Volume 23, N°2 - December 2000

PALYNOS

NEWSLETTER OF THE INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES

IFPS NEW OFFICERS

Anne-Marie Lézine, Annick Le Thomas and Madeline Harley (Newsletter Editor, President, and Secretary-Treasurer, IFPS)

Annick Le Thomas

From 1960 until 1972, she worked as a systematic botanist in the herbarium of the National Museum of Natural History in Paris. Her major interest during this period was on the flora of tropical Africa, with particular emphasis on the primitive magnolialean family Annonaceae. Research accomplishments were recognized by the award of a Prize from the French National Academy of Sciences. At the same time, she was the Editor-in-Chief of the international botanical journal Adansonia. In 1972 she was appointed Deputy Director of the Plant Morphology Laboratory of the Ecole Pratique des Hautes Etudes (EPHE) in Paris and she initiated her research on the ultrastructure and phylogeny of the pollen of Africano-Malagasy Annonaceae, which culminated in a dissertation for the State doctoral degree under the direction of Madeleine Van Campo. She was promoted to Director of the Laboratoire de Biologie et Evolution des Plantes vasculaires of EPHE in 1983. She has directed the research of this Unit towards the Phylogeny and Evolution of Angiosperms. Several students have completed PhD studies within the Unit. Her interest in the origin of angiosperms has directed her research towards mainly primitive groups of flowering plants. She is also interested in monocotyledonous groups such as the Iridaceae. Madagascar (she is Member of the Academy of Sciences) and Africa are her favourite field work venues.

Annick is an active member of a number of scientific societies and scientific committees and has often been invited to give plenary lectures in European Universities, or in Botanical or Palynological Congresses. She has strong scientific collaborations, especially with scientists from the University of California in Davis, the Missouri Botanical Garden, the University of Barcelona and the University of Utrecht.

From 1979, she has been an active participant in the administration of the APLF

(Association des Palynologues de Langúe Française). She became the President of APLF in 1983. She has served as one of the APLF Councillors with IFPS as well as the representative to the International Union of Biological Sciences (IUBS) before being elected as an IFPS Vice-President in 1985.

lethomas@mnhn.fr

Madeline Harley
Previously Chair/Secretary of the Linnean Society Palynology Specialist Group, and a Vice President of IFPS, Madeline is Head of the Palynology Unit at the Royal Botanic Gardens Kew, London, UK. The Unit specialises in comparative pollen morphological studies for plant taxonomy, systematics, evolution and phylogeny.

Madeline completed her PhD on palm pollen and the fossil record, in 1996, supervised jointly by University of East London (Prof . Mike Boulter) and the Royal Botanic Gardens, Kew (Dr John Dransfield). Apart from a wider interests in the monocotyledons, and in a number of dicotyledonous families, her research interests continue to focus on actuo and fossil pollen studies of the Palmae/Arecaceae, and have resulted in a number of publications.

Palynology is a subject often threatened by institutional changes, commercial cuts, or other failure to attract research funding. Thus, having enjoyed more than two and a half decades as a salaried palynologist, as Secretary-Treasurer of IFPS Madeline feels that she has the opportunity to 'put something back' into the international palynological community. Whether her French will improve during the next four years is a matter of conjecture but, nevertheless, working with Our new President, Annick Le Thomas, and Editor, Anne-Marie Lezine promises to be a busy, lively and enjoyable experience.

m.harley@rbgkew.org.uk

Anne-Marie Lézine
Anne-Marie has been a Researcher at the Centre National de la Recherche Scientifique (France) since 1981. She completed her Thesis on vegetation history of Tropical North-Africa since 12.000 yr. B.P., using pollen analysis from continental sedimentary sequences, at the University of Aix-Marseille II, France in 1987. She is now based at Paris VI-Jussieu University working on vegetation and climatic reconstructions in inter-tropical Africa and Arabia, coastal evolution and sea level changes during the late Quaternary, and atmospheric exchanges between the low and middle latitudes of the Northern Hemisphere during the last climatic cycle.
Currently, she is a member of the Scientific Committee of the African Pollen Database.

Lezine@ccr.jussieu.fr

IFPS NEW COUNCILLORS

Henry Hooghiemstra (AIPA/IAAP) replacing A. Le Thomas

Marie-Pierre Ledru (APLF) replacing J.-L. de Beaulieu. Marie-Pierre is a Researcher at l'Institut de Recherche pour le Developpement (France). She is a specialist in tropical and Quaternary palynology, based in Brazil at the University of Sao Paulo since 1998. She has been the Secretary of APLF since 1997.

Laura Sadori (GPSBI) replacing D. Magri

Shinya Sugita (PSJ) replacing M. Sado

Since 1997, Thomas has been a Research Associate of the CNRS at the Department of Palaeozoic Palaeontology and Palaeobiogeography of the University of Sciences

Charles Wellman (CIMP) replacing G. Clayton.

Charles is a lecturer in the Centre for Palynology (Department of Animal and Plant Sciences) of the University of Sheffield, U.K. Charles was awarded a B.Sc. degree in Geology from the University of Southampton in 1987 and a Ph.D. from Cardiff University in 1991. His Ph.D. research was conducted jointly between the Natural History Museum (London) and Cardiff University, and involved a study of early land plant microfossils from the Silurian-Devonian 'Old Red Sandstone' deposits of Scotland. Subsequently Charles worked on a number of postdoctoral research projects studying various aspects of Ordovician-Devonian terrestrial palynology and palaeobotany, and focusing on the origin and early evolution of land plants. In 1997 Charles was appointed to his current position at the University of Sheffield where he teaches and continues his research. Charles is a member of the AASP, BMS, CIMP and LSPSG, and is currently IFPS councillor for the CIMP.

Thomas Servais (CIMP) replacing F. Paris

and Technologies of Lille, France. Following his studies of geology and mineralogy at the Universities of Namur and Liège (Belgium), he obtained his Ph.D. at Liège in 1993 with a thesis on Ordovician acritarchs from Belgium and Germany, before continuing research as a post-doc fellow at the University of Liège, the Technical University of Berlin, Germany, and the British Geological Survey at Keyworth, England. His research is mainly focused on Palaeozoic acritarchs and other problematica. Thomas was secretary of the acritarch subcommission from 1993 to 1998. Member of the AASP, APLF, APP, BMS, IAAP, and PPMB, he is currently General Secretary, Newsletter Editor, and IFPS Councillor of the Commission Internationale de Microflore du Paléozoïque (CIMP).

Robert Marchant (LSPSG) replacing M. Harley

Robert completed his PhD. on 'Late Quaternary montane vegetation dynamics in western Uganda', at the University of Hull, U.K. in 1997. Presently, he is based at the Hugo de Vries Laboratory, Institute of Ecosystem and Biodiversity Dynamics, University of Amsterdam. He is working on a number of new sites in Central Africa, and a series of synthesis studies of Latin American pollen data. Much of the current work focuses on Colombia where, following research over the past 40 years at the Hugo de Vries Laboratory, the data are of sufficient quantity and quality to carry out such work. Output is used to investigate tropical vegetation responses to environmental forcing (climatic and anthropogenic) and issues surrounding ecosystem functioning and biodiversity, and comparing results with climate models.

