INTERNATIONAL UNION OF BIOLOGICAL SCIENCES SECTION FOR PALAEOBOTANY

International Organisation of Palaeobotany

IOP NEWSLETTER 100

March 2013

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Please send us your contributions for the next edition of our newsletter (June 2013) by May 31st, 2013.

IOP Logo: The evolution of plant architecture (© by A. R. Hemsley)

FROM THE SECRETARY/TREASURER

Dear International Organisation of Palaeobotany Members,

I apologize for this late newsletter, but we had some serious security issues with our computer network that brought us to a virtual standstill for almost two weeks.

This issue contains numerous notices for meetings of interest to the membership, as well as short communications, and IOP business issues.

It is also my solemn duty to report on the passing of Shya Chitaley.

Shya Chitaley passed away in her sleep at the loving home of her daughter on Sunday, 31 March 2013. Cremation and Last Rites were performed 3 April. During the up-coming year, her ashes will be transported to India for internment at various places of significance to her family.

As it will require a team of colleagues, friends, and students to compile a narrative documenting Shya's life and contributions to palaeobotany, her full obituary will be printed in the next IOP Newsletter. I thank Kathleen Pigg and Steve Manchester for organizing that team.

As usual, I will be happy to report good news and dutifully report bad news that you as the membership send me. In particular, I hope to expand regional coverage, as although we are an International Organization, much of our work occurs on a local or regional level, and success stories from each region may translate to success stories in other regions. I can be reached at:

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Please feel free to contact me with questions, comments, or any information you would like passed on to the Membership.

REGIONAL NEWS

North America

Please welcome Chris Liu as the new Regional Representative for North America. Chris can be reached at:

Dr. Chris Liu
Department of Biological Sciences
309 Brown Hall
East Tennessee State University
Box 70703
Johnson City Tennessee, 37614-1710
(423) 439-6920
liuc@etsu.edu

India

The regional Representative position for India is currently open. I will be happy to accept volunteers or nominations for this important position.

Asian Pacific

The regional Representative position for The Asian Pacific is currently open. I will be happy to accept volunteers or nominations for this important position.

RENEW YOUR MEMBERSHIP

Please remember that the notice to renew your membership went out in the last newsletter. I will be contacting Regional Representatives within the month to verify the up-to-date rolls. If you are unsure of your membership status, please contact your regional representative. It is much easier for you as an individual to make contact with your representative, than for your representative to make contact with the dozens or hundreds of you that he or she is responsible for.

Remember, only current IOP members are eligible to stand for office, nominate people for office, and vote.

IPC XIV/IOPC X 2016

The 2016 joint meeting of the International Palynological Congress and the International Organization of Palaeobotanists will be held in Salvador, Brazil.

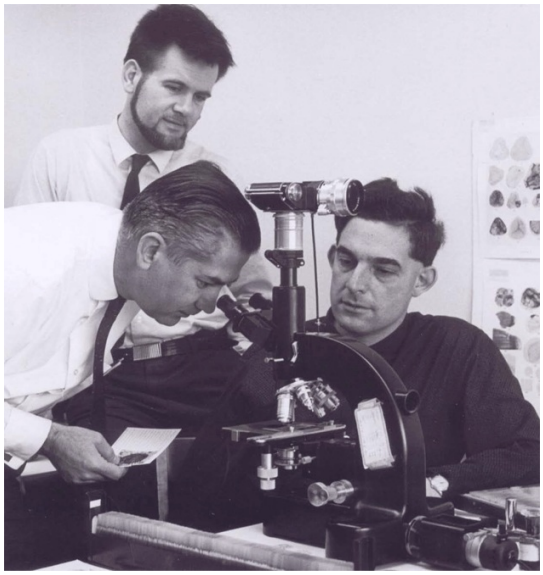
At this time we can only say that the meeting will be during the fall, hopefully early in October, or late in September.

I will send additional details as they are worked out, but please do keep this date in mind. 2016 will be here before we know it, and it is never too early to start thinking about symposia etc.

