



IOP NEWSLETTER 60

MARCH 1997

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TO THE SECRETARY FOR THE NEXT
NEWSLETTER 61.

The views expressed in the newsletter are those of its
correspondents and do not necessarily reflect the
policy of IOP.

IOP NEWS

IOPC-VI, China, 2000

"As the Chairman of the Chinese Organising Committee for IOPC-VI, I have the honour to be permitted by the Chinese Academy of Sciences to inform you formally that our application for hosting the IOPC-VI in China was approved by the Chinese Academy of Sciences on December 6th, 1996. The IOPC-VI will be held in Qinhuangdao City of Hebei Province, China, a beautiful and charming coastal city, in July 2000, and organised by the Palaeobotanical Society of China and the Palaeobotanical Committee of the Palaeobotanical Society of China. The Chairman and Vice Chairmen of the Chinese Organising Committee, ratified by the Chinese Academy of Sciences, are as follows:

Chairman:

- LI Xingxue (Nanjing Institute of Geology and Palaeontology, Academia Sinica, Nanjing)

Vice Chairmen:

- ZHOU Zhiyan (Nanjing Institute of Geology and Palaeontology, Academia Sinica, Nanjing)

- ZHU Weiqing (Institute of Botany, Academia Sinica, Beijing)"

LI XINGXUE, Nanjing, China

NEWS OF FORTHCOMING MEETINGS

14th MIDCONTINENT PALEO-BOTANICAL COLLOQUIUM, May 9 - 11, 1997, Ohio, USA.

The 1997 Midcontinent Paleobotanical Colloquium (MPC) will be held at Ohio University on May 9 - 11, 1997. As in past years, the MPC will include contributed papers and posters, and student participation is particularly encouraged. Additional activities planned for this year are historical remembrances by some of our most senior colleagues, a digital scientific imaging workshop, and coal ball collecting at the Upper Pennsylvanian, Steubenville locality. Those wishing to receive announcements and circulars may request these from:

Gar Rothwell,

Department of Environmental and Plant Biology,

Ohio University, Athens,

Ohio 45701, U.S.A.

Fax: (614) 593-1130;

E-mail: rothwell@ohiou.edu.

2nd INTERNATIONAL CONFERENCE ON THE PRESERVATION OF BOTANICAL COLLECTIONS, June, 26 - 29, 1997, Krakow, Poland.

The Second International Conference on Preservation of Botanical Collections will be held under the status "Botanical Collections throughout the World" at the Wladyslaw Szafer Institute of Botany Polish Academy of Sciences in Krakow. The Conference is a continuation of works expressed in the Memorandum of the first Conference which took place in Sankt Petersburg in December 1993.

Krakow is the former capital of Poland and has a rich cultural and scientific tradition. It is the second largest university center in Poland, seat of one of the oldest European universities - founded in 1364. With its medieval lay-out and priceless monuments Krakow has been included in UNESCO Registers as one of the twelve most outstanding ancient cities in the world. The nearby Wieliczka Salt Mine, known world wide, has also been entered on the same list. Visitors can admire the old shafts, the huge expanses in that mysterious underworld, the fine statues and ornaments all carved in rock salt. The Wieliczka Salt Mine Museum provides the possibility to trace the complete history of Polish salt mining and to see palaeobotanical collections extracted from the Miocene salt sediments.

The following topics are proposed for the Conference:

1. National botanical collections throughout the world (herbaria, fossil collections, palynological and carpological collections, algal drawings etc.
2. Methods of preservation and conservation of collections
3. Botanical collections as cultural heritage of mankind

Sight-seeing of the Krakow City and visiting the Wieliczka Salt Mine Museum for all participants is also planned.

For further information and registration forms, please contact:

Mgr Grzegorz Worobiec,

W.Szafer Institute of Botany,

Polish Academy of Sciences,

Lubicz 46, PL 31-512 Krakow, Poland.

Fax: (48 12) 21 97 90

E-mail: worobiec@ib-pan.krakow.pl

2nd EUROPEAN PALAEONTOLOGICAL CONGRESS *Climates: Past, Present and Future*, July 10-12, 1997 Vienna, Austria.

Under the auspices of the European Palaeontological Association, the Second European Palaeontological Congress will be held in Vienna from the 10th - 12th of July 1997. The theme of the conference will be "Climates: Past, Present and

Future". The idea is to emphasize the role which palaeontology can play in the Global change debate.

Most of the lectures will be held in the recently opened Earth Sciences Building (Geozentrum, Althanstrasse 14, 1090 Vienna), although some events will take place in the Natural History Museum.

The registration fee will be ATS 1800 for students and EPA members and ATS 2000 for non-members. After the 31st of March 1997 the price will be raised to ATS 2500 for all delegates.

Tentative Schedule

Wednesday, 9th July:

- Pre-conference excursion to the Miocene sedimentary succession in the open-cast lignite mine at Köflach in Styria; visit the Ettinghausen Exhibition in Graz.
- 6pm - 10pm: Registration and Informal get-together

Thursday, 10th July:

- 9am - 1pm: Opening ceremony; First Scientific Session on "Palaeontological proxies for Palaeoclimatology" (Keynote Lecture followed by contributed papers).
- 2pm - 6pm: Second Scientific Session on "The contribution of palaeontology to climatic modelling" (Keynote lecture followed by contributed papers).

Friday, 11th July:

- 9am - 1pm: Third Scientific Session on "Correlating changes in Palaeo-ecosystems with climatic change" (Keynote Lecture followed by contributed papers).
- 2pm - 6pm: Fourth Scientific Session on "Climatic change as a driving force in Human Evolution" (Keynote Lecture followed by contributed papers).

Saturday, 12th July:

- 9am - 1pm and 2pm - 6pm: Fifth Scientific Session on "Climates: Past, Present and Future. Using palaeontological data to predict future changes in the environment" (Keynote Lecture followed by contributed papers and forum in which different disciplines are represented).
- Closing session.

Sunday, 13th July:

- Post conference excursion to the Upper Cretaceous of the Neu Welt Basin; Miocene of the Vienna Basin.

