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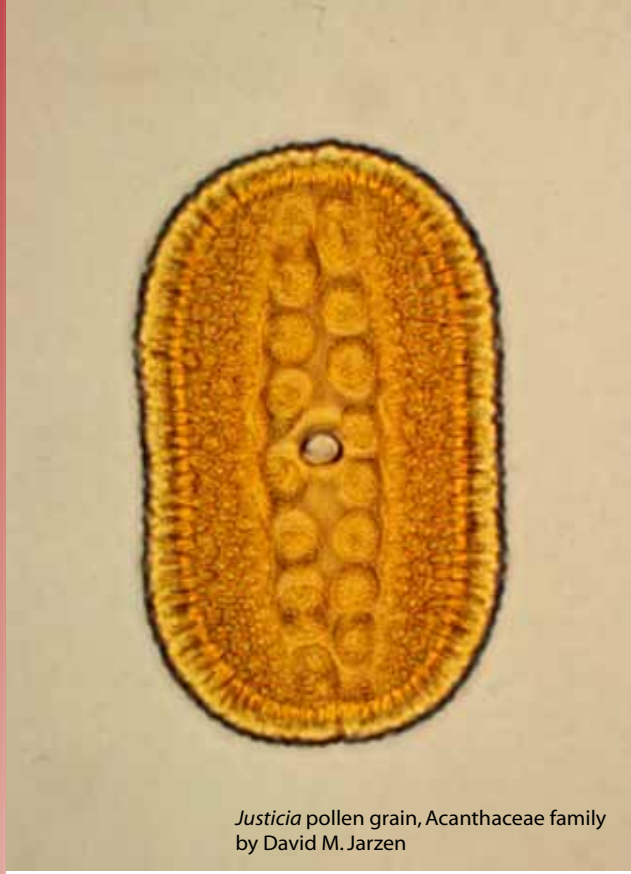

Justicia pollen grain, Acanthaceae family
by David M. Jarzen

NEWSLETTER

September 2012
Volume 45, Number 3

Published Quarterly by AASP — The Palynological Society

AASP-TPS NEWSLETTER

Published Quarterly by AASP - The Palynological Society

September 2012
Volume 45, Number 3

A.A.S.P.

The Palynological Society

The American Association of Stratigraphic Palynologists, Inc. - AASP-The Palynological Society - was established in 1967 by a group of 31 founding members to promote the science of palynology. Today AASP has a world-wide membership of about 800 and is run by an executive comprising an elected Board of Directors and subsidiary boards and committees. AASP welcomes new members.
The AASP Foundation publishes the journal Palynology (biannually), the AASP Newsletter (quarterly), and the AASP Contributions Series (mostly monographs, issued irregularly), as well as several books and miscellaneous items. AASP organises an Annual Meeting which usually includes a field trip, a business luncheon, social events, and technical sessions where research results are presented on all aspects of palynology.

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Dr. William S. Hoffmeister (elected 1975)
Professor Leonard R. Wilson (elected 1975)
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AASP-TPS NEWSLETTER

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The AASP-TPS Newsletter is published four times annually. Members are encouraged to submit articles, “letters to the editor,” technical notes, meetings reports, information about “members in the news,” new websites and information about job openings. Every effort will be made to publish all information received from our membership. Contributions which include photographs should be submitted two weeks before the deadline.

Deadline for submission for the next issue of the newsletter is **November 15.** All information should be sent by email. If possible, please illustrate your contribution with art, line drawings, eye-catching logos, black & white photos, colour photos, etc. **We DO look forward to contributions from our membership.**

A message from our new president

An "accidental" palynologist?

At the University of Southampton, we hold a Results Day BBQ for our final year undergraduate students on the day their degree classifications are released in mid June, and as some of them were leaving, they said they'd see me again at Graduation in July. "Regrettably you won't," I replied, and without really thinking about it, I said to them that instead of attending Graduation I'd be in the United States "taking over the Presidency". It was only after some bright spark asked me if that was the first phase of my Master Plan for World Domination that I realised what I'd said – and I then had to explain that actually the US Presidential elections weren't being held until later this year, and that it was the mantle of the Presidency of the AASP-TPS to which I would be being elevated – whilst not perhaps such a position of power, still a position which I take up with immense pride.

In taking over from the helm of AASP-TPS from Franca, I become the 45th President of the Society, and to do so is a great honour – especially after having looked back at the long line of illustrious names who have preceded me in this office. So many of the previous incumbents of this position are people who were names known to me even early on in my graduate career, people widely published and cited, those people to whom graduate students today still regard with awe as their work has already stood the test of time and forms the foundations on which our branch of science is based. I can't hope to emulate their achievements in this respect, but I hope that in my role as President I can play my own part in furthering the ideals of the Society.

When Franca assumed the Presidency last year, she made mention of AASP members who played a significant role in her development as a palynologist, and in a similar fashion when thinking about what to say today, I found myself thinking along the same lines. Then it struck me that I must have reached that "certain age" where you start to look back into your own personal stratigraphic record to recognise the significant marker events in your own palynological career. We all have several markers that we could log, and in light of mine, one might be tempted to call me (amongst other things!) an "accidental" palynologist. As a teenager I'd always wanted to be an archaeologist, but was warned off the subject at degree level as everyone said then that archaeologists ended up unemployed or in low-salaried jobs. Thus I graduated three years later with a degree in geology at the height of an earlier economic downturn – when no-one but South African mineral exploration companies were hiring geologists (and my experience of a second interview – nay "sales pitch" - in South Africa House at the height of apartheid was sufficient to ensure that I turned that offer down very firmly!). Contrast that with the fact that during my undergraduate years the UK government had passed

Above: Past Presdient Francisca Oboh-Ikuenobe passing on the power to President Ian Harding at the AASP-The Palynological Society annual meeting in Lexington, Kentucky. Photo by Cortland Eble.

a law requiring every local authority to employ archaeologists for rescue digs prior to new buildings being erected! Perhaps I should have stopped and thought more carefully about my future direction at that point, but no, I thus turned my sights on a PhD. Strangely, on the strength of a 30-minute introduction to palynology given by the eminent conodontologist Dick Aldridge during my final undergraduate year at Nottingham, and a short research dissertation under Dick's tutelage examining the possible affinities of the chitinozoa, I approached Norman Hughes at Cambridge to see if he had a palynological doctoral project available. Norman will have been known to many of you reading this article, or it is perhaps his somewhat fearsome and idiosyncratic reputation that might be better known, but to his last few PhD students - of whom I was one – he was very much as an avuncular uncle-like figure. Norman was a man born ahead of his time, as many of his then-radical ideas about classification would be perhaps far better suited to today's powerful databasing systems than the now-primitive computing power of the 1980s. Norman's supervision of my doctorate was to set me on my way to what some might generously call a "career" in palynology, and I still often find myself trying to recall how Norman would have instructed me when I am supervising my own students. As it turned out, it was déjà vu when I completed my PhD, as the economic cycle had not only recovered but had also had time to nosedive once more (I did only take four years, I hasten to add!), and again, no one was hiring geologists when I graduated a second time.

After two years doing what I euphemistically call an "unofficial post-doc", out of the blue I was asked to visit the university at Southampton, who were seeking new staff following the Oxborough Review of Earth Sciences in 1989 that saw about half the geology departments in the UK closed down. No-one was more surprised than me that I was offered the position. Norman knew how much I loathed standing up and giving talks in front of an audience when I was a graduate student, not that I exactly relish doing so in front of my peers much more nowadays in all honesty, but he must have seen something in me that I could not then see in myself, I guess. This was probably the same reason behind his widow asking me to deliver the eulogy at Norman's funeral too… Norman always loved to have the last laugh, and was probably doing the same from somewhere "up there" as I gave my presidential acceptance speech at the Lexington meeting too!