I am also excited to announce that the Organizing Committee of the XIII IPC/ IX IOPC Tokyo, reported that they closed their books in a very healthy condition, and have donated a considerable amount to future International Conferences. The XIII IPC/ IX IOPC 2012 Tokyo Commemorative Fund will support young scientist and student participation. Ruth Stockey is chairing the Committee that will formalize this new fund, and I will hopefully report on the status of the fund in the next newsletter.

OBITUARY

Jan Jansonius
1928 – 2013



Jan Jansonius, Frank Staplin, Stan Pocock, early 60's
(Picture courtesy Imperial Oil Ltd. through Frank Staplin)

Jan Jansonius, an active member of the IAPT-sponsored Committee for Fossil Plants for some 30 years from the 1970s through early 2000s, passed away in Calgary, Alberta, Canada, on January 25th 2005. Jan had a deep interest in taxonomy and nomenclature and, as well as his contributions to the Committee, was (co)author of several papers to Taxon over the years.

Jan Jansonius was born in Groningen, The Netherlands on April 21st, 1928. After high school, Jan studied geology at the University of Groningen, obtaining his B.Sc. in 1952. He continued his studies at the University of Utrecht, where he graduated with a M.Sc. in 1955. It was while in Utrecht that he met and married Bettie, the love of his life. Jan and Bette emigrated to Canada and settled in Calgary in 1956, where Jan was hired by Imperial Oil (later Esso) and worked at their research lab as a palynologist. He also briefly worked for Imperial in Houston, Texas. While at Imperial he studied the Triassic palynology of western Canada and obtained a Ph.D from the University of Utrecht on the results of this study.

Jan (co)authored many palynological publications, especially on scolecodonts and chitinozoa. With Len Hills (University of Calgary), he published the Genera File of Fossil Spores and Pollen, illustrated with Jan's own pen drawings, a massive card file system now available in digital format. Another lasting contribution was the three-volume reference Palynology, principles and applications, published in 1996 in the American Association of Stratigraphic Palynologists Contributijns Series; this now-standard text was co-edited by Jan and Colin McGregor (Geological Survey of Canada).

Jan's other contributions to palynology included his role as co-chair with Len Hills for the Sixth International Palynological Conference in Calgary in 1984. In 1996 he became President of the American Association of Stratigraphic Palynologists. AASP recognized Jan's contributions by presenting him with the Distinguished Service Award in 1996.

After his retirement from Esso in 1987 until 2009, Jan used his time and boundless energy as a volunteer the Geological Survey of Canada (Calgary), where he continued his work on publications, catalogued recently acquired additions to the palynological library and assisted from time to time with investigations by colleagues. He received a Volunteers Award from the Government of Canada (signed by then Prime Minister Jean Chrétien) in 2001.

Aside from science, Jan loved spending time with family, and outings often consisted of bicycle trips and hiking in the Alberta Foothills, Rockies and beyond. Outdoor activities also included a love for gardening and among his successes was the grafting apple trees to create multi-coloured apple blossom in spring. An interest in art, developed in his younger years in Holland, continued in Calgary. Not only did he collect paintings, but he also became an accomplished painter with oil and watercolor. This creativity was also expressed in the many beautifully detailed and accurate line drawings of the spores and pollen in the Jansonius and Hills catalogue. Jan started an informal catalogue of dinocysts, listing numerous genera with their allocated species, all illustrated by himself in

pen and ink. Jan also found time to sing with the choir of the Calgary Philharmonic Orchestra and with the Festival Chorus. And he also found the time to become an accomplished furniture maker.

Jan's kindness, integrity and knowledge will be remembered by all whose lives he touched, above all those who were nearest and dearest to him, in the persons of his wife of 56 years, his daughter Corine and his sons Paul and Johannes and their families. May they find strength by cherishing the memory of this man, who we are proud and grateful to have known as a colleague and friend.

Adapted from an obituary by Bert van Helden, who wishes to thank the Jansonius family, Rob Fensome, Thomas Demchuck and Frank Staplin for assistance.