Valentina Khomutova (RPC) replacing N. Bolikhovskaya
Valentina is a leading researcher at the Institute of Limnology, Russian Academy of Science, St Petersburg, Russia, where she has worked since 1968. Her research interests include palynology of recent sediments; methodological problems of palynological analysis and Holocene palaeogeography of northern Eurasia; palynostratigraphy, palaeogeography and correlation of limnologous formations, and reconstructions of the Late Cenozoic succession of north Eurasian floras, vegetation and palaeoclimates. Since 1994 she has had scientific collaboration with Lund University and the Royal Academy of Sweden. She has participated in the European Palynological Database (EPD) project, and in the Global Palaeovegetation Project-Biome 6000. She has participated in a number of specialist conferences, mainly in Russia, including III IPC. Valentina is principal co-author of five specialist books, and also a co-author of eight others.

Valentina Federova (RPC) replacing A. Gomankov
Valentina is a leading researcher in the Stratigraphy and Palaeontology Department of the All-Russia Petroleum Research Geological Exploration Institute (VNIGRI), St Petersburg, Russia, where she has worked since 1973. Her research interests include palynology and micropalaeoalgology of Cenozoic and Mesozoic sediments; total methodology problems of palynological analysis, and scientific interpretation of data. Also, detailed correlation of palynostratigraphy, and palaeogeography based on systematic studies of the composition of assemblages of miospores, dinoflagellates, prasinophytes, and other groups of organic-walled microalgae from the Upper Jurassic-Lower Cretaceous sediments of the boreal regions and aquatories of Russia. In 1990 she participated in the NMCC IGCP IUGS UNESCO International project N 245: 'Non-marine Cretaceous,' and from 1994-7 in the INTAS International project: 'Northern Hemisphere Mesozoic Palynozonation.' She has participated in various specialist conferences in Russia, and has also participated in the III, IV, IX and X IPC conferences. Valentina has co-authored three books, and is principal or co-author on over 20 professional papers.

MEETING PROCEEDINGS

The 10th International Palynological Congress

Owen Davies and the granite elephant near Ming Xiaoling Mausoleum, Nanjing, China

The 10th International Palynological Congress was held in Nanjing, China (June 23 - 30, 2000) and was attended by 265 palynologists and accompanying members. The participants included palynologists from 45 countries, China (109), Japan (22), France (15), Germany (11), Russia (12), Spain (11), U.K. (8), Poland (8); and others from Italy, Sweden, Norway, Denmark, Netherlands, Ireland, Czech Rep., Romania, Slovenia, Estonia, Hungary, Armenia, Turkey, Iran, Qatar, Sudan, Ethiopia, Togo, Congo, Cote d'Ivoire, Philippines, Vietnam, Malaysia, New Zealand, Australia, India, Uganda, Uruguay, Venezuela, Brazil, Mexico, Canada, and the U.S.A., Belgium, China (Taipei), Libya, Uganda

The Congress was held in the Jinling Hotel in downtown Nanjing. A total of 200 papers were presented in 16 symposia, and there were 87

Small copies of IPC-10 photographs are online at

poster presentations. IFPS business conducted included the approval of an amendment to the IFPS Constitution, selecting the location of the next IPC (Granada Spain, July, 2000), and the inauguration of President Annick le Thomas, the first woman to serve as President of IFPS.

The 10th IPC was preceded by three excursions that included 16 participants. Three post-congress excursions were enjoyed by 32 attendees. A mid-conference tour of the Nanjing Area visited the Yangshan Tablet Materials, Dr. Sun's Mausoleum, the Mayling Palace, the tomb of the First Ming Emperor, the Zhongshan Botanical Garden, the Nanjing Institute of Geology and Palaeontology, Academia Sinica, and the Confucius Temple with its surrounding architecture in the Ming Dynasty style. Participants enjoyed four great meals: a buffet during the Opening Ceremony, a luncheon at the Mayling Palace, a 22-course meal with traditional dance entertainment during the mid conference tour, and a banquet during the Closing Ceremony with a short concert of traditional Chinese music.

The Conference facilities were great, the hotels were comfortable and inexpensive, the Conference planning was very good, and the science was excellent. A particularly gratifying feature of the Congress was the large proportion of young scientists, particularly from the former Soviet Union.

A proceedings volume is planned, to be published by the Organizing Committee. All manuscripts should be submitted to the Scientific Program, Organizing Committee of the 10-IPC by the end of 2000, the same address appeared in the three circulars. Paper format follows those of Review of Paleobotany and Palynology.

O. Davies
Past President, IFPS
and G. Liu

http://geo.arizona.edu/palynology/chna_xtr.html
Full-size versions of these are available upon request. Some of the figure captions are currently in the process of being completed.

Report of Symposium 1: Pollen morphology, systematics and evolution. 10 IPC, Nanjing, China, June 24-30th, 2000

The symposium Pollen morphology, systematics and evolution was divided into two parts, part one in the afternoon of June 25th, and part 2 on the morning of June 26th. The programme of 16 speakers fell into disarray, as eight of the Russian speakers were unable to attend. Nevertheless, by dint of reducing the length of the sessions, both were saved. Furthermore, one unexpected speaker was able to take advantage of one of the many gaps in the programme.

Topics ranged from Upper Permian to Quaternary interglacial, and the present. Application of electron microscopy to fossil pollen studies, fern spores, identification of phylogenetically important pollen characters, aperture evolution, comparative morphology, ultrastructure, sporoderm ontogeny, germination of pollen tubes and related changes to stylar tissue. Plant groups included Pteridophytes, gymnosperms and angiosperms. The angiosperm families included were systematically wide-ranging: basal dicotyledons (Annonaceae), monocotyledons (Palmae), Eudicots (Fumariaceae) Eurosids I (Rosacaeae), Eurosids II (Lythraceae), Euasterids II (Araliaceae).

Because of the drastic reduction and re-organisation of the programme, the papers presented are listed here:

June 25th
Morphology of fossil Lagerstroemia pollen from Quaternary interglacial sediments in Japan [Fujiki, T., Momohara, A. & Yasuda, Y.]

Mountains and the Northern slope of the Tianshan Mountains in the South. The highest point in the Tianshan mountains reaches 5 450m.The Jungar Basin belongs to an arid region of the temperate

Studies on the spore morphology of Sinopteridaceae from China [Yu, J., Wang, Q.-xi & Bao, W.-mei]
Pathways to tripory in palm pollen [Harley, M.M.]
Changes in pollen grains, pollen tube and stylar tissue during germination of *Prunus dulcis*. [Arcalis, E., Castells, T., Márquez, J., Seoane-Camba, J.A. & Suárez-Cervera, M.]
Phylogenetic analysis of pollen features in selected Araliaceae, with emphasis on taxa from China. [Lobreau-Callen, D., Lowry, P.P., Shang, C.-B. & Malécot, V.]

