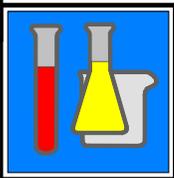




THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

Vol. 26, No. 4

December, 2009

ISSN 0743-3816

**27th TSOP
ANNUAL MEETING**

12-16 September, 2010



**Denver, Colorado
USA**

27th Annual TSOP Meeting
September 12-16, 2010
Denver, Colorado USA
See pages 10-11

Conference Theme:

Advances in Organic Petrology

Meeting Webpage:

www.tsop.org/2010Denver

Call for papers

Submit abstracts by **April 19, 2010**

Conference Topics will include:

- **Oil Shale and Gas Shale**
- **Petroleum Geology and Geochemistry**
- **Coal Resources and Utilization**
- **New Techniques and Applications**

PRELIMINARY MEETING SCHEDULE:

- Sat/Sun, Sept 11, 12: Arrival Denver, Colorado @ Sheraton Denver West Hotel, Lakewood, CO.
- Sunday, September 12: Registration; Icebreaker; Short course - *Basics of Organic Petrography*.
- Monday, September 13: Registration; Technical Sessions; TSOP Business Lunch; Outgoing Council Meeting.
- Tuesday, September 14: Technical Sessions; Conference Dinner; Incoming Council Meeting.
- Wednesday, September 15: Field Trip: Western Colorado - Piceance Basin, Mahogany Oil Shale with overnight stay in western CO.
- Thursday, September 16: Return from Field Trip

The Society for Organic Petrology

TSOP is a society for scientists and engineers involved with coal petrology, kerogen petrology, organic geochemistry and related disciplines. The Society organizes an annual technical meeting, other meetings, and field trips; sponsors research projects; provides funding for graduate students; and publishes a web site, this quarterly Newsletter, a membership directory, annual meeting program and abstracts, and special publications.

Members may elect not to receive the printed Newsletter by marking their dues forms or by contacting the Editor. This choice may also be reversed at any time, or specific printed Newsletters may be requested.

Members are eligible for **discounted subscriptions** to the Elsevier journals *International Journal of Coal Geology* and *Review of Paleobotany and Palynology*. Subscribe by checking the box on your dues form, or using the form at www.tsop.org. You will then be billed by Elsevier. Contact Paul Hackley <phackley@usgs.gov> if you do not receive a bill or have any other problems with a subscription. For the best prices on subscriptions to **AGI's Geotimes**, see their web site at www.geotimes.org/current

TSOP is a Member Society of AGI and an AAPG Associated Society.

The Society for Organic Petrology Newsletter

ISSN 0743-3816 published quarterly

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DEADLINES: March: March 5, 2010
June: June 5, 2010
September: Sept. 5, 2010
December: Dec. 5, 2010

GUIDELINES:

The TSOP Newsletter welcomes contributions from members and non-members alike. Readers are invited to submit items pertinent to TSOP members' fields of study. These might include meeting reports and reviews, book reviews, short technical contributions including those on geologic localities or laboratory methods, as well as creative works such as poems, cartoons and works of fiction. Color illustrations may be possible in some issues.

Please do not embed **graphics** or **photos** in word processor files. You can provide photos or other graphics as slides or prints (which will be returned after being scanned) or as digital files (300 dpi preferred) via email or on cd or dvd. Low resolution images are discouraged as they cannot be reproduced well in print. **Text** is preferred in Microsoft Word, RTF or plain text formats.

Contact the Editor:

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Address Changes

Please report any changes in address or contact information to:

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956 National Center
Reston, VA 20192 USA
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Society Membership

The TSOP Newsletter (ISSN-0743-3816) is published quarterly by The Society for Organic Petrology and is distributed to all Society members as a benefit of membership. Membership in the Society is open to all individuals involved in the fields of organic petrology and organic geochemistry. For more information on membership and Society activities, please see:

www.tsop.org

For purposes of registration of the TSOP Newsletter, a permanent address is: The Society for Organic Petrology, c/o American Geological Institute, 4220 King St., Alexandria, VA 22302-1520 USA

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Officers and Committee Chairs are reminded to provide their records to Ken Kuehn, **TSOP Archivist**. Please contact Ken at kenneth.kuehn@wku.edu for further information.

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Industrial Supporters

On behalf of TSOP Council we would like to say thank you to the following Industrial Supporters for their consistent support of the Society and its goals.

- Joseph Curiale, Chevron.
- Bob Cluff, President, The Discovery Group, Inc.

President's Letter

Dear TSOP Members,

As I extend my sincere thanks to outgoing President Leslie Rupert and Council member Sharon Swanson for their dedicated efforts on behalf of the success of TSOP, I would like to express how honored I am to be working for you and the Society. I never fail to be awed by, and impressed with, the dedication and determination of the Council members, committee chairs and members who make this society function. I am especially looking forward to working with our new Vice President, Isabel Suarez-Ruiz, and Councilor Agnieszka Drobniak. I am also honored to be in company of our past presidents who kindly agreed to lead several TSOP committees and always generously pass their experience and provide great advice

The recent Joint 26th TSOP-ICCP meeting in Gramado, Brazil was a great success. The scientific content of presentations and discussions in TSOP's technical session was, as always, sophisticated and inspiring. Our heartfelt thanks go to the chair, Wolfgang Kalkreuth and the members of the Organizing Committee.

For the first time, TSOP presented the Ralph Gray Awards for the best publications in the field of Organic Petrology (as announced in the previous issue). James Hower kindly agreed to chair the Award Committee, which also includes this year's awardee, Isabel Suarez-Ruiz. We were also glad to host the Peter Hacquebard Award for lifetime achievement at a ceremony by our colleagues at the Canadian Society for Coal Science and Organic Petrology (CSCOP). Wolfgang Kalkreuth received CSCOP's highest award for his profound and lasting influence on the field of organic petrology in Canada, from David Marchioni (CSCOP award committee chair) at our business lunch.

In other news, TSOP has voted to begin the new Incorporation Liaison Committee. This committee will be dedicated to the Society's ongoing affairs related to corporation and tax status, as well as provide a liaison with the legal advisor in this regard. Sharon Swanson kindly accepted to lead this committee and to report to the Council on a regular basis. Thomas Gentzis has kindly agreed to chair the Promotion of TSOP and Coal Science/ Outreach. Other committee chairs kindly accepted to serve for another term.

TSOP's annual meeting is returning to the United States in 2010. We would like to provide our full support to Mark Pawlewicz, chair of the 2010 TSOP Denver, Colorado meeting, to ensure another successful gathering. Fundraising to cover the costs of organizing this meeting is something we would particularly appreciate your support and advice for.

Finally, I would like to thank Mike Avery who has been working hard to establish the website secured page. This is a great addition to the website, and an important feature for the benefit of the members. As I write this, I am sending my best wishes to Mike for a speedy recovery from recent surgery.

Best wishes to you and your families for an enjoyable holiday season. Please do not hesitate to contact me with questions, suggestions, or advice.

Hamed Sanei
TSOP President



* * * * *

CATCH UP ON YOUR TSOP DUES!

Are your dues paid up? TSOP funding is dependent upon members' dues, so please check to ensure you are up to date. If you are not sure what your dues status is, please contact Mike Avery at mavery@nrcan.gc.ca. Don't forget, members can elect to pay several years in advance by taking advantage of the **5 years for the price of 4** discount.

* * * * *

Website News

Work on the new web site continues; the general structure, menus, color schemes, and most of the content (transferred from the existing site) are in place. Fine-tuning those aspects, creating the rest of the content, and finding and integrating illustrations is continuing, and the optimistic view is that we are close to completion.

