



# PALYNOLOGOS

Volume 18, No. 1 - June, 1995

The NEWSLETTER of the INTERNATIONAL FEDERATION of PALYNOLOGICAL SOCIETIES

## Meet the New Councilors for The Palynological Society of Japan



**Dr. Masako Sado**

Dr. Masako Sado is an Associate Professor in the Department of Environmental Hygiene, School of Pharmaceutical Sciences, Toho University, Chiba, Japan. She earned a Doctor of Pharmacy Degree in 1973 at the Université de Paris V. Her dissertation was entitled "Contribution à l'Etude Expérimentale et au Traitement des Brûlures par les Acides - Application aux Acides Chlorhydrique, Bromhydrique et Iodhydrique." In 1979 she earned an MD at the School of Medicine of Toho University.

Dr. Sado's research has included studies of airborne pollen grains in Japan in relation to pollinosis. She has also studied pollen trapping by the gravimetric and volumetric methods.

In addition to her membership in 12 scientific societies, including IFPS, IAA and PSJ, Dr. Sato is a Trustee of Toho University, a delegate to PSJ, chief editor of the Bulletin of the Graduate Association of the Faculty of Pharmacy at Toho University and the Secretary-Treasurer of the Society of Japanese Women Scientists. She also serves as an Inspector of ABSVIG (Association Japonaise des Anciens Boursiers Scientifiques du Gouvernement Français) and is a member of "La Société Franco-Japonaise de Pharmacie."

Dr. Sado's address is:

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**Dr. Takashi Uchiyama**

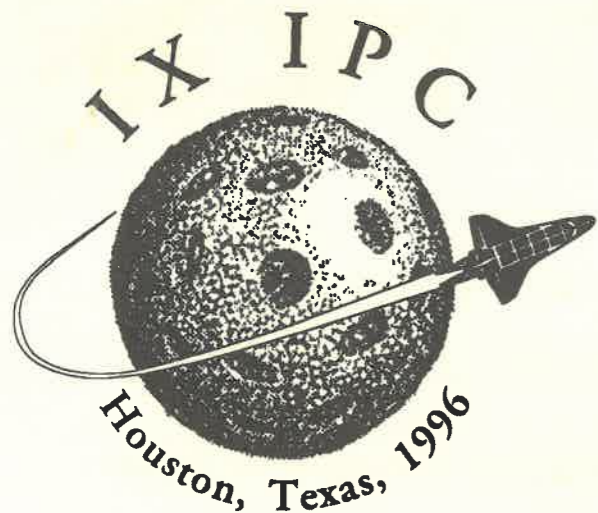
Dr. Uchiyama has been an Assistant Professor at the Chiba Keizai College since 1991. Born and raised in Tokyo, he earned a B.S. degree in 1976 from Kochi University. In 1982 he was awarded a PhD in Palynology from the University of Tohoku for a thesis entitled "Palynological Studies of Alluvial Sediments in the Mid-Temperate Zone of Japan."

Following graduation, Dr. Uchiyama was appointed an instructor at Chiba Keizai High School. He moved to his present university as a lecturer in 1988. Dr. Uchiyama spent 1992-93 at King's College London as a visiting researcher studying pingo deposits in the suburbs of London under the direction of Dr. Peter D. Moore.

Dr. Uchiyama's main interests include Quaternary vegetation history, especially in the post-glacial period, and archeology. His current work includes research on the Lake Bical and analysis of the deforestation of Japan.

Dr. Uchiyama's address is:

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## IXth IPC Announcements

The Second Circular for the IXth IPC was sent out in early April and since that time new symposia have been proposed.

### Global Pollen Databases

A number of database projects are currently underway around the world. The IPC provides a timely opportunity to foster communication among the database groups and especially between the database organizers and contributing palynologists. Only invited speakers will make presentations in this session, which will include the following topics:

- \* History of the development of the European and North American Pollen Databases
- \* The European Pollen Database
- \* The North American Pollen Database
- \* The Latin American Pollen Database
- \* The Indo-Pacific Pollen Database
- \* The Chinese Pollen Database
- \* The Siberian Pollen Database
- \* The role of the World Data Center
- \* An overview of the scientific utilization of global pollen databases

The co-conveners of this symposium are E. C. Grimm, T. Webb III and J.-L. de Beaulieu.

### Tephra-Linked Pollen Analytical Studies

Integration of tephra and pollen studies has led to highly refined correlations in time and space. Paleoenvironmental interpretations have been greatly helped by integrating these techniques. The purpose of this symposium is to provide a forum for researchers to exchange results of their work with this approach. If you are interested in participating, please contact the Symposium Organizer:

Dr. Valerie A. Hall, Institute for Irish Studies, The Queen's University, 8 Fitzwilliam Street, Belfast, BT9 6AW, Northern Ireland; Phone: 245133; Fax: 247895

### Palynology and Sequence Stratigraphy

Sequence stratigraphy is one of the major modern exploratory tools being used in the petroleum industry to integrate geologic data. The goal of this symposium is to provide a forum for the presentation of research or industrial studies aimed at improving our use of palynology in sequence stratigraphy. A keynote speaker will introduce the subject of sequence stratigraphy and set the stage for the symposium.

Individuals interested in presenting a paper on the palynofacies and palynostratigraphy of modern or ancient depositional systems within a sequence stratigraphic context are invited to contact one of the co-organizers (listed below) as soon as possible:

F.E. Oboh, Dept. of Geology & Geophysics, University of Missouri-Rolla, Rolla, MO 65401, USA; Phone: (314) 341-6946. Fax: (314) 341-6935, E-mail: foboh@umr.edu

M. B Farley, Exxon Production Research Co., P. O. Box 2189, Houston, TX 77252, USA; Phone: (713) 965-4033, Fax: (713) 965-7279, E-mail: Martin.B.Farley@usa.exxon.sprint.com

D. K. Goodman, ARCO Alaska Inc., 700 "G" Street, Anchorage, AK 99501, USA; Phone: (907) 265-1135, Fax: (907) 265-1515, E-mail: Goodman#m#\_David\_K@msmail.aai.arco.com



### MEETING REPORTS

#### 4th European Palaeobotanical and Palynological Conference (EPPC) 19-23 September 1994

The fourth European meeting of palaeobotanists and palynologists was held in Heerlen/Kerkrade, the Netherlands, in memory of professor Dr. W. J. Jongmans (1878-1957). About 150 participants from Europe, Algeria, Argentina, Australia, Canada, Madagascar, the United States and South Africa attended the conference. For the first time a significant number of delegates from the eastern European countries were able to participate, thanks to donations by Dutch industries and the International Science Foundation (New York). These participants were from Poland (9), Romania (1), Russia (3), Czechia (3) and the Ukraine (2).