June 26th
Problems and prospects of electron microscopy in palaeopalynology. [Zavialova, N.]
Morphological and ultrastructural characters in the Malmea alliance (Annonaceae). [Le Thomas, A., Suárez-Cervera, M. & Chatrou, L.]
Comparative sporoderm ontogeny in gymnosperms, and primitive and advanced angiosperms: similarities and distinctions. [Gabareyeva, N.I., & Grigoryeva, V.V.]
Aperture development in Fumariaceae: a comparative study. [Romero, A., Jocoba Salinas, M. & Carmen Fernández, M.]

Madeline Harley

Excursion A2: Mesozoic and Cenozoic geology in North Xinjiang (N-W China)
Leaders YAN Shun and MU Guijin

Xinjiang is an autonomous region of Northwestern China close to Kazakstan, Russia and Mongolia frontiers. North Xinjiang is the area including the Jungar Basin bound by the Altay Mountains on North, the Western realm, 30% of its surface is occupied by sand desert. The trip circled the Jungar Basin and investigated the Mesozoic and Cenozoic cross-sections, and also looked at the natural environment and the tourist sites. The Xiyu Siliconized-Woods Park is located at the eastern part of the Jungar Basin. Siliconized woods were produced during the middle and upper Jurassic. Most of boles are lying down, but many are still standing. Cretaceous formations are widely spread at the western margin of the Basin and mainly composed of shallow lacustrine sandstone, mudstone, tuffa and breccia. Water flows and wind have sculpted strange forms in the landscape called Urhe Eolian Castles. Cenozoic formations are located at the northern piedmont of the Tianshan Montains. Two cross-sections have been proposed from fluvial-lacustrine sediments. One cuts through the western part of the Manas anticline (Eocene-Oligocene) and the other through the Dushanzi anticline (Miocene). In the Alabass desert vegetation we saw mainly species of Anabasis, Haloxylon persicum, Ephedra przewalskii, Calligonum mongolicum, Ceratoides, Reaumuria soongorica, Artemisia gracilescens. In the Tianshan mountains, we visiting the Tianchi National Scenery Park and its famous Haven Lake. We also saw the Glacier nº1. The end of the glacier tongue extends to 3734 m above sea level. Our friendly hosts, Dr. Yan and Mu introduced our scientific party to Chinese culture and cooking.

Edwige Masure
Université Pierre et Marie Curie
Dept. of Sedimantary Geology
Laboratory of Micropalaeontology

14th African Colloquium on Micropaleontology Luanda, Angola, May 21-24, 2000.

The 14th African Colloquium on Micropaleontology was held in Luanda, the capital City of Angola, as part of the wider 'Geoluanda 2000' International Conference. Geoluanda also hosted the 4th Colloquium on the stratigraphy and paleogeography of the South Atlantic and an IGCP meeting: South Atlantic of the organizing committee, presided by Dr Maria Luisa Duarte Morais, of Aghostino Nieto University. They are to be commended for the flawless running and high scientific content of the conference.

Daniel Michoux
TotalFinaElf
St Rémy les Chevreuse
France

Mesozoic Correlations. As a result, attendees were presented with a very comprehensive program comprising close to 200 oral and poster presentations. Most contributions of interest to the palynological community were focused on the petroleum exploration of the west African margin.

Several contributions highlighted the key-role of palynology in integrated biostratigraphy, where the palynological signal provides not only correlative events, but is also interpreted in terms of organic matter source and changes in ecological conditions of the water column. The following themes were addressed: Tertiary of the lower Congo Basin (Dupont et al.), Neogene of the Kuito Field, offshore Cabinda (Preece et al.), Cretaceous of the Congolese platform (Massala et al.), Cretaceous-Tertiary of the Côte d'Ivoire Basin (Digbehi Zeli).

Braccini and Perez-Vila presented an interesting contribution to the understanding of the paleoclimatic history and ocean circulation of an Upper Miocene time slice, based on the vertical evolution of vegetation communities.

A mid-conference field trip around Mussulo Bay, a 40 km long back-barrier lagoon south of Luanda, provided the opportunity of discovering the vegetation of biotopes such as Adansonia-Euphorbiaceae savannah and Rhizophora mangroves.

The success of the meeting was a well deserved reward for the dedication and efforts

XIIIth SYMPOSIUM OF APLE Cartagena, Spain, 27th - 29th september 2000

The XIIIth Symposium of the Spanish Palynological Association (APLE) was held in Cartagena from 27 to 29 September 2000, with a significant number of participants. 40% of this attendance was made up from young researchers. The Symposium organisation was headed by Stella Moreno Grau, Professor of the Politechnical University of Cartagena who, with her team, worked extremely hard in order to assure the success of the Symposium. A total of 88 papers were presented in the fields of Melissopalynology, Morphology and Pollen Biology, Palaeopalynology and Aerobiology. These last two areas had the highest number of papers making up a total of 60% of the papers presented. The plenary sessions were given by Madeline Harley, Head of Palynology, Royal Botanic Garden of Kew (UK) and Secretary-Treasure of IFPS, who spoke about 'Palynology of the Palms: variability and similarities,' and Blanca Ruíz Zapata, Associate Professor of Geology Department from the Alcalá de Henares University, who spoke about 'The evolution of the environment and climate through Palynology.'

The satisfaction of APLE members, regarding the successful bid for the 11th IPC to be held in Granada, was obvious during Symposium .

It was decided that the venue for the next (XIV) APLE Symposium in 2002 will be Salamanca.

The General Assembly approved the modifications in the Statutes of the Association, and elected a new Governing board which is formed by:

President: Ana Teresa Romero (IFPS Councillor)
Departamento Biología Vegetal
Facultad de Ciencias
E-18071 GRANADA atromero@ugr.es

Secretary: Koldo Núñez Betelu
Paleontología Laborategia
E-37008 SALAMANCA
maruja@gugu.usal.es

Ana T. Romero

FUTURE MEETINGS

Symposium on Tropical and Subtropical Palynology (America-Africa) La Habana, Cuba. 9th - 14th February, 2001.

