

Fungal remains in a matrix of detrogelinite, corpohuminite and inertodetrinite, all bound together with gelohuminite. Subbituminous coal, New Zealand

As destroyers of wood and other plant tissues, fungi play a role that should not be underestimated in the formation of coal. Although often only representing a few percent, fungal hyphae and sclerotia are the manifest remains of fungal action which may have far reaching effects. In this photomicrograph of the Eocene Kupakupa subbituminous coal bed of the North Island in New Zealand (air objective; etched surface), fungal sclerotia (left center) are shown within a finely particulate and amorphous matrix. Compaction features around one of the more uncompactable fungal sclerotia can be noted. Fungi are largely responsible for the breakdown of plant material into finer fragments, which usually account for greater than 60% of the material in most coals. The particulate matrix is composed of fragments of cell walls (detrogelinite), free floating cell fillings (corpohuminite) and fragments of inertinite (inertodetrinite), all of which can be seen in the cover photograph. These components are all held together by an amorphous "glue" of fossilized humic gels (gelohuminite). An intact root or stem with thick cork tissue can also be noted on the right hand side of the photomicrograph. The lumens of the fungal sclerotia are filled with migrated bitumen (exsudatinite). The long axis of the photomicrograph is about 250 um. Photomicrography by T.A. Moore. See the cover story on page 2.

The TSOP Newsletter

Neely H. Bostick, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write: David C. Glick, TSOP Membership Chair, Coal and Organic Petrology Laboratories, 105 Academic Projects Bldg., Penn State University, University Park, PA 16802-2300 U.S.A. Phone: (814) 865-6543, Fax: (814) 865-3573.

Newsletter Contributions

The Newsletter welcomes contributions about events and topics pertaining to organic petrology — from TSOP members or non-members. Items submitted on computer diskette (preferably DOS, but Macintosh possible) or by Email are more convenient than printed materials. Unformatted ASCII files or files formatted in WordPerfect or Wordstar are preferred. Printed text sent by mail or by FAX can be scanned **if the text characters are equally spaced as from an old typewriter. Proportionally spaced characters close together are barely usable.**

Send contributions to the Editor:

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For purposes of registration of the Newsletter a permanent mail address is: The Society for Organic Petrology; c/o Ron Stanton, ms-956; U.S. Geological Survey; 12201 Sunrise Valley Drive; RESTON VA 22092-0001, U.S.A.

The 1993-94 TSOP Council

President	James C. Hower
Vice-President	P. K. Mukhopadhyay
President Elect	Renee L. Symanski
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1992-94)	Charles R. Landis
Councilor (1993-95)	Cole R. Robison

The Constitution and Bylaws of the Society For Organic Petrology were adopted on March 10, 1984. With revisions through July, 1993, they are printed in the 1993 Membership Directory and Bylaws. For more information see the Editor's box.

COVER PHOTO STORY

SOME THOUGHTS ON FUNGALLY OXIDIZED CONSTITUENTS IN PEAT AND COAL

J.C. Shearer¹, T.A. Moore²

1. Foundation of Research, Science and Technology, Box 12-240, Wellington, NZ;
2. Dept. of Geology, Victoria University, Box 600, Wellington, NZ

Fungal oxidation of peat is often referred to in both peat and coal literature. However, when one comes to look for references documenting evidence of this fungal oxidation process, there is relatively little to be found. In addition, apart from the appearance of "pyrofusinite" i.e. highly reflective and yellowish oxidized material, there are few methods for distinguishing between oxidizing processes e.g. fire, fungal, bacterial, exposure to air, exposure to oxygenated water.

Recently however, we have noted a group of similar oxidized botanical structures, identified as primary roots in a number of peat and coal samples from New Zealand, Indonesia and the United States (a typical example is the long thin oxidized tissue in the photo on the front cover). The similarity of preservation of the structures and their oxidized state has led us to surmise that the structures may have all been oxidized by the same process. Small (1 to 3 microns) oxidized bodies, visible only using a scanning electron microscope have been found associated with at least some of the oxidized primary root structures. It

is thought that these oxidized bodies may be fungal mycorrhizae, as they bear a strong resemblance to modern mycorrhizae. Mycorrhizae are symbiotic associations of fungi with roots of higher plants, increasing the absorption uptake of the roots. It is possible that mycorrhizae gradually oxidize the roots in association with the fungi.

Mycorrhizae are extremely common in modern plants, and might be expected to also have been common in the past. Indeed it is somewhat surprising that evidence of mycorrhizal associations have not been noted in coal; particularly considering that the nutrient absorptive ability of plants with mycorrhizae is of great benefit in nutrient poor environments such as peat.

In conclusion, there is preliminary evidence that primary root structures common to a number of peats and coals, may have been fungally oxidized. The oxidation could have been carried out in the symbiotic mycorrhizal associated of fungi with plant roots.

PRESIDENT'S LETTER

The Changed Kind of Member by Jim Hower

The face of TSOP is constantly changing. Looking back over 10 years of annual meetings we can see a progressive shift from what might be considered "traditional" coal petrology to a broader organic petrology, including significant contributions from organic geochemistry. This is probably what the founding members anticipated when they formed TSOP from the base of North American Coal Petrographers. The balance of the contributions at a meeting, of course, varies with the location of the meeting, the nature of participating societies (Calgary and Penn State meetings), the number of students at nearby universities, and any number of other factors. The keyword in the previous sentence is balance. Coal petrographers could argue that the traditional fields are under represented. Kerogen petrographers and geochemists perhaps would like to see certain other topics addressed. Perhaps we could all agree that it would be great to see more industry, oil or coal, participation at the meetings. I trust that the one point that we

can all agree upon is that diversity is good for the present and future health of the society.

How do we maintain the balance and diversity so important for our stability? Not easy. Over the past decade few of us have escaped downsizing of programs and research groups with the accompanying threat of layoff. Tenured academics have faced the reality of fewer graduate students, lesser research dollars, and the concomitant narrowing focus of research directions.

Part of the problem is in recognizing the progression of organic petrology. Just as coal petrography gained recognition in the steel industry through the advancement of coke-strength prediction methods and the description of coke textures, some of the same techniques can be extended to the characterization of new generations of carbons. Another growth area may be the characterization of coal-combustion by-products because unburnt carbon in fly ash may increase as a consequence of new combustion techniques.

A second part of the solution, something we can all get involved with, is in recruiting new members for TSOP and in encouraging more members to participate in the annual meetings. We all know of scientists with research interests in line with TSOP interests who, for some reason, are not members of our organization. Tell them about TSOP. Encourage them to present some aspect of the work presented at ACS, AAPG, GSA, or anywhere else, at TSOP meetings. In this manner we all benefit - through diversified contributions, increased discussion at the meetings, and a broad spectrum of papers in *Organic Geochemistry*.

* * * *

TSOP COUNCIL ACTIONS

1994 Mid-year Meeting by Ken Kuehn, Secretary/Treasurer

TSOP Council held its mid-year business meeting on February 26th at the Drawbridge Inn, Ft. Mitchell, Kentucky. Complete Minutes of the meeting are available on request from the Secretary.

Council Members Present: President - Jim Hower, President-Elect - Renee Symanski,

Vice President - Prasanta Mukhopadhyay,
 Secretary/Treasurer - Ken Kuehn,
 Editor - Neely Bostick, Councilor - Cole
 Robison. Absent: Councilor - Charles
 Landis. Others Present: MaryAnn Malin-
 conico - Chair, Outreach Committee, Ron
 Stanton - 1994 Annual Meeting Committee.

1. Council approved, with amendment, the Minutes of the 1993 Outgoing Council Meeting held October 10, 1993 in Norman, Oklahoma. Council also approved, with amendment, Minutes of the Incoming Council Meeting, held October 12, 1993 in Norman, Oklahoma.

2. K. Kuehn reported the status of TSOP finances as of Feb. 24, 1994. Checking account balance - \$10,234.35. Vanguard account balance - \$8,473.33. Total assets of the Society - \$18,707.68 against encumbrances of \$12,550. An accounts summary for 1993 was also presented. Revenues exceeded expenses by \$308.72 with about an equal amount expected as profits from the 1993 Annual meeting. Expenses were \$3,397.57 less than the initial 1993 Budget of \$12,850.00.

3. P. Mukhopadhyay reported on the activities of the Honorary Member Committee and presented three names for consideration. After much discussion, Council approved awarding two people, M. Teichmüller and W. Spackman, honorary membership starting in 1994. Council also voted to officially recognize the contributions of the TSOP founders at the 1994 Annual Meeting in Jackson, WY.

4. J. Hower reported for Suzanne Russell, Chair of the Nominating Committee, concerning the slate of candidates for the 1994 election: President Elect - B. Cardott and R. Stanton; Vice President - J. Crelling and R. Rathbone; Editor - J. Pontolillo; Councilor - S. Bend and J. Shearer. Council approved the slate as presented. President Hower informed Council that C. Eble will Chair the Ballot Committee this year.

5. J. Hower reported for Dave Glick, Chair of the Membership Committee, that six membership applications had been received. Council reviewed the applications and voted to accept all six: M. Ellacott, M. Frank (student), A. Hirai, F. Mpanju, F. Schneider, and C. Toles (student).

6. Members are encouraged to request copies of the TSOP brochure from D. Glick so that they may distribute them at meetings, with correspondence, or elsewhere.

7. R. Stanton reported on the status of the 1994 Annual Meeting in Jackson, Wyoming. A pre-meeting commercial tour to Yellowstone National Park will be offered, and also a pre-meeting short course on 'Fractals in Geology'. There will be a three-day post-meeting geological field trip to several coal basins in Wyoming and Montana. An announcement will be mailed and further details will appear in the Newsletter.

8. J. Hower reported on the proposed affiliation between TSOP and the American Association of Petroleum Geologists (AAPG). The AAPG Executive Committee has approved the concept, and it will be decided by their House of Delegates on June 12, 1994. Increased TSOP interaction with the Canadian Society for Coal and Organic Petrology (CSCOP) also was discussed. The 1997 Annual Meeting will be jointly sponsored by the two groups and held in Halifax, Nova Scotia.

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RESEARCH COMMITTEE* REPORT 94-1 by Carolyn Thompson-Rizer

The TSOP Research Committee consists of several subcommittees devoted to specific topics. In the recent past Rui Lin chaired the committee and there were four active subcommittees:

- 1) Standardization of kerogen isolation and characterization methods, led by Stan Teerman.
- 2) Standardization of reflectance and fluorescence methods, led by Rui Lin.
- 3) Coal utilization (liquefaction residue characterization), led by Jim Hower.
- 4) Effect of overpressure on maturity, led by Sue Rimmer and Suzanne Russell.

All four subcommittees presented progress reports at the annual meeting in Norman and the first three submitted manuscripts for publication in the proceedings in *Organic geochemistry*. This is an excellent way to document the efforts of TSOP toward improving our abilities to communi-

cate about and understand organic petrology.

A *Handbook of Organic Petrology* is in preparation, largely through the efforts of P. K. Mukhopadhyay and others. It was proposed in 1991 and will contain about five chapters: 1) Algae and Land Plants; 2) Definition and Classification of Kerogen and Bitumen, Kerogen Isolation, Maceral Petrography; 3) Organic Depositional Environments; 4) Vitrinite Reflectance, Fluorescence, Bitumen; 5) Coalbed Methane, Coal as a Source of Oil, Coal Minerals. Some of the coauthors have been identified but more volunteers are welcome. The exact method of publication is still under consideration.

Carolyn Thompson-Rizer currently chairs the Research Committee and the subcommittees are undergoing some changes. At the annual meeting, in Norman, it was suggested that the existing committees finish their work and new work might include areas of environmental organic petrology (Mukhopadhyay), solid bitumen maturity indicators (Landis and Castaño) and laboratory hardware specifications (Reinhardt). At this time the general membership may submit ideas for working subcommittees, as well as volunteer to work on a subcommittee. At the current time, I propose the following subcommittees for 1994-1995:

- 1) Continuation of Standardization of kerogen isolation/characterization methods, led by Stan Teerman. To get involved in this work call or write Stan (310-694-9210 Chevron P.O. Box 446 La Habra, CA 90631-0446).
- 2) Continuation of Standardization of reflectance and fluorescence methods (with increased effort on fluorescence), led by Jeff Quick. An outcome of this subcommittee may be the finalization of the documentation of the determination of spectral distribution by a joint TSOP and ICCP effort. If you want to be involved in the work of this subcommittee, call or write to Jeff (803-777-6484 ESRI University of South Carolina 901 Sumter St. Room 401 Columbia, SC 29208).
- 3) Creation of Environmental organic petrology, led by Mukhopadhyay who has samples from Halifax Harbor. If you are interested in working on environmental samples call or write Muki (902-453-0061 Global GeoEnergy Research P.O. Box 9469 Station A Halifax, Nova Scotia B3K 5S3 Canada).

It is hoped that progress reports at the annual meeting will become a TSOP tradition, if not every year, then perhaps every other year. We do have a Research Committee Budget of \$1,000. At the present time our 1994 expenditures will be approximately \$100 for environmental subcommittee sample preparation and \$450 for color publication of the kerogen subcommittee progress report.

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Walter A. Bell Symposium Paleobotany and Coal Science

The first Walter A. Bell Symposium on Paleobotany and Coal Science will be held at the University College of Cape Breton, Sydney, Nova Scotia, May 28 to June 1, 1995. Walter A. Bell was a pioneer in studies of Carboniferous coal-bearing strata of the Maritimes and was a Director of the Geological Survey of Canada. The Symposium is being sponsored by the University College of Cape Breton, Geological Survey of Canada, Cape Breton Miner's Foundation and Glace Bay Miner's Museum, and the U.S. Geological Survey.

The first Bell Symposium will focus on the paleobotany of Carboniferous coal-bearing strata in Euramerica. Fifteen keynote speakers and invited speakers from Canada, the United States, and Europe will give talks on significant coal-related research on Carboniferous paleobotany and palynology. One of the keynote speakers is Canada's foremost coal geologist, Dr. P.A. Hacquebard of the Geological Survey of Canada, who will speak on the coal geology of the Maritimes. In addition, there will be about 20 other speakers whose talks will center on Euramerican late Paleozoic paleobotany and floral biostratigraphy.

The Symposium will include a half-day field trip to the Carboniferous coal-bearing strata of the Maritimes. There will also be spousal activities. Also, there will be a half-day workshop on Carboniferous palynology, Carboniferous compressional plant fossils of the Maritimes, and newly discovered coal balls from Nova Scotia. A post-Symposium tour of the historical Fortress Louisbourg is also planned.

There will be a limit of about 100 people (including spouses) so early registration is best. The first circular was mailed in

February, 1994. For a copy of the first circular or for further information contact: Dr. Erwin L. Zdrov, University College of Cape Breton, P.O. Box 5300, Sydney, Nova Scotia, Canada B1P 6L2 (Fax 902-562-0119); or Dr. Paul C. Lyons, U.S. Geological Survey, Mail Stop 956, Reston, Virginia, U.S.A. 22092 (Fax 703-648-4227).

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TSOP PUBLICATIONS AVAILABLE

Order from Renee Symanski

TSOP has a supply of publications available for purchase by individuals or institutions. Renee Symanski recently completed an inventory and prepared an order form to make purchase convenient and economical. The following are listed (price is in US-\$):

Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Kokungsverhalten - (in German, with numerous figures and microphotographs) by M. Teichmuller — \$10

Fluorescence - microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior - (English translation, without figures or microphotographs, of the above book by M. Teichmuller) — \$5

Influence of kerogen isolation methods on petrographic and bulk chemical composition of a Woodford Shale sample, October 1989 — \$20 (only three available)

Fluorescence Microscopy Workshop Lecture Notes — \$35 (several available)

Organic Geochemistry Issues of the journal contain papers from the TSOP annual meetings. They are available in various numbers for the 2nd through 9th meeting (1985-1992) at prices ranging from \$20 to \$35.

An additional \$1 per publication helps cover postage expense; sorry, credit cards can not be used. For further information, to place an order, or get an order blank with a complete listing, contact:

Renee L. Symanski
c/o Core Laboratories
1875 Monetary Drive
Carrollton, TX 75006 USA
Phone: 214 323-3909
Fax: 214 323-3930

ACS SYMPOSIUM, March, 1994

The Geochemistry and Petrography of Kerogen and Macerals

Report by *Jim Hower*

TSOP and the Geochemistry Division of ACS co-sponsored this symposium on March 13-15, 1994, organized by TSOP members Tom Robl, Adrian Hutton, and Sunil Bharati. The three-day symposium at the 207 th American Chemical Society meeting in San Diego featured 38 presentations (out of 48 originally scheduled) from a truly international assembly of researchers in organic geochemistry and petrology. To further emphasize the international flavor, consider that only eight US and two Canadian presentations were among the papers presented. Titles of the papers were included in TSOP Newsletter, V.10, No.4.

The session was started with a pair of keynote addresses: "The chemical and petrographic classification of kerogen macerals" by the co-chairmen (presented by Hutton) and "Twenty-five years of coal maceral analytical pyrolysis - Progress or deja-vu" by Steve Larter. The other papers had a strong emphasis on petrology of dispersed organic matter, with a few coal petrology papers thrown in for good measure. The dominance of geochemistry papers implies, at least to me, that such a venture as this does not detract from the regular TSOP meetings as the symposium attracted papers not normally presented in our annual meetings.

So, was the symposium a success? Without a doubt, yes. The actual attendance may have been about 100 individuals over the course of the three days. The symposium provided an excellent forum for the exchange and critiquing of ideas with all papers generating discussion. Most important for both the attendees and the TSOP members who could not attend, there will be a permanent record of at least some of the papers. *Energy & Fuels* has agreed to publish the proceedings in a special issue scheduled (we hope) for later this year. Watch for an announcement giving details about this volume.

On behalf of TSOP, I wish to thank the three co-conveners for their effort in

organizing the symposium. Special thanks go to Gretchen Tremoulet at the CAER for her behind-the-scenes work in organizing communication with the participants. In addition to contributions from TSOP and the Geochemistry Division, financial support was provided by the Petroleum Research Fund, the International Science Foundation, and the University of Kentucky Center for Applied Energy Research.

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ACS SYMPOSIUM, March 17, 1994
Analysis and Application
of Trace-element
Geochemistry in Coal and
Associated Derivatives
Report by Jim Hower

The symposium was convened at the 207th American Chemical Society meeting by Alan Davis (Penn State) and Gerald Huffman (Kentucky) to address the renewed interest in trace elements in coals and their behavior in combustion and disposal. The morning session emphasized the basic associations of elements in coals. Dal Swaine (CSIRO, North Ryde) led off the session with an overview of environmentally important elements in coal and their release as air-borne fly ash. Jim Hower (Kentucky) discussed elemental associations in density-gradient centrifugation separates of the Blue Gem coal bed. Frank Huggins (Kentucky) reviewed XAFS and EXAFS techniques in the determination of the modes of occurrence of minor elements. Dave Robertson (Kentucky) compared PIGE determination of fluorine to ASTM techniques.

In the afternoon session John Cerbus (Illinois) discussed leaching studies of coal ash, relating his work to the standard TCLP procedure. Curtis Palmer (USGS) also discussed the leaching behavior of coal with emphasis on the elements important in the 1990 Clean Air Act. Bob Finkelman (USGS) discussed the 12 metals specified (or implied in the case of U) in the Clean Air Act. The USGS Coal Quality data base contains analyses of about 7500 full-channel coal beds and will be an important tool in assessing the levels of elements in US coals. Dave Akers (CQ Inc., Homer City, PA) developed predictive equations to assess the change in elemental concentration with physical coal clean-

ing. Ilham Demir (Illinois State Geological Survey) assessed physical coal cleaning with emphasis on Illinois coals. Following a paper by Harry Ni (Kentucky) concerning XPS studies of Fe and Mo impregnated Black Thunder coal, Steve Wasserman (Argonne) discussed the forms of Fe in Argonne Premium Coal samples.

As a society, and particularly for those TSOP members dealing with coal, we need to remember that coal petrology encompasses all aspects of coal composition. The association of minerals and trace elements with coal macerals is important at all levels of coal petrographic studies and will remain important for many years in the assessment of coals for combustion.

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Calendar
1994

April 30: Titles due for TSOP Ann. Mtg., Sept. 25-30. TSOPNws 10(3)8, 10(4)1

May 15-18: Geol. Assn. Canada & Mineral. Assn. Canada: Ann. Mtg, Waterloo, Ontario. Info: (519) 885-1211.

May 20-21: Canadian Soc. Coal & Organic Petrology: Ann. Mtg, Waterloo, Ontario. Info: Stephen Bend (306) 585-4021.

May 22-25: ASTM Committee D5 on coal and coke. Mtg. at Myrtle Beach SC, USA. Info: (215) 299-5487.

June 12-15: AAPG, Ann. Mtg, Denver, Colorado.

June 12-15 (part): Thermal maturity in sedimentary basins: Uses and abuses of vitrinite reflectance. AAPG Mtg. Session. Info: M.D. Lewan (303) 236-9391, B. Cardott (405) 325-3031.

June 12-15 (part): Geostatistics in the search for energy. AAPG Mtg. course. Info: Michael Hohn (304) 594-2331.

June 12-15 (part): Trace elements in coal and their significance to the clean air act amendments of 1990. AAPG Mtg. course. Info: Bob Finkelman (703) 648-6412.

June 22-25: 10th International coal testing conference. Lexington KY, USA. Info: (606) 325-1970.

June 30: Abstracts due for TSOP Ann. Mtg., Sept. 25-30. TSOPNws 10(3)8

Aug. 21-24: AAPG, International Mtg., Kuala Lumpur, Malaysia.

Sept. 14-16: Coalbed Methane and Coal Geology Intl. Conf. at University of Wales, Cardiff, U.K., including session on coal petrology, rank and palynology. Abstract deadline April 1. Info: Phone=0222-874830, Fax=022-874326.

Sept. 25-30: TSOP Ann. Mtg., Jackson Hole, Wyoming. Info: (703) 648-6462 or 648-6421. TSOPNws 10(3)8, 10(4)1. Titles due April 30, abstracts by June 30.

Oct. 2-5: ASTM Committee D5 on coal and coke. Mtg. at Denver, CO, USA. Info: (215) 299-5487.

Oct. 2-8: ICCP Ann. Mtg., Oviedo, Spain. Info: Dr. R. Menendez; Instituto Nacional del Carbon, CSIC; AP.73; 33080-Oviedo; Spain.

Oct. 4-7: Gulf Coast Assn. Geol. Soc. (AAPG Gulf Sect.). Austin, Texas. Info: Peter Rose (512) 480-9970.

Oct. 24-27: GSA, Ann. Mtg., Seattle. Washington.

Oct. 24-27 (part): Origin of compositional characteristics in Tertiary coal: Paleoecology, paleobotany and palynology. GSA Coal Symposium at Ann. Mtg., Seattle. Info: T. Demchuk, T. Moore, Jane Shearer. Details: TSOPNws 10(3)8-9.

Nov. 16-18: Coal and Organic Petrology International Symposium, Kyushu University, Fukuoka, Japan. Info: TSOPNws

10(4)3. **1995**

March 5-8: AAPG, Ann. Mtg, Houston, Texas.

April: Symposium on Appalachian Coal, at GSA Southeastern Meeting, Knoxville, Tennessee. Info: Jim Hower, etc.

Early October?: TSOP, Ann. Mtg., Houston, Texas. Info: John Castaño.

1996

May 19-22: AAPG, Ann. Mtg, San Diego, California.

Fall?: TSOP and CSCOP: Joint Ann. Mtg, Halifax, Nova Scotia.

MEMBERSHIP NEWS

by *Dave Glick*, Chairman

As much as possible we will list permanent and temporary changes in each Newsletter issue so members can update the Directory — or at least spot changes of impor-

tant current correspondents. Therefore it is important that you **let Dave Glick know of any changes and additions.** This is particularly important for FAX numbers, Email and others for which there is no forwarding service! Note: Email addresses are shown here in CAPS and lower-case and punctuation as given to us; they have not been verified to work.

New members have been appearing, and many of you have sent updates of your Directory information to Ken Kuehn along with your dues payments. Thank you for helping us stay current!

Membership Expiration Dates on Mailing Labels

The membership expiration date on the address label of this Newsletter reflects your dues payments received by Ken Kuehn before April 14, 1994. If you recently mailed your payment, but the label still shows an expiration date of 12/93, please check the label of the next Newsletter to verify that our records are updated.

New Members

The Society welcomes the following persons who applied for membership since November, 1993. Please make note of these entries in your 1993 Membership Directory.

Michael V. Ellacott
CSIRO Div. of Petroleum Resources
P.O. Box 136
North Ryde, NSW 2113
AUSTRALIA (02) 887 8645
Fax: (02) 887 8909
Email: m.ellacott@dpr.csiro.au

Michael Ellacott's activities at CSIRO include use of laser induced fluorescence to study fluorescence alteration and variation in reflectance of different kinds of isometamorphic vitrinite. He also works with thermal maturity determination of kerogen from samples related to petroleum exploration.

Michael C. Frank
Department of Geology
University of Regina
Regina, Sask. S4S 0A2
CANADA

306 585-4998
Fax: 306 585-5205
Email: frankmic@max.cc.uregina.

Michael Frank is a Ph.D. student investigating maceral precursors and other aspects of coal and organic petrology.

Rae Anthony Jones
 3 The Wiend
 Rock Ferry
 Birkenhead
 Merseyside L42 GRY
 UNITED KINGDOM
 0742 825439
 Fax: 0742 799088

Rae Anthony Jones is a Ph.D. student in palynology at the University of Sheffield. His work has included Triassic palynology and kerogen chemistry, microwave oxidation of coal and kerogen, and other aspects of palynological processing.

Stephen R. Larter
 Fossil Fuels & Env. Geochem.
 (Postgraduate Inst.): NRG
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 Newcastle upon Tyne
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 011 44 91 222 8501
 Fax: 011 44 91 261 1182
 Email: steve.larter@ncl.ac.uk

Dr. Larter is Head of Fossil Fuels and Environmental Geochemistry (Postgraduate Institute), University of Newcastle upon Tyne. Previously, he developed his expertise in reservoir geochemistry while serving as Head of UNOCAL's Basin Modeling Group and as Visiting Professor at the University of Oslo.

Mark Pawlewicz
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Mark Pawlewicz's work at the U.S. Geological Survey includes studies of type and maturity of organic matter from Alaska, the western interior U.S., Rocky Mountains and Gulf coast.

James Pontolillo
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 956 National Center
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 703 648-4597
 Fax: 703 648-6419

For the last five years, James Pontolillo has been working in various aspects of coal petrology, including petrographic composition, mineral matter in coal, and rank/ maturation studies.

Frank M. Schneider
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After receiving a M.Sc. degree in sedimentology and basin analysis from the Technical University of Clausthal in 1993, Frank Schneider is now at Bryn Mawr College. His work includes organic geochemistry, petrology, and palynofacies analysis.

Jesse D. Yeakel
 3022 La Quinta Dr.
 Missouri City, TX 77459
 713 965-4637

At Exxon Production Research, Dr. Yeakel is once again working in coal petrology. His interests include modern organic sediments, oil-generation from coals, coal combustion and fouling, and seam description.

Address/Phone Changes:

The following changes were received before April 14. Please keep this list with your membership directory.

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CALL FOR PAPERS

1994 TSOP ANNUAL MEETING

September 25-30, 1994

Jackson, Wyoming.

Please

send a tentative title

by April 30, 1994.

The Eleventh Annual Meeting of The Society for Organic Petrology (TSOP) will be held in the town of Jackson, Wyoming September 25-30, 1994.

A pre-meeting **workshop** "Introduction to fractal geometry and its use in the earth sciences" will be taught September 25 by Christopher C Barton, U.S. Geological Survey, Denver. Two days of **oral and poster** technical presentations will be on September 26-27, including a theme session "Organics and the Rockies". Technical contributions are welcome. **Field excursions** through the Wind River, Big-horn, and Powder River basins to examine coal and terrestrial source rocks of oil and gas will be led by Romeo Flores, U.S. Geological survey, Denver.

Full particulars of the meeting were on a flier enclosed in the last Newsletter, and more detail was given in volume 10, No.3.

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 Neely H. Bostick, Editor
 U.S. Geological Survey, ms-972
 Denver Federal Center
 Denver CO 80225-0046 USA



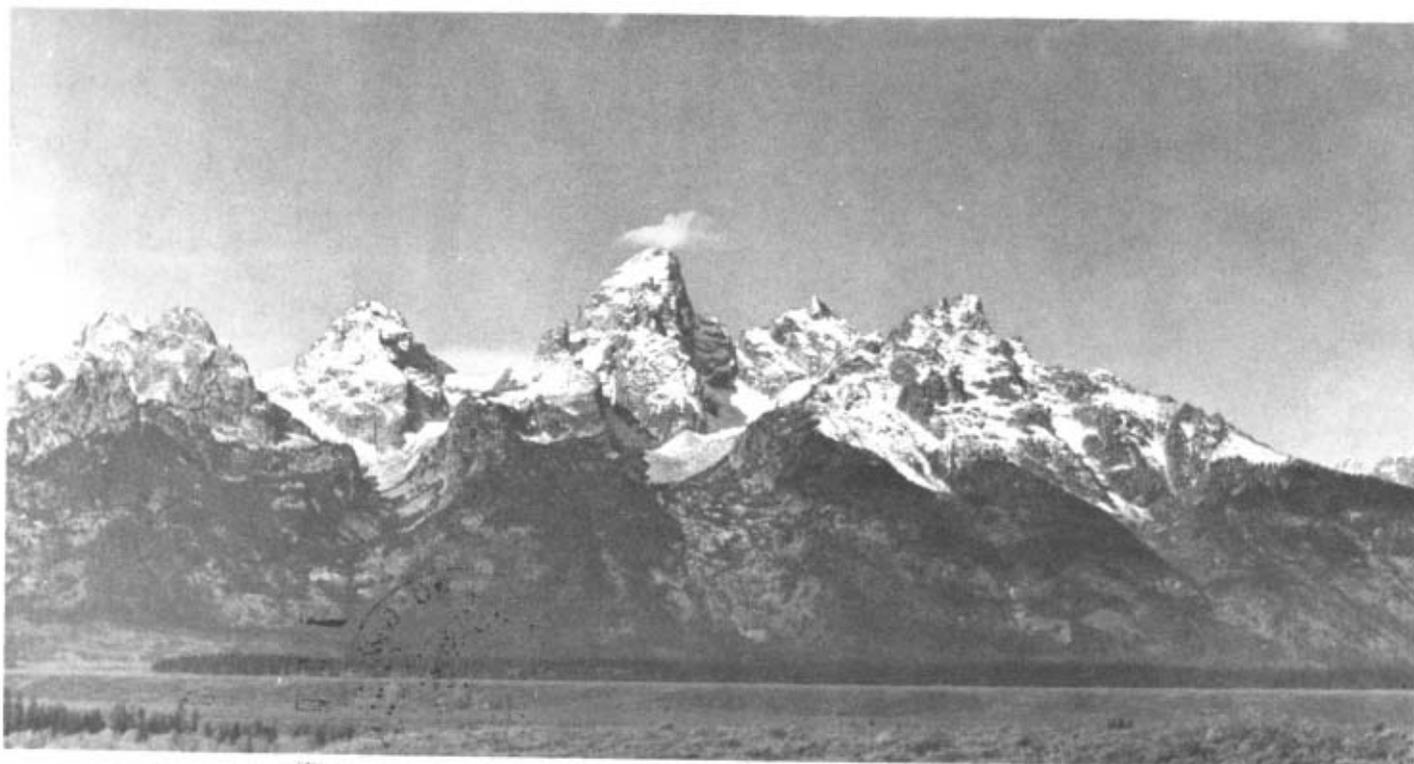
THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 11, No. 2

August, 1994

ISSN-0743-3816



The Teton Range towers above Jackson, Wyoming

TSOP'94 -- Wyoming

REGISTRATION TIME IS HERE!

The 11th Annual Meeting of The Society for Organic Petrology will be held at the Snow King Resort in Jackson, Wyoming on September 25-30, 1994. Details have been distributed in the Newsletter v. 10, No. 3, a flier in v.10, No. 4, and two separate fliers or registration forms sent separately to members recently. Here is a brief recap.

Reception

A wine and cheese Reception will be held on Sunday, September 25 in Rafferty's Restaurant at the Snow King Resort.

Workshop

A one-day, pre-meeting workshop entitled "Introduction to Fractal Geometry and its Use in the Earth Sciences" will be held on Sunday, September 25 in the Timberline III Room at the Snow King Resort. The workshop will be taught by Christopher C. Barton (USGS, Denver) and will review a variety of published applications of fractals in the earth sciences. The purpose of the course is to enable participants to comprehend the fractal literature and to measure and interpret the fractal properties of their own work by applying fractal

Continued on pg. 2

The TSOP Newsletter
Neely H. Bostick, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write: David C. Glick, TSOP Membership Chair, Coal and Organic Petrology Laboratories, 105 Academic Projects Bldg., Penn State University, University Park, PA 16802-2300 U.S.A. Phone: (814) 865-6543, Fax: (814) 865-3573.

Newsletter Contributions

The Newsletter welcomes contributions about events and topics pertaining to organic petrology — from TSOP members or non-members. Items submitted on computer diskette (DOS only, not Macintosh) or by Email are more convenient than printed materials. Unformatted ASCII files or files formatted in WordPerfect or Wordstar are preferred. Printed text sent by mail or by FAX can be scanned **if the text characters are equally spaced as from an old typewriter. Proportionally spaced characters close together are barely usable.**

Send contributions to the new Editor:

Jim Pontolillo, MS-956
 U.S. Geological Survey
 RESTON VA 22092, USA
 Phone: (703) 648-4597
 Fax: (703) 648-6419
Email: jponto@ncrds.er.usgs.gov

For purposes of registration of the Newsletter a permanent mail address is: The Society for Organic Petrology; c/o Ron Stanton, ms-956; U.S. Geological Survey; 12201 Sunrise Valley Drive; RESTON VA 22092-0001, U.S.A.

The 1993-94 TSOP Council

President	James C. Hower
Vice-President	P. K. Mukhopadhyay
President Elect	Renee L. Symanski
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1992-94)	Charles R. Landis
Councilor (1993-95)	Cole R. Robison

The Constitution and Bylaws of the Society For Organic Petrology were adopted on March 10, 1984. With revisions through July, 1993, they are printed in the 1993 Membership Directory and Bylaws. For more information see the Editor's box.

1994 TSOP ANNUAL MEETING

Continued from pg. 1
 geometry. Participants are invited to bring data sets that they are considering for fractal analysis. The registration fee (\$45) covers all course materials.

Meeting

Technical and poster sessions will be held on Monday and Tuesday, September 26-27 in the Grand Room at the Snow King Resort. Topics for the sessions include: coal petrographic and geochemical characterization, thermal maturity, paleobotany, kerogen, coalification patterns, reservoired oils and source rocks, coal quality, experimental coalification, solid hydrocarbons, Coalbed methane, hazardous trace elements, and related applications. Most titles were in the detailed flier.

A theme session entitled "Organics and the Rockies" will also be held on Monday, September 26 in the Grand Room at the Snow King Resort. The keynote speaker is Romeo M. Flores and his topic will be "Tertiary coal basins of the Wyoming Rockies: Events and Processes".

The registration fee (prices increase after August 20, see the earlier fliers) includes the Sunday Reception, all technical/poster/theme sessions, a copy of the Abstracts and Program Volume, a copy of the proceedings in a special number of Organic Geochemistry, a group photo, two Continental breakfasts, and all coffee breaks.



Figure 1. Map showing daily routes for the field trips in the Wind River Basin (day 1), Bighorn Basin (day 2), and northwestern Powder River Basin (day 3).

Field Trip

A three-day, post-meeting field trip touring the Wind River, Bighorn, and Powder River Basins in Wyoming will be held from Wednesday through Friday, September 28-30. Highlights of the trip will include: Tertiary rocks of the Wind River Basin, oil-stained fluvial channel sandstones and the geochemistry of their oil, the Fort Union Badlands, overview of the K/T sandstones, Indian petroglyphs and pictographs, Waltman Shale Member type section, Lost Cabin Oil Field, Precambrian and Carboniferous rocks of the Wind River Canyon, Rocks of the Bighorn Basin, Grass Creek Coal Mine tour, Sand Draw escarpment, Eocene Willwood Badlands, the Fort Union Formation at the Bighorn/Nowood River confluence, Steamboat Point Overlook (Precambrian), Sand Turn Overlook (Carboniferous), overview of the northwest Powder River Basin, East Decker Coal Mine tour, and Spring Creek Coal Mine tour. The field-trip registration fee (\$150) includes a field-trip guidebook, lodgings (double occupancy) for three nights, as well as Continental breakfast and lunch for three days. Please note: the field-trip ends in Casper, WY on Friday, September 30. Hotel and travel accommodations are the responsibility of the participant from this point on.

Lodging

The conference hotel is the Snow King Resort located at the base of Snow King Mountain in the town of Jackson, six blocks from the Jackson Town Square. Hotel accommodations for the time of the meeting are the responsibility of the attendee. Come early or stay late! The following room rates will not only apply for the meeting, but will also be available two days before and two days after the meeting, space permitting.

Single	\$ 60
Double	\$ 70
Triple	\$ 80
Quad	\$ 90
Jr. Suite	\$100
Suite	\$120

Please contact Snow King Resort regarding **any early or extended** room reservations as early as you can! For room reservations during the meeting and any additional lodging information at Snow King, contact:

Snow King Resort 307-733-5200
 400 E. Snow King Ave. FAX: 307-733-4086
 Jackson, WY 83001
 1-800-522-KING (outside Wyoming)
 1-800-533-SNOW (inside Wyoming)

Transportation

Flights are available to Jackson on several major airlines, check with your travel agent.

As an option, vans will be traveling from Denver Airport to Jackson on Sept. 23 and 24 and will be returning to the Airport on October 1, 1994, after the field trip. Seats in these vans will be available on a first-come, first-served basis. For details and to reserve a seat, call Ron Stanton 703-648-6462 (FAX 703-648-6419), soon.

The Snow King Resort provides year-round complimentary transportation between Jackson Hole Airport and the Resort, meeting all scheduled flights. The town of Jackson provides a START bus system between major points in Jackson and Teton Village.

Weather

Anything is possible in Wyoming in late September : it has been known to snow. Daytime highs will probably be in the 80s. Of course, it is always windy. Meeting and field-trip participants are advised to pack accordingly.

Further Information

If you have any problems/questions regarding Meeting details, contact Ron Stanton:

Phone (703)-648-6462
Fax (703)-648-6419

* * * *

President's Letter New Paradigms by Jim Hower

Over the past ten years I have had the opportunity to study a series of coals spanning the Westphalian-Stephanian boundary - a boundary well known to paleobotanists and Palynologists as a time of major change in the Pennsylvanian mires. Within a geologically short period of time, most arborescent lycopods died off and the climate got drier. One July 4th I went to a picnic at the house of two plant pathology post-docs - one a specialist on the American chestnut blight (trust me, there is a connection). In the course of the picnic, a neighbor proudly showed

off her garden, featuring Jerusalem artichokes, to the assembled plant pathology students. One student, whose specialty was Jerusalem artichokes, excitedly exclaimed... "Are they diseased?"

The plants were fine, and I suppose they continued to do fine until harvested, but the statement got me thinking about how our view of the world is framed tightly by our particular niche in science. The plant pathologist probably never gave any more thought to Paleozoic extinctions than I had to modern plant diseases, even though there is a connection between the two disciplines. Did the lycopods succumb to a blight which, over the course of many years, spread through the Euramerican basins? After all, the extinction does not appear to have been simultaneous throughout the coalfields. And was the outset of drier climate during the Stephanian a cause or a consequence of the extinction? The relatively sudden loss of such a large CO₂ sink may have affected climate in a manner similar to the anticipated outcome if modern tropical rainforests would be lost. How does one prove either, both, or neither hypothesis? Just what would diseased vitrinite look like? The questions go on but the important point is the questions were instigated through interaction with another discipline.

Continuing the theme from past letters, I return to the point that the direction of our society will continue to be molded by our level of participation in meetings, and we are offering quite a few opportunities over the next several years, and by the new researchers we attract to our meetings and retain as members. In this climate of open and rapid exchange of ideas we may grasp the clues to enable us to take our own research to new levels. The connection between lycopods and Jerusalem artichokes or American chestnuts may be genetically non-existent but perhaps the modern angiosperms can teach us something about the past. Other connections are waiting, whether they be in models of peat-forming environments, biogeochemical controls on metal deposition, or any number of other research topics. The best way to seek them out is to stay active in societies such as TSOP.



RESEARCH COMMITTEE REPORT 94-2**by Carolyn Thompson-Rizer**

Work is underway or being initiated in the three subcommittees. Progress statements will be made at the Annual Meeting in Jackson, Wyoming in September. Goals, work plans and membership of each subcommittee were written by each chairman and are given below.

1) Standardization of Kerogen Isolation / Characterization Methods, Stan Teerman Chairman (Perth, Australia fax 61.92.63-66-99) — Stan will be in Perth for about two years and he would like to share chairing this committee with an interested TSOP member. This year and into 1995, Stan has proposed a project with the goal of evaluating petrographically and geochemically various types of amorphous organic matter assemblages. The results will contribute to (1) standardization of the identification and classification of various types of amorphous organic matter, (2) elimination of the amorphous nomenclature problem, and (3) integration of microscopy and geochemistry. The work plan calls for a relatively small project, involving samples that contain different types of amorphous organic matter. Photomicrograph round robin studies and questionnaires on various properties of amorphous organic matter will be included. Members of the existing working group are Brian Cardott (Oklahoma Geological Survey), Manuel Lemos De Sousa (University of Porto, Portugal), Richard Harding (Simon)Robertson, UK), Dennis Logan (Phillips Petroleum), Martin Reinhardt (International Geological Consultant, Germany), Carolyn Thompson-Rizer and Roger Woods (Conoco Inc.). New members are invited to join this group, please fax Stan.

2) Standardization of Reflectance and Fluorescence Methods, Jeff Quick Chairman (Columbia, South Carolina fax (803) 777-6437) — Two separate projects are active in this subcommittee, one on vitrinite reflectance and one on fluorescence. The goal of the "Standardization of Vitrinite Reflectance Analysis" project is to examine how much variation among laboratories is due to our calibration technique, rather than to differences in sample preparation or subjective selection of vitrinite particle populations. The result may demonstrate the need for certification of standards by a national accreditation agency. The work

plan requires a round robin analysis to compare calibration methods. Participants will be asked to measure the reflectance of polished glass specimens and to provide information on the reflectance standard and calibration method used in their laboratory. It is hoped that many labs will participate since the actual analytical time involved will be modest. Specimens and instructions will be distributed in October. Membership of this working group is open, contact Jeff (tel. (803) 777-0175, E-mail: jquick@esri.esri.scarolina.edu).

The 1994 goal of the "Standardization of Fluorescence Analysis" project is the completion of the ICCP sheets on fluorescence microscope photometry, part 2, determination of spectral distribution. Jeff Quick and Stephen Bend are currently finishing editorial changes (style and organization) begun by Rui Lin and Carolyn Thompson-Rizer at the ad-hoc working group meeting at the 1992 TSOP/ICCP meeting.

Future plans for this subcommittee include an investigation of the interpretation of vitrinite reflectance measurements on dispersed kerogen, as recently suggested by Martin Reinhardt. Problems with the recognition of vitrinite in dispersed kerogen, the number of reflectance readings per sample, and the interpretation of histograms might be addressed by a working group in 1995. Future efforts in fluorescence might be directed towards evaluation of the influence of filter combinations. Given the ever growing number of available filter combinations (different excitation wavelengths, transmission and blocking efficiencies) an investigation of fluorescence filters for specific applications is suggested. Contact Jeff if you have additional ideas for this subcommittee.

3) Environmental Organic Petrology, P. K. Mukhopadhyay Chairman (Halifax, Canada fax & tel. (902) 453-0061) — The goal of the current project is to document geochemically and petrographically the kinds of organic matter occurring in present day possibly polluted environments. Two samples from Halifax Harbor have been prepared as kerogen pellets and as smear slides. Rock)Eval data have been obtained for each sample and Michael Kruge will study the PAH's. Working members are Suzanne Russell, L. D. Stasiuk, H. B. Lo, Neely Bostick and Michael Kruge. Preliminary results will be discussed at the annual meeting in Jackson.

A Handbook of Organic Petrology is in preparation by P. K. Mukhopadhyay and others. Contact Muki if you are interested in this project or discuss it at Jackson,

Budget — To date \$576 of our \$1,000 budget for the Research Committee has been used to pay for the color reproduction of the Kerogen Isolation/Characterization Methods Subcommittee report.

Plans for 1995 TSOP Annual Meeting Workshop — current ideas are for a microscope workshop to be held at DGSI near Houston to view and discuss round robin samples.

* * * * *

Calendar

1994

August 21-22: Symposium on Amber, Resinite and Fossil Resins: ACS Meeting, Washington DC. Geochemical analysis, petrology, chemotaxonomic and paleobotanical studies, DNA studies, and other aspects of chemistry. Info: J. Crelling (618) 453 7361, K. Anderson (708) 420-3734. TSOPNws 10(9)9.

Aug. 21-24: AAPG, International Mtg., Kuala Lumpur, Malaysia.

Sept. 14-16: Coalbed Methane and Coal Geology Intl. Conf. at University of Wales, Cardiff, U.K., including session on coal petrology, rank and palynology. Info: Phone=0222-874830, Fax=022-874326.

Sept. 25-30: TSOP Annual Meeting and Field Trip, Jackson, Wyoming. Info: (703) 648-6462 or 648-6421. TSOPNws 10(3)8, 10(4)1.

Oct. 2-5: ASTM Committee D5 on coal and coke. Mtg. at Denver, CO, USA. Info: (215) 299-5487.

Oct. 2-8: ICCP Ann. Mtg., Oviedo, Spain. Info: Dr. R. Menendez; Instituto Nacional del Carbon, CSIC; AP.73; 33080-Oviedo; Spain.

Oct. 4-7: Gulf Coast Assn. Geol. Soc. (AAPG Gulf Sect.). Austin, Texas. Info: Peter Rose (512) 480-9970.

Oct. 24-27: GSA, Annual Meeting, Seattle, Washington.

Oct. 24-27 (part): Origin of compositional characteristics in Tertiary coal: Paleoecology, paleobotany and palynology. GSA Coal Symposium at GSA Annual Meeting, Seattle. Info: T. Demchuk, T. Moore, Jane Shearer. Details: TSOPNws 10(3)8-9.

Nov. 16-18: Coal and Organic Petrology International Symposium, Kyushu University, Fukuoka, Japan. Info: TSOPNws 10(4)3.

1995

March 5-8: AAPG, Ann. Mtg, Houston, Texas.

April: Symposium on Appalachian Coal, at GSA Southeastern Meeting, Knoxville, Tennessee. Info: Jim Hower, etc.

Early October?: TSOP, Ann. Mtg., Houston, Texas. Info: John Castaño.

1996

May 19-22: AAPG, Ann. Mtg, San Diego, California.

Fall?: TSOP and CSCOP: Joint Ann. Mtg, Halifax, Nova Scotia.

* * * * *

MEMBERSHIP NEWS

by *Dave Glick*, Chairman

Membership Directory

We expect to mail the 1994 Membership Directory during September, so address and telephone updates received from existing members over the last few months will not be listed here.

New Members

The Society welcomes the following persons who applied for membership since April, 1994. They will be listed in the new Directory.

Catherine Chagué-Goff

c/o Dr. J. Goff

Department of Geology

Victoria University of Wellington

P.O. Box 600

Wellington, NEW ZEALAND

Catherine Chagué-Goff is presently completing a Ph.D. in Earth Sciences at the University of Western Ontario. Her research interests focus on the inorganic geochemistry and organic petrology of peat, and on the study of wetlands. She has recently completed work with the Alberta Research Council, in projects on coal-bed methane and the petrology and geochemistry of Albertan coals.

Alexei Ievlev

Institute of Geology of the Komi Science

Center of the Ural Department of

Russian Academy of Sciences

54, Pervomaiskaya St.

Syktyvkar, Komi Republic 167610

RUSSIA

(821-22) 25698
Fax: (821-22) 25346

Dr. Ievlev completed his Ph.D. in 1987 at the Institute of Geology where he is now employed. His research concerns the composition and structure on natural organic materials.

Michael W. Lambert

Seafloor Sciences Branch
Naval Research Laboratory
Stennis Space Center, MS 39529
601 688-4774
Fax: 601 688-5752

Dr. Lambert's Ph.D. research at the University of Kansas, completed in 1992, concerned the organic geochemistry and petrology of a Paleozoic mudrock. His current work applies the same techniques to seafloor mud.

Glenda Mackay

14 Laughlin Ave.
Nunawading, Victoria 3131
AUSTRALIA

61 3 819 8210
Fax: 61 3 819 8264

Email: Glenda@mechman.mm.swin.edu.au

With degrees in geology and chemical engineering, Ms. Mackay is currently completing a Ph.D. in coal combustion at the Swinburne University of Technology, Melbourne. Her work has included the petrology of brown coals, combustion char research, and the relationship of coal character to utilization procedures.

Valentina A. Pesetskaya

Institute of Geology of the Komi Science Center of the Ural Department of Russian Academy of Sciences
54, Pervomaiskaya St.
Syktyvkar, Komi Republic 167610
RUSSIA

(821-22) 25698
Fax: (821-22) 25346

Dr. Pesetskaya holds a Ph.D. from Moscow State University where she studied petroleum geochemistry and sedimentary basins. Her current work concerns various aspects of source rocks, including kerogen types and thermal maturity.

Neil Sherwood

CSIRO Division of Petroleum Resources
PO Box 136
North Ryde, NSW 2113
AUSTRALIA

61 2 887 8976
Fax: 61 2 887 8921

Email: N.Sherwood@dpr.csiro.au

With varied experience in the field of organic petrology, Dr. Sherwood completed a Ph.D. concerning petrology and geochemistry of oil shales at the University of Wollongong in 1991. He is interested in the relationship of organic petrology and geochemistry, and in development of new techniques for maturity assessment.

Atul Kumar Varma

Coal and Organic Petrology Laboratory
Post Graduate Centre, Chaibasa
Distt.- Singhbhum (Bihar) 833202
INDIA

(0091) 06582-52407

Fax: (0091) 06582-52448

Dr. Varma received his Ph.D. in 1991 from the Institute of Applied Geology, Silesian Technical University, Poland, where he studied effects of petrography on conversion of inertinitic coals. His current work includes application of petrology and organic geochemistry to coal liquefaction, coking and pollution control. He is working in ICCP Commissions I and III.

* * * *

TSOP ELECTION RESULTS**1994-95 Council Positions**

Ballot Committee Chair Cortland Eble has reported the results of the election for officers for the 1994-1995 terms on the TSOP Council. The elected candidates are:

President Elect	Brian Cardott
Vice President	Jack Crelling
Councilor	Stephen Bend
Editor	Jim Pontolillo

The new Council members will begin their terms at the Incoming Council meeting during the Annual Meeting in Wyoming. They will join Cole Robison who will be continuing in his second year as Councilor, Ken Kuehn continuing as Secretary/Treasurer, and Renee Symanski who will be stepping up to the presidency.

Thanks go to the Nominating Committee, chaired by Suzanne Russell, the Ballot Committee, chaired by Cortland Eble, and to all participants (candidates and voters) in the electoral process.



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TSOP Newsletter
 Neely H. Bostick, Editor
 U.S. Geological Survey, ms-972
 Denver Federal Center
 Denver CO 80225-0046 USA

LODGING INFORMATION - Snow King Resort, Jackson

Hotel accommodations for the time of the meeting are the responsibility of the attendee. Come early or stay late! The following room rates will not only apply for the meeting but will also be available *two days before and two days after the meeting, space permitting.*

Single	\$ 60	Double	\$ 70	Triple	\$ 80
Quad	\$ 90	Jr. Suite	\$100	Suite	\$120

For room reservations during the meeting and any additional lodging information at Snow King, contact:

Snow King Resort (307) 733-5200 FAX:(307) 733-4086
400 E. Snow King Ave. Tel.(800) 533-SNOW (Toll-free from Wyoming)
Jackson, Wyoming 83001 (800) 522-KING (Toll-free for all other locations)

Special Pre-Meeting Workshop on "Introduction to Fractal Geometry and its Use in the Earth Sciences"

by Chris Barton, U.S. Geological Survey

Fractal geometry provides a means of mathematically describing and modeling some of the complex patterns that earth scientists map, measure, and describe in ever-increasing detail. It provides a powerful tool for analyzing the roughness, size, distribution, density or frequency of objects over a range of scales in time or space. The scaling geometry of a fractal pattern is represented by a fractional number, termed the fractal dimension. Many geologic patterns have been shown to be fractal, including: topography, tributary river patterns, fluid-flow paths in porous media, fracture networks, petrographic textures in rock, size and spatial distribution of petroleum reservoirs and metallic ore deposits, size and spatial distribution of pores, and sequences of stratigraphic thicknesses and hiatuses.

This workshop is an introduction to the concepts of fractal geometry. A variety of published applications of fractals in the earth sciences will be reviewed. The purpose of the course is to enable participants to comprehend the fractal literature and to measure and interpret the fractal properties of their own work by applying fractal geometry. Participants are invited to bring data sets that they are considering for fractal analysis.

Postmeeting Field Trip Through the Tertiary Basins led by Romeo Flores, U.S. Geological Survey *A unique opportunity to visit the major Tertiary Basins in Wyoming/Montana*

Tuesday, September 27, 1994

Travel to Riverton, Dinner in Dubois (on own), overnight in Riverton. Wyoming

Wednesday, September 28, 1994

Beginning in Riverton. Wyoming

Field Trip among the Tertiary rocks of the Wind River Basin; lower Fort Union badlands; sandstones and Indian petroglyphs and pictographs; Type Section of the Waltman Shale Member; Lost Cabin Oil Field; Wind River Canyon - *Overnight in Thermopolis, Wyoming*

Thursday, September 29, 1994

Field Trip among rocks in the Bighorn Basin; Grass Creek Coal Mine Visit; Eocene Willwood badland topography and paleosols; trip over the Bighorns - *Overnight in Sheridan. Wyoming*

Friday, September 30, 1994

Visit to East Decker coal mine and Spring Creek coal mine - thick Tertiary coals

Overnight in Casper, Flights from Sheridan or Casper. Rides available back to Denver on Saturday.

REMINDER

The Society for Organic Petrology 1994 Annual Meeting

September 25-30, 1994
Jackson, Wyoming, U.S.A.

TRANSPORTATION

Flight* are available to Jackson on several major airlines, check with your travel agent. Special rates are available. As an option, vans will be traveling from Denver Airport to Jackson on Sept. 23 and will be returning to the Airport on October 1, 1994, after the field trip. Seats in these vans will be available on a first come, first served basis! For details and to reserve a seat, call Ron Stanton 703-648-6462, (FAX 703-648-6419), soon.

NOTE TO FIELD TRIPPERS:

If you plan to overnight in Casper on Friday Sept. 30 - You can make reservations at the HOLIDAY INN 307-235-2531 or HAMPTON INN 307-235-6668.

A CHANGE OF PLANS Trip to Yellowstone National Park Saturday Sept. 24, 1994

We originally planned to use a commercial tour, unfortunately, it is not available during this time. Therefore, we have arranged to have a private tour of the Lower Loop through Teton Park and Yellowstone. The cost will be \$25 dollars to cover gas, lunch, and refreshments. Please register directly with the University of Wyoming, (see attached form)

Please print or type

Name _____

(as you wish to appear on nametag)

Affiliation _____

Address _____

City/State/ZIP _____

Country _____

Phone _____ FAX: _____

Visa/Mastercard # _____

Expiration Date _____

Signature _____

You may FAX your registration to 307-766-3914 or call in your registration with your credit card number to 1-800-448-7801; (307) 766-2124. Or return this form with your payment to:

1994 TSOP Annual Meeting
Conferences and Institutes, PO Box 3972
Laramie, WY 82071-3972 USA

MAKE CHECKS PAYABLE TO:
The University of Wyoming

Fees

(Check the appropriate boxes)

Yellowstone Trip \$ 25 D Saturday Sept 24
(transport/ Lunch)
Fractal Workshop \$ 45 • Sunday Sept 25
(includes breaks, lunch, and materials)

Meeting Registration
(before August 20, 1994) (includes Reception, Bar-B-Q and Breaks)
Member \$110 • Non-member \$130 •
Student \$ 80 •

(after August 20, 1994)
Member \$130 • Non-member \$150 •
Student \$ 80 •

Post Meeting Field Trip
\$ 150 • (includes lunches and lodging, double occupancy)

Total
amount enclosed: \$ _____
[US FUNDS]

A confirmation will be mailed to you upon receipt of payment.



THE SOCIETY FOR ORGANIC PETROLOGY NEWSLETTER

Vol. 11, No. 3/4

December 1994

ISSN-0743-3816



Scenes from TSOP '94 in Jackson

Suzanne Russell and Jim Hower ponder fractals over coffee and donuts (top left); TSOP members catch up on their reading in between presentations (top right); The Snow King Resort in Jackson, Wyoming (center); Alan Davis fields a question (bottom left); Cole Robison receives his founder award from Sharon Crowley (bottom center); Prasanta Mukhopadhyay makes a point [bottom right]

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

David C. Glick
Coal & Organic Petrology Labs
105 Academic Projects Bldg.
Pennsylvania State University
University Park, PA 16802-2300 USA

Phone:(814)-865-6543
Fax:(814)-865-3573.

Newsletter Contributions

The *TSOP Newsletter* welcomes contributions about events and topics pertaining to organic petrology from members and non-members alike. Items may be submitted on computer diskette [DOS format only; ASCII or WordPerfect preferred], as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
U.S. Geological Survey
956 National Center
Reston, VA 22092 USA

phone: (703)-648-4597
fax:(703)-648-6419
e-mail: jponto@ncrds.er.usgs.gov

For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology: c/o Ron Stanton, U.S. Geological Survey, MS-956. 12201 Sunrise Valley Drive, Reston, VA 22092-0001 USA.

The 1994-95 TSOP Council

President	Renee L Symanski
Vice-President	John C. Crelling
President Elect	Brian J. Cardott
Secretary/Treasurer	Ken W. Kuehn
Editor	James Pontolillo
Councilor (1993-95)	Cole R. Robison
Councilor (1994-96)	Stephen Bend

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through July 1993, they are printed in the 1994 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

1995 Membership Dues

Once again, it's that time of year: time for membership renewal and payment of annual dues. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/94" appears, then you are paid only through December 1994 and need to pay dues for 1995 if you have not done so already. If you have paid dues in advance for several years, then the appropriate expiration date should appear on your mailing label.

Enclosed with this issue is a colored copy of the 1995 Dues Notice. Please note that membership rates and categories have remained the same: Regular (US \$20/CAN \$30); Student (US \$15/CAN \$23). We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

Dr. Kenneth Kuehn
Department of Geology — EST 304
1 Big Red Way
Western Kentucky University
Bowling Green, KY 42101-3576
USA

Deadline for next issue: 10 February 1995

President's Letter

"Through the Years"

Renee L Symanski

My initial thought in composing my first "Letter from the President" article was to write something profound or intuitively clever. I soon realized that I would probably fail at that type of journalism. I decided that it was more important to express my thoughts and feelings as they relate to TSOP based on my involvement with the Society since 1984.

In September at Jackson Hole, Wyoming, we honored our original founders and gave a special tribute to one member [Pieter van Gijzel] who had recently passed away. It is very apparent that the foundation and success of this Society has been due to the dedication, commitment, and hard work of many individuals throughout our eleven years of existence. We have developed from a fledgling organization into a growing, maturing professional society. As TSOP was changing, so was the work environment in the petroleum, coal, and steel industries, in government, and in academia. Many of us have struggled in our careers and some of us have had to change our professional direction due to economic conditions. Through it all, not only have we as individuals survived (and some even flourished), but so has TSOP.

I have personally witnessed the "changing of the guard" at TSOP, observing individuals volunteer their valuable time to this professional organization. Some individuals have been able to commit a great deal of time and effort, and others have given what time they could spare. The point is that the success of TSOP is due to professionals giving of themselves, with no deed too small to be appreciated. The future of TSOP is first dependent upon the continued enthusiasm of individuals to donate their time to the organization in any capacity, such as being a judge for the student paper award, a member of a committee, a member of Council, or attending the annual meeting. Secondly, as my predecessor Jim Hower stated in one of his TSOP Newsletter articles, the diversification of future TSOP endeavors will be absolutely vital to meet the Society's objective of an expanding membership base. New members are the continued life blood of all organizations, including TSOP. We, as current members of TSOP, need to broaden our affiliations with other professional societies and obtain new members who will enhance the objectives and goals of TSOP.

Through the years I have been proud to be associated with TSOP. I am grateful for the opportunity to be its President, and I truly look forward to the upcoming year working with my fellow Council members, committee members, and all members of TSOP. If you have thoughts, ideas or directions

that TSOP should pursue, I would welcome the opportunity to discuss them with you. Please call (214-444-9922) or fax (214-444-9891). May the coming year be a prosperous time for one and all!

Ex-President's Letter

James C. Hower

I want to take this opportunity while I still have a bit of an open forum remaining to thank all of the TSOP members and all others who helped to make my year as president productive. The society is quite active in many areas and the events of the past year serve to highlight this activity:

- With the kerogen symposium (a symposium longer than any of our own meetings) we ventured into an effort with a major society, the American Chemical Society. The proceedings are being published by *Energy & Fuels* and should be available by the time this newsletter arrives in your mailbox,
- We gained associated society status with the American Association of Petroleum Geologists and are planning to co-host a future TSOP meeting with an AAPG regional meeting,
- We continued to plan the Appalachian coal symposium and field trip in conjunction with the 1995 Southeastern section Geological Society of America meeting in Knoxville, Tennessee,
- We initiated dialogue with the European Association of Organic Geochemists to co-sponsor a symposium at their 1997 meeting, and,
- We were treated to an excellent annual meeting, short course, and field trip in Jackson. Ron Stanton and the Reston- and Denver-based USGS coal and petroleum geologists and Tim Moore and Dan Vogler, past and present coal geologists for Wyoming, put on a great conference.

The coming year should prove to be just as important for the society. We want to continue to grow and cooperate with other societies. The planning for future meetings is on-going and all members can play a needed role in the society by participating in committee activities and by attending business/annual meetings. Once again, thank you for making my year as president an enjoyable year.

First Notice and Call for Papers

Twelfth Annual Meeting of The Society for Organic Petrology

August 27 - 30, 1995
Woodlands Executive Conference Center and Resort
Houston, Texas, U.S.A.

Tentative Program

- August 27: Pre-meeting Microscope Workshop at DGSI, three miles from the Conference Center. The Workshop will be organized by the TSOP Research Committee and will feature the examination of problematic samples of topical interest, such as round robin samples from TSOP and ICCP, vitrinite suppression, and solid bitumen. We are open to other suggestions!
- August 28: Oral and poster session presentations. Contributions are invited.
- August 29: Oral and poster session presentations. Contributions are invited.
- August 30: One day field-trip to examine Texas lignites in the vicinity of College Station, northwest of the Conference Center. The trip will be led by Peter D. Warwick (USGS, Reston) and will emphasize the geochemistry and petrography of the lignites in two working strip mines.

For additional information, please contact:

John R. Castaño
DGSI
8701 New Trails Drive
The Woodlands, TX 77381 USA

phone: (713)-363-2176
fax:(713)-292-3528

Council Meeting Summary

1993-94 Outgoing Council

Kenneth W. Kuehn, Secretary/Treasurer

The meeting of the 1993-94 Outgoing Council was held on September 25, 1994 at the Snow King Resort in Jackson, Wyoming, the site of TSOP's 11th Annual Meeting. Complete minutes of this Council meeting are available on request of the Secretary.

Council Members Present-President: Jim Hower, President-Elect: Renee Symanski, Vice-President: Prasanta Mukhopadhyay, Secretary/Treasurer: Ken Kuehn, Councilor: Cole Robison.

Council Members Absent - Editor: Neely Bostick, Councilor: Charles Landis.

Others Present - John Castaño (1995 Annual Meeting Committee), Jack Crelling (1996 Annual Meeting Committee), Sharon Crowley (Awards Committee), Dave Glick (Membership Committee), MaryAnn Malinconico (Outreach Committee), Ron Stanton (1994 Meeting Committee).

1. Council approved as submitted Minutes of the 1994 Mid-year business meeting held on February 26th, 1994 at the Drawbridge Inn, Ft. Mitchell, Kentucky.

2. K. Kuehn reported the status of TSOP finances as of September 23, 1994. Checking account balance: \$15,257.48. Vanguard account balance: \$8,452.31. Total assets of the Society: \$23,709.79.

3. P. Mukhopadhyay reported that the activities of the Honorary Member Committee were complete for this year and that Jack Crelling is the 1994-95 Chairman.