If you would like to participate and have not been in contact with Dave Glick recently, please contact him at [<webmaster@tsop.org>](mailto:webmaster@tsop.org).

In particular, help is desired with photograph galleries, Cascading Style Sheet coding, and setting up and running discussion forums within the site. At Paul Hackley's suggestion, the new site will include an "Ask a Petrologist" feature for questions related to organic petrology or geochemistry. Other suggestions are welcomed.

For the current site, and continuing when the new site becomes active, help is wanted for updating and maintaining the section for the 2010 Denver meeting, the section of links to related sites, and the Calendar of Events.

The annual update of the very popular section of literature references has been provided and should be completed on the current website by the time this Newsletter is published. Mike Avery's implementation of the members-only section is described in another article. These and the other aspects of the website should be beneficial to members and the scientific community.

David Glick
Internet Committee Chair

* * * * *

Members-only Website Update

On October 30, 2009 all TSOP members with an email address on file were sent a note inviting them to set up their secure login account. The reasons for the initiative were given in the June 2009 TSOP newsletter article '*Cost Savings and Website Security*' (pg 4). To have access to a secure website section brings the Society into the forefront of the use of modern worldwide web technology to advance our goals and provide additional benefits to our membership. One of the major advantages is in cost savings that allow us to keep our membership dues at a very reasonable level and still fund student research awards and other activities.

Many thanks to the over thirty-six percent of the membership that have taken the time to activate their accounts. These members know that besides being able to download the pdf versions of the 2009 TSOP Membership Directory, they now have easy access to a searchable online directory which is updated as soon as members inform us of changes to their contact information. Also, using the 'My Information' link they

can view extra information from their own record such as their **dues expiry date**, their current Newsletter delivery preference and more.

If you have not received the invitation email then please inform me by sending email to silo.admin@tsop.org or mavery@nrcan.gc.ca. You can also go to the 'Members-only' welcome page via the easy link on TSOP's mainpage [www.tsop.org] or directly at [www.tsop.org/mbrsonly]. You are strongly encouraged to make it a priority bookmark or favorite.

We are working to provide new secure content like access to Programs and Abstracts from Annual Meetings. Tools are also being developed to allow members to edit their own contact information and perform other similar tasks to help keep their information current. Again, your suggestions for how to make use of the secure site are welcome.

Mike Avery
TSOP Treasurer and secure website manager

* * * * *

New TSOP Members

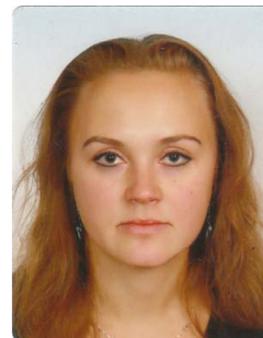
Stavros Kalaitzidis



Dr. Kalaitzidis has worked on coal and peat petrography since 1997, earning his PhD in 2007 from the University of Patras, Greece, under the supervision of Prof. Kimon Christanis. He has authored over twenty publications in the field of peat/coal geology and is a member of ICCP Council. At the moment he is employed by BMA in Australia.

Petra Matysova

Ms. Matysova completed her MSc studies in Environmental Geochemistry in 2006 at Charles University in Prague. Currently, she is mainly engaged in an interdisciplinary



project of permineralized and humified fossil woods using imaging and analytical instrumental techniques. She is pursuing her PhD at Faculty of Science of Charles University in Prague and works full time for the Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic.

Ricardo Ruiz Monroy

Mr. Monroy received his BSc in chemistry in 2003 for a study assessing the utility of the Fehling Test at the National Pedagogical University, Colombia. Currently, he is pursuing a MSc study investigating dispersed organic matter in hydrocarbon source rocks at the National University in Bogota, Colombia, under the supervision of Astrid Blandon.



Arndt Schimmelmann

Dr. Schimmelmann worked for 8 years at Scripps Institution of Oceanography and for the past 16 years at Indiana University. During the past 10 years, he has been using light stable isotopes of hydrogen, carbon and nitrogen in studies of kerogen, coal, crude oil, coalbed gas, and modern organic materials. He received his PhD from UCLA in 1985 for studies of light stable isotopes in chitin.



Alpana Singh

Dr. Singh completed her PhD in paleobotany in 1989 from Kanpur University, India, and works in the Birbal Sahni Institute of Paleobotany, Lucknow. She has twenty-nine years of research experience in organic petrology, primarily in investigations of the petrology of Indian lignite and coal as well as in studies of Tertiary palynology and dispersed organic matter.



Yuzhuang Sun

Prof. Dr. Yuzhuang Sun from Shandong Province, China, works as a professor in coal petrography and organic geochemistry at the Hebei University of Engineering, China. He received his BS in 1982 from the Shandong Mining Institute and then worked as a lecturer at the Hebei Coal Mining and Civil Engineering College until 1991. Following MSc and PhD studies in Germany and two postdoctoral appointments, Prof. Sun returned to Hebei University in 2000. He has authored more than 80 publications in international journals and conferences.



Lopo Vasconcelos

Prof. Lopo Vasconcelos completed his PhD in Moatize coal properties at the Univ. of Porto in 1995. Since that time he has taught coal studies at the University Eduardo Mondlane in Maputo, Mozambique. Prof. Vasconcelos currently serves as ICCP Vice-President and has compiled the database Temporal Variation of Coals, containing over 9,000 petrographic coal analyses. He also serves as Vice-President of the Geological Society of Africa for the Southern Africa Region.



Olusola Raheemat Yusuf

Ms. Yusuf received her BSc in Geology in 2003 from Ahmadu Bello University with a senior thesis investigating the geology of the Bima Sandstone-Benue Trough. Following graduation she was employed with International Energy Services for 4 years. She is currently a postgraduate student of the University of Ibadan pursuing an MSc degree in Petroleum Geology and Sedimentology under the supervision of Dr. Ehinola and Prof Olayinka. Her proposed thesis is titled the occurrence and influence of authigenic clays in reservoir rocks of Agbada Formation, Niger Delta.



Lei Zhao

Ms. Zhao holds an MSc degree from the China University of Mining and Technology in Beijing. Currently she is pursuing PhD studies in the mineralogy and geochemistry of coal at the University of New South Wales, Australia.



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TSOP 2009 Outgoing (September 22) and Incoming (September 25) Council Annual Meeting SHORT Minutes, 2009

Location: Di Cavalcanti Room of the Centro de Eventos, campus of FAURGS in Gramado, Brazil

Attendance – Outgoing, September 22: Shifeng Dai (2012 Meeting Chair), Lei Zhao (guest of Shifeng Dai and participant in 2012 meeting organizing committee) Hamed Sanei (Vice President), Leslie Ruppert (President), Mark Pawlewicz (2010 Meeting Chair), Peter Crosdale (Councilor), Colin Ward (Research Committee Chair), Rachel Walker (Editor), Wolfgang Kalkreuth (2009 Meeting Chair), Isabel Suarez-Ruiz (2008 Meeting Chair), Sharon Swanson (Councilor), Mike Avery (Treasurer), Paul Hackley (Secretary). **Incoming, September 25:** Hamed Sanei (President), Jesse Carrie (Student Activities Committee Chair), Mark Pawlewicz (2010 Meeting Chair), Colin Ward (Research Committee Chair), Rachel Walker (Editor), Isabel Suarez-Ruiz (Vice-President and 2008 Meeting Chair), Sharon Swanson (Past-Councilor), Mike Avery (Treasurer), Paul Hackley (Secretary).

Regrets: Prasanta Mukhopadhyay (AGI Liaison Committee), Agneiszka Drobniak (2009-2011 Councilor).

1. Call to Order: The outgoing meeting was begun at 19:15 local time, September 22, and the incoming meeting was called to order at 18:20, September 25. The synopsis below captures the pertinent details of meeting, officer, and committee chair reports from both the outgoing and incoming meetings.