For further information contact either: Dr P. Perez, Instituto de Ecologia y Sistematica,

Zientzi Fakultatea, EHU/UPV
644 Postakutxa
E-48080 BILBAO
gpbnubek@lg.ehu.es

Treasurer: Delia Fernández González
Departamento de Biologìa Vegetal Facultad de Ciencias Biológicas y Ambientales
Campus de Vegazana s/n
E-24071 LEÓN
dbvdfg@unileon.es

Members: Consuelo Díaz de la Guardia
Departamento de Biología Vegetal
Facultad de Ciencias
E-18071 GRANADA
cdiaz@ugr.es

Ramón Pérez i Obiol
Depto. Biología Animal, Biología Vegetal y Ecología
Universidad Autónoma Barcelona
E-08193 BELLATERRA (BARCELONA)
Ibbt3@cc.uab.es

Maruja Valle Hernández
Departamento de Geología (Paleontología)
Facultad de Ciencias
Carretera de Varona Km 3½, Capdevila, Boyeros, A.P. 8029, C.P. 10800, La Habana, Cuba. Tel. (537) 57-8266/57-8010; Fax. (537) 57-8266/57-8088;

email: ecologia@unepnet.inf.cu
ecologia@ceniai.inf.cu .

or: Dr Emile Roche, Museum of Central Africa, MRAC - KMMA/ Palynology, B-3080 Tervuren, BELGIUM. Tel. 32 4 366 53 91 or 32 2 769 54 73 or 57 71; fax. 32 4 366 53 38;
roche@africamuseum.be
warner@africamuseum.be.

The XVIIth Symposium of the Association des Palynologues de Langue Française (APLF) Marseille, France. 4th - 7th September 2001

The XVIIth Symposium of the Association des Palynologues de Langue Française (APLF) will be held in Arles, near Aix en Provence, from September the 4th to 7th 2001. Topics for discussion will be about "The directions of Palynology in the 21st century". An excursion is planned on September the 7th. For more information please contact the organiser: Jacques-Louis de Beaulieu: Jacques-Louis.de-Beaulieu@lbhp.u-3mrs.fr or

---

the APLF secretary: Marie-Pierre Ledru, ledru@usp.br

Marie-Pierre Ledru
IRD/USP
Instituto de Geociencias, Departamento de Geologia Sedimentar e Ambiental
rua do Lago 562, Caixa Postal 11348
CEP 05422-970 Sao Paulo SP - Brazil

6th European Palaeobotany - Palynology Conference Athens, Greece. August 29th - September 2nd, 2002.

For a copy of the first circular, which should be returned before March 31st, 2001, contact: Prof. D. Evangelos Velitzelos, Organizing Committee, 6th European Palaeobotany-Palynology Conference, Dept of Historical Geology-Palaeontology, Faculty of Geology, University of AASP/BMS/NAMS meeting, which is provisionally planned to be held in London on 11-13 September, 2002.

Provisional Programme CIMP meeting and excursions in September 2002:

Sunday, 1st September:
Arrival in Brest
Monday-Tuesday 2nd - 3rd September:
Pre-symposium excursion in Brittany
Wednesday 4th September:
Transfer to Lille
Thursday to Saturday, 5th - 7th September
CIMP Meeting and Workshops in Lille
Sunday-Tuesday 8th - 10th September:
Post-symposium excursion to the Palaeozoic of Belgium and northern France
Tuesday 10th
Transfer to London (AASP/BMS/NAMS meeting on 11th - 13th September).

Athens, Panepistimioupolis, Zografou, 157 84 Athens, Greece.
Tel./Fax: +30-1-7274162;
velitzel@geol.uoa.gr

CIMP Symposium and Workshops Lille, France. September 5-7, 2002,

The Commission Internationale de Microflore du Paléozoïque (CIMP) will organize the next symposium and workshops at Lille, France, in September 2002.

A pre-symposium excursion to Brittany is proposed on 2-3 September. Scientific sessions and workshops will take place in Lille on 5-7 September. A post-symposium excursion to the Palaeozoic sequences of Belgium and northern France will be organized 8-10 September and is open to participants of the CIMP symposium, and of other meetings. The option would then be available for anyone to travel to London by high speed train ("Eurostar", 2 hours travel) on Tuesday 10th, to allow participation at the

For further information, please contact the organizers Thomas Servais or Ludovic Stricanne at the University of Lille:

thomas.servais@univ-lille1.fr
ludovic.stricanne@univ-lille1.fr

Joint Meeting of AASP, BMS and NAMS 11th-13th September 2002, University College London, England

The American Association of Stratigraphic Palynologists (AASP), the British Micropalaeontological Society (BMS) and the North American Micropaleontology Section of SEPM (NAMS) are holding a joint meeting in September 2002 at University College London, England.
The theme of this international meeting will be recent developments in applied biostratigraphy. Contribution will be invited on four main themes:

1. Sequence biostratigraphy.
2. Deep-water exploration.
3. Reservoir/Development studies.
4. Outcrop analogue studies.

The vision for the meeting is to encourage trans-Atlantic exchange of ideas, ultimately to seed new research initiatives. In particular, we aim to develop an integrated multidisciplinary approach (micro /nanno /paly /sequence /etc) in both the academic and industrial realms. There will be no geographical restriction on contributions. Posters will be invited on any micropalaeontological, palynological or biostratigraphical theme.

Post-meeting excursions are planned to the Dorset Coast (Jurassic - Cretaceous), the Isle of Wight (Cretaceous - Paleogene), Kent and Essex (Paleogene), and Suffolk (Neogene).

Expressions of interest should addressed in the first place to the BMS Secretary (James Powell, 105 Albert Road, Richmond, Surrey TW10 6DJ, England, UK; Tel: +44 20 8948 6443; Fax: +44 20 8940 5917; Email: ajp@dinosystems.co.uk). with your name, title, and complete postal address (phone and fax # optional) if you are considering attending this meeting. Anyone interested in receiving follow-up information on the meeting should respond to this message, as this will form the basis of our master mailing list.

Feel free also to pass the message along to anyone else you know who might be interested in attending the congress.

Owen Davis
palynolo@GEO.ARIZONA.EDU

The 11th International Palynological Congress
Dear colleagues,
As Councillor of the Spanish Palynological Association (APLE) I would like to warmly thank you all for allowing us to organise the 11 IPC in Granada, and we hope that the trust placed in us will be fulfilled and that the conference will be a great success. We wish all of you four highly productive years, so that every one will have a lot

James Powell
Dinosystems, 105 Albert Road
Richmond Surrey TW10 6DJ
England, UK
tel: +44 (0)20 8948 6443
ajp@dinosystems.co.uk

3rd International Congress of Limnogeology
March, 29 - April 2, 2003 Tucson, AZ

Please note on your agenda that the 3rd International Congress of Limnogeology will be held in Tucson, Arizona, between March, 29 (Saturday) and April 2 (Wednesday), 2003. In order to establish a new list of postal and e-mail addresses for future information, please e-mail Andy Cohen (acohen@geo.arizona.edu)

of new research to talk about at the 11 IPC. We would like to emphasise that we hope every aspect of Palynology will be represented at the Congress,and welcome suggestions for symposia, workshops and so forth. As I have already informed the Councillors whore were present during the meeting in China, the first circular will be sent during the summer of 2002. We have prepared a web page about the Granada congress which will be regularly updated : http://www.ugr.es/local/bioveg You can leave your ideas in the suggestion box. Come on, let's hear from all of you! IPC is for YOU!

Finally, I would like to wish you all the very best for a happy and productive New Year.