4. J. Hower reported for Neely Bostick, Editor, and announced that Jim Pontolillo is assuming the Editor's position effective with the Newsletter vol. 11, nos. 3-4, to be published in December 1994.

5. J. Hower reported for Cortland Eble, Chairman of the Ballot Committee, to affirm the results of the 1994 elections. The elected candidates are - President-Elect: Brian Cardott, Vice-President: Jack Crelling, Editor: Jim Pontolillo, and Councilor: Stephen Bend.

6. Dave Glick, Chairman of the Membership Committee, reported that there are 226 members for 1994. This figure includes eleven complimentary memberships in various categories. Council reviewed and approved twelve new

members whose applications had been received since the 1994 Mid-year meeting. The new members are: C. Chague-Goff, Y. Guo, A. Ievlev, M. Lambert, S. Larter, R. Jones, G. Mackay, M. Pawlewicz, V. Pesetskaya, N. Sherwood, A. Varma, J. Yeakel.

7. John Castaño, Chairman of the 1995 Annual Meeting Committee reported that the meeting will be held August 27-30, 1995 at the Woodlands Executive Conference Center near Houston, Texas. There will be a pre-meeting microscopy workshop and a post-meeting field trip.

8. Jim Hower reported that TSOP is co-sponsor of a symposium on Appalachian Coals to be held as part of the Geological Society of America Southeastern Section Meeting on April 5-7, 1995 in Knoxville, TN. There will also be a post-meeting weekend field trip to the eastern Kentucky coalfields.

9. Jim Hower also reported that, on June 12, 1994, TSOP was approved as an 'associated society'¹ with the American Association of Petroleum Geologists (AAPG) by vote of their House of Delegates. Details on this new relationship will be forthcoming in a letter from the AAPG.

Council Meeting Summary

1994-95 Incoming Council

Kenneth W. Kuehn, Secretary/Treasurer

The meeting of the 1994-95 Incoming Council was held on September 27, 1994 at the Snow King Resort in Jackson, Wyoming, the site of TSOP's 11th Annual Meeting. Complete minutes of this Council meeting are available on request of the Secretary.

Council Members Present - President: Renee Symanski, President-Elect: Brian Cardott, Vice-President: Jack Crelling, Editor: Jim Pontolillo, Secretary/Treasurer: Ken Kuehn, Councilor: Cole Robison.

Council Members Absent - Councilor: Stephen Bend.

Others Present - Jim Hower, Maryann Malinconico, Martin Reinhardt.

1. K. Kuehn reported the status of TSOP finances as of September 23, 1994. Checking account balance: \$15,257.48. Vanguard account balance: \$8,452.31. Total assets of the Society: \$23,709.79. A proposed operating budget of \$12,550 for the 1995 calendar year was distributed, discussed, and approved as submitted.

2. J. Pontolillo, Editor, initiated discussion on Newsletter publication dates. It was agreed that a combined issue, V. 11, nos. 3-4, will wrap up 1994. Regular quarterly publication will recommence in 1995.

3. The 1994-95 Committee Chairmen are - 1995 Annual Meeting Committee: John Castaño, Awards Committee: Sharon Crowley, Ballot Committee: Roger Trader, Honorary Member Committee: Jack Crelling, Membership Committee: Dave Glick, Nominations Committee: Jim Hower, Outreach Committee: MaryAnn Malinconico, Research Committee: Carolyn Thompson-Rizer.

4. M. Malinconico reported that she will pursue having TSOP Abstracts with Programs volumes included in the IEA data base. An inclusion therein would permit access and on-line searching through this agency's extensive serials listings.

5. Attendance at the 1994 Annual Meeting was 54. Eight attended the pre-meeting trip to Yellowstone, 17 attended the short course on Fractals, and 28 attended the post-meeting field trip.

6. Publication of the 1995 Organic Geochemistry Annual Meeting Issue (which will contain the collected papers from the 1994 meeting) will end TSOP's association with that journal. Factors such as page restrictions, a guaranteed minimum order, and cost were considered in the decision to switch to the International Journal of Coal Geology.

7. The Council's Mid-year business meeting will be held on March 18, 1995 in Cincinnati, Ohio.

Pieter van Gijzel 1928-1994

A Remembrance

John R. Castaño

Dr. Pieter van Gijzel, the driving force behind the formation of TSOP, died of cancer in Apeldorn, The Netherlands on July 28. He is survived by his wife, Sandy.

Pieter was a native of The Netherlands, and served in the Dutch Army in the East Indies after World War II, during the time Indonesia was fighting its war of independence. The conflict was unpopular at home, and it was a very difficult time for Pieter. He contracted malaria in Indonesia. After military service, he entered university at Leiden, studying geology, paleobotany, and palynology.

Pieter van Gijzel was a pioneer in the study of fluorescence in organic matter, especially spores and pollen. He was an innovator and inventor, as he helped develop the scientific methodology and characterization of fluorescence. Pieter worked closely with manufacturers of microscopes and accessories in designing better instruments to measure fluorescence. His first publication on the subject was in 1961, and in the 1980's (while working for Texaco) Pieter was granted a patent for developing a new method of quantitative fluorescence spectral analysis.

When I first met Pieter in 1973 he was working in the Botany Department at the University of Nijmegen. In the mid 1970's he worked for a year in the Geology Department at the Institute of Technology, ETH, Zurich doing research on fluorescence. After returning to The Netherlands he came to the United States in 1979 when he got a job with Core Laboratories in Dallas. He then accepted a position with Getty in 1980, retiring from Texaco (the successor company) in December 1988. He returned to The Netherlands in 1989 with plans to work as a consultant, but poor health prevented him from being as active as he wanted to be. When he first started working for Getty he made organic petrographic analyses of coals that were being mined by the company, which resulted in a major financial gain for his employer. He found that coals that were of coking quality were being sold for a lower price as steam coal. With Pieter's data in hand, Getty was able to renegotiate long-term contracts for much higher prices.

It was at Pieter's urging that a group was formed in 1983 (the Houston Committee, or the "Gang of 18"), with Pieter as chairman, that laid the groundwork for the organization that became TSOP in 1984. He envisioned the society as having a very different role than the ICCP, and a more formal structure than the North American Coal Petrographers group. TSOP as presently constituted is somewhat different from Pieter van Gijzel's concept, but we all should be very grateful for his vision and efforts in helping create TSOP.

Candidates Sought for TSOP Council

Nominees for the following 1995 TSOP Council positions are currently being sought by the Nominating Committee: President-Elect, Vice-President, Secretary/Treasurer, Editor, and Councilor. TSOP members interested in running for a Council position and/or desiring further information should contact Jim Hower [(606)-257-0261] as soon as possible — by the beginning of January 1995 at the latest!

TSOP '94 Meeting Summary

Ronald W. Stanton

TSOP members enjoyed exceptionally unseasonable weather during the meeting in Jackson, Wyoming and the post-meeting field trip across Wyoming and into Montana. The meeting was preceded by a trip to Yellowstone National Park on Saturday where participants got close to nature. That's close enough, Muk! On Sunday, 17 members attended the Workshop on Fractals conducted by Chris Barton of the U.S. Geological Survey. Chris shared his experiences in applying Fractal analysis to natural data including data relating to petroleum studies. Although the direct applications were not transparent to participants, most would agree that this sort of pattern recognition should be applied to data that particularly appears to be lognormal.

A total of 54 attended the technical meeting and delivered 28 oral and 15 poster presentations. Six oral presentations were made in a theme session on "Organics and the Rockies." This session set the background for the post meeting field trip on which 28 members trekked across the Tertiary Basins of Wind River, Bighorn and the Powder River. Field Trippers (Cowgirls and Cowboys) enjoyed spectacular Wyoming weather that made looking at the rocks much easier. TSOP owes a hefty thanks to Romeo Flores and his USGS gang: Bill Keighin, Steve Roberts, Vito Nuccio, Ron Johnson, Doug Nichols, Bill Perry, and Paul Lillis for their hands-on explanations in the field. Tim Moore and Sharon Crowley shared with us their work in the Decker Mine where we got to view an example of a thick Tertiary coal bed. The field trip has been immortalized through the publication of Public Information Circular No. 33 by the Wyoming State Geological Survey (see display ad on this page). This field guide is packed with 11 papers and 4 road log segments in 184 pages and provides aid for self-guided tours through these basins. A special thanks goes to Gary Glass, Wyoming State Geologist, and his staff for their support in the production of this publication.

Carl J. Smith Honored

TSOP member Carl J. Smith was honored recently by the AAPG and named as a recipient of its Distinguished Service Award. Carl attended Columbia University (A.B. geology/1967) and Indiana University (M.A. geology/1969). Following graduation he worked as a production geologist for the Gulf Oil Corporation. In 1973, Carl joined the West Virginia Geological Survey as a coal geologist/petrographer

Now Available!

Organics and the Rockies Field Guide

Wyoming State Geological Survey
Public Information Circular No. 33

Edited by R.M. Flores, K.T. Mehring,
R.W. Jones, and T.L. Beck
(ISBN 1-884589-06-5)

Just because you didn't attend the TSOP '94 field trip doesn't mean you need to miss out on the valuable research presented during the three-day tour of Tertiary basins. The official field trip guidebook is now available and, at 184 pages, is chockful of the latest scientific information on the Wind River, Bighorn, and Powder River Basins. Fifteen papers cover such diverse topics as : Paleocene paleogeography, palynostratigraphic correlation, thermal history of the Fort Union Formation, petroleum potential of the Waltman Shale, coal depositional environments, origin and characteristics of oil-saturated sandstones, clay geochemistry, and the environmental implications of trace elements in coal. The volume is illustrated with numerous maps, photos, and figures throughout. Since the first printing is limited, be sure to order your copy today!

Orders: Send \$15.00 (U.S. currency only) to Publications Sales, Wyoming State Geological Survey, PO Box 3008 University Station, Laramie, WY 82071 -3008. Phone (703)-766-2286. Wyoming addresses must include 6% sales tax; U.S. orders not prepaid must add \$3.00 first-class postage. Foreign orders prepaid only: add \$5.00 (surface mail) or \$15.00 (airmail). Sorry, no credit orders accepted. For more information, contact Dan Vogler at the Wyoming State Geological Survey.

and eventually was appointed head of the coal section. He is currently the assistant state geologist/deputy director for the state of West Virginia and an adjunct professor of geology at West Virginia University. In recognizing Carl's achievements, the AAPG has cited him specifically for his "outstanding leadership, excellence, and distinguished service to the field of geology and the AAPG."

Three Days Across Wyoming and Montana 1994 TSOP Field Trip - "Organics and the Rockies"

James Pontolillo

The 11th Annual Meeting of TSOP was held September 25-27, 1994 in Jackson, Wyoming. It was followed by a three-day field-trip, the purpose of which was to visit three of the major Tertiary basins in the Rocky Mountain area and view rock types important to coal, petroleum, and gas occurrences in these basins. The overall field-trip organizer and guide was Romeo Flores (USGS/Denver). Other presenters that highlighted stops included: Sharon Crowley and Ron Stanton (both USGS/Reston); Tim Moore (Victoria University of Wellington, NZ); Ron Johnson, Bill Keighin, Paul Lillis, Doug Nichols, Vito Nuccio, Bill Perry, and Steve Roberts (all USGS/Denver). The "convoy" (28 participants in 8 vehicles) left Jackson at 4:30 PM on Tuesday, September 27 on a three-hour drive to the first overnight stop in Riverton, WY. Halfway into the drive a dinner stop was made at Dubois, a tiny town where "Old Wyoming" meets "Nouveau Wyoming." While half of the group dined on such traditional western *delicacies* as burgers, ribs, and chicken-fried steak, the other half feasted on a seven-course gourmet Italian dinner (bruschetta, grilled eggplant parmesan, spaghetti with boar sausage, grilled raddichio and artichokes with smoked mozzarella, turenette with four cheeses, smoked chicken with fresh peach and chili peppers, etc.) that made them wonder if they **really** were still in Wyoming.

Bright and early the next morning (6:30 AM) all gathered in the hotel parking lot for coffee, donuts, and boarding. Soon the vehicles were rolling across the Wind River Reservation (Shoshone and Arapaho tribes) towards the first stop: a hillside providing a fine view of the southern boundary of the Wind River Basin. Floras and Roberts provided the group with the Stratigraphic "big picture" of the basin. The second stop was some twenty miles away: a hands-on introduction to the stratigraphy/sedimentology of the Paleocene Fort Union Formation in the Castle Gardens area (enlightenment courtesy of Floras, Johnson, Keighin, and Nuccio). The third stop, an exposure of oil-stained fluvial channel sandstone in the uppermost Fort Union Formation, was a real crowd pleaser as Flores and Lillis fielded questions regarding the oils and their sourcing. A much-needed lunch-break was then taken at the BLM's Castle Gardens pictograph/petroglyph park. It was now sunny and in the low 80s. The refreshed party then continued on to the Waltman Shale Member type section. Floras provided an overview of the stratigraphy, then Nichols discussed his establishment of the palynomorph biozones at this locality. Another fifty-odd miles brought the

field-trippers to the Lost Cabin oil field for a review of the area's stratigraphy (Floras and Perry) and some free oil samples courtesy of Comanche Oil. The last stop of the day was in the Wind River Canyon where Floras gave insights about the spectacular Precambrian rocks exposed here. After 11.5 hours on the road, the group overnights in Thermopolis (a small town famous for its hot springs) at the southern end of the Bighorn Basin.

The second day started off just as early, although clouds and cooler weather had moved in overnight. At the day's first stop, Floras and Roberts gave the group an overview of the Bighorn Basin's Upper Cretaceous and Paleocene stratigraphy, as well as a discussion of the Hamilton Dome oil field. Stop two was at the Grass Creek Coal Mine, the only remaining active coal mine in the basin. Roberts and Stanton discussed the depositional environment and coal petrology of the Mayfield coal zone. The trip continued on to scenic escarpments near Sand Draw Gap where Flores and Johnson focused on the Mesaverde Formation and its parasequences. Following another large lunch provided by the field trip organizers, the group continued on to an overview of the Eocene Willwood Formation paleosols (Fifteenmile Badlands locale). Roberts and Flores gave a detailed presentation on the fluvial processes responsible for the variegated paleosol units. An unplanned stop was then made in Shell Canyon (Bighorn Mtns); Roberts discussed the Paleozoic core formations of the Bighorn Basin. At the day's final stop, Flores reviewed the stratigraphy of the northwestern Powder River Basin. After 11 hours on the road, the group stopped in Sheridan (and some at the Mint Bar) for the night.

The third and final day of the field-trip began as usual: coffee and donuts at dawn. The convoy headed north from Sheridan into south-central Montana and made its first stop at the East Decker coal mine. Floras, Moore, and Crowley reviewed the depositional environment and coal petrology of the Anderson-Dietz coal bed. A lengthy tour was then taken of both the East Decker and West Decker strip pits. The final stop on the field-trip was a tour of the nearby Spring Creek coal mine, where the group was given a close-up view of surface mining in action (including an overburden shot and lots of gargantuan machinery). A late lunch was then taken at the Tongue River Reservoir. Flores and Roberts received gifts of appreciation from the field-trip group; all agreed that the trip was an unqualified success.

Thoughts on the Origin of Inertinite-rich Coals

Jane C. Shearer

Foundation for Research, Science, & Technology
PO Box 12-240, Wellington, New Zealand

Many coal beds (particularly those of the Carboniferous and Permian) contain more than 20% carbonised material, or inertinite, as an average for the whole seam (Shearer *et al.*, in review). The proportions of carbonised plant constituents in these coals can be interpreted relatively easily on the basis of modern peats: the Palangkaraya peat mire in Borneo, for example, contains 15 - 20% carbonised constituents (Moore *et al.*, in review). However, coal beds containing 40% or more carbonised material, particularly Permian coals which often contain up to 70% carbonised plant debris (e.g. Mishra and Cook, 1992; Hunt and Hobday, 1984), are somewhat more difficult to explain in terms of a modern analogue. Peats such as the Palangkaraya, containing more than a few percent carbonised material, are rare and there is little evidence for any peat being dominantly composed of carbonised plant constituents (or "inertinite precursors").

A possible explanation for the above anomaly between the proportions of carbonised plant remains in peat and coal is that one cannot directly compare proportions between the two substances. In other words, the coalification process may alter the proportion of carbonised material relative to the proportions of other constituents. Evidence for this hypothesis has come from an artificial coalification experiment carried out at the U.S. Geological Survey. In this experiment, peat containing 17% oxidised constituents and a moisture content of 82% was kept at a pressure of 41,340 kpa and a temperature of 125 °C for two months (Orem *et al.*, in preparation). The resultant material had the appearance of low rank coal and a moisture content of 25%.

Petrographic analysis of the peat and artificially-coalified peat showed that the proportion of carbonised material in the peat had increased from 17% to 28% during artificial coalification. At the same time, the proportion of amorphous matrix had decreased from 44% in the peat to 36% in the artificially-coalified peat (counted on an etched block in air). It was estimated that there was a mass loss of approximately 10% during artificial coalification. It is suggested that the material most reactive, and thus most likely to be expelled during artificial coalification, was in the amorphous matrix. The least reactive material was in the carbonised component. Therefore, as artificial coalification proceeded, the proportion of unreactive carbonised components increased relative to the proportion of reactive amorphous matrix.

A conclusion that might be drawn from the above result is that we should be wary of interpreting directly from proportions of carbonised material in coal to the proportions that must have existed in the paleopeat. In addition, it may be possible to increase the proportion of carbonised material during coalification. An increase of approximately 50% was seen in this experiment. However, it is possible to envisage that a highly degraded peat, such as may well have been formed in the Gondwana setting, could undergo even greater concentration of the carbonised component if it consisted largely of amorphous matrix together with carbonised material. Therefore it may not be necessary, and in fact may be incorrect, to look for modern peats containing 70% carbonised plant remains in order to understand the genesis of Carboniferous and Permian coals with very high proportions of carbonised material.

Hunt, J.W. and Hobday, D.K., 1984. Petrographic composition and sulphur content of coals associated with alluvial fans in the Permian Sydney and Gunnedah Basins, eastern Australia. In: Rahmani, RA and Rores, R.M., eds., *Sedimentology of Coal and Coal-bearing Sequences, Spec. Pub. Int. Assoc. Sed. 7*: 43-60.

Mishra, H.K. and Cook, A.C., 1992. Petrology and thermal maturity of coals in the Jharia Basin: implications for oil and gas origins. *International Journal of Coal Geology* 20: 277-313.

Moore, T.A., Shearer, J.C. and Miller, S.A. in preparation. Fungal alteration of plant material in the Palangkaraya peat deposit. *Organic Geochemistry*.

Orem, W.H., Neuzil, S.G., Lerch, H.E. and Cecil, C.B., in preparation. Experimental coalification of Indonesian peats: *Organic Geochemistry*.

Shearer, J.C., Moore, T.A. and Demchuck, T.D., in review. Delineation of the distinctive nature of Tertiary coal beds. *International Journal of Coal Geology*.

TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

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CAER
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phone: (606)-257-0261
fax: (606)-257-0302

Membership News

Dave Glick, Membership Committee Chairman

Address Corrections and Changes

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phone: 214-444-9922, fax: 214-444-9891

Etuan Zhang — E-Mail: EZHA@chevron.com

New Members

The Society welcomes the following persons who applied for membership during or after the Eleventh Annual Meeting in Jackson, Wyoming.

Dr. Janet Dehmer
Schiller Str. 32
71263 Weil der Stadt
Germany
Phone: 07033-81025

Dr. Dehmer's work has included organic petrography and organic geochemistry. Her doctorate studies at the Technical University of Aachen included peat and brown coal petrology and organic geochemistry.

Dr. Fari Goodarzi
ISPG, Geological Survey of Canada
3303 - 33rd St. N.W.
Calgary, Alberta T2L 2A7
CANADA

Dr. Goodarzi rejoins TSOP; his research areas include coal and kerogen petrology and organic geochemistry.

Dr. Cheryl P. Gullett
148 Van Giesen St.
Richland, WA 99352
phone: 509-376-9776/fax: 509-376-5368
Email: cd.gullett@pnl.gov

Dr. Gullett completed her Ph.D. at the University of South Carolina in 1993; her work at Pacific Northwest Laboratory includes investigation of the sedimentary petrology of microbially populated subsurface sediments. She presented a poster illustrating forms and associations of pyrite in such sediments at the Annual Meeting.

Dr. Louis L. Tsai
Institute of Applied Geology, National Central University
Chungli 32054
TAIWAN, REPUBLIC OF CHINA
phone: 886-3-4227151 ext. 5873
fax: 886-3-4263127

Dr. Tsai's work includes coal and kerogen petrology, hydrocarbon potential and generation, fabric analysis, and geochemical and environmental topics.

Dr. Thomas Wagner
University of Bremen, Geosciences
Postfach 330440
Bremen 28334
GERMANY
phone: 49-241-218-7137/fax: 49-241-218-3118

Dr. Wagner completed his Ph.D. in Paleoceanography at the University of Kiel, Germany, in 1993. His activities now include coal and kerogen petrology, geochemistry, and paleoclimatology, particularly in relation to sedimentary organic matter in modern deposits.

Awards Committee Report

Sharon Crowley

The Eleventh Annual Meeting of TSOP in Jackson, Wyoming marked the organization's tenth anniversary. On this occasion, it was our honor to recognize those colleagues who served as volunteers on the TSOP founding committee. The original committee consisted of the following individuals: Pieter van Gijzel (Chairman, deceased), Jack D. Burgess, John R. Castaño, Brenda Claxton, John A. Clendening, Richard W. Harding, Hoom-Bin Lo, Dolores O'Connor, Raymond N. Pheifer, Margaret H. Pytte, Ann B. Reaugh, Coleman R. Robison, Roger Sassen, Helmut Schares, Karl Schwab, John Shane, Jesse D. Yeakel, and Harvey Zeiss. Many thanks to our colleagues who provided the vision, dedication, and energy necessary for creating the strong scientific organization that TSOP is today.

It is also my pleasure to announce that Christopher A. Toles (University of Kentucky) received the Outstanding Student Paper Award for 1994 at the TSOP Annual Meeting in Jackson, Wyoming. Chris gave an excellent oral presentation entitled "Comparative Study of Activated Carbons Produced from Eastern Kentucky Liptinite-rich Coals." Finally, Jane C. Shearer (NZ) received the "farthest travelled" award at the Annual Meeting.

ASTM D-5 Update

Ronald W. Stanton

ASTM Committee D5 on Coal and Coke held its semi-annual meeting in Denver, Colorado on October 2-5, 1994. Of note to members of TSOP are the activities of Subcommittee DO5.28 on Coal Petrography who have completed their round robin analysis of vitrinite reflectance measurement using the 1991 revised procedures of *ASTM Standard D2798 Test Method for Microscopical Determination of the Reflectance of Vitrinite in a Polished Specimen of Coal*. A total of 14 labs participated in the analysis of 6 samples of different rank. Data will be compiled to generate precision statements for Standard D2798. Current task group activities of this subcommittee are to revise definitions of macerals terms, revise the protocol for maceral analysis, and to conduct a round robin for maceral analysis. TSOP members who are interested in the maceral analysis round robin or any other ASTM activities can contact Ron Stanton 703-648-6462 for information. The next ASTM Committee D5 meeting will be May 7-10, 1995, just prior to the 11th International Coal Testing Conference which will be held May 10-12, 1995, both in Lexington, Ky.

Report on the 11th Annual Pittsburgh Coal Conference

Brenda S. Pierce

The U.S. Geological Survey, Branch of Coal Geology hosted an oral session entitled "Coal Resource Characterization" and a poster session entitled "Applied Coal Geology" at the 11th Annual Pittsburgh Coal Conference in September 1994. The Pittsburgh Coal Conference is an international meeting for engineers, scientists, and policy makers involved in coal-related **research** investigations. The Branch of Coal Geology has found the Pittsburgh Coal Conference to be a very effective forum for contributing to and learning about the full spectrum of current topics related to the coal industry. This is the second year of extensive USGS involvement. Last year, the USGS poster session ("Coal Characterization and its significance to Utilization") contained three of the five best poster presentations of the conference: the outstanding poster presentation was awarded to Jim Hower et al, *Characterization of Kentucky coal-combustion byproducts: Compositional variations based on sulfur content of feed coat*, one honorable mention was awarded to J.K. Hardie and N.H. Bostick, *Siliclastic dikes in and near the Cameo coal mine, western Colorado, and dolomite dikes in the Trail Mountain mine, central Utah*, and another honorable mention was awarded to P.K. Mukhopadhyay et al., *Geological and physico-chemical constraints on methane and C₆+ hydrocarbon generating capabilities and quality of Carboniferous coals, Cumberland basin, Nova Scotia, Canada*. The USGS Branch of Coal Geology will host sessions at next year's Pittsburgh Coal Conference. Those interested in contributing, should contact Brenda Pierce for more information (phone: 703-648-6421/ fax: 703-648-6419).

1995 Mid-Year Council Meeting

The 1995 Mid-Year Council meeting of TSOP will be held at 9:00 AM, Saturday, March 18, 1995 at the Omni Netherland Plaza (35 West 5th Street) in Cincinnati, Ohio. All members of the Council should plan to attend as this is the major business meeting of the year. Committee chairmen are also encouraged to attend. As always, Council meetings are open to all TSOP members. If you plan to attend the meeting, have any questions or know of any business items that should be discussed, please phone Renee Symanski at [(214)-444-9922].

Report on the 46th ICCP Meeting

(Oviedo, Spain, October 3-8, 1994)

Paul C. Lyons

The 46th Meeting of the International Committee for Coal and Organic Petrology (ICCP) in Oviedo, Spain, included meetings of Commissions I, II, and III, a poster session, and a one-day field trip to Asturias Province. Abstracts from the poster session will be appended to the minutes of the meeting. Some highlights of the meeting follow.

An ICCP brochure is now available thanks to the efforts of President Alan Davis. This describes what the ICCP does in its role as an international scientific organization.

The ICCP agreed to approve coal petrographic accreditation at about the 60% level based on two years of results from individuals at coal petrographic laboratories in various countries. There was considerable discussion on the new International Standards Organization (ISO) coal classification which will be based on volatile matter, calorific value, and other properties, but not reflectance and petrographic properties. It was agreed to compile an international coal database (ultimate and proximate analyses, maceral data, reflectance, etc.) based on work already started by M.J. Lemos de Sousa and H. Pinheiro in Portugal. It was noted that the USGS has a large database on minor and trace elements in coal. A summary article on international coal classifications — which is co-authored by ICCP members M.J. Lemos de Sousa, H. Pinheiro, and P.C. Lyons, and non-ICCP member R.A. Durie (Australia) — will be published by John Wiley in February 1995 in its *Encyclopedia of Energy Technology and the Environment*. The UN-ECE coal classification will be published this year.

The ICCP archives are now in Aachen, Germany and are being organized by Z. Correa da Silva. Archival data that are missing will be sought from founding and long-standing members of the ICCP. It was suggested by Alan Cook (that CD-ROM is the best way to archive the information.

The ICCP approved by a vote of 23 to 4 a new vitrinite group maceral classification. There was strong opposition to the classification by M. Teichmüller whose critical comments were distributed to the group before the vote. A working group on a new inertinite group maceral classification is now under the leadership of M. Wolf. They will report on the new classification at the 47th ICCP Meeting in Poland. The sheets on the classification of alginite were distributed by Alan Cook and will be attached to the minutes. They include chemical as well as physical parameters. The sheets on fluorescence are still in a draft stage and will be further reviewed by K.

Ottenjann, who prepared the original sheets. Alan Davis suggested that the sheets, once approved by the ICCP, should be included in the ICCP Handbook. W. Pickel, (Secretary of Commission I - General Coal Petrology), reviewed the progress of the Liptinite Maceral Group; the new ICCP classification on liptinite group macerals will include sheets for the new macerals fluorinite and exsudatinite as proposed by M. Teichmüller (see her review paper in the *International Journal of Coal Geology*, 1989, vol. 12). It was agreed that bituminite should be kept in the liptinite group classification. A new working group on coal facies was established by the ICCP. A new atlas on dispersed organic matter in sediments was proposed by W. Kalkreuth. The creation of an ICCP coal petrographic database was also proposed.

The working group on the environmental applications of organic petrology has put together a bibliography under the leadership of J. Bailey and A. Depers, who gave an outstanding slide presentation on a case study in the Lake Illawarra region of Australia (N.S.W.) which has been impacted by various types of industrial pollution. A white paper on the environmental applications of petrographic techniques was presented and its distribution approved.

The ICCP Council put forward the names of Alan Cook (Australia) and Manuel Lemos de Sousa (Portugal) as candidates for the next President of the ICCP. The current president, Alan Davis, completes his term of office next year. B.K. Kwiecinska (Poland) and K. Kruszewska (South Africa) were recommended by the Council as candidates for the next Vice-President of the ICCP. Elections will be held by mail ballot this Fall.

Congratulations to President Alan Davis who received the 1994 Reinhardt Thiessen Medal; A.H.V. Smith (England) — a past recipient of the medal — made the presentation. Two individuals, D. Murchison and V. Hevia, were elected as honorary members of the ICCP. The ICCP noted with sadness the deaths of P. van Gijssel and R. Noel.

The ICCP was given a tour of the experimental coking facility of the Instituto Nacional del Carbon in Oviedo. Their experiments deal with blends containing up to 15 different coals.

The next ICCP meeting will be in Krakow, Poland, August 20-25, 1995, immediately prior to the XIII International Congress on Carboniferous-Permian Stratigraphy and Geology (August 28 - September 2, 1995).

Report on the GSA Coal Geology Symposium

(October 24, 1994; Seattle, Washington)

Origin of Compositional Characteristics in Tertiary Coals: Paleoecology, Paleobotany, and Palynology

Thomas D. Demchuk

This symposium was held at the Annual Meeting of the Geological Society of America, Seattle WA, on the morning of Monday, October 24, 1994. The symposium was organized and co-convened by Thomas D. Demchuk (Amoco E&P Technology, Houston), Timothy A. Moore (Coal Research Association, Lower Hutt, New Zealand) and Jane C. Shearer (Foundation for Research, Science and Technology, Wellington, New Zealand). Eleven papers were presented during the symposium proper, and three were given during the afternoon coal general session.

The symposium was opened with a keynote presentation by Dr. P. D. Moore (Kings College, London) entitled, "The development of modern peat-forming processes." This presentation, describing present day hydrological and vegetational differentiation within mires, set the stage for the remainder of the symposium. Dr. Jane Shearer *et al.* gave the next presentation, "Coal character and Tertiary flora: causes and effects," which discussed the uniqueness of Tertiary coals and some possible causes of these characteristics. Paleobotanical and palynological coal Paleoecology was then discussed by Dr. Garland Upchurch Jr. (SW Texas State U., San Marcos TX) and Dr. Doug Nichols (USGS, Denver) respectively.

Geographically specific presentations then followed and these included:

R.F. Fleming and B.F. Pierce, "Paleocene coals from the Raton Formation, Colorado and New Mexico: palynological and petrographic characteristics"

I.R. Sluiter *et al.*, "Stratigraphic, ecological and biogeographic relationships of the Oligo-Miocene brown coal flora, Latrobe Valley, Victoria, Australia"

G.R. Holdgate *et al.*, "Sequence analysis and the origins of Tertiary brown coal lithotypes, Latrobe Valley, Gippsland Basin, Australia"

R. Sykes *et al.*, "A coal seam facies model for the recognition of raised mire deposits in the Tertiary"

W. Riegel *et al.*, "The botanical signature of Neogene lacustrine lignites in Greece and its application to ecosystem reconstruction" (unfortunately Dr. Riegel was unable to be present)

W. Schneider, "Paleohistology of Miocene lignites in central Europe"

D.J. McIntyre *et al.*, "Petrological, palynological and geochemical characteristics of Eureka Sound Group coals, Stenkul Fiord, Ellesmere Island, Arctic Canada"

Three other presentations which were given in the afternoon general coal session and which fell under the auspices of the symposium included:

J. Dehmer, "The interpretation of petrological and organic geochemical data of Recent peats with known environments of deposition"

P.D. Warwick, "The San Pedro and Santo Tomas coals of Webb County, Texas: anomalous nonbanded coals associated with Eocene-age lignites"

L. Jie, "The preliminary study on the origin of the higher content of bitumen from Tertiary *Sphagnum* brown coal" (unfortunately Dr. Jie could not be present)

Fifteen papers will be included in a proceedings volume, which will be published as a Special Volume of the International Journal of Coal Geology. It is hoped that this volume will be out before the end of 1995. The co-convenors would very much like to acknowledge the Coal Geology Division of GSA for their support of this symposium, and would very much like to thank the Petroleum Research Fund of the American Chemical Society for a grant which offset travel costs for some of the overseas speakers.

***The Kerogen volume is still available!
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GSA (Coal Division) Offers Medlin Scholarship

The Coal Geology Division of the Geological Society of America announces the availability of the Antoinette Lierman Medlin Scholarship in Coal Geology for the 1995-1996 academic year. The scholarships provide full-time students who are involved in research in coal geology (origin, occurrence, geologic characteristics, or economic implications of coal and associated rocks) with financial support for their project for one year.

Scholarship funding can be used for field or laboratory expenses, sample analyses, instrumentation, supplies, or other expenses essential to the successful completion of the research project. Approximately \$1500 will be available for the 1995-1996 scholarship award. In addition, the recipient of the scholarship may be provided with a stipend to present results of the research at the 1996 GSA Annual Meeting. For the academic year 1995-1996, the Coal Division is also offering a field study award of \$500.

Proposals for the scholarship and field study awards will be evaluated by a panel of coal geoscientists. The awards will go to the students whose proposals are ranked highest by this panel. Applicants may apply for the scholarship award, the field study award, or both; however, only one award will be made to a successful applicant.

Interested students should submit five (5) copies of the following:

1. A cover letter indicating which award(s) is (are) sought.
2. A concise statement of objectives and methods, and a statement of how the award funds will be used to enhance the project. This proposal should be no more than five (5) double-spaced pages in length, including references.
3. A letter of recommendation from the student's immediate advisor which includes a statement of financial need and the amount and nature of other available funding for the research project.

Send the material to:

Sharon S. Crowley
A. Lierman Medlin Scholarship Committee
U.S. Geological Survey
956 National Center
Reston, VA 22092
phone: (703)-648-6453

The required materials must arrive no later than February 15, 1995. Applicants will be notified of the Scholarship Committee's decision by April 1, 1995.

The scholarship award was established as a memorial to Antoinette "Toni" Medlin who, for many years, quietly and efficiently dedicated herself to the advancement of coal geoscience and to the encouragement of students in coal geology. Monies for the scholarships are derived from the annual interest income from the scholarship fund.

Now Available!

Developments affecting metallurgical uses of coal

David Scott

IEACR/74, ISBN 92-9020-243-1
92 pp, September 1994, \$130.00

A review of the technologies used in the production of iron and steel. Nearly half the tonnage of internationally traded coal is accounted for by coking coal and, generally, coking coals command premium prices. However, economic and environmental considerations, together with the limited availability of suitable coals, are reducing the attractiveness of the conventional coke ovens/blast furnace route to the production of iron. Currently, a range of technologies is under development designed to reduce the rate of coke consumption in the blast furnace, to make the coke production process more environmentally friendly or to provide alternative routes to iron production replacing both the coke oven and the blast furnace. The new technologies are examined in relation to existing technology and possible implications of their introduction, for the metallurgical uses of coal, are considered. To order, see enclosed IEA Publications order form or contact:

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Teichmüller Awarded Honorary Membership

Noted coal petrologist Dr. Marlies Teichmüller was awarded one of two honorary TSOP memberships that were announced at the Eleventh Annual Meeting of TSOP in Jackson (WY), September 25-27, 1994.

Born Marlies Köster, in Herne, Germany on 11 November 1914, she studied geology, mineralogy, chemistry, and geography at the universities of Freiburg and Berlin from 1934-1939. During the time period of September 1937 - April 1938, Marlies was an exchange student at Clark University (Worcester, MA) and at the Bureau of Mines (Pittsburgh, PA). She received her doctorate from Friedrich-Wilhelms Universität (Berlin) in December 1939. From 1940 until April 1941, Marlies served as a consultant on the microscopy of industrial dusts. She was employed as a coal petrologist with the Reichsamts für Bodenforschung (Berlin) from 1941-1945 and was deputy head of the coal petrology laboratory from November 1942 onward. Marlies then served as a geologist with the Geologisches Landesamt Nordrhein-Westfalen (Krefeld) from 1947-1979. From 1964 onward, she was the head of the coal petrology and chemistry department and received successive promotions to Landesgeologin (1964), Oberlandesgeologin (1967), and Geologiedirektorin (1970). Marlies retired from government service in November 1979, but continues voluntary research at the Geologisches Landesamt.

Marlies was a founding member and is an honorary member of the International Committee for Coal Petrology (ICCP). She has served the organization as a board member (1960-1975), as head of the nomenclature group (1960-1964), and as head of the brown coal group (1964-1975). Marlies is also a member of the Deutsche Geologische Gesellschaft and The Society for Organic Petrology. She has also served as a member of the *International Handbook of Coal Petrography*, *Textbook of Coal Petrography*, and *International Journal of Coal Geology* editorial boards.

In more than 50 years of research Dr. Marlies Teichmüller authored or co-authored in excess of 160 scientific publications. Her research activities (often in conjunction with her late husband, Rolf Teichmüller) have concentrated on the genesis of petrographic organic constituents in coals and oil source rocks; the causes, processes and parameters of coalification and maturation; and the application of organic petrology to a wide range of geological problems.

[biographical data from a resume originally appearing in the GSA Bulletin]

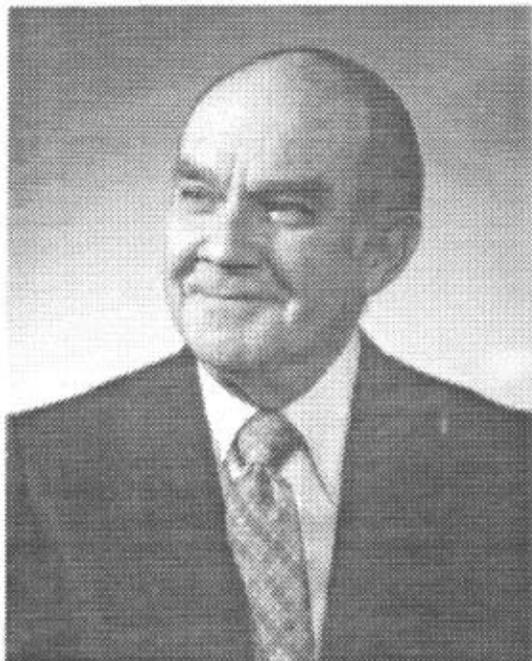


Dr. Marlies Teichmüller (September 1994) displaying her Cady award.

New Publication!

Renee L Symanski

TSOP has recently received a complimentary copy of the new publication, *Petrologue Organique*, edited by R. Cumelle and J.-P. Severac. This Special Publication (Volume 18, 1994, 321 pp) represents an accumulation of proceedings of the 9th French Speaking Organic Petrographers meeting held at the EAP scientific center in Pau, France. Approximately seventy persons attended this three day meeting that was organized by Bernard Pradier. The presentation topics at this meeting were quite diverse. Many of the texts are in French, however the abstracts, figure legends, references, and plate captions are in English. The book is divided into five sections: Heat Flow, Thermal History, and the Genesis of Hydrocarbons [8 papers], Depositional Environments and Organic Sedimentology [8 papers], Microtexture of Source and Reservoir Rocks [4 papers], Structure and Chemistry of Kerogen [7 papers], and Cokes and Products of Pyrolysis [3 papers]. TSOP members requiring further information about this volume should contact Bernard Pradier.



Spackman Awarded Honorary Membership

Noted coal petrologist Dr. William Spackman was awarded one of two honorary TSOP memberships announced at the Eleventh Annual Meeting of TSOP in Jackson (WY), September 25-27, 1994.

Dr. William Spackman is Professor Emeritus in the College of Earth and Mineral Sciences at The Pennsylvania State University. In addition, he held joint appointments in the Departments of Geosciences and Biology as Professor of Paleobotany. Until January 1, 1986, he held the position of Director of the Coal Research Section, a position which he occupied since the creation of the Section in 1957.

Dr. Spackman graduated from the University of Illinois in 1942 with a B.S. degree, having majored in Botany and minored in entomology and chemistry. He received his MA degree in 1947 and his Ph.D. in 1949 in Biology, from Harvard University. Dr. Spackman joined the staff of The Pennsylvania State University in 1949 as a member of the faculty in the Department of Geology.

Dr. Spackman has directed and participated in major research efforts, under contract with DOE, aimed at characterizing the Nation's coal resources and relating compositional characteristics to preparation, liquefaction, and

gasification behavior. He also directed and participated in a research program sponsored by the National Science Foundation concerned with modern coal-forming environments. In addition, he created and directed Penn State's Cooperative Program in Coal Research aimed at facilitating industry/university interaction.

Dr. Spackman is a member of four international coal commissions (relating to coal petrology) and is Past-President of the ICCP Nomenclature Committee. He is a member of the GSA, the BSA, the ASTM, the AASP, and TSOP (serving as President of the latter in 1984-85). In 1976 Dr. Spackman was awarded the Joseph Becker Award of the Ironmaking Division of the Iron and Steel Society of AIME for contributions to the steel industry. In 1977 he was chosen as the recipient of the Gilbert H. Cady Award of the GSA for contributions to coal geology. In 1984 he received the Reinhard Thiessen Medal from the ICCP. On December 31, 1985 Dr. Spackman retired with the rank of Professor Emeritus at The Pennsylvania State University.

Just Published!

Vitrinite Reflectance as a Maturity Parameter: Applications and Limitations

Edited by P.K. Mukhopadhyay & W.G. Dow

ACS Symposium Series 570
(ISBN 0-8412-2994-5)

The 16 papers in this volume were developed from a symposium sponsored by the Division of Geochemistry at the 206th ACS National Meeting. They focus on four major aspects of vitrinite reflectance: petrographic characteristics and limitations; molecular characterization; implications for basin modeling; and correlation with other microscopic and chemical maturity parameters. These papers, along with a comprehensive overview chapter, clarify the complexities of vitrinite reflectance techniques. This is a *must-have* volume for anyone involved in coal & hydrocarbon research and resource evaluation. For further information, contact:

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Calendar of Events

1995

January 19 : Stratigraphic Advances in the Offshore Devonian/Carboniferous, London, England. For information, call 44-71-287-1433, or fax 44-71-439-8975.

January 29 - February 1 : Energy & Environmental Expo '95, Houston, TX. For information, contact ASME Petroleum Division at (214)-746-4901.

January 31 - February 2 : Petro Safe Meeting and Exhibition, Houston, TX. For information, Call (713)-621-8833 or fax (713)-9636284.

February 7 - 8 : Petroleum Geology of the Irish Sea, London, England. For information, contact the Geological Society at 44-71-287-1433 (phone), or 44-71-4388975 (fax).

February 12 - 17 : Sixth UNITAR International Conference on Heavy Crude and Tar Sands, Houston, TX. For information, call (918)-337-4233.

February 13 - 16 : USGS McKelvey Forum, Washington, DC. For information, contact Dudley Rice at (303)-236-5711 (phone), or (303)-236-8822 (fax).

March 3 - 9 : 124th Annual Meeting of The Society for Mining, Metallurgy, & Exploration, Denver, CO. For information contact SME Meetings Dept, at (303)-973-9550.

March 5 - 8 : American Association of Petroleum Geologists Annual Meeting, Houston, TX. For information, contact James O. Lewis at (713)-972-1813.

1st Walter A. Bell Symposium on Paleobotany and Coal Science

The 1st Walter A. Bell Symposium on Paleobotany and Coal Science will be held in Sydney, Nova Scotia, Canada from May 28 to June 1, 1995. Bell was a pioneer in studies of Carboniferous coal-bearing strata of the Maritimes and a past Director of the Geological Survey of Canada. The Symposium is being sponsored by the University College of Cape Breton, the Geological Survey of Canada, the Cape Breton Miner's Foundation and Glace Bay Miner's Museum, and the U.S. Geological Survey.

Fifteen keynote and invited speakers from around the world will give talks on significant coal-related research in Euramerican Carboniferous paleobotany and palynology. One of the three keynote speakers, Dr. P.A. Hacquebard [Geological Survey of Canada], is Canada's foremost coal geologist and will speak on the coal geology of the Maritimes. In addition, there will be approximately 20 other speakers whose talks will center on Euramerican late Paleozoic paleobotany and coal geology. Abstracts (300 words maximum) from keynote and invited speakers and unsolicited abstracts should be prepared according to the style of the journal below. They are due to Dr. E.L. Zodrow on or before February 1, 1995. The keynote and invited papers will be published in a special issue of the *Review of Palaeobotany and Palynology* (Elsevier). Abstracts will be published by the University College of Cape Breton.

There will be a limit of about 100 participants (including spouses), so early registration is best. For a copy of the 2nd Circular and further information, contact one of the organizers:

Dr. E.L. Zodrow
University College of Cape Breton
PO Box 5300
Sydney, Nova Scotia, Canada B1P 6L2
fax:902-562-0119

Dr. P.C. Lyons
U.S. Geological Survey
956 National Center
Reston, VA 22092 USA
fax: 703-648-4227

March 6 - 8 : Asia Pacific Oil & Gas Meeting/Exhibit, Kuala Lumpur, Malaysia. For information, contact SPE (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 11 - 14 : Middle East Oil & Gas Meeting, Bahrain. For information, contact SPE at (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 19 - 22 : Rocky Mountain Region/Low Permeability Reservoirs Symposium, Denver, CO. For information, contact SPE at (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 27 - 29 : Structural Geology in Reservoir Characterization Meeting, London, England. For info, contact the Geological Society at 44-71-287-1433 (phone) or 44-71-439-8975 (fax).

March 28 - 29 : Geological Society of Canada Oil & Gas Forum '95, Calgary, Alberta, Canada. For information, contact Tim Bird at (403)-292-7017

April 5 - 7 : Symposium on Appalachian Coal, GSA Southeastern Section Meeting, Knoxville, TN. For information, contact Jim Hower.

April/May: Third Workshop on Pyrolysis in Organic Geochemistry, Poland. For information, contact M. Kotarba at 48-12-33-6504 (fax).

April 5 - 7 : Fractals and Dynamic Systems in Geoscience Symposium, Frankfurt/Main, Germany. For information, contact Jorn Kruhl at 49-69-7982695 (phone) or 49-69-798-2958 (fax).

Calendar of Events

1995

April 9 - 13 : European Union of Geosciences Symposium, Strasbourg, France. For info, write : EUG VIII, E.O.P.G., 5 Rue Rene Descartes, Strasbourg Cedex 67084, France.

May 2 - 4 : Coal Prep '95, Lexington, KY. For information, contact Sam Posa at (303)-696-6100.

May 2 - 5 : Geotechnica Trade Fair & Congress, Koln, Germany. For information, write : Messe-und Ausstellungen, Ges.m.b.H. Koln, Messeplatz 1, Postfach 210760, D-5000 Koln, 21, Germany.

May 8 - 10 : 13th International Conference on Fluidized-Bed Combustion, Orlando, FL For information, contact Shelton Ehrlich at (415)-855-2444.

May 14 - 18 : 97th Annual General Meeting of the Canadian Institute of Mining, Metallurgy, & Petroleum, Halifax, Nova Scotia, Canada. For information, contact D.G. McPherson at (902)-426-5043.

May 15 - 19 : Peat Organic Matter International Symposium organized by Commissions IV and VI of the International Peat Society, Minsk, Belarus. For information, contact Ivan I. Lishtvan at (0172)-642-631 [phone] / (0172)-642-413 [fax].

May 24 - 26 : Fifth Annual Goldschmidt Conference on Geochemistry, University Park, PA. For information, contact Suzanne St. Pierre at (814)-865-7557.

May 28 - June 1 : First Walter A. Bell Symposium on Paleobotany and Coal Science, Sydney, Nova Scotia, Canada. For information, see notice on previous page.

August 13 - 16 : Annual Meeting, SEPM Congress on Sedimentary Geology, St. Petersburg, FL For information, contact Myra Rogers at (918)-743-9765.

August 15 - 18 : Particulate Control/Managing Hazardous Air Pollutants, Toronto, Canada. For information, contact Lori Adams at (415)-855-8763.

August 19 - 23 : Second International Symposium on Waste Processing & Recycling in Mineral & Metallurgical Industries, Vancouver, British Columbia, Canada. For information, contact L.M. Amaratunga at (705)-675-1151, ext. 2296 [North America] or T.J. Veasey at 011-44-021-414-5333 [Europe].

August 27 - 30 : Twelfth Annual Meeting of The Society for Organic Petrology, Houston, TX. For information, see notice on page 4.

September 10 - 13 : AAPG International Conference and Exhibition, Nice, France. For information, contact AAPG at (918)-584-2555 or fax (918)-584-2274.

September 10 - 15 : Eighth International Conference on Coal Science, Oviedo, Spain. Focus will be on physical, chemical, and petrographic characterization; chemical reactivity; combustion & conversion; coal & the environment. For information, call 34-8-528-08-00.

September 11 - 15 : Twelfth Annual International Pittsburgh Coal Conference, Pittsburgh, PA. For information call (412)-624-7440 or fax (412)624-1480.

September 12 - 17 : Peat Industry and the Environment, Parnu, Estonia. For more information fax the International Peat Society at 35841677405.

October 25 - 27 : Gasification Power Plants Conference, San Francisco, CA. For information contact Linda Nelson at (415)-855-2127.

Fall: ICCP Annual Meeting, Krakau, Poland.

November 6 - 7 : Annual Meeting of the Geological Society of America, New Orleans, LA. For information, contact Vanessa George at (303)-447-2020.

1996

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For further information,.....

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For information, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

August 4 - 14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

Fall? : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL For further information, contact Jack Crelling.

Calendar of Events

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX, For information, contact.....

Fall: Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower.

1998

April 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, Orlando, FL For information, contact

Fall : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information, contact Prasanta K. Mukhopadhyay.

TSOP and *Organic Geochemistry*

Recent policy changes at *Organic Geochemistry* have resulted in modifications of how Special Issues of the Journal are handled. This brief article will describe these changes and their effect on publication of TSOP annual meeting papers in *Organic Geochemistry*.

As Chief Editors, from time to time we convene meetings of our Associate Editors and members of the Editorial Advisory Board. At our most recent meeting, held in conjunction with the Gordon Conference on Organic Geochemistry last August, we discussed the general subject of publication of "proceedings issues" in the Journal, in an effort to develop a policy with respect to special issues (i.e., journal issues that are not comprised entirely of regular submissions). After input from the Associates and the Board, we have decided on the following policies.

In the foreseeable future (but with the exception of agreements already concluded), the only proceedings issue that *Organic Geochemistry* will publish routinely, on an automatically renewable basis, will be the proceedings from the International Meeting on Organic Geochemistry of the European Association of Organic Geochemists (EAOG), for which *Organic Geochemistry* is the official journal. Except for the EAOG proceedings, *Organic Geochemistry*, as a matter of policy, will not publish proceedings issues. Instead, we will publish selected sets of "Theme" papers that will comprise

part or all of a single issue. For example, whereas we would forego an issue of the "Proceedings of the Isotope Group Meeting," we would be interested in publishing a "theme issue" on "Advances in Isotope Geochemistry." Within this new policy, individuals interested in Guest Editing a special issue on a particular theme would propose this to one of us, and agreements would be made as to topic, timing, available page numbers, etc.

We anticipate this new policy to become effective, with respect to the TSOP annual meeting proceedings, at the end of 1995. That is, the proceedings of the TSOP meeting of 1994 will be handled as usual, and published in *Organic Geochemistry* during 1995. Beginning with the 1995 TSOP meeting, conveners may wish to consider the theme-oriented approach outlined above.

As you know, the affiliation between TSOP and *Organic Geochemistry* has been a profitable one for both organizations, and we would like this to continue. In particular, we hope that TSOP will continue its association with the Journal, either through proposal and acceptance of theme-related issues, or by encouraging members to submit geochemically-oriented regular submissions to the Journal. Such submissions would be treated as separate papers, and a footnote may be added to the first page designated that the "paper grew out of a presentation at a recent TSOP annual meeting" (or something to this effect), if the authors so desire.

Organic petrography and organic geochemistry provide critical technologies for understanding organic matter in the earth's crust, and easy access to the literature of both disciplines is critical to the advancement of each. For this reason, we encourage continued interaction, and hope to facilitate this by providing regular Journal pages to those organic petrographic papers that contain a strong organic geochemical emphasis.

We also encourage continuing discussions on this subject, and invite you to contact either of us with your comments.

Joseph A. Curiale, Unocal, Inc.,
714-577-2312 (phone)
714-528-9986 (fax)
stgljac@geological.unocal.com

Archie G. Douglas, University of Newcastle
44-91-222-8627 (phone)
44-91-261-2400 (fax),
a.g.douglas@newcastle.ac.uk

*Dues must be paid by 1 February 1995!
Renew your membership today!*

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TSOP Newsletter
 James Pontolillo, Editor
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 956 National Center
 Reston, VA 22092 USA



THE SOCIETY FOR ORGANIC PETROLOGY
NEWSLETTER

Vol. 12, No. 1

March 1995

ISSN-0743-3816

Homer Griffield Turner



JUDY HOWER

..... *Forgotten Pioneer!*

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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105 Academic Projects Bldg.
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University Park, PA 16802-2300 USA

Phone: (814)-865-6543
Fax: (814)-865-3573.

Newsletter Contributions

The *TSOP Newsletter* welcomes contributions about events and topics pertaining to organic petrology from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII or WordPerfect preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
U.S. Geological Survey
956 National Center
Reston, VA 22092 USA

phone: (703)-648-4597
fax: (703)-648-6419
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For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology: c/o Ron Stanton, U.S. Geological Survey, MS-956, 12201 Sunrise Valley Drive, Reston, VA 22092-0001 USA.

The 1994-95 TSOP Council

President	Renee L. Symanski
Vice-President	John C. Crelling
President Elect	Brian J. Cardott
Secretary/Treasurer	Ken W. Kuehn
Editor	James Pontolillo
Councilor (1993-95)	Cole R. Robison
Councilor (1994-96)	Stephen Bend

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through July 1993, they are printed in the 1993 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

1995 Dues Reminder

Despite the inclusion of a "not-to-be-ignored" fireball fuschia dues renewal notice with the last issue of the *TSOP Newsletter*, a fair number of you have yet to send in your renewals as of this writing. The ever-patient TSOP Council would appreciate it if those in question would correct their egregious oversight and remit said renewals and dues immediately. Your continued membership is vital to the on-going mission of TSOP!

Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/94" appears, then you are paid only through December 1994. Please note that membership rates and categories have remained the same: Regular (US \$20/CAN \$30); Student (US \$15/CAN \$23). We ask that you complete the form included in the last issue and return it along with your dues payment. If you misplaced your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

Dr. Kenneth Kuehn
Department of Geology — EST 304
1 Big Red Way
Western Kentucky University
Bowling Green, KY 42101-3576 USA

Deadline for next issue: 10 May 1995

President's Letter

"Hats Off to Technological Advances"

Renee L Symanski

The purpose of this letter is to acknowledge and applaud the scientific and technological advancements that have been made in the past few years. These technological advances have been nothing less than impressive. I remember using a slide rule in school and was so proud of my first calculator that could add, subtract, multiply and divide. We have effectively gone from basic function calculators to computers that have rapidly evolved from "PC" to 286s, to 686s, to UNIX-based and Pentium chip computer systems. TSOP (via Jim Hower) and the Energy Minerals Division of the AAPG are jointly pursuing the utilization of CD ROM capabilities to catalog a thousand or more coal images, thus providing a comprehensive library of coals. This project and ones like it have effectively changed the utility and presentation of collected data.

Most of us in the scientific community and in the business world perform our work while sitting in front of a computer or at a piece of equipment (such as a microscope) that is interfaced to a computer via some type of digital signal output. Through all of these advances we have become much more efficient in our tasks. (Ironically, only to have more productivity expected of us). Today via the various Internet computer systems we can interact over the computer "superhighway" throughout the world. This type of communication goes far beyond the simple E-mail that we have become used to using on a routine basis. Along these lines it has been suggested by Martin Reinhardt that TSOP may want to consider being a part of, or sponsoring, a "Coal Mailbox" to be used as an international information center for topics as they relate to organic petrology. This may be another means by which TSOP members could actively interact with each other in addition to the annual meeting. I personally believe this may be an excellent communication link for TSOP.

As we move towards the year 2000 and beyond, I am sure we will witness technological and scientific advances that will make the Pentium chip and interactive CD ROM appear as archaic as the slide rule is today. The more I see of futuristic science fiction movies, the more I believe they are not that far from tomorrow's reality. For this reason, I say "Hats Off" to the technological advancements that man has accomplished. We have come a long way in a short period of time, almost at an exponential technological advancement rate. That's impressive!

About Our Cover

On behalf of TSOP I would like to extend our warmest thanks to Judy Hower for the fine likeness of Homer Griffield Turner gracing the cover of this issue. Judy is the wife of TSOP member Jim Hower, whose fascinating biography of Homer Turner begins on page six. The only other illustration at our disposal was a photocopy of a somewhat grainy photograph printed in a 1933 issue of *Mineral Industries*. Any other individuals who wish to contribute their skills to future issues of the *TSOP Newsletter* are encouraged to contact its "artistically-challenged" editor. JP

Still Available!

Coal Classification

Anne M. Carpenter

IEACR/12,
October 1988, \$90.00

Literature (mainly post 1980) on coal classification is reviewed. Over the years many classification systems have been proposed for coal. Some of the classification systems currently in use in the member countries of IEA Coal Research are examined. These include Seyler's chart, the ASTM (used in North America), NCB (UK), Australian (including the new 1987 system), German (Ruhr) and international (for both hard and soft coal) classifications. The new international codification system is also covered. Reasons for the poor fit of some coals are discussed. The properties of coal (chemical, physical, mechanical and petrographic) that are used as classification parameters, and their determination, are described. A short section is included on potential analytical techniques. Properties of relevance in combustion, liquefaction and coking of coal and their use, or potential use, as classification parameters are then examined. To order, see enclosed IEA Publications order form or contact:

Center for Applied Energy Research/University of Kentucky
Attn: IEA Publications/Theresa Wiley
3572 Iron Works Pike
Lexington, KY 40511-8433
phone: 606-257-0308
fax: 606-257-0302/0220

An Open Letter from Dr. Marlies Teichmüller

Dr. Marlies Teichmüller
Am Hohen Haus 15
D-4799 Krefeld
Telefon 02151/24790

Krefeld, 29. December 1994

Dr. Renee L Symanski
President of TSOP
351 Aspenway Drive
Coppell, TX 75019 U.S.A.

Dear Dr. Symanski,

Having received the December issue of the TSOP Newsletter I was very pleased to read that your society awarded me as an honorary member. I would like to thank you as the president very much, indeed, for this great honor.

I am especially proud of this award because I regard The Society for Organic Petrology as a most effective and successful organization which promotes not only coal research, but also hydrocarbon prospecting and the solution of certain general questions of classic geology.

With my best wishes for further success and with personal regards

yours sincerely
Marlies Teichmüller
[signed]

1995 Mid-Year Council Meeting Reminder

The 1995 Mid-Year Council Meeting of TSOP will be held at 9:00 AM, Saturday, March 18, 1995 at the Omni Netherland Plaza (35 West 5th Street) in Cincinnati, OH, U.S.A. All members of the Council should plan to attend as this is the major business meeting of the year. Committee chairmen are also encouraged to attend. As always, Council meetings are open to all TSOP members. If you plan to attend, have any questions, or know of any business items that should be discussed, please phone Renee Symanski at (214)-444-9922.

Second Notice and Call for Papers

Twelfth Annual Meeting of The Society for Organic Petrology

August 27 - 30, 1995

Woodlands Executive Conference Center and Resort
The Woodlands, Texas, U.S.A.

Program

- Aug 27: Pre-meeting Microscope Workshop at DGSi, three miles from the Conference Center. Organized in cooperation with the TSOP Research Committee, the workshop will feature hands-on examination of samples of topical interest, such as solid hydrocarbons, vitrinite suppression, recognition of kerogen at all stages of maturity, and environmental applications.
- Aug 28/29: Oral and poster session presentations. The conference Theme Session will be entitled *Integration of Organic Petrology and Geochemistry* in honor of the late Pieter van Gijzel, a strong advocate of this approach. Contributions are invited. In addition to the Theme Session, other topics to consider include : organic petrology of rocks and coals, palynology, thermal maturity, fluorescence, geochemistry, environmental applications, depositional environment of organic-rich rocks, and optical and electron microscopy. Talks on related topics are also welcome.
- Aug 30: One day field-trip to examine lignites in the vicinity of College Station, northwest of the Conference Center. The trip will be led by Peter D. Warwick (USGS, Reston) and will emphasize the geochemistry and petrography of the lignites in two working strip mines.

Please submit tentative titles for presentation before **April 30, 1995** to John R. Castaño (address below), indicating your preference for oral or poster presentation; we will send you instructions on the preparation of extended abstracts. The deadline for submission of abstracts is **June 30, 1995**. Authors will be invited to submit papers for publication in a special issue of the International Journal of Coal Geology.

For additional information, please contact:

John R. Castaño
DGSi
8701 New Trails Drive
The Woodlands, TX 77381
phone:(713)-363-2176 / fax: (713)-292-3528 / e-mail: dgsi@aol.com

Homer Griffield Turner : Pioneer Anthracite Petrographer

James C. Hower

University of Kentucky Center for Applied Energy Research. Lexington. KY 40511

With little argument, we can safely say that the history of coal petrology has a definite European flavor. To be sure, North American coal petrographers contributed to the science and, indeed, Reinhardt Theissen and Gilbert Cady are memorialized through major awards of the ICCP and the Geological Society of America. Despite that, the science as practiced today, particularly reflected light microscopy and the theories of coal metamorphism, is of European lineage. Were North American contributions in the pre-World War II era insignificant or just forgotten?

The contributions of Homer Griffield Turner fall into the latter category. Turner was born in Toronto, Ontario, Canada on November 3, 1887. He became a naturalized U.S. citizen in 1903 after emigrating to the U.S. in 1891, presumably with his parents. Turner received his B.S. degree in 1912 and his M.S. degree in 1914, both from Syracuse University, and also took graduate courses at the University of Chicago in the summer of 1915. He served as an instructor in mineralogy at Syracuse from 1913 - 1916 and as an assistant professor from 1916 - 1918. Turner joined the geology department at Lehigh University in 1918 as an assistant professor and stayed until 1929, serving as acting department chairman for the 1926-1927 school year. In 1929, he left undergraduate teaching to join the Anthracite Institute, then at Lehigh, as the director of research. In July 1931, the Anthracite Institute moved to Penn State where, in addition to his continuing appointment as the institute's director of research, he joined the School of Mineral Industries as a research associate in Fuel Technology. Turner left Penn State in July 1934, apparently coincident with the folding of the Anthracite Institute (Penn State archives are inconclusive on this matter). He then joined the Anthracite Equipment Corporation (New York, NY) as a research engineer while maintaining his residence in State College, PA. Turner died of a heart attack on May 17, 1945.

Turner's contributions to coal petrography were in anthracite petrology. From 1923 to 1932 he published five papers, albeit with some redundancy, on the petrography of Pennsylvania anthracites. In the process he developed methods for the etching of polished blocks and the subsequent examination of the etched blocks with reflected light air optics.

His basic studies were of the Buck Mountain, Primrose, and Mammoth veins from several of the Pennsylvania anthracite

fields. The technique consisted of grinding and polishing 2 cm square blocks. The polished blocks were placed in a drying oven over a Bunsen burner and heated to about 220°C for an hour. Upon removal from the oven the blocks were heated to red hot with an oxidizing blowpipe flame, resulting in differential oxidation without significant loss of polish. He found that the duller layers, while etching rapidly, required repeated oxidizing steps to bring out the greatest detail. Bright, unlaminated anthracite required the use of a sandbath. With the polished surface exposed, the sandbath was heated to 300°C for 1/2 hour then heated to red hot in place. Other methods, such as using hot (250°C) O₂ under slight pressure also produced etching, although not as effectively as direct heating. Petrographic examination was made with a metallographic microscope with carbon-arc illumination and 250x total magnification.

As a result of his procedure, Turner was able to describe, and illustrate through photographs, wood structures including medullary rays and annual rings. Also included were photographs of spore exines [*Punctatisporites minutus* [Cortland Eble, 1994 personal communication]] from dull layers. Overall, he demonstrated that anthracite had the same botanical structures, generally without distortion, as bituminous coal (previously, some geologists believed that anthracite had a different botanical origin than bituminous coal). He was not without critics. Theissen commented that thin sections would be easier to make than the polished blocks and E.C. Jeffrey expressed his belief that thin sections would reveal more botanical detail. Both statements may be true for bituminous coals, particularly considering the detailed etching procedure used by Turner, but it is difficult to believe that anthracite thin sections could be efficiently produced due to the extreme thinness required.