Special Evening Events

- Plants & Climate: a taste of Austrian wines
- Public lecture in the Natural History Museum
- Reception by the Mayor of Vienna.

Accommodation

Different categories of lodgings will be available, including a student hostel. Although there is a youth hostel, it is not convenient for the delegates.

Working Languages will be English and German. Please contact the following for a registration form:

Dr. Heinze A. Kollmann,
Natural History Museum,
Burggraben 7 - A-1014 Vienna, Austria.
Fax: 00-43-1-5235254

EVOLUTION OF MARINE PHYTOPLANKTON, September 14-18, 1997, Massachusetts, USA.

This is an American Association of Stratigraphic Palynologists special symposium at the Marine Biological Laboratory's Swope Conference Center, Woods Hole, Massachusetts. The meeting will be an extension of the regular annual AASP meeting and includes invited lectures on the evolutionary history of photosynthetic groups from the Precambrian on. Registration and abstracts due June 15th. For more information and a registration packet, contact:

Paul K. Strother,
Dept of Geology & Geophysics,
Boston College, Weston Observatory,
Weston, MA, USA
Tel: (617) 552-8395, Fax: (617) 552-8388
E-mail: Strother@hermes.bc.edu

5th EUROPEAN PALAEOBOTANICAL PALYNOLOGICAL CONFERENCE, June 26 - 30, 1998. Kraków, Poland.

This meeting is sponsored by the State Committee for Scientific Research and the Polish Academy of Sciences. Krakow is the former capital of Poland and has a rich cultural and scientific tradition. It is the second largest university center in Poland, the seat of one of the oldest European Universities - founded in 1364.

With its medieval lay-out and priceless monuments Kraków has been included in UNESCO Registers as one of the twelve most outstanding ancient cities in the world. The nearby Wieliczka Salt Mine, known world wide, has also been entered on the same list. Visitors can admire the old shafts, the huge expanses in that mysterious underworld, the fine statues and ornaments all carved in rock salt. The Wieliczka Salt Mine Museum provides the possibility to trace the complete history of Polish salt mining and to see palaeobotanical collections extracted from the Miocene salt sediments.

Organising Committee

- President - Leon STUCHLIK
- General Secretary - Grzegorz WROBIEC
- Conveners of the Palaeo-Mesozoic Section - Elzbieta TURNAU, Danuta ZDEBSKA
- Conveners of the Tertiary Section - Anna SADOWSKA, Barbara SLODKOWSKA

Scientific programme

- The conference will have simultaneous paper sessions on different topics, and also poster sessions.

- Time for presentation of each paper is 15 minutes and 5 minutes for discussion.
- The official language of the conference is English.
- All lecture rooms are equipped with slide projectors.
- Poster size max. 90 x 110 cm
- Intra-Conference Excursion to the Salt Mine Wieliczka for all participants (½ day).

Post-Conference Field Trips

1. Carboniferous and Permian of Upper Silesian Coal Basin (3 days). (*Leaders: Sonia Dybova-Jachowicz, Ireneusz Lipiarski*)
2. Tertiary - Quaternary floras of Belchatów, Konin (Central Poland) and several localities in South Western Poland (5-6 days). (*Leaders: Anna Sadowska, Maria Ziembinska-Tworzydło, Zofia Balwierz, Malgorzata Nita.*)
3. Tertiary - Quaternary floras and recent vegetation of sub-Tatra and Tatra Mts region (3 days). (*Leaders: Andrzej Obidowicz, Maria Lesiak, Zbigniew Mirek.*)
4. Holocene - Palaeobotany of the Neolithic settlement in the vicinity of Crakow (1 day). (*Leaders: Krystyna Wasylkowa, Maria Litynska-Zajac, Dorota Nalepka-Paperz.*)

NEWS FROM ROMANIA

During the last ten months of 1996 - January 1997, paleobotanical researches and investigations were promoted in the normal way within the Laboratory of Paleontology (University of Bucharest, Faculty of Geology and Geophysics) by Prof. Dr. Ovidiu Dragastan (Paleoalgology, Paleo- and Mesozoic megaflores), by Reader Dr. Nicolae Ticleanu (Tertiary megaflores), by Assistant Mihai Popa (Jurassic megaflores) and by students working for their graduation, MSc or Ph.D. thesis.

During January 1997, the Laboratory of Paleontology had the honor to receive the visit of Dr. Johanna van Konijnenburg - van Cittert, from the Laboratory of Paleobotany and Palynology, Utrecht University. During the visit, Dr. van Konijnenburg - van Cittert made a critical review on the Liassic flora from Romania, working on material stored within the Laboratory of Paleontology, Museum of Geology or from the Geological Survey of Romania. The discussions were focused on systematic aspects, such as the *Nilssonia orientalis* HEER group, on Matoniaceous ferns (*Phlebopteris*, *Aninopteris*), on pteridosperms (*Cycadopteris* - *Lomatopteris*, *Pachypteris*), on bennettites (*Zamites schmiedelii* group), *czekanowskials* (possible *Phoenicopsis* species) or on conifers (*Storgaardia*). The accent was put especially on Steierdorf-Anina collections, a fossile-Lagerstätten locality from the South-Western

Carpathians, with taphonomic, paleoecological aspects discussions. All these data were approached in view to supervise the Ph.D. study of Mihai Popa regarding the Liassic flora of Romania. This Ph.D. study is co-supervised by Dr. van Konijnenburg - van Cittert and by Prof. Ovidiu Dragastan. During her visit Dr. van Konijnenburg - van Cittert also gave a lecture for the students in the second cycle in Geology, on Jurassic floras of Yorkshire and Scotland, a very instructive presentation on plant systematics and paleoecology.

Reader Dr. Nicolae Ticleanu continues his work on Neogene floras from Romania. His preoccupations regard the Sarmatian floras from Comanesti Basin and Getic Depression, the Romanian flora from the Dacian Basin, and generally the relations between Recent flora and Neogene floras, coal generating phytocoenoses and phytotaphonomy.

