diego, CA. (Roger J. Witmer, UNOCAL Science & Technology Center, 376 South Valencia Ave., Brea, CA 92621)

1992

June 28-July 1

PALEONTOLOGY (5th North American Convention), Chicago, U.S.A. (Dr. Peter R. Crane, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605-2496, U.S.A.)

August 24-September 3

INTERNATIONAL GEOLOGICAL CONGRESS (29th), Kyoto, Japan. (Dr. Tadasahi Sato, Chairman, Japanese-National Committee on Geology, Inst. of Geoscience, The University of Tsukuba, Ibaraki, 305 Japan)

August 30-Sept. 3

INTERNATIONAL ORGANIZATION OF PALEOBOTANY (4th Conference), Paris, France. (Secretariat 4th IOPC, Universite de Paris VI, 12 rue Cuvier, 75005 Paris. Fax: (33) 143 54 40 97).

September 6-12

INTERNATIONAL PALYNOLOGICAL CONGRESS (8th), Aix-en-Provence, France. (J-P Suc, Laboratoire de Palynologie, Univ. Montpellier II, F-34095 Montpellier cedex 5).

1993

April 19-25

MODERN AND FOSSIL DINOFLAGELLATES (5th International Conference), Zeist, The Netherlands. (Jan Weegink, Lab. Palaeobot. & Palynology, Univ. Utrecht, Heidelberglaan 2, 3584CS Utrecht, Netherlands).



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