2. Officer’s Reports

A. President’s Report: Outgoing President Jingle Ruppert acknowledged Council for their efforts and expressed a special gratitude to Peter Warwick for stepping up to fill in as Chair of the Nominating Committee.

- B. Vice President’s Report:** Hamed Sanei. No nominations were received for the Castaño Award. Incoming President Sanei acknowledged the service of outgoing President Jingle Ruppert over the past two years.
- C. Treasurer’s Report:** Mike Avery. A financial summary was presented, including the new and substantial income from the arrangement made with AAPG Datapages to make TSOP abstracts available from the internet. The budget proposal for 2009-2010 was discussed and approved with minor changes.
- D. Secretary’s Report:** Paul Hackley. The Secretary presented a synopsis of Society business conducted via email since the 2009 mid-year meeting.
- E. Editor’s Report:** Rachel Walker. The Editor presented the much lower costs for Newsletter printing as a result of the smaller print run and associated switch to volunteer production (Dave Glick). Mailing costs still are an issue and another appeal was made at the TSOP business lunch to encourage members to migrate to enews download from the internet.

3. Annual Meeting Planning Committees

- A. 2008 Oveido Meeting:** Isabel Suarez-Ruiz. The financial accounting for the 2008 Annual meeting concluded with a net 168 Euro loss overall. Selected papers derived from the conference presentations (oral and posters) are in preparation for a special issue of the International Journal of Coal Geology that will be published early next year.
- B. 2009 Porto Alegre/Gramado Meeting:** Wolfgang Kalkreuth. The meeting committee was working well with the assistance of Bocker Turismo and Office Marketing in support of the approximately 100 registered attendees. The excellent palynology short course presented by Prof. João Graciano was a meeting highlight and featured a new Zeiss microscope on site.
- C. 2010 Denver Meeting:** Mark Pawlewicz. The 2010 meeting in Denver will run September 12-16, and include a ½ day pre-meeting short course on the basics of organic petrology and an overnight post-meeting field trip to the Colorado western slope to visit the Mahogany Ledge of the Green River oil shale.
- D. 2011 Halifax Meeting:** Mike Avery. The 2011 meeting is planned for July and will include a focus on oil and gas geochemistry. Mike and Dr.

Mukhopadhyay are negotiating with local hotels to find a venue.

- E. **2012 Beijing Meeting:** Shifeng Dai. Plans are developing for the 2012 meeting in Beijing. The meeting will run separately from the ICCP meeting, which will also occur in Beijing before TSOP meeting. The individual meetings will be separated by a 3-day field trip, and registrations will be separate for each of the three events.

4. Committee Reports

- A. **Research Committee:** Colin Ward. Ten applications were received for the Spackman Award, a very encouraging number. Thanks to donations from Robert Cluff, Discovery Group, and Joe Curiale, Chevron, the committee was able to make two awards (one outright and one shared) in 2009.
- B. **Internet:** Mike Avery/Dave Glick. Work is moving forward on the new TSOP webpages and the secure portion should be accessible soon to members to download the 2009 TSOP Directory.

5. Other Business

- A. **TSOP Tax Status Update:** Sharon Swanson. We will receive a response from the IRS by mid-October (at the earliest) concerning our application for the 501(c)(3) tax status. Additional efforts are needed for TSOP to keep robust financial records, in particular for annual meetings, in the event of being audited by the IRS.
- B. **New Awards:** Isabel Suarez-Ruiz was presented with the first Ralph Gray Award for a joint paper in the IJCG and also a second award for the book Applied Coal Petrology, edited by herself and Jack Crelling.

6. **Adjourn.** The September 22 meeting was adjourned at 21:00 local time and the September 25 meeting was adjourned at 19:50 local time.

Respectfully Submitted,

Paul Hackley – TSOP Secretary

* * * * *

News from ASTM

ASTM subcommittee D05.28 for the petrographic analysis of coal and coke met via teleconference May 12, 2009, and during ASTM D05 committee week October 18-21 at the Hyatt Regency, Atlanta, Georgia. Subcommittee D05.28 is charged with maintaining six ASTM consensus standards.

These include three *test methods* which produce a numerical result: 1) vitrinite reflectance of coal, 2) maceral composition of coal, and 3) textural components of coke. Also included within the purview of D05.28 are three *practices* (instructions for an operation that does not produce a numerical result). The practices are for: 1) preparing coal samples for microscopical analysis, 2) preparing coke samples for microscopical analysis, and 3) etching of coal samples.

Business before the subcommittee included the addition of a precision and bias statement to the coal maceral analysis standard D2799. This new statement lists repeatability and reproducibility statistics based on data from past commercial round robin exercises organized by D05.28 members. The 2799 standard also will refer to an online photomicrograph atlas available from http://energy.er.usgs.gov/coal_studies/organic_petrology/photo_atlas.html for pictures of bituminous coal macerals.

Standards D2798 for coal vitrinite reflectance analysis and D121 for terminology will no longer refer to the presence of different types of vitrinite as analysts following D2798 include all vitrinite in the measurement for coal rank.

Work to create a new ASTM standard for dispersed vitrinite reflectance analysis is ongoing and the task group responsible for this effort includes members of TSOP and the ICCP. An ASTM news update describing this work is available from http://www.astm.org/SNEWS/SO_2009/d0528_so09.html.

ASTM D05.28 members Louis Giroux and Kevin DeVanney are soliciting input from TSOP members who would be interested in participating in a commercial coke petrography interlaboratory program. Participants in this round robin exercise would be required to follow ASTM D5061 for analysis of the textural components of coke. TSOP members who are interested in participating are encouraged to contact Kevin DeVanney (kevin_coalpetr@windstream.net). The cost to participate will be determined by the number of participating laboratories, sample preparation, and shipping location.

Membership in ASTM subcommittee D05.28 (currently twenty-four) is dominated by the metallurgical coal industry, including representatives from coal and steel companies, service laboratories, and consultancies. A small minority of the subcommittee consists of representatives from governmental organizations and academia. TSOP members who have an interest and would like to contribute to consensus standards development within subcommittee D05.28 are encouraged to contact Paul Hackley (phackley@usgs.gov) for additional information.

* * * * *

**Laudation for the Society for Organic Petrology
John Castaño Honorary Membership Award**

Professor Jin Kuili

2007



The Society for Organic Petrology (TSOP) selected Professor Jin Kuili to receive the 2007 John Castaño Honorary Membership Award. The Castaño Award is the highest honor in the society and is presented in recognition of profound influence upon the field of organic petrology.

Prof. Jin was born in Liaoning Province, China on April 26, 1926 now at the age of 83 years. He first learned electrical engineering and German of Tongji University in Shanghai, then transferred to Peking University and graduated from her geological department in 1950. In those days Chinese graduate schools were ceased. So he was assigned to work at geological department of China University of Mining and Technology. Through more than 50 years outstanding work, he became a famous coal geological and organic petrological professor in China. In addition to his regular job, he had done for judge of national committee of resources and or a council of Chinese geological Society for several years each in front and behind “Culture Revolution” time.

In early 1950s he only worked on coal petrology, till early 1980s, because of requirement for national oil and gas exploration, therefore, he not only used microscopy but also began with geochemistry and modern measurement upon source rocks study. He introduced organic petrology in many occasions and jointed activities of key oil-gas projects of national five-year plans since the sixth, and ran a microscopic photometry training class for academic circles (1984), in year 1986, for petroleum geology training class he presented his printed teaching materials of organic petrology.