In 1932, Turner published a procedure for the x-radiography of 1 mm thick coal blocks. Distinct coal layers yielded distinct x-ray diffraction patterns with the "anthraxylon" having patterns approaching the structure of graphite. Other work while at Lehigh involved studies of adsorption of CO₂ on anthracite and bituminous coals. He also effectively rebutted C.B. Lipman's claim that living bacteria found in Pennsylvania anthracite were descendants of dormant bacteria from the time of formation of the coal, pointing out that groundwater would have been in contact with the coal in the mines.

Turner's arrival at Penn State coincided with the initiation of a joint Penn State - U.S. Bureau of Mines sampling project in the Pennsylvania anthracite fields. USBM engineers Charles Stull and Henry Goodman provided much of the manpower. *Mineral Industries* (v. 1, no. 3, Dec. 22, 1931, published by the School of Mineral Industries, Penn State) reported that 185 face channel samples were collected from April through December, 1931. A final total of 214 channels from 28 mines were collected. Turner participated in the sampling, certainly in 1933 in Sullivan and Northumberland counties (credited in USBM Technical Paper 659, 1944) and possibly at other times (he appears to be among samplers in photographs in *Mineral Industries*, v. 1, no. 3). The samples were analyzed at the USBM Pittsburgh laboratories. The detailed analyses are in USBM TP 659 but Turner did provide an early overview in a 1934 paper. He mapped isovols on a moisture and ash-free basis in addition to outlining the physical properties of semianthracite and anthracite. In his assessment of the isovol patterns he proved to be a product of his time as a follower of David White's theories.¹ He proposed that the isovols supported White's theory that the pattern resulted from horizontal thrust pressure applied prior to and in a different direction from the forces that formed the structure. As a proof of pre-folding metamorphism, he cited the example of similar semianthracite rank in the steeply-dipping beds at Trevorton, Northumberland County, and in flat-lying beds in the Bernice Field, Sullivan County. He did, albeit grudgingly, admit that Hilt's Law explained the decrease in volatile matter with depth at 9 of 11 collieries where such assessment was possible.²

In summary, his contributions paved the way for the use of etched surfaces to examine the fine structure of vitrinite, for the use of reflected-light microscopy in anthracite petrography, and the regional characterization of anthracite properties - an important basis for later studies of anthracite metamorphism. He may have been overlooked in some corners but his influence is still present in much of the practice of modern coal petrography.

Notes

1. "The data set forth in this paper are in such close agreement with David White's theory of progressive regional carbonization that the author would like to call attention to a few significant facts as a tribute to David White." (Turner, 1934a, p. 339).

2. "Last and weakest is the indication that the law of Hilt still holds in the anthracite fields.... it was found that the volatile content decreased with original depth of beds in spite of their present position." (Turner, 1934a, p. 341)

Acknowledgements

Chasing ghosts is never easy and is best done with the cooperation of others. I wish to thank Alice Marksberry, CAER assistant librarian; Cortland Eble, Kentucky Geological Survey; Judy Kiusalaas, Penn State College of Earth and Mineral Sciences; Leon Stout, Penn State University Archives; Amy Doherty, Syracuse University Archives & Records Management; and Alpha Chi Sigma for supplying the most elusive piece of information, the date of death.

References

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The Joys of Fieldwork, part 1

November 9, Camp No. 35 — While preparing for our departure before daylight, Dr. Woodhouse, who was warming himself by the fire, received an arrow through the leg, fortunately without doing him much injury. Several others were thrown into the camp and among the mules, but the darkness caused them to fall harmless. The sentinels, however, were thrown farther out, and we got underway without further annoyance, numbers following us with yells of defiance, but taking care to keep at a respectful distance.

Report of an Expedition down the Zuni and Colorado Rivers by Captain L Sitgreaves (Corps of Topographical Engineers). 1853.

Environmental Impacts of Coal Utilization Phase I Characterization of Solid Waste Products — A Teamwork Approach

R.B. Finkelman

Coal combustion mobilizes many environmentally deleterious substances such as heavy metals, radionuclides, and organic compounds. The 1990 Clean Air Act Amendments (CAAA) focus on the emission of these hazardous air pollutants (HAPS) from many sources, including coal-burning electric utilities. If the U.S. Environmental Protection Agency decides that emissions of HAPS from coal-burning utilities are a hazard to human health and the environment, they will recommend regulations to reduce emissions. Many people in the industry are concerned that the CAAA will lead to greater volumes of solid wastes having higher concentrations of hazardous elements in reactive forms. They feel that disposal of these additional wastes may present a greater threat to the environment than do current practices.

A team of about 25 people are collaborating on a multi-disciplinary project to generate information on the physical and chemical properties of solid coal combustion waste products and to assess their environmental impact. Participating in this project are scientists from the U.S. Geological Survey, the Kentucky Geological Survey, Kentucky Utilities, the Kentucky Center for Applied Energy Research, and East Georgia College (see Figure 1, next page).

In the first year of this project samples of feed coal, bottom ash, and fly ash are being collected on a monthly basis from two units of the Ghent Power Plant near Carrollton, Kentucky. The Ghent plant is the largest coal user and electric supplier in the Kentucky Utility system. One unit burns relatively high-sulfur coal from Indiana and western Kentucky. The second unit burns low-sulfur coal from West Virginia and eastern Kentucky. A flue-gas desulfurization unit was recently installed on the unit burning the high-sulfur coal. The limestone feed and flue gas desulfurization sludge are now being sampled.

Data will be generated on the bulk chemistry (major, minor, and trace elements), mineralogy (x-ray diffraction and petrography), sulfur forms and isotopes, petrography of the coal, and element modes of occurrence (using scanning electron microscopy, electron microprobe analysis, analytical transmission electron microscopy, selective leaching, etc.). In addition, information will be obtained on the magnetic properties, radionuclide content, and organic chemistry of the coal, fly ash, and bottom ash. Various size, density, and magnetic splits will be generated and characterized. The physical and chemical properties of the solid coal combustion

wastes produced by this utility have been previously generated on individual samples, however not all on the same suite.

We are also conducting batch and column leaching experiments designed to simulate the environment of the disposal sites and we are conducting geochemical modeling analyses to determine the theoretical behavior of the elements in the disposal site. Next year we hope to obtain cores of the Ghent coal combustion waste products buried for as long as 20 years. Analyses of these samples will be compared to results from the leaching and modeling experiments in a unique test of predictive models.

One of the questions that we seek to answer concerns the modes of occurrence of environmentally sensitive trace elements. Many studies of fly ash assume that these elements are concentrated on the particle surfaces by condensation, surface chemical reactions, or diffusion. We hope that the comprehensive characterization of the Ghent samples will shed light on these and other coal combustion waste disposal issues.

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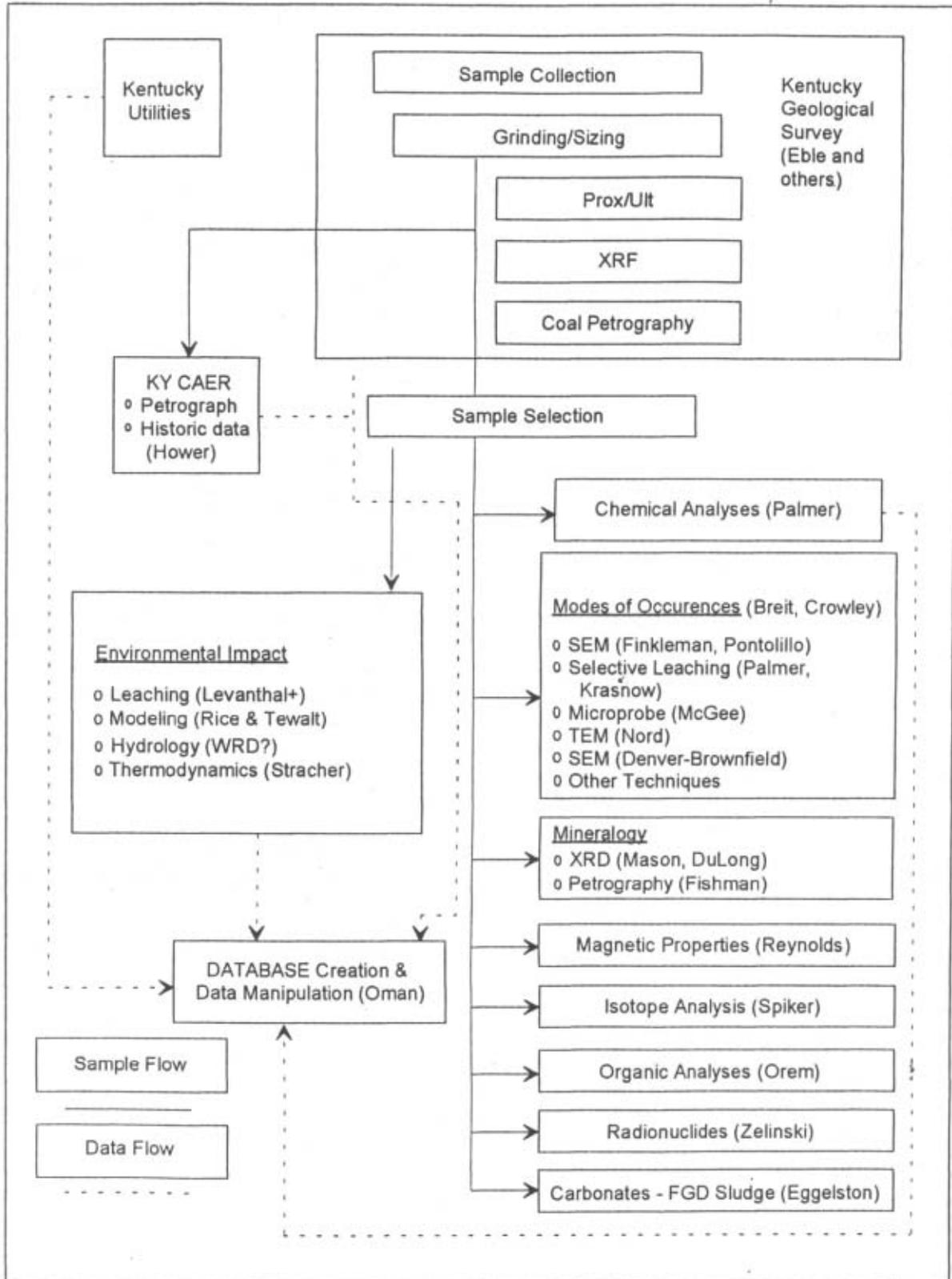


Figure 1 : Schematic diagram of EICU approach. Solid lines indicate sample flow; broken lines indicate information flow.

Dr. V.J. Gupta vs The Scientific Method

James Pontolillo

Who is Dr. Viswa Jit Gupta? As a paleontologist at the Centre for Advanced Study In Geology, Panjab University of Chandigarh (India) he is perhaps the greatest purveyor of scientific fraud to come down the pike since Dawson and his Piltdown Man, Blondlot and his N-rays, Linus Pauling and his vitamin C cures, and the team of Pons and Fleischmann with their wondrous cold fusion. Unfortunately, all too few in the scientific community are familiar with either the Gupta case or the man's legacy of decades of fraudulent contributions to Himalayan biostratigraphy. While this case of scientific misconduct *appears* to be limited only to Himalayan paleontology, much broader issues are at stake.

Scientific research is never performed in a vacuum. The increasing need for interdisciplinary studies requires that the overall scientific database be as free from error and contamination as possible. No member of the scientific community can remain unaffected by fraud perpetrated in another discipline; all such scandals serve to reduce public confidence in science in general. The scientific method is unique in demanding of its **practitioners** the most rigorous adherence to a clear set of standards : an openness to new ideas coupled with a healthy dose of skepticism, the formulation of demonstrable claims subject to falsification, and the validation of only repeatable phenomenon. The Gupta affair demonstrates both the scientific method's greatest weakness (reliance on fallible humans) and its greatest strength (built-in self-correcting mechanisms such as peer review).

The first stage in the unmasking of V.J. Gupta came about with the release of a detailed study of his contributions to the Silurian and Devonian biostratigraphy of India, Nepal, and Bhutan (Talent et. al., 1988). This has been followed by an on-going avalanche of further studies illustrating Gupta's fraudulent practices, as well as numerous public statements by his past co-authors supporting the charges against their colleague (Ahluwalia et al, 1989; Bassi, 1989; Brock et al, 1991; Erben, 1989; Radhakrishna, 1991; Talent, 1989; Talent, 1990s; Talent, 1990b; Talent et al, 1989; Talent et al, 1990; Talent et al, 1991; Webster, 1991; Webster et al. 1993; Wyatt, 1990). The damage done by Gupta's "contributions" is on a vast scale : at least 456 publications involving 117 coauthors (including 6 books) spanning all intervals Proterozoic to Pleistocene have been swept up in this tidal wave of disinformation. The spurious data and stratigraphical conclusions based on them have been used for global paleogeographic syntheses, and have appeared in standard textbooks. The primary investigators in this sordid affair have concluded that the Himalayan database is "so

extensively marred by error, inconsistency and implausibility as to throw grave doubts on the scientific validity of any conclusions that might be drawn from it" (Talent et. al., 1988).

In order to get a true feel for the scientific malpractice perpetrated by V.J. Gupta, the painstakingly documented studies examining his works should be carefully read. However, for our purposes a summary of Gupta's various *modus operandi* (modified from Brock et. al, 1991) will have to suffice :

- 1) "Recycling" - reporting the same specimens from more than one locality, often in support of new and startling stratigraphic alignments.
- 2) Plagiarism - including taking pictures from other people's publications (e.g. fossils from Canada) and then claiming them to be pictures of fossils supposedly collected in India.
- 3) Applying generic and specific names to materials that are unidentifiable as to genus, species, and sometimes even order or phylum.
- 4) "Phantom localities" - giving vague and misleading data making confirmatory sampling at alleged localities impossible.
- 5) Positing widely different ages for the same associations of fossils, resulting in serious Stratigraphic inconsistencies.
- 6) Asserting that identifications have been confirmed by leading authorities who deny having seen materials from the locality in question.
- 7) Spurious authorship - making other workers co-authors of papers and co-editors of volumes without their approval. Also, removing main author credits from a disproven work and publishing it as one's own work.
- 8) "Pamphleteering" - repeated publication of the same "discoveries" in several journals without cross-reference to comparable journals.
- 9) Issuing information in the smallest publishable increments so as to increase the number of publications.
- 10) Scrambling "data" from paper to paper.

11) Reporting materials that can be said to be "fingerprinted" because of associations or highly characteristic modes of preservation unique to specific localities elsewhere in the world. In at least one instance, Gupta is suspected of the theft and "recycling" of curated geological specimens (Wyatt, 1990).

12) Reporting incredible associations of fossils, never found in association elsewhere in the world, that imply age differences as great as 15-30 million years. While this is certainly not reprehensible *a priori*, the other examples of Gupta's fraudulent practices and the lack of field confirmation casts a heavy suspicion on all claims of this type.

From the beginning, the geological community in India has given V.J. Gupta ample opportunity to reply to the devastating allegations levelled against him. His responses, and those of his closest associate and lone scientific apologist, to this flood of evidence have at least been amusing, if not substantive or explanatory (Gupta, 1989; Gupta et al, 1990; Waterhouse and Gupta, 1990). Despite numerous requests, Gupta has refused to produce original samples, field notebooks, laboratory registers, or any other physical evidence that might contradict the many documented cases of fraud. His responses have been characterized by conscious attempts to confuse the issues being discussed. He has also accused one of the principal investigators, John A. Talent, of a "malicious intent to take revenge for personal rivalry and professional jealousy over the past 20 years" (Nature **338**, 694) and of racism (Nature **341**, 11) without citing any possible motive or supporting evidence.

One would think that if a faculty member at a prominent university was caught falsifying his research on a grand scale he would be summarily dismissed and the institution would do some soul searching. However, in the case of V.J. Gupta and the Panjab University of Chandigarh you could not be more mistaken. From the start, *politics* and not scientific principle was destined to drive the Gupta affair. In his first statement concerning the fraud allegations Dr. A.K. Prasad, director of the Centre for Advanced Study in Geology, characterized them as "a conspiracy to denigrate a top Indian scientist" (Nature **338**, 694). However, at the same time the Indian Society for Scientific Values announced that it would make an impartial investigation of the charges against Gupta.

For its part, the Panjab University set up a two-person investigating committee which by June 1990 had deferred actually investigating anything. Instead the committee took the easy way out by proposing that V.J. Gupta guide a collecting expedition to some of the sites in question. While such an expedition might solve the problem of a few of the many "phantom localities," it would not address any of the other numerous fraud allegations. An expedition, to be led by Dr. A.S. Paintal (President of the SSV), was organized by the

Indian National Science Academy and the Panjab University. However, the expedition was soon in doubt as V.J. Gupta was "taken ill" in July 1990 (Nature **346**, 2). The expedition went on without Gupta, however, and collected four samples from a limited area in August 1990 (Nature **347**, 318). Final testing and comparison of these new samples with Gupta's claimed "finds" was to be completed in one month.

In December 1990 the Panjab University Senate received the conclusions of two independent investigations into the Gupta affair. Both the Indian National Academy of Science expedition report and an independent Geological Society of India report concluded that Gupta's research was not genuine (Nature **349**, 645). The Senate dragged its feet on resolving the matter. Finally, in February 1991 Gupta was suspended from his posts at the Panjab University. Due to political pressures, the two reports condemning V.J. Gupta were not released and his friends outside of the scientific community began a concerted effort to have the matter reviewed for a *third* time.

In February 1992, however, Gupta was reinstated to his posts by the University Senate and the Vice-Chancellor. Their decision was apparently influenced by a 1000 page defence prepared by Gupta. The document has never been released for inspection (Nature 355, 578). Only after the cancellation of funding from the University Grants Commission and much adverse publicity in the international scientific press was a third inquiry begun with evidence being presented to a retired High Court judge, M.S. Gujral (Nature **366**, 616).

During the course of the two-year long hearings, V.J. Gupta was unable to present any evidence to refute the charges against him. He was also unable to remember the dates of his purported fieldtrips and told the inquiry that he did not keep field notes. In June 1994, Judge M.S. Gujral concluded that there was overwhelming evidence that most of Gupta's research was fraudulent and unreliable (Nature **369**, 698). Many thought that the long drama involving V.J. Gupta was finally drawing to a close.

Unbelievably, instead of the speedy dismissal that most expected, the Panjab University Senate decided in September 1994 merely to slap Gupta on the wrist because he had "been punished enough" in their estimation (Nature **371**, 368). Contrary to common sense, the four-times discredited professor will retain his position and continue to teach research students at the University, albeit with no further salary increases nor the ability to hold administrative posts (he would have been the next dean on the basis of seniority). Even more shocking is that when the University Senate entertained a motion for his dismissal, only five of 55 members voted in the affirmative. Apparently building one's *entire* career through scientific misconduct (investigations also indicate that even Gupta's MSc, PhD and DSc thesis work

is fraudulent), contaminating the last 25 years of Himalayan biostratigraphy to the point of near uselessness, and causing a scandal of proportions seldom seen in paleontology are simply inadequate reasons for dismissal from the Panjab University of Chandigarh. V.J. Gupta has eight more years until retirement and his critics can now only hope that he will resign. This seems very doubtful as Gupta continues to dismiss the whole affair as "a conspiracy by foreigners." The Panjab University, through its five years of inaction and this latest farce, continues to bring shame to the research community in India. The University Senate's repeated moral failures have tainted India's century-long tradition of excellence in geology and paleontology

The case of V.J. Gupta should be of interest to all scientists. The nature, scope, and duration of Gupta's deception raise serious questions about the adequacy of the supposedly rigorous self-correcting mechanisms inherent to the scientific method. While fraud is a recurring phenomenon in all walks of life, scientists often mistakenly assume their particular fields to be free from any such contamination. Most scientists are also reluctant to blow the whistle on colleagues promoting dubious claims (some geologists had "experiences"¹ with Gupta's style of research as early as 1979, but refrained from publicly airing the matter). These factors are further complicated by the scientific community's dominant publishing ethos. As long as publishing remains the primary method of guaranteeing funding and achieving advancement, the temptation to produce less than scrupulous work will exist. This affair has also publicly demonstrated the well known shoddy editorial practices of several scientific journals and a number of published volumes. Such carelessness only served to abet Gupta's scientific malpractice. Due to the considerable amount of damage that V.J. Gupta has managed to cause, it may be that the self-correcting mechanisms of the scientific method are not as strong as we believe in guarding against deliberate fraud. This case should give us all pause to think about our own practices (and those with whom we collaborate) in the pursuit of scientific knowledge.

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Robl Honored

On December 2, 1994 the awards committee of the Geochemistry Division of the American Chemical Society announced that Thomas L. Robl (CAER, Lexington, KY) was selected to be the recipient of its Best *Symposium of 1994* award. Tom, along with Adrian Hutton and Sunil Bharati, organized and convened a three-day symposium entitled "The Geochemistry and Petrography of Kerogen and Macerals" at the 207th ACS Meeting in San Diego on March 13-15, 1994 (see previous coverage in *The TSOP Newsletter*, vol. 11, no. 1, pp 6-7). The awards committee singled out this particular symposium for recognition due to its strong international flavor, the high level of participation by known experts, and the excellent reception that it received from the one hundred plus participants.

William F. Berry 1920- 1994

A Remembrance

Ralph J. Gray

Dr. William Francis Berry, an internationally known coal scientist and geologist, died on December 22, 1994 after a long battle with cancer. Bill was born May 2, 1920 to Harvey L and Delia Ingraham Berry in Patterson, New Jersey. He was the fifth of six children who survived.

He served as a pilot during World War II in the South Pacific. He was shot down over New Guinea, hospitalized for nine months with a broken back, and told that he would never walk again. He survived the ordeal and was able to walk. Bill entered the Fort Devens branch of the University of Massachusetts after being discharged from the service. He transferred to the main campus where he received a B.S. in Geology in 1950 even though he majored in Civil Engineering until his junior year. He received his M.S. in Geology (Soil Science) from there in 1952.

In that same year Bill received a Geology Fellowship for a Ph.D. at The Pennsylvania State University under Dr. William Spackman. His Ph.D. thesis was accepted in 1959 and the degree was awarded in 1961. Bill specialized in micropaleontology. He collaborated with Dr. Spackman to produce a movie on the thermal microscopy of coal using a heating stage to transform coal macerals to their carbonized products. This was a one-of-a-kind effort. U.S. Steel Corporation sponsored his work on the movie and on predicting the carbonization potential of coal from its petrographic characteristics. This was the subject of Bill's Ph.D. dissertation and part of this work resulted in his receiving the AISI Best Paper Award at the American Iron and Steel Institute in 1960.

Bill was a charter member of the International Commission for Coal Petrography (ICCP) and a former member of the American Society for Testing and Materials (ASTM), as well as the International Standards Organization (ISO). He served as the American Energy Consultant to the European Common Market for approximately twelve years. Bill was a Certified Professional Geologist (AIPG No. 1956) and a Fellow in the Geological Society of America (GSA). He was also a member of the American Association of Petroleum Geologists (AAPG), American Association of Independent Laboratories (AAOL), American Chemical Society (ACS), American Institute of Mechanical Engineers (AIME), and The Society for Organic Petrology (TSOP).

Bill was a former Project Coordinator of Bituminous Coal Research, the industrial laboratory for the American coal industry, from 1961 until 1968. He then founded W.F. Berry Associates, Inc. offering consulting services to the mining, metals, and mineral industries. Although specializing in coal and coke petrography, his group also offered professional services in property development, geologic data interpretation, in-plant studies of process variables, and literature surveys. The international group S.G.S. purchased W.F. Berry Associates in 1983 and later, through another S.G.S. purchase, it became part of the Commercial Testing & Engineering Company (CT&E). In 1984 Bill started CO-AG Consultants, Inc. which served the coal, steel, and bulk shipping industries for over ten years. He was actively involved in cleaning waste water from all sources with the A.C. Electrocoagulator. He owned many of the patents on electric field flocculation. Bill was widely recognized as an expert in the spontaneous combustion of coal and for his involvement in the safe storage, handling, and transportation of bulk cargoes — especially coal, iron ore, direct reduced iron (DRI), scrap iron, machine turnings, and non-ferrous ores.

Bill had a widely diversified background in coal utilization and an in-depth knowledge of the national and international energy picture. He authored or co-authored about 20 scientific publications. His most recent work was on the spontaneous combustion of coal for the *Encyclopedia of Energy Technology and the Environment*. He served as a consultant to many major domestic and international companies and institutions. He pioneered industrial petrographic applications and will be remembered for his leadership role in this area.

Bill was Past Chairman of the GSA Coal Division and chaired the ACS Symposium in 1963. Southern Illinois University held "An Oral History of Applied Coal Petrology and the Triangle Run" in May 1992, for which Bill, Ralph Gray, William Spackman, and Rich Thompson were the honored speakers. In the 1950s and 1960s industrial coal petrographers, both domestic and international, often visited Penn State, Bethlehem Steel, and U.S. Steel Research in order to exchange samples, equipment, and materials that dealt with the developing science of industrial coal and coke petrography. This was often called the "Triangle Run."

Bill Berry has left an indelible imprint on coal science. He has been appreciated, and will be long remembered, as a good friend and for his many contributions as a coal geologist and petrologist. Bill is survived by his wife Shirley, his sons David Berry and Donald Tessmer, and his daughters Laura Lee Berry and Karyn Konn. His son Scott died earlier in an accident. He is also survived by five grandchildren. His family requests that memorial contributions be made to the Forbes Hospice in Pittsburgh (PA) or to the American Cancer Society.

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Membership News

Dave Glick, Membership Committee Chairman

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Address Corrections and Changes

Please make the following changes and additions in your 1995 Directories:

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New Members

The Society welcomes the following persons who have applied for membership:

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Currently an M.S. candidate at the University of Kentucky, Ms. Alano is working in coal petrology and geology. She completed a B.S. in Geology at Indiana University in 1993.

Yingting Guo
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 Department of Geology
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In China, Dr. Guo is an Associate Professor engaged in research in coal petrology and geology, especially of the Carboniferous-Permian coals of China. During his stay in the U.S., he first visited Penn State and is now at West Virginia University.

Wuu-Liang Huang
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Dr. Huang holds a Ph.D. in Geochemistry from the University of Chicago, and served on the Faculty of Geology at National Taiwan University. He works in organic geochemistry and kerogen petrology and pyrolysis.

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Dr. Seewald studies the role of organic matter in hydrothermal systems, specifically organic - inorganic chemical interactions. He has a Ph.D. in Geology from the University of Minnesota.

Ivaylo Todorov
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Dr. Todorov teaches and performs research involving organic geochemistry and petrology, thermal modeling, and basin analysis. He received his Ph.D. from the University of Sofia in 1991 and also has experience at the Universities of Geneva and Freiberg.

Yunhe Zhang
 Dept, of Geological Sciences, Slone Building
 University of Kentucky
 Lexington, KY 40506-0053
 phone: 606 257-1989 / Email: Yunhe@mik.uky.edu

Mr. Zhang is studying coal & kerogen petrology and organic geochemistry at the University of Kentucky. He has an M.S. degree from China University of Mining and Technology.

Invitation for Papers
Sixth New Zealand Coal Conference
"Clean Coal Technology"

16-18 October 1995
Parkroyal Hotel, Wellington, NZ

The 6th NZ Coal Conference will attract coal producers, distributors, and users; equipment manufacturers and suppliers; researchers and technologists, and experts in related fields. Authoritative overseas speakers will be invited to present keynote addresses and specialist papers. Topics of interest include : clean coal technologies, coal gasification, coal science, climate change, marketing, coal quality, handling, export, combustion, and the environment. Abstracts of up to 200 words plus a summary sentence are due by 15 March 1995. Notification of acceptance of papers will be sent to authors, who must submit the full text of their paper by 30 June 1995. For further information contact: The Conference Secretary, 6th NZ Coal Conference, PO Box 31-244, Lower Hurt, New Zealand. Tel: 64-4-566-2289 Fax: 64-4-566-7737

Publications of Interest

Coal-Bearing Depositional Systems

C.F.K. Diessel
1992, Springer-Verlag, 721 pp

From the preface: "This monograph is neither a textbook nor a research report.... much of its contents in the outcome of hitherto unpublished original research into the causal links between coal properties and geological setting. The analytical approach to this problem is reflected in the relatively small number of examples which have been selected in order to argue the case for coal facies analysis as a useful tool in palaeo-environmental reconstruction on several levels.... It is only natural that the chosen examples reflect my own experience which has been mainly in bituminous coal in Australia and Germany with only occasional glimpses of other areas. This restriction should not be seen as a disadvantage, because it covers two geologically and economically significant coal-producing regions...." Topics covered include:

The Conditions of Peat Formation
The Coalification Process
Coal Petrographic Entities
Coal Facies and Depositional Environment
The Relationship Between Coal and Interseam Sediments
Coal-Producing Sedimentary Environments
Coal Formation and Sequence Stratigraphy
Coal-Producing Tectonic Environments

*Fractals and Chaos
in Geology and Geophysics*

Donald L Turcotte
1994, Cambridge University Press, 221 pp

From the preface: "The purpose of this book is to introduce the fundamental principles of fractals, chaos, and aspects of dynamical systems in the context of geological and geophysical problems. My goal is to introduce the fundamental concepts at the lowest level of mathematics that is consistent with the understanding and application of the concepts." Topics covered include:

Scale Invariance and the Definition of a Fractal Set
Fragmentation and Fractal Clustering
Self-Affine Fractals and Slider-block Models
Self-organized criticality
Renormalization group method and Lorenz Equations

*Vitrinite Reflectance
as a Maturity Parameter:
Applications and Limitations*

P.K. Mukhopadhyay & W.G. Dow [eds.]
1994, ACS Symposium Series 570, 294 pp

From the preface: "During the past 60 years, our knowledge of the applications and limitations of vitrinite reflectance expanded so greatly that this comprehensive volume could be generated.... This volume is the first of its kind and takes an up-to-date and integrated approach to combine the applications and limitations of vitrinite reflectance." Topics covered include:

Petrographic and Molecular Characterization
Applications to Basin Modeling
Need for Standardization of V.R. Measurements
Influence of Remnant Cell Structure
Reflectance Suppression
Evolution of Ultra-fine Structures
Paleoheat Flux Reconstruction
Hydrocarbon Generation-Migration Predictions

*Coal and Coal-bearing Strata
as Oil-prone Source Rocks?*

A.C. Scott and A.J. Fleet [eds.]
1994, Geological Society Spec. Publ. 77, 213 pp

From the overview article: "This book sets out to review the current status of our understanding of the formation of oil accumulations from coals. It is not concerned just with coals *sensu stricto* but also with the organic-rich mudrocks found in coal-bearing strata.... Understanding why coal-bearing sequences are oil prone can unlock a predictive capability for petroleum exploration and so help to reduce exploration risk." Topics covered include:

Terrestrially Sourced Oils
Oil-generating Potential of Rants
Geochemical Characteristics of Terrestrially Sourced Oils
Chemical Heterogeneity of Coal Microlithotypes
Condensates & Oils from the North Sumatra Basin
Geochemistry of Aliphatic-rich Coals
Oil Potential of Egyptian Mid-Jurassic Coals
Coal-bearing Strata as Source Rocks : Global Overview
Current Problems and Future Directions

Calendar of Events

1995

March 3 - 9 : 124th Annual Meeting of The Society for Mining, Metallurgy, & Exploration, Denver, CO. For information contact SME Meetings Dept, at (303)-973-9550.

March 5 - 8 : American Association of Petroleum Geologists Annual Meeting, Houston, TX. For information, contact James O. Lewis at (713)-972-1813.

March 6 - 8 : Asia Pacific Oil & Gas Meeting/Exhibit, Kuala Lumpur, Malaysia. For information, contact SPE at (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 11 - 14 : Middle East Oil & Gas Meeting, Bahrain. For information, contact SPE at (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 19 - 22 : Rocky Mountain Region/Low Permeability Reservoirs Symposium, Denver, CO. For information, contact SPE at (214)-952-9393 (phone) or (214)-952-9435 (fax).

March 27 - 29 : Structural Geology in Reservoir Characterization Meeting, London, England. For info, contact the Geological Society at 44-71-287-1433 (phone) or 44-71-439-8975 (fax).

March 28 - 29 : Geological Society of Canada Oil & Gas Forum '95, Calgary, Alberta, Canada. For information, contact Tim Bird at (403)-292-7017.

April 5 - 7 : Symposium on Appalachian Coal, GSA Southeastern Section Meeting, Knoxville, TN. For information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

April/May : Third Workshop on Pyrolysis in Organic Geochemistry, Poland. For information, contact M. Kotarba at 48-12-33-6504 (fax).

April 5 - 7 : Fractals and Dynamic Systems in Geoscience Symposium, Frankfurt/Main, Germany. For information, contact Jorn Kruhl at 49-69-7982695 (phone) or 49-69-798-2958 (fax).

April 9 - 13 : European Union of Geosciences Symposium, Strasbourg, France. For info, write : EUG VIII, E.O.P.G., 5 Rue Rene Descartes, Strasbourg Cedex 67084, France.

May 2 - 4 : Coal Prep '95, Lexington, KY. For information, contact Sam Posa at (303)-696-6100.

May 2 - 5 : Geotechnica Trade Fair & Congress, Koln, Germany. For information, write : Messe-und Ausstellungs, Ges.m.b.H. Koln, Messeplatz 1, Postfach 210760, D-5000 Koln, 21, Germany.

May 7 - 10 : ASTM Committee D-5 on Coal and Coke Meeting, Lexington, KY. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

May 8 - 10 : 13th International Conference on Fluidized-Bed Combustion, Orlando, FL. For information, contact Shelton Ehrlich at (415)-855-2444.

May 10 - 12 : 11th International Coal Testing Conference, Lexington, KY. For information, call (606)-325-1970 or fax (606)-325-2689.

May 14 - 18 : 97th Annual General Meeting of the Canadian Institute of Mining, Metallurgy, & Petroleum, Halifax, Nova Scotia, Canada. For information, contact D.G. McPherson at (902)-426-5043.

May 15 - 19 : Peat Organic Matter International Symposium organized by Commissions IV and VI of the International Peat Society, Minsk, Belarus. Chemical properties, physical properties and molecular structure of peat and sapropel compounds, peatland biological properties, new processing technologies, medicinal and cosmetic applications of peat and sapropel. For information, contact Ivan I. Lishtvan at (0172)-642-631 [phone] / (0172)-642-413 [fax].

May 24 - 28 : Fifth Annual Goldschmidt Conference on Geochemistry, University Park, PA. For information, contact Suzanne St. Pierre at (814)-865-7557.

May 28 - June 1 : First Walter A. Bell Symposium on Paleobotany and Coal Science, Sydney, Nova Scotia, Canada. For information, see previous notice (TSOP Newsletter, vol. 11, no. 3/4, p. 17) or fax either Dr. E.L. Zodrow (902)-562-0119 or Dr. P.C. Lyons (703)-648-4227.

June 26 - July 1 : European Coal Conference '95, Prague, Czech Republic. Coal prospecting, exploration & extraction, utilization, coal bed methane & environmental impacts. For information write/call: E.C.C. '95, Faculty of Science, Charles University, Albertov 6, 12843 Prague 2, Czech Republic (telephone 2.24915472).

August 13 - 16 : Annual Meeting, SEPM Congress on Sedimentary Geology, St. Petersburg, FL. For information, contact Myra Rogers at (918)-743-9765.

Calendar of Events

1995

August 15 - 18 : Particulate Control/Managing Hazardous Air Pollutants, Toronto, Canada. For information, contact Lori Adams at (415)-855-8763.

August 19 - 23 : Second International Symposium on Waste Processing & Recycling in Mineral & Metallurgical Industries, Vancouver, British Columbia, Canada. For information, contact L.M. Amaratunga at (705)-675-1151, ext. 2296 [North America] or T.J. Veasey at 0-41-44-021^14-5333 [Europe].

August 20 - 25 : ICCP 47th Meeting, Krakau, Poland.

August 27 - 30 : Twelfth Annual Meeting of The Society for Organic Petrology, Houston, TX. For information, see notice on page 5.

August 28 - September 2 : XIII International Congress on Carboniferous-Permian Stratigraphy and Geology, Krakow, Poland. For information, telephone (48 32) 66 20 36/38 or fax (48 32) 66 55 22

September 10 - 13 : AAPG International Conference and Exhibition, Nice, France. For information, contact AAPG at (918)-584-2555 or fax (918)-584-2274.

September 10 - 15 : Eighth International Conference on Coal Science, Oviedo, Spain. Focus will be on physical, chemical, and petrographic characterization; chemical reactivity; combustion & conversion; coal & the environment. For information, telephone 34-8-528-08-00 or fax 34-8-529-76-62.

September 11 - 15 : Twelfth Annual International Pittsburgh Coal Conference, Pittsburgh, PA. For information call (412)-624-7440 or fax (412)-624-1480.

September 12 - 17 : Peat Industry and the Environment, Parnu, Estonia. For more information fax the Secretary of the Organizing Committee at 3722453310.

October 8 - 11 : ASTM D-5 Committee on Coal and Coke Meeting, Norfolk, VA. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 11 - 14 : AASP Annual Meeting, Ottawa, Canada. For information contact Dr. Pierre Richard : telephone (5W 343-8023, fax (514)-343-8008, or send an e-mail message to richard@ere.umontreal.ca

October 25 - 27 : Gasification Power Plants Conference, San Francisco, CA. For information contact Linda Nelson at (415)-855-2127.

November 6 - 7 : Annual Meeting of the Geological Society of America, New Orleans, LA. For information, contact Vanessa George at (303)-447-2020.

December 17 - 22 : New Techniques in the Chemical Analysis of Coal Symposium, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii. This symposium is being sponsored by the Geochemistry Division of the ACS. The symposium will focus on both microchemical and bulk chemical techniques including micro-FTIR, microprobe light element analysis, x-ray imaging of coal macerals, IR and XAFS spectroscopy, coal fluorescence, laser pyrolysis gc-ms, NMR analysis and imaging, model compound reactions, trace element analysis of minerals in coal, proton thermal analysis of coal, new approaches to lignin analysis, and coal-bed methane generation. Most of the 23 papers in the symposium are expected to be published in a special issue of the *International Journal of Coal Geology*. For more information, contact Paul C. Lyons, U.S. Geological Survey, 956 National Center, Reston, VA 22092, USA.

1996

May 5 - 8 : ASTM D-5 Committee on Coal and Coke Meeting, Pittsburgh, PA. For more information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For further information,.....

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For information, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

August 4 - 14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

Fall? : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. For further information, contact Jack Crelling.

October 13 -16 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

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TSOP Newsletter
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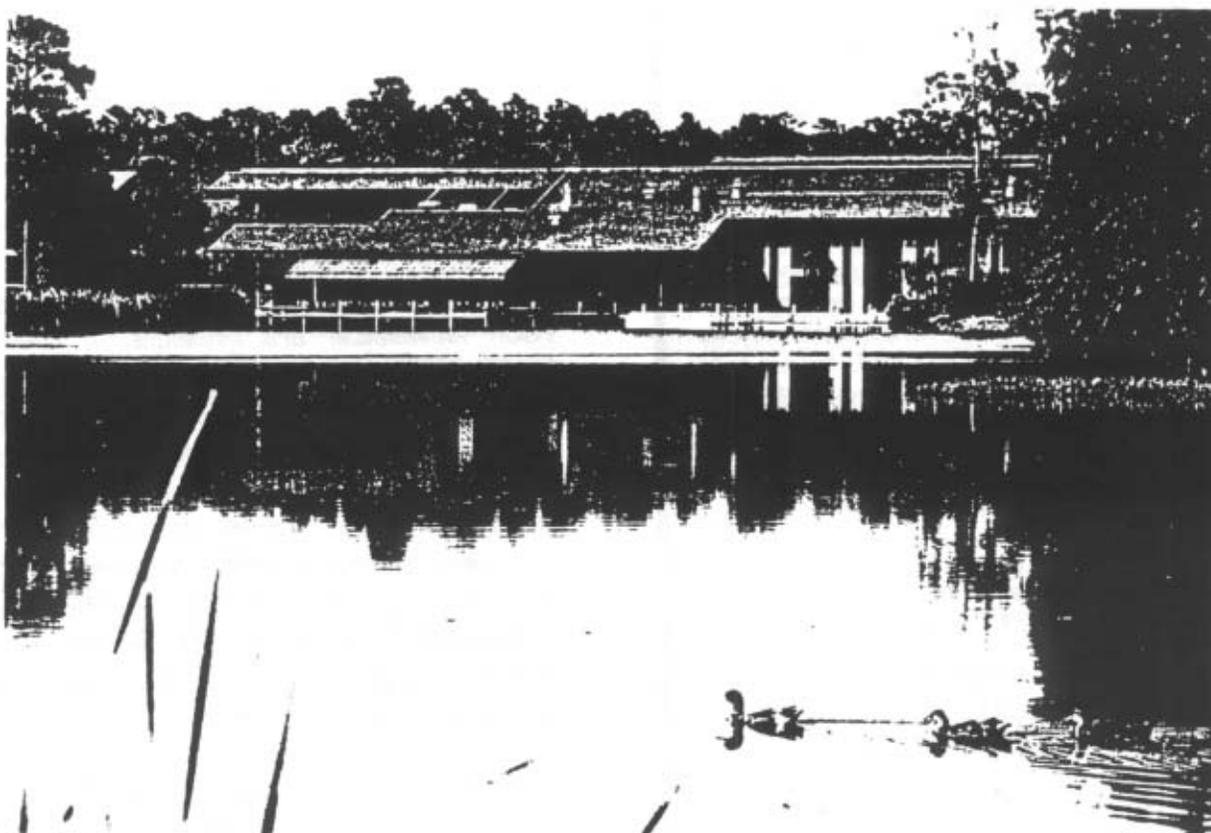
THE SOCIETY FOR ORGANIC PETROLOGY
NEWSLETTER

Vol. 12, No. 2

June 1995

ISSN-0743-3816

TSOP '95 - Houston, Texas



The Woodlands Executive Conference Center and Resort, site of TSOP '95, lies less than an hour from the city of Houston. In addition to its exceptional business meeting facilities, this tranquil oasis of woodlands and lakes offers golf, tennis, swimming, biking, hiking, fine dining, and a health club for the enjoyment of its guests. Come join us at The Woodlands in Texas on August 27 - 30, 1995 for the best TSOP annual meeting yet! (see pages 5 - 7 for full details)

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

David C. Glick
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105 Academic Projects Bldg.
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University Park, PA 16802-2300 USA

Phone: (814)-865-6543
Fax:(814)-865-3573.

Newsletter Contributions

The *TSOP Newsletter* welcomes contributions about events and topics pertaining to organic petrology from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII or WordPerfect preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
U.S. Geological Survey
956 National Center
Reston, VA 22092 USA

phone: (703)-648-4597
fax:(703)-648-6419
e-mail: jponto@ncrds.er.usgs.gov

For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology, c/o Ron Stanton, U.S. Geological Survey, MS-956, 12201 Sunrise Valley Drive, Reston, VA 22092-0001 USA.

The 1994-95 TSOP Council

President	Renee L Symanski
Vice-President	John C. Crelling
President Elect	Brian J. Cardott
Secretary/Treasurer	Ken W. Kuehn
Editor	James Pontolillo
Councilor (1993-95)	Cole R. Robison
Councilor (1994-96)	Stephen Bend

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through July 1993, they are printed in the 1993 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they might attend. Membership information packets and membership application forms are also available for distribution to interested parties. TSOP is a voluntary organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
(703)-648-4597 phone
(703)-648-6419 fax

For Membership Packets:

Dave Glick
(814)-854-6543 phone
(814)-365-3573 fax

Deadline for next issue: 10 August 1995

President's Letter

Renee L Symanski

My third letter to the membership of TSOP is a "potpourri"¹ of various topics that I wish to share with all of you.

It is once again that time of year for each and every TSOP member to actively exercise their right to vote for the 1995 officers of TSOP. Thanks to the efforts of the Nominating Committee and the agreement of selected members of TSOP to volunteer their time, we have an excellent ballot of candidates for each of the respective offices. The candidates include individuals who have previously held other offices within TSOP and individuals who have been actively involved with TSOP, but have not previously held an office within our society. This combination of past officers and chairpersons, along with active TSOP members willing to volunteer their time as new officers, is a very important attribute for the success and viability of our society.

I believe that for most people within TSOP, worldwide, it is becoming harder and harder for us to obtain the managerial approval and/or financial support to attend any and all meetings compared to a few years ago. Under these circumstances, your individual commitment to attend meetings and volunteer your time to societies such as TSOP, becomes even more admirable than in the past. From the perspective of TSOP, our annual meeting becomes not just an opportunity to see our colleagues and friends, but an excellent time to share and interact with our fellow scientists from throughout the world on the latest ideas and research activities that each of us is involved in throughout the rest of the year. With that said, I personally look forward to seeing many of you at the Houston meeting in August. The Woodlands (just north of Houston, Texas) is a wonderful place to have a meeting and play some golf, if that is your pleasure. John Castaño and his Annual Meeting Committee have been putting the final details together for this meeting and we anticipate an excellent program and good attendance.

My final thoughts for this article are directed more towards the U.S. membership, however, I believe similar situations may be occurring worldwide. This is concerning the potentially dramatic changes to occur with the U.S. Geological Survey (USGS) and the U.S. Bureau of Mines (USBM) as a result of being targeted for partial or complete elimination. The voice of the TSOP Council on this matter is that it would be a grave mistake for these agencies to be severely dismembered and/or eliminated. The benefits and wealth of information these agencies provide to all citizens should not be overlooked. These agencies are actively involved in research on

numerous topics, including earthquakes, floods, drought, surface and ground water pollution, and of course, the coal and shale research that is more familiar to most of us. TSOP as a society, and many of its individual members, will be doing what they can (via letters to Congressional delegates) to deter any action against the USGS and the USBM. I personally encourage the membership to voice their opinions and support for these agencies and any others on the "chopping block" that are providing a true benefit and service to the people.

I hope 1995 has been a good year thus far for one and all, and I will see all of you at The Woodlands in August!

AAPG Associated Society Benefits

TSOP has recently been granted AAPG Associated Society status with the following benefits:

- (1) Listed in AAPG Bulletin under Associated International Organizations.
- (2) Free quarter-page black and white ad annually in *AAPG Explorer*.
- (3) Twenty percent discount off published ad rates in *AAPG Explorer* and *AAPG Bulletin*.
- (4) TSOP members can register at AAPG member rate on pre- and on-site registration at annual AAPG meetings and other AAPG meetings for which AAPG is financially responsible.
- (5) Access to AAPG mailing lists at the Affiliated Society rate.
- (6) Priority consideration of proposed technical sessions at AAPG meetings.
- (7) Priority treatment of requests for business meetings and social functions at AAPG meetings.
- (8) Priority access to utilization of AAPG services (membership maintenance, directories, composition and printing, meetings' management, etc.) through contractual agreements.
- (9) Cooperative continuing education, publishing, and marketing ventures.
- (10) Exhibit space rental at educational/non-profit rate.

REPORTER(S) WANTED!

European Coal Conference '95
(June 26 - July 1/Prague, Czech Republic)

The TSOP Newsletter wishes to bring coverage of this important meeting to its many worldwide readers. If you are planning to attend ECC '95, please consider submitting a meeting summary for the September issue of the TSOP Newsletter (deadline August 10). Interested parties should contact the newsletter editor (see page 2).

Mid-Year Council Meeting Summary

Kenneth W. Kuehn, Secretary/Treasurer

The 1995 Mid-Year Council Meeting was held on Saturday, March 18th, at the Omni Netherlands Hotel in Cincinnati, Ohio. A copy of the complete minutes of this meeting may be obtained on request from the Secretary.

Attendance : President Renee Symanski, President-Elect Brian Cardott, Secretary/Treasurer Kenneth Kuehn, Councilor Cole Robison, Membership Committee Chairman Dave Glick, Nomination Committee Chairman Jim Hower, and 1995 Annual Meeting Committee Chairman John Castaño.

1. Secretary/Treasurer Ken Kuehn reported balances of \$16,357.66 in checking and \$8,635.09 in the Vanguard account making the total assets of the society \$24,992.75. A motion by K. Kuehn to transfer \$4,000.00 from checking into the Vanguard account was seconded and approved.

2. Jim Hower, Chairman of the Nominating Committee presented the slate for the 1995 elections : President-Elect [Jack Crelling, Jeff Levine), Vice-President (Ken Kuehn, Cole Robison), Councilor (Ganjavar Khorasani, Brenda Pierce), Secretary/Treasurer (Karen Rose Cercone, Lorraine Eglinton), Editor (Jim Pontolillo). Roger Trader will be Chairman of the Ballot Committee. All ballots will be counted by June 30, 1995.

3. Membership Committee Chairman Dave Glick reported that there are 239 people on the TSOP mailing list. In 1994 there were 210 paying members and to date, 78 have not renewed for 1995. Ken Kuehn will send a reminder notice to them. Eleven applications for membership were approved by the council. Welcome new TSOP members: Penny L. Alano, Janet Dehmer, Fari Goodarzi, Cheryl Gullett, Yingting Guo, Wu-Liang Huang, Jeff Seewald, Ivaylo Todorov, Louis Tsai, Thomas Wagner, and Yunke Zhang.

4. Renee Symanski reported for MaryAnn L. Malinconico, Chairwoman of the Outreach Committee, that six industrial sustainers supported TSOP in 1994. Announcements of TSOP around meetings will appear in *AAPG Explorer* and *GSA Today*.

5. John Castaño, Chairman of the 1995 Annual Meeting Committee reported on the status of this event. The meeting will be held August 27 - 30, 1995 at The Woodlands

Executive Conference Center and Resort, The Woodlands, Texas. The meeting will feature oral and poster sessions along with a pre-meeting microscopy workshop and a post-meeting field trip to lignite mines in east-central Texas.

6. Renee Symanski reported for Vice-President Jack Crelling on the status of the 1996 TSOP Annual Meeting to be held in Carbondale, Illinois. The proposed dates are September 16-17, 1996.

7. Jim Hower presented a proposal on a CD-ROM project which would cover aspects of coal preparation, maceral classification, and coal rank. The project would be international in scope and is expected to cost approximately \$23,000 to generate the master discs. The Council voted to commit \$1,000 of TSOP funds to this project.

8. President-Elect Brian Cardott reported results of AAPG Day held in Tulsa, Oklahoma on February 5, 1995. TSOP is the first AAPG associated society to make a presentation at this event. TSOP was elected an AAPG Associated Society at the 1994 Annual Meeting. As such, we receive certain benefits such as free advertisements and reduced rates for AAPG meetings. [see *detailed article on previous page - Ed*]

9. President-Elect Brian Cardott presented a "Member Questionnaire" designed to assess member preferences on selected issues. The Council approved insertion of this questionnaire in the third-quarter Newsletter.

10. The Council discussed policy on travel support for attendance at the Mid-Year Meeting. President Renee Symanski will draft a statement to be included in the official "Procedures Manual." TSOP policy is based on that of the AAPG. Council members shall seek the support of employers first, then possible subsidy by TSOP. The President organizes the Mid-Year Meeting and has ultimate authority in matters of attendance. As this is the primary business meeting of the society, all Council members are expected to attend.

TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower, CAER, 3572 Iron Works Pike
Lexington, KY 40511

phone: (606)-257-0261 / fax: (606)-257-0302

12th Annual Meeting of The Society for Organic Petrology

August 27 - 30, 1995
The Woodlands, Texas USA

John R. Castaño and Suzanne J. Russell

This year's annual TSOP meeting will be held in the heavily forested surroundings of The Woodlands Executive Conference Center and Resort. The meeting arrangements and facilities offer a unique opportunity for concentrated discussion and interaction with fellow attendees. The outside temperatures at this time of year are expected to be in the low 90s with high humidity. However, conference facilities are comfortably air-conditioned.

The meeting registration form is included in the Newsletter. Please print your name as you would like it to appear on your nametag. Conference fees which can be prepaid include the microscopy workshop, the registration fee, the post-meeting field trip and the copy of the technical proceedings.

Microscopy Workshop

On Sunday, August 27th, a full day workshop (starting at 8:30 am) will be held at DGSi which is three miles from the Woodlands Conference Center. Transportation from the Conference Center to DGSi is included in the cost of the workshop. Check at the hotel desk for transportation arrangements. Four topics will be presented: 1) Solid hydrocarbons, 2) suppression of vitrinite reflectance, 3) changes in kerogen with maturation, and 4) environmental applications of organic petrology. Short formal presentations will be made on each subject followed by examination of samples by the participants. Four microscopes will be used to allow plenty of time for sample examination. Each subject will be concluded with a group discussion with ample opportunity for questions. Refreshments and lunch will be provided as well as handouts on the subject matter. Capacity will be limited to 20 participants, so please register early to avoid disappointment. The workshop fee is \$40 for professionals and \$25 for students.

Meeting Registration

This year's meeting offers incentive to register early, by August 4th. Pre-registration for TSOP members (professional) is \$135 and for students, \$95. The registration includes lunch on both Monday, August 28th and also on Tuesday, August 29th. Lunch is served at the Conference Center as an all-you-care-to-eat buffet with several entree (and dessert)

choices. Late registration (after August 4th) increases by \$20 for both professionals and students. The Conference Proceedings, which will be published in the *International Journal of Coal Geology*, may be ordered at the time of registration for an additional \$15. It is not included in the registration fee. An icebreaker will be held on Sunday evening in the Confederate Room of the Conference Center at 6:30 pm. The Outgoing Council Meeting will also be held on Sunday, August 27 in the Travis Room. Registration will be in the Conference Center Lobby beginning at 4:00 pm on Sunday. On Monday and Tuesday, registration will be outside the Houston Room where technical sessions will be held. A colored **copy of the Registration Form has been enclosed in this newsletter. If the Registration Form is missing, please contact John Castaño at the address given below.**

Post-Meeting Field Trip

The one day field trip will be to lignite mines of east-central Texas to view the geology of the Eocene Calvert Bluff and Manning Formations. Our field trip leader is Peter Warwick of the U.S. Geological Survey. The field trip price of \$40 includes transportation from The Woodlands Conference Center, a box lunch, and the field trip guidebook. The Guidebook is a USGS Open-file/Bulletin "Coal Geology of the Eocene Calvert Bluff (Wilcox Group) and Manning (Jackson Group) Formations in East-Central Texas" edited by Peter D. Warwick and Sharon S. Crowley. The capacity of the trip is not presently limited, but please register early so that the proper number of vans can be reserved.

The Woodlands Conference Center & Resort

A meeting package has been prepared for us by the Conference Center. It includes for the night of Sunday, August 27, room and dinner; room, breakfast, and dinner for Monday, August 28 (lunch is included in the price of registration); and breakfast Tuesday morning, August 29. The price is \$110 each night (Aug. 27 and 28) for a single and \$70 per person, for a double. Additional nights (Saturday, Tuesday, Wednesday) are priced at \$79 for the single and \$39.50 per person for the double, with no meals included. The prices do not include sales tax and gratuity. The package is very

economical as it includes roundtrip transportation from Houston Intercontinental Airport to the Conference Center for which you would expect to pay \$30 - \$50. Those arriving at Houston Intercontinental Airport must make arrangements to be met directly with The Woodlands Conference Center. All hotel arrangements must be made with The Woodlands Conference Center:

Toll free phone : 1-800 433-2624
 Toll free in Texas : 1-800-533-3052
 Fax: (713) 367-2576

Room availability for the TSOP meeting is guaranteed until August 4th. Golf (this was the location of the 1995 Shell Houston Open), tennis, health club facilities, and swimming are all available to guests.

Conference Fees

Fees for the meeting registration, proceedings volume, microscopy workshop, and post-meeting field trip may be sent in advance payable by check in US funds to *The Society for Organic Petrology*. Mail to :

John Castaño
 DGSi
 8701 New Trails Drive
 The Woodlands, Texas 77381

Phone:(713)363-2176
 Fax:(713)292-3528
 E-mail: DGSi@aol.com

Contact John Castaño at the above address for additional information concerning the meeting.

Remember: the Abstract Deadline is June 30th!

Travel Information

Directions to The Woodlands Conference Center

From I-45 take the Woodlands Parkway exit. Go west on Woodlands Parkway 1.5 miles to Grogan's Mill Road. Turn left (south) on Grogan's Mill Road and go 0.5 miles to North Millbend Road. Turn right (west) on North Millbend Road. The entrance to the Conference Center is a few hundred feet on the left. Follow the signs. [see map, right column]

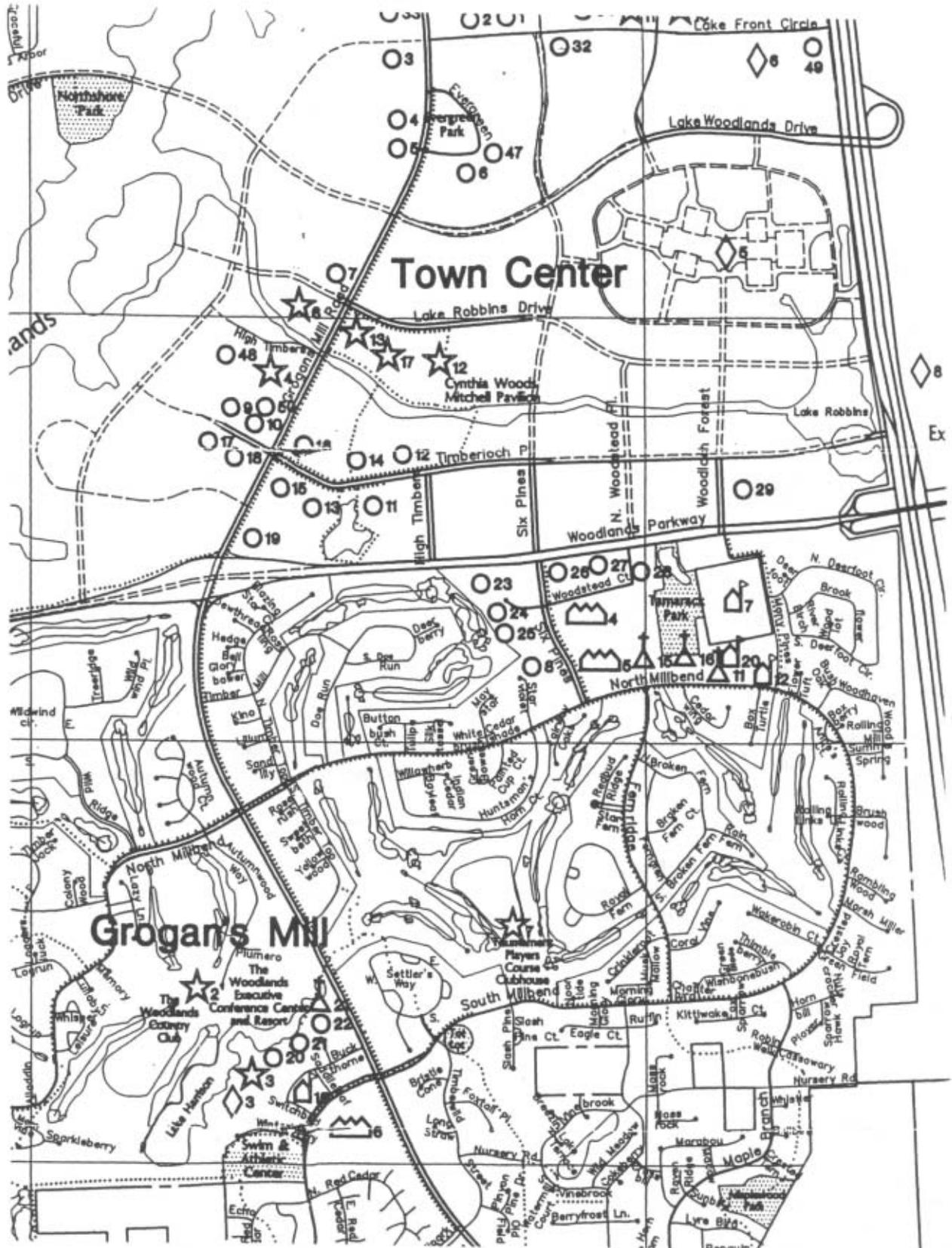
Directions to DGSi

From Houston traveling on I-45 take the Research Forest Drive exit (exit #77). On the feeder road go 1.3 miles (past the Lake Woodlands overpass) to Research Forest Drive. Turn left (west) on Research Forest Drive and go 1.5 miles to New Trails Drive. Turn right on New Trails Drive. DGSi is the first driveway on the left. [see map, below]

From Dallas on I-45 take the Research Forest Drive exit and turn right on Research Forest Drive. Follow the directions above to New Trails Drive, [see map, below]



Generalized road map of The Woodlands area.



Detailed street map of The Woodlands (Texas) area

Electronic Communications Committee Active

Dave Glick, Electronic Communications Committee Chairman

Some members have wondered how TSOP might participate in the expanding world of on-line communications. At the mid-year Council meeting, President Renee Symanski appointed an ad-hoc committee consisting of David Glick (chairman), Brian Cardott, Jeff Levine and Martin Reinhardt. They are investigating existing electronic forums related to TSOP's areas of interest, and will recommend possible goals and avenues for TSOP involvement. Members are strongly urged to participate in the survey in this issue.

A possible goal would be a "coal mailbox;" questions or comments on organic petrology could be posted, along with later answers and discussion. The Internet newsgroup sci.geo.geology, an "Org-Geochem" electronic mailing list, and forums on commercial services already exist, but none are directed specifically at organic petrology.

Another goal could be publicity for TSOP and the science of organic petrology. AAPG, GSA, SEPM, USGS, and many other societies, organizations and universities have recently made information available on the World-Wide Web. It is well suited to showing logos, membership information, newsletter articles, meeting schedules, informative documents, and promotional material in an attractive manner.

Depending on the views and needs of members, these goals might be achieved individually or by a combined method. The Committee is investigating methods in use by other organizations to achieve their goals.

An informal discussion session on TSOP's use of these methods is planned for the annual meeting in Houston on August 27 - 30. Please bring your thoughts, opinions, examples, and questions and plan to attend! At present, anyone wishing to comment, become involved, or receive more information on the Committee's findings may contact David Glick or any other Committee member.

Survey : What are you doing on the Net?

1. Do you use e-mail?
2. Do you use the Internet or commercial services like *CompuServe* (please specify)?
3. Do you use the World-Wide Web?

4. If you use the services, what do you do (e-mail, exchange data sets, read abstracts, discuss scientific topics, investigate related fields)?

5. If TSOP supported an electronic forum or site, would you use it? What would you expect from it or plan to use it for?

6. If TSOP distributed its membership database electronically, what file format would you want [*Lotus Organizer, dBASE, Access, etc.*)?

7. Please tell us your suggestions or opinions.

If you want to become involved with the committee or would like a more complete report of what we have found, contact David Glick at :

David Glick
e-mail: xid@psu.edu
fax: (814) 865-3573
Coal & Organic Petrology Labs
The Pennsylvania State University
105 Academic Projects Building
University Park, PA 16802-2300 USA

European members (who have not already responded to Martin Reinhardt's fax survey) may prefer to respond to:

Martin Reinhardt
Reinhardt Geological Consulting International
Drostei 7
30982 Koldingen
Germany
fax: +49 5102 915673

The Scope of Computer Communications

There are various methods for actually connecting, several types of things to do, and many programs which can be used. For each individual case, only certain ones will be useful, and general advice may not help. The trend of people adopting computer communications is in full swing, so it's likely that someone in a similar situation in your company, university, or city has done it and can provide pertinent advice. If you are truly on your own, the popular computer magazines have been concentrating on this topic recently (for example, *PC Magazine*, Feb. 21, 1995).

Commercial services (such as *CompuServe*, *America On Line*, *Prodigy*) charge a monthly fee and provide a range of features for their subscribers: reference materials supplied by the service, forums in which subscribers post questions, answers and discussions in many areas of interest, documents and archives associated with those forums, electronic mail, etc. One generally connects by using a modem to call up the service on a standard telephone line; often a local number is provided. Most of the subscribers are individuals or businesses. Each of these services was once self-contained, but recently they have been providing increasing access to the non-commercial Internet.

The Internet is a non-commercial worldwide network which grew out of government and university networks. Personal computers in universities, government, and business may be connected to local networks which are connected to the Internet; this can provide very fast communication because no telephone call (the slow link) is required. Those organizations might also allow employees to call up their system from home or remote locations and connect to the Internet. Another option for connection is a commercial Internet provider, which one dials up like *CompuServe* but provides only access to the Internet.

Several tools for moving information back and forth exist on the Internet; each is implemented by a certain type of program. To avoid confusion it is useful to separate each of these tools from the broader concept of "using (or cruising or surfing) the Internet."

Electronic mail is familiar to many because it has been in use within local computer networks or within organizations. In a similar manner a note can be typed in and sent via the Internet to anyone else whose Internet address is known. Mail can also be sent to recipients on commercial services such as *CompuServe*, *America On Line*, *MCI Mail*, etc. Copies can be sent to additional recipients, and other files (text documents, digitized photographs, data sets, programs) can be encoded and "attached" to mail messages for easy transfer. The mail appears in the recipient's e-mail "in-box."