Ana T. Romero

NEWS FROM POLLEN DATABASES

'PalDat'

We wuld like to inform you that the Department of Ultrastructure Research & Palynology, at the Institute of Botany, University Vienna, has designed the palynological database "PalDat". The database was developed by Ralf Buchner and Martina Weber in 1997-99. The aim was, to catalogue the large amount of palynological data from a variety of plant families gained in the department through many years. It is an MS Access 8.0-Database for WIN 95/WinNT 4.0; best viewed with a resolution of at least 1024x768 and 24 bit colour (True Colour). By the request of many people

Canadian pollen data available

Pollen data from Canada are available on the web site of the Laboratory of Paleoclimatology and Climatology, University of Ottawa, Canada. At this site, Excel files containing pollen counts, radiocarbon dates and site information can easily be downloaded. These data have also been transferred to Springfield and will soon be incorporated into the North American Pollen Database (NAPD) in the usual format. The data are being made available on NAPD as it may be easier to use them for certain purposes in this format.

The URL follows, and the data are found in the Special Projects section:
http://www.uottawa.ca/academic/arts/geographie/lpcweb/index.htm.
While you are on the site, you may wish to check out other information and software, including a macro which imports NAPD F70 files into Excel, and M Sawada's popular Spatial Autocorrelation programme, ROOKCASE (1999 Bull ESA, 80:231). Copies of recent poster presentations, lab and field method descriptions and links to course notes (Biogeography, Climatology) are available.

The Canadian pollen database project was initiated in the 1980's by J.C. Ritchie, then at the University of Toronto. Digital files of pollen counts were created, mostly from western and northern Canada, to be used for mapping and quantitative paleoclimate reconstructions. Many of these data have already been incorporated into the NAPD. As always, we would like to thank the data contributors for their cooperation.

For more information, contact K Gajewski: (Dept of Geography

interested in palynology a homepage was created. For this purpose the MS Access-Database was converted into a mySQL-Database. Free access to the database is now available via the internet. The address is:

http://paldat.botanik.univie.ac.at/

Any comments and suggestions are welcome!

Martina Weber
Department of Ultrastructure Research and Palynology
Institute of Botany / University Vienna
Rennweg 14 A-1030 Vienna
Austria
Tel.: +43-1-4277-54002
Fax.:+43-1-4277-9541
martina.weber@univie.ac.at

The African Pollen Database (APD)

In providing tools for a better knowledge of African ecosystems and their response to climate change in the past the African Pollen Database supports the development of scientific research in Africa in the field of environmental and climate changes and, in turn, the development of land-use strategies.

The principals and basis for the functioning of APD were adopted during a meeting organized at Bierville (France) in 1996 and grouping scientists involved in African and Malagasy palynology.

The long-term objective of APD is to collect pollen data to place at the disposal of the whole scientific community, to archive the information for future generations of researchers, and to promote international scientific co-operation. Scientists from 30 countries have already agreed to participate in this initiative.

APD organises data compilation (180 Late Quaternary pollen sequences and over 1000 surface samples; over 3000 pollen taxa; 6000

The Latin American Pollen Database (LAPD), a potted history and current applications

Latin America comprises the area between 350N to 650S, and 350W to 1200W. The region is remarkable in having strong environmental gradients associated with 1000 of latitude, approximately 7000 m of altitudinal variation and the transition from oceanic- to continentally dominated climate systems. Over the past 50 or so years, palynologists have collected numerous sub-fossil pollen records from a range of vegetation types. With an ever-increasing number of sedimentary records becoming available there has been a need to collate this information. The requirement can be met by the regional pollen databases, such as the Latin American Pollen Database (LAPD), which combine to form the Global Pollen Database. The LAPD was initiated by Vera Markgraf and Eric Grimm following funding from the NOAA Paleoclimatology program in August 1994. An organising workshop brought together a number of scientists to develop the database that was constructed with the help of John Keltner at the World Data Center-A (WDC-A) for Paleoclimatology,

and Ottawa-Carleton Geoscience Centre, University of Ottawa, Ottawa, ON K1N 6N5 Canada)
gajewski@aix1.uottawa.ca

photos of reference pollen grains) and distribution, and co-ordinates research efforts concerning natural resources, while actively encouraging the participation of African scientists in international research programmes.

The African Pollen Database is funded by Unesco- IGCP 431 and the European Union, (IC18-CT98-0274) with the participation of CNRS (France).

http://medias.meteo.fr/apd/

Anne-Marie Lézine

Boulder, Colorado. By mid-1998 data from 87 sites had been submitted to the LAPD. In October 1998, the coordinator's torch was passed to Robert Marchant and Guido Van Reenen at the University of Amsterdam. This development followed an award, by the Netherlands Science Organisation for Scientific Research, to Henry Hooghiemstra to investigate Latin American vegetation dynamics, the forcing mechanism on these and data-model comparisons. This has enabled a further 45 sites, primarily from Colombia, to be prepared for entry to the LAPD.

descriptive forms filled out in full. However, if all the information is not available, or is not within Tilia format, this does not prevent the record being accepted, but it may slow the accession into the database. Indeed any format is acceptable, from paper count sheets to institute-specific computerised records. Where possible information on chronology, funding source, lithology, principal investigators, publications and site location should be supplied. Following submission, the data are lodged on the server for access by the pollen community at the World Data Center-A for Paleoclimatology, MEDIAS France and newly established mirror-servers in Nairobi (Kenya) and Mendoza (Argentina). Data can be accessed and retrieved by any one of four methods: World Wide Web (http://www.ngdc.noaa.gov/paleo.html), gopher (gopher.ngdc.noaa.gov), anonymous FTP (ftp.ngdc.noaa.gov.) or mail (the present database co-ordinator being the point of contact). As such, no member of the palynological community should be excluded from using the LAPD. The World Wide Web site incorporates a convenient search engine that allows for the retrieval of data by country, latitude/longitude, analyst, age range and elevation. The visitor can enter multiple queries; for example, it is possible to access pollen data from Brazil within an age range of 21,000-17,000 years ago, from altitudes between 1500 and 2500 m. Pollen data are available in a range of formats. Tilia software required to enter pollen and associated data, and read the retrieved data sets, is provided free of charge to all participants.

In addition to being a safe house for pollen data storage and retrieval, the LAPD provides a cornerstone of the LAPD is the understanding that 'the whole can be greater than the sum of all the parts', and that by collating pollen records we will be able to develop research areas. For example, the LAPD can allow for strategic setting of future palaeoenvironmental investigations. Indeed, new sites, located in key areas, are required to refine our understanding of the Neotropical response to Late Quaternary and environmental change. The LAPD provides a forum to disseminate data use and develop new research initiatives. These aims can only function with a willingness of the community to become involved in the wider use of the data within the LAPD. Wherever possible, the role of the original data provider is highlighted, both as co-authors on resultant publications and through referencing of original publications. More importantly, there is a wish to incorporate data providers within research projects that access and use the pollen data.