So what was the event that changed the course of my own evolution? It was a chance encounter in the coffee room at Cambridge with Norman, as I was heading towards a telephone to turn down the offer of the Southampton lectureship. Norman intercepted my progress and asked me what decision I'd arrived at – when I told him I couldn't see myself being a lecturer, he characteristically rocked back on his heels, rolled his follically-challenged head back and uttered one of his famous understatements "I think we need to sit down and have a little talk". Needless to say, 20 minutes later he'd changed my mind and I'd accepted the position - the rest as they say is history. Norman's timely intervention has turned out to have provided me with an extraordinarily rewarding – if somewhat "accidental" - career both in research and education, and whilst research still brings the thrill of discovery and the satisfaction of solving problems and uncovering new ones at the same time, it is the educational side of my role which I have relished most. Being able to teach successive cohorts of undergraduate and graduate students has been a delight, and to be able to set students off on their own paths of discovery and acquisition of knowledge is the real buzz I get from working in academia.

In this context the one thing I wanted to do was to try to put a positive spin on the world of palynology, after reading back through some of the recent presidential acceptance speeches before me, which have alighted on the decline in the number of society members and so rightly indicated the need to provide our society with a higher profile and to demonstrate its relevance to the wider world: to the next generation of potential palynologists in particular. There is indeed still relatively little about which we involved in the academic side of palynology can be positive about, with cuts both to research and educational funding. Indeed, chatting to fellow academics at the excellent Lexington meeting, there were more than a couple that are seriously ques-

tioning whether their role in academia is sustainable: some clearly feel that their positions remain viable only by directing funds secured from undertaking industrial contract work towards sustaining their research. However, at least in the UK there is one ray of light which I'd like to mention as a positive development for the world of palynology: namely the new research Master's degree (MSc) in Micropalaeontology which will start at the University of Birmingham in October, and on which one of the new AASP Directors at Large - Guy Harrington - will be teaching. Hopefully this new degree will again start to produce palynologically-trained master's students at least in the UK, reversing the trend of closing such degree programmes down over recent years, but this is of course only one new programme in one country. (By the time you read this article Guy will have become the first palynologist to have sailed on the Japanese IODP vessel Chikyū - 'Earth').

It is my belief that it is only by providing a wider awareness of our subject and the contribution our science can make to the wider public that our Society will move forward. As an academic I believe that it is thus critical to stimulate interest in our subject amongst the next generation of students and thereby encourage them to stay on to qualify as palynologists. It is this way that we can ensure that our subject has a vibrant future towards which it can look forward, rather than we academics looking amongst ourselves and wondering who will be the one to switch out the palynological light in their respective country when they retire from university teaching.

To go back to my own experiences of teaching at both undergraduate, master's and doctoral level it is clear that there is no shortage of enormously intelligent and talented individuals continuously coming up through the educational system. The problem lies in retaining them in the subject, firstly into funded doctoral positions and then going on to acquire the post-doctoral experience that is essential for them to secure academic positions. The students are there, their interest and enthusiasm can be captured, but we must try to retain them. I therefore hope to set several objectives for my term as President. Firstly, and no doubt by far the most problematic is to continue the discussions between academic and industry as regards material support for student palynological research, a discussion that many of us were involved in at last year's AASP-TPS meeting in Southampton, and which resulted in the paper by Iain Prince (Shell) that was widely distributed amongst industry and academia alike. Finding ways of taking this forward will not be an easy task, but one I believe we need to engage with seriously.

Secondly, I hope that AASP-TPS can provide meaningful support and gravitas in any way in which it can to the longed-for digitised evolution of the uniquely valuable Palynological resource that is the John Williams Index of Palynology at the Natural History Museum (Riding et al., in press) following the presentation by Tom Hill and Stephen Stukins at the Lexington meeting.

Finally, in what I hope will be my most visible contribution as President, I have already gained the support of fellow Board members in developing a new annual award scheme to reward academic excellence amongst undergraduate students pursuing palynological studies. I hope that these awards can be awarded annually, and specifically by the tutors of undergraduate level programmes (either course modules or degree programmes) or micropalaeontology courses which contain a significant element of palynological education. There will be one award available annually for *each* qualifying programme. Such awards, of a one-year membership of AASP-TPS and the corollary benefits will be modest, but will hopefully serve to further raise awareness of both the subject of palynology and of our society amongst successive cohorts of students, and also allow them to experience the benefits of being part of the wider palynological community, thus encouraging them to take their studies in the subject further. In this way the society will hopefully be helping to perpetuate palynology into the future – in the hope that more students will make a positive decision to become palynologists and not follow me so accidentally into the subject!

Ian Harding

Palynology Managing Editor's report

We were recently informed by Taylor and Francis that the impact factor of *Palynology* now stands at 0.9, which represents a significant increase on last year's figure of 0.6. This upwards trajectory is a very positive trend and we hope it continues.

When Taylor and Francis originally made digital copies of *Palynology* pre-2010 available on the journal website, many of the volumes were inadvertently scanned at relatively low resolution and consequently the plates were of low quality. These volumes have recently been rescanned at high resolution and these are now available. We apologise for the inferior quality of some of these volumes until now.

So far in 2012, the AASP Foundation has published two *Contributions Series* numbers. Number 45 is by Ramesh K. Saxena and S.K.M. Tripathi and is entitled *Seven decades of Indian Tertiary spore-pollen floras: a compendium*. This volume comprises 182 pages, was published in March 2012, and is an electronic publication only. It can be obtained from Production Editor Bob Clarke at rtclarke1@aol.com for a price of US$20.00 post-paid. You may order C45 as an e-mailed pdf file or a CD ROM sent by mail. However, customs declaration forms for **ALL** non-US addresses for CD's sent by mail will have to be filled out.

Contributions Series Number 46 is entitled *A compilation and review of the literature on Triassic, Jurassic, and earliest Cretaceous dinoflagellate cysts* by James B. Riding. It was published during June 2012 and comprises 119 pages. It also includes a CD ROM with a searchable pdf file of the text. C46 is now available for US$30.00 plus shipping, and can be ordered via the website. For a temporary time, if payment is made by check drawn on a U.S. bank **AND the order is being shipped to a U.S. address**, you may order directly from Robert T. Clarke, 725 Sam Hill St., Irving, Texas 75062-7548, U.S.A. However, **ALL** credit card orders should be made through the website.

Submission rates continue to be healthy and we have a significant number of manuscripts that are at various stages of review and production.

If you have any questions regarding the online manuscript submission system for *Palynology*, please contact Daniel Jones at Taylor and Francis (email: Daniel.Jones@tandf.co.uk), copying me in. If you need to speak to Daniel direct, his office telephone number is +44 (0)20337 73602.