Newsgroups provide a "bulletin-board" forum for posting questions, announcements, comments, and answers. Each posting is available to anyone who looks at the newsgroup. Using news reader software, one can look at subject lines of postings in a certain newsgroup and read the interesting ones, follow a "thread" of discussion started by a particular posting, and post a question or response in a particular newsgroup. There are newsgroups for almost every topic (several thousand in total), organized in a hierarchy by general topic. Those of interest to TSOP include *alt.aapg.general*, *alt.aapg.announce*, *sci.geo.geology*, and *sci.geo.petroleum*. Postings remain for a certain length of time, and an archive of old messages may also exist.

Mailing lists are hybrids between e-mail and newsgroups, and are the alternative when there is an insufficient level of use to warrant a newsgroup, or control over the list of participants is needed. Like a newsgroup, each posting is distributed to all participants, but this is accomplished via e-mail. One must subscribe and supply an e-mail address, and then all messages from the group are received like other e-mail. An example is the "org-geochem" mailing list.

Talk (available on some systems) sends short messages between participants quickly; it's the analog of a conversation (or two-way radio communication). Internet relay chat (irc) extends this to multiple participants who may come and go in a "room," like cocktail party talk.

Telnet allows one to log on to a remote computer and run programs on it as though directly connected. This generally requires some specific purpose, and an existing account on that computer. The Internet only provides the link.

File transfer protocol (ftp) provides a way to retrieve files which have been placed on a computer and made available for that purpose. If the files are restricted, a password is required; otherwise, "anonymous ftp" makes the files available to anyone. Ftp is easiest if the existence, location, and identity of the file is known in advance; it can be awkward to identify them otherwise. AAPG has an ftp site which includes descriptions of their publications and other files.

Gopher consists of documents on various computers, and sets of menus used to find them; the menu entries may be linked to menus or documents on other computers around the world. The documents are generally viewed rather than transferred for storage, and are usually plain text or tables. Many organizations and universities around the world have staff directories on gopher; this is a good way to find an address, telephone number, or e-mail address knowing only a name and university location. AGI has a gopher site with *Geotimes* table of contents, classified advertising, etc.

World-Wide Web (WWW) is the newest, broadest reaching, fastest growing, and most interesting of these tools; it is accessed by using a web browser program like *Netscape*, *Mosaic*, or *WebExplorer*. Its documents depend on graphics for their full impact, and incorporate pictures, sound, formatted text, and hypertext links. Clicking with a mouse on a link may produce a document on the desired subject from a computer across the world. Directories and search programs are available, and it's easy to move around within "the web." Web browsers may also incorporate e-mail, news reader, ftp, and gopher features and are continuing to expand their capabilities (most are still in their first version).

[continued]

Using WWW, universities are presenting supplementary course materials or self-paced courses, photo directories of their faculty, course schedules, and descriptions and requirements for majors. Businesses present their catalogs (record companies can provide album cover pictures and music clips) with on-line ordering. Cable TV stations distribute their program schedules. Communities provide event schedules, council minutes, voter information, and retail directories and advertisements. AAPG has a WWW site which includes their membership directory [access limited to members], publications index, meeting schedules and paper abstracts, current three months of AAPG Explorer article titles, headquarters directory, a link to their anonymous ftp site, and a section with many links to other geology WWW pages. GSA has a similar site.

ASTM News

Ronald W. Stanton

ASTM Committee D5 on Coal and Coke met in Lexington, Kentucky on May 7-10, 1995. Ballotting in Committee D5 has been light because many new standards and major revisions to existing standards are in subcommittees for rebalotting. The following are some highlights that may be of interest to TSOP members.

New Standard or Major Changes

D5671 Standard Practice for Polishing and Etching Coal Samples for Microscopical Analysis by Reflected Light This is new and has been approved and will be coming out as a separate publication probably in late summer 1995 and will appear in the 1996 Annual Book of Standards.

Changes to parts of *D388 Standard Classification of Coals by Rank* now permit the use of drill core samples in addition to channel samples to determine rank.

Precision statements for *D2798 Standard Test Method for the Microscopical Determination of the Reflectance of Vitrinite in a Polished Specimen of Coal* have been prepared and will be incorporated in a revision of D2798. These statements are based on an interlaboratory study involving six sample round robins among 12 participating labs who determined random reflectance and maximum reflectance on polished pellets supplied and samples prepared by each participating lab. The following statements are made after analyzing the data using statistical procedures of ASTM Practice E691:

1. There is no statistical difference in reflectance determined on pellets prepared and polished by a common lab as opposed to those prepared and polished by individual labs.

2. The within-lab repeatability for mean maximum vitrinite reflectance for coals measured between 0.7 and 1.7% reflectance is 0.02%.

3. The reproducibility of mean maximum vitrinite reflectance between labs is 0.06%.

4. For the reflectance range between 0.7 and 1.7% mean-maximum, the following statement was derived with no statistical difference between different rank ranges:

$$R_{o-max} = -0.034 + (1.09)(R_{o-rand})$$

Task Group Work

Task Group on Priority Trace Elements expects to issue an emergency standard for trace elements soon. This will allow labs to standardize testing for trace elements in anticipation of regulations requiring testing of coal for trace elements.

A new task group has been formed in response to a request by the Society for Mining, Metallurgy, and Exploration (SME) to develop a new standard relating to the Classification of the Resources of Coal. The chair of this group is Ron Stanton (USGS) and the task group is composed of members from industry, state and federal agencies, and academia.

The Task Group on Maceral Analysis is preparing to conduct an interlaboratory round robin to establish precision statements for maceral analysis.

11th International Coal Testing Conference

Ronald W. Stanton

The 11th International Coal Testing Conference was held following the ASTM meeting in Lexington, Kentucky from May 10-12, 1995. Two separate papers on the petrography of fly ash were presented by TSOP members Jim Hower and Kevin DeVanney. Both presented data that demonstrates the importance of using coal and coke petrography in the characterization of carbon retained in fly ash. Many in the audience, familiar with testing for carbon in fly ash, were surprised to learn that microscopy of fly ash could be as helpful as demonstrated in the studies presented. Another TSOP member, Cortland Eble, discussed the variability of trace elements in coals of Kentucky. Other presentations discussed field and laboratory testing of coal, sampling coal, on-line analysis, and applications of ICP analyses to coal and water slurries of ashes. This cross-over conference is unique in that it offers a forum for researchers, field, and laboratory personnel to discuss problems and investigate potential areas of new applications of such methods as optical microscopy and organic petrology. Perhaps it is time that more meetings of this type occur.

Inorganic Geochemistry of Lignite in the Lone Formation, California

A Correction

Robert B. Finkelman

U.S. Geological Survey, Mail Stop 956, Reston, VA 22092

In the proceedings of the 1994 TSOP conference, Finkelman and others (1994) presented data on the geochemistry of the lone lignite from the vicinity of the Mother Lode gold belt, Amador County, California. In that abstract they presented values for the gold content of the lignite that are now believed to be erroneous. This note presents new data for gold from the reanalysis of several samples and the analysis of newly collected lignite samples.

In 1994 Placer Dome U.S., Inc. collected a suite of 13 samples from the same lignite pit that Finkelman and others (1994) had obtained their samples. Analysis for gold was done by a commercial analytical laboratory using fire assay followed by ICP atomic fluorescence spectroscopy analysis.

Finkelman and others (1994) reported the average gold content of lignite in their lone lignite samples to be about 1.5 ppm. They noted that this value was considerably higher than the average gold value of U.S. coal (0.05 ppm). The analytical data obtained by Placer Dome U.S., Inc., however, indicated gold values of the lone lignite to be between 2 and 12 ppb. Reanalysis, by instrumental neutron activation analysis (INAA), of 6 samples analyzed by Finkelman and others (1994) and 6 Placer Dome samples having similar Stratigraphic distribution, indicated gold values of the lone lignite to be between 2 and 11 ppb, totally consistent with the Placer Dome results. The mean value for gold in the lone lignite is 5 ppb \pm 20%. We cannot offer an explanation of why the original data for gold was in error.

References

Finkelman, R.B., Bostick, N.H., and Congdon, R.D., 1994, Inorganic Geochemistry of Lignite in the lone Formation from the vicinity of the Mother Lode Gold Deposit, Amador County, California : *In* Pontolillo, J. (ed.), Abstracts - 11th Annual Meeting of The Society for Organic Petrology (Jackson, WY; September 25-30, 1994). pp. 2557.

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Membership News

Dave Glick, Membership Committee Chairman

Membership Directory

We expect to mail the 1995 Membership Directory during June, so address and telephone updates received over the last few months will not be listed here.

New Members

The Society welcomes the following persons who have applied for membership:

Thomas J. Algeo
Department of Geology
University of Cincinnati
Cincinnati, OH 45221-0013
Phone: 513 556-4195
fax: 513 556-6931
Email: Thomas.Algeo@uc.edu

Dr. Algeo holds a Ph.D. in Geology from the University of Michigan. His areas of interest include coal petrology and research on black shales.

Don L Hall
Amoco Exploration & Production Technology Group
4502 East 41st St.
Tulsa, OK 74135
Phone: 918 660-3926
fax: 918 660-4163
Email: dhall@amoco.com

Dr. Hall has worked for 4 years at Amoco developing and applying fluid inclusion techniques related to petroleum exploration and recovery. The results are integrated with other organic geochemical and petrographic data. He holds a Ph.D. in Geology from Virginia Tech.

Your contributions are needed!

The TSOP Newsletter is an open forum for its members' ideas, concerns, and interests. We are *always* in need of articles, reviews, news items, and opinion pieces. Help the TSOP Newsletter stand out from the pack. *Contribute today!*

Impact of Hazardous Air Pollutants on Mineral Producers and Coal-Burning Plants in the Ohio Valley

A Conference on the Title III, Clean Air Act Amendments of 1990

Leslie F. Ruppert and James Pontolillo

The Ohio Valley Mineral Consortium, which consists of the state geological surveys of Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia as well as the coal associations of the region, held its second successful conference in Lexington, Kentucky on March 19-21, 1995. The conference, entitled *Impact of Hazardous Air Pollutants on Mineral Producers and Coal-Burning Plants of the Ohio Valley*, focused on Title III of the Clean Air Act (CAA) Amendments of 1990. The diversity of the participants' affiliations (15% government agencies, 20% utilities, 25% universities, 10% private consultants, 5% stone industry, 25% other [lawyers, etc.]) made for a dynamic, interesting meeting.

The conference started Sunday, March 19th with a half-day short course on "Environmental Impacts of Trace Elements in Coal" given by R.B. Finkelman, L.F. Ruppert, and H.J. Gluskoter (all USGS). On Monday, D.C. Haney (KGS) opened up the conference with a welcoming address and short talk on Dr. Robert Peter, the first state geochemist of Kentucky. The first technical session, "Overview of Issues" moderated by J.C. Cobb (KGS), centered on policy issues. Two speakers from the EPA, D. Doniger and B. Jordan, gave talks on the CAA and its effects on and the role of industry in implementing the act's air toxic provisions. G.C. Bloomquist (U of KY) discussed the market impacts of the CAA; P.E. Bissell (CONSOL) gave an industry perspective on air toxics and the coal market. The session ended with a panel discussion involving representatives of several state utility commissions.

The second technical session early Monday afternoon was moderated by H.H. Damberger (ISGS) and entitled "Trace Elements in Coal." R.B. Finkelman (USGS) led off with an overview talk on trace elements in coal. H.J. Gluskoter and L.J. Bragg (both USGS) presented data on regional variations in the occurrence and distribution of HAP elements. A panel discussion was then held on coal quality databases by researchers from various institutions. S.A. Benson and K.A. Katrinak (U of ND) ended the session with a presentation on the abundance and association of trace elements in coal.

The third technical session, "Trace-Element Control Technology," was moderated by D.A. Stith (OGS) and held late Monday afternoon. C.E. Schmidt opened the session with a study of air toxic emissions from coal-fired utility boilers. T.A.

Sarkus and others (PETC) then discussed the characterization of air toxic emissions from clean-coal process configurations. D.G. Salladay (TVA), scheduled to address the removal of air-toxics via wet-limestone scrubbers, was a last-minute cancellation. W.E. Straszheim and others (ALFEP, PETC) presented the advantages of column froth flotation in controlling trace elements. I. Demir and others (ISGS, ICCI) ended the session with a discussion of coal beneficiation through other flotation-based approaches.

The last day of the conference began Tuesday morning with the fourth technical session, "Disposal and By-Product Recovery," moderated by S.S. Medina (EKPC). L.F. Ruppert and R.B. Finkelman (both USGS) started the session with a presentation on by-product recovery of coal-waste products. L.V.A. Sendlein and others (KWRRRI, KGS, U of KY) addressed trace element stability in Kentucky ash-disposal sites. E.C. Miller (TVA) then discussed the effects of the CAA on by-product utilization. B.C. Hardinge (Hardinge Engineering Corp.) stood in for A.F. Barsotti and R. Kalyoncu (BOM) and gave an update on the gypsum dilemma. T.L. Robl and others (CAER, EKPC) closed the session with a talk on the effects of the CAA and low NO_x burner conversion.

The conference itself came to a close late Tuesday morning following the fifth technical session, "Special Topics." A.P. Evans and G.A. Farthing (Babcock & Wilcox Alliance Research Center) gave the session's lone presentation on an advanced emissions control development program.

Two poster sessions were also held (Sunday and Monday nights) and included the following displays:

- W.C. Grady and others, "Trace Element Distribution in West Virginia Coals"
- A. Glover and others, "Coal in Pennsylvania"
- D.W. Carlton and others, "Trace Elements of Ohio Coals"
- C.F. Eble and others, "Trace Elements in Kentucky Coal"
- W.A. Hasenmueller and others, "Major, Minor, and Trace-Element Content of Indiana Coals and Limestones"
- C.-L. Chou and others, "Trace Elements in Illinois Coals and Limestones"
- G.R. Dever and others, "Trace Elements in Ohio Valley Carbonate Rocks"

The conference abstracts were published as: *Impact of Hazardous Air Pollutants on Mineral Producers and Coal-Burning Plants in the Ohio Valley* (Kentucky Geological Survey Special Publication #21, Series XI, 1995, 28 pp.).

Current Research in Appalachian Coal Geology

44th Annual Meeting of the Southeastern Section
The Geological Society of America, Knoxville, Tennessee, April 7, 1995

James C. Hower and Cortland F. Eble

Jim Hower and Cortland Eble organized the Appalachian coal geology symposium at the southeastern section GSA meeting. The symposium was co-sponsored by TSOP and the GSA Coal Geology Division, the first joint venture between the two groups. The abstracts were published in the GSA Abstracts with Programs, volume 27, number 2.

Blaine Cecil and Frank Dulong led off the symposium with a continent-wide examination of allogenic influences on Pennsylvanian soil horizons. Tim Demko and Bob Gastaldo brought Cecil's discussion to the basin scale in their study of allocyclic and autocyclic controls within the Mary Lee coal zone in Alabama. Jim Staub discussed allocyclic controls on mire development and mire termination using examples from West Virginia. John Calder, regrettably not able to attend the meeting, was scheduled to discuss the controls on mire development in the Maritime coal fields.

The lithologic [based on major sandstones and widespread marine intervals], palynologic, and megafloreal correlations through the Central Appalachians were discussed in papers by Don Chesnut, Cortland Eble, and Mitch Blake and co-authors. Based on extensive examination of coal and oil and gas drill records, Chesnut has established a regional Stratigraphic framework for the Central Appalachian coal field. Eble concentrated on the Lower and lower Middle Pennsylvanian in the high volatile bituminous regions in southwestern Virginia and adjacent portions of Kentucky. Blake emphasized the plant megafossils in his traverse of the Pennsylvanian stratotype through West Virginia.

Smaller-scale regional studies were presented by the other speakers. Habte Churnet examined the sandstones in southeastern Tennessee. Steve Greb and John Hiatt showed variation from outcrop/mine scale to quadrangle scale in the Fire Clay coal bed and the surrounding strata in Kentucky. They demonstrated that the deposition of the lower split was completed prior to the volcanic ash fall which is preserved as the basin-wide tonstein. Brenda Pierce and co-authors (presented by Eble) discussed the petrography and palynology of the Stockton coal bed in Martin County, Kentucky. The Stockton is one of the "block" or "splint" coals of the Central Appalachians and is somewhat lower in vitrinite than the Lower Pennsylvanian coals discussed earlier by Eble. Bill

DiMichele and co-authors presented a case study of a lycopsid forest at the top of the Mahoning coal bed in northeastern Ohio. Such a setting is as interesting from a Paleocological standpoint as it is dangerous in mining.

The field trip to eastern Kentucky was cancelled due to a shortage of paying attendees. The trip will be offered as the Geological Society of Kentucky field trip in September. Details are given elsewhere in this issue of the newsletter.

Abstracts

Blake, B.M., Eble, C.F., Grady, W.C., Lower end Middle Pennsylvanian biostratigraphic correlations across the West Virginia part of the central Appalachian Foreland [28957]

Calder, J.H., Archer A.W., Dolby, G., Gibling, M.R., Naylor, R.D., Scott, A.C., Wightman, W., Paleocology, paleoclimate, and paleogeography of Maritime Canada coal basins: current research [22416]

Cecil, C.B., Dulong, F.T., Allogenic controls on Pennsylvanian underclay and coal beds [37022]

Chestnut, D.R., Geologic framework for the coal-bearing rocks of the central Appalachian Basin: a basis for a unified Stratigraphic nomenclature [35907]

Chumet, K.G., Depositional environments of Lower Pennsylvanian coal-bearing siliciclastics of southeast Tennessee [37011]

Demko, T.M., Gastaldo, R.A., Allocyclic origin for marine strata associated with the Lower Pennsylvanian Mary Lee coal zone, Warrior basin, Alabama [37010]

DiMichele, W.A., Hook, R.W., Chaney, D.S., Miller, T.R., Eble, C.F., A drowned Lycopsid forest above the Mahoning coal (Conemaugh group, Upper Pennsylvanian) in Jefferson County, Ohio [37020]

Eble, C.F., Lower and lower Middle Pennsylvanian coal palynofloras: eastern Kentucky and southwestern Virginia [35908]

Greb, S.F., Hiatt, J.K., Deposition of the Fire Clay coal interval (Middle Pennsylvanian), Breathitt Formation, eastern Kentucky coal field [35959]

Pierce, B.S., Eble, C.F., Hower, J.C., Petrography and palynology of the Stockton coal bed, Kentucky [37015]

Staub, J.R., Punctuated sequences in Upper Carboniferous coal beds in southern West Virginia [34150]

Coal Geology of the Eastern Kentucky Coal Field

September 29 - 30, 1995

Field Trip Leaders

Cortland Eble & Steve Greb

Kentucky Geological Survey

Jim Hower

Center for Applied Energy Research

A one and one-half day field trip, sponsored by the Geological Society of Kentucky, will explore some of the more unique and exciting aspects of Appalachian coal geology. The trip will begin, and end, in Hazard, Kentucky, which is conveniently situated in the heart of the Eastern Kentucky Coal Field. The first day will be spent examining new roadcuts along Kentucky Route 3, near Inez, and exposures along Kentucky Route 80. Two important coal-producing intervals in the Pennsylvanian-age Breathitt Formation will be the focus of discussion, the interval between the Magoffin and Stoney Fork Marine Members, and the Fire Clay coal bed (Figure 1).

Lithologically, the interval between the Magoffin and Stoney Fork Members is dominated by large multi-storied sand bodies, which greatly contrasts with stratigraphically older, finer-grained rocks of the Breathitt Formation. Coal beds in this interval, many of which are heavily-mined, are also unique in that they contain an abundance of dull, "splint" coal lithotypes, in contrast with older Breathitt coals which contain a greater proportion of bright, "gas" coal lithotypes. They also tend to be multiple-benched, with several coal layers being intercalated with clastic units. Coals between the Magoffin and Stoney Fork are also unique palynologically, in that they typically contain higher percentages of tree fern, and small lycopod [*Densosporites*] spores. Older coals tend to be more uniformly dominated by spores of lycopod trees [i.e., *Lycospora*]. The significance of these characteristics, from both an origin and usability standpoint, will be a focal point of discussion on the trip.

The Fire Clay coal bed, which is the second highest-producing coal (> 20 Mt in 1993) in the Eastern Kentucky Coal Field, will also be examined on the first day. The Fire Clay coal contains a distinctive flint clay parting, thought to be of volcanic origin. This distinctive parting allows the bed to be field identified, and correlated across state boundaries. The flint clay parting also naturally divides the bed into two benches, each being different in appearance and composi-

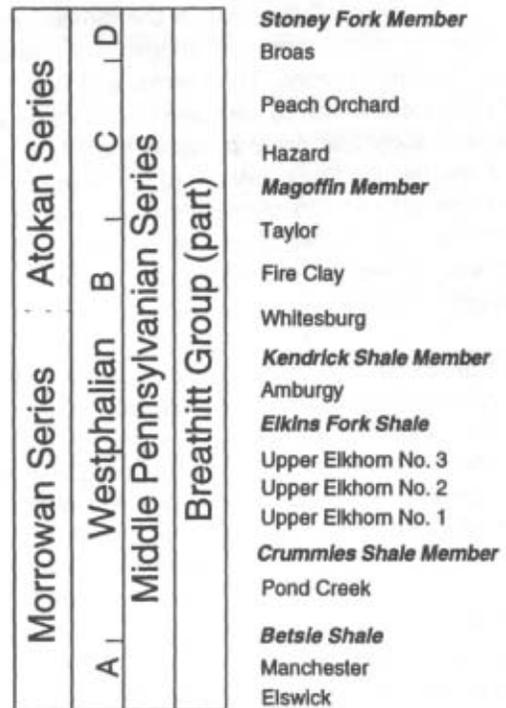


Figure 1 - Generalized Stratigraphic column for Pennsylvanian strata in the Eastern Kentucky Coal Field, showing the position of major minable coal beds. Widespread marine units are shown in bold, italics.

tion. The lower bench typically is thin (< 0.5 m), laterally discontinuous, and mainly comprised of dull lithotypes. In contrast, the upper bench of the Fire Clay generally is thick (> 1 m), laterally continuous, and mainly comprised of bright lithotypes. Discussions of the Fire Clay will include the inferred origin of both benches, as well as areal and temporal distribution of several geochemical parameters, including ash, sulfur, calorific value, and selected trace elements

earmarked for potential monitoring by the Clean Air Act Amendments of 1990.

The second day (half-day) of the field trip will include stops at the panoramic intersection of Kentucky Routes 80 and 15 where some 200+ meters of Breathitt Formation strata are exposed in "4-corners", a channel-coal remnant in the Hazard #5 coal bed, and the type area of the Manchester coal bed. The Manchester is the stratigraphically-oldest, major-minable coal in the Eastern Kentucky Coal Field. Discussion will include areal and temporal trends in petrography, palynology, and geochemistry as they relate to the inferred origin of the Manchester. We will compare/contrast the appearance and composition of the Manchester with the Fire Clay, and minable beds between the Magoffin and Stoney Fork Marine Members seen and discussed on the first day. The significance of the overlying Betsie Shale, which is the first major marine interval of basin-wide extent in the Eastern Kentucky Coal Field, will also be discussed in terms of basin tectonics and eustasy. The trip will end in Hazard early Saturday afternoon, September 30th.

The approximate cost of the trip will be \$100.00, which will include two nights lodging September 28th and 29th (double occupancy), bus/van transportation, lunch and dinner on the 29th and 30th, and a field trip guidebook. Barring rain, weather in the Appalachian Plateau usually is quite pleasant in late September, with high temperatures in the 70's. Fall foliage should also begin to come into color at this time.

We encourage interested TSOP members to contact Ken Kuehn (502-745-3082 phone / 502-745-6471 fax) for more information, and look forward to seeing many of you in September.

REPORTERS WANTED!

- ICCP 47th Meeting (Krakow)
- XIII Carbo-Permian Congress (Krakow)
- AAPG International (Nice)
- 8th Coal Science (Oviedo)
- 12th Pittsburgh Coal Conference
- 6th New Zealand Coal Conference
- 1995 Ash Utiliz. Symposium
- 1995 GSA Annual Meeting

The *TSOP Newsletter* wishes to bring coverage of these important meetings to its many worldwide readers. If you are planning to attend one of the above conferences — or any others, please consider submitting a meeting summary for publication in a future issue of the *TSOP Newsletter*. Interested parties should contact the newsletter editor (see page 2).

Waste Utilisation!

Applications for Coal-use Residues

Lee Clarke

IEACR/50. ISBN 92-9029-207-5
406 pp, December 1992. \$150.00

The production of coal-use residues is an inevitable consequence of the utilisation of coal. In many countries landfill provides a simple method of disposing of most coal-use residues. However, increased environmental concerns, stricter regulations, and higher disposal costs may in future make dumping unacceptable. In many countries there is now a greater emphasis on utilisation of waste materials, rather than disposal. A wide range of utilisation options have been demonstrated for various coal-use residues, including applications in agriculture, building and structural materials, industrial materials, and material recovery. A number of commercial applications are well documented and have been carried out for many years. Research into new applications for residues is in progress at many centres around the world.

This report provides basic information on over 200 different applications and processes which utilise coal-use residues, from more than 20 countries. Applications range from high-volume, low-technology uses, to low-volume but highly specialised applications. Commercial processes and applications are listed together with those which are at an experimental or developmental stage, in work carried out by private or governmental research organizations. Process and manufacturing descriptions are given for each application, and data are provided on the types of coal-use residues utilised, other materials incorporated, and properties of manufactured products. To order, see enclosed IEA Publications order form or contact:

Center for Applied Energy Research/University of Kentucky
Attn: IEA Publications/Theresa Wiley
3572 Iron Works Pike
Lexington, KY 40511-8433
phone: 606-257-0308
fax: 606-257-0302/0220

An Unusual Ball

Gosforth colliery lies about three miles north from Newcastle, and on the west bank of a romantic "dean," or little valley, through which the Ouse Burn winds its way to the Tyne. The sinking was commenced in 1825, and the coal was won on Saturday, January 31, 1829. Great expense was incurred in this undertaking.... So remarkable a winning deserved a celebration.... Some persons would have had the workmen out in a field, and made them spectacles of inebriety to the open eye of day. But the proprietors adopted a more suitable plan.... that of a grand subterranean ball, at the very place of triumph! The ball-room was situated at a depth of nearly 1100 feet below the surface of the earth, and was in the shape of the letter L, the width being 15 feet, the base 22 feet, and the perpendicular height 48 feet. Seats were placed on the sides of the said ball-room, the floor was dried and flagged, and the whole place was brilliantly illuminated with lamps and candles. The company began to assemble, and descend in appropriate dresses, about half-past nine in the morning, and continued to arrive till one in the afternoon. The men engaged in the work, their wives and daughters, and sweethearts; several neighbors with their wives, the proprietors and agents with their ladies, and sundry friends of both sexes — all these gradually found their way to the bottom of the shaft. Immediately upon their arrival there, they proceeded to the extremity of the drift, to the face of the coal; at the face each person hewed a piece of coal as a memento.... and then returned to the ball-room. As soon as a sufficient number of guests had assembled, dancing commenced, and was continued without intermission till three o'clock in the afternoon. No distinction was made among the guests, and born and bred ladies joined in a general dance with born and bred pitmen's daughters. All now returned in safety.... to the upper regions, delighted in the amusements in which they had been engaged. A local band of miner's musicians was in attendance, and the pit was filled with music and merriment. The genii of the caverns were startled, and the young dandified pitmen never looked so happy, so clean, and so gay. Refreshments were not forgotten, and cold punch, malt

liquor, and biscuits of all kinds, were dispensed in abundance. It was estimated that between 200 and 300 persons were present, and that nearly one-half of them were females!

Our Coal and Our Coal-Pits; the People in them, and the Scenes around them by "A Traveller Underground" (London, 1854)

Research Geochemist

ARCO Exploration and Production Technology has an opening for a research geochemist in our Exploration Research and Technical Services division. We are looking for an organic geochemist with a background in kinetics of oil and gas generation, kerogen chemistry, and source rock depositional environments. Familiarity with petrographic techniques to assess organic matter type and maturity is also highly desirable. Responsibilities will entail participation in cross-disciplinary research and technical service projects in support of international, Alaskan, and lower 48 exploration efforts.

Requirements include an advanced degree in Geochemistry, Geology, or Chemistry, along with 4+ years of related experience. Applicants must also be familiar with geochemical analytical techniques and their interpretation, including GC, GC-MS, isotopes, TOC, pyrolysis, Py-GC, and Ro. Additional requirements include effective communication and teamwork skills, a working knowledge of computers and personal computing software, and the ability to handle several concurrent projects.

ARCO offers a competitive salary and attractive benefits. For confidential consideration, please send your resume by July 21 to: ARCO Exploration and Production Technology, Human Resources Department, Room PRC E1122, 2300 W. Plano Parkway, Plano, TX 75075-8499.

ARCO Exploration and Production Technology 
Division of AtlanticRichfield Company

An equal opportunity employer.

Publications of Interest

Asphaltenes and Asphalts, 1

T.F. Yen & G.V. Chilingarian (eds.)
1994, Elsevier, 476 pp

From the publisher's ad-copy: "This is the first volume of a two-volume set of critical reviews of many aspects of both asphaltenes and asphalts and their interrelationship. Asphaltene is invariably present in asphalt or bitumen and other fossil fuel-derived liquids such as coal tar, coal liquefaction products, pyrolyzed shale oil from oil shales, source rock extracts, and numerous naturally occurring substances.... The book will be welcomed as a valuable reference source for petroleum companies, research institutes, refineries, universities, and also by individuals dealing with the production, origin, formation, engineering, conversion and catalysis of heavy oil, tar sands and other bituminous materials." Topics covered include:

- Chemical and Physical Studies of Asphaltenes
 - Fuel Oil Chemistry
- Structure and Geochemical Significance
 - Adsorption and Precipitation
 - Mathematical Modeling
- Use as Thermal Maturation Indicators
- Thermodynamics of Intermolecular Interactions

Bitumens in Ore Deposits

J. Parnell, H. Kucha & P. Landais (eds.)
1993, Springer Verlag, 520 pp

From a recent review: "This well-produced book is a mine of information, focusing on bitumens which are either associated with ore deposits or enriched in metals.... a total of 27 papers.... This extensive set of contributions reflects the broad occurrence of bitumens in association with a wide variety of ores, and encompasses a broad range of analytical approaches, both petrographic and geochemical.... the definitive textbook for students and researchers in this field." Topics covered include:

- Nomenclature and Methodology
- Petroleum in Modern Hydrothermal Systems
- Bitumens in Precious Metal and Mercury Deposits
- Bitumens in Uranium/Thorium Deposits
- Bitumens in Base Metal/Manganese Deposits
- Applications to Exploration for Metals and Hydrocarbons

Coalbed Methane in the Cretaceous Fruitland Formation, San Juan Basin, New Mexico and Colorado

W.B. Ayers, Jr. & W.R. Kaiser (eds.)
1994, NM Bureau of Mines Bull. #146, 216 pp

From the preface: "Coalbed methane is playing an increasingly important role in meeting the energy needs of the United States.... this unconventional gas may supply 4-5% of the domestic natural gas in 1994. In the San Juan Basin, Fruitland Formation coal beds contain an estimated 43 - 49 tcf of methane. This basin is the most active area of Coalbed methane development and production in the United States.... From August 1987 through July 1990, the Bureau of Economic Geology at the University of Texas at Austin evaluated geologic and hydrologic controls on the occurrence and producibility of Coalbed methane in the Fruitland Formation.... This report discusses five areas that relate to controls on the occurrence or producibility of Coalbed methane." Topics covered include:

- Tectonic Setting and Fracture Patterns
- Depositional Setting and Structural Controls
- Thermal Maturity and Gas Composition
- Integration of Geologic and Hydrologic Studies

European Coal Geology

M.K.G. Whateley & DA Spears (eds.)
1995, Geol. Soc. London Spec. Publ. 82, 334 pp

From the publisher's ad-copy: "This volume covers many aspects of European coal geology and illustrates the depth and breadth of research from sedimentological, geochemical and exploration models, to exploration drilling and economic evaluation of coal deposits, on a local and countrywide scale, as well as the environmental aspects of coal burning and disposal of CO₂.... [this] book should prove particularly useful for a wide audience, ranging from researchers, lecturers and students to professionals in industry." Topics covered include:

- Exploration and Evaluation Techniques
- Geophysical Exploration
- Resources, Environment and Energy Policies
- Case Histories

Calendar of Events

1995

May 28 - June 1 : First Walter A. Bell Symposium on Paleobotany and Coal Science, Sydney, Nova Scotia, Canada. For information, see previous notice (TSOP Newsletter, vol. 11, no. 3/4, p. 17) or fax either Dr. E.L. Zodrow (902)-562-0119 or Dr. P.C. Lyons (703)-648-4227.

June 12 - 16 : Symposium on Sustainable Development of Opencast Coal Mining Regions, Krasnojarsk, Russian Federation. For more information contact Slav Slavov at 41.22.917.24444 (phone) or 41.22.917.0038 (fax).

June 26 - July 1 : European Coal Conference '95, Prague, Czech Republic. Coal prospecting, exploration & extraction, utilization, coal bed methane & environmental impacts. For information write/call: E.C.C. '95, Faculty of Science, Charles University, Albertov 6, 12843 Prague 2, Czech Republic (telephone 2.24915472).

August 13 - 16 : Annual Meeting, SEPM Congress on Sedimentary Geology. St. Petersburg, FL For information, contact Myra Rogers at (918)743-9765.

August 15 - 18 : Particulate Control/Managing Hazardous Air Pollutants, Toronto, Canada. For information, contact Lori Adams at (415)-855-8763.

August 19 - 23 : Second International Symposium on Waste Processing & Recycling in Mineral & Metallurgical Industries, Vancouver, British Columbia, Canada. For information, contact L.M. Amaratunga at (705)-675-1151, ext. 2296 [North America] or T.J. Veasey at 011-44021 -4145333 [Europe].

August 20 - 25 : ICCP 47th Meeting. Krakow, Poland.

August 27 - 30 : Twelfth Annual Meeting of The Society for Organic Petrology, Houston, TX. For information, see article on pages 5 - 7, this issue.

August 28 - September 2 : XIII International Congress on Carboniferous-Permian Stratigraphy and Geology. Krakow, Poland. For information, telephone (48 32) 66 20 36/38 or fax (48 32) 66 55 22

September 4 - 8: Biodiversity, Environmental Importance and Sustainability of Tropical Peatlands Symposium, Palangkaraya, Kalimantan, Indonesia. For information, telephone [44115-9515151] or fax (44-115-9513251).

September 10 - 13 : AAPG International Conference and Exhibition, Nice, France. For information, contact AAPG at (918)-584-2555 or fax (918)-584-2274.

September 10 - 15 : Eighth International Conference on Coal Science, Oviedo, Spain. Focus will be on physical, chemical, and petrographic characterization; chemical reactivity; combustion & conversion; coal & the environment. For information, telephone 348-528-08-00 or fax 34-8-529-76-62.

September 11 - 15 : Twelfth Annual International Pittsburgh Coal Conference, Pittsburgh, PA. For information call (412)-624-7440 or fax (412)-624-1480.

September 12 - 17 : Peat Industry and the Environment, Parnu, Estonia. For more information fax the Secretary of the Organizing Committee at 3722453310.

October 8 - 11 : ASTM D-5 Committee on Coal and Coke Meeting, Norfolk, VA. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 11 - 14 : AASP Annual Meeting. Ottawa, Canada. For information contact Dr. Pierre Richard : telephone (514)-343-8023, fax (514)-343-8008, or send an e-mail message to richard@ere.umontreal.ca

October 16 - 18 : Sixth New Zealand Coal Conference, Wellington, New Zealand. Topics of interest include clean coal technologies, coal gasification, coal quality, combustion, and the environment. For more information, telephone (64-4-566-2289) or fax (644-566-7737).

October 17 - 21 : International Conference on Coalbed Methane Development and Utilization. Beijing, People's Republic of China.

October 18 - 20 : 1995 Fuel Supply Seminar, New Orleans, LA. For information contact Susan Bisetti at (415)-855-7919.

October 23 - 25 : 1995 International Ash Utilization Symposium, Lexington, KY. Held in affiliation with the Journal *Fuel*. For more information contact Gretchen Tremoulet at (606)-257-0355 (phone) or (606)257-0360 (fax).

October 25 - 27 : Gasification Power Plants Conference, San Francisco, CA. For information contact Linda Nelson at (415)-855-2127.

November 6 - 7 : Annual Meeting of the Geological Society of America, New Orleans, LA. For information, contact Vanessa George at (303)-447-2020.

December 17 - 22 : New Techniques in the Chemical Analysis of Coal Symposium, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii. This symposium is being sponsored by the Geochemistry Division of the ACS. The symposium will focus on both microchemical and bulk chemical techniques including micro-FTIR, microprobe light element analysis, x-ray imaging of coal macerals, IR and XAFS spectroscopy, coal fluorescence, laser pyrolysis gc-ms, NMR analysis and imaging, model compound reactions, trace element analysis of minerals in coal, proton thermal analysis of coal, new approaches to lignin analysis, and coal-bed methane generation. Most of the 23 papers in the symposium are expected to be published in a special issue of the *International Journal of Coal Geology*. For more information, contact Paul C. Lyons, U.S. Geological Survey, 956 National Center, Reston, VA 22092. USA.

1996

April 15 - 17 : GEO-96, Middle East Geosciences Conference and Exhibition, Bahrain. For information, contact Jalil Al Samahiji at 973-753421 [phone] or 973-753475 [fax].

May 5 - 8 : ASTM D-5 Committee on Coal and Coke Meeting, Pittsburgh, PA. For more information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For further information contact John A. Minch at (714)-367-1000.

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For information, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

July 7 - 12 : Carbon 96, New Castle upon Tyne, United Kingdom. For information, contact Dr. KM Thomas at 44-0-91-222-8542 (fax).

August 4 - 14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. For further information, contact Jack Crelling at (618)-453-7361 [phone] or [618]-453-7393 [fax].

October 13 - 16 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 (fax).

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call (918)-584-2555.

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact....

Fall: Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 (phone) or (606)-257-0302 (fax).

1998

Fall : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 (phone/fax).



GSA THEME SESSION
Wetlands: Past, Present, and Future

This special theme session will be held at the Geological Society of America annual meeting in New Orleans, LA, November 6-9, 1995,

Description: The session will focus on physical, chemical and biological processes in wetlands, wetland creation, and the geological record of wetlands including, but not limited to, peat and coal. Suitable topics might include field studies of existing wetlands, results of wetland creation demonstration projects, and environments of deposition in ancient wetlands.

For more information, contact GSA at

1-800-472-1988 or 303-447-2020 ext. 141,

e-mail mball@geosociety.org



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TSOP Newsletter
James Pontolillo, Editor
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Reston, VA 22092 USA

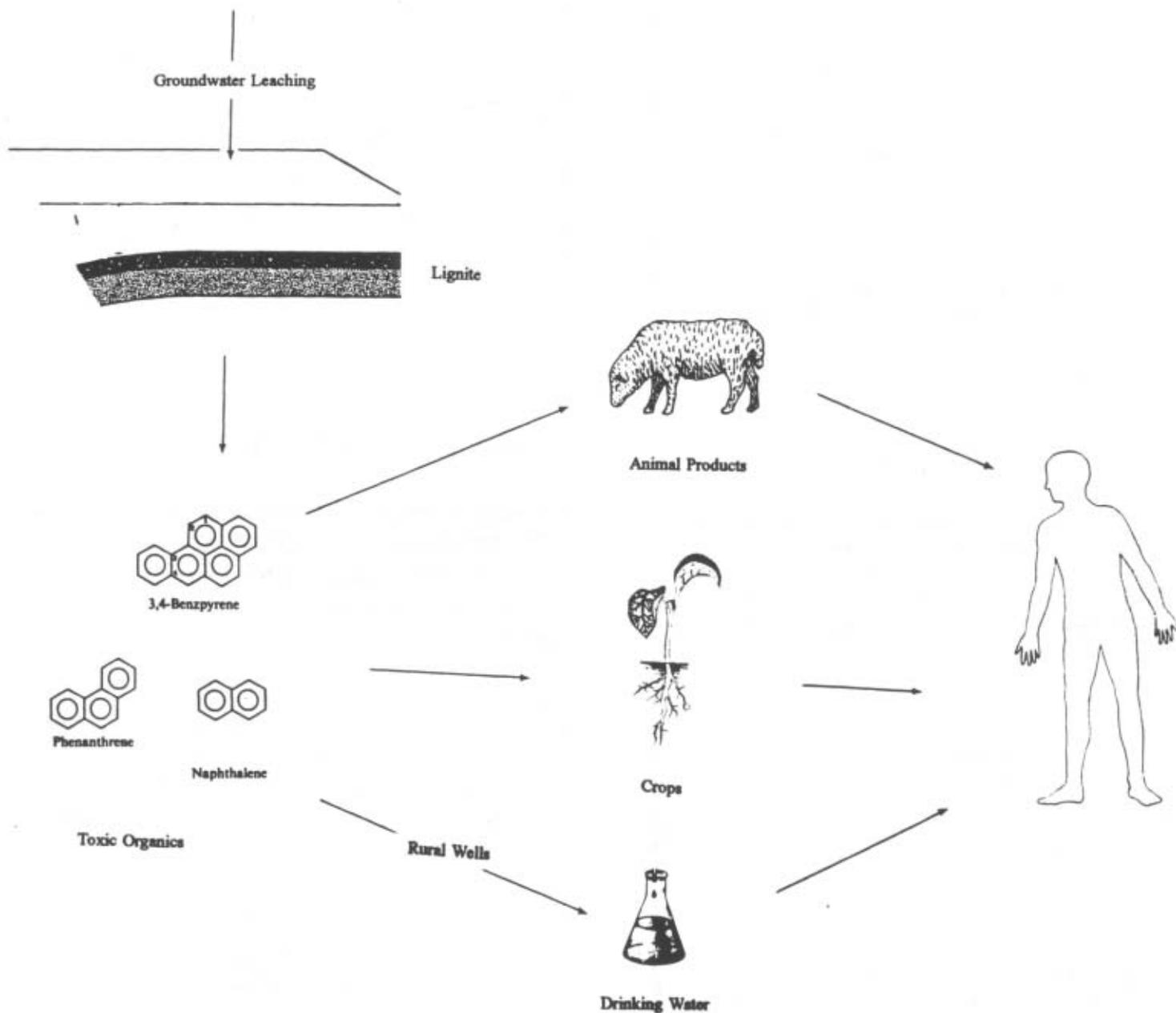


THE SOCIETY FOR ORGANIC PETROLOGY
NEWSLETTER

Vol. 12, No. 3

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ISSN-0743-3816



Disease Links to Low Rank Coals? (see story on page 5)

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

David C. Glick
Coal & Organic Petrology Labs
105 Academic Projects Bldg.
Pennsylvania State University
University Park, PA 16802-2300 USA

Phone: (814)-865-6543
Fax: (814)-865-3573.
E-mail: xid@psu.edu

Newsletter Contributions

The *TSOP Newsletter* welcomes contributions about events and topics pertaining to organic petrology from members and non-members alike. Items may be submitted on computer diskette (DOS format only, ASCII or WordPerfect preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
U.S. Geological Survey
956 National Center
Reston, VA 22092 USA

phone: (703)-648-4597
fax: (703)-648-6419
e-mail: jponto@ncrds.er.usgs.gov

For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology, c/o Ron Stanton, U.S. Geological Survey, MS-956, 12201 Sunrise Valley Drive, Reston, VA 22092-0001 USA

The 1994-95 TSOP Council

President	Renee L Symanski
Vice-President	John C. Crelling
President Elect	Brian J. Cardott
Secretary/Treasurer	Ken W. Kuehn
Editor	James Pontolillo
Councilor (1993-95)	Cole R. Robison
Councilor (1994-96)	Stephen Bend

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through July 1993, they are printed in the 1993 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they might attend. Membership information packets and membership application forms are also available for distribution to interested parties. TSOP is a voluntary organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:
Jim Pontolillo
(703)-648-4597 phone
(703)-648-6419 fax

For Membership Packets:
Dave Glick
(814)-865-6543 phone
(814)-865-3573 fax

Deadline next issue: 10 November 1995

President's Letter

Renee L Symanski

At the annual TSOP meeting in Houston this year (which will have concluded a few days before the date of this newsletter) many research papers will have been presented; a workshop on solid hydrocarbons, vitrinite reflectance suppression, changes in kerogen with maturation, and environmental applications of organic petrology will have been held; and a field trip to view the geology of the Eocene Calvert Bluff & Manning Formations will have been conducted. In addition to this excellent program at the annual meeting, the Research Committee and an Adhoc Committee on Electronic Communications will have met to gather information and ideas on future directions from the members at the meeting.

The Research Committee, headed by Carolyn Thompson-Rizer, will spend time discussing each of the current subcommittees (Standardization of reflectance and fluorescence methods subcommittee - subchair: Jeff Quick; Environmental organic petrology subcommittee - subchair: Prasanta Mukhopadhyay; and Standardization of kerogen isolation/characterization methods - subchair: Stan Teerman). In addition, Jim Hower will update the membership on the progress and deadlines for the publication of the AAPG Energy Minerals Division/TSOP Coal Atlas CD-ROM. The objective of the Research Committee at the meeting is to: i) update the membership on the current research subcommittees, ii) determine the viability of these subcommittees, iii) sequester members interested in performing research for these subcommittees, and iv) possibly modify the existing research projects or propose different research projects for TSOP to pursue. A future issue of the newsletter will address the highlights of these discussions. Members who were not able to attend the Houston meeting and have a particular interest in an aforementioned research topic should contact Carolyn or the subcommittee chair for further information.

An informal discussion on whether TSOP might participate in the expanding world of on-line communications was held. David Glick has been in the process of information gathering since the mid-year meeting in Cincinnati. He is the chairman of the Adhoc Committee on Electronic Communications. Please refer to the June 1995 Newsletter (vol 12., no. 2, pp 8-10) for more information on this topic and if you have some ideas or suggestions concerning this issue, please contact David Glick. He would appreciate as much input on the subject to better serve the TSOP membership.

Finally, I am pleased to announce that TSOP was unanimously elected to membership in the American Geological Institute (AGI) as of June 15, 1995. Brian Cardott will act as TSOP's

representative to the AGI Member Society Council. TSOP's role as an AAPG Associated Society and as a part of the AGI Member Society Council are positive steps towards educating our fellow scientists about TSOP and its goals.

1995 TSOP Election Results

The ballots have been counted and the following individuals have been elected by the membership to serve in the designated positions:

President-Elect - Jeffrey R. Levine
 Vice-President - Kenneth W. Kuehn
 Secretary/Treasurer - Lorraine B. Eglinton
 Councilor (1995-97) - Ganjavar K. Khorasani
 Editor - James Pontolillo

The new council members will assume their duties at the upcoming Annual Meeting in Houston. At this time, President Renee Symanski will pass the gavel to current President-Elect Brian Cardott. Stephen Bend will serve out the final year of his two-year Councilor position (1994-96).

The TSOP Council extends its sincere thanks to all of the candidates who took part in this year's elections, as well as to Roger Trader who oversaw the balloting process.

1996 Membership Dues

Once again, it's time for membership renewal and payment of annual dues. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/95" appears, then you are paid only through December 1995 and need to pay dues for 1996. If you have paid in advance for several years, then the appropriate expiration date should appear on your mailing label. Enclosed in this issue is a colored copy of the 1996 Dues Notice. Please note that membership rates and categories have remained the same. We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

Lorraine B. Eglinton
 Woods Hole Oceanographic Institute, Fye 120
 Dept, of Marine Chemistry & Geochemistry
 Woods Hole, MA 02543-1543 USA

TSOP Membership Survey

Readers will find enclosed in this issue a questionnaire designed to update the Society's records on areas of interest to our members. Your responses to this survey play an important part in our evaluation of how well we are meeting the needs of our members, as well as fulfilling the stated goals of the Society (TSOP Constitution, Article III). For an organizational survey such as this a response rate of 20% is usually considered outstanding. We *implore* all members to take the time and effort to respond and get us as close to a 100% response rate as possible. **Completed questionnaires should be returned with the enclosed Dues Notice.**

Last Call!

Organics and the Rockies Field Guide

Wyoming State Geological Survey
Public Information Circular No. 33

Edited by R.M. Flores, K.T. Mehring,
R.W. Jones, and T.L. Beck
(ISBN 1-884589-06-5)

Just because you didn't attend the TSOP '94 field trip doesn't mean you need to miss out on the valuable research presented during the three-day tour of Tertiary basins. The official field trip guidebook is chockful of the latest scientific information on the Wind River, Bighorn, and Powder River Basins. Fifteen papers cover a diverse range of topics. The volume is illustrated with numerous maps, photos, and figures throughout. Since the first printing is limited, be sure to order your copy today!

Orders: Send \$15.00 (U.S. currency only) to Publications Sales, Wyoming State Geological Survey, PO Box 3008 University Station, Laramie, WY 82071-3008. Phone (703)-766-2286 Wyoming addresses must include 6% sales tax, U.S. orders not prepaid must add \$3.00 first-class postage. Foreign orders prepaid only: add \$5.00 (surface mail) or \$15.00 (airmail). Sorry, no credit orders accepted.

Geochemistry of Coal and its Impact on Environments and Human Health

A Symposium to be held in conjunction with
the 30th International Geologic Congress
August 4- 14, 1996
Beijing, People's Republic of China

In August 1996 the 30th International Geologic Congress will be held in Beijing, China. For this conference we have organized a symposium entitled "Geochemistry of Coal and its Impact on Environments and Human Health" (Symposium 18-2). The venue is especially appropriate for this timely and important topic. The health of as many as 10 million Chinese may be affected by uncontrolled emissions from the combustion of coals enriched in hazardous trace elements.

We anticipate having experts representing a wide range of disciplines to address the symposium's focus. We are seeking presentations that will cover such topics as the location, extent, and severity of coal-related environmental and health problems, the coal quality characteristics responsible for specific problems, as well as the development of prevention and mitigation strategies/technologies.

We hope that you will consider joining us at this important conference. If you have any questions regarding the IGC Congress or this symposium, please contact Bob Finkelman or Chen-Lin Chou (see below).

Deadline for submitting abstracts: November 1, 1995

Bob Finkelman
(703)-648-6412 phone
(703)-648-6419 fax

e-mail - rbf@ncrds.er.usgs.gov

Chen-Lin Chou
(217)-244-2492 phone
(217)-244-2785 fax

e-mail - cchou@geoserv.isgs.uiuc.edu

Note : If sufficient interest is expressed, a field trip will be organized to tour southwestern China and observe some of the environmental problems resulting from coal combustion.

Balkan Turmoil Delays BEN Research

Disease Links to Weathered Low-Rank Coals Remain Speculative

James Theisen

The political disintegration of the former Socialist Republic of Yugoslavia and its ongoing multi-party civil wars have effectively postponed efforts to study hypothesized links between weathered low-rank coals and the occurrence of an incurable disease known as Balkan Endemic Nephropathy (BEN).

BEN is a chronic, progressive renal disease characterized by the onset of uremia during the fifth to sixth decades of life. A large proportion (possibly as high as 40%) of those affected also develop papillary transitional cell carcinomas of the renal pelvis and ureter. Patients are faced with either a lifetime on dialysis or eventual death from kidney failure. BEN occurs almost exclusively among farm workers who have lived or presently reside in rural endemic villages situated in the alluvial valleys of waterways that are tributary to the Danube River. This includes the Sava, Morava, Drina, and Kolubara rivers in the former Yugoslavia; the Motru, Cerna, Carasul, and Jiu rivers in southwestern Rumania; and the Ogosta river in northwestern Bulgaria (see Figure 1). Those affected lived in an endemic village for at least twenty years; males and females were equally affected. Recent estimates place the number of BEN cases at 25,000, with the majority of cases (19,000) occurring in the former Yugoslavia. One of the more puzzling aspects of the disease is the fact that not all villages in a given alluvial valley will be endemic. It is quite common for valleys to contain endemic and non-endemic villages separated by only a few kilometers.

Although the disease most certainly existed prior to the Second World War, it was first recognized and described by a group of Bulgarian physicians in 1956. Over the last forty years BEN has defied the repeated efforts of epidemiologists to explain its etiology. Twenty-five international conferences — as well as numerous scientific papers — have helped to formulate the descriptive epidemiology of BEN, but have failed to pinpoint any specific cause(s). Histologic changes related to BEN resemble renal injuries due to metals, radiation, cyclosporin, and other toxic substances. A large number of hypothetical etiological agents have been proposed, including chronic chemical toxicity of Pb, Cd, Cr, Se and other trace elements; chronic deficiency of bio-essential trace elements such as Se, I, and Mg; fungal mycotoxins (Ochratoxin A among others); plant toxins [*Aristolochia clematitidis*]; genetic deficiencies, abnormalities, and predispositions; and infectious micro-organisms. However, none of these agents have been

supported by the findings of subsequent investigations. The only conclusion related to BEN etiology which most investigators agree upon is that the disease is environmentally, not genetically, influenced. Most studies have focused on local drinking water as the suspected carrier of the unknown etiological agent since its chemistry is generally believed to be the single most important factor in human health and the geological environment.

Recently, a study supported by the US-Yugoslav Joint Fund for Scientific and Technological Cooperation may have finally shed some light on the BEN mystery (Feder et. al., 1991; Finkelman et. al., 1991; Orem et. al., 1993). The authors studied the geochemical environment of Yugoslavian BEN areas and found a common factor: the bedrock adjacent to all but one of the endemic areas contains coal. In most cases the coal is Pliocene age lignite (see Figure 2). These are the youngest coals in the Balkans (1.6 - 5.3 my) and are inferred to have a very low rank. Such low-rank coals still contain many of the complex organic compounds originally found in their plant precursors. Solid-state NMR analyses of a Pliocene lignite from the Kosovo region of Yugoslavia indicated the presence of large amounts of organic functional groups. It is to be expected that any weathering of these low-rank coals would produce and mobilize complex mixtures of organic hydrocarbons. Preliminary qualitative GC/MS analyses of well water samples from endemic villages indicated the presence of polycyclic aromatic hydrocarbons (PAHs) and aromatic amines (e.g., naphthylamine, aniline, anthracene, pyrene, acenaphthene, phenanthrene, fluoranthene). The US-YJF group also performed batch leaching studies of Pliocene lignites that yielded dissolved organic compounds with highly aromatic structures similar to those found in endemic village well water samples. Some of these water-soluble compounds are carcinogenic, have been shown to produce interstitial renal nephropathy, and may be the etiological agent responsible for BEN and its related cancers. The research team hypothesized that BEN results from the long-term effects of drinking well water containing carcinogenic compounds leached by groundwater from lignites and shales surrounding endemic areas. The team's observations appear to be predictive: it was recently announced by health officials that a new endemic area had been documented in the Kosovo region (in the vicinity of Pliocene coalfield #19, Figure 2).



Figure 1 - Map showing the geographic distribution (cross-hatched areas) of BEN foci (from *Feder et. al., 1991*).

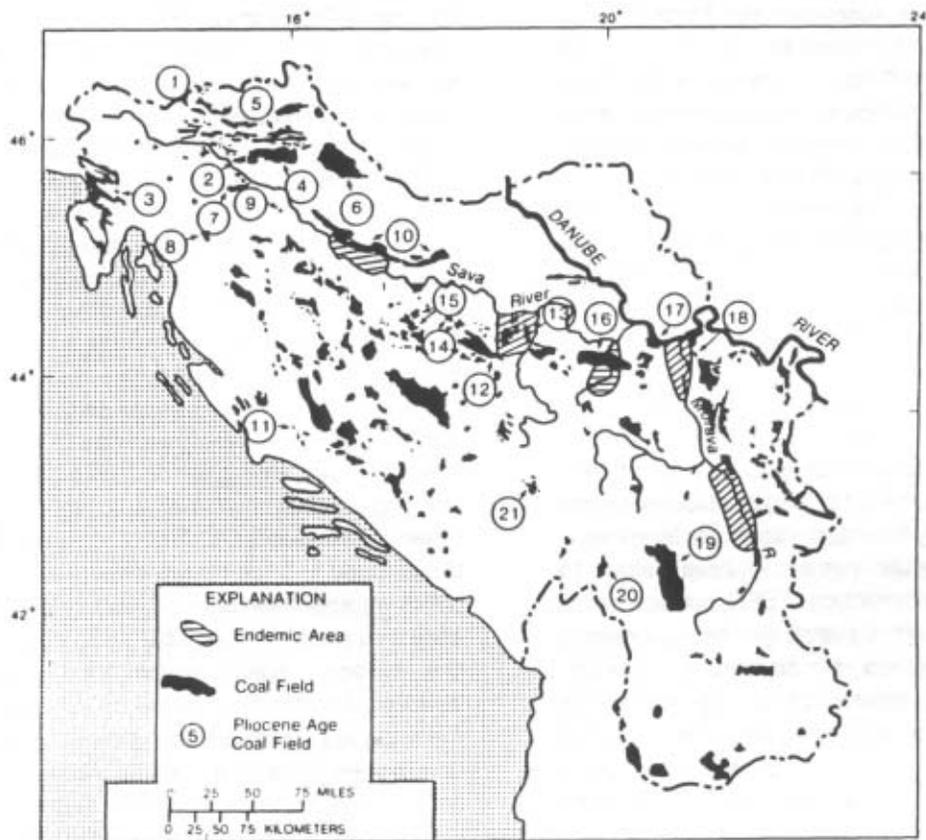


Figure 2 - Map showing the relationship between BEN foci (cross-hatched areas) and coal basins in Yugoslavia. Pliocene basins are numbered from 1 to 21. Note : BEN foci have recently been identified in the area of basin 19 in the Kosovo region (from *Finkelman et al., 1991*).

Such an environmentally-related hypothesis is not unprecedented. Bain [1979] documented an apparent correlation between increased heart attack death rates in Ohio and the consumption of drinking water from coal-bearing strata, while Kagey et. al. (1980) documented a possible correlation between digestive cancer mortality rates in Missouri and the consumption of drinking water from coal-bearing strata. The findings of the US-YJF researchers are also in accord with several related medical and geochemical studies. Coal carbonization workers exposed to elevated levels of PAHs are known to have an extremely high incidence of urothelial carcinomas [Braunstein, et. al., 1977]. Radovanovic and Stevanovic (1988) in a study of Yugoslavian BEN endemic drinking waters found increased nitrite concentrations and decreased nitrate/nitrite ratios and concluded that these data trends were probably indicative of organic contamination. Additionally, they noted that the effects of high nitrite concentrations alone in BEN endemic areas cannot be dismissed. The causal link between human cancers and nitrite has been well documented.

A preliminary examination of the geochemical environment of the Rumanian BEN locales also supports the US-YJF research group hypothesis. Endemic villages in the Motru, Jiu, and Cerna River areas lie amidst the massive Pliocene Oltenian lignite deposits and endemic villages south of the Carasul River adjoin smaller Pliocene lignite deposits in the Oravita and Carasova basins (Nastaseanu et. al., 1981; Petrescu et. al., 1987). The distribution of other Pliocene lignite deposits in Rumania suggests that as yet unrecognized BEN endemic areas may exist in the eastern, central, and northwestern parts of the country. Unfortunately, information on the one Bulgarian BEN endemic area is sparse. "Officially" BEN does not exist in Bulgaria since the former Communist government relocated endemic villages and never recognized the disease. The endemic villages were situated on Sarmatian-Lower Pliocene deposits south of the extensive Lorn lignite basin. Obviously, more research needs to be done on BEN in Rumania and Bulgaria in conjunction with efforts in the former Yugoslavia. It may also prove helpful if studies are undertaken on the occurrence of low-rank Pliocene lignites in Turkey, Greece, Italy, and Burma and the incidence of renal disease in these areas.

Numerous critical points, however, still remain to be resolved before it can definitely be stated that BEN is the result of low-rank coal weathering. A locale's proximity to a Pliocene lignite deposit, in and of itself, appears to be insufficient to account for the occurrence of BEN. Several large Pliocene lignite deposits in Slovenia and Croatia (northern Yugoslavia) are not associated with any endemic areas. Also, at least one major endemic foci is not associated with known coal deposits (although the presence of organic-rich shales has not been ruled out). Additional work needs to be done to determine whether the drinking water in endemic villages

contains a sufficient amount of carcinogenic compounds to establish a causal relationship and if there are consistently significant differences in organic water chemistry between endemic and non-endemic locales. Other possible co-factors - such as overall water chemistry, hydrologic regime, the presence of other pollutants, diet, socio-cultural practices, etc. — need to be carefully investigated. In particular, plants and animals are known to uptake and concentrate PAHs; some plants can also apparently biosynthesize them. Since BEN may well exhibit a multi-factorial causation, any one of these considerations could prove crucial to resolving the disease's etiology.

Unfortunately, the future of BEN research remains clouded. A resolution to the region's ongoing crises appears as elusive now as ever. Until lasting peaceful solutions to the present political and ethnic disputes are reached and safety returns to the Balkan republics, researchers will be left to speculate whether they have finally uncovered the Rosetta Stone of the BEN enigma or merely begun a promising start down yet another dead end.

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Report on the First Walter A. Bell Memorial Symposium

(Sydney, Nova Scotia, May 28 - June 1, 1995)

Paul C. Lyons and Erwin L. Zodrow

An international symposium on Carboniferous paleobotany and coal geology was held in Sydney, Nova Scotia, in the heart of Nova Scotian coal country. The symposium honors the late Dr. Walter A. Bell, a pioneering Carboniferous geologist and paleobotanist who spent his entire career with the Canadian Geological Survey. He also served as Director of the Canadian Geological Survey from 1949 - 1953.

The First Walter A. Bell Symposium, which was organized and chaired by Erwin L. Zodrow (University College of Cape Breton) and Paul C. Lyons (U.S. Geological Survey), was attended by paleobotanists, Palynologists, botanists, and coal geologists from Canada, the United States, Germany, the United Kingdom, France, Spain, and the Czech Republic. The keynote speakers were Drs. PA Hacquebard (Canada), R.H. Wagner (Spain), and J. Galtier (France). The invited speakers were Drs. M. Barthel (Germany), P.H. von Bitter (Canada), W.G. Chaloner (U.K.), C.J. Cleal (U.K.), Mr. W.H. Gillespie (U.S.A.), Drs. J.-P. Laveine (France), MA Millay (U.S.A), A. Lesnikowska (U.S.A.), Gar W. Rothwell (U.S.A), B. Thomas (U.K.), and H.W.J. van Amerom (Germany). Dr. Stephen Manley, Dean of the School of Science and Technology, University College of Cape Breton, gave an insightful and stimulating opening address.

The focus of the symposium was on Euramerican Carboniferous paleobotany and coal geology and the resolution of coal Stratigraphic correlations across the Atlantic Ocean. Twenty-five papers were delivered on a wide range of subjects including Canadian palynology, paleobotany, and coal geology; systematic work on major groups of fossil plants (herbaceous lycophytes, walchian conifers, tree ferns, and seed ferns); coal geology of the Kladno coalfield, Bohemia; whole-plant associations and *in situ* spores in permineralized plant fossils; historical aspects of Canadian Carboniferous geology, new finds of coal-ball plants and lycophyte and conifer forests in Atlantic Maritime Canada; biostratigraphic studies of Euramerican micro- and megaflores; the range of plant megafossils from the Mississippian and Pennsylvanian Systems of the Appalachian region; modern phylogenies and plant homologies; the significance of Bell's Fundy Basin; the morphological aspects of the lycophyte *Sporangiostrobus*, and the fossil-plant record and global climatic change. The interrelationships among these diverse topics by international experts provided unusual breadth and depth to the First Walter A. Bell Memorial Symposium.

A display of plant and animal fossils from the world-famous Joggins Carboniferous section by Laing Ferguson (Mount Allison University, New Brunswick) added to the focus of the symposium. Also, workshops on coal-ball plants, palynology, and compression-impression fossils of the Carboniferous of Canada led by Graham Dolby (Calgary, Canada), Michael Millay (Ohio University), Erwin Zodrow, and Paul Lyons extended the oral presentations, as did a field trip to Point Aconi, the highest part of the on-land Carboniferous section in Nova Scotia. Participants were given an opportunity to collect plant megafossils from the roof shales of the Point Aconi seam, one of the richest collecting sites in Euramerica.

A parallel session on Euramerican stage boundaries chaired by C.J. Cleal (National Museum of Wales) led to progress on the recognition of the Westphalian D-Bolsovian and Westphalian D-Cantabrian stage boundaries in Canada, the United States, and Europe. Collections at Point Aconi also revealed the relative age of Nova Scotian and central Appalachian coal beds.