Sixty-five oral contributions and about 30 posters were presented. There were three invited speakers: Dr. S. Kouwe, Geological Survey of the Netherlands (Sequence Stratigraphy),

Professor T. N. Taylor, Ohio State University (Biology, paleoclimate and ecology) and Professor B. Spicer, Open University (Paleobotany and global change: adaptation and opportunism in a stressful regime).

The Dutch Geology and Paleontology Foundation, members of which organized the conference, has established an award for outstanding people working in the field of geology and stratigraphy, with particular emphasis on paleobotany in the widest sense. The first recipient of the J. W. Jongmans Medal is Professor Dr. W. Remy, Department of Palaeobotany, Geological and Paleontological Institute, University of Münster, Germany. Winfried Remy, born March 21, 1924, in Breslau, Silesia, studied geology at the Humboldt University in Berlin. He obtained his doctorate in 1952 in Tübingen and his 'Habilitation' degree in Berlin. After construction of the Berlin wall, he moved to Münster where he was appointed professor in 1965 and head of the Palaeobotany Section in 1968. Although he officially retired in 1989, Dr. Remy is still very active.

In collaboration with his wife Renate, Dr. Remy published numerous contributions on Carboniferous and Permian plants. His three volumes on the floras of Paleozoic paralic and limnic basins are standard references. Apart from a fundamental botanical approach, his work is characterized by an open mind for applied earth sciences. In addition to stratigraphical interpretations, palaeogeographical and ecological aspects are dealt with. In collaboration with others, Remy has greatly expanded our understanding of the Lower Devonian Rhynie (Scotland) chert plants. This has led to the discovery of an alternation of generations in the oldest known anatomically preserved land plants.

Three field trips were offered: a two-day trip to the Devonian of Belgium and the Carboniferous Piesberg quarry near Osnabrück, Germany; a one-day trip to the Upper Cretaceous from Aachen in the east to the Maastrichtian stratotype section in the west; and a two-day trip to the Mio-Plio/Pleistocene of the Dutch/German border area in the Lower Rhine Embayment.

Proceedings from the conference will appear in a special volume of the 'Mededelingen Rijks Geologische Dienst' (Geological Survey of the Netherlands).

The 5th EPPC conference will be organized by Professor L. Stuchlik of the W. Szafer Botanical Institute in Krakow, Poland in 1998.

Submitted by:

G.F.W. Herngreen, Secretary-General, 4th EPPC Geological Survey of the Netherlands, P.O. Box 157 2000 AD Haarlem, The Netherlands



In Edmonton (Alberta, Canada), an officer pulled over a driver, who jumped out of his car with radar detector in hand, smashed it on the pavement, and yelled, "I paid \$500 for this thing and it doesn't work." You only have one license plate," said the officer: "Were you speeding?"

### Report on the Paleovegetation of the Americas (POA) Workshop for the Development of a Latin American Pollen Database (LAPD)

Twenty scientists from Mexico, Central America, Europe, and North America representing groups of major palynological research activity in Latin America attended the workshop at the Illinois State Museum (ISM) in Springfield, Illinois (November 16-19, 1994). The ISM is the center for the development of the Paleovegetation Database for the Americas (POA). The goals of the workshop were:

- 1) to discuss the development of databases in the context of Global Change research initiatives, especially PAGES (Past Global Change core project of the International Geosphere Biosphere Program [IGBP]);
- 2) to present an overview of existing and developing pollen databases in Europe, North America, Australia/New Zealand, and Behringia;
- 3) to explain the fundamentals of relational databases;
- 4) to train the participants in the use of TILIA, TILIA-GRAPH, FTP (File Transfer Protocol), and MOSAIC. TILIA and TILIA-GRAPH are software tools for storing, analyzing, and presenting pollen data. FTP and MOSAIC are software tools for communication and data exchange on the Internet; and
- 5) to discuss the implications of regional databases, data centers, and data cooperatives in the context of Latin America.

The coordinators and advisory boards of the European and North American Pollen Databases spent considerable time and effort to create a comprehensive database structure and computer software for data entry and retrieval. It, therefore, seems most sensible for other database efforts to build on this well-tested foundation. All attending agreed that it would be advantageous to use the existing structure for the Latin American Pollen Database.

The discussion focused on how to most efficiently initiate the interaction among all researchers involved in palynological research in Latin America. To this end the following steps were proposed:

1. Regional representatives would coordinate meetings in 1995 to demonstrate the use of pollen databases to all regional palynologists interested in participating.
2. An electronic mail network (LISTSERV) would be installed to exchange news and information.
3. Software needed to enter pollen and associated data (TILIA / TILIA FORMS) would be provided free of charge to all participants. Also distributed was SITESEER and SHOWTIME, software illustrating the content and capabilities of the databases.

4. An inventory of pollen records available for timely inclusion in the database would be compiled and distributed promptly via Internet, including location maps.

5. As a reward contributors of pollen records would be presented with a T-shirt displaying the Latin American Pollen Database logo.

The meeting was coordinated by Eric Grimm (ISM), John Keltner (NOAA-NGDC), and Vera Markgraf (University of Colorado). They were assisted by Lysanna Anderson and Pietra Muller. The Paleoclimatology Program of the National Oceanic and Atmospheric Administration (NOAA) sponsored the meeting.