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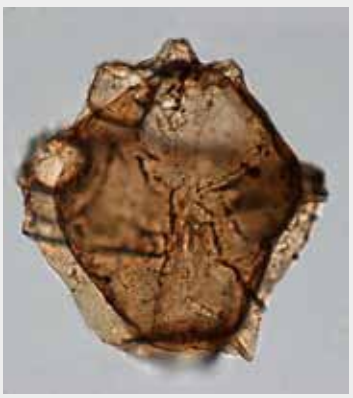
August 2012

AASP CONTRIBUTIONS SERIES NUMBER 46

A COMPILATION AND REVIEW OF THE LITERATURE ON TRIASSIC, JURASSIC, AND EARLIEST CRETACEOUS DINOFLAGELLATE CYSTS

By J.B. RIDING

The above title is a recently-published *AASP Contributions Series* volume which comprises a listing of all the publications on Triassic, Jurassic, and earliest Cretaceous dinoflagellate cysts. The author has been engaged in a project which seeks to compile data on the global distributions of these fascinating palynomorphs, hence a literature compilation was one of the first steps in this. The manuscript was completed in March 2012, when a total of 1347 scientific contributions from all the continents had been identified. Unsurprisingly, 45.4% of these 1347 papers are from western Europe; most of these contributions are focused on the Late Jurassic. The John Williams Index of Palaeopalynology (JWIP) was used to ensure that this compilation was as comprehensive as possible (Riding et al. 2012).



This contribution can be used to rapidly amass data relevant to a specific area and/or a particular stratigraphic interval. This is facilitated by a string of keywords which follow each entry and describe the scope of the paper in terms of geography, scientific scope, and stratigraphy. A clear distinction is made between contributions which provide primary data (i.e. from new samples which are related to specific successions) and compilations of pre-existing data. Furthermore, the most significant publications are highlighted. A pdf file of the text is provided on a CD with each printed copy in order to enable the rapid and effective digital searching of keywords. The author sincerely hopes that this publication will be useful for palynologists interested in all aspects of Mesozoic palynology.

Having completed such a comprehensive compilation, the author intends to keep the database constantly updated; it is possible that a supplement can be issued in sometime in the future. For example, since March 2012, a further 38 contributions have come to light which are not in Riding (2012). Only five of these 38 papers were published since March 2012. If any readers know of any papers that I have missed, or has had anything just published, I would be extremely grateful to receive details. Many thanks.

AASP Contributions Series No. 46 is now available for US$30.00 plus shipping, and can be ordered via the website or directly from Vaughn M. Bryant Jr., Secretary AASP Foundation, c/o Palynology Laboratory, Department of Anthropology (TAMU 4352), Texas A&M University, College Station, Texas 77843-4352, USA (tel.: 979-845-5255; fax: 979-845-4070; e-mail: vbryant@neo.tamu.edu).

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Keyworth, Nottingham NG12 5GG, UK, jbri@bgs.ac.uk

References

RIDING, J.B. 2012. A compilation and review of the literature on Triassic, Jurassic, and earliest Cretaceous dinoflagellate cysts. *American Association of Stratigraphic Palynologists Contributions Series, No. 46*, 119 p. plus CD ROM.

RIDING, J.B., POUND, M.J, HILL, T.C.B., STUKINS, S., and FEIST-BURKHARDT, S. 2012. The John Williams Index of Palaeopalynology. *Palynology*, http://dx.doi.org/10.1080/01916122.2012.682512.

Pictured are *Endoscrinium* sp. (top) and *Wanaea clathrata* (below).

AASP Foundation
Dallas, Texas, U.S.A.
June, 2012
ISSN 0160-8843

AASP CONTRIBUTIONS SERIES NUMBER 46

How to order?

AASP FOUNDATION CONTRIBUTION SERIES No. 46

A COMPILATION AND REVIEW OF THE LITERATURE ON TRIASSIC, JURASSIC, AND EARLIEST CRETACEOUS DINOFLAGELLATE CYSTS

by
JAMES B. RIDING
e-mail: jbri@bgs.ac.uk

Abstract:
Triassic and Jurassic dinoflagellate cysts are ideal index fossils because they are typically geographically extensive, and many taxa have relatively short ranges and/or well-defined range tops/bases. Consequently they are extensively utilized in geological problem-solving in both the industrial and academic spheres. A comprehensive list of the literature on Triassic to earliest Cretaceous organic-walled dinoflagellate cysts comprises 1347 publications with every continent being represented. The most significant publications are highlighted with an asterisk and each item of literature is briefly described by the use of a string of keywords that indicate the scientific scope, the stratigraphic interval covered, and the geographic focus. These publications are dominated (45.4%) by contributions from West Europe, where the type sections are all located. The next best-studied regions are the Arctic (7.5%), Australasia (7.1%), and East Europe (5.5%). Other regions, namely Africa, Central America, North America, South America, Antarctica, China, the Indian subcontinent, the Middle East, and Russia, each represent less than 5% of the literature on this topic. Most publications are focused on the Late Jurassic. This is largely because of the extensive nature of Upper Jurassic marine strata and the diverse nature of Late Jurassic dinoflagellate cysts.

Keywords: dinoflagellate cysts; Triassic; Jurassic; Early Cretaceous; literature compilation

119 pages
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IMPORTANT BY-LAW CHANGE

The following changes to the by-laws are recommended by the Board in order to accommodate the addition of a new position, Student Member, which has been recommended by the Board. The recommended changes/additions to the text of the by-laws are indicated below in boldface type.

The original text reads:
"4.02 The number of Directors shall be eleven.…"
The revised text reads:
"4.02 The number of Directors shall be **twelve (12)**,…"

The original text reads:
"5.01 The officers of the corporation shall be a President, President-Elect, Past-President, Secretary-Treasurer, Managing Editor, Webmaster, Newsletter Editor, and four (4) Directors-at-Large, all ten (10) of whom shall be members of and constitute the Board of Directors."

The revised text reads:
"5.01 The officers of the corporation shall be a President, President-Elect, Past-President, Secretary-Treasurer, Managing Editor, Webmaster, Newsletter Editor, **a student member,** and four (4) Directors-at-Large, all **twelve (12)** of whom shall be members of and constitute the Board of Directors."

The original text reads:
"5.02 …The Secretary-Treasurer, Managing Editor and Webmaster may succeed themselves in office."

The revised text reads:
"5.02 …The Secretary-Treasurer, Managing Editor, Webmaster, **Newsletter Editor** and **Student Member** may succeed themselves in office."

The following new text is recommended for insertion to follow Section 5.11:

Student Member

5.12 A Student Member of the Board shall be elected each year and serve a one year term as a voting member of the board. The Student Member must be enrolled in a degree program at a college or university as of the first day of January in the election year. The Student Member may serve up to three (3) consecutive terms on the board.

Note:
A ballot will follow later for you to record your objections or approval of these proposed changes.

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NUMBER 45

Details and how to order...

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CONTRIBUTIONS SERIES

NUMBER 45

SEVEN DECADES OF INDIAN TERTIARY SPORE–POLLEN FLORAS: A COMPENDIUM

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SEVEN DECADES OF INDIAN TERTIARY SPORE–POLLEN FLORA: A COMPENDIUM

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Preface

During the last few decades, importance of palynological studies in oil and coal explorations, biostratigraphy, correlation and dating of sedimentary sequences, palaeoenvironmental interpretations, reconstruction of past vegetation, evolution of morphographic characters, etc. has been well recognized. The Indian Tertiary sediments, because of having rich oil reserves, attracted attention of palynologists at various organizations, viz. Birbal Sahni Institute of Palaeobotany, Lucknow, Oil and Natural Gas Corporation, Geological Survey of India, Oil India Limited, Agharkar Research Institute, Pune, Wadia Institute of Himalayan Geology, Dehradun, and at a number of universities. The generation of palynological data from different Indian Tertiary basins resulted into manifold increase in the number of publications dealing with the Tertiary palynology, but dissemination of these publications remained limited. Day by day, it became difficult and impractical for any individual scientist to keep track of all the publications and need to assemble and collate the contents of these publications at one place was long felt.