The first Walter A. Bell Medal was presented to Dr. Peter A. Hacquebard, Scientist Emeritus of the Canadian Geological Survey (see photo, next page). Dr. Hacquebard is a pioneering coal petrologist and palynologist whose leadership led to the formation of a microfloral scheme for the Carboniferous System of Canada. This pioneering work, which was performed in conjunction with M.S. Barss of the Canadian Geological Survey, extended Bell's megaflores and faunal zonation schemes. The handcrafted silver Bell Medal was presented to Dr. Hacquebard by his friend and contemporary Dr. Aureal T. Cross (Michigan State University). Dr. Hacquebard is also a past recipient of both the Rienhardt Thiessen Medal of the International Committee of Coal Petrology and the Gilbert H. Cady Award of the Geological Society of America.

The proceedings of the Bell Symposium will be published as a special issue of the *Review of Palaeobotany and Palynology*. Drs. Lyons and Zodrow will be guest editors of the special issue, which is scheduled for publication by Elsevier Science in the Spring of 1996.

The symposium banquet was attended by Dr. Jacquelyn Scott, President of the University College of Cape Breton, and Mr. Donald Downe, Minister of the Nova Scotia Department of Natural Resources. The *Men of the Deep*, an internation-

ally renown choral group of twenty-four present and former Nova Scotian coal miners, provided original songs and music focusing on coal mining. They also sang a special American song to honor Dr. Cross¹ 79th birthday on June 4th.

The organizers announced that the Second Walter A. Bell Memorial Symposium will be held in 1999 in Sydney, Nova Scotia. The exact dates will be announced in about two years.



L - R : E.L. Zodrow, P.A. Hacquebard (1st recipient of the Walter A. Bell Medal), AT. Cross, and P.C. Lyons

REPORTERS WANTED!

AAPG International (Nice)
8th Coal Science (Oviedo)
12th Pittsburgh Coal Conference
1995 Ash Utilization Symposium
1995 GSA Annual Meeting

The *TSOP Newsletter* wishes to bring coverage of these important meetings to its many worldwide readers. If you are planning to attend one of the above conferences — or any others of interest to our membership — please consider submitting a meeting summary for publication in a future issue of the *TSOP Newsletter*. Interested parties should contact the newsletter editor (see page 2).

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REVIEW - *Energy Choices in a Competitive Era: The Role of Renewable and Traditional Resources in America's Electric Generation Mix*

prepared for the Center for Energy & Economic Development by Resource Data International, Inc., 1995

Reviewed by James C. Hower

University of Kentucky Center for Applied Energy Research, Lexington, KY 40511

There exist many possible methods to generate electricity other than the fossil fuels commonly in use in the United States and most other developed countries. The Center for Energy and Economic Development (CEED) study sought to uncover the potential for combustion and non-combustion renewable energy sources to displace fossil fuels, in particular coal, in the near future. In order to place the book in the proper perspective, it is first useful to introduce CEED. The organization, based in Alexandria, Virginia, was formed in 1992 in order to educate the public as well as state and federal policymakers on new economic, technological, and scientific research relevant to energy resources and electric generation. While maintaining some degree of objectivity, CEED is a non-profit coal-industry group, formed to counter the negative public opinion concerning coal use.

Energy Choices... evaluated four combustion technologies: landfill gas, biomass, municipal solid waste, and tires; and four non-combustion technologies: wind, geothermal, solar thermal, and solar photovoltaic. Each technology was discussed in terms of the following attributes:

- 1) capability - limits on the ability of the unit to generate power in a given period under normal conditions,
- 2) availability - any reduction in the capability of a unit to generate power under normal conditions,
- 3) dispatchability - the control over the power generation from a unit,
- 4) modularity - the size factor in individual units comprising a generating site,
- 5) location - the location of the generating site, in particular the non-combustion technologies, in relation to the existing electric transmission grid,
- 6) cost - defined strictly for this study as the pure cost of generation,
- 7) efficiency - the heat rate in terms of Btu/kwh,
- 8) incentives - government subsidies including tax credits and accelerated depreciation schedules,

9) external costs and benefits - a bit more theoretical and controversial than the other factors, externalities include environmental and regional economic impacts of benefit to the public at large [the study does not deal with this specifically for any of the technologies).

Each of the technologies will be reviewed briefly below. As with CEED, my bias is, of course, towards coal-generated electricity. Nevertheless, I will attempt to present the summary objectively but, as presented in the CEED report, in the context of 1995 economics and politics and the projected economics over the next 15 years. Further discussion of the book can be found in a review by Resource Data International authors (Myers and Townsend, *Coal*, June 1995, p, 29).

Wind power - The United States is the largest producer of wind-generated electricity with 1725 MW capacity. This total is comparable with single large coal-fired plants. For example, Kentucky Utilities Ghent plant, which is being studied by the USGS-Kentucky Geological Survey team (TSOP Newsletter, v. 12, no. 1, 1995), has four 500 MW units. The actual installed capacity of wind power, or any other renewable, is not the most pressing problem at the present time, since as an emerging technology we should expect low capacity in the development phases. Drawbacks of wind power do include the low capacity factor, about 30% at average annual wind speeds of 15.7 to 16.6 mph (25.4 to 26.9 kph); low availability for older turbine designs; the large area required for the wind farms, up to 80 mi² (210 km²); and the location of the resource, not always near the utilities' customers. In addition, wind farms are a source of noise and visual pollution as well as a problem for the birds which fly "... into the blades with negative consequences." On the plus side, wind power lends itself to modularity. The cost of about \$0.06/kwh, including the \$0.015/kwh federal subsidy, is about 50% higher than fossil energy.

Geothermal - The US currently has about 2700 MW of installed capacity, most of it in California. Geothermal energy, where situated, has a high availability, rivaling coal. Unlike wind, geothermal energy is generally available at all times, the only limitation being the availability of the generating equipment. Wind energy, while variable, can be counted on to return to ambient levels while geothermal resources do

return to ambient levels while geothermal resources do deteriorate over time. The economic cutoff for hydrothermal resources is 90°C, a severe limiting factor in siting a power plant, limiting most resources to the western states. The land requirements per unit of electricity are a third of the land required for wind and one ninth the land for solar thermal power. The costs of geothermal power in California are escalating to \$0.15/kwh by 1999 under the terms of the legislated supply agreements. As those contracts expire [10-year terms), geothermal energy has a difficult time competing with other sources.

Solar thermal and solar photovoltaic (Pv) - The US has 354 MW of solar thermal and 14 MW of solar Pv capacity. As with the two previous technologies, location is important. The greatest potential for solar generation is in the southwestern states. Only one solar Pv project is not in California, PEPCO's 0.30 MW unit in Washington, DC. Thermal capacities range from about 20% to 40% while Pv averages 19%. As noted above, solar generation requires a large dedicated land area. That factor, as well as the desert location of prime solar resources, can place solar energy generation at some distance from the power grid. The costs of solar thermal are calculated at about \$0.13 - 0.26/kwh. The calculated cost for solar Pv was \$0.16 - 0.35/kwh based on a 50 MW unit in the west. The costs for a customer using only solar Pv would be two orders of magnitude higher.

Biomass combustion - Biomass represents the return of an old energy source. The US capacity of 7415 MW, 81% of it non-utility, is nearly half of the total renewable capacity (not including hydroelectric). The traditional sources of biomass are varied and are enhanced with the addition of energy crops, cultivated for the specific purpose of providing fuel. Biomass plants need to be located near the source of the feedstock, ideally within 50 miles (80 km) and have an optimum size of 50 MW. Biomass combustion also has a problem, albeit not insurmountable, of the non-uniform size consist of the feedstock and its lower heating value. Energy crops pose an interesting source of energy but also a land-intensive source of energy. A 100 MW plant would require 95000 acres for crops (assuming a 10-year growth cycle and a very generous yield of 40 dry tons per acre). For biomass to generate 10% of the total current US electricity supply, the equivalent of 12% of the US farmland would have to be dedicated to the production of the feedstock. Existing biomass can provide a relatively abundant source of material, though, as in the case of California where a third of all agricultural residues are being burned in combustors. In the latter case, the emissions which would have been generated in an open burn can be controlled. The cost of biomass-generated electricity ranges from \$0.096 - 0.129/kwh, including subsidies and accelerated depreciation.

Municipal solid waste (MSW) - The US produces over 200 Mt of MSW each year, 84% by volume being organic waste. Waste-to-energy (WTE) incinerators have grown as an alternative to landfilling or recycling. US WTE capacity in 1992 was 2300 MW, an increase from 1810 MW in 1990. The heating value of MSW processed to remove most inorganics is, at best, less than 8000 Btu/lb, less than the value for what the study considered to be the lowest for marketable coals. The heating value of the MSW dictates that the material will not be transported far from the source, implying that the generators will be located near the urban areas generating waste but also near the grid. The emissions and wastes generated from MSW are potentially much more toxic than coal-fired emissions and ash. MSW emissions include higher levels of SO₂, NO_x, HCl, Pb, Cd, Cu, As, and Hg than coal plants, in addition to dioxins and furans not encountered in coal-fired emissions. The ash from conventional MSW (not upgraded to remove inorganics) represents 30% of the original material but with enhanced concentrations of heavy metals. Unlike coal fly ash, MSW ash qualifies as a hazardous material. As a hazardous material, MSW waste would have more barriers to beneficial reuse than coal-derived fly ash and, therefore, would likely end up in a landfill in a more hazardous form than the original MSW. MSW incineration is viewed as an alternative to landfilling, therefore the costs of landfilling will play a part in the growth of WTE as a power source. The study calculates the cost of WTE power at \$0.102 - 0.18/kwh, including accelerated depreciation.

Tires - Tire incineration represents a sidebar to the MSW issues discussed above. Tires have 12000 - 16000 Btu/lb, making them a better fuel source than conventional MSW. Tires are often landfilled separately from other MSW, and, indeed the two US plants dedicated to tire-derived power (there are others using tires as a supplement to coal) are sourced from dedicated landfills. The two plants in question have a total of 44 MW capacity and consume nearly 15 million tires per year. Considering the total volume of tires discarded annually in the US, estimated at 170 million, the maximum capacity would be about 500 MW. Tire combustion does result in the emission of about 1.8 lbs SO₂/MM Btu plus other inorganic and organic toxics. Tire combustion, owing to the high heating value, can be competitive with coal combustion at a fuel price of \$1.00/MM Btu, actually on the low end of Appalachian fuel costs. As noted, the actual power production can only be a small proportion of coal-fired production.

Landfill Gas (LFG) - The anaerobic decomposition of MSW produces methane and CO₂ over periods of 10 to 100 years. While current LFG generation capacity is only 377 MW, total LFG production, if captured, would represent 5% of the total US gas consumption. Raw LFG has 493 Btu/ft³, less than

the first few years, and the frequent outages for equipment and supply reasons. Their location at major landfills does place the electric source near population centers and near the grid. The future of LFG generation is uncertain. With newer landfill standards, larger landfills may become the norm, providing the concentrated source of MSW to generate LFG. The limited time span of the resource will still be an impediment to large-scale development. In any case, LFG would contribute less than 1% of the total US energy requirements.

The role of coal - Coal-fired generation, while undergoing changes in technology in combustion methods and emission controls, is a mature technology. Coal produces over 55% of the US electric supply at 454 coal-fired plants with 320.6 GW capacity, with 7.3 GW planned or under construction. From 1970 to the 1990's, implementation of the 1970 Clean Air Act and the 1977 and 1990 amendments led to a halving of total SO₂, NO_x, and particulate emissions per unit of electric generation. The advantages of coal include its abundance in basins across the US, the high heating value which justifies long-distance transport, and its relatively low cost. Coal-fired electricity costs about \$0.04 - 0.05/kwh.

The authors projected three future scenarios of electric generation: a "Base Case," their best estimate assuming that renewables' subsidies stay in place; "Full and Open Competition," an assumption that solely economic considerations will drive energy choices; and "Subsidy Intensification," an assumption of increased subsidies to overcome the economic advantages of natural gas and coal. Under the base case, coal-fired generation by 2010 would increase to 396 GW compared to 423 GW under full and open competition and only 329 GW under a subsidy intensification. It should be no surprise that renewables fare the worst under full and open competition, with expanded natural gas generation, up to 325 GW from the 245 GW in the base case, projected to be the replacement for much of the capacity which would have gone to renewables. Renewable energy under a subsidy intensification scenario would account for 375 GW, compared to 7 GW under full and open competition, of the 782 GW projected total. Increased subsidies, at least in the current economic and, in particular, political climate, would appear to be unlikely, and, in the case of the California subsidies to renewables, older subsidies are expiring without replacement. Some middle ground between the base and full and open competition would appear to be likely and, in either case, coal-fired generation with natural gas-generation also important, will continue to be the primary sources of electric generation in the US for at least the next 15 years. In an independent study, the Edison Electric Institute foresees just such a role for renewables (Sprouls, *Coal*, June 1995, p. 18). By 2010, they forecast 140.8 GW capacity for renewables compared to 354.2 GW for coal and 235.2 GW for natural gas, out of a total capacity of 883.9 GW. Coal would still

provide 53% of the electricity generation. While some policymakers may not want to acknowledge it, and certain groups may wish it would vanish entirely, coal-fired generation will be a factor in the economy of the US for the foreseeable future.



TSOP Members Win Laurels

The TSOP Council wishes to extend its sincere congratulations to members P.K. Mukhopadhyay and J.H. Calder on the occasion of their winning the Best Paper Award/International Development Category at Intergas '95 (International Unconventional Gas Symposium] in Tuscaloosa, AL on 17 May 1995. Their winning paper was entitled :

P.K. Mukhopadhyay, D.J. MacDonald, and J.H. Calder - Evaluation of Coalbed Methane Potential of the Stellarton Basin, Nova Scotia, Canada, based on Geological, Physical, and Geochemical Properties.

More Thoughts on Oxidised Material in Peat and Coal

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It has been suggested in the literature that peat can become "oxidised" on exposure to air (Cohen et. al., 1987; Styan and Bustin, 1983; Stach et. al., 1982). That is, the reflectance of the peat material may be increased (and by inference, the chemical composition made more carbon rich). "Oxidation" in such cases has been interpreted from darkening of colour in peat after exposure to air. However, in observations on grab samples from a New Zealand ombrogenous peat deposit, it appeared that exposure to air may not result in highly oxidised peat, nor is dark peat necessarily oxidised. In the peat bog studied the upper 10 - 15 cm has been exposed to air by a drop in water table and the peat appears dark and is of "crunchy" texture. But microscopically the peat does not contain a significant proportion of oxidised material.

Two grab samples were taken from the Moanatuatua Bog, south of Hamilton, New Zealand. One sample was taken from the upper 10 cm of peat. This peat appeared dry, "crunchy," and dark and is above the level of water table fluctuations in the peat at present (15 - 20 cm below the surface of the peat). The second sample was taken from about 50 cm depth in the peat and appeared wet and also relatively dark in colour. From each sample a portion was freeze dried, mounted in epoxy, and then polished using standard coal microscopic techniques (as described for peat by Esterle et. al., 1991). In addition, part of the wet peat sample was left to air dry and then mounted and polished.

Petrographic analysis was done in reflected light. Point counts were made across the surface of the peat mounts and it was found that the freeze-dried crunchy peat and the air-dried wet peat were relatively similar in composition to one another (see Table 1), while the freeze-dried wet peat had a very different composition. Both the freeze-dried crunchy peat and the air-dried wet peat were dominantly composed of amorphous humic material, while the freeze-dried wet peat was dominantly composed of cell wall remains either in intact plant material or as matrix.

It appears from these results that the dominant result of aerial exposure on this type of peat is that plant material is broken down to amorphous matrix. This occurs whether exposure is in the natural peat environment or on a laboratory table. In the peat dried within the mire there was also a significant increase in the proportion of fluorescing material, which nearly all appeared within the matrix as small, shape-

	Crunchy Peat (TO)	Wet Peat (AD)	Wet Peat (FD)
Total Humic Material	B1	96	93
Cell Walls in Roots/Stems	10	15	36
Well-Preserved Cell Walls in Unidentified Plant Tissue (UPT)	0	10	38
Poorly-Preserved Cell Walls/ Amorphous Matrix in UPT	7	19	0
Cell Wads in Matrix	8	10	19
Amorphous Matrix	56	42	0
Total Fluorescing Material	13	2	4
Total Highly Reflecting Material	6	2	3

Table 1. Proportions of plant material in Moanatuatua peat (volume %)

less particles. This fluorescing material may be residues left after microbial breakdown of plant tissue. In this peat, the result of aerial exposure does not seem to be significant production of "oxidised," i.e. highly reflecting material. Nor can the dark appearance of the dried peat be related to it containing highly reflecting material.

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Renew Your Membership Today

TSOP members are reminded that 1996 dues must be paid by 1 February 1996. Renew now and avoid those sleepless nights of guilt-wracked torment!

Membership News

Dave Glick, Membership Committee Chairman

Membership Directory

The Membership Directory was mailed at the end of July. It includes recent address changes and other updates which will not be repeated here. Please check your entry and inform David Glick of any corrections (see page 2).

fax: 513-556-6931
Email: Jaminsj@uc.edu

Mr. Jaminski is a Ph.D. student with interests in palynostratigraphy, palynofacies, and sedimentology of black shales.

Address Corrections and Changes

David J. Batten
Institute of Earth Sciences
University of Wales
Aberystwyth SY23 3DB
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phone: 44-0-1970-622573
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Olufemi Robinson Olugbemiro
Institut und Museum für Geologie und Paläontologie
Universität Tübingen
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72076 Tübingen, Germany
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Following employment as Lecturer in Sedimentology at Ahmadu Bello University and as Subsurface Geologist with Texaco Overseas, both in Nigeria, O. Olugbemiro is now a Ph.D. student in organic petrology/geochemistry.

New Members

The Society welcomes the following persons who have applied for membership:

David L. Hoffman
University of Cincinnati
Department of Geology, ML 013
500 Geology/ Physics Building
Cincinnati, OH 45221-0013

Phone: 513-556-3732
fax: 513-556-6931
Email: HOFFMADY@ucunix.san.uc.edu

Mr. Hoffman is a graduate student working on characterization of organics in Pennsylvanian black shales from southeastern Kansas.

Jacek Jaminski
Department of Geology
University of Cincinnati
Cincinnati, OH 45221-0013
Phone: 513-556-3732

Noriyuki Suzuki
Department of Earth and Planetary Sciences
Graduate School of Science
Hokkaido University
Sapporo 060, Japan
phone: 11-706-2730
fax: 11-746-0394
Email: SUZUTOKU@s1.hines.hokuda.ac.jp

Dr. Suzuki holds a Dr. Sci. from Tohoku University and is now an Associate Professor teaching organic petrology and geochemistry at Hokkaido University.

Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its members' ideas, observations, concerns, and interests. We are always in need of articles, publication reviews, news items, and opinion pieces. Help the *TSOP Newsletter* stand out from the pack. Contribute today!

[The following article originally appeared in the *Skeptical Inquirer* for July/August 1995 and is reprinted here with the kind permission of CSICOP and the *SI* editors.]

Lighting Candles, Cursing Darkness

Ralph Estling

No, I'm sorry, but there is just no getting around the fact that we expect scientists to make more sense than just ordinary people. And that's where the trouble lies.

Scientists themselves (at any rate, the ones among them who make sense) are quick to challenge this contention, pointing out that there is no earthly reason to assume, or even hope, that scientists as a whole are wiser (and not merely in possession of certain facts) than any other body of professionals — professional politicians, professional footballers, professional professors, or anything else — that, to sum up, among their number the proportion of good, mediocre, and plain lousy is no different from that of any other organized body of men and women.

"The big question of the day," various busy minds are now asking, "is simple : Can science give us answers based on certainty?" And as the question (not of the day but of the past 400 years or so) *is* simple, I can give a simple answer, the simplest there is : No.

It is not science's job to be certain. That is religion's job. Or politic's job. Or Freudian psychoanalysis' job. It is science's job to make sense.

Why, for example, do I so enjoy reading things by Haldane, Medawar, Carl Sagan, Martin Gardner, Hawking, Hoyle, Bondi, Feynman, Maynard Smith, Stephen Jay Gould, Richard Dawkins, Leakey (all of them), Asimov, Bronowski, and a hundred others like them (well, several others), when I wouldn't give a tinker's dam, even if I was sure what it was, to read volumes by the great minds in the realms of theology, for instance. The idea of reading a book authored by or, far more likely, ghosted for a politician is too gruesome even to be considered. No, we expect our scientist — physicist, chemist, astronomer, geologist, biologist, paleontologist — to be more profound, more aware, more conscious, less inclined than others to opt for the easy, cheering, reassuring lie. Why should this be so?

One answer is that it is not so, it is just plain wrong, both factually and ethically, to believe a person trained in and practicing a scientific vocation is on average more capable of sound thinking, less capable of self-deception, than anyone

else. Why should a scientist be more conversant with good sense than, say, an advertising executive, an accountant, a bishop? Perhaps here is where one possible answer lies.

A scientist (I mean a real one and not a reasonable facsimile of one, and there are plenty of them lying about of course) is interested in something that matters profoundly — or ought to — but is not out to sell you something. I'm not sure what he *is* out for. Disinterested pursuit of understanding? That would be nice. And I believe it, in a way, although I'm not always all that certain of the "disinterested" bit.

Maybe the answer I'm looking for, or a part of it, lies in the word *pursuit*, the acknowledgment that the thing he wants is, one, worth pursuing and, two, not yet attained, that it lies outside himself and that this is "a good thing." For once a thing is attained, what happens to the pursuit of it? The framers of the Declaration of Independence were not quite professional politicians at the time (many of them would later become so, unfortunately) and were therefore still capable of seeing that the value of happiness lay in its being pursued, not in its obtainment, either in Heaven or on Earth.

There is a grumbling, growling, dissatisfied, grouchy restlessness in a scientist, a good one, that I find appealing; and not being a scientist, I might of course be kidding myself in believing that this is the mark of a good scientist or that there are a lot of them around, even granting they are just a minority of their profession. I've little doubt that smugness and self-satisfaction form the larger part of the behaviour patterns of most scientists; I just think, and I can be wrong, that the minority who don't think like this is larger among scientists than among nonscientists. I don't know. As soon as I see the notion written down in such a concrete fashion like this I get cold feet. I think maybe I'm only fooling myself. Self-deception is no respecter of persons. Still, there it is. Whatever "it" is.

Perhaps "it" is the acceptance, if only tacit, that it is not enough to light one candle in the darkness. One must also curse the darkness, the eternal, all-encompassing darkness, the darkness that will beat us, in the end. Lighting a candle, or even a whole bevy of candles, is a good thing, a vitally necessary thing; but it is, when you come down to it, a pretty

petty, lackluster achievement. The darkness remains, is hardly aware of the candle. And so it remains for a good scientist to curse that darkness loud and long. Indeed, never to stop cursing it. for all the candles he may light. For every scientist (every real one) knows that prizes handed out by Nobel committees and all the other prizes of all the other committees are, when you come down to it, prizes given for failure to achieve, prizes awarded for the laughably, cryably little candle that has been lit in the unutterable vastness of the dark.

Perhaps, just possibly, the real scientists among us know this and are constantly aware of it. And so they are certain of less and in pursuit of more, and so, being less certain of more things, they can understand more, and better, than the rest of us, and are restless and grumpy and dissatisfied with things but most especially with themselves. And that's why I like them better (the better ones) than I like philosophers and other men and women skilled in life's little wisdoms who aren't grumpy at all. Or restless.

For they, the calm, satisfied, ones, have lit their little candles and they quietly, or not so quietly, rejoice in what they have done, congratulating themselves as they bask in the tiny flicker. For they are the Certain Ones, those who Know, those whose conclusions, as Peter Medawar wrote in *The Future of Man*, mark "the end of a train of thought instead of the beginning of an exploration."

They have forgotten to curse the darkness.

Ralph Estling writes from Ilminster, Somerset, England.



Brad Marshall

Publications of Interest

Control of Coal Dust in Transit and in Stockpiles

Johannes Schmitz

1994, IEA Coal Res. Perspectives #15, 31 pp

From the publisher's ad-copy: "World coal demand and output have risen substantially in the last twenty years. This growth in coal demand, transportation and handling has resulted in an increase in the potential for problems related to coal dust. Developments in coal extraction, processing, and use have compounded the effect. This report analyzes the properties and sources of coal dust, and the hazards associated with dust. It then considers the general principles of dust control. The potential for successful control of coal dust by the use of suppressants, containing and capturing methods, and measuring and monitoring systems is then discussed in detail."

The Values of Precision

M. Norton Wise (ed.)

1995, Princeton University Press, 372 pp

From a recent review: "Standardization and precision measurement have often been taken for granted by historians of science.... this excellent collection of essays places the topic right where it belongs, at the center of historical attention.... an array of good case studies bearing on the emergence of precision as a cultural value and of exact measurement as a key technology from the 18th to the early 20th century. Two aspects [of precision] are particularly striking. First, technical reliability depends on the organization of people.... Second, the values of precision are not only technical or economic but also moral.... Precision, accuracy, or exactitude — connoting disinterestedness and reliability — came to be regarded as particularly characteristic of members of the professional classes.... Indeed, this ability, this *reliability*, was closely identified with the moral character that entitled scientists to that professional autonomy which has allowed systems of peer review to flourish in most walks of scientific life."

Dazzle 'em with Style : The Art of Oral Scientific Presentation

Robert R.H. Anholt

1995, W.H. Freeman Company, 200 pp

From a recent review: "Word has it that scientists cant communicate. The jury is still out on whether the problem is science itself. Is science just dull or is there something peculiar about scientists and their culture? Or both?... [this book] contains some good old-fashioned advice about giving lectures. It is the sort of advice that any half-decent communications consultant would give — for a hundred times the price. If the advice seems like common sense, then that's because it is.... The real trouble scientists have with communication is with language itself. They often seem incapable of using it precisely or vividly.... Many science lecturers will benefit from this book."

An Introduction to Coal Technology (Second Edition)

Norbert Berkowitz

1994, Academic Press, 398 pp

From a recent review: "The book is divided into two parts of equal length. The first is 'Origins, Formation, and Properties of Coal'.... (and the second) addresses the 'Upgrading, Handling, and Processing of Coal'.... The numerous illustrations are a strength of this book. Most pages have an interesting graph or the diagram of some fancy coal-related gizmo.... There are nearly 1200 footnotes citing the literature, although recent literature has been slighted. One-half of the citations date to 1960 or earlier, and one-half date from the period 1950 to 1974. Considering the importance of sampling, as well as the frequency with which coal is sampled incorrectly, a chapter on sampling should have been included.... (the book) is a wide-ranging review of its subject. It includes many references, and it is well-organized, readable, and abundantly illustrated. Anyone needing a general reference, a technical review, or an entree to the literature could use this book."

Calendar of Events

1995

August 28 - September 2 : XIII International Congress on Carboniferous-Permian Stratigraphy and Geology, Krakow, Poland. For information, telephone (48 32) 66 20 36/38 or fax (48 32) 66 55 22

September 4 - 8 : Biodiversity, Environmental Importance and Sustainability of Tropical Peatlands Symposium, Palangkaraya, Kalimantan, Indonesia. For information, telephone (44115-9515151) or fax (44-115-9513251).

September 10 - 13 : AAPG International Conference and Exhibition, Nice, France. For information, contact AAPG at (918)-5842555 Or fax (918)-584-2274.

September 10 - 15 : Eighth International Conference on Coal Science, Oviedo, Spain. For information, telephone 34-8-528-08-00 or fax 34-8-529-76-62.

September 11 - 15 : Twelfth Annual International Pittsburgh Coal Conference, Pittsburgh, PA. For information call (412)-6247440 Or fax (412)-624-1480.

September 12 - 17 : Peat Industry and the Environment, Parnu, Estonia. For more information fax the Secretary of the Organizing Committee at 3722453310.

October 8 - 11 : ASTM D-5 Committee on Coal and Coke Meeting, Norfolk, VA. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 8 - 13 : 16th World Energy Conference, Tokyo, Japan. For more information, contact the organizing committee at 81-3-3437-4727 (phone) Or 81-3-3437-4678 (fax).

October 11 - 14 : AASP Annual Meeting, Ottawa, Canada. For information contact Dr. Pierre Richard : telephone (514)-343-8023, fax (514)-343-8008, e-mail: richard@ere.umontreal.ca

October 16 - 18 : Sixth New Zealand Coal Conference, Wellington, New Zealand Topics of interest include clean coal technologies, coal gasification, coal quality, combustion, and the environment. For more information, telephone (644-566-2289) or fax (64-4-566-7737).

October 17 - 21 : International Conference on Coalbed Methane Development and Utilization, Beijing, People's Republic of China.

October 18 - 20 : 1995 Fuel Supply Seminar, New Orleans, LA. For information contact Susan Bissetti at (415)-855-7919.

October 23 - 25 : 1995 International Ash Utilization Symposium, Lexington, KY. Held in affiliation with the Journal *Fuel*. For more information contact Gretchen Tremoulet at (606)-257-0355 (phone) or (606)257-0360 (fax).

October 25 - 27 : Gasification Power Plants Conference, San Francisco, CA. For information contact Linda Nelson at (415)-855-2127.

November 6 - 9 : Annual Meeting of the Geological Society of America, New Orleans, LA. For information, contact Vanessa George at (303)447-2020.

December 17 - 22 : New Techniques in the Chemical Analysis of Coal Symposium, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii. This symposium is sponsored by the ACS Geochemistry Division. It will focus on microchemical and bulk chemical techniques including micro-FTIR, microprobe light element analysis, x-ray imaging of coal macerals, IR and XAFS spectroscopy, coal fluorescence, laser pyrolysis gc-ms, NMR analysis and imaging, model compound reactions, trace element analysis of minerals in coal, proton thermal analysis, new approaches to lignin analysis, and coal-bed methane generation. Most of the 23 papers in the symposium are expected to be published in a special issue of the *International Journal of Coal Geology*. For more information, contact Paul C. Lyons, U.S. Geological Survey, 956 National Center, Reston, VA 22092, USA.

1996

February 25 - 29 : Spring National Meeting of the American Institute of Chemical Engineers, New Orleans, LA. For more information, call (212)-705-7845.

March 5 - 7 : Society of Petroleum Engineers International Petroleum Conference & Exhibition of Mexico, Villahermosa, Tabasco, Mexico. For information, call (713)-529-1616.

March 11 - 13 : Sub-Saharan Oil & Minerals Conference, Johannesburg, RSA. For information, call 44-171-600-6660.

March 24 - 28 : American Chemical Society 211th National Meeting, New Orleans, LA. For information, call (202)-872-396.

April 15 - 17 : GEO-96. Middle East Geosciences Conference and Exhibition, Bahrain. For information, contact Jalil Al Samahiji at 973-753421 [phone] or 973-753475 [fax].

April 22 - 26 : XIV World Congress on Occupational Safety and Health, Madrid, Spain. For information, call 34-1-404-57-36.

May 5 - 8 : ASTM D-5 Committee on Coal and Coke Meeting, Pittsburgh, PA. For more information contact Ron Stanton at (703)-648-6462 [phone] or (703)-6478-6419 [fax].

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For further information contact John A. Minch at (714)-367-1000.

May 27 - 29 : Joint Annual Meeting of the Geological Association of Canada/Mineralogical Association of Canada, Winnipeg, Manitoba. For information call (204)-474-8857.

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For information, contact CPO Hanser Service at 49-511-643-2459 (phone) Or 49-511-643-2304 (fax).

June 2 - 6 : Fourth Annual Association of Afro-Asian Petroleum Geochemists (AAPG) International Conference, Arusha, Tanzania. For information, contact Dr. Y.S. Mwalyego, 4th AAPG Conference Secretariat-TPDC, P.O. Box 5233, Dar Es Salaam, Tanzania.

June 14 - 18 : Fifth World Congress of Chemical Engineering, San Diego, CA. For further information contact the AIChE Meeting Department at (212)-705-7320(fax).

June 17 - 21 : Annual Meeting Canadian Society of Petroleum Geologists, Calgary. For information call (918)-584-2555.

July 7 - 12 : Carbon 96, New Castle upon Tyne, United Kingdom. For information, contact Dr. K.M. Thomas at 440-91-222-8542 (fax).

August: Geochemistry of Coal & its Impact on Environments & Human Health, Beijing, China. For information, see display ad on page 4.

August 4 - 14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

August 25 - 30 : 212th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-396.

September 8 - 11 : Second AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. For information

contact the AAPG Convention Department at (918)-584-2555 (phone) or (918)-584-2274 (fax).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. For further information, contact Jack Crelling at (618)-453-7361 [phone] or (618)-453-7393 [fax].

October 7 - 11 : Fourth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, Cagliari, Italy. For further information, contact the International Committee Chairman Dr. Raj K. Singhal at (403)-241-9460 (fax - Canada).

October 13 - 16 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call Charles L. Pillmore at (303)-236-1240.

November 10 - 15 : AIChE Annual Meeting, Palmer House, Chicago, IL For more information call (212)-705-7845.

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at (918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For information call (202)-872-4396

Fall: Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For more information, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV. For info call (202)-872-4396.

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

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TSOP Newsletter
James Pontolillo, Editor
U.S. Geological Survey
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Reston, VA 22092 USA

The Society for Organic Petrology

Member Questionnaire

This questionnaire was designed to update our records on areas of interest to our members and to evaluate how well we are meeting the needs of our members and the objectives of the Society (as stated in the TSOP Constitution, Article III). Please respond to the questions below and **return this form with the enclosed Dues Notice.**

1. What are your areas of interest in organic petrology?
(Please place a "1" next to the most important area, with subsequent numbers next to other areas of interest).

___ coal petrology _____ organic geochemistry
___ kerogen petrology _____ petroleum geochemistry
___ bitumen petrology _____ environmental
___ palynology _____ other _____

2. What do you like about TSOP?
3. What do you dislike about TSOP?
4. What would you like to see different about any aspect of TSOP?
5. What additional benefits, committees, or projects would you like to see in TSOP?
6. What groups could we contact that may be interested in becoming TSOP members?
7. Other comments:



THE SOCIETY FOR ORGANIC PETROLOGY
NEWSLETTER

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12th Annual Meeting of TSOP (coverage begins on page 5)

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

David C. Glick
 Coal & Organic Petrology Labs
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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions about events and topics pertaining to organic petrology from members and non-members alike. Items may be submitted on computer diskette (DOS format only, ASCII or WordPerfect preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
 U.S. Geological Survey
 432 National Center
 Reston, VA 22092 USA

 phone: [703]-648-6804
 fax: (703)-648-5832
 e-mail: jpontoli@usgs.gov

For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology, c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1995-96 TSOP Council

President	Brian J. Cardott
Vice-President	Kenneth W. Kuehn
President Elect	Jeffrey R. Levine
Secretary/Treasurer	Lorraine B. Eglinton
Editor	James Pontolillo
Councilor (1994-96)	Stephen Bend
Councilor (1995-97)	Ganjavar K. Khorasani

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through July 1993, they are printed in the 1993 Membership Directory and Bylaws. For further information, see the Editor's box [this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they might attend. Membership information packets and membership application forms are also available for distribution to interested parties. TSOP is a voluntary organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
 (703)-648-6804 phone
 (703)-648-5832 fax

For Membership Packets:

Dave Glick
 (814)-865-6543 phone
 (814)-865-3573 fax

Deadline next issue: 10 February 1996

President's Letter

"This Old Meeting"

Brian J. Cardott

There is a well-known television program on PBS in the U.S. called "This Old House." It comes on in my area several times a week, including Saturday morning. Even though I would not tackle the major renovation projects that are illustrated on the program, I enjoy learning about the multifaceted aspects of construction and am inspired to tackle my Saturday morning chores.

An analogy of this was evident at the recent TSOP annual meeting in The Woodlands. Organic petrology is an ever-expanding discipline. Likewise, the TSOP annual meeting is a representation of the field, with the microscopy workshop, presentations, and field trip covering many aspects of coal petrology, Coalbed methane, kerogen petrology, organic geochemistry, kinetic modeling, palynology, and petroleum geochemistry. I realized at the meeting that, even though I do not have the equipment or expertise to apply all of these procedures to my projects, I enjoy learning about these areas and am inspired to apply them in my projects.

I have had the privilege of attending the last nine TSOP annual meetings. I did not attend the first three, partly due to budget constraints and commitments at other meetings, but mostly because I did not know what I was missing. If I were limited to attend one meeting a year, I would clearly choose the TSOP annual meeting. I encourage all TSOP members who have never attended a TSOP meeting to attend an upcoming meeting, and present the results of some of their work. We would all benefit from it.

I realize that many TSOP members are unable to attend the annual meeting for many reasons. Approximately one-fourth of the membership attended the last three annual meetings. That means that most TSOP members benefit from membership in other ways. In addition to benefits from the newsletter, abstracts and program volume, membership directory, annual meeting, and research subcommittees, members benefit from TSOP being an Associated Society of the AAPG and a Member Society of the AGI. An Internet Committee was recently established to investigate ways to promote TSOP to non-members and provide an additional service to members.

The Council would like to know how we can serve you better. Enclosed in the September *TSOP Newsletter* was a Member Questionnaire. I strongly encourage **all TSOP members** to fill

it out and return it with the dues notice. Not only does it provide an update on member areas of organic petrology interest, it also provides a forum for members to communicate their concerns to the Council in anonymity. Council will discuss the results at the Mid-Year Council meeting in March. Of course, you are always welcome to share your views personally to any Council Member at any time. We welcome your comments.

Ex-President's Letter

Renee L Symanski

This last year, as president of TSOP, has been a very rewarding and gratifying experience for me. I was fortunate to have a terrific group of officers and chairpersons who made the year an easy one to manage from a president's point of view and a memorable one due to the people who make up the society. I want to make special mention of a few people; however, my thanks and gratitude go out to the entire membership of TSOP.

To all my council members [Brian Cardott - president elect; Jack Crelling - vice president; Ken Kuehn - secretary/treasurer; Jim Pontolillo - editor; Cole Robison - councilor; and Stephen Bend - councilor) and chairpersons (David Glick- membership; MaryAnn Malinconico - outreach; Carolyn Thompson-Rizer - research; Jim Hower - nominating; Roger Trader - ballot; Sharon Crowley - awards; and John Castano - annual meeting) I am, and will always be, grateful for your help, service to TSOP, and your friendship.

During my last eleven years being associated with TSOP, I have seen members from all over the world gather together at our annual meetings, work together, have stimulating scientific discussions that have helped to determine the direction of organic petrology and related disciplines, and during this time develop and build lifetime friendships.

In closing, I will say that I am proud to have been closely associated with TSOP over the years. I hope to continue to be a part of this society, to continue to watch it grow, to stay in touch with friends I have made, and to develop new friendships. Thanks to one and all!

***The Kerogen volume is still available!
Only a limited number of copies are left-
SO ACT NOW!!!***

First Notice and Call for Papers

Thirteenth Annual Meeting of The Society for Organic Petrology

September 16-17, 1996
Southern Illinois University
Carbondale, IL U.S.A.

Sponsored by the Coal Research Center and the Department of Geology - SIUC

Tentative Program

- September 15 : Pre-meeting Short Course : The Petrography of Cokes, Chars, Carbons, & Graphites.
- September 16 : Oral and poster presentations. Contributions are invited.
- September 17 : Oral and poster presentations. Contributions are invited.
- September 18/19 : Two day field-trip to examine the Tradewater coals of the Illinois Basin.

For additional information, please contact:

Prof. Jack Crelling
Department of Geology
Southern Illinois University
Carbondale, IL USA 62901

phone:(618)-453-7361
fax: (618)-453-7393
e-mail: jcrelling@geo.siu.edu

Twelfth Annual Meeting of TSOP - Meeting Summary

John Castano

A Pre-Meeting Microscope Workshop was held at DGSI in The Woodlands on Sunday, 27 August 1995. Twenty-one participants spent a full-day studying three topics of current interest : Kerogen Maturation (presenter, John Castano), Solid Hydrocarbons - Homogeneous, Granular, Coked (presenter, Charles Landis), and Vitrinite Reflectance Suppression (presenter, H.B. Lo). Each presentation was followed by microscopic examination of samples and then a discussion session. The workshop ended just in time for those who wanted to attend Sunday night's TSOP Outgoing Council Meeting (see report on page 8). Following the council meeting, many of the conference attendees gathered for the Ice-Breaker party which featured lots of great finger-food and every geologist's best friend....a free bar!

The 12th Annual Meeting of TSOP proper began the next day (Monday, August 28th) at The Woodlands Executive Conference Center and Resort. A total of forty-two participants registered for the two days of oral presentations, posters, business meetings, product exhibits by Leica (Helmut Schares) and Opti-Quip, as well as a veritable deluge of food and drink.

The Monday morning technical session was dedicated to the late Pieter van Gijzel (the original guiding light of TSOP) and presided over by the conference organizer, John Castano. It began with a five-minute video of Pieter van Gijzel delivering a presentation and was followed by six talks covering advances in kerogen evaluation, electronic color measurements of palynomorphs, factors affecting the accumulation of oil and gas from coal, petroleum geochemistry, rifting and thermal modeling of the Taylorsville Basin (VA), and inertinite-rich mudstones of the Jakobsstigen Formation (Greenland). A midday lunch and meeting photo break was then taken. The Monday afternoon technical session was presided over by Wally Dow and included laser heated cavity spectroscopy, laser-induced fluorescence indicators and thermal maturation determination, vitrinite reflectance spectra, petrography of the onset of oil generation, the source rock potential of impact craters, chemical characterization of fusinite, and in-situ monitoring of kerogen transformation.

After a short recess, a meeting of the Internet Special Interest Group was held that night to discuss the advisability of and planning required to start up a TSOP World Wide

Web site. Attendance was excellent (about 25% of the conference attendees) and plenty of helpful ideas and opinions were collected by Dave Glick, Chairman of the Adhoc Electronics Communications Committee.

The second day of the Annual Meeting (Tuesday, August 29th) began with a morning technical session presided over by Suzanne Russell covering artificial coalification of peats, triboelectric dry coal cleaning, modeling of gas generation and storage, modeling of matrix shrinkage and its effects on absolute permeability, petrography of the 3500 and 4500 lignite beds (east-central TX), distribution of HAPs in the A1 lignite bed (Calvert Mine, TX), and palynology of Manning Formation (Lake Somerville, TX) lignites.

After a hearty Mexican lunch, the Annual Business Meeting was held featuring reports by TSOP officers and committee chairmen, including the Outreach, Balloting, Membership, and Awards committees. The *Best Student Paper Award* was given to Zhiwen Han for his presentation with John C. Crelling on "Fluorescence Spectral and Geochemical Analysis of Kerogen, Organic Extracts and Crude Oils: A Petrographic Approach to Determination of the Onset of Oil Generation." The *Farthest Travelled Award* went to Jorgen A. Bojesen-Koefoed (Copenhagen, Denmark). The business meeting ended with a TSOP "changing of the guard" as outgoing-President Renee L. Symanski passed the gavel on to incoming-President Brian J. Cardott.

The Tuesday afternoon technical session was a mixture of presentations and meetings. Neely Bostick combined coal geology with the fine art of the travelogue in his interesting and enjoyable talk on the Jurassic coals of the Kyrgyz Republic (former USSR). A Workshop Review was then conducted by John Castano for the benefit of those who were unable to attend the Pre-Meeting Microscopy Workshop. This was followed by a well-attended meeting of the Research Committee (see report on page 7). After a short break, the TSOP Incoming Council Meeting was held to transact all the business necessary to ensure a smooth start to the 1995-1996 fiscal year (see report on page 8). The 12th Annual Meeting of TSOP came to an unofficial end with dinner (fajitas-to-kill-for) at Wally Dow's house later that night.

For those who still had not had enough of organic petrology, a Post-Meeting Field Trip to view the coals of the Paleocene-

Eocene Calvert Bluff Formation and the Eocene Manning Formation in east-central Texas and was held on Wednesday, August 30th. A total of thirteen participants loaded aboard vans for a full-day, three-stop trip to the northwest of Houston [see below].

1995 TSOP Field Trip

Peter D. Warwick

Following the annual TSOP meeting at The Woodlands, Peter Warwick and Sharon Crowley (both from the USGS) led a group of brave souls to the hot, humid pits of two east Texas lignite mines. Tom Demchuk (AMOCO) was gracious enough to arrange the logistics for the field trip.

The first stop was at the Gibbons Creek mine where several beds are mined from the Eocene Manning Formation (Jackson Group). Tom Yancey, Judy Gennett (both from Texas A&M) and Peter Warwick led the discussion on depositional environments, palynology, and coal petrography and geochemistry. Eric Lancaster (Texas Municipal Power Agency) provided details of the mining operations at the Gibbons Creek mine and the proposed shift to use imported Powder River Basin coal to fuel the nearby electric power plant.

The group had a picnic lunch on the shores of the beautiful Lake Somerville and enjoyed the very warm summer breezes. The temperatures were now above 35 °C. Following our box lunches (provided by AMOCO) we examined the Manning Formation lignite and volcanic ash outcrops exposed on the banks of the lake spillway.

The last stop of the day was at the Calvert mine where Paleocene Calvert Bluff (Wilcox Group) lignite is mined. Jim Luppens (Phillips Coal) and Sharon Crowley led the discussions on depositional environments, coal petrology and geochemistry. By the end of the day our brains had been baked by the Texas heat and we were ready to head back to the air conditioning of The Woodlands Convention Center.

The field trip guide book, *Coal Geology of the Paleocene-Eocene Calvert Bluff Formation (Wilcox Group) and the Eocene Manning Formation (Jackson Group) in east-central Texas* edited by Warwick and Crowley, is available from TSOP (see enclosed Publications Order Form) or USGS Open-File Services in Denver, Colorado (ask for USGS OF 95-595).

TSOP / AGI Affiliation Update

At the Mid-Year Council Meeting in Cincinnati, on 18 March 1995, the TSOP Council voted to join the American Geological Institute (AGI) as a Member Society. On 20 June 1995 TSOP was notified that it had been unanimously elected to membership in the AGI. The AGI moves fast : TSOP has already been added to the organization's stationery, directory, and the interior masthead of its journal, *Geotimes*. The AGI also distributed a *Spotlight* series news release (dated 14 July 1995) to announce the new affiliation and to inform the geosciences community about TSOP and its goals. TSOP President Brian J. Cardott will serve the initial three-year term as TSOP representative to the AGI Member Society Council. This three-year term (stipulated by the AGI) should help provide continuity to TSOP's efforts in assisting to guide the Institute's programs.

The AGI is a non-profit federation of 28 geoscientific and professional organizations that collectively represent more than 80,000 geologists, geophysicists, and other earth scientists. Since its founding in 1948, the AGI has worked with and for its members in three main areas : 1) to facilitate intersociety affairs and to serve as a focused voice for shared interest in the geoscience profession, 2) to provide leadership for improving earth-science education at the pre-college and college levels, and 3) to increase public awareness and understanding of the vital role the geoscience's play in society's use of resources and interaction with the environment. The Institute holds two regularly scheduled council meetings yearly in conjunction with the AAPG and GSA annual meetings. The TSOP Council hopes that this new partnership will prove to be a long-lasting and positive one.

TSOP Publications

An updated list of the TSOP Publications Order Form has been enclosed with this issue of the newsletter. There are three changes of note. The proceedings volume for the 9th Annual Meeting of TSOP is no longer available. A few copies are still available of the Field Trip Guidebook from the 8th Annual Meeting of TSOP [*Coal-bearing rocks along the western margin of the eastern Kentucky coal field* by C.F. Eble, S.F. Greb, and D.R. Chestnut, Jr., 34 pp.]. Finally, the Field Trip Guidebook from the 12th Annual Meeting of TSOP [*Coal Geology of the Paleocene-Eocene Calvert Bluff Formation [Wilcox Group] and the Eocene Manning Formation [Jackson Group] in east-central Texas* edited by P.D. Warwick and S.S. Crowley, 86 pp.] is now available.

TSOP Research Committee Update

Carolyn Thompson-Rizer

On August 29th at the end of the oral presentations of the Annual TSOP Meeting in Houston, Texas, a special discussion was held to review and gather ideas for the TSOP Research subcommittees. Currently there are three research subcommittees, as described below. The discussion was led by Research Committee Chairman Carolyn Thompson-Rizer. Jeff Quick was available to present the work of his subcommittee. Two special projects were also discussed, including Jim Hower's explanation of the AAPG CD-ROM project. This year was a particularly difficult one for many TSOP members as workloads increased, laboratories moved or closed, and jobs were eliminated or redefined, therefore little progress was made in the subcommittees. The following summary provides some highlights of the discussion :

1) Sub-committee on the Standardization of Reflectance and Fluorescence Methods (Jeff Quick)

A set of guidelines sheets on spectral fluorescence measurement were co-authored with the ICCP (K. Ottenjahn) and were to be presented at the recent ICCP meeting. It was decided that TSOP as a whole will not participate in the ICCP Commission II round robin on the intercalibration of microspectrofluorescence devices; interested individuals may contact Rejane Baranger and Bernard Pradier directly. A lengthy debate ensued about reflectance standardization and useful round robin exercises. Jeff suggested using plastic standards, others want to measure vitrinite concentrates from shales or crushed particles from a single vitrain band mixed with silica, etc. We collected names of workers interested in this problem and Jeff will be contacting them soon about a study. Others are invited to contact Jeff.

2] Sub-committee on the Standardization of Kerogen Isolation and Characterization Methods (Stan Teerman) :

Stan is ready to start a round robin study of amorphous kerogen as proposed in the August 1994 *TSOP Newsletter* and described in a January 1995 letter to interested workers. The specific objectives include: amorphous nomenclature, better definition of petrographic properties, identification and definition of the subdivisions of amorphous organic matter, and the integration of petrographic and geochemical results. To date, workers in this subcommittee are: Brian Cardott, Martin Reinhardt, Henrique Pinheiro, Alexi levlev, Carolyn Thompson-Rizer,

Roger Woods, and John Castano. Stan is still looking for a co-chairman.

3) Sub-committee on Environmental Organic Petrology (Jim Hower and Cole Robison)

Due to his workload, former committee chairman P.K. Mukhopadhyay was unable to conduct round robin studies of samples from Halifax Harbor and Lake Ontario. We discussed the ICCP working group on *Environmental Applications of Coal Petrology* and Renee Symanski provided copies of their white paper written in October 1994. Brian Cardott forwarded the minutes from the AGI Environmental Geoscience Advisory Committee. The co-chairmen will investigate the activities of other organizations and design a program for TSOP. During the discussion, interest in working on this subcommittee was shown by Lorraine Eglinton, Zhiwen Han, and Sharon Crowley. Topics discussed included coal, peat, fly ash, & pollution problems in the former USSR.

4) Special Project: Handbook of Organic Petrology

This project has been halted indefinitely.

5) Special Project: AAPG Coal Atlas CD-ROM

Jim Hower explained this ongoing effort between TSOP and AAPG-EMD. He, Ron Stanton, and Adrian Hutton are collaborating on producing one half of a compact disk which will contain approximately 300 petrographic images and accompanying text. The second half of the CD will be created by other authors and contain an additional 300 images documenting mine-scale coal geology. The images will be PC and MAC compatible, as well as downloadable. It is anticipated that a peer review will help to resolve technical issues. In the end, however, the identifications will be the responsibility of the individual authors and not TSOP.

Renew Your Membership Today

TSOP members are reminded that 1996 dues must be paid by 1 February 1996. Renew now and avoid those sleepless nights of guilt-wracked torment!

1995 Outgoing TSOP Council Meeting Summary

Kenneth W. Kuehn, Secretary/Treasurer

The 1995 Outgoing Council Meeting was held on August 27, 1995 at The Woodlands Conference Center, The Woodlands, Texas. President Renee Symanski called the meeting to order at 4:40 pm CDT.

Attendance: Present - Renee Symanski, President; Brian Cardott, President-Elect; Ken Kuehn, Secretary/Treasurer; Jim Pontolillo, Editor, Cole Robison, Councilor. Absent - Jack Crelling, Vice-President; Stephen Bend, Councilor. Others present - Neely Bostick; John Castano, 1995 Meeting Committee; Lorraine Eglinton, Incoming Secretary/Treasurer; Dave Glick, Membership Committee; Jim Hower, 1997 Annual Meeting Committee; Jeff Levine, Incoming President-Elect; MaryAnn L Malinconico, Outreach Committee; Carolyn Thompson-Rizer, Research Committee.

1) Ken Kuehn, Secretary/Treasurer, distributed a financial statement covering the period from January 1, 1995 to July 31, 1995. On July 31, the checking account balance was \$20,807.82 and the Vanguard account balance was \$9,101.16, making the total assets of the Society \$29,908.98.

2) Renee Symanski announced the 1995 election results on behalf of Roger Trader, Chairman of the Ballot Committee: Jeff Levine, President-Elect; Ken Kuehn, Vice-President; Lorraine Eglinton, Secretary/Treasurer; Ganjavar Khorasani, Councilor; James Pontolillo, Editor.

3) Dave Glick, Chairman of the Membership Committee, reported that there were 204 members paid at that time. Six new member applications were approved by Council. TSOP welcomes Thomas J. Algeo, Don L Hall, David L Hoffman, Jacek Jaminski, Olufemi R. Olugbemiro, and Noriyuki Suzuki.

4) MaryAnn L Malinconico, Chairman of the Outreach Committee, reported that a total of \$2,600 has been received from five Industrial Sustainers in their support of TSOP goals and objectives. Also, 750 TSOP promotional pens have been ordered and will be distributed at various professional meetings.

5) Jim Pontolillo, Editor, reported on behalf of Ron Stanton that 17 manuscripts have been received from the 1994 Annual Meeting held in Jackson Hole, Wyoming. Sixteen

papers have been reviewed, and about half have been resubmitted with corrections by the authors. The actual publication date is unknown at this time, but it will not be completed in the current calendar year. Council is looking into expediting the process.

6) John Castano, Chairman of the 1995 Annual Meeting Committee, reported that a profit is expected from this meeting largely due to the generous support of several parties: Amoco printed the field-trip guidebook, Texaco paid for printing the Abstracts and Program, Unocal contributed \$500, and DGSi contributed \$200. The manuscripts received from this meeting will ultimately be published in the *International Journal of Coal Geology*. The pre-meeting microscopy workshop was just completed and had 21 participants.

7) The 1997 Annual Meeting will be held jointly with the Eastern Section of AAPG in Lexington, Kentucky on September 29 - 30, reported Jim Hower, Chairman of the 1997 Meeting Committee.

8) Jim Hower reported further that AAPG has approved the concept of developing a coal geology/coal petrology photo atlas in CD-rom format. AAPG's publisher indicated that they could put 600 images with text onto a single master disk for \$11,500. Jim will pursue this for TSOP.

1995 Incoming TSOP Council Meeting Summary

Kenneth W. Kuehn, Secretary/Treasurer

The 1995 Incoming Council Meeting was held on August 29, 1995 at The Woodlands Conference Center, The Woodlands, Texas. President Brian Cardott called the meeting to order at 5:00 pm CDT.

Attendance: Present - Brian Cardott, President; Jeff Levine, President-Elect; Ken Kuehn, Vice-President; Jim Pontolillo, Editor. Absent: Lorraine Eglinton, Secretary/Treasurer; Stephen Bend, Councilor; Ganjavar Khorasani, Councilor. Others present - John Castano, 1995 Annual Meeting Committee; Sharon Crowley, Awards Committee; Dave Glick, Electronic Communications Committee; Jim Hower, 1997 Annual Meeting Committee; MaryAnn L Malinconico, Outreach Committee.

1) Council approved an operating budget of \$13,750 for the 1996 calendar year. This amount includes new items of \$2,500 to assist authors in paying for their color plates in the 1995 Annual Meeting Proceedings [*International Journal of Coal Geology*] and an amount of \$2,000 for the ad-hoc Electronic Communications Committee.

2) Jim Pontolillo, Editor, reported that some changes including heavier paper and better photo reproduction will be used in upcoming newsletters. He noted that member participation in the newsletter has been limited, but positive, and welcomed any and all contributions from the membership. He will also recruit regional correspondents and solicit articles in languages other than English.

3) Council discussed the possibility of including in the Newsletter various employment notices and advertisements of interest to the membership. Jim Pontolillo will develop an appropriate rate schedule for such items for further discussion at the Mid-Year Business Meeting.

4) John Castano reported data for the 1995 Annual Meeting : 42 people registered for the meeting, 21 participated in the pre-meeting microscopy workshop, and 13 participated in the post-meeting fieldtrip. A small profit is expected.

5) President Brian Cardott announced that Council needs proposals for the location of the 1999 Annual Meeting.

6) President Brian Cardott distributed materials indicating that TSOP has recently been elected as a member society in the American Geological Institute (AGI) and is now listed as such on their letterhead and inside *Geotimes* magazine.

7) After a report from Dave Glick, Chairman of the Ad-hoc Electronic Communications Committee, Council voted to dissolve that committee and establish the standing "Internet Committee" in its stead. This new committee assumes control of the \$2,000 budget in order to establish a web site and home page, and to maintain operations of our electronic communications. The Chairman of this committee will be named at a later date.

Internet Committee Spinning Along

At the Incoming Council Meeting, a standing committee was established to provide Internet computer communications concerning TSOP and its areas of interest. Its goals include promoting knowledge of the existence, work, and scientific

interests of TSOP, and providing a forum for discussion on these topics. A World-Wide Web site is expected to be established for the presentation of information, and may also include a discussion forum. David Glick (Email xid@psu.edu) can provide more information to those interested.

1995 - 1996 TSOP Committees

Nominating Committee	Renee L Symanski
Ballot Committee	Roger K. Trader
Annual Meeting Committee	
1996 (Carbondale)	John C. Crelling
1997 (Lexington)	James C. Hower
1998 (Halifax)	P.K. Mukhopadhyay
Research Committee	Carolyn Thompson-Rizer
Outreach Committee	MaryAnn L Malinconico
Membership Committee	David C. Glick
Honorary Member Selection	Kenneth W. Kuehn
Awards Committee	Mike Darnell
Annual Meeting Advisory	James C. Hower
Ad Hoc Internet Committee	David C. Glick
Internet Committee	(to be named)
Ad Hoc/European Contacts	Martin Reinhardt
Ad Hoc/Canadian Contacts	Stephen Bend
Ad Hoc/S. American Contacts	Coleman R. Robison

Call for site proposals :

1999 TSOP Annual Meeting

The TSOP Council is soliciting proposals for the 1999 Annual Meeting site. It is desirable to select a site three years in advance of the meeting. Proposals submitted by the end of February 1996 can be considered at the 1996 Mid-Year Council Meeting in mid-March.

Guidelines for preparing an annual meeting proposal are in the TSOP Procedures Manual (chapter 1; summarized in the *TSOP Newsletter*, vol. 9, no. 3, p. 8), available from any council member. Proposals for the 1999 Annual Meeting site should be mailed to Lorraine Eglington, Secretary-Treasurer, no later than 29 February 1996. Jim Hower is chairman of the Annual Meeting Advisory Committee and is available to advise others on the planning of future TSOP meetings.

Report on the International Symposium on the Biodiversity, Environmental Importance and Sustainability of Tropical Peat and Peatlands

Palangka Raya, Indonesia (September 4 - 8, 1995)

Jane C. Shearer

This symposium on tropical peats was held in the midst of a vast peat-forming area in Central Kalimantan, on the island of Borneo. This peatland, composed of numerous thick, ombrogenous peat domes, is threatened by agricultural development as the population of Indonesia grows and demands higher standards of living and rice self-sufficiency.

The focus of the symposium was the functioning of tropical peats, particularly those in Indonesia. There were about 100 delegates at the conference, of whom half were from Indonesia and half from elsewhere. Thirty-eight papers were delivered, a number of these being related to a three-year study of a peat dome near Palangka Raya. This study has involved botanists, ecologists, zoologists, and climatologists in an integrated research programme on the ecological functioning and biodiversity of the peat dome. It has been found that, although the peat is up to 14 meters thick and the conditions acidic, the biodiversity in the peatland is far greater than had previously been thought. There is considerable diversity in both flora and fauna and the peat dome forms an undisturbed habitat of many orangutang.

It became clear during the conference that there is a dichotomy of views between the Indonesian and western peat scientists. Indonesian peat researchers are driven by their government's priority to find new agricultural and horticultural land to reduce the population load on Java and Sumatra. In contrast, the western researchers were interested in conservation and preservation of peats as a unique and important ecosystem. This is a problematic division as it is not feasible for a more developed country to tell a less developed one to stop using its resources. Few western countries can boast of their environmental conscientiousness during their developmental phase. To the Indonesians it must have seemed that westerners felt the right to say, "We have destroyed our peats so you ought to preserve yours."

From the point of view of peat as a modern analogue for coal, the conference showed that there is still much to be learned. An ecosystem approach is needed for fully understanding the functioning of peat bogs, which are a

complex interplay between biological, hydrological and geological dynamics. We are all aware of the difficulty in attaining funding and cooperation to involve such a wide range of scientists on any one project. At a more specific level, controls on water table fluctuations are not clear. Nor are controls on, or types of, degradational processes in the peat well understood. The tropical peat systems appear to be one of the best modern analogues for coal seams given their thickness, area! extent, longevity, and the woody vegetation contributing to the peat. However it must also be remembered, when using such peatlands as modern analogues, that the present tropical peat vegetation [angiosperm dominated] is only similar to Miocene tropical coals and older coals were formed from very different floras. In addition, until we understand these modern peat systems better, application of them to understanding the past will be shaky at best and misleading at worst.

[Despite governmental decrees, many Indonesian professionals are skeptical about the potential for success in converting the approximately one million hectares of peat swamp forest in Central Kalimantan to rice production. Since peatlands are not isolated entities, complex negative feedbacks on regional climate and hydrology may occur if they are significantly disturbed by deforestation, drainage, and agricultural development-Ed.]

Candidates Sought for TSOP Council

Nominees for the following 1996 TSOP Council positions are currently being sought by the Nominating Committee : President-Elect, Vice-President, Editor, and Councilor. TSOP members interested in running for a Council position and/or desiring further information should contact Renee L Symanski [(214)-509-1121] as soon as possible.... by the beginning of January 1996 at the absolute latest!

Report on the XIII International Congress on Carboniferous-Permian Stratigraphy and Geology

Maria Mastalerz

The XIII International Congress on Carboniferous - Permian Stratigraphy and Geology was held at the Academy of Physical Education in Krakow, Poland from August 28th to September 2nd, 1995. The official language of the congress was English. Apart from the obvious interest in Carboniferous and Permian geology, the location of the congress in one of the most beautiful Polish cities, as well as intriguing post-Communist changes, attracted 363 participants [not including accompanying parties] to the Royal City of Krakow. The participants represented 29 countries, with Poland [166], Russia (43), Germany (32), Ukraine (22), and the USA (22) accounting for more than 70% of the attendance.

The distribution of participants indicates that the cost of travel was an important factor influencing attendance, although it was not necessarily the decisive factor. It was very encouraging to see so many scientists from the former Soviet Union whose presence was clear evidence of the political changes that have occurred in their republics. It also documents both their awareness of the need to participate in the international scientific community and strong will to do so despite language problems and a lack of technical means to deliver high-quality contributions.

The Congress began on Monday, August 28th, with an opening ceremony and speeches by K. Jaworowski (President of the Organizing Committee), S. Speczik (Director of the Polish Geological Institute), K. Szamalek (Chief Geologist of Poland), J. Lassota (President of the Royal City of Krakow), the Consul of the Czech Republic to Poland, and S. Archan-gelsky (President of the 12th ICC-PSG in Argentina). The opening speeches were followed by an overview of the Carboniferous and Permian in Poland presented by K. Jaworowski. The day ended with a Plenary Session and three key lectures: "The Permian-Triassic boundary in continental sequences" by V.R. Lozowsky, "Permian stages" by B. Glenister, and "New perspectives on the Dinantian megaflora in the type area" by N. Rowe.

The next four days were filled with several simultaneous technical sessions that included: 1) Global synthesis - paleogeography, plate tectonics, and paleoclimate; 2) Stratigraphy and palaeontology - biostratigraphic global correlations of microflora, macroflora, and macrofauna; 3)

Basin analysis; 4) Tectonics and magnetism; 5) Post-depositional transformation of organic substances - Coal petrology and geochemistry 6) Economic geology; and 7) Ecological impacts of coal extraction and downstream industries. Apart from these major sessions, there were also several intracongressional symposia, workshops, and meetings, including a well attended symposium on the stratigraphy of the mid-Carboniferous interval.

From a TSOP member's viewpoint, the session on post-depositional transformation of organic matter and economic geology were of great interest. Unfortunately, they overlapped and some portions could not be attended because of this scheduling problem. Oral presentations for these sessions were supplemented by two poster sessions exhibiting approximately 80 posters.

The session on post-depositional transformation concentrated on the petrology of Carboniferous and Permian coals and the geochemistry of organic matter dispersed in Permian sediments. There were many presentations on Russian, Polish, and Brazilian coals. The only American contributions were presented by myself: one on Lower Pennsylvanian coals in Indiana (co-authored with B.A. Stankiewicz and E. Kvale) and the other on the application of in-situ techniques of studying coal macerals (with co-author R.M. Bustin).