SHORT CORRESPONDENCE

Special Issue in PALAIOS Commenorates 20th Anniversary of the International Workhop on Plant Taphonomy

One of the best things about being a paleobotanist in Europe is being able to take part regularly in the International Workshop on Plant Taphonomy. The "Plant Taphonomy Workshop"—as it is sometimes informally called—is a lively discussion meeting of paleobotanists interested in the depositional and preservational fate of plants and plant organs in the fossil record. The Workshop has a familial character, because the same dedicated band of plant taphonomists come together almost every year. Nevertheless, each of the 20 workshops has had its own unique character, because the meeting venue is ever-changing, always on the move to another interesting city in Europe.

To commenorate the 20th anniversary meeting of the International Workshop on Plant Taphonomy, a special issue on plant taphonomy was edited by Carole T. Gee and Lutz Kunzmann and published in the November 2012 issue of PALAIOS (see special issue cover). The 20th meeting of the Workshop was held one year before, at the Senckenberg Naturhistorische Sammlungen Dresden, from March 25-27, 2011 (see group photo).

The PALAIOS special issue features a SPOTLIGHT essay by David K. Ferguson, the founder of the meeting series. The SPOTLIGHT, entitled "Plant taphonomy: 20 years of death, decay, and dissemules," recounts the history of the Workshop and recalls memorable events, presentations, and personalities over the course of the last two decades.

In regard to research, the special issue consists of six papers that span the breadth of plant taphonomy, reaching as far back into earth history as the Permian and Triassic, and extending to the actuopaleobotany of carpological deposits and silicification experiments that help us to understand the sorting, deposition, or fossilization of plants and plant organs. Listed in their order of appearance in the special issue, these six papers are:

Taphonomical implications of the Ladinian megaflora and palynoflora of Thale (Germany) – Evelyn Kustatscher, Carmen Heunisch, and Johanna H. A. van Konijnenburg-van Cittert

Early Oligocene riparian and swamp forests with a mass occurrence of Zingiberoideophyllum (extinct Zingiberales) from Saxony, Central Germany – Lutz Kunzmann

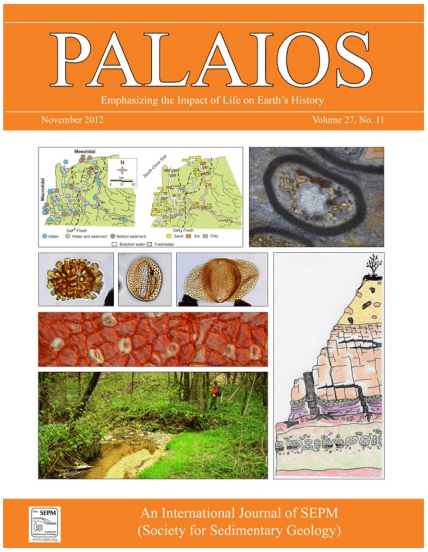
Biases in the frequency of fruits and seeds in modern fluvial sediments in northwestern Italy: the key to interpreting analogous fossil assemblages – Elena Vassio and Edoardo Martinetto

Taphonomic controls on the distribution of palynomorphs in tidally influenced coastal deltaic settings – Robert A. Gastaldo

A snapshot of an early Permian ecosystem preserved by explosive volcanism: new results from the Chemnitz Petrified Forest, Germany – Ronny Rößler, Thorid Zierold, Zhuo Feng, Ralph Kretzschmar, Mathias Merbitz, Volker Annacker, and Jörg W. Schneider

Experimental silicification of the tree fern Dicksonia antarctica at high temperature with silica-enriched H20 vapor – Sashima Läbe, Carole T. Gee, Chris Ballhaus, and Thorsten Nagel

On behalf of all the contributing authors, Lutz and I warmly thank the reviewers who have refereed the research papers, as well as Edith L. Taylor, a Co-Editor of PALAIOS in 2010, for her strong support of the special issue, and especially Jill M. Hardesty, PALAIOS Managing Editor, for the great job and her tireless efforts in pulling everything together.