With the objective to provide a gist of all the contributions published so far, on the Indian Tertiary palynology, it is planned to bring out an abridged version of all these publications in the form of a compendium. The compendium is expected to prove immensely helpful to the researchers working on biostratigraphy, palaeovegetation and palaeoenvironmental studies. It will provide up-to-date information generated from different Tertiary horizons of India and therefore will not only facilitate the formulation and programming of future researches but will also help in identifying the areas where enhanced efforts are required.

This compendium mainly deals with the publications on spore-pollen studies, whereas those exclusively on dinoflagellate cysts and fungal remains, etc. are not included. The geological ages are generally given as per original publications, even if they are in variance with the accepted age of the horizon. Orthography of geographical names has been changed according to their present use, e.g. Varkalla and Warkalli are changed to Varkala, Cutch and Kachchh to Kutch, Quilon to Kollam, Cannanore to Kannur, Trichnopoly to Tiruchirapalli, Madras state to Tamil Nadu, Bombay to Mumbai, Madras to Chennai, Calcutta to Kolkata, Kundara to Kundra, Sirmur to Sirmaur, Dharamsala to Dharmsala, Simla to Shimla, Pondicherry to Puducherry, part of Punjab to Himachal Pradesh and part of Assam to Meghalaya.

In spite of our best efforts, it is possible that some papers on Indian Tertiary palynology might have escaped our attention. The authors take full responsibility for such lapse, if any.

Abstract

The main objective of this book is to synthesize information on the Indian Tertiary palynology published so far. The book can broadly be divided into three parts: Introduction, Synopses of publications and Discussion.

The introductory part provides a brief introduction of the Book, historical background of Tertiary palynology in India, an overview of the Indian Tertiary sediments, systems of classification of palynofossils used in India and their merits / demerits, and field and laboratory techniques relevant to palynological studies.

This is followed by the synopses of all the publications on Indian Tertiary palynology published during the last seven decades (1941 to 2010). Altogether, there are 499 entries. Each entry is numbered and begins with its author(s) and year of publication, followed by the title, a brief synopsis and key-words. These are arranged alphabetically according to author's surnames. For ready retrieval of available information, various categories of indices, viz. Author Index, Index of Stratigraphic Units, Index of Geologic ages, Index of Geographical areas / Sedimentary Basins and Subject Index, are provided. The indices will help the readers to synthesize the available information in more coherent way and in broader perspective.

The Discussion part includes a summarized account of palynofloras and their biostratigraphic application in various regions of India and their palaeogeographical and palaeoclimatic implications. A number of tables are provided to summarize biostratigraphic zones and their characteristic palynofossils. A brief account of some selected fossil pollen genera, which are of regional and global significance, is also given, with suitable illustrations. Some of these forms elucidate diversification in angiosperms and migration of some taxa between Africa, India, South-east Asia and South America during the Tertiary Period. In this respect distribution of pollen having affinity with the families Arecaceae, Bombacaceae, Dipterocarpaceae and Ctenolophonaceae has been commented upon. An effort has been made to identify gaps in our knowledge about Indian Tertiary Palynology and suggestions have been given for future studies.

ASP Contributions Series 45

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AASP FOUNDATION CONTRIBUTION SERIES No. 45

SEVEN DECADES OF INDIAN TERTIARY SPORE–POLLEN FLORA: A COMPENDIUM

by

Ramesh K. Saxena and S.K.M. Tripathi

ABSTRACT

The main objective of this book is to synthesize information on the Indian Tertiary palynology published so far. The book can broadly be divided into three parts: Introduction, Synopses of publications and Discussion.

The introductory part provides a brief introduction of the Book, historical background of Tertiary palynology in India, an overview of the Indian Tertiary sediments, systems of classification of palynofossils used in India and their merits/ demerits, and field and laboratory techniques relevant to palynological studies.

This is followed by the synopses of all the publications on Indian Tertiary palynology published during the last seven decades (1941 to 2010). Altogether, there are 499 entries. Each entry is numbered and begins with its author(s) and year of publication, followed by the title, a brief synopsis and key-words. These are arranged alphabetically according to author's surnames. For ready retrieval of available information, various categories of indices, viz. Author Index, Index of Stratigraphic Units, Index of Geologic ages, Index of Geographical areas/ Sedimentary Basins and Subject Index, are provided. The indices will help the readers to synthesize the available information in more coherent way and in broader perspective.

The Discussion part includes a summarized account of palynofloras and their biostratigraphic application in various regions of India and their palaeogeographical and palaeoclimatic implications. A number of tables are provided to summarize biostratigraphic zones and their characteristic palynofossils. A brief account of some selected fossil pollen genera, which are of regional and global significance, is also given, with suitable illustrations. Some of these forms elucidate diversification in angiosperms and migration of some taxa between Africa, India, South-east Asia and South America during the Tertiary Period. In this respect distribution of pollen having affinity with the families Arecaceae, Bombacaceae, Dipterocarpaceae and Ctenolophonaceae has been commented upon. An effort has been made to identify gaps in our knowledge about Indian Tertiary Palynology and suggestions have been given for future studies.

182 pages Electronic version ONLY (pdf format)

(ISSN 0160-8843)

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The John Williams Index of Palaeopalynology

By Steve Stukins and Tom Hill
Natural History Museum (London)

Introduction

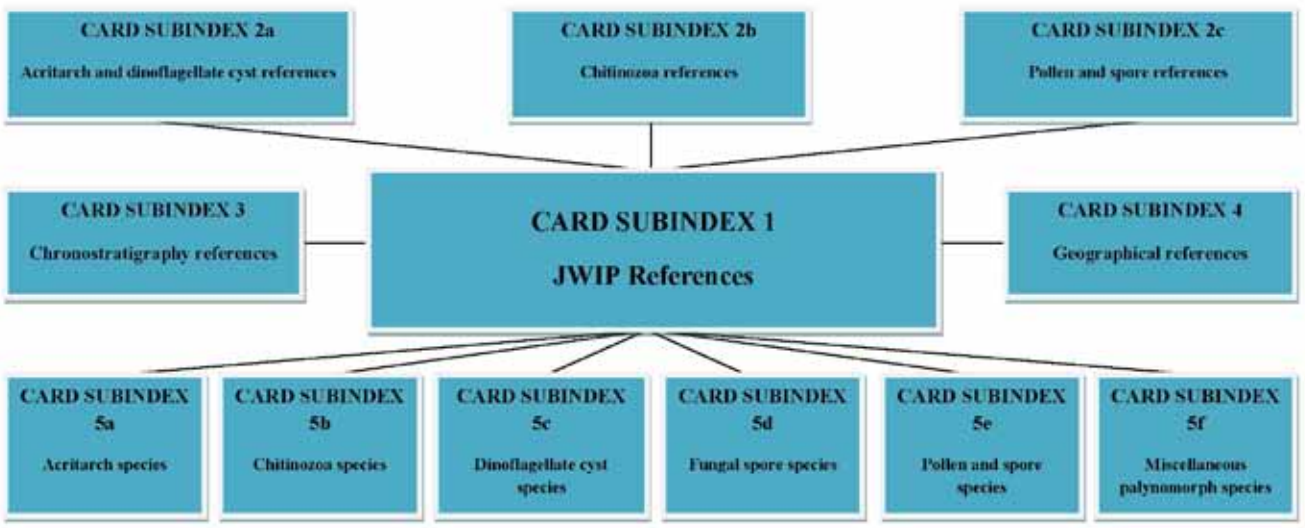
During the 45th annual meeting at the University of Kentucky in Lexington, a presentation was given by the Natural History Museum, London, on an extensive bibliographic card index known as the John Williams Index of Palaeopalynology (herein referred to as JWIP). Due to the potential value of the resource, the meeting organisers kindly offered to include an additional session that was dedicated to reviewing the card index and the associated future needs. Databases and card indexes of this type are invaluable to every palynologist as they are a sink for vast amounts of precise and catalogued information, much of which may otherwise be lost in today's minefield of online and published data.