Submitted by: Mirta E. Quattrocchio, IFPS Councilor for the Asociacion Latinoamericana de Paleobotanica y Palinologia, Bahia Blanca, Argentina. (Extracted by the Editor from a report by V. Markgraf, E. Grimm, and J. Keltner)



**IN MEMORIAM**  
**DR. D. C. BHARADWAJ**  
1923-1995

The science of Palaeopalynology suffered a great loss in the death of Dr. D. C. Bharadwaj following a brief illness at Lucknow. Dr. Bharadwaj was born on December 13, 1923 at Biswan, a small city in Sitapur District of Uttar Pradesh in India. A bryologist by training and a palynologist by profession, he achieved international recognition for his innovative contributions in bryophytes as well as palynology.

Dr. Bharadwaj received a PhD in Botany (Bryophyta) in 1952 under the direction of the late Professor S. K. Pandey at

Lucknow University. In 1953 he was awarded the German Academic Exchange Service (DAAD) Fellowship to work with Professor Robert Potonie of the Geological Survey in Krefeld, Germany, where he studied fossil palynology. He received the Degree of Dr. rer. nat. in 1955 from Bonn University. Upon his return to India Dr. Bharadwaj established the school of Gondwana Palynology for the study of coal palynology, which was later expanded to encompass work on the palynology of Tertiary lignites and biopetrology of the Gondwana Sequence.

At the Birbal Sahni Institute Dr. Bharadwaj rose from the rank of Scientific Officer in 1949 to Deputy Director in 1977-81. He was a pioneer in systematically describing the Saar palynoflora from Europe and the Raniganj assemblage from India. His style of describing the fossil spores and pollen and explaining their organization and reconstruction as well as his interpretation of observations by L-O analysis were original and well received by other palynologists.

During his 35-year career, Dr. Bharadwaj advised 18 PhD students. His studies ranged from the Carboniferous to the Tertiary in India, Europe, China, South America, North America and Spitsbergen. He wrote on the topics of species delimitation, correlation of coal seams, palynology-based Gondwana reconstruction studies, classification, morphotaxonomy and evolutionary trends. Pursuing his original interests, he established a new extant genus of bryophyte, *Foleoceros*, under Anthocerotales in 1971. During this time, Dr. Bharadwaj also established the standard palynological sequences in the coal-bearing strata of the Damodar, Satpura and Son-Mahanadi Valley basins.

Dr. Bharadwaj held editorial positions with *The Palaeobotanist*, *Geophytology*, *Review of Palaeobotany and Palynology*, *CIMP Monographs*, *Biological Memoirs*, *Proceedings of the IV International Palynological Conference*, *Palaeobotany and Cryptogamic Botany* as well as several other publications.

He was active in several academic organizations, both national and international, including the International Subcommittee on Carboniferous Stratigraphy (IUGS); the International Commission on Paleozoic Microfossils (Secretary); the International Society of Palynologists, the International Commission of Palynologists (vice president); the Scientific Society of IGCP (UNESCO, IUGS); and the Palaeobotanical Society (secretary).

In addition to his scientific achievements, Dr. Bharadwaj was an original thinker in other areas. Twenty-five years ago he advocated, among other things, issuing identity cards to all citizens of India, establishing very small hydro-power dams for producing electricity for the Tahsil level, writing Hindi in Roman script and the broad introduction of computers in India.

Those who knew Dr. Bharadwaj, either personally or through his writing, will be at a loss at his demise. His sense of humor, his "forgive and forget" attitude, crisp and clear decisions, adaptability to any situation, in depth analysis of a problem, insight into scientific matters and his pleasant and affectionate relationships with his colleagues and students will ever be remembered.

R. S. Tiwari, Director  
Birbal Sahni Institute of Palaeobotany, Lucknow, India



**WARREN S. DRUGG**  
1929-1994

It is with a great deal of sadness that I record the passing of Warren S. Drugg in La Habra, California, on December 1, 1994, after a battle with cancer that had only been diagnosed nine months earlier. His untimely death was a blow to his family and to all his friends in the palynological and geological community. Warren will be greatly missed by all those who had the privilege of knowing him.

He was born in Sitka, Alaska, on January 29, 1929 to Nels E. Drugg, a commercial fisherman and Edith Newhall. The family moved to Vermont in 1942 and then to Seattle, Washington, in 1947, where Warren was graduated from Ballard High School. In 1952 he received a BA in Geology from the University of Washington.

Warren served as a First Lieutenant in the US Air Force (1952-1956) and returned to his alma mater where he earned an MA in Geology in 1959. About this time he married Marlene Boivin, whom he had first met in 1944 through his friendship with her brother. The couple moved to San Francisco in 1958 where he worked as a palynologist for the California Exploration Company. It was during this time that I first met Warren.

In 1960 he and Marlene moved to La Habra, California, where he had been transferred to the California Research Corporation as an Associate Research Geologist. He was assigned to the Paleontology Group to plan and conduct research and development on the applications of palynology to problem solving in hydrocarbon exploration.

The laboratory was headed by the late Dr. A. R. Loeblich who had been hired recently. He induced Warren to continue his education in the field of Paleobotany which was at that time considered to be a key to the relatively new science of applied palynology, a subject in which many oil companies were interested for its potential for solving geological problems. Warren received his Ph.D. in 1965 from the Claremont Graduate School. He studied Russian as a minor and enjoyed using his facility in the language to sprinkle a few words in ordinary conversation "for effect".

Warren spent his entire 32-year career at CRC as a working

palynologist making age and environmental determinations on samples from all over the world. I had occasion to consult with him many times and it was through these meetings as well as many inter-company Paleontological Meetings and Seminars at the American Association of Stratigraphic Palynologists Annual Meetings that I had the good fortune to get to know Warren. We always immediately gravitated toward each other and because we had so many common interests and opinions we could immediately pick up where we had left off a year earlier.

I first really got to know Warren in 1962 when we drove from La Habra to Tucson to attend the first International Conference on Palynology. He navigated; I drove. His confidence (misplaced) in his unerring sense of direction led us to leave El Centro, basically located on a single east/west major highway, in the direction of Mexico (south). Marlene mentioned that once when trying to leave La Habra for Seattle, on vacation, it took him five hours to get out of town.