Using methods that have been developed within the BIOME 6000 project (Prentice and Webb-III, 1998), sub-fossil pollen data from more than 120 sites, from Mexico to Tierre del Fuego, have been translated to biomes. Accompanying this achievement of the BIOME 6000 project in reconstructing large-scale vegetation patterns at past key periods there are a number of parallel modeling initiatives. Key to the development of climate and vegetation models is the ability to provide independent tests for evaluating model output. This allows an understanding to be developed about the role of the terrestrial biosphere in global change research; how it

platform to promote scientific development and inter- and intra-disciplinary development of Latin American palynology. Indeed, at the very

interacts with the atmosphere and oceans and regulates global biogeochemical cycles under past, present and future boundary conditions. In addition to these direct applications, biomes derived from the pollen data can be translated to specific

components, such as carbon budgets, and thus provide a direct test for modelling studies concerned with these components.

These past reconstructions of the natural vegetation are all well and good, although the majority of the land we inhabit today is characterised to some degree by human impact. As well as being reflective of the climate, plant communities are proxies of changing cultural influence. By incorporating disturbed vegetation categories within our reconstructions; we can suggest where, when and how humans impacted on the vegetation (Marchant et al., in press). When used in conjunction with archaeological information, it is possible to determine environmental and cultural dynamics and inter-relationships. For example, we can determine what impact past periods of climate change had on the population and, importantly, their associated cultural and agricultural practices. These pollen-based signals can be interpreted in the light of comparable data from other areas and palaeoenvironmental archives (Jolly et al., 1998). A meeting will be held at the end of November in Bogotá, Colombia to bring together archaeologists and paleoecologists to discuss a number of issues raised here. Therefore, following the dedication of numerous researchers over the past decades in Latin America, the application of new techniques of treating fossil pollen data, and incorporating the output within a modelling framework we are able to piece together a regional picture of vegetation change. In fact we are able to travel through time, 'witnessing' various climatic changes, and unravel how the vegetation has responded to these and interacted with cultural dynamics.

References

Jolly, D., Harrison, S.P., Damnati, B., Bonnefille, R., 1998b. Simulated climate and biomes of Africa during the Late Quaternary: comparisons with pollen and lake status data. Quaternary Science Reviews 17, 629-657.

Marchant, R.A., Behling, H., Berrio, J.C., Cleef, A., Duivenvoorden, J., van Geel, B, van der Hammen, T., Hooghiemstra, H., Kuhry, P., Melief, B.M., van Reenen, G., Wille, M. in press b. Late Holocene Colombian vegetation dynamics: a biome approach. Quaternary Science Reviews.

Prentice, I.C., Webb III, T., 1998. BIOME 6000: reconstructing global Mid-Holocene vegetation patterns from palaeoecological records. Journal of Biogeography 25, 997-1005.

Current contributors to the Latin American Pollen Database

Maria Lucia Absy, Tom Ager, Scott Anderson, Hermann Behling, Svante Björck, Roger Byrne, Mark Bush, John Flenley, Paulo De Oliveira, Kurt Graf, Barbara Hansen, Simon Harbele, Henry Hooghiemstra, Sally Horn, Peter Kuhry, Marie-Pierre Ledru, Barbara Leyden, Socorro Lozano-Garcia, Vera Markgraf, Bert Melief, Patricio Moreno, Niel Moar, Aldo Prieto, Maria-Lea Salgado-Labouriau, Frank Schäbitz, Elisabeth Schreve-Brinkman, Thomas Van der Hammen, Bas Van Geel, Guido van Reenen, William Watts, Lex Wijmstra.

Address for correspondence:
Robert Marchant - Hugo de Vries Laboratory, Department of Palynology and Paleo/ Actuo-ecology, Institute of Biodiversity and Ecosystem Dynamics, University of Amsterdam, Postbus 94062, 1090 GB Amsterdam, The Netherlands.

NEW BOOKS

Origin and Evolution of Tropical Rainforests. Robert J. Morley, 1999. John Wiley & Sons Ltd. ISBN 0471983268. £95.00 (HB).

Tropical rain forests form the world's most species-rich ecosystems, although their origins and history remain unclear, except on the very short time scale of the last 20 000 years or so. This book provides the first comprehensive review of the history of tropical rainforests on a long-term geological time scale, commencing with the origin of the angiosperms, over 100 million years ago, which overwhelmingly dominate these forests. Tropical rainforest evolution is discussed in a global context within an up to date plate tectonic, palaeogeographical and palaeoclimatic framework, primarily by reference to the record of fossil pollen and spores.

A particularly important aspect of this book is that, in addition to published literature, it relies heavily on unpublished palynological data generated for petroleum companies during the course of hydrocarbon exploration programmes. Without access to such data the book could not have been written.

The main text of the book reviews the evolution of tropical rain forests on a continent by continent basis, culminating with a global synthesis of their history in relation to the changing positions of the world's tectonic plates and changing climates. This section also establishes the age of the great tropical rain forest blocks, and identifies the world's oldest tropical rainforests. The final chapter compares 20th Century tropical rain forest destruction with prehistoric forest clearance in temperate regions, and looks for analogues of the present phase of destruction within the geological record, before considering long-term implications of total rain forest destruction.

The book will be of interest to all concerned with tropical rainforests, especially biologists, ecologists, and students of evolution. It will be valuable for postgraduates and advanced undergraduates, as well as stratigraphers, paleobotanists, and petroleum geologists.

CONTENTS
1. INTRODUCTION.
2. PRESENT DAY RAINFORESTS: primary rainforests; coastal vegetation; riverine vegetation; freshwater wetlands; ecotonal vegetation, ecology versus palaeoecology.
3. GEOLOGICAL TIME FRAMEWORK, PALAEOECOLOGICAL AND PALAEOCLIMATE DEFINITIONS, INCLUDING SEQUENCE STRATIGRAPHY.
4. GEOLOGICAL EVIDENCE FOR RAIN FORESTS: plant macrofossils and microfossils; geochemical fossils; terrestrial fauna; lithological indicators; marine fauna; isotope data; palaeoclimate modelling.
5. EARLY ANGIOSPERM HISTORY AND THE FIRST MEGATHERMAL RAIN FORESTS: angiosperm origins; Cretaceous angiosperm expansion and diversification; the terminal Cretaceous event; the first megathermal rain forests? summary of early angiosperm evolution.
6. SOUTH AND MIDDLE AMERICA: tectonic setting; Mexico and Central America; South American Tertiary vegetation; Quaternary vegetation; summary.
7. AFRICA: tectonic setting; Late Cretaceous and early Tertiary isolation; early and mid-Tertiary vegetation; Late Tertiary vegetation and climatic cyclicity; Quaternary vegetational history; summary.
8. INDIA: tectonic history; Palaeogene vegetation; Neogene and Quaternary rain forest history; summary.