Professor Jin is a founder of modern organic petrology research in China, with innovative publications in both the national and international literature going back over more than 50 years. His work includes fundamental studies of coal / organic petrology and coal-bearing successions / oil-gas fields in regions throughout China, as well as classification of organic matter, coal metamorphism, new techniques in coal /

organic petrology and the application of organic petrology to both coal utilization and petroleum studies.

He is highly regarded as a teacher of coal geology in China, and has successfully supervised more than 50 postgraduate research students. He has published more than 200 papers in the national and international literature, and has received numerous national awards for his scientific achievements. Professor Jin has acted as convener for two major international coal / organic petrology meetings in Beijing: the ICCP meeting in 1987 and the 23rd TSOP meeting in 2006, which was one of the most successful recent TSOP meetings.

Finally, apart from his scientific knowledge, expressed through numerous papers and oral presentations, Professor Jin is beloved for his enthusiasm, dedication, and depth of knowledge in geology and organic petrology. TSOP honors Professor Jin’s significant contributions in research and education, both within China and on the international stage, over a period of more than 50 years.

His detailed career may see “Florilegium of Professor Jin Kuili’s Publications on coal & Organic Petrology (Eds: Qin Yong, Zhao Changyi, Zhang Wanhong)” together with “A Review of Research and Progress on Organic Petrology in China (by Jin Kuili)”, all dedicated to the 23rd annual meeting of the Society for Organic Petrology.



Professor Kuili Jin’s Response

Dear TSOP colleagues,

I have the honour in acknowledging the receipt of the 2007 Castaño Award. Let me express my heartfelt thanks to council members and society colleagues.

The news that I won the 2007 Castaño Award had been reported by China Newspaper of Education over the country on the 14th Dec. 2007. At the opening ceremony of the 11th National Organic Geochemistry Conference on 10th Oct. 2007, President Liang Digang also informed the 300 participants of the award. Liang and Qiao, President of China University of Mining and Technology (Beijing) expressed “This announcement is the honour of conference”.

At this time even though I retired, I work within my capacity. I praise the old Chinese saying – fight as long as one has a breath in one’s body. I would like to encourage myself and will support TSOP’s hard work.

Kuili Jin

27TH TSOP ANNUAL MEETING 2010

September 12-16, 2010

Denver, Colorado

ORGANISING COMMITTEE:

Mark Pawlewicz USGS pawlewicz@usgs.gov
Paul Hackley USGS phackley@usgs.gov
Mike Lewan USGS
Ron Johnson USGS (oil shale field trip)

Meeting theme: *Advances in Organic Petrology*

Conference Topics will include:

- Oil Shale and Gas Shale
- Petroleum Geology and Geochemistry
- Coal Resources and Utilization
- New Techniques and Applications

Call for papers: Submit abstracts by **April 19, 2010**

Submit via email to: Mark Pawlewicz pawlewicz@usgs.gov
and/or Paul Hackley phackley@usgs.gov

Please submit abstracts up to 250 words in Microsoft Word. Indicate your preference for oral or poster presentations. Personal contact information required.

Following review and notification of acceptance, authors will be invited to submit their papers for a special issue of the International Journal of Coal Geology.

REGISTRATION, CONFERENCE DINNER AND FIELD TRIP FEES:

Includes participation in all TSOP sessions, ice breaker reception, business luncheon and coffee breaks.

Registration costs: TBA

Short course: TBA

Conference Dinner: TBA

Field Trips: TBA

Payment for all events to be in cash at the time of registration.

Meeting, registration and abstract submittal information available at: www.tsop.org/2010Denver/

ACCOMODATIONS:

The meeting will be held at the Sheraton Denver West Hotel. This hotel is located in Lakewood, Colorado, west of Denver. It is about 50km (30 miles) from Denver International Airport easily accessed by major highways. Attendees should plan to stay at this address.

For hotel information please see:

www.starwoodhotels.com/sheraton/search/hotel_detail.html?propertyID=883

In making reservations, please indicate your participation in the TSOP meeting.

PRELIMINARY MEETING SCHEDULE:

- Sat/Sun, Sept 11, 12: Arrival Denver, Colorado @ Sheraton Denver West Hotel, Lakewood, CO
- Sunday, September 12: Registration; Icebreaker; Short course - *Basics of Organic Petrography*
- Monday, September 13: Registration; Technical Sessions; TSOP Business Lunch; Outgoing Council Meeting
- Tuesday, September 14: Technical Sessions; Conference Dinner; Incoming Council Meeting
- Wednesday, September 15: Field Trip: Western Colorado - Piceance Basin, Mahogany Oil Shale with overnight stay in western CO
- Thursday, September 16: Return from Field Trip

Short course: *Basics of Organic Petrography*: From sample preparation to reflectance data acquisition; microscope equipment to data quality and accreditation. Half day.

Field Trip to western Colorado: A special overnight trip to the Piceance Basin near Rifle, Colorado. This will be conducted as a multiple stop bus trip to various vantage points to see the Mahogany Ledge Formation, a significant oil shale deposit in an open country setting.

LOCAL FIELD TRIPS TO BE OFFERED:

- Denver Museum of Natural History (Half day).
- CO School of Mines Gem and Mineral Museum: Museum visit and local geology trail. Half day.
- Dinosaur Ridge: walk along roadside outcrops with dinosaur footprints and see geology of Denver's Front Range. Half day.

**Joint 61st ICCP/26th TSOP Meeting
Advances in Organic Petrology and Organic
Geochemistry
19-26/09/ 2009**

Final Report

1. Meeting Statistics

The meeting was attended by a total of 101 participants (76 professionals, 25 students). Of these were 22 ICCP Members, 13 TSOP Members, 14 ICCP/TSOP Members and 52 non-members. The regional participation in terms of continents and countries is shown in Figures 1 and 2.

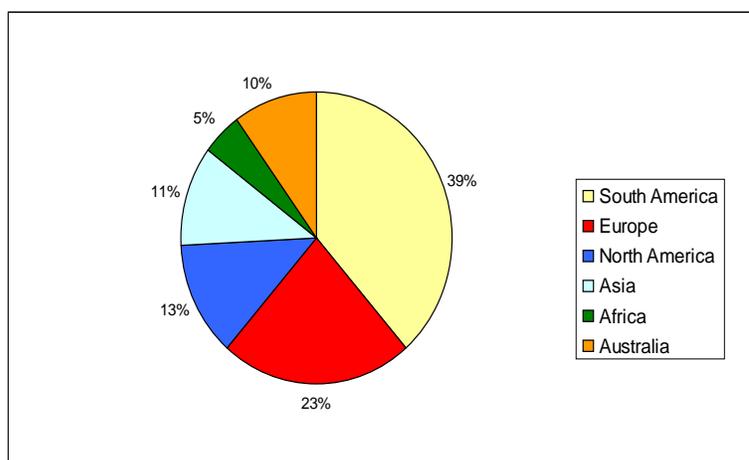


Figure 1: Participation by continents

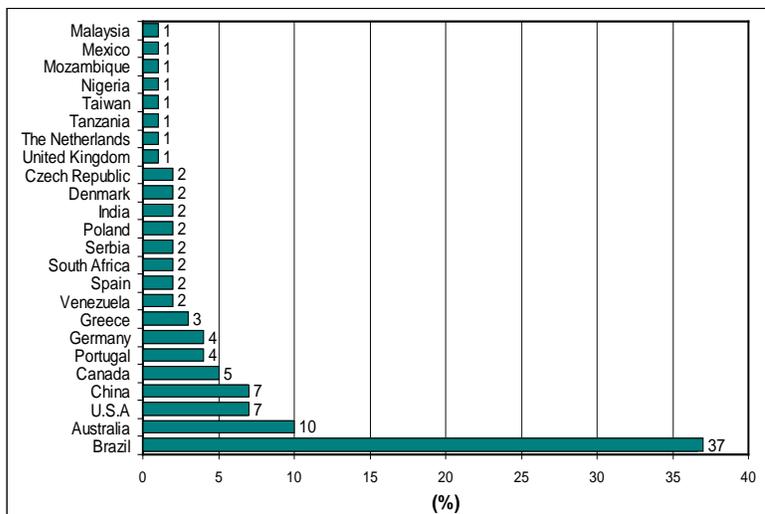


Figure 2: Participation by countries

2. Program

The detailed program and abstracts are shown on the conference homepage www.ufrgs.br/iccp_tsop_2009 and are not repeated here.