Regarding archaeological Palynology, Dr. Marin Carciumaru (V. Parvan Institute of Archaeology, Bucharest) continues to investigate Pleistocene-Paleolithic sites, caves especially. Also Mihai Tomescu from the National Centre for Interdisciplinary Research (National History Museum of Romania) works on neo- and eneolithic sites from Dobrogea (South-Eastern Romania) and collaborates with Dr. Ticleanu on Pliocene flora from Oltenia.

The novelties regarding Romanian publications are:

1. Tertiary peat bogs of Romania (1996) by Prof. Dr. Razvan Givulescu, Honorary member of the Romanian Academy, Carpatica Press, 171 pages (can be ordered directly from Prof. Givulescu);
2. Sabal major (Unger, 1842) Heer 1855 aus dem oberen Oligozän des Schichtbeckens, Kreis Hunedoara, Rumänien (1996), by Prof. Razvan Givulescu, Beiträge zur Paläontologie, 21, Wien.
3. *Rivularia haematites*: a case of the Recent versus fossil morphology. Taxonomical considerations (1996), by O. Dragastan (Bucharest University), S. Golubic (Boston University) & D.K. Richter (Ruhr University - Bochum), Revista Espanola de Micropaleontologia, vol. 23/1, Madrid.
4. Taphonomic researches on the fossil plants from the Pliocene coal deposits in Oltenia (1995), by R. Dr. N. Ticleanu, Romanian Journal of Paleontology, 76, p. 153-160, Bucharest.
5. Utilization of the paleobotanical data in the study of the coal deposits (1995), by R. Dr. N. Ticleanu, Romanian Journal of Paleontology, 76, p. 145-152, Bucharest.
6. An attempt to reconstitute the evolution of the annual mean temperature in the Neogene of Romania, Romanian Journal of Paleontology, 76, Bucharest.
7. Early Jurassic phytostратigraphy of the Holbav Formation, Getic Nappe, Brasov County (in print),

AUSTRALIAN NEWS

Two Australian women scientists have been nominated as Corresponding Members of the Botanical Society of America. They are Mary Dettmann our well known palynologist from Brisbane, and IOP stalwart, and Barbara Briggs, of Sydney, not specifically a palaeontologist, but also well known for her work on the family Proteaceae and others.

In a less happy vein I report the death of Jean Rigby the wife of John, also long time IOP member. Jean was very much involved in work among handicapped and disadvantaged children, and attended many Conferences with John, including I remember the Paris IOP of 1992.

Finally I have moved from Melbourne after living there since 1941, and now live at 41 Grieve St, Warrnambool, Victoria, Australia. Phone -61 3 55 616869 and -61 3 55 988227. Email unchanged as douglas@melbpc.org.au

J. DOUGLAS, Victoria, Australia

PALEOBOTANY IN ARGENTINA

In 1966 several paleobotanical groups were active. The Corrientes group (Prof. R. Herbst) worked on Triassic and Tertiary Floras from Patagonia and the Mesopotamia area. Prof. Herbst has temporarily moved to the Lillo Institute at Tucuman University. The Lillo group (Lic. J. D. Cabrera) is working on the glossopterids from Santa Cruz Permian sequences. At Cordoba (Dr. M. Hunicken) the work on the original fossil plant collection of F. Kurtz was published by the National Academy of Sciences. The Trelew group (Dr. N. R. Cuneo) was active in several fields related to Antarctica, and the Permian, Jurassic and Cretaceous of Patagonia. The La Plata University group (Drs. E. Morel and A. Artabe) continued their work on Devonian and Triassic plants while the Buenos Aires University group (E. Ottone and E. Romero) is doing research on Late Paleozoic sequences from Western Argentina and the Late Cretaceous and Tertiary floras from Patagonia. The Buenos Aires Natural History Museum group (S. Archagelsky) continued the research on Late Paleozoic and Cretaceous plants. Other groups, not mentioned in this brief report, were active on Paleopalynology (Mendoza, Bahia Blanca, Cirgeo).

During the XXV Argentinian Botanical Congress that took place at Mendoza on November several paleobotanical and palynological papers were

presented: 2 on Paleozoic, 2 on Mesozoic and 10 on Cenozoic fossils. Ameghiniana, the Journal of the Argentine Paleontological Society published the vol. 33 in 1966. The 4 issues included eleven papers on paleobotany and palynology: 7 on Paleozoic, 1 on Mesozoic and 4 on Cenozoic fossils. Finally, the Xth Argentinian Symposium on Paleobotany and Palynology has been announced. It will take place at Mendoza on October 29 to 31 (e-mail cricyt@planet.losandes.com.ar). It is a good opportunity to visit the Andean region including spectacular view of Aconcagua, the highest peak of the Cordillera.

G. DEL FUEYO, L.V. DE SEOANE & S. ARCHANGELSKY, Buenos Aires, Argentina

CHARLES SMILEY'S LIBRARY IS DONATED TO CHINA

Recently, the library of the Nanjing Institute of Geology and Palaeontology, Academia Sinica, welcomed the arrival of Prof. Charles Jack Smiley's personal library, donated by his wife Mrs. Marguerite (Peg) C. Smiley. Dr. Charles Jack Smiley (Jack, as known by his friends and colleagues), the late emeritus professor of geology and director of Tertiary Research Center at the University of Idaho, USA, had decided to donate his personal collection of books and literature to the Chinese palaeontology community, before his sudden death on Jan. 1st, 1996. His collection of professional references contains about a thousand books in various languages, five thousands original reprints, as well as journals and maps that he has accumulated through decades of his academic life. His references are dominated by Mesozoic and Cenozoic palaeobotany but also cover a broad range of subjects such as botany, sedimentology, general biology, general geology, and climatology. After being briefly catalogued in Moscow, Idaho, USA, the whole collection was shipped in fifty eight boxes for Nanjing, China in July of 1996.