This article hopes to raise awareness of this resource to those society members unable to attend the Kentucky meeting. In addition, we would like to also encourage discussion regarding JWIPs future format and maintenance, along with its potential digitisation and more importantly, how such an initiative may be funded.

What is JWIP?

JWIP is a card catalogue based around a central index of over 23,650 references (as of July 2012). The card catalogue was created in 1971 by John Williams (see photograph on page 17) who has been the sole contributor to this unique resource. JWIP includes approximately 190,000 cards containing information extracted from a thorough review of palaeopalynological papers, textbooks, selected conference abstract volumes, and grey literature (e.g. downloadable reports from the Internet, MSc and PhD theses) that have been critiqued by the author since creation of the catalogue some 40 years ago. JWIP evolves around a central publication reference card index (known as 'JWIP References'), from which each reference is then cross-referenced into separate card sub-indexes categorised by palynomorph group, taxa, geological period and geographical region. A summary of the structure of the card index can be seen below. For more information, a paper will shortly be published in the upcoming volume of *Palynology* (Riding et al., in press).

It is therefore possible for a JWIP user to undertake a search based on his or her specific needs. If for example a user was interested in individual taxa within a broader taxonomic study, the card index would include cards dedicated to each species, which will not only include a summary of all relevant synonyms, but also include a summary of every publication in which that species was encountered, along with the geographic and chronostratigraphic context of each cited reference. Alternatively, if the user was interested in learning more



about assemblage data from a specific time period or location, the card index provides an alternative route through which all the relevant references can be found.

Future Options

The index, in its current format, is available for use by those who visit the Natural History Museum, London. We feel however that this is a resource that should be made available to a wider audience. JWIP has the potential to be developed into a format which is both easy to use and accessible remotely. Such a format could also provide an avenue through which JWIP could be managed and indeed updated in the longer term, which is especially relevant if John decides to retire from maintaining this great work. The card index was scanned in 2011 into pdf files which have been formatted into a usable virtual card index. However, this does not make updating or managing the resource any easier. Ideally, the index should be made into a searchable database where a keyword search would highlight all relevant publications within seconds. The obvious conclusion therefore is to digitise the card index.

Requirements for Digitisation

To create a digital database suitable to cater for the wealth of information stored within this unique index, several factors need to be considered. The main consideration, above all, is the potential cost and subsequent funding acquisition. At the NHM we would prefer for such a digitisation project to be undertaken in-house by employing individuals with a suitable grasp of palynological systematics, with appropriate supervision being provided by ourselves (or potentially a similar organisation). This will however have its cost implications in comparison to sub-contracting the project to a 'production-line' style operation. Whilst this approach could result in the digitisation being much quicker and far cheaper, when taking into account the sheer size of the card index and the associated information it contains, quality assurance would be a serious issue.

The interest from the petroleum industry has identified one avenue of potential funding but discussions are at an early stage and indeed this may not supply all of the capital required. Grants from research councils and government bodies will also be explored. From the discussions at the annual meeting, the publication of the forthcoming paper in *Palynology* (Riding et al., in print) and this article, we hope to raise awareness within the community about JWIP and indeed encourage further discussions as to how best to move forward. Many people to date have kindly provided valuable information, guidance and advice on how to proceed. We would like to encourage others who have either been part of similar projects or know of funding sources which have the potential to support the re-formatting of this valuable palynological resource to please get in touch. And, if you're ever in London, please come and visit us and use JWIP at the Museum! If you would like to contact us about any aspect of JWIP and the topics raised in this article, please do not hesitate to get in touch: micropalaeontology@nhm.ac.uk

Riding, J., Pound, M., Hill, T., Stukins, S, Feist-Burkhardt, S. (in press) The John Williams Index of Palaeopalynology. *Palynology*

For info, contact:
Dr Steve Stukins or Dr Tom Hill
Department of Earth Sciences
The Natural History Museum
Cromwell Road
London
micropalaeontology@nhm.ac.uk

We had a blast!

Report on the 45th AASP – The Palynological Society Annual Meeting University of Kentucky Lexington, KY, U.S.A.

The 45th Annual Meeting of AASP – The Palynological Society was a joint meeting with the CIMP - Commission Internationale de la Microflore du Paléozoïque. The joint meeting took place at the William T. Young Library and Kentucky Geological Survey on the University of Kentucky Campus on July 21-25, 2012.

Our hosts were Dr. Cortland Eble of the University of Kentucky - Kentucky Geological Survey and Dr. Jen O'Keefe of Morehead State University. Sixty five participants registered for the 5 days of technical sessions and field trips, including 15 students and six guests.

The meeting began on Saturday with a pre-meeting field trip to the Natural Bridge State Resort Park and the Red River Gorge National Geological Area. This hiking trip took place on one of the coolest days we had all month and featured two long treks up to and across magnificent natural sandstone arches, as well as many impressive exposures of Mississippian-Pennsylvanian strata, and a little Kentucky history, with a visit to the Gladie Interpretive Center and one of the surviving settlers' log cabins in the Red River Gorge. Many of the participants continued on for southern barbeque in Lexington following the trip at a restaurant popularized during the mid-year board meeting back in April.

Sunday featured both a field trip to the world-famous Kentucky Horse Park, which recently hosted the World Equestrian Games for our participants, while the Outgoing Board of Directors met at the Kentucky Geological Survey.

Picture (top): The famed Sky Bridge in the Red River Gorge where the pre-meeting field trip took place.
Picture (above): Group enjoying the pre-meeting field trip at Natural Bridge State Resort Park.
Pictures (next page): Storage of bourbon at the Woodford distillery. Insert shows French colleagues Daniel Michoux and Sophie Warny during the ice breaker. Bottom insert highlight the group enjoying the visit of the distillery.

Following the meeting and field trip, we embarked on a bus trip across the rolling bluegrass to the Woodford Reserve Distillery for the Icebreaker, sponsored by Taylor & Francis, Hess, Shell and BP. The relaxed atmosphere, southern hospitality, distillery tours, fine gourmet foods, and bourbon-tasting set the stage for the rest of the meeting! Both appetizers and the buffet meal featured seasonal locally-grown produce and locally-raised meats, including lamb and fried green tomatoes. The bourbon-tasting was a unique experience that utilized a series of food tidbits to enhance the flavor of the bourbon. Pronouncements of the flavor changes (still tastes like turpentine!) prompted many laughs, as did the faces of bourbon neophytes! We were even serenaded by our gifted co-host Dr. Eble, when his Dixie band convinced him to join them for a set. Following a convivial evening on the patio and in the guest-house, we returned to Lexington looking forward to the formal sessions in the morning.