November 2012 cover of PALAIOS:

The cover is composed of figures from the six research papers in the November 2012 issue celebrating the 20th anniversary of the International Workshop on Plant Taphonomy in 2011. These figures show various aspects of plant taphonomy and include, from left to right, top to bottom: collection sites and sediment maps tracking palynomorph concentration in the Rajang River Delta in East Malaysia (Gastaldo), silicification of tree ferns such as Psaronius (Läbe et al.), pollen and spores as long-term, regional indicators of the late Middle Triassic vegetation in central Germany (Kustatscher et al.), fossil leaf cuticle of Laurophyllum from a Oligocene leaf bed in Saxony (Kunzmann), a modern fluvial depositional site with fruit and seed remains and medium sand (Vassio and Martinetto), and a stratigraphic section of the volcanics that buried the Permian forest alive at what is now Chemnitz (Rößler et al.).

Carole Gee
Steinmann Institute, Paleontology
University of Bonn, Germany

Chemometrics in Palaeobotany. Some examples (Triassic, Argentina - Pennsylvanian, Canada)

José A. D'Angelo1,[2] and Erwin L. Zodrow[2]

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According to the definition of The International Chemometrics Society, chemometrics is 'the science that relates measurements made on a chemical system or process to the state of the system via application of mathematical or statistical methods'. Thus, chemometrics combines chemical measurements (e.g., spectroscopic data) and mathematical or statistical methods (e.g., multivariate analysis).
In our chemometric studies we mainly use Fourier transform infrared (FTIR) spectrometry to derive spectroscopic data which are then analyzed by principal component analysis (PCA). This is a powerful combination for investigating Late Palaeozoic-Early Mesozoic fossils for preservation pattern, and identifying groups or trends with taxonomic overtones (summary D'Angelo et al., 2010; D'Angelo and Zodrow, 2011). FTIR data are conducive to using PCA because the datasets are multivariate random variables, and a strong, often linear low-rank structure, is present (i.e., high linear correlation).
The capabilities of chemometrics applied to FTIR-derived data obtained for coalified compressions and cuticles of several fossil taxa are numerous. They include for example the identification of different preservation modes. This is the case of Triassic remains of the Dicroidium flora (Cacheuta, Mendoza, Argentina) preserved as compressions and cuticle-free coalified layers. These sample forms can be distinguished from cuticles and associated coal samples through evaluation of the semi-quantitative FTIR data by way of PCA (Figure 1).
Another important application of chemometrics is the study of the preserved structural make-up of Carboniferous coalified ovules (Sydney Coalfield, Nova Scotia, Canada). Deposited in near-coastal flood plains, presumably under

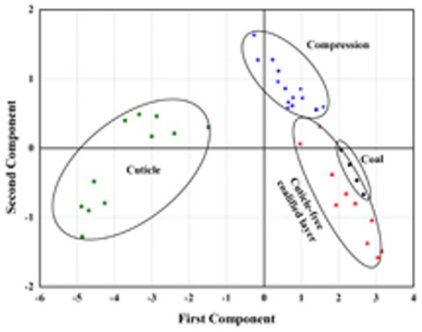

Figure 1: Principal component analysis: plot of component scores. Dicroidium flora remains (Mendoza, Argentina) with different preservation modes. Ellipses around the samples are for clarity only. Please contact the authors for a high resolution image.

isotaphonomic conditions, the ovules show different patterns of coalified layers. Since variations due to conditions of fossilization are eliminated, these fossils provide an ideal package in which to study their chemical composition. We evaluate the semi-quantitative FTIR data by way of PCA (Figure 2) to gain an insight into the original ovular structure, and to relate differences in chemistry to structural-precursor materials of such a complex plant organ.