A grand receiving ceremony was held at the Nanjing Institute of Geology and Palaeontology, Academia Sinica in Nanjing on Nov. 18th, 1996, during the celebration of the 45th anniversary for the foundation of the institute. Mrs. Smiley, accompanied by her son Mr. John C. Smiley, was invited by the Chinese Academy of Sciences to attend the ceremony and to officially open the special room which hosts Jack's collection in the library. Officials from the State Science and Technology Commission, Chinese Academy of Sciences, municipal and provincial governments along with Jack's friends and colleagues participated in the ceremony. His former Ph.D. student, Dr. Hong Yang from the University of Michigan at Ann Arbor, delivered a speech

highlighting Jack's life, career, and scientific contributions.

"Geological formations do not stop at the country boundaries" as Jack's quotation appeared on his commemorating copper plate accompanying the books, Jack had a long interest in the geology and modern and fossil floras of China, and he believed that his professional books should go to a place where they are needed the most. The Nanjing Institute of Geology and Palaeontology is grateful for receiving the invaluable gift from the Smileys, and the references will be widely used by students and faculty at the institute as well as scientists from other parts of China.

Qin LENG

Department of Palaeobotany,

Nanjing Institute of Geology and Palaeontology,
Academia Sinica, Nanjing 210008,

P.R. China

THE JARED POTTER KIRTLAND AWARD

Dr. Shyamala Chitale, September 24, 1996

This award is to be given for an outstanding achievement in the field of natural science.

Standing four feet, ten inches, she is a diminutive, dynamic dynamo! Fondly known as Shya, Dr. Shyamala Chitale joined the staff of The Cleveland Museum of Natural History in 1980. Her field of specialization was paleobotany. In 1980 this Museum had no such department. Full credit goes to Shya for the very fine Paleobotany Department here today, recognized internationally for its outstanding collection of plant fossils from the Cleveland shale.

Shya received her Bachelor of Science and her Masters Degrees in botany at the University of Nagpur, India. In 1955 she was awarded a Ph.D. in botany, specializing in paleobotany, at the University of Reading, in England. For approximately 28 years she taught botany and served as Head of the Botany Departments, first at the Institute of Science in Nagpur, India, and then the Institute of Science in Bombay, India.

Shya's main interest is in the mega and micro flora of sedimentary deposits of any age, and in relating them to the environment under which they grew or fossilized. By the time she settled in America she had become one of the world's leading authorities on the Upper Cretaceous plant fossils from the southern part of India, known as the Deccan Intertrappean flora. These are among the world's earliest evolved flowering plants, of which many kinds are still in existence. No text on plant evolution can lack references to Dr. Chitale's work in India, which has continued up to the present through her many visits and fossil digs.

At an age when most professional women are thinking of retirement, Shya joined the staff of our Museum and founded and organized the Paleobotany Department. As a new curator she negotiated the acquisition of the 30,000 specimen Hoskins Collection as a gift to the Museum from the University of Cincinnati. It took two trucks to bring this huge collection of fossils, and their associated cabinets, catalogs, descriptive literature, peels, and micro-slides back to Cleveland!

Since the early 1980s Dr. Chitale has been training a core of volunteers to assist in the work of the department, teaching them the delicate skills of preserving fossils in wax, and preparing slices of fossils called peels by using strong acids combined with an acetate-paper technique. They have learned to identify petrified plant specimens found in the peels, and how to catalog the information. She has guided undergraduate and graduate students in her field, including 13 doctoral candidates. For many years she has participated in the Kirtlandia Society's Adopt-A-Student Program, guiding a college-level intern in summer research in paleobotany.

Shya is a prolific writer, and her research projects have resulted in over 100 publications. Since 1979 she has held the post of chief editor in the quarterly botanical journal, *Bolanique*. She has presented research papers at regional, national and international botanical and paleobotanical conferences. She is in constant correspondence with the world's leading scholars in paleobotany, many of whom have visited the Museum to see our impressive collection. In 1989 she organized and hosted, here at the Museum, the Seventh Mid-continent Paleobotanical Colloquium.

Since her arrival in 1980 the main thrust of her research has been the fossil plants in the Cleveland Shale, from the Upper Devonian period of 400 million years ago. Here was a blank page in the fossil record which Dr. Chitale with her collaborators have managed to fill in, from studying the many specimens the Museum has acquired from sites around I-71 on the west side of Cleveland and elsewhere in northern Ohio and western Pennsylvania. Coinciding with the 200th anniversary of the founding of Cleveland and the 75th anniversary of this museum was Dr. Chitale's and her co-author's description of a new genus and species of ancient club-moss from the Cleveland Shale. Named *Clevelandodendron ohioensis*, it is the only fossil of its kind so far discovered. Its description will appear this year in a scholarly journal. The specimen itself occupies a place of honor in the current exhibit, "Cleveland Before Cleveland".

Shya must have a "photographic mind". She is so familiar with the specimens in the Museum's paleobotany collection that something clicked in her mind when she saw a picture of a newly described Jurassic club-moss with peculiar globe-shaped cones in an Australian Journal. She remembered that on one of the 30,000 and some specimens in the

Museum's collection she had seen the exact same plant with the globe-shaped cones, but from the Upper Devonian Period of the Cleveland Shale, about 200 million years preceding the Australian specimen. Surely this must be the topic of another research paper!

Shya, for the extensive paleobotany collections that you have accumulated, organized, and cataloged during these 16 years with this Museum: for the national and international recognition that your scientific knowledge and expertise have brought to this Museum; and for the paleobotanical skills and information that you have imparted to others, it is my distinct honor, on behalf of the Board of Trustees to present to you the Jared Potter Kirtland Award.

M.G. SMEAD, Chairman, Awards Committee, The Board of Trustees

EVOLUTION OF *Nymphaea* - REQUEST FOR INFORMATION

We are just starting a joint botanical/palaeobotanical PhD project on the systematics and evolution of the genus *Nymphaea*. This will include a great deal of work on fossil material. Therefore we are interested to know about nymphaeaceous fossils hidden somewhere in the collections. Our interest is not restricted to macrofossils, but also includes pollen. The aim of the palaeobotanical part of the project is to get an idea on the occurrence of nymphaeaceous fossils in time and space, and to compare them to the living species. For more information please contact:

Volker Wilde & Thomas Borsch,
Forschungsinstitut Senckenberg,
Palaeobotany,
Senckenberganlage 25,
D-60325 Frankfurt am Main,
Germany.