The session on economic geology covered a wide range of topics including coal resources and economics, oil shales and petroleum, and the coal-bed gas potential of basins. In this session, there were three American presentations: two on Kentucky coals presented by J.C. Cobb (co-authored with D.R. Chestnut and D.C. Haney) and D.C. Haney (with D.R. Chestnut as co-author) and one on hydrocarbon resources in Upper Mississippian sandstone reservoirs of West Virginia delivered by D.W. Neal.

Friday evening's (September 1st) dinner in the Wieliczka Salt Mine was memorable. The dinner was preceded by a tour through the medieval salt mine workings, some of them transformed into chapels with beautiful sculptures in salt by eminent Polish artists. The dinner was a fine example of Polish hospitality (plenty of food and even more drink) and gave the participants a taste of Polish culture, as a band of

miners performed regional music. The dinner lasted five hours which seemed a little long, although many attendees did not share my opinion. The official conference closing took place on September 2nd with a speech by K. Jaworowski, a talk on the ice sheet in the Carboniferous and Permian, and the reports of various international subcommittees.

The Congress was also accompanied by pre-Congress (5) and post-Congress field trips to examine Carboniferous and Permian sediments in Poland and the Slovak Republic. There was also a one-day field trip to see the ecological impact of underground coal mining and associated industries. In summary, the XIII International Congress on Carboniferous - Permian Stratigraphy and Geology was a success and special words of appreciation should go to the organizing committee, K. Jaworowski, M. Podemski, and S. Dybova-Jachowicz, in particular. I hope that participants enjoyed the Congress, the city of Krakow, and their exposure to Polish culture. The XIV ICC-PSG will be held at Calgary, Canada in 1999.

1995 Ash Utilization Symposium

Lexington, KY, October 23 - 25, 1995

James C Hower

Nearly 300 participants from 19 countries and every inhabited continent took part in the First International Ash Utilization Symposium in Lexington, KY, which was sponsored by the University of Kentucky Center for Applied Energy Research and the journal *Fuel*. The conference grew out of the three regional ash utilization workshops, a format to be reinstated next year prior to returning as an international meeting in 1997. The Kentucky meeting is intended to fill the interval between the American Coal Association symposiums held in January of odd-numbered years.

Following a plenary session, the symposium was conducted as two concurrent sessions with additional papers presented as posters. The sessions' themes included Chemistry and Mineralogy of Ash, Legal and Regulatory Issues, Mine Reclamation and Backhauling, New Materials and New Uses, Beneficiation and Utilization of High LOI (Loss on Ignition) Ash, Agricultural Applications, Concrete Applications and Flowable Fills, and General Papers. The Chemistry and Mineralogy and High LOI sessions would likely be of most interest to TSOP members. The amount and nature of carbon in fly ash is critical in the use of fly ash in concrete. Limits on LOI exist but, as is often the case when a concept is simplified into a single parameter, the LOI number does not tell the whole story. Depending on the type of carbon in the fly ash, a high-

LOI fly ash, while generally unacceptable in the concrete industry, could behave similarly to low-LOI fly ashes.

Selected papers from the symposium will be published in *Fuel*. As noted above, the symposium will return to Lexington on October 20 - 22, 1997. TSOP members interested in the coal ash aspect of coal utilization should consider attending the Second International Ash Utilization Symposium and the ACAA symposium in Orlando, Florida, in January 1997.

12th Annual International Pittsburgh Coal Conference

Leslie F. Ruppert

The Twelfth Annual International Pittsburgh Coal Conference was held from September 11 - 15, 1995 in Pittsburgh, PA. The conference drew 400 coal scientists, technologists, and industrial leaders for its 35 technical sessions organized around the theme *Coal - Energy and the Environment*.

The conference included a Utility Executive Forum featuring Donald Carlton (Radian Corporation), James M. Davis, Jr. (Carolina Power & Light), Kerry E. Adams (Southern Company Services), and Kurt E. Yeager (Electric Power Research Institute) and two USGS-organized geologic sessions entitled *Trace Element Characterization* and *Applied Coal Geology*. Selected session titles that may have interest for TSOP members included: Ash Formation and Behavior in Power Systems; Fundamental Characteristics of Coal Combustion By-Products & Impacts on Utilization; Low Rank Coal Upgrading; Issues & Strategies for Coal Combustion By-Products; Advances in Coal Preparation; Nonfuel Use of Coal, Coal Cleaning Technology; Coal Products, By-Products and Wastes - Environmentally Friendly Utilization & Disposal; Coal Conversion Processes for Clean Fuels & Chemicals; and Energy and the Environment - Domestic & International Challenges. Copies of the proceedings volume entitled *Twelfth Annual International Pittsburgh Coal Conference Proceedings, Coal - Energy and the Environment 1995* (Shiano-Hung Chiang, ed.) can be obtained from the University of Pittsburgh, Center for Energy Research, 1140 Benedum Hall, Pittsburgh, PA, 15261 [phone (412)--624-7440 / fax (412)--624-1480].

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Report on the 8th International Conference on Coal Science

Oviedo, Spain (September 10-15, 1995)

Robert B. Finkelman

The 8th International Conference on Coal Science was held in Oviedo, Spain from September 10-15, 1995. The conference was attended by about 550 coal scientists, technologists, and managers from more than 30 countries. There were approximately 200 oral and 300 poster presentations in four concurrent sessions. The proceedings from the conference have been published in a 1,200 page two-volume set by Elsevier (Coal Science - Volume 24, Pajares and Tascon, editors). Rumor has placed the price of the set at about \$600. (Caramba!)

Historically, this series of conferences has been dominated by chemical engineers and combustion technologists, although in recent years geoscientists have been making significant inroads. Nevertheless, there was a very heavy emphasis on technological aspects again this year.

The following is just a sampling of the presentations that I attended. Stencil and others (U.S.) described the partitioning and behavior of coal macerals during dry coal cleaning. For high-volatile A and B coals they found a significant enhancement of vitrinite macerals in the cleaned coal fractions, whereas fusinite, Semifusinite, and exinite are enhanced in the tailings. These trends were not observed for a high-volatile C coal. Harris and others (Australia) found that demineralization of coal by hot caustic solutions changed its coking properties and enhanced the coal's reactivity during gasification. Further studies were planned to determine why the demineralization process had these effects on the coal.

Three of the better geoscience presentations were authored by Xavier Querol and his colleagues (Spain). In one study on the trace elements in Spanish sub-bituminous coals they split the coals into 11 density fractions. They determined the chemistry and quantitative mineralogy of each of the fractions and from these data inferred the organic/inorganic affinity of about 45 elements. They also studied the behavior of the elements during combustion. Those elements that were enriched in the fly ash with respect to the slag also were concentrated in the finer fly ash particles. With Mike Whateley (England) they described the unusual mineralogy and geochemistry of a Turkish lignite. Zeolites constitute about 80% of the minerals in this high-sulfur (8.2%) coal. They suggest that the zeolites resulted from alkaline solutions activating aluminosilicate glasses derived from volcanic

activity. With Simon Chenery (England) they used a laser ablation microprobe-inductively coupled plasma mass spectrometer to quantitatively determine trace element concentrations in coal and coal combustion wastes. Strontium was ubiquitous, occurring in vitrinite, clays, pyrite, and marcasite. Unburned coal in the fly ash still contained B, and Sr. B, Cr, V, Th, and U were enriched in the glass and Co, Ni, Cu, and Zn were found primarily in magnetite particles in the fly ash.

Haim Cohen and others (Israel) described their work on hydrogen release from coal and the possibility that some mine explosions may be caused by the hydrogen. This presentation attracted a lot of local media attention because there was a tragic incident just prior to the conference; 14 Spanish coal miners were killed in a mine explosion, the cause of which was still under investigation.

The next meeting will be held in Essen, Germany on September 7-12, 1997. Hasta luego.

Call for Corresponding Editors

In an effort to provide a broader range of information and to bring an enhanced international flavor to the our publication, members are invited to become regional Corresponding Editors of the *TSOP Newsletter*. Corresponding Editors will be expected to monitor government, academic, and private-sector activities related to organic petrology in their geographic "beat" and to provide a minimum of one or two news-style articles per year for inclusion in the newsletter. Applicants do not need to reside in the region they wish to cover, but should be fully conversant with the region and its institutions. Corresponding Editors are being sought for the following regions: United States, Canada, South America, Western/Central Europe, Eastern Europe and the former USSR, Africa, the Middle East, Mainland Asia (includes Japan), and the Pacific Basin. For further information or to apply, please contact the newsletter Editor (see page 2).

Membership News

David C. Glick, Membership Committee Chairman

Address Changes and Corrections

Please make the following changes and additions in your 1995 Directories.

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Neil Sherwood - Email: n.sherwood@syd.dpr.csiro.au

Christopher A. Toles
2100 Sawmill Rd. #201
River Ridge, LA 70123-5902

Misplaced Members

The Membership Committee seeks current addresses for members Penny Alano and Yunhe Zhang; their addresses in the 1995 Directory are out of date. Please contact David Glick (see p. 2) with any current information.

New Members

The Society welcomes the following persons who have applied for membership:

Judith A. Gennett
709 East 31st St.
Bryan, TX 77803

phone: 409 823-5848
Email: judith@bihs.net

Dr. Gennett is a coal palynologist who has worked on several Eocene lignites as well as Pennsylvanian coal. She is a Research Affiliate at Texas A&M University and helped present the field trip at our recent Annual Meeting.

Henrik I. Petersen
Geological Survey of Denmark & Greenland (DGGU)
Thoravej 8
DK-2400 Copenhagen NV
Denmark

phone: +45 3110 63 33
fax: +45 3119 68 68

Dr. Petersen recently completed his Ph.D. in coal petrology and organic geochemistry, and also works on char characterization and reactivity and other aspects of coal combustion.

Shan Xie
Nathan Kline Institute. Bldg. 37
140 Old Orangeburg Rd.
Orangeburg, NY 10962

phone: 914 365-2000
fax: 914 359-7029

Dr. Xie holds a Ph.D. from Kyoto University in organic chemistry, and works with organic and analytical geochemistry.

Member seeks Employment

TSOP member Richard Risek has recently received his doctorate and is currently seeking employment. His dissertation focused on the geochemistry and stratigraphy of Appalachian Basin paleoenvironment. Those interested in obtaining a curriculum vitae/resume should contact: Dr. Richard M. Risek, P.O. Box 410922, Kansas City, MO 64141 [(816)-471-2732].

Report: 6th New Zealand Coal Conference

October 16 - 18, 1995

Timothy A Moore

The "Wonderfully Windy" city of Wellington, New Zealand once again played host to the New Zealand Coal Conference. A feature of the conference is that it brings together a wide variety of people involved in the coal mining industry : from the coal geologist, to the mining engineer, to the coal users and even the odd policy analyst! A total of 190 people attended the conference, mostly from New Zealand but also from the USA, Australia, Indonesia, and Malaysia. Technical sessions covered such topics as clean coal technology, coal utilisation, geologic modeling, and combustion technology.

There were 40 talks over the three days, five of which were by keynote speakers as well as two addresses by the Minister of the Environment and the Minister of Energy. One of the keynote speakers, Dr John C. Fern from the University of Kentucky, spoke on avoidable problems in a privatised coal industry - an issue of great importance now in New Zealand as what was state-owned coal is sold off to private companies. Other keynotes included G.G. Summers from Shell Coal Australia Ltd. on the coal prospects in the Asia-Pacific region and Tom Sarkus from the U.S. Department of Energy on clean coal technologies for power plant utilisation.

The remaining talks were wide-ranging and included : *A comparison of fusible inertinite in Carboniferous and Permian coals* by Diessel and Gammidge, *Modeling of swirling pulverised-coal flames in an axi-symmetric furnace* by Bech and Jensen. *Factors affecting elemental composition of peat - implications for coal research* by C. Chague-Goff, *Relationships between quantitative vitrinite fluorescence and the chemistry and industrial properties of West Coast coals* by Newman, and *A comparison of breakage behaviour for New Zealand and Australian coals* by Esterle et al. These are just a few of the titles and a complete list can be obtained from H. Gabriel, Coal Research Ltd., P.O. Box 31-244, Lower Hutt New Zealand [Email: H.Gabriel@CoalRes.co.nz]. Papers for all the talks were published as a two-volume proceedings set comprising 402 pp.

The next meeting will be in 1997 and is scheduled to run in conjunction with the annual ICCP meeting (for more information on this contact: T.A. Moore, Coal Research Ltd, Email: T.Moore@CoalRes.co.nz). There will also be an associated field trip, probably to the coalfields in the South Island. Please plan to attend as all Northern Hemispherians are welcomed too!

Review - Coal Blending for Power Stations

by Anne M. Carpenter, IEA Coal Research IEACR/81, 1995

Reviewed by James C. Hower

University of Kentucky Center for Applied Energy Research, Lexington, KY 40511

Coal blending is conducted at power stations throughout the world, and indeed, in some regions, it is unusual to find a power station with a feed from a single mine or mine complex. Blending can be at the scale of many US plants where coals from a relatively limited geographic area are blended, at the scale of certain mid-western US plants where eastern US bituminous and western US subbituminous coals are used, or at the scale of the plants in non-coal producing countries (and elsewhere) where a variety of coals from throughout the world may be utilized. In the first example, the problems associated with blending are usually minimal as the rank and ash chemistry of the components will be relatively similar. In the latter cases though, considerable problems can arise due to the differing combustibility of coals of different rank and to the differences in iron- and silica-rich ashes common in many bituminous coals from the Appalachians and the alkali ashes common in the Powder River Basin coals.

This recent contribution from the IEA addresses problems associated with using and analyzing blended coals. Achieving low sulfur emissions, short of installing flue-gas desulfurization systems, is not quite as simple as blending a low-sulfur Powder River or Columbian coal with a high-sulfur Illinois Basin coal or a medium-sulfur Appalachian coal. Complications arise in the power output as more coal must be burned to generate the same amount of electricity; in the combustion cycle where the lower-rank coals burn at a different rate than the bituminous coals; in the increased boiler fouling as a consequence of the higher sodium in the subbituminous coal; in the collection of fly ash as lower sulfur can impact the performance of electrostatic precipitators; and in the utilization of fly ash since what was a class F fly ash product is now either class C or an intermediate type that may not be marketable in a region acclimated to class F ash. To further complicate the problems facing a utility planning to blend coals, many of the properties of the coal blend are not additive and therefore cannot be simply predicted from the properties of the component coals. The non-linearity of ash fusion properties is perhaps the best known of the problems associated with blends. Even the maceral composition, which is additive in itself, leads to non-linear behavior when the properties of macerals of

different ranks are considered. Other, more subtle but no less important, problems are discussed in this book.

Typical of the IEA books, *Coal Blending for Power Stations* is a succinct overview of a complex problem. Also typical of IEA books, the references are comprehensive, including a variety of sources not easily available to most researchers, and amazingly up-to-date, including a number of references from 1995. Less than one-third of the references pre-date 1990. Despite the price, \$225 (\$112.50 for academic purchases), this book is an invaluable addition to the reference library of any coal researcher dealing with coal utilization.

1996 Membership Dues

Once again, it's that time of year: time for membership renewal and payment of annual dues. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/95" appears, then you are paid only through December 1995 and need to pay dues for 1996 if you have not done so already. If you have paid dues in advance for several years, then the appropriate expiration date should appear on your mailing label.

Enclosed with this issue is a colored copy of the 1996 Dues Notice. Please note that membership rates and categories have remained the same: Regular [US \$20/CAN \$30]; Student (US \$15/CAN \$23). We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

Lorraine B. Eglinton
 Woods Hole Oceanographic Institute, Fye 120
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 Woods Hole, MA 02543-1543 USA

Review - *Coal: Resources, Properties, Utilization, Pollution*

Edited by Dr. Orhan Kural (Mining Faculty, Istanbul Technical University), 1994, 494 pp

Reviewed by James Pontolillo

In *Coal: Resources, Properties, Utilization, Pollution*, Dr. Orhan Kural, a mining engineer by trade, sets out to give the reader a cradle (formation and occurrence) to grave (waste disposal and mining reclamation) portrait of coal and its modern use as an industrial fuel. His stated aim is to "introduce the coal activities of Turkey to the international scientific community, to promote the utilization of coal as an energy source, and to foster interaction between research scientists, industrialists, and economists." These are all commendable goals, especially the latter as institutional barriers persist in limiting interdisciplinary approaches in many fields. How successful Dr. Kural is in this undertaking depends for the most part on the reader's expectations.

Coal consists of 32 chapters written by 57 geoscientists (primarily Turkish) covering a far-reaching array of coal-related topics including: origin and occurrence, classification, petrography, physical and thermal properties, inorganic constituents, mechanical properties, Coalbed methane, mining methods and computerization, reserves, industrial uses, sampling, spontaneous combustion, preparation, dewatering and drying, desulfurization, low-rank coal/water mixtures, fluidized-bed combustion, briquetting, coking, pyrolysis, gasification and liquefaction, refuse disposal, economics, environmental impacts, and reclamation. It is readily apparent that the utilization aspects of coal were foremost in Dr. Kural's mind as only seven of the chapters deal with coal geology and petrology. In general, each chapter is a concise, well-written extended summary of a specific area of interest with numerous figures and a wide selection of references that can serve as a starting point for more in-depth reading on the subject matter.

Unfortunately, there are notable exceptions to this appraisal. The chapter on coal classification (chapter 4) is well-written, but devoid of any photographs illustrating the various ranks/types of coal that are discussed in the text. At the very least, this is an unfortunate oversight. The chapter on coal petrography (chapter 5) is so poorly written as to risk confusing those unfamiliar with the terminology employed. Additionally, the reader is treated to only two photomicrographs of polished coal sections depicting the main maceral groups discussed, and these are grainy and of low quality. If anything can make petrographic nomenclature more accessible, it is a judicious selection of clear photomicrographs illustrating the plethora of coal constituents. Worse yet, the

entire volume contains only three illustrations of coal throughout its nearly 500 pages! Inexperienced readers will come away from *Coal* without having the faintest idea of what it actually looks like megascopically or microscopically. Even the excellent sections on inorganic matter in coal (chapters 6 and 7) cannot remedy the situation; they only heighten the reader's attention to the gravely defective presentations elsewhere. Dr. Kural did find ample room, however, for full-page photographs of sooty, hard-bitten miners. In all honesty, it would have been more accurate if he had titled this volume "Coal Utilization and Technology."

However, if the reader shares Dr. Kural's predilections and is not particularly concerned with coal petrology, or can otherwise overlook the book's obvious shortcomings in this area, then *Coal* may prove useful with regard to the engineering and technological aspects of coal. This book's primary audience will be those non-coal professionals who need a broad overview of the many facets of modern coal utilization. *Coal* may also serve well as an introductory level college textbook in a mining curriculum. Each chapter can easily stand alone as an instructional unit and supplementary material to augment the text can be drawn from the accompanying references. *Coal* may be ordered for \$60 - \$100 (depending on the recipient's locale and the mailing methods used) from: Dr. Orhan Kural, FTU, Mining Faculty, Maslak, 80626 Istanbul, Turkey [fax: (212)--285-6531 / e-mail: mdkural@cc.itu.edu.tr].

Davis Honored

At its 45th Meeting, held in Oviedo, Spain earlier this year, the International Committee for Coal Petrology named TSOP-member Dr. Alan Davis as the outstanding petrographer of 1994 and awarded him its prestigious Reinhardt Thiessen Medal. Dr. Davis was recognized "for his outstanding contributions as a teacher and researcher in organic petrology, especially in the development of a chemical and geological basis for the optical properties of coal macerals and their liquefaction products." The TSOP Council wishes to extend its warm congratulations on behalf of all TSOP members to Dr. Davis on his receipt of this well-deserved mark of recognition.

Calendar of Events

1995

December 17 - 22 : New Techniques in the Chemical Analysis of Coal Symposium, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii. This symposium is sponsored by the ACS Geochemistry Division. It will focus on microchemical and bulk chemical techniques including micro-FTIR, microprobe light element analysis, x-ray imaging of coal macerals, IR and XAFS spectroscopy, coal fluorescence, laser pyrolysis gc-ms, NMR analysis and imaging, model compound reactions, trace element analysis of minerals in coal, proton thermal analysis, new approaches to lignin analysis, and coal-bed methane generation. Most of the 23 papers in the symposium are expected to be published in a special issue of the *International Journal of Coal Geology*. For more information, contact Paul C. Lyons, U.S. Geological Survey, 956 National Center, Reston, VA 22092, USA.

1996

February 25 - 29 : Spring National Meeting of the American Institute of Chemical Engineers, New Orleans, LA. For more information, call (212)-705-7845.

March 5 - 7 : Society of Petroleum Engineers International Petroleum Conference & Exhibition of Mexico, Villahermosa, Tabasco, Mexico. For information, call (713)-529-1616.

March 5 - 9 : Taipei Chem'96, Taipei, Taiwan. For information call 44-171-486-1951.

March 10 - 13 : New Zealand Petroleum Conference, Auckland, New Zealand. For information, call 64-4472-0030.

March 11 - 13 : Sub-Saharan Oil & Minerals Conference, Johannesburg, RSA. For information, call 44-171-600-6660.

March 13 - 16 : Oil and Gas Thailand '96, Bangkok, Thailand. For information, call 44-171-486-1951.

March 24 - 28 : American Chemical Society 211th National Meeting, New Orleans, LA. For information, call (202)-872-4396.

April 15 - 17 : GEO-96, Middle East Geosciences Conference and Exhibition, Bahrain. For information, contact Jalil Al Samahiji at 973-753421 [phone] or 973-753475 [fax].

April 21 - 24 : SPE/DOE 10th Symposium on Improved Oil Recovery, Tulsa, OK. For information, call (214)-952-9393.

April 22 - 26 : XIV World Congress on Occupational Safety and Health, Madrid, Spain. For information, call 34-1-404-57-36.

May 5 - 8 : ASTM D-5 Committee on Coal and Coke Meeting, Pittsburgh, PA. For more information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For further information contact John A. Minch at (714)-367-1000.

May 27 - 29 : Joint Annual Meeting of the Geological Association of Canada/Mineralogical Association of Canada, Winnipeg, Manitoba. For information call (204)-474-8857.

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For information, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

June 2 - 6 : Fourth Annual Association of Afro-Asian Petroleum Geochemists (AAAPG) International Conference, Arusha, Tanzania. For information, contact Dr. Y.S. Mwalyego, 4th AAAPG Conference Secretariat-TPDC, P.O. Box 5233, Dar Es Salaam, Tanzania.

June 11 - 13 : 10th Latin American Petroleum Show, Maracaibo, Venezuela. For information, contact International Exhibitions at 713-529-1616 [phone] or 713-529-0936 [fax].

June 14 - 18 : Fifth World Congress of Chemical Engineering, San Diego, CA. For further information contact the AIChE Meeting Department at (212)-705-7320 (fax).

June 17 - 21 : Annual Meeting Canadian Society of Petroleum Geologists, Calgary. For information call (918)-584-2555.

July 7 - 12 : Carbon 96, New Castle upon Tyne, United Kingdom. For information, contact Dr. KM Thomas at 44-0-91-222-8542 (fax).

August: Geochemistry of Coal & its Impact on Environments & Human Health, Beijing, China. For additional information and registration materials, see the display ad in the September 1995 *TSOP Newsletter* (vol. 12, no. 3, p. 4) or contact either of the conference organizers: R.B. Finkelman (703-648-6412) or C.L. Chou (217-244-5492).

August 4 - 14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

August 25 - 30 : 212th National Meeting of the American Chemical Society, Orlando, FL For more information call (202)-872-4396.

August 25 - 30 : 1st Application of Molecular Markers to Environmental Geochemistry Symposium, Orlando, FL This symposium will be held in conjunction with the 212th Meeting of the ACS [see above]. For further information, contact Dr. Robert Eganhouse at (703)-648-5879.

September 8 - 11 : Second AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. For information contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 (fax).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL For further information, contact Jack Crelling at (618)-453-7361 [phone] or (618)-453-7393 [fax].

October 7 - 11 : Fourth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, Cagliari, Italy. For further information, contact the International Committee Chairman Dr. Raj K. Singhal at (403)-241-9460 (fax - Canada).

October 13 - 16 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call Charles L. Pillmore at (303)-236-1240.

November 10 - 15 : AIChE Annual Meeting, Palmer House, Chicago, IL For more information call (212)-705-7845.

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at (918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For information call (202)-872-4396

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For more information, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV. For info call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany.

September 29 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)447-2020 [phone] or (303)447-6028 [fax].

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14442500 ext 1830 [phone] or 51-144425587 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-0396.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact....

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)4530061.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Canada. For information, contact the GSA at (303)-447-2020.

1998 : 30th Anniversary Jubilee Symposium of the International Peat Society, Jyväskylä, Finland.

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ASTM News

Ronald W. Stanton

TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower
 CAER
 3572 Iron Works Pike
 Lexington, KY 40511

 phone: (606)-257-0261
 fax (606)-257-0302

Committee D-5 met in Norfolk, VA in October 1995. The following items may be of interest to members of TSOP. D5671 Practice for polishing and etching coal samples for microscopical analysis by reflected light has been approved and will appear as a separate standard in the 1996 Book of Standards. A round robin for coke petrography is being organized and should occur in Spring 1996. A new test method for priority trace elements has been approved as a provisional standard once it has passed Subcommittee ballot. Another test method for trace elements using ICP analysis is being developed and should be ready for round robin testing early Spring 1996. Jim Luppens (Phillips Coal Co.) received the RA Glenn Award of Committee D-5 for his service to the development of standards, in particular those relating to low rank coals and the problems of moisture.

The next meeting of Committee D-5 will be held in Pittsburgh at the Westin William Penn Hotel, May 5-8, 1996. At this meeting, a special seminar will be hosted by Consol which will cover trace element testing and current and future regulations. Any comments or questions concerning ASTM can be addressed to Ronald W. Stanton, USGS, 956 National Center, Reston, VA 22092 (703-648-6462 / rstanton@usgs.gov).



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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Marie Carmichael Stopes,

Crusading Paleobotanist



Marie hard at work with a transmitted light microscope - the lamplight is focused by a water-filled sphere onto the lower mirror which reflects light through a thin-section and up along the microscope's optical axis (article begins on page 5).

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
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 For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1995-96 TSOP Council

President	Brian J. Cardott
Vice-President	Kenneth W. Kuehn
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Secretary/Treasurer	Lorraine B. Eglinton
Editor	James Pontolillo
Councilor (1994-96)	Stephen Bend
Councilor (1995-97)	Ganjavar K. Khorasani

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
 (703)-648-4849 phone
 (703)-648-5832 fax

For Membership Packets:

Dave Glick
 (814)-854-6543 phone
 (814)-865-3573 fax

Deadline Next Issue: 10 May 1996

President's Letter

"Reach Out"

Brian J. Cardott

Without growth, there is death. For TSOP, that means expanding our membership base (by reaching out to new members) and stretching our abilities (by reaching out to new horizons). The Outreach Committee, Ad Hoc Committees, and others are working to keep TSOP from being the best-kept secret. As Jim Pontolillo has requested several times in this newsletter, we need your help in promoting TSOP at meetings that you attend.

The Outreach Committee sends notices to over 70 organizations. TSOP is in the "Directory of AAPG Associated International Organizations" at the back of the *AAPG Bulletin*, and in the list of AGI Member Societies in *Geotimes*. If there is an organization that does not advertise TSOP but should, please contact MaryAnn Malinconico, chairperson of the Outreach Committee. There are Ad Hoc Committees on outreach to Canada, South America, and Europe. Are you willing to serve on an Ad Hoc Committee to reach another region, or as a regional Corresponding Editor of the *TSOP Newsletter*?

Diversification and outreach are related. The more widely organic petrology is applied, the more likely it is that TSOP will be known. Likewise, the more widespread TSOP is promoted, the greater potential for discovering new ways to utilize organic petrology. We would like to see all organic petrologists working in the field of organic petrology. Diversification is therefore related to longevity. One exciting new area of organic petrology is in environmental applications, as exemplified by the TSOP Research Subcommittee on Environmental Organic Petrology. However, it is imperative that we work with other groups on related projects, as is taking place with the ICCP and AGI on environmental applications.

According to Webster, the term "liaison" is "a linking up or connecting of the parts of a whole,....in order to bring about proper coordination of activities." TSOP has done this informally for many years with several groups. It is time to formalize our contacts with related societies through TSOP Liaisons. I am presently selecting liaisons to the following groups: American Association of Stratigraphic Palynologists (AASP), AAPG Energy Minerals Division, American Chemical Society Fuel and Geochemistry Divisions (ACS), American Geological

Institute (AGI), American Society for Testing and Materials (ASTM), Canadian Society for Coal and Organic Petrology (CSCOP), European Association of Organic Geochemists (EAOG), GSA Coal Geology Division, and the International Committee for Coal and Organic Petrology (ICCP). The purpose of the liaisons is to foster communication with the groups for joint projects, publications, and meetings, and provide updates in the *TSOP Newsletter*. Do you know of a group with which we should coordinate?

I ask for your participation in TSOP outreach. The more (active members and new members), the merrier.

Honorary Member Inductees

The TSOP Council is pleased to announce that John R. Castano and Peter A. Hacquebard were elected as TSOP Honorary Members by Council on August 27, 1995. Their plaques state "Presented To ..., Honorary Member, In Recognition of Distinguished Contributions and Devotion to Organic Petrology and Service to the Society, The Society for Organic Petrology, 1995."

Honorary Members are elected for life with all of the privileges of membership in the Society. Castano and Hacquebard join William Spackman and Marlies Teichmüller as TSOP's Honorary Members. Honorary Membership is the Society's highest mark of recognition. Congratulations!

TSOP - AAPG Relationship

TSOP is listed in the "Directory of AAPG Associated International Organizations" in the *AAPG Bulletin*. AAPG Associated Society status allows TSOP members attending the 1996 AAPG Annual Convention in San Diego (May 19-22) to pay the AAPG Member registration fee of \$200 (US), a savings of \$60 (US) over the Non-Member registration fee.

IEA Publications Sale!

A recently revised price list (dated January 1996) is now available from IEA Publications. Prices on many older publications have been slashed; all old merchandise must go to make room for new stock. For a copy of the revised price list contact: CAER/University of Kentucky, IEA Publications/Theresa Wiley, 3572 Iron Works Pike, Lexington, KY 40511-8433. ph: 606-257-0308 / fax: 606-257-0302 or 0220

Second Announcement and Call for Papers

Thirteenth Annual Meeting of The Society for Organic Petrology

September 15-19, 1996
Southern Illinois University; Carbondale, IL U.S.A.

Program

Sunday, September 15 : A pre-meeting short course on the *Petrology of Cokes, Chars, Carbons, and Graphites* covering the use of petrography in the manufacture and utilization of these materials presented by Prof. Jack Crelling and others.

Monday, September 16 and Tuesday, September 17 : Technical and poster presentations. The Monday morning theme session will be devoted to *New Applications of Organic Petrology*. Contributions are invited.

Wednesday, September 18 and Thursday, September 19 : A post-meeting field trip to look at the *Tradewater Formation in the Lower Pennsylvanian section of southern Indiana* will be led by Eric Kvale and Maria Mastalerz of the Indiana Geological Survey. The coals in this formation are some of the lowest sulfur reserves in the Illinois Basin and are much duller in composition than the better known Herrin No. 6 or the Springfield No. 5 coals that occur higher up in the section.

Call for Titles and Abstracts

Please submit a tentative **title** for your presentation by **April 15, 1996** to Jack Crelling (address below) and indicate your preference for either an oral or poster presentation. Camera-ready extended **abstracts** (1 - 3 pages in length, figures included) must be submitted to the same address by **May 17, 1996**. Abstracts should be typed single-spaced using letter quality printing (Times Roman 12 point type) with 1.2" margins on all sides. The abstract format should be as follows:

Use of Laser Heated Cavity Spectroscopy for Rapid Trace Element Analysis in the Field

J. Senftle¹, C. Landis², and A. Zigler¹

Advanced Power Technologies, Inc., 1250 24th Street, Suite 850, Washington, DC 20037

²American Colloid Company, 1500 West Shure Drive, Arlington Heights, IL 60004

Laser-induced Heated Cavity spectroscopy permits detailed analysis or rapid screening analysis of trace elements in water, soils, and rocks with little or no sample preparation.....The intense radiation from a laser.....

Publication : Authors will be requested to submit papers for publication in a special issue of the *International Journal of Coal Geology*. Completed manuscripts will be required before December 31, 1996.

Future announcements and registration information will appear in upcoming issues of the TSOP Newsletter For additional information, please contact the local organizing committee at the Department of Geology, Southern Illinois University, Carbondale, IL 62901:

Jack Crelling
ph: (618)-453-7361
jcrelling@geo.siu.edu

Russ Dutcher
ph: (618)-453-7362

Mike Kruge
ph: (618)-453-7368
kruge@geo.siu.edu

Bill Huggett
ph: (618)-453-7381

(This is the first installment of a three-part article. All references will appear in a bibliography at the end of part three.)

Marie Carmichael Stopes, Crusading Paleobotanist

James Pontolillo

Part One

Within the scientific community, Dr. Marie C. Stopes is best known as an English paleobotanist whose research focused primarily on the Carboniferous and Cretaceous floras of England, New Brunswick (Canada), and the United States. She was also the author of notable studies on early angiosperm wood, plant reproductive structures, and important classification works in coal petrography. However, to the European general public of 1918-1930, Marie Stopes was a pioneering contraception and reproductive health advocate, sociologist, and literary figure. Most accounts of her life's work are sadly unbalanced and incomplete: the scientific community has completely ignored her important social role, while women's health advocates and historians have neglected her contributions to paleobotany and coal petrology. The aim of this article is to present a more balanced review of Marie Stopes' scientific, social, and literary contributions.

Marie Charlotte Carmichael Stopes was born on October 15, 1880 in Edinburgh (Scotland), the first child of Charlotte Carmichael and Henry Stopes. Her mother was a pioneer of women's university education. She was the first woman to take the University Certificate in Literature, Philosophy, and a number of other subjects at Edinburgh University. Even though a woman might meet all the requirements necessary for an academic degree, actual diplomas were not granted to women at this time. Charlotte Carmichael later established a reputation for herself as a highly-respected Shakespearean scholar, as well as a passionate advocate of women's suffrage. Marie's father was employed as an engineer and a brewery architect. Henry was better known, however, as a dedicated gentleman archaeologist who possessed the largest private collection of flint implements in England. He was also the discoverer of the Red Crag Shell (which provided the first evidence of humans in the Pliocene) and, like his wife, a fervent supporter of women's suffrage. Marie had one sibling, a younger sister named Winifred born in 1884.



Marie (right) with her younger sister Winifred.

Marie was educated at home until her twelfth year by parents who were very different individuals. From her mother Marie received a smattering of formal education with little, if any, praise for her accomplishments. Some biographers (notably Briant, 1962; and Hall, 1977) have identified this maternal indifference as the source of Marie's lifelong anxieties and inferiorities. Her father, on

the other hand, was by all accounts a warm and loving parent; Marie adored him. From her earliest years, she followed him on his far-ranging archaeological digs. Marie would help dig, wash, and catalog the recovered specimens. On at least one occasion, she skillfully explained the significance of the finds to a group of flabbergasted visiting academics. Marie, always eager to please her father, developed as intense a love for the sea as Henry's. She regarded it as a universal panacea and drank daily large glasses of sea water whenever possible. By 1890 her parent's relationship had cooled and they were distant with each other, although this does not appear to have effected the children to any significant degree. Despite the lack of a strong religious environment at home, Marie developed an acute sense of her own sin and a seriously felt responsibility for those less fortunate.

At the age of 12 Marie was sent to St. George's High School, a Suffragist school in Edinburgh. Although she had been home-schooled by capable parents, Marie was markedly behind in almost all aspects of learning for her years. The bulk of her time was dedicated to correcting these educational deficiencies. She spent her spare time collecting stamps and sea shells, as well as signatures for women's rights petitions. All in all, she was an unremarkable and average student. As evidenced by her diaries, Marie's indifferent performance led her to stress any success, however minor (a trait that would evolve into compulsive self-congratulation as an adult that both friends and enemies disliked).

In 1894 the Stopes family moved to Hampstead (England) so that fourteen year-old Marie could attend North London Collegiate, one of the finest girl's schools of the day. With access for the first time to a large lending library, Marie read voraciously on a wide range of subjects showing an especial zeal for science and natural history. During a family visit, one of her Scottish aunts, a highly religious woman, expressed horror that Henry Stopes even mentioned the name of Darwin in front of his daughters. Naturally, Marie championed her father, and confessed that she had also read Darwin. Whereupon the aunt whisked Marie off to another room, demanding immediate repentance and recantation. She refused and was summarily condemned to hell by her indignant relative.

Marie's late teen years (1896-99) were a time of great change in her intellectual life. She suddenly transformed herself from a mediocre student into a brilliant one. While perhaps unexpected, such drastic changes in adolescent performance are not that uncommon an occurrence. At this time Marie also ended her brief involvement with the Society of Friends (Quakers). In dropping formal religion altogether, she explained that

she preferred to rely on direct communication with the Almighty. Her educational performance improved to such a degree that, upon leaving North London Collegiate in 1898, Marie was granted a scholarship in science (chemistry).

Both Henry and Charlotte wanted their daughter to continue her education at one of the women's colleges attached to London University. Marie however, wanted the best education possible and at that time women's colleges did not attract stellar faculty. Against her parent's wishes, she enrolled as a student in the science department of University College (London) in 1900. Marie's request to skip intermediate chemistry and pursue honors degree chemistry was rejected. Unwilling to politely accept this rebuff to her wishes, Marie decided to switch fields entirely and pursue an honors degree in botany instead. Even though her previous interest in botany had been quite limited (some minor paleobotany with her father), Marie won the Gold Medal in Junior and Senior Botany at the end of her first year. She was also the President of the Women's Union debating society and shocked university authorities by starting joint debates with the men's society. During her second year, Marie's capacity for hard work became readily apparent. At the end of that year Marie took her final B.Sc. examination receiving First Class Honors in Botany and 3rd Class Honors in Geology/Physical Geography. It was generally considered impossible for a student to receive an honors examination in one year. Not only did Marie receive two in one year, she was also the only candidate in the science department to receive any honors that year (all of the male candidates having failed their examinations). For her outstanding academic performance, Marie was awarded the university's Gilchrist Scholarship. Her last few months at University College were spent as a research assistant to Drs. F.W. Oliver and D.H. Scott, both pioneers in the study of the reproductive aspects of early plant life. Paleobotany, which had originally been Marie's second choice after chemistry, had now become a major passion. Her first scientific publications saw print at this time (Stopes, 1903a-c).

In October 1903, with the funds from her Gilchrist Scholarship, Marie headed for post-graduate work at the Botanical Institute of Munich University. At the time she was the only female student among 5000 men. Marie went to Munich with the specific intent of working under Prof. K. Göbel, the most eminent European plant morphologist of the day. Through her studies at University College, Marie had become passionately interested in the reproductive habits of the cycads. Prof. Göbel had the most comprehensive collection of cycads (fossil and living), and Marie was determined to work on the cellular structure of their ovules and ova. At first, the

professor tried to dissuade her since the university did not confer degrees upon women. Marie ignored this obstacle and worked 12 hour days during the week, and up to 30 hours at a stretch on the weekends. Somehow she found the time to take in the art and cultural life of Munich. Marie also had a number of suitors and treated all but one of them with a studied indifference. Impressed by her zeal, Prof. Göbel convinced the regents of Munich University to change their regulations. When her research was complete, Marie presented and ably defended her thesis on cycads in German (which she had taught herself since arriving in Munich!). Her work on cycad ovules proved fundamental to the understanding of the evolution of integumentary structures (Stopes; 1904b, 1905). Marie was the first woman to receive her Ph.D. (*magna cum laude*) from Munich University; she was the only recipient of such honors that year. Although offered a research assistant's post with the Botanical Institute, Marie decided that it would do little to further her career. She left Munich in June 1904 and returned to England.

At the beginning of October 1904 Marie accepted a position as junior lecturer and demonstrator in botany at Owens College/Manchester University. In a by now familiar pattern, she had the distinction of being the first woman appointed to the college's scientific staff. Marie received criticism early on when she initiated a series of formal balls open to undergraduates; at the time, faculty and students did not mix socially. In her spare time, Marie also brought paleobotany to the slums of Manchester through a program of evening lectures for factory workers in the Ancoats district. In 1905 Marie received her D. Sc. degree, making her the youngest doctor of science in Britain. She was also elected as a member to the Manchester Literary and Philosophical Society in April of that year.

By now most of Marie's botanical passion was channelled into the study of coal. Manchester was located near the Lancashire and Yorkshire coalfields which were, at that time, the world's richest source of coal-balls. She immediately began to work on the extensive collection of fossil plants housed at Manchester University. This led directly to several papers (Stopes, 1906a, 1907a - 1907e; Stopes and Fujii, 1906), a general interest book for young readers (Stopes, 1906b), and a collaborative paper on coal-balls (Stopes and Watson, 1908) that was the standard reference work on the subject for a number of years. Considering her relative youth, Marie displayed a degree of expertise that often surprised those who did not know her. In 1907 she read a paper before the British Association for the Advancement of Science. Sir Jethro Teal (Director of the Geological Survey) was in attendance and commented afterwards, "I went to

encourage a young girl, and I remained to learn from a master."



Marie in her doctoral robes.

As was briefly noted above, Marie had a strong effect on her colleagues while at the Botanical Institute in Munich. Many of her acquaintances have remarked on the "magnetic effect" Marie exerted on others throughout her life. In at least one case, the effect was like that of a moth to a candle flame. At a social gathering in 1907 (exact date not recorded) Marie met Captain Robert Falcon Scott, the famed Antarctic explorer of 1902. By all accounts, she convinced him of the value of paleobotany and the need to collect samples on any future expeditions. In 1910, Scott set sail in command of the British Antarctic "Terra Nova" expedition. While the main body of the expedition conducted scientific research along the shores of the continent, Scott set off with four companions on November 1, 1911 in an attempt to be the first to reach the South Pole. The conditions enroute were terrible beyond all their planning. The party's motor tractors broke down and all the horses and dogs soon died. The five explorers were reduced to hauling their sleds over the rough icy terrain by hand. They finally reached the pole on January 18, 1912, unfortunately one month after a group of

Norwegians under Amundsen. The Scott party headed back through weather that was worse than on the inbound leg of the trip. On February 8, 1912 the party collected 35 pounds of plant fossils and coal from outcrops of the Beacon Sandstone near a moraine at the base of Mount Buckley. Scott's diary records the increasing misery of the party : repeatedly they had to abandon essential equipment because they were too weak to continue forward. Scott's party died of exposure and starvation on March 29, 1912, a mere eleven miles from one of their supply depots. When their final camp was found in November 1912 by a search party, the fossil plants were among their few remaining possessions.

Although Marie actively discouraged her many suitors while at the Botanical Institute in Munich, there was a fellow student who caught her eye — a Japanese researcher named Kinjiro Fujii. By the time Marie left Munich and returned to Britain to assume her position at Owens College/Manchester University, they were quite attached to each other. Enough so that Dr. Fujii followed Marie to Britain where they socialized and collaborated professionally until early 1907. Then Dr. Fujii's sabbatical came to an end and he had to return to Japan. With expectations of marriage, Marie applied for and received a grant from the Royal Society of London (again, the first-ever for a woman) with the stated goal of collecting and studying Japanese fossils to solve the mystery of the angiosperms' sudden appearance and dominance.

Marie left for Japan in July 1907 and upon her arrival worked out of the Botanical Institute of the Imperial University in Tokyo. While in Japan she was accorded the status of an "honorary man" on the basis of her reputation; there were no women scientists of any type in Japan at this time. Marie conducted trips through the coalfields and trackless forests of Hokkaido accompanied by an interpreter, two guides, thirty porters, and a policeman. As a working white woman out and about in a very insular Japan, Marie was a crowd-drawing oddity. While she found no coal-balls, she did discover one of the earliest examples of petrified plant ovaries and also collected a number of calcareous nodules containing Cretaceous plants with well-preserved structures. This expedition resulted in a series of publications (Stopes, 1909a-b; Stopes, 1910a - 1910e; Stopes and Fujii, 1910), including a second general interest book (Stopes, 1910f). Unfortunately, during the course of her work it became apparent that the relationship with Dr. Fujii was destined not to be. Marie left Japan on January 24, 1909 and returned to England. As a prelude to her later literary interests, Marie also wrote an article (*Trans. Roy. Soc. Lit.*, series 2, 29 (3): 152-178) and two books (*A Journal from Japan*

(1910) and *Plays of Old Japan : The No* (1913)) dealing with various aspects of Japanese cultural life.

March 1909 found Marie back in England and now a full lecturer in botany at Owens College/Manchester University. She was also commissioned by the British Museum at this time to perform a full-scale cataloguing and description of its Cretaceous flora collection. Not yet thirty years old, Marie was considered one of the foremost paleobotanists in the world. Early in 1910, at the invitation and with the funding of the Canadian government, Marie began a study of the Carboniferous flora of New Brunswick in order to resolve a forty year controversy over the nature of the deposits. Her work eventually led to an important monograph (Stopes, 1914a) establishing the age of the plants, previously reputed to be Devonian or Silurian, and identifying many of them with species already known from Europe. In April 1910 Marie began publication of her own annual magazine satirizing the botanical world — *The Sportophyte*, subtitled "A British Journal of Botanical Humour." It lasted through volume IV (April 1913). She was also elected a Fellow of University College (London) during the course of the year.

Marie's life and career were nearing a turning point, although she could hardly have foreseen the drastic changes that would soon take place. Early in 1911 she met a Canadian botanist, Dr. Reginald Ruggles Gates, at a Geological Society of America meeting in St. Louis, Missouri. After a very brief courtship, they were married on March 18th in Canada. Marie, with her new husband in tow, returned to England in April and resumed her career at Owens College/Manchester University. However, she now had the distinction of holding the first and only lectureship in paleobotany in all of Great Britain. Her scientific publications for this time period consist of a number of short notes (Stopes, 1911a - 1911e; Stopes, 1912b - 1912f) and a lengthy paper on early European angiosperms (Stopes, 1912a). At some point in the year (date uncertain) Marie was elected to the Geologists' Association of London. In a foreshadowing of her future social independence, Marie had kept her maiden name in accordance with old Scottish custom. On her return to England, she had solicitors file legal documents to establish her married name as *Marie C. Stopes*. Several years of squabbling followed with old-fashioned editors who repeatedly attempted to publish her scientific papers under the surname *Gates*. However, Marie was not about to be cowed and won out in the end. In another preview of things to come, Marie joined the Women's Social and Political Union in 1912.

End of Part One.

Part Two will appear in the June 1996 TSOP Newsletter

7th Australian Coal Science Conference

Monash University, Gippsland, Australia

December 2 - 4, 1996

The Seventh Australian Coal Science Conference will be held December 2 - 4, 1996 at Monash University, Gippsland Campus, Churchill, Victoria, Australia under the auspices of the Australian Institute of Energy. The program will consist of two parallel sessions on various aspects of coal science and technology. Leading speakers from Australia and overseas are being invited to present plenary papers on key issues in coal science, highlighting the current situation, future directions, and implications for the coal industry. Technical tours to places of interest in the Latrobe Valley are being organized. The conference will deal with the following topics relating to coal with emphasis on the scientific aspects:

Greenhouse effect update
Clean coal technologies
Environmental aspects
Characterization
Beneficiation
Coking and Carbonization
Briquetting/agglomeration
Geotechnical Engineering

Gasification
Value added products
Coal sampling and analysis
Structure
Combustion
Liquefaction
Geology
Ash properties and uses

Contributions on other coal related topics will also be considered. Intending authors are invited to submit titles of proposed papers with an abstract of about 250 words by **May 1, 1996** to the address below. Notification of acceptance for presentation and instructions for preparing manuscripts will be sent out by early June 1996. Submission of the complete text will be required by September 4, 1996. Accepted papers will be included in the Conference Proceedings.

If you are interested in further information on this conference, or wish to present a paper, please contact:

Dr. Geoff Perry
HRL Technology Pty Ltd
Private Bag No 1
Morwell 3840
Victoria, Australia

Tel: 61-0-51-321500

Fax:61-0-51-321580

E-mail: perrg@hrl.com.au

Report: New Techniques in the Chemical Analysis of Coal Symposium (Honolulu, Hawaii; December 17-22, 1995)

P.C. Lyons¹, CA Palmer¹, R.M. Bustin², A.M. Vassallo³, A.N. Buckley³
¹U.S. Geological Survey ²The University of British Columbia ³CSIRO, Australia

The symposium *New Techniques in the Chemical Analysis of Coal*, which was part of the 1995 International Chemical Congress of Pacific Basin Societies (Honolulu, Hawaii, December 17-22, 1995), was attended by participants from New Zealand, Australia, Europe, Japan, Canada, and the United States. The symposium was organized by Paul C. Lyons and Curtis A. Palmer of the U.S. Geological Survey (United States), R. Marc Bustin of The University of British Columbia (Canada), and Anthony M. Vassallo of the Commonwealth Scientific and Industrial Research Organization (CSIRO, Australia). Alan Buckley (CSIRO), substituting for A.M. Vassallo, was one of the four co-chairmen of the two symposium sessions. The symposium focused on new *in situ* and bulk techniques for analyzing coal and the implications of these techniques for understanding coal composition and structure, coal processing, combustion, and air pollution. These techniques included light-element microprobe analysis, secondary ion mass spectrometry (SIMS), reflectance and transmission micro-FTIR, X-ray absorption near-edge spectroscopy (XANES) and near-edge absorption micro-spectroscopy (NEXAFS), X-ray absorption fine structure (XAFS), X-ray photoelectron spectroscopy (XPS), *in situ* inner shell spectroscopy, instrumental neutron activation analysis (INAA), thermochemolysis, nuclear magnetic resonance (NMR) spectroscopy and imaging (NMRI), and pyrolysis-gas chromatography/mass spectrometry (py-gc/ms). These tools were used to address a whole series of problems related to air pollution, surface properties of coal, coal utilization, and coal-combustion problems. The keynote talk was on coal porphyrins.

Several of the papers delivered at the symposium dealt with *in situ* analysis of coals and coal macerals. Marc Bustin (The University of British Columbia) reported on the application of electron microprobe analysis of light elements in coal macerals and showed good agreement with ASTM data for C and O contents. He also demonstrated using microprobe data a progressive decrease in O with progressive increase in rank from lignite to anthracite and showed that the C contents of vitrinite and inertinite macerals in anthracite are similar. Reflectance micro-FTIR studies of vitrinite and sporinite

by Maria Mastalerz (Indiana Geological Survey) and Marc Bustin show certain functional groups (CH₂, CH₃, C=O, and C=C) in vitrinite, sporinite, cutinite, Semifusinite, and fusinite and their variation in bituminous coals using CH₂/CH₃, C=O/C=C, and C=O/CH₂⁺CH₃ ratios. The paper by Alan Buckley (CSIRO) summarized the progress in the application of XPS and TOF-SIMS to coal-surface characterization, such as hydrophobicity in bituminous coals from the Bowen Basin of Australia. Using model compounds as fingerprints, G. Michael Bancroft and Masoud Kasri (both from The University of Western Ontario) demonstrated that several organic sulfur groups can be identified in Euramerican coals by XANES, a synchrotron radiation technique. This technique, using both L-edge and K-edge XANES, showed major differences in the relative amounts of sulfur functional groups (e.g., heterocyclic sulfur, mercaptan sulfur, and thiophenic sulfur) in different coals. Carbon NEXAFS and X-ray imaging was applied by George Cody (Geophysical Laboratory) and R.E. Botto (Argonne National Laboratory) to coal macerals in ultra-thin section. They proved that the macerals telocollinite, cutinite, sporinite, and fusinite can be imaged and their absorption bands distinguished, which can be related to concentrations of aromatic carbons and sp³ hybridized carbons. Bin Gong and co-authors (The University of South Wales) reported on the application of time-of-flight SIMS to the analysis of minerals in coals. Their depth-profiling chemical data show that the subsurface layer (< 10 nm) in quartz and other minerals is different from the surface chemistry.

A variety of techniques were reported for the bulk analysis of coal. XAFS, another synchrotron radiation technique, was used by Frank Huggins and G.P. Huffman (both from The University of Kentucky) to show the trace element variation (concentrations > 5 ppm) in float/sink samples and their implications for air pollutants as indicated in the 1990 Clean Air Act Amendments. A related paper by Curtis Palmer and Paul Lyons (both from the U.S. Geological Survey) reported on the use of INAA, another non-destructive bulk technique, in the trace-element analysis of major minerals in Euramerican coals. Using a mass-balance

approach and very pure concentrates of quartz, kaolinite, illite, and pyrite, they revealed that these minerals account for many of the trace elements known in Euramerican coals. Thermochemolysis was applied by Daniel E. McKinney and Patrick G. Hatcher (both from The Pennsylvania State University) to a maturation series from peat to subbituminous coal, and showed that lignin-derived monomers decrease while the ratio of methylated acids to methylated aldehydes increases. Deswelling and swelling of the Illinois No. 6 coal was measured by Lei Hou and P.G. Hatcher (both from The Pennsylvania State University) and RE. Botto (Argonne National Laboratory) using pyridine and the combined techniques of NMR and NMRI. This study showed that coal swelling is anisotropic, with the swelling in the plane perpendicular to bedding being greater. W. Roy Jackson (Monash University, Australia) and co-authors used py-gc/ms and NMR to refine the guest-host model of the structure of brown coal. The technique of ^{15}N NMR was used by Heike Knicker (The Pennsylvania State University) and co-authors who concluded that the preponderance of pyrrolic nitrogen over pyridinic nitrogen was even greater than that expected from previous X-ray spectroscopic studies of coals of similar rank. She was the first to show ^{15}N NMR spectra of coal and their chars. P.K. Mukhopadhyay (Global Geoenergy, Inc.) and co-authors demonstrated the mineralogical speciation in fly and bottom ash as related to the parent coal burnt in a Canadian power plant. Elements such as As, Cr, Pb, and rare earths were enriched ten to twenty times in fly ash. Arsenic was also shown by X-ray mapping to be associated with Fe in bottom ash. In a related paper, Bruce Chadwick, R. Ashman, and co-authors (Cooperative Research Centre for New Technologies for Power Generation from Low-Rank Coal) summarized the new techniques for on-line analysis of gas-phase molecular sodium, a major contributor to fouling and slagging in coal combustion systems using low-rank coals. W.A. Barton and co-authors (CSIRO) using gravimetric analysis and ^1H NMR showed the influence of coal oxidation on water sorption processes.

The keynote speaker at the symposium was Raymond Bonnett of the University of London. His talk on porphyrins in coals summarized the state of knowledge in the field. Because of the low concentration of porphyrins and metalloporphyrins in coal ($0-10\ \mu\text{g}\text{g}^{-1}$) their isolation and analysis present difficult problems. He showed that Fe and Ga porphyrins, rather than Ni and VO (vanadyl) porphyrins, are the norm in coal, and that an averaged porphyrin composition can be used as a maturation indicator in coal.

It is clear from these papers that there has been much progress in the field of coal chemistry, in both the

refinement of old techniques and the introduction of new techniques for coal analysis. Much remains to be done in applying *in situ* techniques — which have mainly been used to understand the chemical composition of and the genesis of elements in coal macerals — to elucidate bulk characteristics, which relate mainly to technological properties and use. Future work will most likely be directed toward environmental issues (e.g., air and water quality), coal conversion and beneficiation processes, coal combustion problems, and the elemental and organic chemistry of coal macerals.

Most of the papers from the symposium will be published as a special issue of the *International Journal of Coal Geology*, which is expected to be published around July 1996.

Magoon and Dow Net Honors

In the December 1995 issue of the *AAPG Explorer* it was announced that two TSOP members, Leslie B. Magoon and Wallace G. Dow, have been awarded the AAPG's Robert H. Dott Sr. Memorial Award for Best Special Publication in 1994 for their recent memoir "The Petroleum System - From Source to Trap" (eds. L.B. Magoon & W.G. Dow) [see notice in *Publications of Interest*, p. 17]. On behalf of all its members, the TSOP Council wishes to extend its warmest congratulations to Leslie and Wally on their receipt of this well-deserved mark of recognition.

Call for Corresponding Editors

In an effort to provide a broader range of information and to bring an enhanced international flavor to the our publication, members are invited to become regional Corresponding Editors of the *TSOP Newsletter*. Corresponding Editors will be expected to monitor activities related to organic petrology in their geographic "beat" and to provide a minimum of one or two news-style articles per year for inclusion in the newsletter. Applicants do not need to reside in the region they wish to cover, but should be fully conversant with the region and its institutions. Corresponding Editors are being sought for the following regions: United States, Canada, South America, Western/Central Europe, Eastern Europe and the former USSR, Africa, the Middle East, Mainland Asia (includes Japan), and the Pacific Basin. For further information or to apply, please contact the newsletter Editor (see page 2).

Coal Geology Gumbo : Environmental and Paleoenvironmental Perspectives

Geological Society of America 1995 Annual Meeting
New Orleans, Louisiana

James C. Hower and Sharon S. Crowley

The year 1995 marked the 40th anniversary of the first meeting, also in New Orleans, of the Geological Society of America's Coal Geology Division. The Coal Geology Division's technical session at the 1995 annual meeting of the Geological Society of America consisted of the remnants of two failed theme sessions plus four other contributed papers. The session was chaired by Sharon Crowley and Jim Hower. Abstracts are published in the Geological Society of America Abstracts with Programs, v. 27, no. 6, p. A-138-A-141.

The first ten papers, addressing issues in applied coal geology, were led off by John Popp (Mapco Coal) who discussed recurring mineability problems associated with channel sandstones in an underground mine in eastern Kentucky. Steve Greb (Kentucky Geological Survey) used the Fire Clay coal bed in eastern Kentucky to illustrate coal availability studies. Channel sands also play an important role in the mineability of the Fire Clay coal bed. Peter Warwick (U.S.G.S.), presenting for Dan Vogler (Wyoming Geological Survey), applied some of the same principles to the study of the Wyodak-Anderson coal bed in the Powder River Basin. The past few years have seen an increase in the research activity on trace element emissions in coal combustion and on the chemistry of the solid by-products of coal combustion. Cortland Eble (Kentucky Geological Survey) addressed the impacts of possible regulation of hazardous trace element emissions on the future development of Kentucky coal. Jim McGee (U.S. Geological Survey) and Jim Hower (University of Kentucky Center for Applied Energy Research) each discussed the chemistry, mineralogy, and petrology of coal combustion by-products. The former study addressed element partitioning between fly ash and bottom ash from a Kentucky power station. The latter study examined the impact of coal, fly ash, and flue-gas desulfurization reagent chemistry on the final pozzolonic product at two Kentucky power stations burning similar blends of high-sulfur Illinois Basin coal but differing in the approaches to SO₂ control. The use of peat for environmental remediation, specifically in the uptake of heavy metals and hydrocarbons, was discussed by Art

Cohen (University of South Carolina). Heinz Damberger (Illinois State Geological Survey) discussed the difficulties in the determination of moisture in coal and the implications of coal moisture in taxation. The increased use of low-rank, high-moisture coal and the deeper cleaning of bituminous coals, which adds moisture to the fine coal, are both impacted by issues surrounding coal taxation. Chris Toles (formerly University of Kentucky, now U.S. Department of Agriculture / New Orleans), reviewed his research on the phosphoric acid activation of high volatile A bituminous maceral concentrates and a gymnosperm lignite. The final paper of the applied coal geology segment was presented by Steven Schatzel (U.S. Bureau of Mines). He discussed methane monitoring and methane control at a deep mine in Carbon County, Utah.

The second portion of the session consisted of two papers from a wetlands theme session and four other papers. Sandra Neuzil (U.S. Geological Survey) discussed rates of peat accumulation in Indonesia. The Lower Kittanning (Appalachians) - Colchester (Eastern Interior Basin) -Croweburg (Western Interior Basin) coal bed(s) can be correlated across a wide portion of the United States. Frank Dulong (U.S. Geological Survey) noted the compositional variables which can be attributed to variations in the climate across the region. Trent Rehill (Dalhousie University) won the best paper award for his presentation of the stratigraphy of Late Viséan to Early Permian cycles in the Maritimes Basin, much of which lies beneath the Gulf of St. Lawrence. Tim White (Pennsylvania State University) entered the discussion of the origin of fusinite, attributing periodicity in the abundance of fusinite in the Clarion coal bed in Pennsylvania to the periodic emergence and combustion of the peat surface. Nicolai Pedentchouk (Auburn University) outlined the different organic facies found in Holocene sediments in the Rajang River delta, Sarawak, Malaysia. John Calder (Nova Scotia Department of Natural Resources) closed the session with a discussion of the nature of the margin of the Harbour seam at Table Head in the Sydney Basin of Nova Scotia. [continued on back page]

The following paper was presented for discussion at a recent AGI Executive Committee Meeting [November 5-6, 1995] and has been distributed with blanket permission for reproduction to all AGI member societies. Harrison H. Schmitt is a former Apollo 17 astronaut (as such, the only geologist to get to the Moon) and a former GOP senator from New Mexico. The opinions expressed are those of Schmitt and the Annapolis Center and in no way represent the policies of TSOP or the AGI. A reply follows.

Science and Regulation : Marriage or Divorce?

Harrison H. Schmitt
Chair, The Annapolis Center

Proper organization and implementation of the management of the Federal Government's scientific role in natural resource and environmental research remains crucial with respect to the acquisition of good science for environmental and health risk assessment. Few, if any, models exist in our Federal Government's history, however, that lend support to the bureaucratic marriage of related regulation and science within a given agency. Indeed, several examples of bad results exist that would argue for clear separation and, conversely, several exist that indicate that separation works remarkably well.

In general, it appears that separation of topical scientific research from regulatory functions enables the affected private and public sectors of society to work together in an atmosphere of cooperation rather than distrust, even where basic differences of opinion may exist. Separation also prevents the politically dominant regulators from forcing their agency's "science" to support their political conclusions when such support is not warranted.

The worst negative examples of the marriage of regulation and research probably lie in the political demise of nuclear power technology and mineral exploration in the United States. In the first instance, the combination of regulation and research (and secrecy) in the Atomic Energy Commission (AEC) and later in the Department of Energy (DOE) led to a failure of objective science and engineering research to provide for sound operation and regulation of nuclear power within full view of the public. This failure eventually led to the almost total collapse of public confidence in things nuclear in general and nuclear power specifically.

In the second case, whatever may have been the mistakes in the past, the transition of the Department of the Interior and the Department of Agriculture from cooperative partners to regulatory adversaries in mineral exploration, aided and abetted by the Environmental Protection Agency (EPA), has rapidly

increased our dependence on foreign sources of energy and hard minerals, decimated many local economies, driven related business off-shore, and undermined our influence on the global mitigation of the environmental consequences of mineral extraction and processing.

In contrast, the separation of research and regulatory functions relative to aeronautics has been between the National Advisory Committee on Aeronautics, later the National Aeronautics and Space Administration (NASA), and the Federal Aviation Administration. Much research, some cooperatively with NASA, also occurs in the private sector. Additionally, the National Oceanic and Atmospheric Administration provides independent research and forecasts of aviation weather. The positive results of this separation, in addition to extensive research and development in the private sector, has led to world dominance of American commercial aircraft and flight operations as well as great public confidence in air travel even in the face of strings of accidents.

The advantage of separation of research and regulation for technologically complex activities is further shown by the example the continuously exploding arena of telecommunications, with research left to the private sector and NASA and regulation placed in the Federal Communications Commission. The public's use of telecommunications technology and the economic value of telecommunications to the country further support the importance of separation.

In contrast, again, the marriage of research and regulation [in this case, under the auspices of the EPA] has eroded public confidence in both technology's impact on the environment and the appropriateness and efficacy of environmental regulations. The perception is growing that environmental and health regulation and its economic and social costs focus (1) on the least important environmental and health issues and (2) on law abiding citizens rather than those who abuse the environment.

The Army Corps of Engineers' apparent regulatory excesses related to wetlands suggests another failed marriage, brought on by the modern legislative authority and judicial direction under which that organization conducts wetlands regulation.

On the other hand, agricultural regulation by the Department of Agriculture and agricultural research by the Land Grant Colleges and Universities have remained organizationally separated even though the research has been funded through the Agricultural Extension Service of the Department of Agriculture. The result has been the "green revolution" of this century that has made this country the major source of food and agricultural technology for the world.

Another generally successful separation of research and regulation has been that in the area of medicine where research responsibility lies within the National Institutes of Health (NIH) and the private sector and regulatory responsibility belongs to the Food and Drug Administration. Recent regulatory difficulties related to the FDA appear to be an aberration that should not detract from the great success of this model.