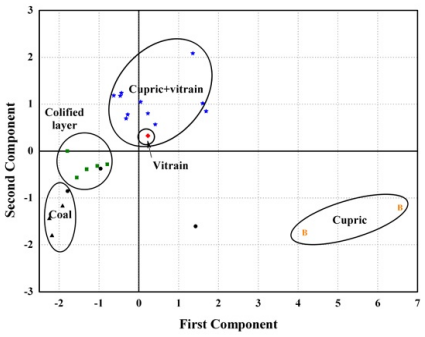

Figure 2: Principal component analysis: plot of component scores. Different layers of Trigonocarpus grandis ovules (Sydney Coalfield, Canada). Plot showing groupings of fossil- and coal-derived data as indicated by approximate delimited elliptical zones that do not have any statistical significance.

Finally, it should be noted that on-going research results on neuropteroid taxa (Pennsylvanian, Sydney Coalfield, Canada) are promising regarding the potential utility of chemometrics to the taxonomic study (chemotaxonomy) of 'problematic' plant groups.

References

D'Angelo, J.A., Zodrow, E.L., Camargo, A., 2010. Chemometric study of functional groups in Pennsylvanian gymnosperm plant organs (Sydney Coalfield, Canada): Implications for chemotaxonomy and assessment of kerogen formation. Organic Geochemistry 41, 1312-1325.

D'Angelo, J.A., Zodrow, E.L., 2011. Chemometric study of functional groups in different layers of Trigonocarpus grandis ovules (Pennsylvanian seed fern, Canada). Organic Geochemistry 42, 1039-1054.

Compendium Index of North American Mesozoic and Cenozoic Fossil Plants at the Peabody Museum published electronically

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The Division of Paleobotany at Peabody Museum of Natural History is pleased to announce the electronic publication of the Compendium Index of North American Mesozoic and Cenozoic Fossil Plants. The Compendium Index of North American Mesozoic and Cenozoic Fossil Plants is a collection of approximately 12,000 8"x10" cards, in which each card contains illustrations and description of an individual occurrence of a fossil plant species. The Compendium Index (CI) presently covers fossil floras from North America, including Greenland, starting in the Triassic Period and extending to Pleistocene. The CI was begun in 1937 by Erling Dorf, paleobotanist in the Department of Geology at Princeton University. In 1984 the CI was transferred to the Division of Botany (then including Paleobotany) at Peabody Museum of Natural History where it has been substantially updated and reorganized. At first, most new references were added using paste-ups of high quality Xerox copies. Today, new entries are prepared electronically, although a physical copy of each new card is still added to the original card file in the Division of Paleobotany. This unique and invaluable resource for fossil plant identification that has no counterpart anywhere else in the world includes 248 references extending from 1866 to 2010. Hopefully, the on-line

availability of this resource will facilitate the often painstaking process of identifying fossil plant materials by making a broad array of publications from highly disparate and often hard to obtain sources. Because the cards of which the CI is composed are filed by morphological categories, the researchers can rapidly receive information on the history of a particular taxon, as well as misidentifications, and nomenclatural synonyms. The Compendium Index is available free at http://peabody.research.yale.edu/pbci/

UPCOMING MEETINGS

The Carboniferous-Permian Transition

An international meeting devoted to all aspects of Carboniferous-Permian geology with special emphasis on the Carboniferous-Permian transition will be held 20-22 May 2013 at the New Mexico Museum of Natural History and Science, Albuquerque, New Mexico, USA

30th Midcontinent Paleobotanical Colloquium

April 26-28, 2013
Chicago Botanic Garden
Glencoe, IL

Plenary Speaker:
William DiMichele, National Museum of Natural History, Smithsonian Institution

"Coal swamp forests seen from below: Reconstructing ancient vegetation from undergound mine exposures"

Organizers:
Patrick Herendeen, Chicago Botanic Garden (pherendeen@chicagobotanic.org)
Ian Glasspool, The Field Museum (iglasspool@fieldmuseum.org)

Accommodations:
Marriott Courtyard, 1505 Lake Cook Road, Highland Park, IL (800-321-2211 or 847-831-3338). Special rate $99 single or double including breakfast. Group name is Midcontinent Paleobotany Colloquium. Deadline for reserving hotel room is April 5, 2013

Program:
Friday evening- reception (Chicago Botanic Garden)
Saturday- plenary lecture, papers, posters, banquet (Chicago Botanic Garden)
Sunday- excursion to Garfield Park Conservatory and Field Museum paleobotanical collections

International Congress of Agora Paleobotanica.