E-mail: vwilde@sngkw.uni-frankfurt.de
tborsch@sngkw.uni-frankfurt.de

NEWS OF INDIVIDUALS

OVIDIU DRAGASTAN is now Head of the Department of Geology and Palaeontology, University of Bucharest.

HANS KERP and the palaeobotany group in Münster (Germany) now have their own internet home page. Though still under construction, most pages are now available in German and in English. Their address is: <http://www.uni-muenster.de/GeoPalaeontologie/Palaeo/Palbot/ebot.htm>

HARUFUMI NISHIDA is the new Professor of biology at Faculty of Science and Engineering, Chuo University, 1-13-27 Kasuga, Bunkyo-ku, Tokyo, 112 Japan.

Phone: +81-3-3817-1727,

Fax: +81-3-3817-1671

E-mail: PXL10023@niftyserve.or.jp

CEDRIC SHUTE retires on May 16th after working for 38 years in the Palaeobotany Section of the Natural History Museum, London. After retirement he intends to work at the Museum on a casual basis, creating the electronic database of the palaeobotany collections and doing research. From March, please address all official correspondence to Tiffany Foster who is taking over the running of the Palaeobotany Section.

BARRY THOMAS has left the National Museum of Wales. His address is now: Professor B.A. Thomas, Geography Department, University of Wales Lampeter, Lampeter, Ceredigion SA48 7ED, Wales, UK. (Tel. 01570 422351 ext. 302; Fax 01570 424714; e-mail b.thomas@lamp.ac.uk). He is pleased to have left administration behind him and is now able to devote much more time to his research interests in palaeobotany, pteridology and conservation and plans to finish off far too much unpublished work. He will maintain his links with Chris Cleal at Cardiff. Last July he obtained a DSc from the University of Reading for his researches into fossil and living pteridophytes. He is now the Treasurer of the British Institute for Geological Conservation.

PHONE NUMBERS IN FRANCE

Telephone and fax numbers have recently changed in France. All numbers in Paris now start with 01, those in Lille and Strasbourg with 03 and those in Lyon and Montpellier with 04.

The telephone number of **Jean Broutin** (Paris) has changed to (33) 01 44 27 48 65, that of **Lea Grauvogel-Stamm** (Strasbourg), to (33) 03 88 35 85 70, and that of **Jean Galtier** (Montpellier) to (33) 04 67 14 36 31.

PALÉOBIOLOGIE CONTINENTALE

The Laboratoire de Paléobotanique at Montpellier which edited "Paléobiologie continentale" sells its stock. Each copy listed below (e.g. Vol I, N°4) is available at 50 FF to cover mailing expenses. Please, pay by money order if possible and send your orders to:

Brigitte Meyer-Berthaud,
Laboratoire de Paléobotanique
Université Montpellier 2, Place Bataillon
34095 Montpellier Cedex 5, France

Available copies of Paléobiologie Continentale are:

Vol I, 1970

- N°1: J. MEDUS - Première contribution à la palynologie stratigraphique du Crétacé supérieur du Sud-Est de la France et du Nord-Est de l'Espagne: 3-14, 2 pl.
- N° 4: J. GALTIER - Recherches sur les végétaux à structure conservée du Carbonifère inférieur français: 1-221, 74 fig., 54 pl.

Vol II, 1971

- N° 2: L. GRAMBAST - Remarques phylo-génétiques et biochronologiques sur les Septorella du Crétacé terminal de Provence et les Charophytes associées: 38p., 29 pl.

Vol III, 1972

- N° 1: M. FEIST-CASTEL - Charophytes éocènes de la région montpelliéraine: 22p., 6 pl.
- N° 2: L. GRAMBAST - Etude sur les Charophytes tertiaires d'Europe occidentale. I - Genre Tectochara: 30 p., 8 pl.
- N° 3: L. GRAMBAST & I. SOULIÉ-MÂRSCHÉ - Documents sur l'ancienneté et la diversification du genre Nitellopsis (Charophytes): 10p.
- N° 4: C. AZEMA, S. DURAND & J. MÉDUS - Des miospores du Cénomanien moyen: 54p., 27pl.

Vol IV, 1973

- N°1: J.-L. VERNET - Contribution à l'histoire de la végétation du Sud-Est de la France au Quaternaire. Etude des macroflores, de charbons de bois principalement: 90p., 13pl.
- N° 2: C. GRUAS-CAVAGNETTO - Première contribution à l'étude de la palynoflore de la formation de Célas (Bassin d'Alès, Gard): 13 p., 4pl.

Vol V, 1974

- N° 1: C. AZÉMA & E. BOLTENHAGEN - Pollen du Crétacé moyen du Gabon attribué aux Ephedrales: 38 p., 4 pl.
- N° 2: C. GRUAS-CAVAGNETTO - Associations sporopolliniques et microplanctoniques de l'Eocène et de l'Oligocène inférieur du Bassin de Paris: 20p., 6pl.

Vol VI, 1975

- N°2: S.K. SRIVASTAVA - Microspores from the Fredericksburg group (Albian) of Southern United States: 120p., 48 pl.

Vol VII, 1976

- N°2: G. GUTIERREZ & F. ROBLES - Biostratigraphie du Sónenien continental des environs de Villalba de la Sierra (Prov. de Cuenca, Espagne): 17p.

Vol VIII, 1977

- N°1: L. GRAMBAST - Etude sur les Charophytes tertiaires d'Europe occidentale - III. Espèces nouvelles de l'Eocène inférieur: 28p., 7 pl.
- N°2: L. GRAMBAST & G. GUTIERREZ - Espèces nouvelles de Charophytes du Crétacé supérieur terminal de la province de Cuenca (Espagne): 34p., 15pl.

Vol IX, 1978

- N°1: J. SIVAK - Histoire du genre Tsuga en Europe d'après l'étude des grains de pollen actuels et fossiles:

226p., 13 tabl., 159 pl.

- N°2: M. MASSIEUX & J.-C. PLAZIAT - Characées du Thanétien et du Sparnacien inférieur des Corbières Septentrionales (Aude): 15p., 4 pl.