Program Overview

The meeting started in the morning of September 20, with a short course entitled : **Palynofacies and Organic Facies: Principles, Methods and Applications** lectured by João Graciano Mendonça Filho (LAFO/UFRJ), Taíssa Rêgo Menezes (CENPES/PETROBRAS), Joallice de Oliveira Mendonça (LAFO/UFRJ).

The afternoon of September 20 featured the opening ceremony (welcome by Wolfgang Kalkreuth, chair of the organizing committee, welcome by Prof. J. Frantz, Director of Instituto de Geociências, UFRGS, and to invited lectures: 1) **THE CONTRIBUTION OF ORGANIC GEOCHEMISTRY AND ORGANIC PETROLOGY TO PETROLEUM EXPLORATION IN BRAZIL** by L. A. Trindade, Petrobras, and 2) **COAL IN BRAZIL** by W. Kalkreuth and E. Osório, UFRGS. This in turn was followed by the ICCP Opening Plenary Session and the Icebreaker.

The days of September 21-23 were devoted to ICCP activities (working groups of commissions I, II, III, including a joint microscopy session in the afternoon of September 22. The visit to Caracol Park on September 23 had to be cancelled because of rain, and was substituted by a joint lunch in a restaurant of typical cuisine of the area (Cafe Colonial).

The **Symposium on Advances in Organic Petrology and Organic Geochemistry** was held on September 24, with a total of 10 oral presentations and 42 posters. This was followed by the Conference Dinner at the Restaurant Garfo e Bombacha, featuring local food (churrasco) and music and dance.

The TSOP Technical Session was held on September 25, featuring a total of 18 oral presentations. The TSOP Business Lunch was held in the Serra Grill Restaurant, with Leslie Ruppert and other members of TSOP Council reporting on the status of the society. At the end of the formal TSOP presentation W. Kalkreuth was presented the Peter Hacquebard Award by CSCOP (Canadian Society of Coal Science and Organic Petrology) for his contributions to coal research in Canada.

The meeting ended on September 26 with two fieldtrips:

Fieldtrip 1: Excursion to the Leão – Butiá Coalfield, Rio Grande do Sul, Brazil, Participants: 35

Fieldtrip 2: Excursion to examine the relationship of soil type and climate to champagne and wine quality in the region of Vale dos Vinhedos, RS Participants: 22

3. Final Remarks

On behalf of the organizing committee I would like to thank once more the institutions involved in organizing the meeting, our sponsors to generously supporting the event, the meeting exhibitors to provide insight in the latest developments on organic petrology using incident light microscopy, as well as the conference delegates for their contributions either by participating in the ICCP Working Groups, or presenting papers and/or discussions during the ICCP/TSOP Joint Symposium and the TSOP Technical Session.

As chair of the Organizing Committee I would like to express my thanks to João Graciano Mendonça Filho and co-workers to offer the short course on concepts of palynofacies, to Maristela Bagatin Silva and Eduardo Osório for leading Fieldtrip No 1, to João Graciano Mendonça Filho and Carla Araujo to organize the microscopes for the meeting, and to those members of the organizing committee who participated in critical reading of the 79 abstracts submitted for the meeting. Also, I am grateful to João Graciano Mendonça Filho and Maristela Bagatin Silva to act as guest-editors for the upcoming Special Issue of the International Journal of Coal Geology.

Wolfgang Kalkreuth
Chair, Organizing Committee

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Hacquebard Medal Awarded to Prof. Dr. Wolfgang Kalkreuth by Canadian Society for Coal Science and Organic Petrology

At the Joint 61st ICCP/26th TSOP meeting held in Gramado, Brazil in September, the Canadian Society for Coal Science and Organic Petrology presented the

Hacquebard Medal to Prof. Dr. W.D. Kalkreuth of the Federal University of Rio Grande do Sul in Porto Alegre, Brazil, and formerly of the Geological Survey of Canada.

The Hacquebard Medal is the society's highest award, made to a member of CSCOP who has had a long and distinguished career in coal science and whose work in advancing coal science and organic petrology has been recognized both nationally and internationally. The award is in memory of Dr. Peter Hacquebard, a pioneer in coal geology and organic petrology in Canada. Peter came to Canada from the Netherlands and served a long and distinguished scientific career with the Geological Survey of Canada. Most of those years were spent at the Atlantic Geoscience Centre in Halifax. Wolfgang Kalkreuth is a very worthy recipient, who has made significant contributions to coal petrology and organic geochemistry in Canada and in several other countries during his highly productive research career.

Dr. Kalkreuth came to Canada from Germany after gaining an MSc in geology from the University of Berlin and a PhD in organic geochemistry from the University of Aachen. In 1989 he was awarded the Habilitation degree from the University of Berlin – the highest scientific award in European Academia and equivalent to a Doctorate of Science.

He joined the Geological Survey of Canada at the institute of Sedimentary and Petroleum Geology in Calgary in 1980. During his 17 year tenure at the GSC he made a major contribution to coal



geoscience, producing more than 130 research papers including more than 60 in refereed journals. His contributions cover a wide range of topics including, thermal maturation in the Rocky Mountain Foothills and Ranges, composition and depositional environments of Canadian coals, the characterization of Canadian oil shales, the alternative utilization of Canadian fossil fuels and the characterization of dispersed organic matter with

new spectroscopic techniques.

Wolfgang has been very active in scientific societies. At TSOP he served as Councilor from 1986 to 1988 and as Vice President in 2005-06. With ICCP he served as an officer of Commission 2 for 13 years between 1991 and 2003, first as Secretary and then as Chair of that Commission.

Dr. Kalkreuth has given time and inspiration to students in his role as an adjunct professor at both the University of Berlin and at Dalhousie University in eastern Canada and in a sabbatical year at the University of Cologne. That role continues as he has established a well-equipped and active research laboratory at UFRGS in Porto Alegre and has several graduate students working with him on a range of projects. He has continued his active research role and has published at least 30 scientific papers and been the principal adviser to 7 graduate students since joining the faculty in 1996.

Previous recipients of the Hacquebard Medal are the late Dr. Alexander Cameron, Dr. Fari Goodarzi and Prof. Dr. Marc Bustin.

By Dave Marchioni

* * * * *

TSOP Spackman Awards, 2009

As indicated in the June Newsletter, a total of ten applications were received for the Spackman Award in 2009, from students in North and South America, Africa and Australia. The project proposals covered a wide range of activities, with applications to coal geology, petroleum generation and the use of organic petrology in better understanding sedimentary processes. A generous donation from Robert Cluff on behalf of The Discovery Group, enabled additional awards to be made in the 2009 round to assist more of these research activities that would otherwise have been the case.

The applications were assessed by sub-committee of senior TSOP members from industry, research and academia, none of whom had any association with the applicants or their home institutions. Based on a consensus within the sub-committee, the following awards were recommended and accepted by Council.