Warren's problem with directions did not prevent him from making substantial contributions to palynology including his published studies on the Moreno Formation of California, Some Jurassic Dinoflagellate Cysts from England, France and Germany, Some Eocene and Oligocene Phytoplankton from the Gulf Coast, USA and Some New Genera, Species and Combinations of Phytoplankton from Lower Tertiary of USA. There were also many useful unpublished company reports. I have one separate on *Glyphanodinium* which reads "To my field assistant, H. V. Kaska, with condensation, Warren," another "To my good friend, from 'Ammobroma' Drugg." Warren could always inject some of his mischievous sense of humor into almost any situation, no matter how unfunny.

By the time he retired on January 1, 1991, he had been advanced to Senior Research Associate in the Geology Division and had, in recent years mostly worked on Saudi Arabian palynology for Aramco.

Because of his Norwegian heritage he liked to compare himself favorably with the Vikings and he particularly admired their success in "looting and sacking" endeavors. He was also interested in the Northwest Indians and collected their paintings and carvings as well as having an impressive collection of his own carvings of masks and totems.

I was in Southern California last year for Thanksgiving Day. I called Warren the day after and wanted to drive to La Habra to visit, but he said he was too weak to see me. I knew that he had been suffering terribly from the effects of chemotherapy, but I was not prepared for the news from Marlene three days later that he was gone.

He wrote me a letter in 1992 after I had a heart attack which said "I am sorry that you have been struck down much as Sir Bors was unseated in a tournament, only to rise again and go on to greater triumphs" and then went on to wish for my speedy recovery. He then later, in vintage Warren style, informed me that he expected me to do the decent thing and die first. Thus I did not expect to be writing his Memorial, which has stirred many other pleasant memories of our times together, so soon and sadly. If it contains much of Warren the person, rather than an abstract of his work, it is because of the way I knew him, as a friend.

Warren leaves behind, besides his wife, three children: Martin, Gordon and Karen, all in Southern California; three grandchildren; and his sister, Virginia, of Seattle, Washington.

We are all going to miss him.

I would like to thank Marlene, Floyd Sabins, Betty Froman and Bert van Helden for assistance in the preparation of this Memorial.

Harold V. Kaska  
Clayton, CA



**FREDRIK (FRITS) P. JONKER**  
(1912-1995)

Professor Jonker, Frits as he was known among his friends, died peacefully on April 2, 1995 in his 82nd year. Thereby, the Laboratory of Palaeobotany and Palynology of Utrecht University lost its esteemed founder, who devoted a long and busy life to research, teaching and organization.

Looking back on all these years, one realizes the important contributions that Frits has made to botanical science in general, and to interdisciplinary palynology in particular, not only in The Netherlands but also internationally. An account of Frits' love for nature and his academic career as a systematic botanist, composed by Roel Janssen, may be found in the F.P. Jonker Special Issue of the Review of Palaeobotany and Palynology (vol. 26, 1978) that was issued at the occasion of his retirement from academic life. Here, in PALYNOS, it seems appropriate to emphasize those accomplishments for which the world of palynology has much to thank him for.

Frits' first contact with palaeobotany and palynology was through Franz Florschuetz, who in the 1930s taught pollen analysis in Utrecht. The nestor of Dutch palynology left Utrecht 1948, but Frits' interest for palaeobotany and palynology had been aroused. After his appointment to Full Professor in 1960, he began to organize courses for geology and biology students, including regular field trips. He then founded his palaeobotanical/palynological research unit that later became known as the Laboratory of Palaeobotany and Palynology. A wide international orientation had impressed upon him the need to study and teach under one roof both macropalaeobotany and palynology in its broadest interdisciplinary sense. Specialists on Quaternary and pre-

Quaternary palynology, pollen morphology, macropalaeobotany and aeropalynology were appointed to the staff. The number of research students, both biologists and geologists, rapidly increased.

In 1962 Frits participated in the International Palynological Conference in Tucson. This visit turned out to be the starting point of his long involvement in the complex organizational matters related to the creation of an overall international palynological organization. He became a member of the International Palynological Conference Committee that had to ensure organization of the 2nd IPC in 1966. The majority of the Committee favored the USSR as the most desirable host, but Frits had immediately foreseen the tremendous political and bureaucratic problems that had to be resolved before Soviet palynologists could make a formal invitation. He therefore offered Utrecht as an alternative site. Thus, as could be expected, his newly established institute had to accept the challenge of organizing the 2nd IPC. Frits' organizational talents resulted in a successful conference, and immediately established a good international reputation for the young Utrecht group.

Prior to, as well as during, the Utrecht conference, the need to create a permanent organization was amply discussed and Frits played a prominent role in bringing conflicting standpoints together. In Utrecht the planning committee was modified into the International Committee for Palynology. With Frits as president, apart from arranging the 3rd IPC, this committee should prepare a constitution for an international organization. With diplomacy and using personal contacts, Frits succeeded in obtaining an invitation to hold the 3rd IPC in 1971 in Novosibirsk. Together with Arie Manten, the Committee's secretary, he managed to prepare a draft constitution that was acceptable for at least the majority of the committee members.

Leafing through his presidential archive you may be impressed by his perseverance in opposing the deep-rooted prejudice that on an organizational level there should exist a strict separation between palaeopalynology, primarily related to geology, and actuopalynology, mainly related to biology. Similarly as in his own research group, Frits advocated one umbrella organization for all aspects of palynology. He negotiated with both IUBS and IUGS officials for recognition and affiliation of such an organization. Unfortunately, because of stubborn opposition by the Academy of Sciences of the USSR, it became clear that Novosibirsk was not the place where his concept of a single interdisciplinary organization could be successfully defended.

Meanwhile, through his personal contacts with various research groups in India, Frits had received an invitation to arrange the 4th IPC in Lucknow. As Past-President he acted as a liaison-officer between his successor, Norman Hughes, and the local organizing committee. In 1974 he went to India to obtain the Gunnar Erdtman International Medal for Palynology. Two years later, at the Lucknow conference, he could see the delayed results of all his efforts in bringing the world's palynologists together: the formal establishment of the International Commission for Palynology that evolved into the IFPS. Despite all these organizational worries, the Laboratory of Palaeobotany and Palynology was his most cherished child. The professor's room was the nerve center of the Laboratory, where research and teaching programs were developed and where progress and failure were analyzed.