Vol X, 1979

- N°1: Journées sur la Palynologie du Crétacé moyen et supérieur: 37p., 2 pl.
- N°2: F. DINIZ & J. SIVAK - Informations chronologiques sur les dépôts de Rio Major (Portugal) à partir de l'étude de la microflore: 9p., 8 pl.

Vol XII, 1981

- N°2: L. GRAMBAST & N. GRAMBAST-FESSARD - Etude sur les Charophytes tertiaires d'Europe occidentale. III Le genre Gyrogona: 35 p., 6 pl.

VOL XIII, 1982

- N°1: J.-P. SUC & J. CRAVATTE - Etude palynologique du Pliocène de Catalogne (Nord-Est de l'Espagne): 31 p.

Vol XIV, 1984

- N°1 - S.K. SRIVASTAVA & L. BINDA - Siliceous and silicified microfossils from the Maastrichtian Battle formation of Southern Alberta.
- N°2 - J.P. SUC - Paléoenvironnements continentaux en Méditerranée au Néogène et évolution paléoclimatique.

VOL XV, 1986

- C. MARTIN-CLOSAS & N. GRAMBAST - Les Charophytes du Crétacé inférieur de la région de Maestrat.

VOL XVI, 1989

- S.J. CHOI - Les charophytes du bassin potassique catalan à la limite Eocène-Oligocène.

NEW PhD THESES

VERONIQUE DAVIERO, Montpellier

Veronique Daviero successfully defended her thesis entitled "Approche morphométrique, modélisation et simulation informatique de l'architecture et du développement de spénophytes actuelles et fossiles" at the University of Montpellier on February 7th 1997. Her work concerned one extant species of *Equisetum* and different species of Upper Carboniferous spénopsids. The innovative aspects of her study were (1) the morphometrical analysis of fossil axes preserved as pith casts and compressions, (2) a special interest for elongation patterns and (3) the simulation of the architecture of a set of "reconstructed plants" at different stages of growth, using the AMAP software. AMAP was developed by the "Atelier de modélisation du CIRAD, Montpellier" and is currently used by this agronomical institut for predicting the shape and fruit production of diverse types of angiosperm trees during their growth.

Veronique just got a temporary teaching position at the University of Lyon (Laboratoire de Paléobotanique du Mésozoïque).

B. MEYER-BERTHAUD, France.

MADELINE HARLEY, London

Palm Pollen and the Fossil Record

Abstract: Previously published descriptions of the pollen morphology of the Palmae are reviewed and discussed. The earliest macro fossil records for palms are summarised, while a more detailed review is given of the fossil records of palm-like pollen. Selected literature relating to pollen sharing some similarities to palm pollen in other monocotyledonous families are briefly reviewed, and the fossil pollen records for these families are examined. A brief chronological account of earlier systematic treatments of the palms is provided, as well as an outline of the systematic treatment of the family used in the present account.

The pollen morphology of 1150 collections, representing 765 species of palms, from all but seven of the currently recognised genera, has been examined, as well as dispersed palm-like fossil pollen from the middle Eocene of the Isle of Wight, and of Java. *In situ* pollen of fossil palm flowers from the Messel oil shales (Germany) is described. Post meiotic tetrad stage has been studied for representative species in all subfamilies excepting the Phytelphantoideae. Pollen morphology of both recent and fossil pollen is described from light, scanning electron and, selectively from transmission electron microscopy, while tetrad results are from light and scanning electron microscopy. Full details of preparation methods, terminology and databases used for pollen morphological, fossil and tetrad studies are given.

Seventeen aperture types, plus numerous subtypes, and twelve exine types with numerous subtypes are identified. The aperture types are shown to be broadly separable into two groups which are associated with either simultaneous (tetrahedral tetrads) or successive (tetragonal tetrads) microsporogenesis. In general these two groups support present systematic opinion regarding the subfamilies. Successive meiosis is dominant in subfamilies Calamoideae and Nypoideae while, with some rare exceptions, simultaneous meiosis predominates in the remaining four subfamilies: Coryphoideae, Ceroxyloideae, Arecoideae and Phytelphantoideae. Pollen ultrastructure is treated in detail only for simple tectate exines where it is important for further definition. Six types and a number of subtypes are described. The systematic distributions of aperture and exine types are summarised. A trend towards larger pollen is noted, with the smallest pollen occurring in the least specialised subfamily, the Coryphoideae, while very large-sized pollen are characteristic of subfamily Phytelphantoideae. Monosulcate, disulcate and zonosulcate pollen are described from fossil material and closest affinities with recent palms suggested.

Pollen morphology of recent palms is summarised and discussed, and compared with pollen of selected monocotyledonous families. The bearing of pollen data on recent palm systematics is considered at various levels from subfamily to species. Angiosperm pollen evolution is re-considered and evolutionary pathways for palm pollen aperture types and exine types are suggested. In the light of recent pollen morphology for the family the fossil record of palm pollen is re-evaluated. Some widely accepted affinities are challenged while previously unconsidered affinities are suggested, particularly for the mid-Cretaceous. The need is emphasized for future fossil pollen studies to look critically for pre Late Cretaceous palm-like monosulcates, which would be more informative of the early history of the family than the apparently highly evolved, easily recognisable *Spinizonocolpites* of the Late Cretaceous. Palaeogeography, environment and distribution of fossil records and depositional environment are discussed.

Probable evolutionary pathways of pollen morphology, including pollen tetrad data which suggest simultaneous rather than successive meiosis as the plesiomorphic state, offer further evidence that the palms are indeed an ancient group, and support the hypothesis that the palms may have originated in South America and Africa (West Gondwana) in the Late Jurassic or early Cretaceous, prior to the complete separation of these continents.

M. M. HARLEY: Palaeobiology Research Unit, University of East London, in collaboration with the Palynology Unit, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, UK.

VINCENT WIJNINGA, Amsterdam

Paleobotany and palynology of Neogene sediments from the high plain of Bogotá (Colombia).

Evolution of the Andean flora from a paleoecological perspective. By Vincent M. Wijninga.