One award (\$1,000) was given to:

- **Ms Dawn Hayes**, a student at Utah State University, for a project entitled: *Sequence stratigraphic microfossil and geochemical analysis of the Neoproterozoic Red Pine Shale, Uinta Mountain Group: evidence of biotic change driven by eutrophication?*

One award was shared (\$500 each) between the following two students:

- **Mr Asep Permana**, a student at the University of New South Wales, for a project entitled: *Influence of igneous intrusions on coal seam characteristics in the South Walker Creek area, Bowen Basin, Queensland.*
- **Ms Margaret McPherson**, a student at the University of Kentucky (transferring to Southern Illinois University), for a project entitled: *Geochemistry and petrography of thermally metamorphosed Antarctic coal: implications for ¹³C-depleted methane release.*

Congratulations are extended to the winners of these awards. The assessment task was not easy, and more of the applications would have been worthy of support if funding had been available. All applicants are eligible for one year of free Student Membership of TSOP, and we hope that the outcomes of their various projects will be presented at future TSOP meetings.

Colin R. Ward
Chair, TSOP Research Committee

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Sequence stratigraphic, microfossil, and geochemical analysis of the Neoproterozoic Red Pine Shale, Uinta Mountain Group, Utah: evidence of biotic change driven by eutrophication?

Dawn Hayes, Utah State University

Problem statement and significance:

The Uinta Mountain Group (UMG) of Utah, much like the Chuar Group of Arizona, contains an assemblage of microfossils that were preserved in a dominantly clastic marine setting during mid-

Neoproterozoic time. Despite moderate to good preservation of these microbiotas, species diversity in the Uinta Mountain Group is much lower than that of the Chuar Group and other coeval clastic deposits (Vidal, 1976; Knoll et al. 1991; Butterfield et al. 1994). Morphologically simple filaments, the colonial bacteria *Bavlinella faveolata*, and species of the unornamented acritarch *Leiosphaeridia* dominate the Uinta Mountain Group microfossil assemblages; *Chuaria circularis*, vase-shaped microfossils, and ornamented acritarchs are present but very rare (Nagy and Porter, 2005). The relative lack of diversity and complexity in Uinta Mountain Group fossil assemblages is interesting because it cannot be readily explained by age or poor preservation; a more likely cause is that paleoenvironmental conditions excluded the diverse communities of morphologically complex eukaryotes found in other coeval clastic deposits (Anbar and Knoll, 2002).

The most fossiliferous parts of the Uinta Mountain Group, and thus the most ideal for microfossil analyses, are the Red Pine Shale and underlying shales of the formation of Hades Pass. In these shales, all of the microfossil types listed above and a few additional taxa have been described (Nagy and Porter, 2005), yet no study thus far has attempted to document temporal or spatial changes in Red Pine Shale microfossil assemblages and their potential correlations with paleoenvironmental conditions. Several other Neoproterozoic successions worldwide, including the likely correlative Chuar Group, provide evidence of sudden biotic turnover from diverse assemblages including ornamented acritarchs to low-diversity bacterial and/or leiosphaerid-dominated assemblages (Vidal and Knoll, 1982; Knoll, 1994; Vidal and Moczydlowska-Vidal, 1997; Knoll et al., 1981). This dramatic biotic change has been hypothesized to represent a mass extinction of eukaryotic phytoplankton, possibly due to eutrophication rather than the onset of low latitude Sturtian glaciation. In the Chuar Group, paleontological, total organic carbon, and iron speciation data support this interpretation (Nagy et al., 2009). It is my intent to conduct a sequence stratigraphic, microfossil, and geochemical analysis of the Red Pine Shale and upper shales of the formation of Hades Pass to 1) document whether a similar biotic change is present, and 2) determine if biotic changes correlate with geochemical indicators of paleoenvironmental eutrophication.

If these Uinta Mountain Group shales contain biotic evidence of eutrophication, the microfossil assemblage in the strata should shift upsection from a lower-density higher-diversity assemblage to a higher-density one with less-diverse, simpler organisms. Increasing total organic carbon content, indicative of increasing primary productivity, would also be an expected upsection trend, as would a shift in $\delta^{13}\text{C}_{\text{org}}$ values. Since eutrophication ultimately results in oxygen depletion due to increased organic decay rates, evidence of anoxia should be present in any sediments deposited during eutrophication. Where the shales contain geochemical evidence of eutrophication, $\delta^{34}\text{S}$ and iron speciation signatures should indicate sustained sediment pore-water and water column anoxia. To support eutrophication, the microfossil change(s) should correlate with the chemical change(s). Specifically, a shift from a higher-diversity fauna including ornamented acritarchs to a lower-diversity fauna dominated by bacteria and/or leiosphaerids should co-occur with increasing organic carbon and be followed by anoxia, as indicated by sulfur isotope composition and iron speciation. Ideally, this correlation will not co-occur with a major lithofacies change.

In addition to addressing the question of possible paleoenvironmental eutrophication, my study of the UMG shales also has several secondary goals: 1) it will provide detailed descriptions of the Red Pine Shale and the formation of Hades Pass in an area where there currently are none and mapping has been done only very generally, 2) add to the carbon isotope and organic carbon data set of the UMG, possibly allowing for more robust correlations between measured sections in the UMG and between the UMG and the Chuar Group of the Grand Canyon, 3) yield additional microfossil data for formations that have received little paleontological attention, 4) provide the first sulfur isotope and iron speciation data for the Uinta Mountain Group, and 5) enhance the sequence stratigraphic framework for the Red Pine Shale and underlying formation of Hades Pass. This study's broader significance is that information about UMG microfossils and paleoenvironment should contribute to our understanding of eukaryotic biodiversification and pre-Sturtian oceanic and atmospheric conditions on Earth.

Objectives and methods

The two main objectives of this study are: 1) to document changes in microfossil assemblage over time in the Red Pine & Hades Pass shales, and 2) to

determine if changes in microfossil assemblage in the shales correspond with geochemical indicators of eutrophication. An additional objective, sequence stratigraphic analysis of previously undescribed portions of the Uinta Mountain Group, is required for both within-formation data correlations and to place new microfossil and geochemical data in the context of their depositional environment.

Approximately ten stratigraphic sections within the Uinta Mountain Group of northeastern Utah will be measured and described in detail between June 15, 2009 and October 30, 2009. The specific localities will include the most likely to contain evidence of the hypothesized microfossil transition due to eutrophication; previous but very limited sampling of the Leidy Peak Shale (possibly correlative to the Red Pine Shale) yielded evidence of a change in microfossil assemblage up-section, from ornamented acritarchs to leiosphaerids (Nagy and Porter, 2005). This locality has not yet been studied in detail and has been mapped only very generally and possibly incorrectly (Dehler, pers. comm., 2009). To the east of 110° longitude the Red Pine Shale may undergo a facies change and partial truncation by an angular unconformity and overlying Paleozoic strata (Sprinkel, 2002; Myer 2008). For these reasons, outcrops to be measured and described in detail will be selected in reconnaissance fashion in the field.

Rock samples will be collected from the measured sections for thin section preparation, microfossil analysis, carbon mass spectrometry, sulfur mass spectrometry, and iron speciation analysis. Approximately 5 thin sections from each measured section will be prepared for subsequent point counts using the traditional 300-point count method; samples for microfossil, mass spectrometry, and iron speciation analyses will be collected at 5-10 meter intervals within the measured sections to obtain a total of ~250 samples. Stratigraphic columns will be generated for each measured section, along with composite sections when necessary and detailed facies descriptions. Correlation charts and fence diagrams will be constructed to analyze stratigraphic relationships between the measured sections and describe the geometry of the formation in the study area if possible.