The 2nd International Congress of Agora Paleobotanica, titled “A Congress in the Countryside” will be held in Ariño (Teruel, Spain) from 9th to 13th July, 2013.

For more information go to:

http://www.grupopaleobotanicaiberica.es/eventos/congresos/arino2013_en.htm

This website has all of the information about the agenda and program.

46th annual meeting of AASP –

The Palynological Society (AASP-TPS) will meet jointly with Dino 10, the Canadian Association of Palynologists (CAP), and the North American Micropaleontology Section of SEPM (NAMS). The meeting will be held in the Heart of San Francisco.

Questions or Suggestions? Contact Co-Chairpersons:
Lanny H. Fisk (Lanny@PaleoResource.com) and/or Joyce Lucas-Clark (jluclark@comcast.net)

4th International Palaeontological Congress

The 4th International Palaeontological Congress will be held in Mendoza, Argentina, September 28 - October 3, 2014. the Congress website is already up and running: www.ipc4mendoza2014.org.ar. There you can find preliminary information on the event, with more information to come soon. This website has all of the information about the agenda and program.

9th EPPC 2014
(August 26-31, 2014, University of Padua)

Italian palaeobotanists and palynologists are enthusiastically preparing the next EPPC in Padua, or Padova as the Italian name is. We hope to meet all our European colleagues at this conference.

The present day problems of climate and floristic changes, ecosystem and landscape transformations caused by human activities, force the palaeobotanical and palynological world to study these subjects also in the past, and in this way reinforce the bridge between past and present. These subjects will be among the topics of the 9th EPPC meeting in Padua.

Padova is a charming historic city, located at about 40 km west of Venice, in Northern Italy, with a dense network of arcaded streets, large “piazze” (squares) and many bridges crossing the various branches of the Bacchiglione river. The almost 800 years old University of Padova is famous for having had Galileo Galilei among its lecturers as well as important 19th century palaeobotanists such as Abramo Massalongo and Barone Achille de Zigno.
All scientific sessions will be held at the new Department of Geoscience. However also the famous Botanical Garden and the Museum of Palaeontology will be involved in this conference.
In order to favor the attendance of young scientists, we hope to offer University residences and special grants. Field-trips are planned in the fascinating landscapes of the Dolomites, Sardinia, Emilia-Romagna, Latium and Tuscany.

Hoping to see you all in Padova,
The EPPC 2014 organizing group

More information will be available at the homepage of the congress:
http://www.geoscienze.unipd.it/9th-european-palaeobotany-palynology-conference

The 10th North American Paleontological Convention (NAPC)
February 15 - 18, 2014

We are pleased to announce that the 10th North American Paleontological Convention (NAPC) will be held in Gainesville, Florida, in February 2014. The meeting will be hosted by the Florida Museum of Natural History (University of Florida) from February 15th through 18th (Saturday through Tuesday). Pre-conference and post-conference field trips are tentatively planned for February 13th - 14th and 19th - 20th, respectively.

The North American Paleontological Convention is a major international paleontological event administered by the Paleontological Society under the auspices of the Association of North American Paleontological Societies. Initiated in 1969, NAPC meets every 4-5 years. The convention includes active participation from all fields of paleontology. Over 500 participants from 26 countries attended the most recent NAPC in Cincinnati (2009).

A more detailed 1st circular, including a formal solicitation for symposium/theme session proposals, student support information, important deadlines, and a preliminary website will be forthcoming shortly.

We extend our warmest invitation to all who are interested in paleontology and hope to see you in Florida in February 2014.

On behalf of the organizing committee of the 2014 North American Paleontological Convention,

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CALL FOR NEWS AND NOTICES

Please send any and all information for the Membership of IOP to:

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To be assured of inclusion in the next newsletter, all information must be received by 31 May 2013.