9. SOUTHEAST ASIA AND EASTERN PACIFIC: pre-Tertiary plate tectonics and climatic setting; Paleocene and Eocene vegetation; the terminal Eocene event; Oligocene to Pliocene vegetation; East Malaysia and the eastern Pacific; Western Sulawesi and Wallace's Line; Quaternary vegetation; Mangrove origins and evolution; summary.
10. AUSTRALASIA: tectonic setting; Australian and early and mid-Tertiary vegetation; the Neogene and the demise of Australian rain forests; the Quaternary; Ninetyeast Ridge; New Zealand; summary.
11. NORTHERN HEMISPHERE RAINFORESTS: tectonic setting and continental connections; Paleocene/Eocene paratropical rain forests; Oligocene to Pliocene; summary.
12. INTERPLATE DISPERSAL PATHS AND LAND BRIDGES: review based on palynological evidence.
13. SYNTHESIS: overview of tropical rain forest history; the antiquity of biogeographical patterns; distribution of palms, oaks and dipterocarps; the origin of mangroves; survival of tropical rain forests during glacial maxima.
14. THE FUTURE OF RAIN FORESTS?

[taken from John Wiley & sons advertising literature]

Pollen and Spores: Morphology and Biology. M.M. Harley, C.M. Morton & S. Blackmore (Editors), 2000. Royal Botanic Gardens, Kew. ISBN 1 900347 95 4. £30.00 (PB).

Proceedings of the 1998 International Kew Conference. The fourth in an occasional series of palynological conferences organised by the Linnean Society Palynology Specialist Group (LSPSG).

Over 30 papers, from internationally recognised palynologists comprise a volume which brings together topical research from a wide range of pollen-related disciplines including:
• Pollen development and ontogeny
• Pollination and pollen stigma interactions
• Pollen variability within species and populations
• Theoretical modelling
• Pteridophyte phylogeny and spore morphology
• Pollen morphology and ultrastructure of gymnosperm pollen
• Pollen morphology in angiosperm phylogenetic systematics and evolution
• Cryptospore phylogeny and development
• Fossil pollen and Cretaceous phytogeoprovinces
• Quaternary palynology

Huitième Index Bibliographique sur la Morphologie des Pollens d'Angiospermes. K. Thanikaimoni and R.W.J.M. van der Ham. 1999. Publications du Département d'Écologie Institut Français de Pondichéry. ISSN 0971-3107. French francs 180.00 (c. £18.00 or $US28.00).

The Eighth Bibliographic Index to the pollen morphology of angiosperms has made its welcome appearance. There was some concern that this series might not continue, and it is gratifying to read in the Introduction of Raymonde Bonnefille (Head of Palynology Laboratory at the French Institute) that, "Senior scientists as well as young palynologists encouraged the updating of the Index." This is the third volume of this invaluable series to have been published since the untimely death, in 1987, of Dr Ganapathi Thanikaimoni ("Thani"). (Vol. 6. C. Tissot; Vol. 7. C. Tissot & RWJM van der Ham). It is marvellous to see Kitty Thanikaimoni, after her years of effort to ensure that this series would continue, as senior Editor of Volume 8. Her husband would be so delighted.

The Bibliographic Index was founded by Thanikaimoni in 1972. The high editorial standard, and exhaustive coverage of angiosperm pollen morphological literature have been consistently maintained. Not only is

the index unique, it is very reliable and thorough, it is a fundamental reference tool that should be in the library of any researcher studying comparative pollen morphology. Of course there is always the problem, in an index such as this, that by the time it is published there will be a gap of about two years in the referencing. Some 995 new references have been added to Volume 8 covering the years 1992-1997. The series follows the format of its predecessors: a generic index, a family index, followed by the references, and finally a list of the 163 journals consulted (this is apart from books, chapters in books, floras, cladistic analyses, proceedings of symposia and conferences, monographs, dissertations etc.).

There is discussion as to whether this series should be put into electronic format. At present this is dependent to a larger extent on the future policy of the Publications Dept of the French Institute, Pondicherry. Surprisingly for such a well-priced and important publication, there are still researchers out there who do not know of its existence, and are amazed and delighted when they discover it. Many of the back issues are still available. For those of us who know and value this series we can only join with Kitty Thanikaimoni in expressing our tremendous appreciation to past and present Directors of the French Institute for continuing to provide the facilities needed for the production of "Thanikaimoni's Bibliographic Index" at roughly 4-6 year intervals.

Madeline Harley
Palynology Unit, RBG Kew, UK

IN MEMORIAM

Lucy May Cranwell (Mrs. S. Watson Smith) died on the morning of June 8, 2000 of cancer at Saint Joseph's Hospital, Tucson, Arizona. She was preceded in death by her husband Samuel Watson Smith, and is survived by her son Benjamin Watson Smith.

Lucy was born August 7, 1907, in Henderson (now Cranwell Park, West Auckland), New Zealand, where her father, Benjamin Franklin Cranwell, owned an orchard and a hardware store. Lucy attended the Henderson public school, the Epsom Girls Grammar School (Central Auckland), and graduated with a M.A. from the University of Auckland in 1929. Lucy was a hockey player and strong swimmer, and matriculated with a double major in English and Botany. Her English major explains the quotes from Spenser, Keats, and Milton that enlivened her letters, as well as her considerable skill as an editor. The second (Botany) degree shaped her career, because upon graduation she was hired as Head of the Botany Department of the Auckland War Museum, a post she held until1944. Lucy Cranwell was awarded a D.Sc. degree from the University of Auckland in 1959.

Her duties at the Auckland Museum included setting up the new natural history galleries, care of the herbarium (her own collections for the herbarium number over 3600 specimens), service to the public through plant identifications, radio talks, preparing native flower shows, and regular newspaper columns.

With her friend, Dr. Lucy Moore, the "two Lucys" carried out fieldwork in remote areas of New Zealand, collecting plant specimens and publishing their results. These areas included the Poor Knights Islands, Hen and Chickens Islands, the summit of Te Moehau, Mt Hikurangi, and the summit of Maungapohatu in the Urewera country.

Lucy married Watson Smith on September 30, 1943 in Auckland, where he was stationed as a Major in the U.S. Army Air Forces. The couple moved to the United States after Major Smith was transferred from the Pacific and to Washington, D.C. After being discharged, "Wat," as he was known, worked at the Peabody Museum of Harvard University, and Lucy held a post of Research Associate in the Botany Department of Harvard University from1944 to 1950. Their son, Benjamin Smith, was born in Boston, Massachusetts, on March 19, 1947. After the family moved to Tucson, in 1950, Lucy became a Research Affiliate in the Department of Geosciences at the University of Arizona - a post she held until her death.