Rock samples to be used for mass spectrometry and iron speciation analysis will be crushed in a zirconium shatter box to 200 mesh; this will be completed upon return from the field between June 30, 2009 and November 15, 2009. Samples to be used for organic

carbon analysis will be cleaned with 10% hydrochloric acid solution until all carbonate is dissolved, then rinsed with deionized water until their pH reaches 5.5, then dried. Organic carbon mass spectrometer analysis of these samples (~250 samples at 100µg each) will be conducted in the fall of 2009 at Brigham Young University to obtain $\delta^{13}\text{C}_{\text{org}}$ and total organic carbon values. Sulfur mass spectrometry and iron speciation analysis will be conducted at University of California Riverside in the winter of 2009-2010 for ~250 samples to determine $\delta^{34}\text{S}_{\text{pyrite}}$ values and the ratio of highly reactive iron (pyrite-derived and dithionite-soluble) to total iron; ratios above 0.38 are indicative of anoxic bottom waters during deposition (Nagy et al., 2009). Microfossil analysis will be conducted in the fall of 2009 using standard preparation techniques at the University of California Santa Barbara with the assistance of Dr. Susannah Porter. Statistical analyses will be performed to determine the significance of any correlations between microfossil assemblages and geochemical results.

In a spring 2009 preliminary study, ten samples from the type section of the Red Pine Shale were analyzed for total organic carbon content and $\delta^{13}\text{C}_{\text{org}}$ to evaluate the feasibility of a future larger-scale study of paleoenvironmental conditions using geochemical indicators. Total organic carbon ranged from 0.32 to 2.26 weight percent, and carbon isotope analysis shows a $\delta^{13}\text{C}_{\text{org}}$ range from -29.494 to -12.253 ‰ relative to VPDB. Cross-plots of total organic carbon vs. $\delta^{13}\text{C}_{\text{org}}$ indicate that the carbon preserved in these sediments is likely primary and thus the use of geochemical indicators of paleoenvironment is appropriate. The carbon isotope signatures suggest that the depositional environment was primarily marine; a comparison of these values with those of the upper Chuar Group lends support to the idea that the UMG and Chuar Group are coeval deposits formed in the same marine environment (Dehler et al., 2005). Additionally, a few large positive shifts in total organic carbon combined with depletions in $\delta^{13}\text{C}_{\text{org}}$ may represent an increase in primary productivity associated with eutrophication. It seems possible that additional data from the Red Pine Shale and underlying shales of the formation of Hades Pass, such as microfossils, sulfur isotopes, and iron speciation combined with detailed carbon isotope stratigraphy could provide important information about a potentially global Neoproterozoic eutrophication and subsequent eukaryotic extinction just prior to the first Snowball Earth glaciation.

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Geochemistry and petrography of thermally metamorphosed Antarctic coal: implications for ^{13}C -depleted methane release

Margaret McPherson, Southern Illinois University

Statement of problem and scientific significance

Negative $\delta^{13}\text{C}$ isotope excursions at the Permian-Triassic boundary, as well as the end of the Guadalupian epoch, are evident worldwide in organic-rich rocks (Retallack et al., 2006). Some of the excursions are exceptionally large in the Antarctic coal fields, where widespread sheets of igneous intrusive rocks have altered the organic-rich rocks through thermal metamorphism (Schopf and Long, 1966; Retallack et al., 2006). Intruded coal is altered both petrologically and geochemically, and there is evidence that isotopically light thermogenic methane is released during contact metamorphism (Finkelman et al., 1998; Cooper et al., 2007). Research has suggested that large amounts of methane released from intruded Antarctic coal fields may have altered the atmospheric composition enough to cause a considerable warming of the climate, followed by the Permian-Triassic extinction (Retallack and Jahren, 2008).

Hypothesis

The hypothesis to be tested is that if an amount of methane gas substantial enough to create large global $\delta^{13}\text{C}$ excursions was released from the Antarctic coal fields, then the remaining organic matter should have evidence of intense thermal metamorphism, such as high R_o , coked material, mosaic structures, and pyrolytic

carbon. There are several factors which may influence both current $\delta^{13}\text{C}$ measurements, as well as the volume of isotopically light gases that could have been released at the Permian-Triassic boundary.

First of all, the initial rank of the organic-rich rocks determines how much additional thermal metamorphism is possible. If the organic-rich rocks were already high rank due to burial metamorphism at the time of intrusion, then they would undergo little alteration. Furthermore, the petrographic composition of the organic-rich rocks influences bulk isotopic composition. If the organic-rich rocks contain a proportionately high amount of inertinite, then the temperatures of intrusion may have little effect. Secondary mineralization of carbonate during intrusions will affect measurements of volatile matter. In addition, the presence of pyrolytic carbon, or coal-bed methane that has been retained in the coal seam, will also influence $\delta^{13}\text{C}$ measurements. All of these factors will influence both the volume of ^{13}C depleted-methane that could have been released at the time of intrusion, as well as the $\delta^{13}\text{C}$ currently measured in the organic-rich rocks.

Research plan

The research plan for this study includes the analysis of various samples of organic-rich rocks from various locations in Antarctica, specifically the Transantarctic Mountains. Samples have been obtained from Dr. Gregory Retallack and Dr. Matt Saltzman, and additional samples will be received from the U.S. Polar Rock Repository at Ohio State University. Petrographic analysis including R_o and descriptive petrography will be performed at the University of Kentucky Organic Petrology Laboratory. Proximate analysis will be performed at the Kentucky Geological Survey (KGS) laboratories. Ultimate analysis will be performed at the University of Kentucky Center for Applied Energy Research (CAER). Isotopic ratio mass spectrometry will be performed at the University of Kentucky's Environmental Research Training Laboratory (ERTL) or a comparable facility to determine isotopic composition. Stable carbon isotope composition will be compared to maturity and maceral composition of samples.

Application and significance of organic petrology

Organic petrography will be integral for this research in order to interpret geochemical data. In order to determine the maceral composition and initial rank of the organic-rich rocks, as well as the presence of

pyrolytic carbon which will have an effect on the isotopic composition, organic petrography will be essential. Standard techniques such as R_o and petrographic examination will be used in order to solve the hypothesis.

Current status of project

Petrographic examination has begun on samples from the Transantarctic Mountains. Evidence of intrusions such as vesicular high-temperature coke and mosaic structures are present in various samples. Additional R_o and detailed petrographic analyses will be completed.

Proximate and ultimate analyses for the samples already received have been completed. Proximate analyses (standard ASTM methods using various LECO instruments) were performed under the direction of Henry Francis at the KGS laboratories. Ultimate analyses were performed under the direction of Margaret Grider at CAER using standard ASTM methods and various LECO instruments. The results of the ultimate and proximate analyses are currently being reviewed.

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The influence of igneous intrusions on the main coal seam characteristics of the South Walker Creek Area, Bowen Basin, Central Queensland, Australia.

Asep Permana, University of New South Wales

Statement of problem and scientific significance

The impact of igneous intrusions on coal properties depends on various factors, including size and temperature of the intrusion (e.g. Crelling and Dutcher, 1968), the type of intrusion material (Murchison, 2005), and the rank of the coal at the time the intrusion was emplaced. Igneous intrusion may also involve changes in coal optical properties and coal chemistry (e.g. Kisch and Taylor, 1966; Thorpe et al., 1998; Finkelman et al., 1998; Golab and Carr, 2004), as well as changes in pore structure (Mastalerz et al., 2009) and coal seam gas characteristics (Gurba and Weber, 2001). Intrusions may be associated with changes in coal mineralogy (Ward et al., 1989; Uysal et al., 2000; Susilawati and Ward, 2006), giving rise in some cases to mineral assemblages similar to those developed during metamorphism of other rock materials.