In light of this analysis, one option for environment and natural resources research and regulation would be the consolidation of all research related to environment and natural resources in a single, independent agency, called, for example, the Environment and Natural Resource Research Agency (ENRRA). Existing research entities that would be included in such an agency include those of the USGS, Biological Survey, Bureau of Mines, and NOAA as well as other environment and natural resource research activities in EPA, DOE, DOD, NASA, and DOI.

I did not feel that I could run the above piece in clear conscience without some sort of reply to address at least some of the author's misleading characterizations. The paper itself is erroneously titled since Schmitt's argument seems to be solely with government regulations which he views as unnecessary burdens on society. A number of his claims of "regulatory difficulties" (such as those at the FDA) are so vaguely stated as to preclude meaningful response. He certainly fails to clarify how divorcing regulatory activities from related scientific research will result in more efficient regulation.

The author claims that such a separation will prevent "the politically dominant regulators from forcing their agency's science to support their political conclusions..." in favor of unnecessarily strict regulation. If anything, the

reverse has been true of Federal Government agencies. The DOI, DOA, and DOE, in particular, have long track records of ignoring their own research and scientists in order to push forward often economically-questionable and environmentally-damaging projects for purely political and ideological reasons. The loss of in-house research and voices to counter such extensive political meddling will only serve to exacerbate this problem and insure that even more public policy decisions are made in an atmosphere devoid of objective science.

With regard to the DOI, Schmitt seems to have forgotten that it was charged to act as the steward of America's public lands for the use and benefit of all of its citizens. However, in the past the DOI certainly was a cooperative partner with the mineral industry — whatever the miners wanted they generally got. In the last 20 years the DOI has actually begun to act as a judicious land steward, hence the author's characterization of the agency as a "regulatory adversary." His supporting objections are equally spurious. The amount of fuel and raw materials needed by the American economy will never be met by domestic sources; present economic growth projections dictate an increasing dependence on foreign sources. Such a situation is an argument for diplomatic efforts abroad, not watered-down regulations to resuscitate economically-unviable industries at home. The local mineral-based economies that Schmitt claims were "decimated" by environmental regulation have never been stable. Boom/bust cycles independent of regulatory influences have always prevailed in those regions relying on extractive industries as a primary employer (the communities of the American Rocky Mountains are a prime example). Considering the author's dislike of regulation, it is hard to believe that he is concerned about America's influence on the global mitigation of mineral industry impacts.

Clearly, Schmitt is echoing the recent chorus of voices calling for drastic deregulation across the board. However, he offers no convincing argument that various governmental "failures,"¹ as he chooses to characterize them, have had anything to do with the marriage of research and regulation. If anything, a careful examination of government agency actions shows that more often than not political interference in both scientific and regulatory processes is the real culprit. The author's proposal to lump all research into a single agency is a dangerous one. It would make it that much easier for those politicians so inclined to either ignore the findings of this lone agency or to eliminate the government's research functions altogether.

— Ed.

Membership News

David C. Glick, Membership Committee Chairman

Expiration Dates on Mailing Labels

All 1996 dues payments received by the Secretary-Treasurer through February 20th have been recorded and should be reflected in the expiration date at the upper right-hand corner of your mailing label. The next issue of the newsletter will be sent only to members paid up for 1996.

Professional Changes

Members are invited to submit news/details of changes in their employment or positions, as well as address changes, for publication. Please send your news to David Glick (see address information on page 2).

Address Changes and Corrections

Please make the following changes and additions in your 1995 Directories:

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James Pontolillo - phone: 703-648-4849

New Members

The Society welcomes the following persons who have applied for membership:

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Beijing 100083
Peoples Republic of China
phone: 86-10-2017641-248
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(continued on next page)

Review - *At What Cost? Manufacturing Employment Impact from Higher Electricity Prices*

by Thomas A. Hewson, Jr., & John B. Stamberg
The Center for Energy and Economic Development, January 1996

Reviewed by James C. Hower

Coal science in the United States is no longer an apolitical activity (if it ever was). As scientists we need to be aware of the use, abuse, or ignorance of science in the creation of legislation and regulation. As consumers we need to be aware, in particular, of the latter two points and their impact on the economy.

The Ozone Transport Group (OTAG) and the U.S. Environmental Protection Agency (EPA) have proposed a 37-state (east of the Rockies) seasonal control on sources of NOx. As with many, if not most, environmental initiatives, the objectives are admirable, the improvement of air quality standards. Certainly, the U.S. electric utility industry can be proud of the improvements to air quality while increasing coal burning since the implementation of the 1970 Clean Air Act. The OTAG/EPA proposal would set, by the year 2003, a May 1 to September 30 reduction of NOx to 25% of 1990 levels (prior to reductions imposed by the 1990 Clean Air Act amendments) or to 0.15 lbs. NOx/MM Btu on major stationary sources (primarily utilities) without consideration of vehicular emissions.

From a science and engineering standpoint the proposal is flawed in at least two points. First, as noted, not all sources of emissions would be regulated. The second concern is that the regulation may be exceeding the capability of the engineering. The lowest current enforceable NOx in the U.S. is 0.17 lbs. NOx/MM Btu, slightly higher than the proposed upper limit and lower than the standards to which utilities are currently retrofitting boilers in order to comply with the 1990 Clean Air Act amendments. The low limit and the fact that the NOx standards are a moving target are obvious concerns to both the coal and electric utility industry.

From an economic standpoint, the study projects that the regulations would cost \$18-27 billion total (not per year as stated on page 1) in equipment costs, \$4 - 5.5 billion per year in utility compliance costs, and \$0.4 - 1.0 billion per year in industrial compliance costs. In addition, between 80,000 - 400,000 manufacturing jobs would be lost as industries reduce operations in the face of rising electric costs.

The report obviously reflects justified industry concerns regarding excessive regulation. As noted above, though, the utility (and coal) industry is experienced in pointing out the improvements which have been made over the past quarter century, improvements which would not be as advanced if not enforced by regulations. The unstated, but apparent, plea of the study is to achieve a balance between the continued need to be aware of environmental problems and the awareness of the consequences of placing too much of the burden of a solution on just one source of the problem.

Membership News (continued)

Zhongkai Chen is working on maturity and petrography of coal and kerogen, and generation of oil from coal.

Jorgen A. Bojeson-Koefoed
Geological Survey of Denmark and Greenland
8 Thoravej
DK2400NV Copenhagen, Denmark
phone: 45-3110-66-00 / fax: 45-3119-68-68

Dr. Bojeson-Koefoed completed his Ph.D. in geochemistry at the Technical University of Denmark in 1993. He is now involved in organic petrography and geochemistry in relation to petroleum exploration.

TSOP World-Wide Web Page

At the upcoming Mid-Year Council Meeting in St. Louis (March 2, 1996), the Internet Committee will present a proposal to Council for the establishment of a TSOP World-Wide Web page, to be housed on a computer at The University of British Columbia. When the web page is completed and fully functional, members will be notified in the *TSOP Newsletter*. To be placed on a list for direct notification as soon as the site becomes available, please notify David Glick (xid@psu.edu, or see address on page 2) of your interest.

Publications of Interest

The Petroleum System -- From Source to Trap

Leslie B. Magoon and Wallace G. Dow (eds.)
1995, AAPG Memoir 60

From the publisher's ad-copy: "Systematize your search, and improve your success... This comprehensive book includes 20 chapters covering every aspect of the petroleum system approach : assessing the petroleum potential and exploration risks of undrilled prospects, plays, and basins; building logical frameworks for constructive multidisciplinary communication among petroleum geologists, geochemists, geophysicists, and petroleum engineers; blending petroleum geology and geochemistry to substantially increase exploration success; modeling both new exploration in frontier areas and re-exploration in developed areas; and interpreting the processes of petroleum generation, migration, and trapping... Also included are 18 chapters of case studies from around the world." This memoir was recently awarded the AAPG's *Robert H. Dott Sr. Memorial Award for Best Special Publication in 1994.*

* * * * *

Sedimentation of Organic Particles

Alfred Traverse (ed.)
1994, Cambridge University Press, 544 pp.

From a recent review: "This extensive and unusual volume was inspired by a 1988 International Palynological Congress symposium on the relation of organic particles to sediments in which they occur. In his introduction, Alfred Traverse sets the stage for the 23 varied chapters organized into three major sections that deal with studies of palyno-sedimentation in modern environments, reconstruction of late Cenozoic vegetation and sedimentary environments from palynological data, and applications of data on palyno-sedimentation to the solution of geological problems. An appendix provides an annotated bibliography.... In sum, the book includes a large suite of topics that span many time scales, and, as such, it is interesting to a variety of Palynologists with many different perspectives.... It will be a welcome addition to any palynologist concerned with sedimentary problems, despite its hefty price tag."

Messel: An Insight into the History of Life and the Earth

Stephan Schaal and Willi Ziegler (eds.)
1995, Oxford University Press, 328 pp.

From a recent review: "Messel [an oil shale deposit of early middle Eocene age located near Frankfurt am Main, Germany] is one of the most well known fossil localities in the world.... with exquisite preservation of both plants and animals, a place where there is an extensive diversity of ancient life preserved that is only rarely encountered and where a synthesis of plant and animal data can be applied to reveal a more complete view of a biome than is usually possible. The book is well organized and takes the reader through a story of Messel that will never be forgotten.... it will become obvious to paleobotanists that this book presents a record that is worth building upon. Not all of the plant fossils collected from Messel have yet been investigated and those that have are now available for further study."

* * * * *

Lignites of North America

H.H. Schobert
1995, Elsevier Science B.V., 714 pp.

From the publisher's ad-copy: This volume "provides a comprehensive survey of the origin, the fundamental properties, and the technology of utilization of the lignites of North America, this book will be of particular interest to professional scientists and engineers working in coal research or coal technology. There is a very extensive index, making the contents of the book easily accessible to the reader." Topics covered include:

- Principal Lignite Deposits of North America
- Deposition and Formation
- Organic Structure
- Fundamental Organic Reaction Chemistry
- Inorganic Constituents and their Behaviour
- Physical Properties and Moisture
- Mining, Transportation, and Storage
- Beneficiation and Combustion
- Alternative Uses

Calendar of Events

1996

March 5 - 7 : Society of Petroleum Engineers International Petroleum Conference & Exhibition of Mexico, Villahermosa, Tabasco, Mexico. For information, call (713)-529-1616.

March 5 - 9 : Taipei Chem'96, Taipei, Taiwan. For information call 44-171-486-1951.

March 10 -13 : New Zealand Petroleum Conference, Auckland, New Zealand. For info, call 64-4-472-0030.

March 11 - 13 : Sub-Saharan Oil & Minerals Conference, Johannesburg, RSA. For information, call 44-171-600-6660.

March 13 - 16 : Oil and Gas Thailand '96, Bangkok, Thailand. For information, call 44-171-486-1951.

March 24 - 28 : American Chemical Society 211th National Meeting, New Orleans, LA. For information, Call (202)-872-4396.

April 15 - 17 : GEO-96, Middle East Geosciences Conference and Exhibition, Bahrain. For information, contact Jalil Al Samahiji at 973-753421 [phone] or 973-753475 [fax].

April 21 - 24 : SPE/DOE 10th Symposium on Improved Oil Recovery, Tulsa, OK. For information, Call (214)-952-9393.

April 22 - 26 : XIV World Congress on Occupational Safety and Health, Madrid, Spain. For information, call 34-1-404-57-36.

April 30 - May 2 : Coal Prep '96, Lexington, KY. For information, contact Sam Posa at (303)-793-0488.

May 5 - 8 : ASTM D-5 Committee on Coal and Coke Meeting, Pittsburgh, PA. For information contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

May 19 - 22 : Annual Meeting of the American Association of Petroleum Geologists, San Diego, CA. For information contact John A. Minch at (714)-367-1000.

May 19 - 23 : Australian Coal Conference, Gold Coast, Queensland. For information call 61.07.3221 2240.

May 27 - 29 : Joint Annual Meeting of the Geological Association of Canada/Mineralogical Association of Canada, Winnipeg, Manitoba. For information call (204)-474-8857.

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For info, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

June 2 - 6 : Fourth Annual Association of Afro-Asian Petroleum Geochemists (AAPG) International Conference, Arusha, Tanzania. For information, contact Dr. Y.S. Mwalyego, 4th AAPG Conference Secretariat-TPDC, P.O. Box 5233, Dar Es Salaam, Tanzania.

June 11 -13 : 10th Latin American Petroleum Show, Maracaibo, Venezuela. For info, contact International Exhibitions at 713-529-1616 [phone] or 713-529-0936 [fax].

June 14 - 18 : Fifth World Congress of Chemical Engineering, San Diego, CA. For information contact the AIChE Meeting Department at (212)-705-7320 (fax).

June 17-21 : Annual Meeting Canadian Society of Petroleum Geologists, Calgary. For information call (918)-584-2555.

July 7 -12 : Carbon 96, New Castle upon Tyne, United Kingdom. For information, contact Dr. K.M. Thomas at 44-0-91-222-8542 (fax).

August : Geochemistry of Coal & its Impact on Environments & Human Health, Beijing, China. For additional information and registration materials, see the display ad in the September 1995 *TSOP Newsletter* (vol. 12, no. 3, p. 4) or contact either of the conference organizers: R.B. Finkelman (703-648-6412) or C.L. Chou (217-244-2492).

August 4 -14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

August 25 - 30 : 212th National Meeting of the American Chemical Society, Orlando, FL For more information call (202)-872-4396.

August 25 - 30 : 1st Application of Molecular Markers to Environmental Geochemistry Symposium, Orlando, FL. This symposium will be held in conjunction with the 212th Meeting of the ACS (see

above). For further information, contact Dr. Robert Eganhouse at (703)-648-5879.

September 8 - 11 : Second AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. For information contact the AAPG Convention Department at (918)-584-2555 (phone) or (918)-584-2274 (fax).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. For further information, contact Jack Crelling at (618)-453-7361 [phone] or (618)-453-7393 [fax].

October 7 -11 : Fourth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, Cagliari, Italy. For information, contact Dr. Raj K. Singhal at (403)-241-9460 (fax - Canada).

October 13 - 16 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For info, contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call Charles L. Pillmore at (303)-236-1240.

November 10 - 15 : AIChE Annual Meeting, Palmer House, Chicago, IL. For information call (212)-705-7845.

December 2 - 4 : 7th Australian Coal Science Conference, Gippsland, Australia. For information see display ad on page ? or contact Dr. Geoff Perry at 61-0-51-321500 [phone], 61-0-51-321580 [fax], or perry@hrl.com.au [e-mail].

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at (918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For information call (202)-872-4396

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For information, contact the AAPG Conventions Dept. at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV For info Call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany.

September 29 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact....

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

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TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower
 CAER
 3572 Iron Works Pike
 Lexington, KY 40511

phone: (606)-257-0261
 fax: (606)-257-0302

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I just don't know how I got through my day at work without my two brand-spanking new TSOP mugs. They're sturdy, microwaveable, fabulous looking, and great conversation starters too! I can't recommend the TSOP mug highly enough!

Coal Geology Gumbo (continued)

John Calder, in his position as First Vice-Chairman of the Coal Geology Division, was responsible for the organization of the session as well as the entire division technical program. The Coal Geology Division continues to provide an excellent forum for discussion of current research topics and TSOP members are urged to support the efforts of Jim Staub and Brenda Pierce, 1996 and 1997 program coordinators, respectively, in their efforts to organize sessions for the Denver and Salt Lake City GSA meetings.

Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its members' ideas, observations, concerns, and interests. We are always in dire need of scientific, technical and historical articles, as well as publication reviews, news items, and opinion pieces. Our excessively large and ridiculously over-paid editorial staff needs your help! All that writing, editing, and re-writing eats away at valuable time that we'd rather spend on the Côte de Azur or at the baccarat tables in Monaco. *Only your efforts can increase our leisure.* Help the *TSOP Newsletter* stand out from the pack. Contribute today!



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol.13, No. 2

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ISSN-0743-3816

TSOP '96 Annual Meeting —

Carbondale, Illinois



Aerial view of the Southern Illinois University campus at Carbondale, site of the 1996 TSOP Annual Meeting. Come join us from September 15th - 19th for the best TSOP meeting yet! (article begins on page 5).

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

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For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.



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The 1995-96 TSOP Council

President	Brian J. Cardott
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President Elect	Jeffrey R. Levine
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Councilor (1994-96)	Stephen Bend
Councilor (1995-97)	Ganjavar K. Khorasani

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
 (703)-648-4849 phone
 (703)-648-5832 fax

For Membership Packets:

Dave Glick
 (814)-854-6543 phone
 (814)-865-3573 fax

Deadline Next Issue : 10 August 1996

President's Letter

Brian J. Cardott

I have compiled the responses from questionnaires that were distributed with the September 1995 issue of the *TSOP Newsletter*. To those that completed and returned their questionnaire, thanks. Anyone that would like a copy of the questionnaire summary may request one from me.

There were 28 responses, which represents 14% of the TSOP membership. This low ratio negates the objective of the first question ("What are your areas of interest in organic petrology?"): to arrive at a better representation of the priority and diversity of TSOP member interests. Additional categories added to the questionnaire by members included industrial petrography (coke, carbon forms, hydrogenation residue, fly ash, tar), organic and inorganic interactions, Paleobotanical reconstructions, and peat petrology.

Concerning the second question ("What do you like about TSOP?"), responses favored existing benefits of membership: regular annual meetings, short courses, field trips, newsletter, membership directory, and other publications provide an opportunity to stay current in the broad field of organic petrology and interact with other organic petrologists. However, as is evident from other comments, there is always room for improvement. I would like to comment on some of the more common responses.

For a low membership fee of \$20, TSOP members receive a quarterly newsletter, annual meeting abstracts and program volume, and membership directory. This is much more than I receive from other societies with comparable dues. Several members commented on the content of the *TSOP Newsletter*. Compilation of the *Newsletter* is an enormous task. Enhancement of the *Newsletter* is the responsibility of all TSOP members. Submissions, including technical contributions, are requested from the entire membership. We can only publish contributions that are submitted. A balance of member interests will occur only through more members contributing. If you are aware of needed information, please suggest the need to the Editor and consider providing the information yourself. Some would like to see a TSOP journal and more publications. TSOP has been fortunate to have a means to publish the annual meeting proceedings. The manpower, funds, and volume of submissions required are not presently available for TSOP to consider creating its own journal

at this time. Sponsored publications from joint symposium volumes (e.g., kerogen volume; Appalachian coal petrology volume) and special projects (e.g., the Coal Atlas on CD-ROM that should be available by the end of the year; this is the first CD-ROM only project of the AAPG Publications Department) are beginning to appear. Be sure to take advantage of the "Stock Reduction 50% Off Sale" of selected TSOP publications that is announced with this issue (see enclosed flyer).

Several concerns will be satisfied with the availability of advertisements in the *Newsletter*. The pros and cons of this policy have been debated by TSOP Councils for many years. Useful information provided through ads includes availability of equipment (e.g., what is the latest innovation in instruments and analyzers?), supplies (e.g., who is a supplier of reflectance standards?), and services (e.g., who has the capability to prepare strew slides, perform Rock-Eval pyrolysis and other geochemical services; who is a consultant?).

Several comments were made about the annual meeting, particularly concerning the distance to attend meetings and timing. Every effort is made to host the annual meeting in a desirable location at a time that will not conflict with other meetings. However, conflicts arise particularly when we set our dates prior to others and they in turn do not attempt to work around our dates. The annual meeting has traditionally been held in either the United States or Canada. The annual meeting site is selected to reach the widest group of TSOP members while maintaining a small profit for the meeting. Much like the AAPG, TSOP will likely continue to hold its annual meeting in North America. One avenue that has been successful is to sponsor a TSOP symposium at another society's meeting. This could be applied to meetings outside of North America. It takes volunteers to prepare a proposal for TSOP Council's approval and make the arrangements. Taking a cue from the AAPG, TSOP could introduce a biennial international meeting. It too requires a proposal from a group willing to serve as the international meeting committee. Such a proposal has never been submitted to the TSOP Council. The proposal should demonstrate a potential audience and per person charges that ensure that the meeting will be a success. Copies of the proposal guidelines (available in the TSOP Procedures Manual) may be requested from any Council member. =>

Every effort will be made to ensure that the Abstracts and Program volume (an established serial registered with an International Standard Serial Number) will be as user friendly as possible after the meeting. Some suggestions for enhancement are a complete table of contents (authors, titles, and page numbers) and abstracts arranged in alphabetical order by author.

The annual meeting proceedings volume papers are peer reviewed (generally two reviewers per manuscript) following the established policy of the selected journal - formerly *Organic Geochemistry* and presently the *International Journal of Coal Geology*. As such, there are papers that are rejected.

Limited communication with other groups and among ourselves between meetings has been a concern. Two solutions have been proposed. Liaisons are TSOP members that will interact with other groups and report on mutual interests through the *TSOP Newsletter*. The Internet Committee is busy creating the TSOP web site, which will benefit TSOP in many ways. For example, in addition to the efforts of the Outreach Committee, it is a tool to publicize the importance of organic petrology to industry. There is the potential to interact with colleagues worldwide through a "HyperNews Discussion Group," provide timely information (employment opportunities; electronic bibliographies and glossaries), access a current TSOP Membership Directory (password accessible only to members), and possibly one-day publish articles.

The small size of TSOP does not allow us to obtain publication discounts from other groups. However, our status as an AAPG Associated Society allows us to provide the AAPG Member rate on registration at the AAPG annual convention and other AAPG meetings for which AAPG is financially responsible.

For a society of our size, we have many benefits and much to offer. Thanks to all that contribute in many ways. TSOP is a society of volunteers, and contributions are essential.

TSOP Liaisons

TSOP Liaisons are TSOP members that are contacts at other groups to (1) foster communication on joint projects, publications, and meetings, (2) inform the TSOP Council of their activities, and (3) provide annual updates on mutual concerns in the *TSOP Newsletter*. Liaison appointments for 1996 are as follows :

AAPG EMD (Energy Minerals Division) : Jim Hower

AASP (Amer. Assn. Stratigr. Palyn.) : Gordon Wood
 ACS (Amer. Chem. Soc. Fuel & Geochem. Divs.): Lorraine Eglinton
 AGI (American Geological Institute) : Brian Cardott
 ASTM (American Society for Testing and Materials) : Ron Stanton
 CSCOP (Canadian Soc. for Coal & Org. Petrology) : Stephen Bend
 EAOG (European Assn. of Org. Geochemists) : Lorraine Eglinton
 GSA CGD (Coal Geology Division) : Cortland Eble
 ICCP (Intern. Comm. for Coal & Org. Petrology) : Alan Davis
 Iron and Steel Society of AIME : Gary Mitchell
 Standards Assn. of Australia (Petrog. Subcom.): Adrian Hutton

TSOP Advertisement Policy

The following advertisement policy was adopted by a vote of the TSOP Council and will be distributed along with rate schedules and application forms to all interested parties. For further information, contact the TSOP Editor (see page 2).

- 1) Acceptability of ads will be at the discretion of the Editor who may solicit the guidance of the TSOP Council. In general, acceptable ads are those related to employment, equipment, products, and services of interest to the membership. Meeting advertisements and information notices will normally be run free of charge.
- 2) Advertisements will be accepted from all sources. However, if there is a shortage of space in a newsletter then preference will be according to the following schedule: a) commercial advertisers who have previously purchased multiple placements, b) TSOP members, and c) all other commercial advertisers. Advertisements may be placed throughout each issue of the newsletter at the discretion of the Editor to aid in the flexibility of newsletter design and layout. All details of ad size, layout, and time of appearance are also at the discretion of the Editor.
- 3) TSOP members will be charged one-half of the commercial rates *for personal ads* (i.e., employment and services sought). Advertisements for private consulting companies will be charged commercial rates.
- 4) Commercial advertisers must submit camera-ready copy of their own design. In special circumstances, the TSOP Editor can provide a fee-based layout service.
- 5) All advertising fees must be paid to TSOP in advance and are non-refundable. However, if a date-dependent advertisement cannot be run (for instance, due to space limitations), then the advertiser will be offered their choice of either a full refund or a reduced-rate future ad placement.

13th Annual Meeting of The Society for Organic Petrology

September 15-19, 1996

Southern Illinois University at Carbondale, Illinois USA

John C. Crelling

You are invited to attend the thirteenth annual meeting of The Society for Organic Petrology at Southern Illinois University at Carbondale (SIUC). The meeting will be hosted by Jack Crelling, Russ Dutcher, Bill Huggett, and Mike Kruge and sponsored by the Department of Geology and the Coal Research Center. The technical sessions and lunches will take place in the SIUC Student Center and the banquet (a buffalo tro) will be held at the Touch of Nature Environmental Center. Carbondale is located in Jackson County, a land of rolling hills, towering sandstone bluffs and acres of beautiful lakes. Fall is a lovely time here in Southern Illinois. Crab Orchard Wildlife Refuge is four miles east of Carbondale, Giant City State Park is twelve miles south of Carbondale, Lake Murphysboro State Park is twelve miles west of Carbondale and the Shawnee National Forest extends into Jackson County. During your visit, we hope you will have an opportunity to explore some of the natural beauty of this region. Please feel free to contact our local tourism bureau for more information about the area at (800)-526-1500.

Pre-Meeting Short Course

A pre-meeting short course on *The Petrology of Cokes, Chars, Carbons, and Graphites* dealing with the use of petrography in the manufacture and utilization of these materials will be presented by Professor Jack Crelling and others on Sunday, September 15th. The course will cover such topics as metallurgical cokes, petroleum coke, combustion chars, carbon-carbon composites, activated carbons, natural graphite, aluminum anodes, and arc furnace electrodes. The course notebook will include atlas plates of photomicrographs in color microfiche format.

Technical and Poster Sessions

The technical and poster sessions will be held on Monday and Tuesday, September 16th and 17th in the Student Center at SIUC. The session on Monday morning will be a theme session devoted to *New Applications of Organic Petrology*. The keynote speaker at this theme session will be Dr. Neil Murdie of Allied Signal Inc., who will speak on "The Use of Organic Petrology in the Carbon Industry".

Post-Meeting Field Trip

The field trip to southwestern Indiana will examine coal-bearing sequences of the Mansfield and Brazil formations (Morrowan and Atokan). The coal was deposited in a coastal plain environment, with a strong tidal influence and occasional marine transgressions. The coal seams of these two formations are relatively thin and discontinuous, but locally they may constitute a large resource of low-sulfur coal. The controls on coal quality, and sulfur in particular, will be the main emphasis of this field trip. Both the controls of coal (peat)-depositional environment on coal quality characteristics and the influence of roof lithologies and post-peat clastic environments will be discussed. The coals are much duller than those in the upper part of the Pennsylvanian (Desmoinesian), and reflect a unique depositional environment. Low-sulfur coals in this part of the Pennsylvanian section are often overlain by laminated sediments characteristic of tidal rhythmites. The relationship between low-sulfur coals and tidal rhythmites facies is both intriguing and practically important and will be closely examined during the field trip. The participants will have an opportunity to visit a quarry and a coal mine in Indiana and examine both coals and roof rocks. In addition, numerous cores from this part of the Pennsylvanian section will be available for observation at the Indiana Geological Survey in Bloomington.

Meeting Registration

The meeting registration form is included in this Newsletter. Please print your name as you would like it to appear on your name tag. Conference fees, which can be prepaid, include the petrology workshop on cokes, chars, carbons, and graphites; the meeting registration fee; the post-meeting field trip; and a copy of the technical proceedings.

Registration : Advance registration is \$120.00 for faculty and professionals and \$50.00 for students. After August 12th, a \$25.00 late fee will be charged. This charge also applies to on-site registration. Advance registration is advised. Please return the enclosed registration form with your payment or call 618-536-7751 to register by phone if

using Visa, MasterCard, or Discover. If you wish to register by fax, the number is 618-453-5680.

Refund and Cancellation Policy: Cancellations received in writing before September 9th, entitles the registrant to a refund minus a \$10.00 cancellation fee. No refunds will be made after that date. The University reserves the right to cancel any program deemed necessary. In the event of program cancellation, only those pre-registered will be notified.

Lodging

Rooms have been blocked at the Holiday Inn, Best Inns, and Comfort Inn. We strongly urge you to reserve your room early. Be sure to mention The Society for Organic Petrology Conference. Room rates or availability cannot be guaranteed after August 30, 1996, or after room blocks are filled on a first come, first serve basis. All rates are subject to state and local taxes.

Hotels: Must Reserve By August 30th: Holiday Inn, 800 E. Main, (618)-529-1100; Single \$49, Double \$55 / Best Inns, 1345 E. Main, (618)-529-4801; Single or Double \$33.88 / Comfort Inn, 1415 E. Main, (618)-549-4244; Queen \$39.99, King \$42, Double \$45.95.

Travel Information

Airline : Flights are available to Williamson County Airport from TWA Express via St. Louis, MO, and Southern Illinois Airport by United Express via Chicago, IL. Check with your local travel agent for details.

St. Louis Airport Shuttle Service : Ground transportation from St. Louis to Carbondale is available through three shuttle services. Advance reservations are required. Reservations can be made by calling: BART at (800)-284-2278, The Shuttle at (800)-600-3003, or Saluki Shuttle at (800)-474-3370.

Local Shuttle Information : The Carbondale Holiday Inn operates a free shuttle service for Holiday Inn guests arriving by train or arriving by air at the Southern Illinois Airport, Carbondale, IL. Shuttle service for the Williamson County Airport, Marion, IL, is provided by the Holiday Inn for \$5.00 per trip. Please arrange for local shuttle service when making hotel reservations with the Holiday Inn (618)-529-1100.

Local Automobile Rental : Enterprise Rent-A-Car (800)-325-8007; Ford Rent-A-Car System (618)-457-8133; Hertz

Rent-A-Car (618)-529-1017; Smith Dodge Rentals (618)-457-8155.

Train: Carbondale, IL is a stop on the AMTRAK route from Chicago to New Orleans. Call (800)-812-7245 for details.

Conference Check-in : Conference check-in and late registration will be at the SIUC Student Center on Monday, September 16th, beginning at 7:00 am. Everyone, including presenters, must check-in at the SIUC Division of Continuing Education registration table in the Gallery Lounge of the center to receive a name badge, conference program, and other vital information.

Directions to SIUC Student Center : The SIUC Student Center is located on Lincoln Drive immediately west of US 51, at the main entrance to the University. Please refer to the attached map (see page 8).

Parking : Free parking is available in Lot 56 at the SIUC Arena. There are a limited number of visitor metered spaces (\$.50/hr.) directly across from the Student Center. Free parking permits and maps will be provided at the registration desk.

For additional registration information contact:

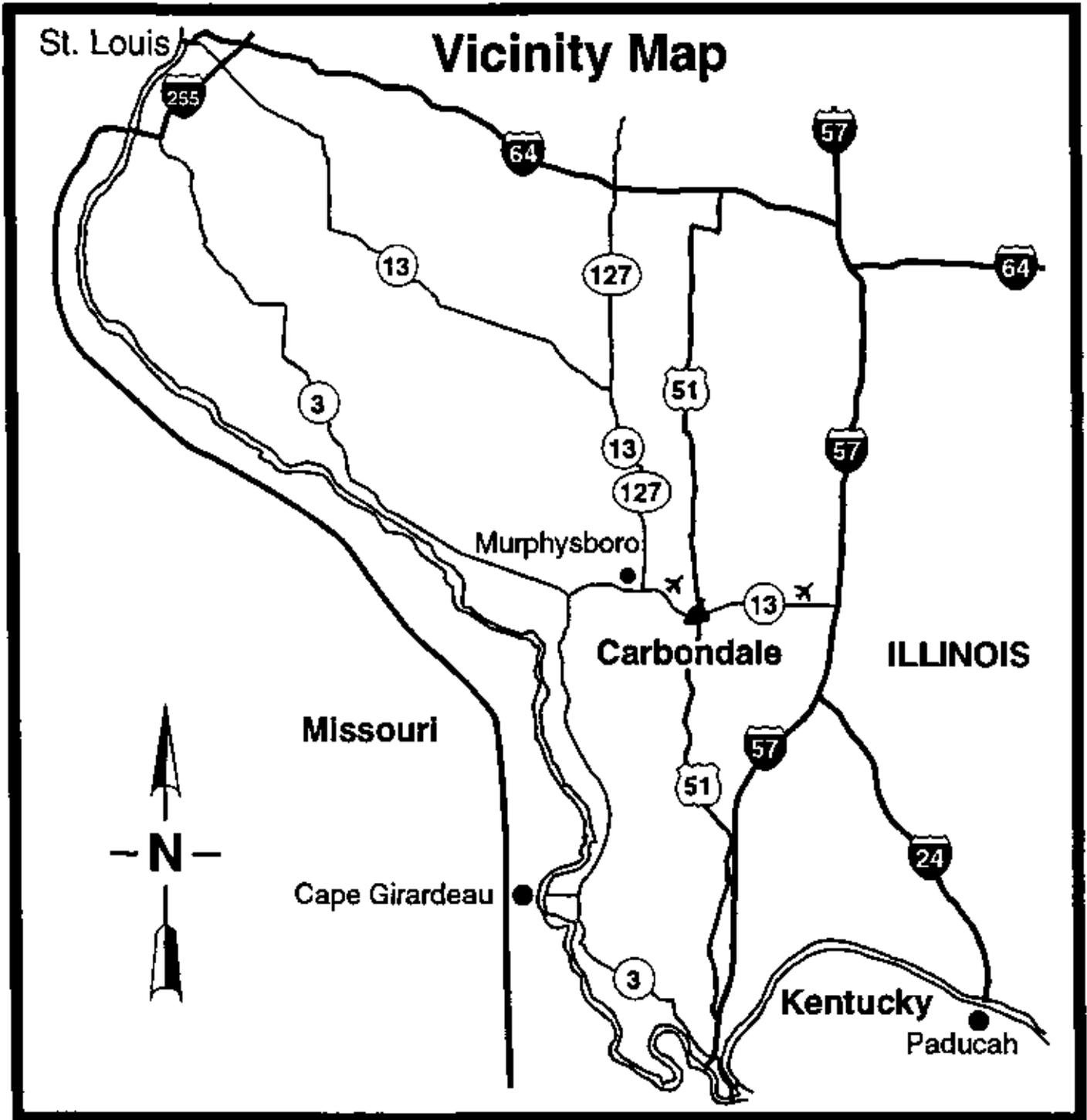
Division of Continuing Education,
Southern Illinois University at Carbondale
Carbondale, IL 62901-6705
Tel: 618-536-7751
fax: 618-453-5680

For additional technical information contact:

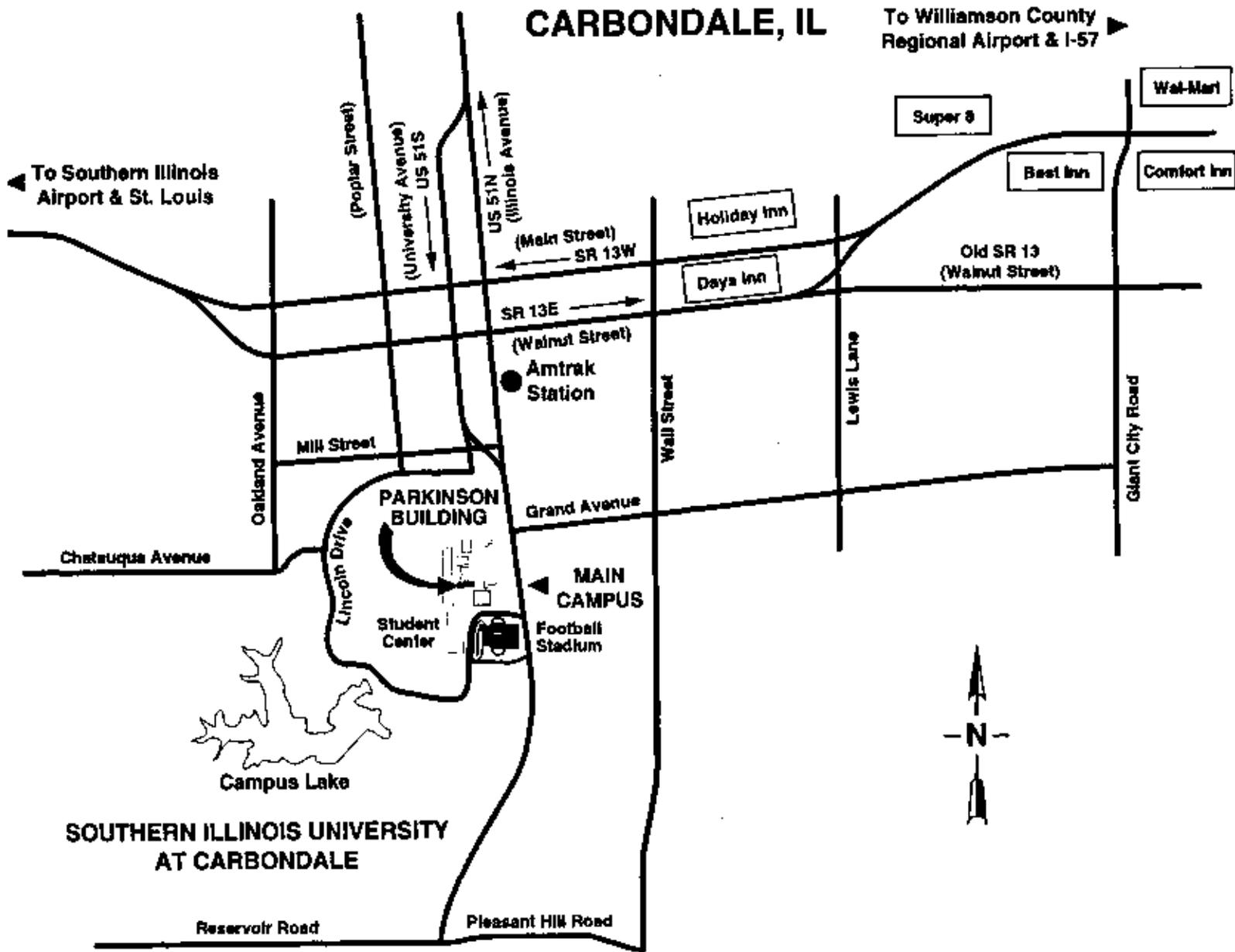
Jack Crelling (618)-453-7361, jcrelling@geo.siu.edu
Russ Dutcher (618)-453-7362
Mike Kruge (618) 453-7368, kruge@geo.siu.edu
Bill Huggett (618) 453-7381
Department of Geology
Southern Illinois University, Carbondale, IL 62901

For additional field trip information contact:

Maria D. Mastalerz
(812) 855-9416 maria@gismo.geology.indiana.edu
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(812) 855-1324 kvalee@gismo.geology.indiana.edu
Indiana Geological Survey
611 North Walnut Grove
Bloomington, IN 47405



Generalized road map of the greater Carbondale (Illinois) area.



Detailed street map of Carbondale showing the campus of Southern Illinois University.

(This is the second installment of a three-part article. All references will appear in a bibliography at the end of part three.)

Marie Carmichael Stopes, Crusading Paleobotanist

James Pontolillo

Part Two

Four years of hard work came to fruition for Marie in 1913 with the publication of the first volume of her *Catalog of the Mesozoic Plants in the British Museum* (Stopes, 1913a). She also published a number of short notices on various subjects (Stopes, 1913b - 1913f). The *Catalog* was well received by the scientific community. Both its length and detail undoubtedly account for the modest nature of most of Marie's other publications during the period 1910-1913. This year also saw the publication of what is believed to be her first foray into the social welfare scene, *Income Tax as a Penaliser of Marriage* (English Review, no. 15, pp. 146-9). The truly important events of Marie's life, however, were taking place outside of work. By October it was clear that her marriage to Reginald Gates had disintegrated beyond repair. Gates was very conservative in his ways and could not tolerate an independent wife who outperformed him in the field of botany. Seeking out advice, Marie found that lawyers would not help her. In her typically independent fashion, she decided to help herself by going to the British Museum and reading everything that she could find on English law.

Continuing the previous year's themes, 1914 saw the final collapse of her marriage as well as the appearance of an important publication. In the scientific realm Marie's output remained steady: the aforementioned monograph on the Carboniferous flora of New Brunswick (Stopes, 1914a) and several short articles (Stopes, 1914b - 1914e) saw publication. Potentially more important, however, was the appearance of her book *Man, Other Poems and a Preface*, which marked the beginning of Marie's career as a novelist, playwright, and poet. On May 11th, Marie left her husband and began annulment proceedings. Extensive law readings led Marie to advise her solicitor on how to conduct the case (a common feature of her many future legal actions). Late in the year the strain of a foundering marriage and uncertainties regarding her future career took expression in Marie's unpublished evangelical

manuscript *The People's Bible* containing prayers, epistles, and a creed. She was very outspoken in support of eugenics as a method of improving the human "stock," a common sentiment for the times. The case finally came to court in May 1916 and the marriage was legally annulled on the grounds specified. After five years of marriage, Marie was childless — a situation which she greatly regretted. Although there had certainly been opportunities for her to seek solace elsewhere, she had unswervingly held to her belief that sexual relations should only occur in the context of marriage. A decade later, Marie would publish a play (*Vectia*, 1926) based on the disintegration of her marriage. The Lord Chancellor would deny it a performing license on the grounds that its theme was unsuitable for public consumption.

The following year (1915) Marie ended her association with Owens College/University of Manchester and accepted a lectureship in paleobotany at University College (London). She also received a part-time appointment in coal research with the Scientific and Industrial Research Department of the British government at the Home Office Experimental Station Eskmeals (Cumberland). Marie's work on coal at Eskmeals, especially her collaboration with R.V. Wheeler, would result in a number of influential papers and mark the last of her productive years in paleobotany/coal petrology. This year also saw publication of the long-awaited second volume of her *Catalog of Mesozoic Plants* (Stopes 1915a), which contained an important account of petrified woods from the British Lower Greensand. These woods were remarkable in that, although they were the earliest angiosperms known from northwestern Europe, they were completely modern and specialized in their anatomy, seeming to bear out the suddenness of the rise of flowering plants in the early Cretaceous. In the long run however, Marie's scientific achievements for the year were overshadowed by her growing involvement in social welfare and reproductive health

reform in Great Britain. In mid-July she met with American birth control pioneer Margaret Sanger, who was then in London avoiding prosecution in America for distributing birth control information. Sanger gave what advice she could to Marie and influenced her especially with regard to the championing of sexual satisfaction for women. In the autumn, when Sanger returned to the United States and faced prosecution, Marie organized a petition to President Woodrow Wilson on her behalf. Ironically, it was a cordial start for two women who would later become the bitterest of enemies.

The time period 1916-1917 saw Marie's outside involvements effectively overtake her scientific interests for the primacy of her time. While she still found the time to publish several scientific articles (Stopes, 1916a - 1916f; 1917a - 1917d), most of her energy was devoted to social and literary concerns. Marie spent her spare time working on the manuscript for her first book dealing with marital problems. She became a representative to the Cinema Commission of Inquiry of the National Council of Public Morals and also wrote, produced, and published her first play, *Conquest or A Piece of Jade* (1917). This minor literary output led to the beginning of a life-long correspondence with George Bernard Shaw, who at times would exercise a pronounced influence on her.



Marie at the time of her marriage to H.V. Roe.

The turning point for Marie was the banner year of 1918. It was the events of this year that truly determined her destiny. Aside from some short notices (Stopes, 1918a-b) and a paper on Cretaceous Bennettitean cones (Stopes, 1918c), Marie's labors at Eskmeals resulted in a joint publication (Stopes and Wheeler, 1918). It was a well documented survey of the coal petrology literature and led to her recognition in international coal petrology circles. To complement such a grand entrance into the coal world, Marie left her unfulfilled past behind on May 16, 1918 by marrying Humphrey Verdon Roe (a wealthy manufacturer and pilot).

The lifelong justification in Marie's campaign for sexual reform was the terrible experience of her first marriage. Her reflections on that marriage and on sexual relations in general found print in 1918 with the release of her book *Married Love*. Although the manuscript for *Married Love* was substantially complete by 1914, it took Marie four years to find a financial backer and a printer brave enough to publish it. Eventually her future husband Henry Roe was prevailed upon to finance the project. Her stress throughout the book is on the necessity of loving, mutually satisfactory sexual relations in marriage. To the modern reader, *Married Love* is an innocent, even puritanical, book. Sixty years ago however, when the majority still thought of marital relations in terms of man's "rights" and women's "duties," it landed in polite society like a bombshell. Marie's critics were numerous, vocal, vitriolic, and usually unrestrained by facts in their attacks on her. In 1924, Dr. C.P. Blacker referred to *Married Love* as "responsible for providing instruction to girls of initially dubious virtue as to how to adopt the profession of more or less open prostitution." Her scientific colleagues were similarly unhappy with Marie's activities with regard to sex education. Many of them thought her work was crude, distasteful, and particularly unseemly for a woman. For the most part, sex was not talked about. If it was written about, it was by men and then the language was scientific and published in abstruse medical journals. Marie wrote in a frank manner that many found scandalous. Soon all of London was talking about *Married Love* and by the end of the year it was in its sixth printing. The American edition was edited to tone it down, but was still declared obscene by New York State courts and deemed unmailable. In 1935, American academics included it on their list of the 25 most influential books of the previous fifty years. All told, *Married Love* would go through 28 editions, 81 reprints, and have over a million copies printed in 15 languages. The tidal wave of interest, controversy, and response to *Married Love* swamped Marie's literary and scientific work. She began to receive letters from all over Britain from husbands and wives asking for every variety of

marital advice. In November, Marie published a second book, *Wise Parenthood*, that dealt exclusively with contraception and family planning. Its appearance resulted in another firestorm of public response. Not only was the book heavily criticized for its factual errors, but organized churches and secular nationalists (neither group was in favor of population limits) weighed in against Dr. Stopes. Nevertheless, public demand for *Wise Parenthood* was great and the book went through 25 editions, 57 reprints — over 700,000 copies in thirteen languages. Amid all of this, Marie found time to publish two plays, *Gold in the Wood* and *The Race*.

Following the overnight success of her two books and her elevation to "marital relations guru" status, Marie was asked to join the National Birth Rate Commission in 1919. Her writings on reproductive health continued and she self-published further advice that year in pamphlet format (*A Letter to Working Mothers*). On July 17, 1919 disaster struck the Stopes-Roe household. Marie's long-held desire to have a child came to naught when she delivered a still-born son. For reasons never quite made clear (including an inadequately sewn-up birth injury), Marie was convinced that the attending doctors had "murdered" her child through incompetence. Over time, these feelings grew into a distrust of doctors in general and would greatly influence her medical decisions near the end of her life. Marie's scientific output had now dropped to the lowest point yet in her career. However, sewing by a fire one day, she noticed that some bands in the coal burned differently from others. This gave her the idea of microscopically examining the differing bands. Using this approach Marie correlated the microscopic and macroscopic characteristics of four constituents of coal, defined their nature, and coined the terms vitrain, clarain, durain, and fusain (Stopes, 1919b). This work was typical of her later endeavours in the field : although essentially of an applied nature, it explored the origin of coal and its composition as a Paleobotanical problem. It also had a profound influence on subsequent coal research, particularly after the differences between these "types" and their relevance to applied coal petrology had been established by coking tests and ash analyses. Marie's terminology, with some modifications, was accepted as the basis for the classification of coals at the Third International Congress on Coal (at Heerlen) and is still used today.

The next two years were extremely lean with regard to Marie's scientific (Stopes, 1920a-b; 1921) and literary output (none); virtually all of her energy was devoted to the reproductive health crusade that she had championed. Late in the year, Marie resigned her post at University College (London) in order to devote more time to the founding of a women's reproductive health clinic, although she did continue to pursue private coal

research for the Home Office at Eskmeals. This period saw the release of two new social welfare publications. Marie's third book, *Radiant Motherhood* (1920), reinforced her previously stated ideas on the importance of healthy marital relations. In July 1920 she issued a circular entitled *A New Gospel*, the aim of which was to influence the views of the Lambeth Council of the Anglican Church on reproductive questions. In it Marie claimed that God came to her under a yew tree and gave her this prophecy to pass on : that the "act of union" properly done to the satisfaction of both participants is a holy sacrament in God's service. *A New Gospel* proved to be highly damaging to Marie's reputation. The organized churches were wholeheartedly against her ideas; one reviewer classed the work as "imaginary mysticism and pornography." In 1920 Marie also organized a widely publicized campaign against the Rhondda Valley education authorities' plan to fire all of their married female teachers. Although her campaign failed and the teachers were fired, the affair further increased Dr. Stopes' name recognition.

By now Marie Stopes had gone from being a renowned scientist among a limited circle of fellow researchers to being a national figure with whom thousands corresponded seeking advice. The upper and middle classes, looked down upon her out of cultural narrowmindedness. The medical community had mixed feelings with regard to Marie's publications. Many felt that she had overstepped the bounds of her professional competence. Politicians, ever the toadies of public opinion, mostly avoided the issue due to its controversial nature. The lower and working classes of the British public, however, were very supportive of Marie's social and reproductive health work. The First World War had profoundly shaken accepted cultural attitudes. Britain had lost 750,000 men, with another 1.5 million permanently injured. One in five returning veterans had some form of venereal disease. As if this was not bad enough, there was also unemployment, inflation, rationing, and housing shortages.

Marie actively continued to outrage the self-appointed guardians of morality in 1921 with the publication of her fourth book, *Truth about Venereal Disease*. Then on March 17th, Marie opened Britain's first birth control clinic, the Mothers' Clinic for Constructive Birth Control, in a poor area of North London. The Clinic was jointly funded by both Marie and her husband. All services were free and contraceptives were either free or sold at cost to those with the means to pay. In a move characteristic of her later public behaviour, Marie tried to inject herself into a major coal miner's strike that had begun. In April she wrote to the Prime Minister, Lloyd George, advising him not to give in to the miner's demands. Marie suggested that she could force the

union's leaders into acquiescing if given the assistance of some armed men. George politely declined her offer. On May 31st Marie gave an impassioned speech at the historic Queen's Hall Meeting in London setting off the "Birth Control Wars." The attacks against her grew fiercer. On August 16th, Marie and Humphrey founded the Society for Constructive Birth Control and Racial Progress (SCBC & RP), a separate organization to drum up support for their clinic. Marie's notoriety had even reached across the Atlantic to the United States — on October 27th she gave an invited speech on birth control at the New York City Town Hall.



Marie as a crusader on the lecture circuit.

Marie's writing streak continued in 1922 with the publication of *Early Days of Birth Control* and *Mother, how was I born?*, and the founding in May of the *Birth Control News*. This newspaper was the official house organ of the SCBC & RP and began as a monthly. It saw many layout and production changes, eventually becoming a magazine, before its final demise in November 1946. Early in the year, Dr. Halliday G. Sutherland published his book, *Birth Control : A Statement of Christian Doctrine against the Neo-Malthusians*. In it he claimed that Marie was experimenting on the poor, damaging their health, and

should be jailed for her views and practices. On May 11th, Marie filed a libel suit against him. The Catholic Church quickly brought its coffers and propaganda machine to Dr. Sutherland's aid. With regard to her scientific life, this year saw Marie's election to the Geological Society of London, as well as the publication of a few short papers (Stopes, 1922a-d), and a lecture series volume (Chamberlain et al., 1922).

In January 1923 Marie's lack of support for other persecuted birth control advocates caused several members to resign from the SCBC & RP. On February 21st, the libel case against Dr. Sutherland began. The proceedings lasted nine days and it was essentially Marie's ideas that were put to the test. The trial was a major media event and the general public was greatly impressed with the redoubtable Dr. Stopes. The judge, Lord Chief Justice Baron Hewart, was clearly biased against modern ideas on sexuality and took the defendant's side from the first day of the trial. The jury returned with the confused verdict that Marie had been *defamed by true statements* and awarded her 100 pounds in restitution. Although the press interpreted the jury's verdict as a victory for Marie, Lord Hewart ruled in favor of the defendant resulting in an unexpected public uproar. Marie was incensed, but her publisher (Putnam's) was overjoyed - orders for her books were pouring in. The letters of sympathy sent to her were so numerous that Marie had to pull together a duplicated form letter in reply. Mail came in from all over the world; one delivery at the Clinic brought 350 letters. Her celebrity status increased by leaps and bounds — she was one of the most photographed women of the day. As a public lecturer, Marie was now in demand all over Britain. Marie appealed the decision and on July 20th Hewart's judgement was reversed by the Court of Appeals. The Catholic Church, however, began a nationwide fundraiser and gave additional financial support so that Dr. Sutherland could appeal the new ruling to the House of Lords. In May, Marie's movie *Maisie's Marriage* (based on themes from *Married Love*) was released and was a big success, despite the Head of the British Board of Film Censors attempt to prevent its screening. In June 1923 Marie's seventh book, *Contraception*, was published and received an unusually warm reception from the medical community. Amidst all of this tumult, Marie did manage two short scientific notes (Stopes, 1923; Stopes and Wheeler, 1923a), as well as a longer paper on the spontaneous combustion of coal (Stopes and Wheeler, 1923b). She also published a three-act satirical play dealing with reproductive health politics entitled *Our Ostriches*.

End of Part Two.

Part Three will appear in the September 1996 TSOP Newsletter.

1996 Mid-Year TSOP Council Meeting Minutes Summary

Lorraine B. Eglinton, Secretary/Treasurer

The 1996 Mid-Year meeting was held on March 2nd 1996 at the Holiday Inn Riverfront, St. Louis, Missouri. President Brian Cardott called the meeting to order at 9:10 am CST. Attending council members : Brian Cardott, *president*; Jeffrey Levine, *president-elect*; Kenneth Kuehn, *vice-president*; Lorraine B. Eglinton, *secretary/treasurer*, Jim Pontolillo, *editor*, Ganjavar Khorasani, *councilor*, Stephen Bend, *councilor*, Jack Crelling, *1996 annual meeting committee chairperson*; and Jim Hower, *1997 annual meeting committee chairperson*.

1). Minutes from the 1995 Outgoing and Incoming TSOP Council Meetings, held at The Woodlands Conference Center, Texas on August 27 and 29th 1995 respectively, were unanimously approved.

2). Secretary/Treasurer's Report:

a). Lorraine Eglinton distributed a financial statement covering the period from January 1st 1995 to December 31st 1995. On December 31st 1995, TSOP's checking account balance was \$18,388.40 and Vanguard (short-term Federal) account balance was \$13,638.72. The total assets of the society on this date were \$32,027.12.

b). A merchant credit card status report concluded it is not cost effective for TSOP to apply for merchant credit status at this time. The matter was openly discussed and alternatives for collection of TSOP membership dues were suggested. The election of "Agents in Place" to collect member dues for specific regions and countries was introduced for discussion.

c). A motion to include expenses for acquiring honorary plaques (\$100/year) under the Honorary Membership budget was approved.

3). Vice-President's Report:

a). Ken Kuehn presented the updated TSOP procedural manual. Major changes have been made which greatly improve the manual's utility. The changes were openly discussed and approved with minor amendments. Additional changes to the manual are expected in the near future.

b). 1996 Honorary Member Selection Committee report : Sharon Crowley of the USGS agreed to serve on this committee, replacing Alex Cameron. The 1995-96 committee members are : Ken Kuehn (chairperson),

Brian Cardott (1993-1996), Gary Mitchell (1994-97) and Sharon Crowley (1995-98). Ken Kuehn announced the 1996 "Honorary Member" and the candidate was unanimously approved by council. The candidate will be officially informed by council and then announced in the *TSOP Newsletter*. The Honorary Member Committee made some recommendations to council regarding stipends to honorary members to attend annual meetings and this was discussed at length. The council was in agreement that this option should be offered. Brian Cardott will provide a motion for council to vote on by E-mail.

c). Approved by Brian Cardott, as of January 17th 1996 Ken Kuehn is TSOP's official archivist, taking over the position from Ron Stanton of the USGS. An inventory of holdings was presented and followed by a discussion concerning maintenance protocols. TSOP's official archives are currently housed at Western Kentucky University's Department of Geography and Geology.

4). Editor's Report :

a). Jim Pontolillo presented the *TSOP Newsletter* publication costs including the cost of heavier paper and better photo reproduction for upcoming issues. Council discussed at length TSOP's advertisement rate policy and schedule and unanimously agreed to authorize the placement of commercial adds in the *TSOP Newsletter*. Jim Pontolillo will refine the rate policy and schedule for council's approval. (*The policy was subsequently approved, see page 4 of this issue ~ Ed.*)

b). Brian Cardott announced a "Stock Reduction 50% Off Sale" for TSOP publications effective through August 1996 (see flyer accompanying this issue).

5). 1996 Annual Meeting Report:

Jack Crelling presented a report by the 1996 Annual Meeting Committee. The 13th Annual Meeting of the society will be held on the campus of Southern Illinois University at Carbondale, September 9th - 13th, 1996. It will have a format similar to previous TSOP annual meetings. A short-course entitled "The Petrology of Cokes, Chars, Carbons and Graphites" will be offered with a technical and poster session and a field trip to the Tradewater Formation. A budget was discussed at length and unanimously accepted with minor amendments. =>

6). Nominating Committee Report:

Jim Hower presented the report on behalf of Renee Symanski. The following candidates have accepted their nomination for the upcoming election : President-elect (Ken Kuehn, Martin Reinhardt); Vice-President (Wally Dow, Charles Landis); Editor (Jim Pontolillo); and Councilor (Sharon Crowley, David Glick).

7). Membership Committee Report:

Brian Cardott presented on behalf of David Glick. He reported that on March 2nd 1996, 234 members were listed.

8). Internet Committee Report:

Brian Cardott presented on behalf of David Glick. A lively discussion was had by council concerning site, maintenance, and logistics of TSOP's official homepage. Council members were impressed with the work done by the Internet Committee and particularly by Michelle Lamberson. Council, however, had to recommend submittal of a new, firmer proposal from the Internet Committee addressing council's concerns before the proposal could be approved.

9). Research Committee Reports :

a). Presented by Brian Cardott on behalf of Carolyn Thompson-Rizer. Nothing new was reported.

b). Jim Hower, now the sole co-chairman of the Environmental sub-Committee discussed the sub-committee's progress and the need for help to acquire a sample set suitable for "round-robin" analyses.

c). Jim Hower informed council the CD-ROM petrology atlas text is in review. Jim is collaborating with an Australian petrographer to coordinate suitable plates for inclusion in the volume.

10). Outreach Committee Report:

Presented by Brian Cardott on behalf of MaryAnn Malinconico. As an associated society of the AAPG our annual meetings can now be advertised free in the AAPG *Explorer*. Industrial support has been gratefully received from Amoco, Conoco, Phillips, Unocal, and Exxon. Petrobras sent an annual contribution and pledged four more years of support. We discussed the possibility of a promotions booth at large conferences. However, in order to support the expense we would need to attract 50 new members at such an event. Council doubted this was possible and deferred the proposal. Smaller promotional items, such as pens and magnets will continue to be offered.

11). Ad-Hoc Committee Report:

a). Presented by Brian Cardott on behalf of Martin Reinhardt and Cole Robinson. Martin is trying to consolidate communications between European

members through the Internet. Cole Robison reported that South America has a new journal - text in English, edited by L. Correa da Silva.

b). Steve Bend discussed the pros and cons of a TSOP merger with the Canadian Society for Organic Petrology with a view to organizing more joint meetings.

12). Annual Meetings' Reports :

1994: Ron Stanton, chairperson, reported that twelve manuscripts were accepted by *Organic Geochemistry* for the annual meeting symposium volume.

1995: John Castano, chairperson, reported that he had five manuscripts in hand and four more promised for the annual meeting symposium volume.

1997: Jim Hower, chairperson: TSOP-eastern AAPG, Lexington, Kentucky (September 27 - 30, 1997). This will be a concurrent meeting and TSOP members will be able to attend AAPG functions.

1998: Prasanta Mukhopadhyay, chairperson: Halifax, Nova Scotia (August 22 - 24, 1998).

1999: Jeff Quick: Proposal for 1999 meeting in Salt Lake City, Utah.

13). Other Meetings:

GSC SE GSA, 1995 : Section symposium proceedings papers are in production.

TSOP/EMD 1996 : Charleston, West Virginia.

EAOG 1997 : Maastricht, The Netherlands.

14). Old Business:

Questionnaires : Brian Cardott presented the results of the TSOP questionnaires.

15). New Business:

a). 1995-1996 TSOP Liaisons : A number of member liaisons were appointed by council in order to foster communication with the groups for joint projects, publications, meetings, and to provide updates in the *TSOP Newsletter* (see President's Letter, page 3 of this issue, for further details).

b). Council unanimously agreed to contribute \$150 annually to AGI's Government Affairs Program (GAP).

Additions and Corrections

Marie Stopes part 1 (vol. 13, no. 1, March 1996)

The journal of botanical humor that Marie edited was *The Sportophyte*, not *The Sporophyte* as stated. Marie's D.Sc. degree in 1905 was from London University. Marie met her first husband, Dr. R.R. Gates, at a meeting of the AAAS in St. Louis, not the GSA as stated.

Report on the Second Conference on Unburned Carbonaceous Material in Utility Fly Ash March 5-6, 1996; Pittsburgh, Pennsylvania

James C. Hower

How does one get more than 160 people to a conference in Pittsburgh in the winter? Well, if you are the U.S. Department of Energy's Pittsburgh Energy Technology Center, you hold a conference on a topic of great concern to the utility industry and charge no registration fee. The second conference on Unburned carbonaceous material in utility fly ash doubled the attendance of the first conference (held in 1995) showing the growing interest in the topic, an interest heightened by the general trend of an increase in fly ash carbon following conversion to low-NO_x combustion. The primary use of fly ash is as a partial replacement for Portland cement but excessive carbon keeps the fly ash out of the market owing to state restrictions on loss on ignition (LOI) in the ash. Increased carbon therefore means that the utility is not burning coal as efficiently as prior to conversion, that a previously marketable fly ash must now be disposed of (the euphemism being *temporary storage*), and that the ash marketers have a decreased quantity of fly ash to sell (ash marketers regard electricity as a by-product of fly ash production).

Reduction of SO₂ and NO_x emissions was mandated by Title IV of the 1990 Clean Air Act Amendments. William Weissman, of Piper & Marbury, L.L.P., a Washington, D.C. law firm, explained the implications of changes in fly ash quality regarding regulation of fly ash disposal and use. The US Environmental Protection Agency determined that fly ash is not a hazardous waste, but reserved the right to re-examine this exemption should any characteristics of fly ash change following implementation of the Clean Air Act Amendments. While the character of fly ash has changed, the EPA has not, to date, reopened the issue.

Jim Hower, Tom Robl, and Bob Rathbone (Center for Applied Energy Research) examined the impact on fly ash quality of NO_x conversion of a 200-MW unit at a Tennessee power plant. Owing to the overhaul of the pulverization circuit and changes in the air : fuel ratio, the carbon in the fly ash decreased following conversion, an unexpected result based on previous studies by the CAER and contrary to the experience of the other utilities represented. Consensus opinion of the

audience was that the increased fineness of the feed was a key factor in the improvement. The post-conversion fly ash does contain a small quantity of melted, but uncombusted coal, and a lesser amount of glass than the pre-conversion fly ash. This suggests that some fly ash properties may change in ways other than just the amount of Unburned carbon. As noted, not many utilities see an improvement in carbon following NO_x conversion. Peter Calvert (New England Power, with co-authors from Brown University) discussed the impact of increased fly ash carbon on concrete air entrainment following the conversion of two Massachusetts power plants. The loss of fly ash markets is particularly critical for New England Power as they represent the largest source of fly ash in the region.

Many papers addressed the on-line and off-line monitoring of fly ash carbon, certainly an important aspect of any quality control program. Robert Brown (Iowa State) discussed a novel approach using the photoacoustic effect to detect carbon. Off-line testing required grinding of the fly ash to a more uniform particle size in order to reduce particle size and packing density errors. The on-line instrument used a frequency that is not sensitive to particle size but is also not particularly sensitive to changes in carbon content above 1 - 2%. Michael Serio (Advanced Fuel Research) demonstrated that in-situ infrared emission spectroscopy offers some promise as an on-line tool. The technique, still in pilot-scale development, is sensitive from 0 - 5% carbon, a critical range for utilities. Southern Company, with 22 coal-fired plants in their fold, produces about 5 Mt/a of fly ash, more than 10% of the U.S. total. They obviously have a keen interest in the monitoring of fly ash carbon. Lamar Larrimore discussed four different systems with a variety of response times and accuracies. At this point in their investigations, it appears that they have not yet reached a practical compromise between the latter two goals. Overall, while the on-line measurement of inorganics in coal has attained the level of industry acceptance, the opposite problem — the measurement of small quantities of carbon in an inorganic stream — still faces a number of hurdles and is not ready for commercialization. =>

One approach to the control of carbon in fly ash is the redesign of the combustion system. Roger Glickert (Energy Systems Associates) discussed co-firing of natural gas to improve carbon burnout at New England Power's Brayton Point station. The co-firing lowered the carbon, but not quite to the levels needed for the fly ash market. Edward Levy (Lehigh University) offered examples of attempts by Potomac Electric Power at controlling operating parameters to reduce carbon while keeping the NO_x emissions within the permitted limit.