The thesis presents the history of neotropical vegetation and environment in the area of the high plain of Bogotá (2550 m alt., Cordillera Oriental, Colombia) during the Neogene. The aim of the study was to document the history and development of the montane Andean vegetation in relation to the final uplift of the Eastern Cordillera by means of pollen and plant macrofossil analysis. **Chapter 1** includes a historical overview of paleobotanical research in tropical South America, a geographical description of the study area, and the present vegetation in the Eastern Cordillera are given. In addition an overview of the geology of the study area, and lithostratigraphy and biostratigraphy of the Neogene-Quaternary sediment sequence of the study area are presented.

Chapter 2 discusses the results of a geochemical study, which was carried out on the fossil plant

material from a selection of the studied sections of Neogene age. The objective of this study was to assess the chemical composition and the degree of decomposition of the neotropical plant material. The chemical composition of the fossil organic material was revealed by means of pyrolysis gas chromatography mass spectrometry. The chemical analyses were performed on total organic matter samples and on selected plant tissues (wood and cuticles). A chemical fingerprint of each deposit was obtained from the total organic matter samples. These fingerprints reflect primarily the type of depositional environment. The results of the analysis of the woods show that the preservation of organic matter in the sections studied is primarily controlled by the prevailing biotic and abiotic conditions during sediment deposition. Apparently, the factor time explains only a minor part of the differences in preservation of the fossil plant material from the sections studied.

Chapter 3 describes the paleovegetation and environment before the uplift of the study area had taken place. This phase is represented by the sediments of sections Salto de Tequendama I and II, which belong to the Tequendama Member of the Lower Tiltá Formation. Sediments of section Salto de Tequendama I were deposited in a low energy river, those of section Salto de Tequendama II accumulated in a depression on the river floodplain. The pollen and macrofossils of section Salto de Tequendama I are suggestive of a tropical lowland floodplain forest. At present similar forests are found in northwestern Amazonia. The presence of montane pollen taxa, transported by river, indicate that mountains in the proximity of the deposition site were covered by *Podocarpus*-rich forest. Pollen and macrofossils from section Salto de Tequendama II are indicative of a swamp forest, dominated by the palm *Mauritia* and with representatives of Cyclanthaceae and Cyperaceae in the understorey, situated on the lowland floodplain. Paleovegetational characteristics suggest that sediment deposition occurred at approximately 700 ± 500 m elevation. Based on the lowland paleovegetation and the absence of pollen of *Hedyosmum* the sediments of sections Salto de Tequendama I and II belong to Biozone I. The presence of *Crassoretitritiletes vanraadshooveni* (not redeposited) and scanty presence of Compositae is suggestive of a Middle? Miocene age for the sediments of both sections.

Chapters 4 and 5 describe the first stage in the uplift of the study area. The fossil plant assemblages of sections Río Frío 17 and Subachoque 39 consist predominantly of Andean and subandean pollen taxa associated with pollen and macrofossils of tropical lowland elements. Recorded montane taxa are, e.g. *Podocarpus*, *Hedyosmum*, *Ilex*, *Viburnum*, *Myrsine*, *Symplocos* and *Clethra*-type. The lowland forest taxa

include, e.g. *Amanoa*, *Mauritia*, *Iriarte*, *Sacoglottis*, *Humiriastrum* and *Vantanea*. The concurring presence of lowland and montane taxa is explained by assuming a relatively small area covered with lowland forest, whereas the area of the surrounding mountain slopes covered with Andean and subandean forest was relatively large. Sediment deposition is thought to have occurred at approximately 1000 ± 500 m altitude. Based on new palynological evidence the sediments of section Río Frío 17 belongs to Biozone IIA, instead of Biozone I. A volcanic ash layer intercalated this section was fission-track dated at 5.3 ± 1 Ma. The sediments of section Subachoque 39 belong to the same biostratigraphical zone as section Río Frío 17, but belongs to the younger Tibagota Member of the Lower Tiltá Formation.

In **chapter 6** the fossil plant assemblage of peat section Facativá 13 is described. The assemblage represents a *Podocarpus* forest mire, which consisted of scattered *Podocarpus* trees accompanied by shrubs of Melastomataceae. Modern analogs of this forest are unknown in northern South America, although in podocarpaceous swamp forests are found in New Guinea. The forest surrounding the mire included taxa, such as *Myrsine*, *Weinmannia*, *Vallea*, Melastomataceae, *Alchornea*, *Ilex*, and *Hedyosmum*. The presence of the latter taxon and the absence of *Myrica* are indicative of Biozone IIB. The composition of the fossil plant assemblage suggests that sedimentation occurred at approximately 2000 ± 500 m elevation. Fission-track on zircon from an intercalated volcanic ash layer gave an age of 3.7 ± 0.5 Ma.

The paleoecological interpretation of the fossil plant assemblage of section Guasca 103 is presented in **chapter 7**. The fluvio-lacustrine sediments belong to the Guasca Member of the Upper Tiltá Formation. The recorded plant fossils are indicative of a forest near the present-day upper limit of the subandean vegetation belt, that is, 2200 ± 500 m elevation. The subandean forest shows marked fluctuations in its floristic composition. Several of the aforementioned taxa have adapted to disturbance. Alternation of paludal and aquatic environments suggest water level fluctuations. These dynamic conditions might be related to the initial stage in the formation of the sedimentary basin of Bogotá near the end of the Pliocene uplift. The presence of *Myrica* suggests that the sediments of section Guasca 103 belong to Biozone III. The Guasca sediments are estimated to be of Late Pliocene age.

Based on the palynological and paleobotanical evidence **chapter 8** provides a synthesis of the development of the Andean flora in relation to the final Pliocene uplift of the Eastern Cordillera. The change in forest composition in terms of phytogeographical origin of plant taxa during Neogene time is presented. The issue of explaining

the current high plant diversity in the Amazon basin is addressed. The problem focuses on whether speciation or extinction process dominated among plants in the Amazonian lowland as a result of the climatic fluctuations during the Quaternary. Pollen type countings of Neogene pollen sections were compared with those from Late Quaternary pollen sections in order to evaluate the plant diversity in Neogene time.