In the last few years before his retirement in 1978, the complexity of all the activities in the Laboratory, the rapid change to different organizational structures within the university may, at times, have perplexed him. Having been so active during so many years, Frits deserved a rest in which he was liberated from the ever increasing administrative duties. As Emeritus Professor he continued some palaeobotanical research and supervision of PhD projects, but more and more he spent his time and energy in promoting nature-conservation projects in The Netherlands. Gradually he was seen less frequently at the Laboratory but he continued to take a genuine interest in all aspects of the scientific activities, careers and personal welfare of his former staff and students.

Frits never attempted to influence the direction that they took, yet he remained the fatherly teacher and manager to whom you could always turn if you had a problem. Enjoying the hospitality that he and his wife Anneke offered in their beautiful home in Asperen, you could receive advice by carefully listening to the often anecdotal stories from his past career.

Frits Jonker will be remembered with affection and respect.

Submitted by:  
Henk Visscher, Past-President, IFPS, Laboratory of Palaeobotany and Palynology, Utrecht University



## IX IPC SECOND CIRCULAR ON THE WEB

The World Wide Web version of the Ninth International Palynological Congress' Second Circular and Call for Papers is now available on the Web Site of the American Association of Stratigraphic Palynologists (AASP). The AASP home page can be found at (note case sensitivity):

<http://www.geology.utoronto.ca/AASP>

The AASP Web site can be accessed by any web browser (although Netscape gives the most elegant rendering of the layout). The Web version of the Second Circular has everything found in the printed version (including printable registration and abstract forms) plus color graphics of selected Houston scenes and a current news update. Information at your fingertips! Check out the AASP home page regularly for latest announcements.

Martin J. Head, AASP Newsletter Editor & WebMaster  
E-mail: [head@quartz.geology.utoronto.ca](mailto:head@quartz.geology.utoronto.ca)

## MORE ABOUT SPORE TABLETS

The calculation of palynomorphs per gram by means of spore tablets was discussed in the previous issue of PALYNOS. These pills do work, but for persons who want to use a more elegant method that doesn't contaminate one's samples with

extraneous spores and has no dependence on the accuracy of the spore count in said pills, I would like once again to recommend my method. It is described in detail in Paleopalynology (1988, Traverse, A., Unwin and Hyman, Inc., Boston, Mass., 600 pages; See pages 464-465). The method is based on weighing the original sample, then the total residue plus mounting media, then slides+coverslips before and after adding drop of residue. Only the slide-weighing must be done on a sensitive balance to hundredths of a milligram. If a double-mounting technique is used the weight measured must of course be only that of the residue plus polyvinyl alcohol or other primary mountant because the principle is to determine the percentage of the residue that is on the slide.

It usually works out to something on the order of 1/200 or so. The concentration of palynomorphs in the sample is then:

$$\text{palynomorphs/gram} = \frac{200 \times \text{palynomorph count on slide}}{\text{weight of original sample processed}}$$

Submitted by:  
A. Traverse, Department of Geosciences, College of Earth and Mineral Sciences, The Pennsylvania State University, University Park, PA 16802

## THE IMPACT OF AFRICAN DUST ACROSS THE MEDITERRANEAN: AN INTERNATIONAL RESEARCH WORKSHOP

The Impact of African Dust Across the Mediterranean will be the subject of an International Research Workshop to be held in Oristano, Sardinia, October 4-6, 1995.

The goal of the meeting is to assemble a diverse group of speakers to address all aspects of the desert dust and its role in the Mediterranean basin and to formulate recommendations for future research. Sessions are planned in Geology, Chemistry, Modeling, and Aerobiology.

Please direct inquiries to Dr. Stefano Guerzoni (ADAM), 1st Geologia Marira - CNR, Via Gobetti, 101/140129 Bologna, Italy; Tele: +39 51 639 8864; Fax: +39 51 639 8940

## INFORMATION NEEDED

A certain tricolporate pollen type most frequently occurring in the Tertiary of Asia and Europe is supposed to be comparable with the pollen of Hoplestigmataceae. But this supposition is only based on a line drawing of Hoplestigma pierreanum published by Erdtman in 1952.

Hoplestigmataceae, a dicotyledonous woody plant, is now endemic to west tropical Africa, ranging from Cameroon to Gabon, with only one genus and two species (Hoplestigma pierreanum and H. kleineanum). Considering the wide distribution of Hoplestigmataceae tricolporate pollen in the geological past and the limited distribution of the present Hoplestigmataceae, the postulated link between the two would be highly interesting.

To ascertain their relationship, a detailed study of both fossil and modern material is necessary. Thus I urgently need the

modern pollen grains of Hoplestigmataceae, as well as some background knowledge about its topographic and climatic information in the distributive regions.

Any help will be highly appreciated. Thank you very much. Please contact:

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Tel: 86-25-6637648

### CAP WWW PAGE

It's an age of acronyms and I'd like to introduce you to yet another: WWW. This stands for World Wide Web, the latest and fastest-growing method of electronic communication and information transfer. WWW documents are usually read with a browser, such as Mosaic or Netscape, and can incorporate text, images, and even sounds. Web documents can include "links" to information that resides at other sites, thus allowing data to be combined and presented in many different ways. It is an extremely powerful and versatile means of presentation. Each Web document is referenced by its URL or "Uniform Resource Locator", such as the one given below for the CAP WWW page. If you have not already had a chance to explore the Web, I urge you to do so.

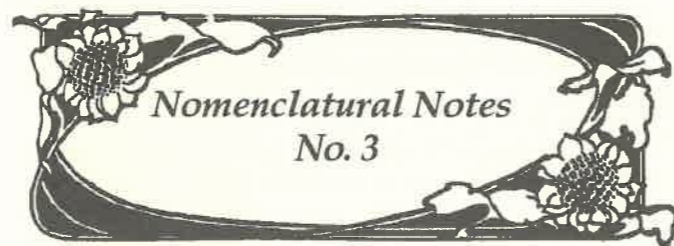
CAP is the Canadian Association of Palynologists/ Association Canadienne des Palynologues. CAP is the first national palynological organization to have its own Web page. The CAP WWW page was launched on March 8, 1995. The CAP home page has been accessed from visitors at sites worldwide, including, for example, the USA, UK, Sweden, Japan, and Germany.