Formal sessions began on Monday morning in the William T. Young Library with a gradual march down the geologic column, beginning with a series of talks on palynology of lakes and transitioning to the terrestrial Holocene. The mid-morning break was bracketed by two important presentations on the utililty (or not!) of radiocarbon dating palynological samples (Haselwander et al.) and a novel approach to processing Quaternary peat samples (Valente). Neogene palynology continued until early afternoon, when we transitioned to the Paleogene with Kate Griener's presentation on shifts in relative humidity in the Late Eocene of Antarctica. The Mesozoic following the mid-afternoon coffee break. The afternoon session included a foray into the Paleoproterozic, with examples of new prokaryotic palynomorphs (Strother), and concluded with a talk on the John Williams' Index of Palaeopalynology (Hill et al.). This set the stage for an open discussion of the fate and need for preservation of the John Williams' Index, which took place at the Kentucky Geological Survey following the day's formal presentations. This discussion, led by Tom Hill and Steve Stukins of the Natural History Museum (London), highlighted several options for the preservation of this important resource. We look forward to hearing developments and participating in the search for funding as Tom and Steve continue working to support this resource. See the article on this topic on page 16-17.

Following a short break, the conference dinner kicked off Monday evening with drinks at the Hilary Boone Center, adjacent to the Kentucky Geological Survey. The gracious southern atmosphere continued the tone set by the Icebreaker, and many relaxed conversations took place. The meal again featured seasonal locally-grown produce and locally-raised meats, and introduced our guests to sweet corn pudding.

Following the formal talks, the CIMP Spore and Pollen Subcommission held a brief business meeting, while other participants enjoyed an extended coffee break that segued into the poster session and tours of Dr. Eble's palynology and organic petrography laboratory.

Following the end of formal sessions on Tuesday, a discussion was held at the Kentucky Geological Survey on the need for palynological data packs for TimeScale Creator. It was agreed that these need to be developed. Martin Farley is taking the lead on contacting the developers, and we hope to have further discussion on this topic and a firm direction forward developed during the 2012 meeting of the Geological Society of America.

The Tuesday oral technical session was a special CIMP-sponsored session on the Devonian-Carboniferous in honor of the fine work and long careers of Geoff Clayton and Ken Higgs. The session began with an introduction to the work, students, and a few funny anecdotes from their careers. The palynological "Gods of Olympus" thought they were getting off lightly from the mere mortals. Talks ranged the gamut of the Devonian-Carboniferous section, and included twelve presentations by the honorees, their friends, colleagues, and former students.

The AASP business luncheon took place midday on Tuesday at the Hilary Boone Center. Our sponsors Hess, BP, and Shell funded participation of all student registrants at this event. During the requisite business portion of the luncheon, an overview of the status of the society (doing well) and its finances (growing!) was given. Awards were given for the L.R. Wilson Best Student Presentation, Best Student Poster, and Best Overall Poster. The winner of the L.R. Wilson award was

Picture (left): Reed Wicander reading the wonderful (and often hillarious) letters from palynologists sharing life-long collaboration stories with Geoff Clayton and Ken Higgs.
Picture (inserts): Reed giving the Lifetime Achievement "Oscars" to Geoff and Ken.

Pictures (top to bottom):
- Gilda Lopes (Portugal) received the Best Student Poster award.
- Robbie Goodhue (U. of Dublin, Ireland) received the Best Overall Poster award.
- Kate Griener (CENEX, LSU, U.S.) received the L.R. Wilson Best Student Presentation award.
- Among others, David Pocknall (HESS), Katrin Ruckwied (Shell), and Dan Finucane (BP) represented the three companies that jointly sponsored the luncheon.

Kate Griener (*Combining standard palynology techniques with δ13C analysis of palynomorphs to understand shifts in relative humidity in the Late Eocene, Antarctica*), a PhD student from Louisiana State University, USA. The winner of the Best Student Poster was Gilda Lopes (*Provenance of the reworked Ordovician Palynomorphs in SDJ1 Borehole - Santa Susana Basin, Ossa Morena Zone, Portugal*), a PhD student from the University of Algarve, Portugal. Both students receive cash awards, two years membership in The Palynological Society, and a framed certificate. The winners of the Best Overall Poster award were Robbie Goodhue et. al. (*'Palynomorph Darkness Index' – a new method for determining thermal maturity*), from Trinity College, University of Dublin, Ireland.

Following awards, a presentation was made by Lanny Fisk and Joyce Lucas-Clark to advertise the 46th AASP meeting in San Francisco, CA! This meeting will be 30 years to the week of the last meeting in San Francisco and is a joint meeting with Dino10, CAP and NAMS. Highlights are to include field trips into wine country and a dinner cruise on the bay. The meeting will be contained in a single venue, one of the oldest surviving (and completely modernized) buildings in San Francisco and a former playground of the rich-and-famous – the Hotel Whitcomb.

Just as the honorees of the day were beginning to relax, Reed Wicander and Zélia Pereira sprang into action. CIMP toasted and well-and-truly roasted Geoff Clayton and Ken Higgs as only those who have long known, worked with, and cherished them can. Both were presented with Oscars for their "Lifetime Achievement" in the science of Palynology. Ken earned a wanted poster for fare-dodging, while Geoff was immortalized for finding the best outcrops for lounging. Who will ever forget "The Blow Up" in Bonn or Ken dangling a pregnant student off of a cliff face to collect samples?

The business luncheon concluded following much hilarity with the passing of the gavel and the Society's prized copy of Roberts' Rules of Order, signed by all previous presidents, from outgoing president Francisca Oboh-Ikuenobe to incoming president Ian Harding. Ian gave a brief address, encouraging us to continue the

support of the science and our students, and most importantly to introduce new students to the field.