The plant microfossils and macrofossils recorded in the studied Neogene sediments from the high plain of Bogotá are described and illustrated in the **appendix** of the thesis. The lightmicroscope and SEM photographs of the plant fossils are compiled in 69 plates that include 66 microfossil types (mainly pollen) and 226 plant macrofossil types (seeds, fruits, leaves and wood). Type-number and taxonomical indexes are included.

Ponsen and Looijen B.V., Wageningen; ISBN 90-900-9414-8; Vincent M. Wijninga, Ph.D. thesis, Hugo de Vries-Laboratory, Dept. of Palynology and Paleo/Actuo-ecology, University of Amsterdam, Kruislaan 318, 1098 SM Amsterdam, the Netherlands. 1996. x + 374 pages, with 16 appendices in a seperate envelope. US\$ 50 (including handling & postage). The 69 photoplates are also available on cd-rom (software requirements: Adobe Photoshop 3.0 or higher). For more information and orders: wijninga@bio.uva.nl or fax: +31 20 5257662.

BOOK DESCRIPTIONS

Late Oligocene Flora of the Petrosani Basin (1996) - Răzvan Givulescu, Science book press, 145 p, 32 pl, 1 map, Cluj-Napoca.

The book represents a revised and improved edition of the versions published by Prof. Razvan Givulescu in 1983 and 1985. It should not be forgotten that the fossil flora of the Jiu Valley has historical resonances - through the years, it has been a subject of study for great naturalists, palaeobotanists and geologists: D. Stur (1863), O. Heer (1870, 1872), M. Staub (1887), F. Pax (1907, 1908), I. Tuszon (1911, 1913), Gr. Raileanu (1955) and I. Mateescu (1956).

The principal aim of the work is the description of the fossil plants in a systematic order: Charophyta (1 taxa), Pteridophyta (9 taxa among which *Pteridium incurvata* n.sp. Givulescu ex *P. crenatum* (Web.) Givulescu, *Salvinia ovoidea* Givulescu), Gymnospermatophyta (3 taxa - *Sequoia abietina*, *Taxodium dubium*, *Glyptostrobus europaeus*) and Angiospermatophyta (47 taxa including *Laurophyllum chatticum* Givulescu, *Lindera pluristoma*

Givulescu, *Lithocarpus pulchra* Givulescu, *Grewia staubi* Givulescu).

All taxa are figured in the 32 plates; they are accompanied by exhaustive synonymies, biometric studies and critical revisions - as is the case with *Ocotea aglajae* (Unger, 1838) Giv. 1959, or *O. dubia* (Staub 1887) Giv. nov.comb..

Insects which lived in the Late Oligocene forests of the Petro, sani Basin are also mentioned, by means of the mines, galls and gnawing traces produced by them: Aphidae, Lepidoptera, Diptera etc..

A map shows the occurrences of the various taxa in the main plant deposits from the Petro, sani Basin - Carnpu lui Neag, Uricani, Lupeni, Vulcan, Aninoasa, Petrila, Lonea, Petro, sani, Livezeni etc..

We recommend this book to all the specialists (palaeobotanists, geologists) and especially to students, as a rich source of information concerning the Tertiary Floras from Romania. You can order it by writing to:

Prof.dr. Ovidiu Dragastan,
Head of the Department of Geology and
Palaeontology,
University of Bucharest,
70111 Bucharest, Romania.

Atlas of Fossil Plant Anatomy in China (English edition) - Li Chengsen & Cui Jinzhong (editors). 1995. Science Press, Beijing, China. 132pp. 273figs. ISBN 7-03-004900-4/p.584.

Land vascular plants originated in the Late Silurian and Early Devonian, about 400 million years ago. In the evolution of plants kingdom, vascular plants have been developing very well in adaptation to terrestrial environment by the change of their configurations. Most historical plants have been extinct. New and important data of anatomical structures of fossil plants from Silurian to Tertiary have been accumulated in China in the last two decades. Anatomical structures of fossil plants, including 54 species of ferns, gymnosperms and angiosperms in China, are described and illustrated in the Atlas. Delicate photographs of light and scanning electron microscopes show the details of epidermal cuticle, ground tissues and vascular structures of leaves, stems, roots, sporangia and seeds.

Price: US \$35.00 per copy (hard cover) plus US \$5.00 per copy for surface mail. Please send orders to the following address:

Professor Li Chengsen,
Department of Palaeobotany,
Institute of Botany,
Chinese Academy of Sciences,
N0.20 Nanxincun, Xiangshan,
Beijing 100093 P.R.China.
E-mail:lics@botany.ihep.ac.cn

IOP INTERNET LOG

The December 1996 newsletter listed the number of queries made from our website (<http://ibs.uel.ac.uk/ibs/>) during November 1996. Here are lists of queries for January and February 1997. The country codes are explained in the December newsletter page 2. Clearly, someone went crazy in Poland during January!

26994	pl
17483	uk
4477	com
4036	net
3024	DE
2823	edu
1198	es
912	CA
884	fr
762	jp
719	fi
669	au
630	nl
599	be
483	se
285	no
222	pt
219	kr
206	ORG
206	us
163	gov
152	mil
120	dk
97	cz
83	it
83	sg
66	br
62	hk
48	uy
40	gr
38	is
34	ie
29	ar
29	nz
24	at
24	mx
18	hr
16	za
15	lu
15	il
14	co
13	su
13	ch
9	tw
7	ru
5	ve
5	yu
5	th
2	hu
2	lt
1	tr
1	gl

13484	uk
10180	com
7043	de
4666	pl
4067	net
3403	edu
1295	jp
1024	hr
750	fi
734	es
605	au
552	se
532	SCH
442	ca
430	us
354	org
320	fr
198	sg
177	it
138	nl
97	no
92	mx
84	nz
78	be
71	ie
71	pt
68	il
67	at
57	ch
56	gov
52	za
52	hk
44	br
33	kr
32	gl
28	cn
19	tr
14	dk
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6	mil
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1	cr
1	sk
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