The CAP WWW page consists of a "home page" which contains a directory of information and links to various other components or subsidiary pages. These pages contain information on CAP, announcements of upcoming conferences, a directory of palynologists, a list of recent papers in palynology, an article on palynology, a guide to internet resources, news of departments with palynology programs and information on laboratory equipment and supplies. The pages are continually updated. The CAP WWW page may be found at:

<http://gpu.srv.ualberta.ca/~abeaudoi/cap/cap.html>

The CAP WWW page is a good starting point for an exploration of the Web because it contains links to many other earth science and botanical sites. I welcome your comments on this presentation.

Alwynne B. Beaudoin, CAP Newsletter Editor  
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### NOMENCLATURE NOTES NO. 3

#### WHAT'S IN A DATE?

When describing and identifying fossil plants (palynomorphs included), geological age is not the only date to consider. In order to establish the correct name of a fossil, a number of dates hidden away in the *International Code of Botanical Nomenclature (ICBN; Greuter et al., 1994)* may need to be considered. These are the dates dealing with conditions for the valid publication of names. For example, the name of any new species or other taxon proposed after 1957 but not given a type is not validly published - Article 37.1. These dates seem to be added to with the passing of each Botanical Congress and the appearance of each new *Code*; the present round is no exception. Indeed, the current addition to the list of dates will probably have more practical impact on working palaeobotanists and palynologists throughout the world than most of the dates already on the list. It is this: **formal diagnoses or descriptions of fossil plants (palynomorphs included) will have to be in Latin or English as of January 1st 1996 (Article 36.3)**. We ask readers to stay aware of the new language requirement when writing and reviewing for publication and communicate it, where appropriate, to journal editors.

Originally, all names of plants except fossils and algae published after 1934 had to be accompanied by a Latin diagnosis or description or reference to one (Article 36.1). The algae gained this requirement 23 years later, on January 1st, 1958 (Article 36.2). Now, as highlighted above, the diagnoses and descriptions for fossil plants will have a similar language requirement. This change is a result of actions by the previous Fossil Plant Committee, which endorsed a recommendation promoting the use of English for all plants. When this general proposal was defeated at the Congress, Bill Chaloner, on behalf of our Committee of which he was then chair, proposed that the language provision be made for fossil plants only. The proposal was accepted. Hence, beginning with the names of new taxa published next January, for most of us English will be the language for fossil plant descriptions. Limitation of descriptions to two languages will, it is hoped, make it easier to communicate between the wide variety of researchers working on fossil plants and palynomorphs across the world. With the current situation, in which fossil plants can be described in any language, communication is often hampered as a consequence, and synonyms and poorly understood taxa result.

Returning to the subject of dates in general, the following may be a handy list to keep beside your microscope. On January 1st:

- 1912 -- Illustration, or reference to one, required for fossils (Article 38.1).
- 1953 -- Clear indication of rank of a new taxon required (Article 35.1).
- 1953 -- Proposal of alternative names in same rank became a cause for all of them to be rejected (Article 34.2).
- 1953 -- New names and new combinations require direct and full reference to basionym (Article 33.2).
- 1958 -- Designation of type required at family rank or below (Article 37.1).
- 1973 -- Full and direct reference to all validating information required (Article 45.1).
- 1990 -- Place in which the type is lodged must be specified (Article 37.5; see below).
- 1996 -- Descriptions and diagnoses for fossils must be in English or Latin (Article 36.3).

The penultimate item on the list has been a great problem for dinoflagellate workers. Tens of species described since 1990 have names not validly published because they fail to comply with Article 37.5, in spite of the fact that most are excellently described and otherwise fulfill all legal requirements. Whether one likes it or not, Article 37.5 specifies that the institute or herbarium in which the type is lodged must be specified. However, Werner Greuter (in a letter to Jan Jansonius; Greuter is Chairman of the Editorial Committee for the *ICBN*) considered that "... the intent of [Article 37.5] is not to make deposition of types in a public herbarium mandatory, but to force authors to make the whereabouts of their types publicly known." He continued by noting that "Article 37.5 [specifies] "herbarium", not "public herbarium" (nor, unfortunately, "collection", which is what is meant) ...."

The present writers are of the belief that the *Code* should be read as literally as possible, otherwise we will end up in a morasse of interpretations and counter-interpretations. Nevertheless, anyone with a collection of specimens can claim to have a "herbarium" (which, according to the Oxford English Dictionary, is a "collection of dried plants scientifically arranged").

Moreover, Recommendation 7A implies that a herbarium does not have to be a public facility. Hence, as long as an author fully specifies a location, public or private, for her or his types (not just slide numbers with or without abbreviations suggesting place of storage), we suggest unofficially, in the spirit of Werner Greuter's remarks, that Article 37.5 is satisfied. While making this suggestion, however, we also feel that authors have a moral - even if not a "legal" - obligation to officially lodge their types in a responsible public institution.

There is another date which may be important in the future. On or after January 1, 2000, new names may have to be registered

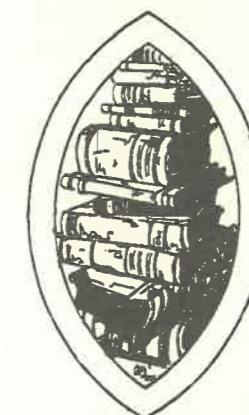
if a registration proposal is ratified by the next Botanical Congress. There has been much debate about this procedure and, since it will come up for vote again, your committee would appreciate views on the matter.

Indeed your input on any nomenclatural subject is welcome any time. Please give us some feedback. Contact either of us or any member of the International Association for Plant Taxonomy sponsored Fossil Plant Committee (FPC) - see *Palynos* 17(2):9-10 or *IOP Newsletter* 51. Thanks to Jan Jansonius, Dan Nicolson and Graham Williams for discussion pertaining to this note.