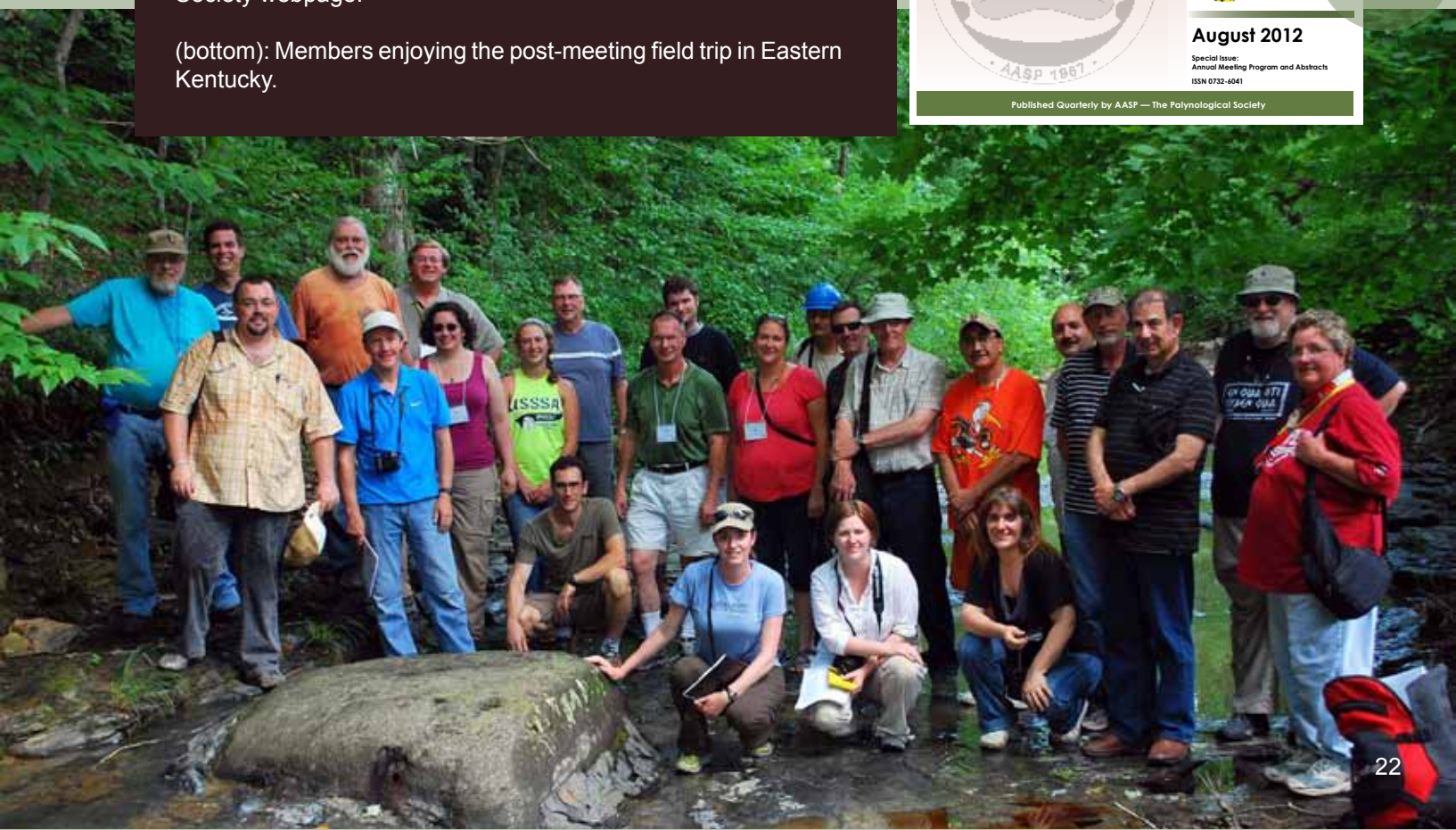
The conference concluded with a field trip to world-famous exposures of Devonian-Carboniferous strata in Eastern Kentucky, including the Silurian-Devonian boundary in Kentucky, the Mississippian-Pennsylvanian Boundary along I-64, the type locality of the 3-Lick Bed, and the glacial dropstone exposed in a creek bed in Logan's Hollow. Everyone enjoyed the post-meeting field trip and were delighted that the rain held off until the bus ride back. It has been several years since both meeting field trips remained dry!

Delegates left commenting that the bar has been set very high for the meeting in San Francisco and they are all looking forward to attending again next year!

Pictures (top): Board members thanking Jen O'Keefe and Cortland Eble for the organization of this meeting, and Joyce Lucas-Clarke and Lanny Fisk for their ongoing work to organize what is certain be another successful meeting (San Francisco 2013).

(right): Conference abstracts where published in a special issue of the AASP Newsletter (August 2012). It is available on the Society webpage.

(bottom): Members enjoying the post-meeting field trip in Eastern Kentucky.



ATTENTION STUDENTS!

2013 AASP Student Scholarships

An early reminder that the deadline for applications for the AASP Student Scholarship is:

March 31, 2013.

AASP Student Scholarships are awarded annually to support studies in palynology. These comprise two scholarships for US$2000 each. Ordinarily, the scholarships will be offered to beginning graduate students, but advanced undergraduates may also apply. The qualification of the student, the originality and imagination evident in the proposed project, and the likelihood of significant contribution to the science of palynology are factors that will be weighed in the selection of award winners. Previous winners of this award are eligible only if they are pursuing a different degree than the one they were pursuing when they received the previous award.

AASP Scholarships are available to all students of palynology in all countries and these students need not be members of AASP.

Application forms can be downloaded from our website at http://www.palynology.org/content/scholar.html

Sincerely,
Martin Farley

AASP supports students!

Early Announcement for Student Travel Support Other than the Annual Meeting

AASP has a new approach for student travel support. The Society will entertain applications for student travel support with a deadline of:

December 1, 2012

for 2013 meetings other than the Annual Meeting. This opportunity allows students to request support for any meeting at which they are presenting their palynological results.

The application should include the following:

1) one paragraph justification for the request with a description of the research to be presented (plus the abstract submitted for the presentation, if available)

2) outline of the requested amount and how the funds would be used;

3) applicant's email address;

4) all of these to be forwarded by the applicant's advisor who includes a brief explanation of how attendance at this particular meeting will benefit the student.

Application materials should be sent by email to the Chair of the AASP Awards Committee:

Martin Farley
mbfarley@sigmaxi.net

Geology, Old Main 213
University of North Carolina at Pembroke

There will be a separate opportunity for travel support to the Annual Meeting in San Francisco in 2013.

Do you want to:

- learn more about what's the latest in palynological research?

- converse with your Dino10, CAP, and NAMS colleagues?

- enjoy a dinner cruise around San Francisco bay and under the Golden Gate Bridge?

- walk through majestic redwood forest?

- visit the famous Napa Valley wine country?

Then...

MARK YOUR CALENDAR TODAY!

46th Annual Meeting
AASP – The Palynological Society
San Francisco, U.S.A.
October 20-24, 2013

Photo UCSF

46th Annual Meeting
AASP – The Palynological Society
San Francisco, U.S.A.
October 20-24, 2013

The 46th annual meeting of AASP – The Palynological Society (AASP-TPS) will be a joint meeting 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 at the Hotel Whitcomb, which has been chosen for its location, its historic elegance, its proximity to everything San Franciscan, and its excellent conference facilities. A large block of rooms has been reserved at the conference hotel, including a variety of comfortable, affordable individual rooms and suites. The hotel has guaranteed us the lowest rate available, not to exceed $159/room/night.

San Francisco (SF) is located on beautiful San Francisco Bay in coastal central California on the west coast of the United States. SF is a tourist destination recognized worldwide with such major attractions as the Golden Gate Bridge, Alcatraz Island, cable cars, beautiful beaches, redwood forests, Napa Valley wine country, etc. These popular features should help attract palynologists and their families from around the world to visit and maybe spend a few extra days vacationing in the Bay Area.

To take advantage of the excellent weather during early Fall, the meeting is scheduled for 20-24 October 2013 – 30 years to the week after the 16th annual meeting held in SF in 1983.

AGENDA

Sunday 20 October – pre-meeting field trip to Napa Valley, Muir Woods, Golden Gate Bridge, etc. Ice-Breaker/Welcoming Reception at the Hotel Whitcomb.
Monday 21 October – presentations/posters in the conference hotel. Walking tour of the San Francisco sights for spouses/guests. Conference Dinner aboard a cruise ship.
Tuesday 22 October – presentations/posters in the conference hotel. Business Luncheon at the conference hotel.
Wednesday 23 October – presentations/posters in the conference hotel. Paleoclimate Symposium.
Thursday 24 October – post-meeting coastal field trip from SF to either Sierra Nevada or Santa Cruz.
Save the date and join us in San Francisco 20-24 October 2013.

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

Photos Wiki Commons

RHODES UNIVERSITY
Where leaders learn

The Geology Department at Rhodes University hosts the

2012 Shell Lecture Series Workshop

Applied Biostratigraphy in Exploration and Production

November 12th – 16th 2012

Rhodes University, Grahamstown, South Africa

This Workshop is free for students and academics

The workshop covers all aspects of industrial biostratigraphy on an awareness level. The focus will be on palynomorphs as this is the fossil group applicable to the Karoo Basin (coal and hydrocarbons) as well as in the Cretaceous sediments offshore South Africa. The workshop will be composed of lectures, microscopic examinations and exercises.
Participants will get an overview of biostratigraphy and how it can be applied in the industry, which fossils to use in which stratigraphic interval and lithology, how to interpret age and palaeoenvironment of sediments based on the fossil content and how to avoid/recognize pit falls.