The Late Permian Rangal Coal Measures exposed in the South Walker Creek mine in the northern Bowen Basin contain an unusual assemblage of mineral matter (Fraser et al., 2006), with illite-chlorite assemblages resembling a metamorphic association in some parts of individual seams and kaolinite-rich assemblages of more normal sedimentary origin in others. The reason for the vertical variation in clay minerals through the seam profile, however, is unknown. Changes associated with rank advance would be expected to provide a more uniform profile, and thus the possibility exists that igneous intrusion and/or hot fluid injection may be responsible for the mineralogical variation observed in the earlier study.

Major hypothesis

The specific objective of this project is to investigate the geological factors responsible for the mineralogical variation, especially in the clay mineralogy, within the coal seams of the South Walker Creek area, including the effects of rank advance, igneous intrusion, and possibly changes in coal type or original inorganic components. This will involve integration of information on the macerals in the different parts of the coal seams, the rank as indicated by vitrinite reflectance,

and the nature and mode of occurrence of the different mineral components. It will also involve comparative studies of seam profiles throughout the deposit, including the relation to igneous intrusions and to regional rank and depositional trends. Several different aspects of coal petrology, geochemistry and mineralogy therefore need to be investigated, to evaluate the pattern of organic maturation and coal type variation in relation to the variation in coal mineralogy, as well as the relationship of these factors to the burial history and tectonic events affecting the area.

Research plan

This is a two-year research project, which started in March 2009. This project will include compilation of previous data, geological field investigation, laboratory analysis and petrological study using optical and electron microscope techniques. At this stage, a range of coal and non coal samples have been collected from different localities through the area, although a further field study and sampling program will be included in the work program. Samples from different parts of the seam profiles will be further investigated, with a focus on detailed investigation of both vertical and horizontal variations. Coal samples will be crushed and split into representative portions. One portion will be used for detailed petrographic analysis and others for geochemistry, XRD and XRF analysis.

Petrographic analysis will include vitrinite reflectance and quantitative maceral analysis using a Zeiss Axioplan microscope. Coal geochemistry, proximate, and ultimate analysis will be carried out as described by Australian Standards. Mineralogical composition of individual coal samples will be determined by low-temperature oxygen-plasma ashing and quantitative X-ray diffraction analysis. SEM-EDS analysis of polished sections will be carried out using a Hitachi S3400-I SEM facility, and the chemical composition (major and possibly trace elements) of the coal samples determined by X-ray fluorescence (XRF) spectrometry techniques.

Application and significance of organic petrology

Organic petrology will be used to determine the modes of occurrence of the different minerals, and the relation between mineralogy and other coal properties such as rank level. Increased vitrinite reflectance approaching igneous bodies, for example, would be useful to identify the extent of the thermal aureole and its impact on mineral alteration within the coal seam.

The results of the research will provide information for coal companies and research institutions regarding the relation between mineralogy and other geological processes, such as the effects of igneous intrusions, which can be used in mine planning, production, marketing and utilisation. Consequently, the project will demonstrate a significant contribution of organic petrology techniques in solving problems of a practical, industry-oriented nature.

Current Status

At this stage, I have completed a preliminary literature review, identified the scope of the project, developed a work schedule and commenced the laboratory work. I have also undertaken a training program in SEM analysis, to complement the information available from optical microscopy studies.

An initial series of 24 samples through the coal seam at one location, already studied by XRD methods, have been examined in polished section using optical microscopy techniques. This has shown that the South Walker Creek coals have a high inertinite maceral content. Preliminary $R_{V_{max}}$ measurements indicate some variation with depth, although some samples will be re-polished and re-measured for further investigation. Currently, a series of polished sections is being analysed by SEM-EDS techniques, to investigate more fully the mode of occurrence of the minerals, especially the clay minerals, indicated by the XRD results. Chemical analysis of these samples is also in progress using XRF techniques.

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**IIIrd International Scientific and
Practical Workshop**

***ASHES FROM TPPs – REMOVAL,
TRANSPORT, PROCESSING, LANDFILLING***

April 22-23, 2010

Moscow, Russia

Moscow Power Engineering Institute

Organized by

Informational and Analytical Center "Ecology in Power
Engineering" of MPEI

(Affiliated member of the European Coal Combustion
Products Association «ECOBA»)

www.ecopower.ru/index.php?newsid=60

WORKSHOP TOPICS

- influence of the international and national legislation on efficiency of solution of ash and slag problem;
- volumes and directions of utilization of ash and slag from TPPs in separate countries and international associations;
- use of ash and slag in building industry;
- use of ash and slag in agriculture;
- use of ash and slag at mining, primary and other industries;
- ash and slag properties and standardization;
- technologies of ash and slag removal and beneficiation of their properties;
- complex approach to increase in economic efficiency and ecological safety of TPPs and solution of ash and slag handling issues.

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MASTER CLASS
***“TERRESTRIALLY-DERIVED FOSSIL
PALYNOFLORA: SUBSURFACE
APPLICATIONS TO PETROLEUM GEOLOGY”***

August 16-20, 2010

University of Utrecht, The Netherlands

The Significant Aims of this Class will be:

- To provide instruction on basic pollen/spore/algal taxonomy as an aid in identifying and classifying varied terrestrially-derived palynoflora
- To provide a general background into terrestrial palynomorph morphology, taxonomy, chronostratigraphy, paleoecology and paleoclimate through the Phanerozoic
- To provide case studies of standard and innovative Industrial applications of terrestrially-derived pollen/spore/algae to subsurface problem solving, including calibration to sequence stratigraphic modeling (systems tracts): Case studies include those from the Middle East (Paleozoic), Southeast Asia (Cenozoic), Offshore Nigeria (Neogene)

This week long course will also include a half-day fieldtrip to the type Maastricht in the southern Netherlands, an opening evening Icebreaker and mid-week dinner. Additionally, each topic of the Course Outline will be supplemented with workshops at the microscope investigating varied palynoflora, sitting alongside the experts. Maximum enrollment to the class will be 40. Course fees have not been finalized but are expected to be in the range of: 1100 Euros (Professional), 750 Euros (Consultants/Academics), 500 Euros (Students).

Additional information and questions regarding this course may be forwarded to either Thomas Demchuk (thomas.d.demchuk@conocophillips.com) or James Eldrett (James.Eldrett@Shell.com).

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Calendar of Events

2010

March 21-25, 2010: American Chemical Society Spring Meeting, San Francisco, California. <http://portal.acs.org/>

April 11-14, 2010: AAPG Annual Convention & Exhibition, in New Orleans USA. www.aapg.org

May 2-7, 2010: European Geosciences Union General Assembly, Vienna, Austria. <http://meetings.copernicus.org/egu2010/>

June 13-18, 2010: Goldschmidt Conference, Knoxville, Tennessee, USA. www.goldschmidt2010.org/

July 11-16, 2010: Carbon 2010, the Annual World Conference on Carbon, Clemson University, South Carolina, USA. <http://caeff.ces.clemson.edu/carbon2010/>

September 12-16, 2010: 27th Annual TSOP Meeting, Denver, Colorado, USA. www.tsop.org/2010Denver/index.htm

September 29 – Oct. 2, 2010: 43rd Annual AASP Palynological Society Meeting, Halifax, Nova Scotia, Canada. www.palynology.org/

October 11-14, 2010: 27th International Pittsburgh Coal Conference, Istanbul, Turkey. www.engr.pitt.edu/pcc

October 31 – Nov. 3, 2010: Geological Society of America Annual Meeting, Denver, Colorado, USA. www.geosociety.org/meetings/2010/

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Gramado Meeting Poster Session



TSOP Ice Breaker, Gramado Meeting



Fieldtrip 1 to the Leão – Butiá Coalfield

PHOTO GALLERY

TSOP/ICCP Gramado Conference Dinner