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Submitted by Judy Skog (Secretary, FPC) and Rob Fensome (Chair, FPC).



### New Books Available

#### POLLEN ET SPORES D'EUROPE ET D'AFRIQUE DU NORD: SUPPLEMENT 1 by M. Reille

Supplement 1 follows the same format and is the same size (24x31.5 cm) as the first volume (See review of the first volume, below). This 325 page volume includes a short introduction (5 pages) and 274 plates (more than 8,000 photographs) illustrating some 1200 taxa of spores and pollen.

As is the case in the first volume, this book includes three indices to help locate a particular pollen or spore by family, genus and species or by pollen type. The volume costs 800 FF (\$US163.00-; Checks must be in FF, made out to the order of Laboratoire de Botanique Historique et Palynologie). Order from: Laboratoire de Botanique Historique et Palynologie, boîte 451, 13397 Marseille, cedex 20 France

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## GLOSSARY FOR RESEARCH PAPERS

### THEY WRITE

### THEY MEAN

It has long been known that...	I haven't bothered to look up the original reference
...of great theoretical and practical importance.	...interesting to me
While it has not been possible to provide definite answers to these questions...	The experiments didn't work out, but I figured I could at least get a publication out of it.
The W-Pb system was chosen as especially suitable to show the predicted behavior...	The fellow in the next lab had some already made up
High purity; Very high purity; Extremely high purity; Super-purity; Spectroscopically pure.	Composition unknown except for the exaggerated claims of the supplier
A fiducial reference line...	A scratch
Three of the samples were chosen for detailed study...	The results of the others didn't make sense and were ignored.
...handled with extreme care during the experiments	...not dropped on the floor
Typical results are shown...	The best results are shown...
Although some detail has been lost in reproduction, it is clear from the original micrograph that...	It is impossible to tell from the micrograph.
Presumably at longer times...	I didn't take the time to find out.
The agreement with the predicted curve is excellent.	fair



## Book Reviews

### ASPECTS OF ARCHAEOLOGICAL PALYNOLOGY: METHODODOLOGY AND APPLICATIONS

edited by Owen K. Davis

American Association of Stratigraphic Palynologists Contributions Series No. 29 (1994). AASP Foundation, Dallas, Texas. 221 pages. \$15.00. (Order from: Palynology Laboratory, Texas A&M University, College Station, Texas 77843-4352).

This book is a must for the bookshelf of any serious palynologist interested in using pollen and spores to interpret

archaeological sites and past cultural events. The idea for this book was an outgrowth of a series of presentations at the 8th International Palynological Congress held in Aix-en-Provence, France in 1992. Most of the papers are from that conference, but additional contributions are included.

Except for several textbook chapters, a book by Dimbleby (1985), and a scattering of journal articles, there are no major works on archaeological palynology. Thus, Dr. Davis' collection of articles is a unique volume on this topic of growing palynological importance.

Prior to the 1980s, published reports of pollen studies from archaeological sediments were sporadic at best. However, with the growing interest in new ways to interpret past cultures, more emphasis has been placed on the palynology of sites. As Dr. Davis states in the introduction, "In the last decade, the analysis of pollen from archaeological sites has become one of the most active fields of palynology."

The book contains 17 original articles that cover a wide range of archaeological sediments, geographical regions and time periods. Six articles discuss problems of pollen dispersal and how that might affect the interpretation of archaeological pollen data. Six articles discuss pollen preservation and why the sediments of some sites seem to contain abundant fossil pollen

while others seem to be devoid of pollen. This topic should be of special interest to geoarchaeologists and others interested in the environmental conditions and soil types that might prove most useful for fossil pollen studies.

Two of the articles discuss problems related to fossil pollen extraction from soils, and one article deals specifically with the topic of pollen sourcing (using pollen to determine the source area or use of an artifact). Eight articles examine how archaeological pollen data can be used to reconstruct ancient vegetational patterns, and three additional ones examine using pollen to evaluate post-depositional disturbance of sediments. The final two articles show how pollen data from archaeological sites can be used to infer ancient dietary practices.

The quality of the articles is good overall, yet some stand out as reports of new or innovative techniques, or as superior examples of data collection and interpretation. The article by Dr. Marie-Francoise Diot is one such article and could almost be classified as a study in forensic palynology. In her study, Dr. Diot shows how she used the pollen and spores trapped in moss, used to caulk a 17th Century French river boat, as a key to determining where the boat was made, what trading routes it followed, and where it was once repaired.

Owen Davis and Stephen Buchmann present an equally fascinating study of how pollen, carried underground by burrowing insects, might become confused with fossil pollen recovered from archaeological sediments, and then misinterpreted as representing ancient cultural or environmental data.

Equally significant is the study by James Greig of fossil pollen recovered from ancient British latrines. He offers readers an insightful look into what ancient British diets were like, and suggests the sources of latrine pollen and how these data might best be interpreted. Jannifer Gish's article should be of special interest to archaeologists because it describes a way to recover minute traces of agricultural pollen in the sediments of archaeological sites. These types of data are often overlooked because they occur in such tiny amounts. Maria Fernanda Sanchez Goñi's article is an excellent summary of Upper Paleolithic paleoenvironmental sequences for Western Europe based on the fossil pollen records of numerous archaeological cave deposits.

Some palynologists might question certain techniques mentioned in a few of the articles. For example, both Hunt and Groenman van Waaterling reported using sieves with a mesh openings ranging from 10-14 microns in diameter to remove tiny pieces of debris from the fossil pollen. The pollen remained on top of the screens. I have experimented with this exact process, but have abandoned its use because I found that there are a number of tiny pollen types (i.e., some species of *Salix*, *Castanea*, *Mimosa*, *Myosotis*, *Asperugo*, etc.) which will pass freely through screens of this size and are thus lost from the analysis.