Audience: PhD and MSc students, researchers, as well as industry employees that are working in exploration and production (coal, hydrocarbons).

Lecturers

Dr Katrin D. Ruckwied works as Biostratigrapher for Shell. Before she joined Shell in Houston she worked 4 years in the Netherlands in the Shell Centre of Expertise. Her background is palynology of Palaeozoic and Mesozoic sediments. Besides other projects Katrin is specialized in the biostratigraphy of the Karoo Basin.

Dr Iain M. Prince is Principal Technical Expert for Biostratigraphy in Shell. Before joining Shell he was Biostratigraphy Advisor in Statoil and has worked in NW Europe, West Africa, South America, Gulf of Mexico and onshore USA. Iain's background is palynology of Cenozoic and Mesozoic sediments.

Prof Annette E. Götz works on sedimentary basins world wide, applying palynofacies analysis to high-resolution cyclo- and sequence stratigraphy. From 2012 she joined Rhodes University as the Geology Department's sedimentologist. Her recent research focusses on coal deposits as palaeoclimate archives.

Contact, further information and registration: Prof Annette E. Götz, Rhodes University, Email: a.gotz@ru.ac.za





SHORT COURSE!

The course (which is taught in English) will examine the character of sedimentary organic matter (SOM) and palynology and its various uses in palaeoenvironment, palaeoclimatology and fossil fuel research (including source rock and shale gas evolution). Several case studies will show how sedimentary organic matter can be used to understand key Phanerozoic events, such as the Carboniferous-Permian glaciation and the Palaeocene-Eocene Thermal Maximum (PETM). Case studies will also show how the analysis of palynology and SOM allow understanding of source rock generation for conventional hydrocarbons, as well as aspects of the primary controls on unconventional shale gas prospectivity.

Sedimentary organic matter: characterization and applications

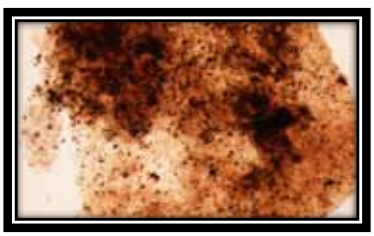
UNIVERSITÀ DEGLI STUDI DI MILANO

SCUOLA di DOTTORATO
"Terra, Ambiente, Biodiversità"
Corso di Dottorato in Scienze della Terra

A short course at the University of Milan, **19-21 September 2012**

Cost: Euros 150 (accommodation and meals not included)

Laminations at the PETM



Carboniferous AOM

PROGRAM

- **Preservation and types of sedimentary organic matter (SOM)**
- **SOM: palaeoenvironments and palaeoclimatology through geological time**
- **SOM, palynology and hydrocarbons: source rocks, hydrocarbon generation**
- **Unconventional hydrocarbons: shale gas and coal bed methane**

Course Tutor: Prof Mike Stephenson
Head of Energy Science, British Geological Survey
Editor-in-Chief *Review of Palaeobotany and Palynology*
For more information contact Mike Stephenson: mhste@bgs.ac.uk

Microfossils III: Geologic Problem Solving with Microfossils
March 10-13, 2013
University of Houston
Houston, TX USA

The **NAMS** Section of SEPM announces the 3rd ***Geological Problem Solving with Microfossil*s** conference (a.k.a., Microfossils III) that will be held March 10-13, 2013 at the University of Houston in Houston, Texas. The mission of Microfossils III is to bring together a diverse range of geoscientists to focus on the use of microfossil disciplines to solve geologic problems.

The conference activities include: oral and poster technical presentations, a regional pre-meeting field trip, post-meeting short courses, ice breaker, and plenary dinner at the Houston Museum of Natural Science. Tentative session themes include:

- The Microfossil record of Major Oceanic Events
- Microfossils and Unconventional Resources: The New Frontier
- High-resolution Biostratigraphy, Chronostratigraphy, and Geochronology
- Reconstructing Past Environments Using Microfossils
- Paralic and Lacustrine Micropaleontology
- Microfossils and Biofacies Analysis: Applications and Challenges
- Paleoclimate, Paleooceanography, and Relative Sea-level Change
- Taxonomy, Phylogeny, and Evolution
- New Technologies and Techniques in Microfossil Studies

Abstract submittal deadline: November 11, 2012

For more information, visit **http://www.sepm.org/nams** or contact **Dr. Mark Leckie** at:

MLeckie@geo.umass.edu

2012 Geological Society of America Annual Meeting, November 4-7, 2012, Charlotte, North Carolina, USA (http://www.geosociety.org/meetings/2012/techProg.htm)

Abstracts for 2012 GSA Annual meeting are called for the following session on ***quantitative Cenozoic terrestrial climate reconstructions***.

T125. Quantitative Cenozoic Terrestrial Climate Reconstructions in the Northern Hemisphere: Evidence from Paleo-Proxies and Beyond

Rationale:
Recent advances in quantitative Cenozoic paleoclimate reconstructions have greatly improved our understanding on the climate change in terrestrial environments in the Northern Hemisphere, thanks for the technical improvements using paleo-proxies (fossils) and Earth System modelling. Progress has been made largely in regional scales, and most recently, data cover partly allows for a continent-wide study and interpretation of paleoclimate and vegetation patterns, e.g. between single regions of Eurasia covered by the NECLIME – Neogene Climate of Eurasia network. To get an insight on the Cenozoic climate change in a larger scale and/or bring multiple results from different fields, we invite contributions based on paleo-proxies and modelling experiment dealing with Cenozoic terrestrial climates in the Northern Hemisphere. This session is sponsored by the Paleontological Society.

Scientific Categories:
Paleoclimatology/Paleoceanography, Paleontology, Paleoecology/Taphonomy, Paleontology, Diversity, Extinction, Origination

Description:
The session will address the Cenozoic terrestrial climate reconstructions in the Northern Hemisphere by integrating evidence from various paleo-proxies and modeling experiments.

Contacts

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Fax Number: 49-228-739037
Email: utescher@geo.uni-bonn.de

The Micropalaeontological Society

http://www.tmsoc.org

Annual General Meeting 2012

The TMS are delighted to announce that the 2012 AGM will be held at the BGS in Nottingham and take place over 3 days!

Proposed schedule:

***Sunday 11th*: Field trip to Charnwood Forest**
Participants will be able to examine Late Precambrian metasediments with an Ediacara biota (*Charnia* etc.), intrusive igneous rocks and Quaternary glaciogenic sediments.

***Monday 12th*: 'Warm Worlds' symposium and Society AGM**
The day will include a tour of the BGS, guest lectures on the theme 'Warm Worlds', followed by Society business. The evening will conclude with the wine reception and conference dinner.

***Tuesday 13th*: Open talks on micropalaeontology and keynote Industrial Lecture**
The day will begin with a Keynote Industrial Lecture, followed by an open poster and presentation session. We welcome the submission of abstracts for posters and short (10min) presentations across all aspects of the discipline, including biostratigraphy, palaeoecology, palaeobiology, palaeoceanography, palaeolimnology, palaeoclimatology, molecular evolution and systematics. We particularly encourage talks and posters from doctoral students and early career scientists.

Poster/Presentation Abstract deadline 30th September 2012. Further information regarding conference fees, accommodation options and transport etc. can be found on the TMS website

For further information please contact:

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British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

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