Lucy Cranwell was made a Fellow of the Linnaean Society (London) in November 1937, "in recognition of botanical research work done both in New Zealand and Sweden and because of efforts she has made to stimulate interest in botany through her position at the Auckland Museum." Lucy was awarded the Hector Medal from the Royal Society of New Zealand in 1957, and she also won the Loder Cup (New Zealand's premier conservation award) in 1937. She was made a Fellow of the Royal Society New Zealand in 1944, and was given an honorary DSc from Auckland University in March 1992 . In November, 1999, the Auckland Museum bestowed upon Lucy M. Cranwell its Honorary Fellowship in recognition of a life-time's distinguished contribution to the botanical sciences. Lucy was appointed a Fellow of the Arizona-Nevada Academy of Science in1983, an made an Honorary Member of the American Association of Stratigraphic Palynologists in1989. In 1983,

Lucy Cranwell and Watson Smith established the Cranwell Award in Palynology for Graduate Students. This award has provided research scholarships to 25 students since then.

Several living plant species have been named in her honour, as have been four microfossil taxa: the genera Cranwellia Srivastava, and Cranwellipollis Martin, and the species Nothofagus cranwellae Couper, Gephyrapollenites cranwellae Stover.

Lucy Cranwell began the study of microfossils under the guidance of Lennart von Post, the founder of pollen analysis, during the winter of 1935-36, when she was invited to Stockholm to study peat samples collected from Southland, New Zealand, by Carl Caldenius in 1934. This collaboration resulted in a joint paper presenting the first Australasian pollen diagram (Cranwell and von Post, 1936). In 1938 she was awarded a Bishop Museum (Honolulu) Fellowship by Yale University that allowed her to study Hawaiian montane bogs. These fossil studies were followed by Lucy's morphological studies of pollen from New Zealand and related genera and species (conifers 1938, Nothofagus 1939, 1963, 1964, keys to New Zealand genera 1942, monocots 1953, Acmopyle 1961, and others). Her arrival in the U.S. was heralded in Paul Sears' Pollen Analysis Circular (Sears, 1944). After moving to the U.S.A., Lucy Cranwell initiated the first palynological investigations of Antarctic sediments including McMurdo Sound erratics (1960 with H.J. Harrington and I. Speden), and reports on upper Cretaceous and Tertiary (Campanian to Eocene) finds (not in situ) from Seymour Island and Snow Hill (1959, 1964, 1966, 1969). Similar Eocene deposits were traced to Southern Chile and worked on with Cookson (Cookson and Cranwell, 1967).

Lucy Cranwell was a member of the Organizational Committee for the First International Conference on Palynology held in Tucson, April 23-27, 1962. The gracious accommodations of Lucy and Watson's desert home (dubbed The Casa Gondwana) were a gathering place for many of the 175 international scientists, many of whom were

visiting the American Southwest for the first time.

BIBLIOGRAPHY OF LUCY M. CRANWELL

Cookson, I. C. and Cranwell, Lucy M. 1967. Lower Tertiary microplankton, spores and pollen grains from southernmost Chile. Micropaleontology 13: 204-216.

Cranwell, Lucy M. and von Post, L. 1936. Post-Pleistocene pollen diagrams from the Southern Hemisphere, I: New Zealand. Geogr. Ann. 18: 308-347.

Cranwell, Lucy M. Southern beech pollen. 1939. Rec. Auck. Inst. Mus. 2: 175-196.

Cranwell, Lucy M. 1940. Pollen grains of the New Zealand conifers. New Zealand J. Sci. Tech. 22: 1-17.

Cranwell, Lucy M. 1942. New Zealand pollen studies I. Key to the pollen grains of families and genera in the native flora. Rec. Auck. Inst. Mus. 2: 280-308.

Cranwell, Lucy M., Green, J. E. and Powell, A. W. B. 1943. Food is where you find it - a guide to emergency foods of the western Pacific. Auckland Institute and Museum, Auckland.

Cranwell, Lucy M. 1953. New Zealand Pollen Studies - The Monocotyledons. Bulletin of the Aukland Institute and Museum No 3.

Cranwell, Lucy M. 1959. Fossil pollen from Seymour Island, Antarctica. Nature 184: 1782-1785.

Cranwell, Lucy M., Harrington, H.J. and Speden, I.G. 1960. Lower Tertiary microfossils from McMurdo Sound, Antarctica. Nature 186: 700-702.

Cranwell, Lucy M. 1961. Subantarctic pollen and spores. 1. Lyallia of Kerguelen. Pollen et Spores 3: 11-20

Cranwell, Lucy M. 1962. A mid-Pacific coal and its microfossils. Pollen et Spores. 4:189-190.

Cranwell, Lucy M. 1962. Antarctica: cradle or grave for Nothofagus. Pollen et Spores. 4:190-192.

Cranwell, Lucy M. 1962. Endemism and isolation in the Three Kings Islands, New Zealand - with Notes on Pollen and Spore types of the Endemics. Records Auckland Institute and Museum 5-6: 215-232.

Cranwell, Lucy M. 1963. The Hectorllaceae: pollen type and taxonomic speculation. Grana Palynologica 4: 195-202.

Cranwell, Lucy M. 1963. Nothofagus: living and fossil pp. 387-400 In: J. L. Gressitt ed. Pacific Basin Biogeography. Honululu, Bishop Museum Press.

Cranwell, Lucy M. 1964. Ancient Pacific Floras The Pollen Story. Honolulu, University of Hawaii Press.

Cranwell, Lucy M. 1964. Antarctica: cradle or grave for its Nothofagus? P. 87-98 In. L. M. Cranwell, Lucy M. 1964. Extra-Antarctic correlations in the dating of erratic deposits and McMurdo Sound, Antarctica 8th Ann. Meeting Arizona Acad. Sci. 1964.

Cranwell, Lucy M. 1964. Hystrichospheres as an aid to Antarctic dating with special reference to the recovery of Cordosphaeridium in erratics at McMurdo Sound. Grana Palynologica 5: 397-405.

Cranwell, Lucy M. 1966. Senonian dinoflagellates and microspores from Snow Hill and Seymour Island. J. Arizona Acad Sci 4: 136.

Cranwell, Lucy M. 1969. Palynological intimations of some pre-Oligocene Antarctic climates. IN: Palaeoecology of Africa and Antarctica SCAR 1978.

Cranwell, Lucy M. 1971. Pollen. Encyclopedia of Science and Technology, McGraw-Hill Book Co., Inc.

Cranwell, Lucy M. 1981. The botany of Auckland. Auckland, N.Z. Auckland Institute and War Memorial Museum.

Wall, Arnold and Cranwell, Lucy M. 1936. The botany of Auckland. Auckland, N.Z.: Auckland Institute and War Memorial Museum.

Ward, J. and Cranwell, Lucy M. 1993. Review of K. Kubitzki, the Families and Genera of Vascular

Plants. Rev. Palaeobotany Palynology 77: 146-147.

PALYNOS (ISSN 0256-1670) is published bi-annually (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. Please forward to the Editor:

Anne-Marie Lézine
CNRS, Paléontologie et Stratigraphie. Jussieu
Boîte 106, F-75252 Paris Cedex 5. France
lezine@ccr.jussieu.fr