Other authors state that they were able to differentiate fossil grass pollen into "cereal-type" and "non cereal-type." I question how some palynologists can be so certain they are recovering "cereal-type" pollen in their archaeological samples when the criteria they use for this separation is based on pollen size. Some of my own studies, and those of other palynologists, including Bell (1959), Bragg (1969), and Mack (1971), show that size variation within the pollen grains of a single genus and species will vary, sometimes quite significantly! Although "cereal-type" is generally identified as being over 50 microns, there are some non-cereal grasses which produce pollen whose size range overlaps that of cereal pollen.

The price of this book is a bargain, especially when you consider the average price of most scientific reference books today. But, even at a higher price this book would be worth purchasing because of its value as a reference source for information about the many potential ways of using fossil pollen for assessing archaeologically-important data.

(References:  
Bell, C. R. 1959 Mineral nutrition and flower to flower pollen size variation. *American Journal of Botany*, 46, 621-624.

Bragg, L. H. 1969 Pollen size variation in selected grass taxa. *Ecology*, 50, 124-127.

Dimbleby, G. W. 1985 the palynology of Archaeological sites. Academic Press, Inc., New York, 176p.

Mack, R. N. 1971 Pollen size variation in some western North American pines as related to fossil pollen identification. *Northwest Science*, 45, 257-269.)

Reviewed by:  
V. M. Bryant, Jr., Department of Anthropology, Texas A & M University, College Station, Texas 77843-4352

### POLLEN ET SPORES D'EUROPE ET D'AFRIQUE DU NORD

By Maurice Reille

1992, 520 pp., 1600 French Francs. Published by Laboratoire de Botanique Historique et Palynologie, boîte 451, 13397 Marseille cedex 20 France. (Checks must be in FF and made out to the order of Laboratoire de Botanique Historique et Palynologie).

This is an extremely useful volume for anyone studying pollen and spores, particularly, but not exclusively, from Europe or North Africa. The book consists of more than 13,000 photographs of 2276 taxa (900 genera representing 186 families) of pollen and spores from the region. Each taxa is illustrated by multiple photographs of single specimens taken at different focal depths. The photographic sequence shown for each taxa clearly illustrates the morphology of each grain and the LO (light-obscure analysis) character of their morphologic features. The quality of the photos varies, but not to a

detrimental degree, and overall their contrast, clarity and focus is very good. All illustrations are either 500x or 1,000x except for a few higher magnification photos of the exine of certain species. A scale bar is included on each plate.

The author emphasizes the importance of LO analysis for correctly interpreting pollen wall morphology and clearly discusses and illustrates the principles of LO with a number of clear, useful drawings. The author points out the need for a correctly adjusted microscope, set up for Kohler illumination, if LO analysis is to be successful. To help achieve this, the procedure for setting up Kohler illumination is briefly discussed.

This is a grand start towards the author's stated goal of illustrating one species of each genus described in the five-volume treatise *Flora Europaea* (Tutin, T. G. et al., 1964, 1968, 1972, 1980. University Press, Cambridge). There is a need for this type of volume, even in this day of digital images and relational databases. There is nothing like flipping through pages of similar taxa to help identify an unknown grain. Undoubtedly, anyone who buys this volume will use it throughout their career. There are no interpretations in this volume that could become dated (names may change, but the pollen morphology won't), just good photographic documentation of palynomorphs.

This is a valuable book, both in regards to its use and its cost (1600 FF = \$US325.00!). The latter is the only, but significant, drawback of the volume. It is an expensive volume and this may limit the audience. This is unfortunate because it is certainly worth having available for use.

Reviewed by:  
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August 31, 1995  
INQUA, Berlin, Germany. (E. Derbyshire, Royal Holloway & Bedford New College, London University, Egham, Surrey TW20 OEX, UK.)  
Telefax: +44 (0) 273-748919

September, 1995  
Xth Congress of the Committee for Mediterranean Neogene Stratigraphy, Bucharest, Romania (General Secretary Dr. Florian Marinescu, Institute of Geology and Geophysics, 1, Caransebes Street, RO-79678, Bucharest 32, Romania.)  
Telex: 122861GRR  
FAX: (40.1) 312.84.44


October 4-6, 1995  
The Impact of African Dust Across the Mediterranean, Oristano, Sardinia. (Dr. Stefano Guerzoni (ADAM), 1st Geologia Marira - CNR, Via Gobetti, 101/140129, Bologna, Italy.)  
Tele: +39516398864  
Fax: +39516398940

October 10-14, 1995  
28th Annual Meeting of the American Association of Stratigraphic Palynologists. Ottawa, Ontario, Canada. (Details: Ms. Susan A. Jarzen, Canadian Museum of Nature, P. O. Box 3443, Station "D", Ottawa, Ontario, Canada K1P 6P4, Fax: (613) 954-4724. )

June 3-7, 1996  
European Association of Exploration Geophysicists and European Association of Petroleum Geologists, Amsterdam, Netherlands. (EAPG, Attention of Mr. E. van der Gaag, PO Box 298, NL-3700AG, Zeist, Netherlands.)

June 9-12, 1996  
North American Paleontological Convention (6th), Washington, D.C., USA. (NAPC-VI, c/o Dept. of Paleobiology, Mail Stop 121, National Museum of Natural History, Washington, DC, 20560, USA.)

June 22-29, 1996  
IXth International Palynological Congress, Houston, Texas, USA (Contact: Dr. V. W. Bryant, Jr., Department of Anthropology, Texas A & M University, College Station, Texas 77843, USA)  
Phone: 409-845-5242  
Fax: 409-845-4070

	<p><b>PALYNOS</b> (ISSN 0256-1670) is published semiannually (June and December) and is distributed to all individual members of the scientific organizations affiliated with the International Federation of Palynological Societies (IFPS). News items, photos, member and society activities are welcomed. (Scientific papers will not be published in <i>PALYNOS</i>.) Please forward materials for <i>PALYNOS</i> to the Editor:</p> <p>Dr. John H. Wrenn Center for Excellence in Palynology Department of Geology &amp; Geophysics Louisiana State University Baton Rouge, LA 70803 U.S.A.</p> <p>Phone: 504-388-4683 FAX: 504-388-2302</p> <p>E-Mail: <a href="mailto:glwrenn@lsuvm.sncc.lsu.edu">glwrenn@lsuvm.sncc.lsu.edu</a></p>
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