The prediction of fly ash carbon drew attention from Will Gibb (Power Technology; with co-authors Mike Cloke and Ed Lester of Nottingham University). They claim that an image analysis-based parameter provides a better predictor than the conventional "reactive macerals" number. In reality, neither offers a reliable predictor and the image analysis results offered an improvement on conventional microscopy only when the Pocahontas (Central Appalachian medium volatile bituminous) and Guasare (Venezuela high volatile bituminous) coals were ignored. David Kalmanovitch (DP Riley) also used petrography as one of many tools in the prediction of LOI at American Electric Power's Glen Lyn station.

The beneficiation of fly ash to recover a marketable low-carbon fly ash, and other marketable products, gathered attention from Dennis Horazak (Parsons Power Group). Potential does exist for the beneficiation of fly ash into a number of by-products, borrowing an old trick from hog processors who market *everything but the squeal*¹. Some conference participants, however, felt that Horazak was too optimistic in employing high sale prices without factoring in the saturation of regional markets. Edward Levy (Lehigh University) discussed the operation of a bubbling fluidized bed process for the removal of high carbon fly ash and John Stencil (CAER) discussed triboelectrostatic separation of fly ash. Both processes are still in development, although a variation of the latter process has been commercialized by Separation Technologies. Wet separation, not represented at the conference, also offers promise but is frowned upon by some ash marketers since they traditionally market a dry product.

The subject of carbon in fly ash is one of continued interest to utilities. The opportunity for interaction with traditional and new applications of coal petrography makes the topic an important issue for TSOP as we enter into the later 1990's.

¹ I recall from a high school history paper that Wilson Sporting Goods got its start (perhaps in the 1880's) from the need for Wilson Meat Packers (perhaps not exactly the corporate name) to either dispose of or market their hides.

ASTM News

Ronald W. Stanton

The Spring 1996 Meeting of Committee D-5 on Coal and Coke was held in Pittsburgh, PA. The seminar held focused on trace elements in coal. Presentations ranged from modes of occurrence of trace elements to what are the possible levels of detection of specific elements. One set of presentations by Consol Inc. and the Department of Energy dealt with trace element partitioning around two different power plants and the problems of sampling and mass balance associated with the study. A final presentation dealt with standardization efforts in ASTM and ISO for trace elements.

Two new standards have just been published and are available as separates: PS052-96 *Test Method for determination of trace elements in coal, coke and combustion residues from coal utilization processes by inductively coupled plasma atomic emission spectrometry and inductively coupled plasma mass spectrometry* and D5668 *Test Method for total fluorine in coal and coke by the pyrolytic extraction and the ion selective electrode or ion chromatograph methods*. *Classification of coals* (D388) is being amended to include a discussion of the derivation of the Parr mineral formula.

A round robin analysis of coke carbon forms is being conducted by participants of the reflectance round robin exercise. In addition, protocol for maceral analysis is being developed to accompany a round robin for maceral analysis. Interested participants should contact Ron Stanton (703-648-6462 / rstanton@usgs.gov).

Two petrographers received the R.A. Glenn Award this year. The R.A. Glenn Award is presented to members of Committee D-5 on Coal and Coke who have contributed to the development of ASTM Standards. Ralph Gray received the award for his continuing contributions to the development of ASTM Standards in coal and coke petrography and for his efforts in training many present-day industrial petrographers. Kevin DeVanney received the award for his leadership on the revision of existing standards and the development of new standards.

The next meeting of Committee D-5 on Coal and Coke will be held on October 6-9, 1996 at the Snow King Resort in Jackson, Wyoming.

EAOG and ACS Geochemistry Division Updates

Lorraine Eglinton, TSOP Liaison

"Who runs the European Association of Organic Geochemists (EAOG) and when is the next meeting?"
Current EAOG Members of the Board are :

B. Horsfield (Julich), Chairman
J. Rullkotter (Oldenburg), Secretary
P.J.R. Nederlof (Oman), Treasurer
S.J. Rowland (Plymouth), Membership Officer
A-Y. Huc (Rueil-Malmaison), Awards Officer
R. Patience (Stavanger), Newsletter
J.O. Grimalt (Barcelona)
M. Hetenyi (Szeged)
J.W. de Leeuw (Texel)
N. Tielnaes (Bergen)

EAOG has a special membership offer : If you join EAOG for £45 UK (approximately \$75 US) you will receive all 1996 issues of the journal *Organic Geochemistry*. Upon renewing your membership in 1997 you will be able to register for the 18th International Meeting on Organic Geochemistry to be held at Maastricht, The Netherlands, 22 - 26 September 1997 for a substantially reduced rate. In addition, whether you attend the Maastricht meeting or not, you will receive the special volume of *Organic Geochemistry* containing the proceedings of the meeting and all normal issues of *Organic Geochemistry*. This is a generous offer from the publishers and it may be worth joining EAOG now. To join EAOG contact: Prof. S. J. Rowland, Department of Environmental Sciences, University of Plymouth, Plymouth, England, UK, PL4 8AA. Telephone : 01752-233013, Fax:01752-233035.

Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its members' ideas, observations, concerns, and interests. We are always in dire need of scientific, technical, and historical articles, as well as publication reviews, news items, and opinion pieces. Our excessively large and ridiculously over-paid editorial staff needs your help! All that editing and re-writing eats away at valuable time that we'd rather be spending on the Côte de Azur. *Only your efforts can increase our leisure.* Help the *TSOP Newsletter* stand out from the pack. Contribute today!

"Who runs it and what's going on at the American Chemical Society (ACS) Geochemistry Division?"
Current ACS Executive Officers are :

Timothy I. Eglinton, Chairman
George W. Luther III, Program Chair/Chair-Elect
Susan A. Carroll, Secretary
Bradley Tebo, Treasurer
E. Michael Purdue, Membership Officer
Sue Clark, Editor
Patrick Hatcher, Councilor
Earl Baker, Alternate Councilor

George Luther is program chair for the upcoming ACS meeting in Orlando, Florida, August 24 - 29, 1996. Featured symposia include the following :

1. *Organic Carbon Preservation in Sediments and Soils* J.I. Hedges, School of Oceanography, WB-10, Univ. of Washington, Seattle, WA 98195. Tel: 206-543-0744, fax: 206-543-6073, E-mail: jihedges@u.washington.edu
2. *Transition Metals in Crude Oils and Sedimentary Organic Matter* M.E. Quirke, Dept. of Chemistry, Florida International Univ., University Park Campus, Miami, FL 33199. Tel: 305-348-3093, fax: 305-348-3772.
3. *Geochemical transformations of lignin and carbohydrates in natural waters and modern/ancient sediments* P.G. Hatcher, Fuel Science Program, Penn State, University Park, PA 16802. Tel: 814-865-7838, fax: 814-865-3075, E-mail: hatch@ems.psu.edu.
4. *Geochemical Processes in South Florida Ecosystems* R.K. Kotra, USGS, 954 National Center, Reston, VA 22092. Telephone: 703-648-6271, fax: 703-648-6383, E-mail: rkotra@usgs.gov.

The next ACS meeting will be held in San Francisco, CA in April 1997. Suggestions for symposia should be sent ASAP to the Program Chair : George W. Luther III, College of Marine Studies, Univ. of Delaware, Lewes, DE 19958. Telephone: 302-645-4208, fax: 302-645-4007, E-mail: luther@brahms.udel.edu. Abstracts for this meeting will be due in early December 1996. Further information concerning the ACS Geochemistry Division can be obtained from the World Wide Web at the following address: <http://grommet.whoi.edu/>

Membership News

David C. Glick, Membership Committee Chairman

1996 Membership Directory

The new membership directory should be in the mail soon after members receive this newsletter.

Professional Changes

Members are invited to submit news/details of changes in their employment or positions, as well as address changes, for publication. Please send your news to David Glick (see address information on page 2).

Address Changes and Corrections

Please make the following changes and additions in your 1995 Directories.

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New Members

The Society welcomes the following applicants who were accepted into membership by Council at the mid-year meeting: Judith A. Gennett, Henrik I. Petersen, Shan Xie, Jorgen A. Bojesen-Koefoed, and Zhongkai Chen, all previously introduced in this column, and :

Yuan Ping Yan
Shaanxi Coalfield Geology Bureau
4 Jiandong Street
Xian, Shaanxi 710054, China
phone: 86-29-3213702-3052
fax: 86-29-3239047

Ms. Yuan operates a well-equipped coal petrology lab which provides services in support of coal exploration and evaluation.

Review - *Trace Elements in Coal*

Robert M. Davidson and Lee B. Clarke
IEA Coal Research Perspectives IEAPER/21, 1996, 60 pp.

James C. Hower

University of Kentucky Center for Applied Energy Research, Lexington, KY 40511

Trace elements in coal remain a "hot button" issue for coal-fired utilities in the United States and elsewhere. As a case in point, on March 22, 1996, following nearly two years of contested case activity, a Minnesota judge rejected placing environmental costs on mercury emissions from coal combustion at Minnesota power plants. Before we reassure ourselves that the decision suggests a longer-term trend, the judge actually recommended that the Minnesota Public Utilities Commission "defer adoption of an environmental cost for mercury until after better information becomes available." What is a suggested "environmental cost?" The opponents of coal-fired combustion recommended costs as high as \$8 trillion per ton of Hg emissions but were willing to settle for a mere \$50 million per ton. While costs for Hg were rejected, the judge placed values on lead emissions ranging from \$379/ton in rural areas up to \$3653/ton in urban areas (based on 1993 dollars), [see Wilson, 1996]

Trace elements are more than just a scientific curiosity, serving only as important clues in understanding the depositional and diagenetic history of a coal bed. Trace elements, particularly the "hazardous air pollutants" or HAPs named in the 1990 Clean Air Act Amendments, could prove to be considerations in coal purchases, in fuel switching, and in future decisions regarding new power plants. While the US Environmental Protection Agency deferred any decisions on elements other than mercury, which is subject to more study, the issue of regulation of trace elements in coal combustion could rise again in the future.

Davidson and Clarke set out to provide an update, not a replacement for, one of the classic works on the subject: Dal Swaine's *Trace Elements in Coal*, published in 1990. Considering the rapid pace of scientific publication, a supplement such as *IEA Perspectives 21 - Trace Elements in Coal* is a valuable summary of the recent literature (185 of the 200 references cited are 1990 and later).

In chapters 2 and 3, the authors examine the methods used to detect trace elements, the limits of reliability,

and the problems associated with sampling. Chapters 4 and 5 are devoted to the modes of occurrence and the mineral associations of trace elements. Not all forms of the HAPs are toxic, a point clearly demonstrated for Cr by some advanced analytical techniques.

The review of element partitioning in chapter 6 reinforces the intuitive assumption that trace element partitioning is dependant on the mineral association and the ease of removal of the mineral. Many HAPs have at least partial association with sulfide minerals, providing some advantage in coal beneficiation due to the density difference between the coal and minerals. The size of the mineral and their relative weight contribution to the coal particle are determining factors in the removal of mineral matter. The trace elements not relegated to the refuse stream at the preparation plant are sent to the power plant with the clean coal product. The partitioning of elements in combustion, treated in chapter 7, was reviewed at greater length in a previous IEA report (Clarke and Sloss, 1992). The authors point out that with two exceptions, Se and Hg, the emissions of HAPs from power plants are quite low. The need for further research on trace element emissions, particularly for the latter elements, is emphasized.

Trace Elements in Coal is a valuable reference, particularly considering the amount of current research summarized in the book. At prices ranging from \$75 for educational establishments in IEA member countries to \$450 for purchasers in non-member countries, the price may be a deterrent to the purchase of the book by many individuals who would benefit most from the discussion.

References

Clarke, L.B. & Sloss, L., 1992, Trace elements - emissions from coal combustion and gasification, IEACR 49, 111 pp.

Wilson, R., 1996, Minnesota judge issues externalities report, rejects mercury value: *CEED News*, v. 4, no. 4. [In press / no pagination; available at (<http://www.conx.com/ceed/comms/newsltr/v4n4.html>)]

Review - Amber, Resinite, and Fossil Resins

Ken B. Anderson and John C. Crelling (eds.)
ACS Symposium Series 617, 1995, 297 pp.

James Pontolillo

This volume was developed from presentations given at a symposium sponsored by the Division of Geochemistry at the 208th National Meeting of the American Chemical Society (ACS) in Washington, DC from August 21 - 25, 1994. As such it serves as a valuable snap-shot of a discipline in the process of inventing itself and mapping out future research priorities. Those who would slight the importance of amber and resin in the broad scope of organic geochemistry are reminded throughout this volume that "fossil resins preserve details of their own original molecular structure to a greater degree than perhaps any other form of sedimentary organic matter" (e.g., in Chapter 14 Wang et. al. discuss a 40 Ma year-old fly amino acid solution that showed virtually no decomposition of the highly unstable amino acid serine). Clearly, such materials have the potential to be of inestimable value in organic geochemical studies.

In their introduction Anderson and Crelling give an excellent summary of the long-lived nomenclatural problems that continue to hamper communication between researchers and of the controversy surrounding the "dating" of ambers. Their call for a universally-adopted classification scheme based on the structural characteristics of amber itself will hopefully reach a wide audience. It is difficult to envision a productive future for any discipline lacking an objective systematic framework in which to make and interpret observations.

The sixteen chapters (each is an individual paper) that follow cover a broad range of subject matter including : stable isotope composition of ambers; resin-derived hydrocarbons in fresh and fossil dammar resins; pyrolytic and spectroscopy studies of resinite diagenesis; the structure, composition, and maturation of class I (polylabdanoid) resinates; unusual resin chemistries; petrology of resinite in American coals; trace amino acid composition of resins and ambers; and technological uses for fossil resin concentrates. Clearly, space prohibits an examination of each published paper. Several chapters, however, deserve especial mention.

Langenheim (chapter 1 - Biology of Amber-Producing Trees) gives an excellent overview of the resin and

amber-producing plant families (exemplified by case studies of *Hymenaea* and *Agathis*). This is supported by an examination of the botanical structural considerations that must be taken into account with regard to ambers. Anderson and La Page (chapter 9 - Analysis of Fossil Resins from Axel Heiberg Island, Canadian Arctic) present the results of a unique study : exceptionally well-preserved resins that could be characterized both chemically and taxonomically. Usually, the absence of definite morphological characteristics renders the identification of amber origins speculative. The results of this study have important implications for ambers of uncertain botanical origin.

The high point of this volume is, without a doubt, Chapter 11 by Grimaldi (The Age of Dominican Amber). It is a carefully detailed and devastating critique of sloppy ^{13}C -NMR "dating" techniques (interpreting reduced exomethylene resonances as indicative of fossilization) that are currently in use by a number of researchers. Grimaldi demonstrates that these authors have 1) confabulated maturity [age + diagenesis + botanic origin] with "age"; 2) made unwarranted assumptions of linear decay with time for exomethylene resonances; 3) ignored other lines of evidence such as stratigraphy, ^{14}C studies, and fossil insect taxonomy when they contradict ^{13}C -NMR "dates"; and 4) made contradictory claims regarding the interpretation of amber color variations with regard to age. The impact of Grimaldi's work is heightened by the fact that Chapter 10 of this volume employs the very methodology that he so thoroughly discredits.

Amber, Resinite, and Fossil Resins offers the reader a comprehensive review of an often neglected corner of organic geochemistry. The editors have done an excellent job in selecting papers that illustrate the broad applicability of such studies and delineate the long-term research needed to move this discipline from the uncertain frontier to the mainstream of scientific investigation. As always, the ACS has done a top-notch presentation job : hard-cover binding, high-quality paper, sharp black-and-white graphics, and stunning color photomicrographs. This book is a valuable addition to the library of anyone interested in organic geochemistry.

Publications of Interest

Geological and Landscape Conservation

D. O'Halloran, et. al. (eds.)

1995, Geological Society of London, 530 pp.

From a recent review: "The book consists of short papers grouped in four major themes: 1) Sustainability of geological resources; 2) landscape conservation and public awareness; 3) local and community initiatives; and 4) site conservation and public awareness.... This is not a book devoted to science. Rather, it deals with a multitude of considerations needed to achieve the goal of protecting geological sites and geomorphic components of the landscape.... the conservation of geologically significant sites is certainly a noble idea.... Those readers who are more than passive devotees of geologic and geomorphic conservation will enjoy this book and will certainly want to include it in their library for reference purpose."

* * * * *

The Palaeobiology of Trace Fossils

Stephen K. Donovan (ed.)

1994, Wiley Publishing, 308 pp.

From a recent review: "... trace fossils occupy a unique position scientifically, a position that bridges the gap between paleobiology and sedimentology. Trace fossils commonly offer important, if not pivotal, evidence for paleoenvironmental reconstructions and Paleocological interpretations.... Chapters are devoted to the taxonomy of trace fossils; boring and burrowing invertebrates; traces from Pleistocene and Holocene carbonate environments; [the importance of] trace fossils across the Precambrian-Cambrian boundary; bioerosion; bioturbation through geologic history; plant roots; trace-making non-marine arthropods; vertebrate coprolites; vertebrate tracks; and vertebrate eggs. All of the chapters are well-written by leading specialists, the book is very well written, illustrated, and edited.... This book provides a good overview of current thinking among ichnologists....[and]....could serve as a good core text for a graduate level course in ichnology. Perhaps the most useful aspect of this volume is the excellent set of reference lists appended to each chapter."

Fractals in Petroleum Geology and Earth Processes

Christopher C. Barton & Paul R. La Pointe (eds.)

1995, Plenum Publishing, 317 pp.

From a recent review: "The editors of this book chose a diverse spectrum of papers written by pioneers in the field of fractals and their application to the exploration and production of hydrocarbons.... The last two chapters (chapter 13: vertical vs. horizontal well-log variability and application to fractal reservoir modeling / chapter 14: fractal geometry and mathematical order in geology and geophysics) are of particular interest [with regard to geophysical modeling and inversion].... This timely, impressive, elegant book is well illustrated, providing a good balance between theory, concepts, and practice. The book would be valuable for geoscientists and engineers involved in either exploration or production."

* * * * *

Ultrastructure of Fossil Spores and Pollen

M.H. Kurmann & J.A. Doyle

1994, The Royal Botanic Gardens, 221 pp.

From a recent review: "The compilation of papers presented at a symposium presented at the last IPC, this volume represents a snapshot of the state of pollen and spore ultrastructural studies circa 1992. Such studies of fossil spores and pollen provide much needed details to the bigger picture of character states in the context of phylogenetic relationships of the (often unknown) producing plants. This volume represents a significant advance in the documentation of fine-structural details of spores and pollen not for the sake of *pretty pictures* (which in this volume are excellent) but rather for addressing problems in the definition and application of ultrastructural characters and their significance in generating and testing systematic hypotheses.... The many fine studies clearly demonstrate the value of palynology in a systematic context. While some areas of palynology gasp and wheeze it is a pleasure to know that this area at least continues to live and prosper."

Calendar of Events

1996

May 27 - June 2 : Tenth International Peat Congress, Bremen, Germany. For info, contact CPO Hanser Service at 49-511-643-2459 (phone) or 49-511-643-2304 (fax).

June 2 - 6 : Fourth Annual Association of Afro-Asian Petroleum Geochemists (AAPG) International Conference, Arusha, Tanzania. For information, contact Dr. Y.S. Mwalyego, 4th AAPG Conference Secretariat-TPDC, P.O. Box 5233, Dar Es Salaam, Tanzania.

June 11 -13 : 10th Latin American Petroleum Show, Maracaibo, Venezuela. For info, contact International Exhibitions at 713-529-1616 [phone] Or 713-529-0936 [fax].

June 14 - 18 : Fifth World Congress of Chemical Engineering, San Diego, CA. For information contact the AIChE Meeting Department at (212)-705-7320 (fax).

June 17-21 : Annual Meeting Canadian Society of Petroleum Geologists, Calgary. For information call (918)-584-2555.

July 7 -12 : Carbon 96, New Castle upon Tyne, United Kingdom. For information, contact Dr. K.M. Thomas at 44-0-91-222-8542 (fax).

August 4 -14 : Thirtieth Session of the International Geological Congress, Beijing, China. For information, contact Zhao Xun at 86-1-8328928 (fax).

August : Geochemistry of Coal & its Impact on Environments & Human Health, Beijing, China. This session is being held as a part of the 30th IGC. For info, see ad in the September 1995 *TSOP Newsletter* (vol. 12, no. 3, p. 4) or contact the conference organizers: R.B. Finkelman (703-648-6412) or C.L. Chou (217-244-2492).

August : Organic Geochemistry of Fossil Fuels, Beijing, China. This session is being held as a part of the 30th IGC. For information, contact Dr. Jacques Connan (fax: 33-59-834-369) or Dr. Joseph Curiale (fax: 213-287-5408).

August 25 - 30 : 212th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396. See also ACS Geochemistry Division Update (this issue, page 17).

August 25 - 30 : 1st Application of Molecular Markers to Environmental Geochemistry Symposium, Orlando, FL. This symposium will be held in conjunction with the 212th Meeting of the ACS (see above). For further information, contact Dr. Robert Eganhouse at (703)-648-5879.

September 8 -11 : Second AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. For information contact the AAPG Convention Department at (918)-584-2555 (phone) or (918)-584-2274 (fax).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. For further information, contact Jack Crelling at (618)-453-7361 [phone] or (618)-453-7393 [fax].

September 23 - 26 : Coal Structure '96, Krakow, Poland. For information, contact Prof. A. Bylicki at 48-32-31-7410 (phone) or 48-32-31-2831 (fax).

October 6 - 9 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For info, contact Ron Stanton at (703)-648-6462 [phone] or (703)-648-6419 [fax].

October 7 -11 : Fourth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, Cagliari, Italy. For information, contact Dr. Raj K. Singhal at (403)-241-9460 (fax - Canada).

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call Charles L. Pillmore at (303)-236-1240.

November 10 - 15 : AIChE Annual Meeting, Palmer House, Chicago, IL. For information call (212)-705-7845.

December 2 - 4 : 7th Australian Coal Science Conference, Gippsland, Australia. For information, see the ad in the March 1996 *TSOP Newsletter* (vol. 13, no. 1, p. 9) or contact Dr. Geoff Perry at 61-0-51-321500 [phone], 61-0-51-321580 [fax], or perry@hrl.com.au [e-mail].

1997

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For

information, contact the AAPG Convention Department at (918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For information call (202)-872-4396. See also ACS Geochemistry Division Update (this issue, page 17).

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For additional information, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV. For info Call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 (telephone) or 49-40-630-0736 (fax).

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands.

September 29 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 (telephone) or 31-591-301223 (fax).

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 (telephone) or 33-69-756-4201 (fax).

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyväskylä, Finland.

1999

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For information, contact GSA at (303)-447-2020 (phone) / (303)-447-6028 (fax).

2000

August 6 - 11 : Eleventh International Peat Congress, Quebec City, Quebec, Canada.

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Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

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I just don't know how I got through my day at work without my two brand-spanking new TSOP mugs. They're sturdy, microwaveable, fabulous looking, and are great conversation starters too! I can't recommend the TSOP mug highly enough!

TSOP Archives
 Open for Business!

The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

Kenneth W. Kuehn
 TSOP Archivist
 Geology, Western Kentucky University
 1 Big Red Way
 Bowling Green, KY 42101, USA

ph: (502)745-3082
 fax: (502)745-6410
 kenneth.kuehn@wku.edu



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

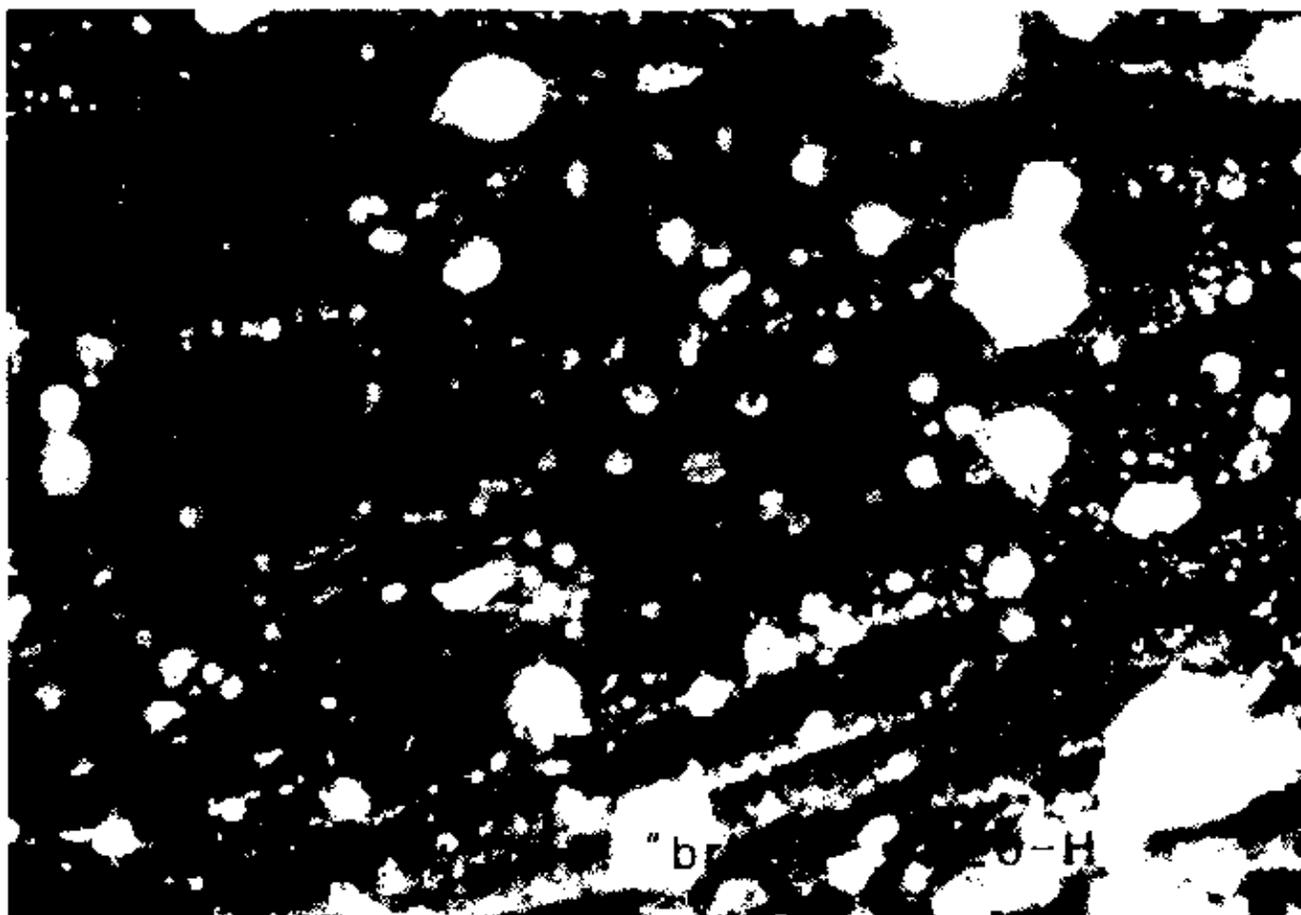
Vol. 13, No. 3

September 1996

ISSN-0743-3816

Inorganic Geochemistry of Lignite

in the lone Formation



Fluorescence photomicrograph of decomposed cuticle and "wax" droplets found in lignites of the Eocene lone Formation along the eastern edge of the Central Valley, California, USA (article begins on page 4). Photomicrograph courtesy of Neely H. Bostick.

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

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For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1995-96 TSOP Council

President	Brian J. Cardott
Vice-President	Kenneth W. Kuehn
President Elect	Jeffrey R. Levine
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Editor	James Pontolillo
Councilor (1994-96)	Stephen Bend
Councilor (1995-97)	Ganjavar K. Khorasani

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:
 Jim Pontolillo
 (703)-648-4849 phone
 (703)-648-5832 fax

For Membership Packets:
 Dave Glick
 (814)-854-6543 phone
 (814)-865-3573 fax



Printed on recycled paper containing 50% post-consumer waste fibers.

Submission Deadline Next Issue
 10 November 1996

President's Letter

Brian J. Cardott

Reflections

Reflecting on this past year (apparently an occupational hazard of measuring vitrinite *reflectance*) calls to mind noted highlights. I would like to begin by stating that I have had the privilege of working with a great group of individuals - some hand picked (committee chairpersons and liaisons) and some I inherited (officers). To these I owe a debt of gratitude in having had a successful year.

- For purposes of registering the *TSOP Newsletter* and promoting the Society, the permanent TSOP mailing address is now care of the American Geological Institute.
- Renee Symanski and Ken Kuehn compiled and organized the TSOP Archives. Ken Kuehn is the new TSOP Archivist. The Archives are housed at Western Kentucky University in Bowling Green.
- Renee Symanski prepared a section for the TSOP Procedures Manual specifying the policy on "Funding of Officers/Chairpersons to TSOP Meetings." Ken Kuehn updated the TSOP Procedures Manual, now more complete than ever.
- Liaisons to other related groups were established.
- Responses from a TSOP Member Questionnaire provided insight into how well the Society is meeting the needs of its members and ways to improve.
- Council created an Internet Committee. Dave Glick, committee chairperson, and Michelle Lamberson worked tirelessly in creating a TSOP web site. Many thanks to them for their efforts and to Marc Bustin for his support in housing the TSOP site at the University of British Columbia Department of Earth and Ocean Sciences.
- The TSOP Membership Directory now has a registered copyright.
- Plaques were prepared and sent to the first four TSOP Honorary Members (William Spackman, 1994; Marlies Teichmüller, 1994; John Castaño, 1995; Peter Hacquebard, 1995). Ralph Gray was elected the 1996 Honorary Member recipient. Council approved a stipend (up to \$500) toward personal expenses incurred by receiving the Honorary Member award at the annual meeting.
- Council approved a policy on including ads in the *TSOP Newsletter*.
- Carolyn Thompson-Rizer, Research Committee chairperson, and Ganjavar Khorasani refined the focus of the Research Committee, with a renewed emphasis on applied research.
- MaryAnn Malinconico, Outreach Committee chairperson, singlehandedly handled TSOP publicity (to over 70 organizations) and the Industrial Sustainer Contribution Fund correspondence.
- Jim Hower and Ron Stanton prepared the TSOP part of the TSOP/AAPG Coal Atlas CD-ROM project.
- Jim Hower and Cortland Eble planned the TSOP/EMD symposium on current topics in coal geology at the 1996 Eastern AAPG meeting in Charleston, West Virginia on October 14-15.
- Jack Crelling, 1996 TSOP Annual Meeting Committee chairperson, has planned an exciting meeting, complete with a full program, short course, and field trip.
- Council accepted a proposal by Jeff Quick and David Wavrek to host the 1999 TSOP Annual Meeting in Salt Lake City, Utah.

In closing, thank you for giving me the opportunity to serve you as TSOP President.

TSOP WWW Site On-line!
(Well...almost)

It was sincerely hoped that by the time this issue of the *TSOP Newsletter* went to press the TSOP World-Wide Web page would be on-line and ready for use by our members and other interested parties. Despite the hard work of the Internet Committee, the site is still a few days from reaching fully operational status. To be placed on a list for direct notification as soon as the site becomes available, please notify David Glick (xid@psu.edu, or see address on page 2) of your interest. Complete details concerning the TSOP web-site and its features will appear in the December 1996 issue of the *TSOP Newsletter*.

Inorganic Geochemistry of Lignite in the Ione Formation, California, USA

Robert B. Finkelman¹, Neely H. Bostick², Walt M. Martin³, and Noel W. Kirshenbaum⁴

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formerly with Placer Dome U.S. Inc., Reno, NV 89509

²U.S. Geological Survey, Mail Stop 972, Denver, CO 80225
⁴Placer Dome U.S. Inc., San Francisco, CA 94115

The Eocene Ione Formation, a series of clay, shale, sandstone and lignite beds occurs along the eastern edge of the Central Valley in California. The lignite is currently mined near the town of Ione in Amador County, about 60 kilometers southeast of Sacramento, in the general vicinity of the Mother Lode gold belt, an historical source of gold, copper, and other metals (Tucker, 1915) [see Figure 1]. Chromite-bearing serpentinites also occur in the area (Aubrey, 1903). The Ione Formation is overlain by a series of rhyolitic and andesitic tuffs (Allen, 1929).

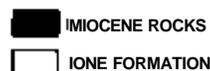
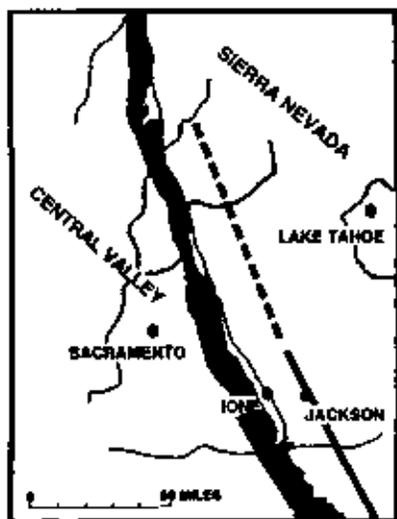


Figure 1. Location map of the Ione Formation and Mother Lode Gold Belt. (Mother Lode Gold Belt denoted by solid-dashed line)

Jennings (1957) reported that the lignite near Ione occurs in three lens-shaped bodies, ranging in diameter from 167 to 1,000 meters and up to 8 meters thick. The lignites are nearly horizontal and have been identified only where covered by less than 50 meters of

overburden. The lignites were once mined only as fuel but, since 1947, they have been mined as the only domestic source of montan wax. The wax is used in shoe polish, lubricants, water-proofing, protective coatings, inks, and other products. After extraction of the wax, the residue has been used as a pigment and as a soil conditioner. Since 1987 the residue has been used as a fuel in a nearby circulating fluidized bed cogeneration power-plant (DOE/EIA, 1994).

Many layers of the Ione lignite contain unusually small proportions of the wood-, root-, and bark-derived components that compose most lignites. The Ione lignite has a high content of hydrogen-rich organic matter such as spores, cuticles, and resins (Bostick, 1988). Even primary waxes and chlorophyll-derived products can still be seen using a microscope. It is possible that this unusual organic composition contributed to some aspects of the inorganic chemical composition.

Although the lignite in the Ione Formation has been mined since the 1860s (Jennings, 1957) we could find no published information on the inorganic chemistry of these lignites. We present chemical analyses of 15 samples obtained from a channel cut in a fresh wall of an active mine.

Samples of the lignite were collected in 1989 from the ALPCO mine (currently operated by the Jackson Valley Energy Partnership) in the Carbondale Basin, the northwestern most lignite body in Amador County [see Figure 2]. A series of 19 samples were collected representing the upper 8.1 meters of the lignite. Approximately 4 meters of the lower part of the lignite were sampled a week later. Two clay partings (about 0.7 and 0.33 meters thick respectively) in the lower part of the bed and about 1.33 meters of lignite near the middle of the bed were not exposed and could not be sampled. Each sample collected represents a 0.33 - 0.67 meter thick interval [see Figure 3].

Inductively coupled plasma mass spectroscopy and atomic emission spectroscopy (ICP-AES) were used to obtain data on 58 elements in the lignite samples (Table

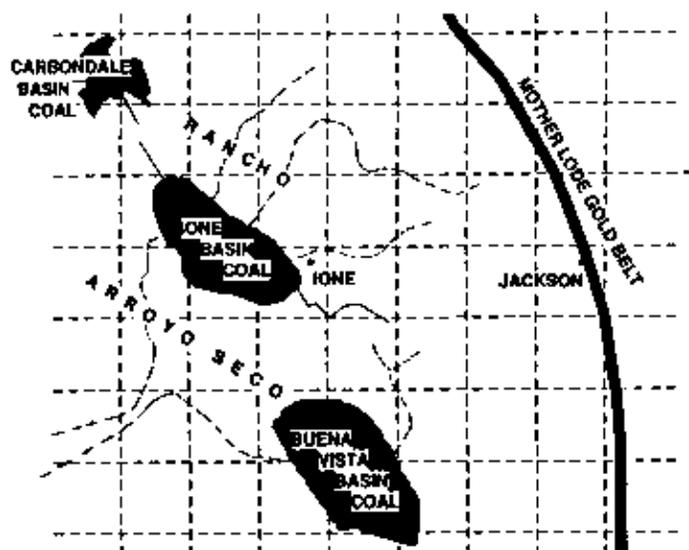


Figure 2. Location map of coal basins in Amador County. (Broken lines denote range and township gridlines)

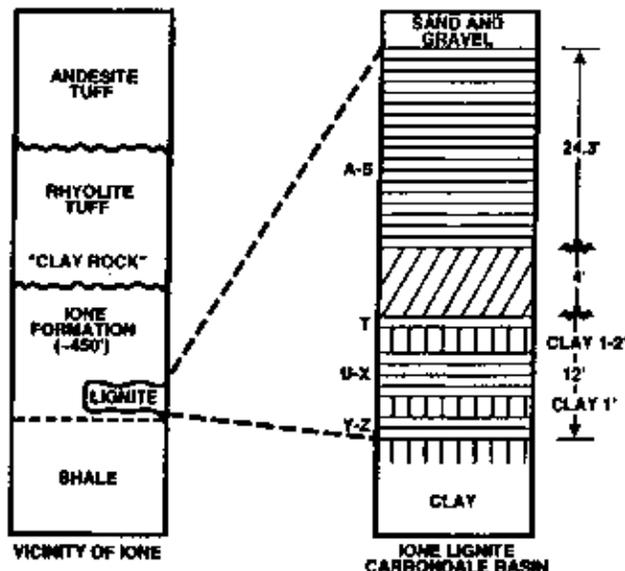


Figure 3. Generalized Stratigraphic section of the lone lignite.

1). Selenium was determined in coal by hydride generation followed by atomic absorption, spectroscopy, and mercury was determined by cold-vapor atomic absorption spectroscopy. Wavelength X-ray fluorescence analysis of the coal was used to determine chlorine and phosphorous concentrations. Fluorine in coal was determined by selective ion electrode.

Bulk mineralogy of eight samples (B, E, G, T, K, Q, X, Y) was determined on the low temperature ash (LTA) by X-ray diffraction using the method described by Hosterman and Dulong (1989). The dominant mineral in the LTA samples is kaolinite (60 - 90 weight-percent). Up to 20 weight-percent of the LTA was bassanite, an artifact of the ashing process. Most LTA samples contained traces (< 5 weight percent) of quartz, carbonates (primarily siderite), and pyrite. The LTA of sample G, however, had 20 weight percent pyrite. Sample X and Y had traces of the aluminum oxides diaspore and gibbsite.

In 1994 Placer Dome U.S. Inc. collected a suite of 13 samples from the same lignite pit. Samples were taken from lignite beds and capping lignites, argillitic conglomerates along the southern and eastern mine benches. The samples were obtained from 1.7 - 2.0 meter intervals of vertical channels and panels having unique lithologies. The samples were sent to a commercial analytical laboratory for gold, platinum, and

palladium by fire assay followed by ICP atomic fluorescence spectroscopic analysis.

Finkelman and others (1994) reported the average gold content of lignite in their lone lignite samples to be about 1.5 ppm. They noted that this value was considerably higher than the average gold value of U.S. coal (<0.05 ppm; Finkelman, 1993). The analytical data obtained by Placer Dome U.S. Inc., however, indicated gold values of the lone lignite to be between 2 and 12 ppb (platinum was less than 5 ppb and palladium was less than 2 ppb for all samples). Re-analysis, by instrumental neutron activation analysis (INAA), of six samples (K, L, N, X, Y, Z) analyzed by Finkelman and others (1994) and six Placer Dome samples having similar Stratigraphic distribution, indicated gold values of the lone lignite to be between 2 and 11 ppb, totally consistent with the Placer Dome results. The mean value for gold in the lone lignite samples is 5 ppb +/- 20%. We cannot offer an explanation of why the original data for gold was in error. The analysts carefully checked all their notes and records on these samples but were unable to account for the discrepancy.

The analytical error originally went unquestioned (by RBF) because of the proximity of the lignite to the gold-bearing rocks and the propensity of peat and coal to scavenge trace elements including gold (Gayer and Rickard, 1993, 1994; Marlatt and Spatz (1991). =>

It is, therefore, fair to ask why the lone lignite *did not* contain a gold anomaly. There are several possible explanations. For example, the gold weathered from the gold-bearing rocks may have been diluted with detritus from non-gold-bearing rocks. The groundwater geochemistry may not have been appropriate for gold dissolution, solute transport, and deposition in the peat. The lone lignite may have been derived from a raised mire receiving most of its nutrients from rainwater, although the relatively high-ash yields (approximately 20 weight-percent) argues against this explanation.

In addition to the data for gold, platinum, and palladium, Placer Dome obtained ICP-AES and atomic absorption data on 33 other elements. The results for all of these elements were similar to the data in Table 1. Similarly, in addition to data for gold, the INAA of the USGS and Placer Dome samples provided data for 24 elements. Bromine was present in the lignite samples at 2 - 10 ppm and lutetium was present at 0.16 - 0.51 ppm. The data for the 22 other elements were similar to the data in Table 1.

Elements highly enriched in the lignite, relative to their average concentration in U.S. lignite, include copper (110 versus 12 ppm) and vanadium (120 versus 20 ppm). Chromium and nickel are not enriched in the lone lignite. Additional research would be necessary to provide the answer, or answers, as to why the lone lignite contains copper and vanadium anomalies but does not contain high values of gold and chromium.

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Sample	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu	Cs	Ga	Ge	Hf	Hg	Li
B	0.23	7.3	1	200	278	1	0.15	0.08	2.8	38	167	0.38	13.4	1.5	2.3	0.47	75.9
D	0.11	7.6	0.9	212	248	1.1	0.09	0.11	7.3	28.3	212	0.09	8.1	1.3	1.4	0.28	40.7
E	0.13	3.8	1.4	223	144	0.9	0	0.05	2.2	24.9	127	0.09	5	0.9	1	0.17	23.6
O	0.18	10.3	1.5	176	298	0.7	0	0.09	2.7	20.4	135	0.09	4.8	1.2	0.9	0.6	30
H	0.09	2.6	2	244	87	0.9	0	0	1.8	18.3	109	0.05	3.8	0.4	1	0.29	22
K	0.24	2.4	2.8	218	120	0.7	0	0.11	3.9	18.5	172	0.11	9.6	0.9	1.7	0.34	52.3
L	0.09	1.6	0	231	96	0.7	0	0.05	3.6	19.6	126	0.16	6.8	0.5	1.4	0.13	35.6
N	0	3.7	2.9	243	200	0.7	0	0	3.1	14.3	64	0.04	5.1	0.6	1.1	0.38	24.3
O	0	16.1	1	168	121	0.7	0	0.07	11.9	21.5	67	0.25	7.2	0.8	1.6	0.29	56
Q	0	3.8	0.9	225	69	0.8	0	0	1.9	11.5	49	0.04	4.1	0.4	1	0.2	21.3
T	0	13.7	0.3	273	63	0.5	0	0	3.5	11.8	20	0.09	5.8	2.5	0.5	0.11	9.1
V	0	6.8	0.6	171	85	0.9	0.09	0.07	1.1	16.9	66	0.09	14.4	1.7	1.8	0.38	75.4
X	0	4.3	4.4	86	86	1.2	0	0.12	3.1	25.2	141	0.68	28.9	1.5	6.2	0.21	234
Y	0	10.2	1.9	148	99	1	0.2	0.16	8.2	22	82	0.72	19.1	1.3	3.3	0.38	145
Z	0	11	1.7	160	69	0.9	0.22	0.13	5.3	22.2	78	0.59	16	1	3.1	0.34	119
		105.2				12.7		1.04	62.4	313.4						4.57	

Sample	Mn	Mo	Ni	Nb	Pb	Rb	Sb	Se	Sn	Sr	Ta	Te	Ti	U	V		
B	182	3	16.2	12.4	9.1	2.4	1.1	24.3	2.8	1	240	0.8	0	3.3	2.2	213	
D	177	2.1	14.3	5.8	4.6	0.9	0.7	23	2.4	1.1	248	0.4	0	3.4	1.7	172	
E	183	1.3	8.3	2.1	2.1	0.7	0.3	18.3	1.9	0.7	262	0.1	0	2.2	1.1	119	
G	142	1.2	15.6	3.2	3.2	0.6	0.4	16	5.1	0.9	222	0	0.25	2.1	1	94	
H	183	0.9	7.2	1.8	1.8	0.4	0.2	15.9	1.9	0.5	293	0.1	0	2	0	88	91
K	153	1.3	12.6	6.8	4.1	1	0.5	24	3.1	1.1	240	0.4	0	2.8	1.6	146	
L	160	1	9.8	4.3	3.2	2	0.4	21	2.3	0.9	267	0.4	0	2.1	1.2	117	
N	157	0.8	8.3	2.7	1.3	0.4	0.2	15.7	2.4	0.6	272	0.3	0	1.4	0	88	93
O	148	1.2	33.6	4.7	3.8	1.4	0.4	15	2.7	0.9	224	0.4	0	2.2	0	1.6	96
Q	175	0.6	7.1	2	1.8	0.4	0.2	13.8	2.3	0.5	275	0.1	0	1.4	0	0.7	64
T	118	0.6	7.9	1.2	1.2	0.5	0.2	6.4	0	0.4	209	0	0	0.8	0	0.6	29
V	131	1.3	8.1	8.8	6.6	0.7	0.6	15.6	3.6	1.7	171	0.6	0	4.4	3.3	131	
X	86	1.7	41.8	27.7	9.8	2.6	0.8	24.6	4	3.7	92	1.8	0	6.2	3.4	160	
Y	69	2.5	19.1	13.5	11.2	3.2	0.8	14.5	4.3	2.6	135	1	0	3.3	3.6	161	
Z	72	2.3	17.8	11.6	13.1	3	0.8	12.5	4.3	2.5	138	0.9	0	3.3	4.1	116	
	2156		227.9		76.9		7.6	260.6	43.1						27.7		

Sample	W	Y	Zn	Zr	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
B	0.8	20.5	12.9	78	15.2	32.9	3	12.7	2.8	0.76	2.5	0.51	2.8	0.51	1.3	0.23	1.3
D	0.2	19.5	19.5	48	14.2	30.1	2.8	10.6	2.5	0.71	1.8	0.35	2.8	0.53	1.1	0.18	1.1
E	0.3	17	4.7	34	11.8	23.6	2.4	9.2	2.2	0.66	1.3	0.39	2.5	0.39	0.9	0.13	0.9
G	6	11.9	3.2	37	9.2	18.3	1.8	6.9	1.8	0.46	1.6	0.23	2.1	0.46	0.7	0.16	0.7
H	0.9	15.9	2.4	29	11	24.4	2.3	8.5	2.1	0.61	2.4	0.37	2.4	0.37	0.9	0.12	0.9
K	0.2	16.1	11.8	61	10.9	26.2	2.6	8.7	2.6	0.87	2.2	0.44	2.6	0.44	1.1	0.17	0.9
L	0.2	16.4	7.1	30	12.5	24.9	2.7	10.7	2.3	0.71	1.8	0.36	2.7	0.53	1.1	0.18	1.1
N	0.3	17.1	7.3	37	11.4	24.3	2.6	10	2.4	0.72	2.9	0.43	2.7	0.43	1.1	0.14	1
O	0.2	15.7	24.6	49	11.2	24.6	2.5	9	2.2	0.67	2	0.45	2.5	0.45	1.1	0.2	0.9
Q	0.4	18.8	2.8	35	12.5	26.3	2.9	10	2.6	0.88	2.5	0.38	2.8	0.5	1.1	0.25	1
T	0.7	10	5.4	15	5.5	11.8	1.3	4.6	1.3	0.36	0.9	0.27	1.5	0.27	0.6	0.09	0.6
V	1.6	14.5	6.6	63	9.2	20.2	2.2	9.2	2.2	0.74	1.8	0.37	2.4	0.37	1.1	0.17	0.9
X	0.6	10.3	98.4	209	12.3	18.5	2.5	6.2	1.8	0.55	1.8	0.31	1.8	0.37	0.6	0	1.2
Y	2.4	13.5	55.9	109	9.9	19.7	2.3	9.9	2.3	0.66	2	0.33	2.6	0.33	1	0.16	1
Z	5.3	14.1	25.7	110	9.4	21.9	2.3	9.4	2.3	0.63	2.2	0.31	2.8	0.31	0.9	0.19	1.3

Sample	F %	Cl %	SiO2 %	Al2O3	CaO %	MgO	Na2O	K2O %	Fe2O3	TiO2 %	P2O5	SO3	Oxide Summ	Ash %
B	0.02	0.01	42	33	9.1	1.4	0.15	0.23	2.6	4.1	0.1	8.3	101	25.3
D	0.009	0.01	34	29	13	1.7	0.19	0.11	2.3	4.2	0.12	13	97.6	17.7
E	0.009	0.02	28	24	19	2.3	0.27	0.14	2	2.6	0.1	18	96.4	13.1
O	0.003	0.02	20	18	9.6	1.3	0.12	0.07	30	1.7	0.07	17	97.9	22.9
H	0.006	0.01	24	23	23	2.8	0.3	0.11	1.4	2.3	0.12	18	95	12.2
K	<0.002	0.01	38	33	11	1.4	0.17	0.11	1.8	4.2	0.12	10	99.8	21.8
L	0.009	0.01	36	31	15	1.8	0.21	0.24	1.7	3.6	0.13	13	102.7	17.8
N	<0.002	0.01	26	23	19	2.2	0.27	0.09	6.4	2.7	0.14	22	101.8	14.3
O	<0.002	0.01	32	27	10	1.2	0.16	0.14	11	2.2	0.08	16	99.8	22.4
Q	<0.002	0.02	23	21	21	2.3	0.34	0.1	3.6	2.2	0.13	23	96.7	12.5
T	0.005	<0.01	21	20	21	2.5	0.31	0.15	5.4	1.4	0.03	25	96.8	9.1
V	0.003	<0.01	41	37	8.6	0.98	0.14	0.1	0.91	3.5	0.08	8.3	100.6	18.4
X	0.008	<0.01	49	44	0.86	0.31	0.04	0.11	1.1	3.9	0.15	0.83	100.3	61.5
Y	0.007	<0.01	45	41	3.6	0.46	0.08	0.24	1.9	3	0.1	5	100.4	32.9
Z	0.006	<0.01	51	39	4.2	0.53	0.08	0.24	2	3	0.09	1.5	105.6	31.3

Table 1. Analysis of lignite samples from the lone Formation. Values are on a whole coal basis in ppm, except at noted. Oxides are reported on an ash basis.

History of The Society for Organic Petrology

Brian J. Cardott, Renee L. Symanski, and James C. Hower

In order to know where we are going, it is useful to refer back to where we have been. The forerunner of The Society for Organic Petrology was the North American Coal Petrographers (NACP), an informal group that met occasionally (every one to three years, with a maximum of four times in 1962) to discuss mutual problems. The first meeting was held on March 12, 1956, at the U.S. Bureau of Mines in Pittsburgh. The organization's name changed several times, beginning as "Eastern American Anthracologists," with later names of "American Coal Petrographers" and "American Anthracologists," until finalizing on North American Coal Petrographers in 1967. The 25th and final meeting of NACP was in Merrillville, Indiana, on November 16-18, 1983. A list of NACP meetings and the organization session agenda of the first meeting were included in the abstracts volume.

Planning for a new formal organization for organic petrologists began in 1983, on the initiative of Pieter van Gijzel, by a group of organic petrographers, coal petrologists, organic geochemists, and Palynologists in Houston known as the "Houston Committee for Organic Petrography" and later known as the "Organizing Committee for Organic Petrology." The Committee consisted of Pieter van Gijzel (chairperson), Jack D. Burgess, John R. Castaño, Brenda Claxton, John A. Clendening, Richard W. Harding, H.B. Lo, Dolores O'Connor, Raymond N. Pheifer, Margaret Hildick-Pytte, Ann Brooke Reaugh, Coleman R. Robison, Roger Sassen, Helmut Schares, Karl Schwab, John Shane, Jesse D. Yeakel, and Harvey Zeiss. These individuals were presented Founder Awards at the 1994 TSOP Annual Meeting.

The group saw a need for a formal organization that would address mutual problems, such as the standardization of techniques (e.g., fluorescence microscope-photometry), improvement of preparation techniques and identification of drilling mud additives, classification systems for types of organic matter, origin of vitrinite, and the preservation and depositional environments of kerogen.

Two questionnaires were sent to approximately 900 members of the American Association of Stratigraphic Palynologists (AASP), North American Coal Petrographers, selected organic geochemists, and others personally known, to inquire (1) professional

activity, (2) support of a new organization for organic petrography, (3) options for an umbrella organization, and (4) plans to attend a founding meeting. Eighty-eight percent of the 260 replies supported a new organization.

The founding meeting of the new organization was held on March 10, 1984 in Houston, where the Committee adopted "The Society for Organic Petrology" as the name for the new organization, accepted the purpose of the organization (TSOP Constitution Article II), adopted a constitution and bylaws, elected officers and agreed on the date and place of the first annual meeting. Letters were mailed in April 1984, to those that responded to earlier mailings, inviting colleagues to become a founding member of TSOP. The dues were set at US\$15.

The first issue of the *TSOP Newsletter* was published in June, 1984. The first meeting of TSOP was held on October 16 - 17, 1984 at Tysons Corner in the metropolitan Washington D.C. area. Tables 1 and 2 are lists of TSOP annual meetings and officers.

Some of the vision of the Society founders (from objectives stated in the July 6, 1983 letter) have been realized: to have a forum for discussion of various problems in organic petrography; meeting with colleagues from different disciplines; teaching organic petrography by organizing seminars, short courses, and symposia; to publish a newsletter, manuals, and meeting proceedings. Other objectives are in progress: to solve several practical problems, such as classification systems for organic matter and bitumen, and standardization of techniques, or should be considered: computerization of microscopic analysis; stimulate universities to start programs in organic petrography and geochemistry.

TSOP has become a formal scientific society (e.g., having officers, constitution, bylaws, members, and honorary members; an annual meeting of technical and poster sessions, short courses, and field trips; abstracts and program volume; proceedings volume of peer-reviewed papers; quarterly newsletter; and membership directory) rather than a standardization organization, a niche served well by the International Committee for Coal and Organic Petrology (ICCP) and American Society for Testing and Materials, among others. TSOP

Table 1. List of Annual Meetings of The Society for Organic Petrology

Annual Meeting	Date	Location	Short Course/Symposium	Field Trip
1	Oct. 16-17, 1984	Tyson's Corner, VA		
2	Nov. 8-9, 1985	Houston, TX		
3	Sept. 23-25, 1986	Lexington, KY		Eastern KY coal and oil shale
4	Oct. 1-3, 1987	San Francisco, CA		Monterey Fm
5	Nov. 7-8, 1988	Houston, TX (TSOP/AASP joint symposium)	<i>Prediction of hydrocarbon reservoir potential from paleotemperatures and petrographic data</i>	
6	Oct. 30-Nov. 2, 1989	Urbana, IL	Fluorescence microscopy	
7	Sept. 9-14, 1990	Calgary, Alberta, Canada (TSOP/CSCOP)		Coal measures, Rocky Mountain Front Ranges and Foothills
8	Sept. 29-Oct. 2, 1991	Lexington, KY	Maceral separation	Coal-bearing rocks, eastern KY coalfield
9	July 23-25, 1992	University Park, PA (TSOP/ICCP)		Anthracite basins, eastern PA
10	Oct. 9-13, 1993	Norman, OK	Petroleum geochemistry	Arbuckle Mountains
11	Sept. 25-30, 1994	Jackson, WY	Fractal geometry	Organics and the Rockies
12	Aug. 27-30, 1995	Houston, TX	Microscopy workshop	Coal geology, Wilcox/Jackson Groups
13	Sept. 15-19, 1996	Carbondale, IL	Petrology of cokes, chars, carbons, graphites	Tradewater Fm, S. Indiana
14	Sept. 27-30, 1997	Lexington, KY (TSOP/Eastern AAPG)	several to be announced	several to be announced

is an Associated Society of the American Association of Petroleum Geologists and a Member Society of the American Geological Institute. There have been joint symposia (with AASP, American Chemical Society Geochemistry Division and Geological Society of America Coal Geology Division, resulting in collected papers in journals) and joint meetings (with the

Canadian Society for Coal and Organic Petrology, ICCP, and, in 1997, the Eastern Section of the American Association of Petroleum Geologists). The Society has grown in stature and is recognized worldwide. The diversity of TSOP membership continues to expand, as does international membership. The vision of the founding members continues to unfold.

Table 2. List of The Society for Organic Petrology Officers

Year	President	Vice President	Secretary/ Treasurer	Editor	Councilor	Councilor
1984	Clendening	Castaño	Reaugh	Hildick	Shane	Senftle
84-85	Spackman	Crelling	Reaugh	Hildick- Pytte	Shane	Senftle
85-86	Castaño	Bostick	Reaugh	Thompson- Rizer	Schwab	Thompson
86-87	Crelling	Teerman	Rimmer	Thompson- Rizer	Kalkreuth	Thompson
87-88	Bostick	Harvey	Rimmer	Williams	Kalkreuth	Levine
88-89	Burgess	Hower	Rimmer	Williams	Kaegi	Levine
89-90	Cohen	Rimmer	McLaughlin	Levine	Kaegi	Stout
90-91	Senftle	Harvey	McLaughlin	Levine	Kuehn	Stout
91-92	Rimmer	Cardott	McLaughlin	Levine	Kuehn	Reinhardt
92-93	Russell	McLaughlin	Kuehn	Bostick	Landis	Reinhardt
93-94	Hower	Mukhopadhyay	Kuehn	Bostick	Landis	Robison
94-95	Symanski (McLaughlin)	Crelling	Kuehn	Pontolillo	Bend	Robison
95-96	Cardott	Kuehn	Eglinton	Pontolillo	Bend	Khorasani
96-97	Levine	Landis	Eglinton	Pontolillo	Glick	Khorasani
97-98	Kuehn		Eglinton		Glick	

1997 Membership Dues

Once again, it's that time of year: time for membership renewal and payment of annual dues. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/96" appears, then you are paid only through December 1996 and need to pay dues for 1997 if you have not done so already. If you have paid dues in advance for several years, then the appropriate expiration date should appear on your mailing label.

Enclosed with this issue is a colored copy of the 1997 Dues Notice. Please note that membership rates and categories have remained the same: Regular (US \$20/CAN \$30); Student (US \$15/CAN \$23). We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

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1996 TSOP Election Results

The ballots have been counted and the following individuals have been elected by the membership to serve in the designated positions :

President-Elect — Kenneth W. Kuehn
 Vice-President — Charles Landis
 Councilor (1996-98) — David C. Glick
 Editor — James Pontolillo

The new council members will assume their duties at the upcoming Annual Meeting in Carbondale. At this time, President Brian J. Cardott will pass the gavel to current President-Elect Jeffrey R. Levine. Ganjavar K. Khorasani will serve out the final year of her two-year Councilor position (1994-96) and Lorraine B. Eglinton will serve the second year of her three-year Secretary/Treasurer position (1996-1998).

The TSOP Council extends its thanks to all of the candidates who took part in this year's elections, as well as to Roger Trader who oversaw the balloting process.

Membership News

David C. Glick
 Membership Committee Chairman

1996 Membership Directory

The Membership Directory is being printed at about the same time as this Newsletter. It was delayed so that it could include the 1996-97 list of officers and, it is hoped, the URL for the TSOP World Wide Web site. It includes recent address changes and other updates which will not be repeated here. Please check your Directory entry and inform David Glick of any corrections (see page 2).

USGS Zip Code Change

One address change included in the Directory affects a whole group of TSOP members: the zip code for the U.S. Geological Survey at the National Center in Reston, Virginia, has changed from 22092 to 20192.

AGI Holds Workshop on Geoscience Data Preservation

The American Geological Institute (AGI) brought together geoscientists from across the United States on July 28th at its Alexandria, Virginia offices to discuss ways to broaden support for efforts to preserve billions of dollars' worth of geoscience data. The workshop participants focused on a number of data types, including seismic data, drill core and well cuttings, paleontological collections, and environmental data - all of which are in danger of being lost as major oil and gas companies continue to shift their operations away from domestic production. Tight budget constraints also threaten data stored at universities and federal repositories. Because so much of this information is spatial, the workshop also addressed the geoscience community's concerns over the future quality and availability of topographic maps.

The workshop laid the groundwork for the drafting of an AGI policy paper that will address the issue of data preservation. The following day, a series of meetings between the workshop participants and national policy makers took place at federal agencies and congressional offices in order to garner support for AGI's efforts to develop a National Geoscience Data Repository System (NGDRS).

The data are readily applicable to many areas of applied and basic research in energy and mineral resources, engineering hydrology, mapping, natural hazards identification and mitigation, paleontology, and soil resources. The NGDRS is intended to capture these data and transfer them to public-domain repositories. The *Geotrek* online cataloging system, now being developed, would also improve access to these and other data in the public domain.

The project has been funded jointly by industry and the Department of Energy's Fossil Energy R&D program. The President's fiscal year 1997 budget request included \$1 million for geoscience data preservation, but the House-passed spending bill made large cuts to the account where that funding is located. The Senate Appropriations Committee restored the funding but Senate floor action and a conference between the House and Senate have yet to take place.

To receive additional information on the workshop or the National Geoscience Data Repository System, contact Dr. David Applegate, Director of Government Affairs, American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502. Phone: 703-379-2480; Fax: 703-379-7563; Email: gov@agi.umd.edu

(This is the final installment of a three-part article.)

Marie Carmichael Stopes, Crusading Paleobotanist

James Pontolillo

Part Three

On March 27, 1924, Marie gave birth to a son, Henry Verdon Stopes-Roe. After all the years of anxiously waiting for a child, Marie was convinced that this boy was the most extraordinary ever. She soon developed a fierce possessiveness about her son Harry. About this time her marriage with Humphrey was beginning to have serious problems — they grew progressively distant with each passing year. Harry's birth also corresponded with the final drop-off of Marie's scientific writings. Of her last eight published references between 1924 and 1955 only three are anything more than passing notices (Stopes and Wheeler, 1924; Stopes, 1935; Stopes et al., 1953). On November 21, 1924, a panel of five Law Lords (three of whom were over 80 years old) decided to reverse the appeal favorable to Marie in the libel suit against Dr. Sutherland. Marie could not bear to be officially in the wrong. From now on, her cause, her enemy (the churches), and she herself became so closely identified that Marie was no longer able to make a rational distinction among them. To make matters worse, an organized campaign to defame and smear Marie was begun; a torrent of threatening poison pen letters began to fill her mailbox. An informal measure of Marie's name recognition can be gauged by the fact that rhymes were made up by school children about her work.

The period 1925 - 1930 saw the steady decline of Marie's reputation as an effective social reformer. This was in large part due to the fact that, having opened the dialogue on sexual matters, she now had many competitors in the field. Even though sales were sharply down, Marie continued her outpouring of reproductive health books : *The First Five Thousand* (1925), *The Human Body* (1926), *Sex and the Young* (1926), *Enduring Passion* (1928), *Sex and Religion* (1929), and *Mother England* (1929). She also established a regular bulletin series published by her London clinic. In 1927, Marie tried to renew her pioneering spirit by sponsoring the world's first travelling, horse-drawn birth-control caravan. It was not at all successful until an enraged

opponent burned it down. The resulting publicity generated revenues for two new caravans and gave Marie's public image a much needed shot in the arm. In 1930, Marie helped to found the National Birth Control Council. Unfortunately, much of her energy was spent entangled in numerous libel suits both by and against her, for the most part involving newspapers. Marie's literary output at this time was still quite modest (four books, most published under pseudonyms). Her personal life had become increasingly erratic : many close friends considered her to be a paranoid megalomaniac. Again, during the General Strike of May 1926 Marie attempted to inject herself into the affair as a mediator, but was rebuffed. By 1928, her marriage with Humphrey had failed. Although the couple continued to live together, they were increasingly estranged. A year later, Humphrey was financially ruined and, in the opinion of his son, a "despised and inconsequential person" around the house.

The precipitous decline of Marie's fortunes in the realm of birth control and social welfare continued through the years. A short technical article (*Clinical Medicine and Surgery*, 1931, vol. 38, no. 3, pp. 179-80) garnered her a fair amount of disbelief and mocking criticism from the medical profession. Marie's unbridled arrogance and vanity, once qualities useful to her pioneering efforts, were no longer appropriate and were destroying her reputation. In 1933, Marie resigned from the National Birth Control Council due to her constant strife with fellow activists. She had become something of an anachronism : advances in methodology and changes in morality left her more traditional views behind. In June, annoyed by the lukewarm reception for her latest book *Roman Catholic Methods of Birth Control*, Marie chained a copy of it to the font of Westminster Cathedral. Despite her increasing marginalization, Marie's writings in the field continued on unabated with *Birth Control Today* (1934), *Marriage in My Time* (1935), and *Change of Life in Men and Women* (1936). Marie's scientific

career underwent a brief renaissance in 1935 with the publication of her last major work on coal petrology (Stopes, 1935). In it, she proposed an ambitious scheme for defining, naming, and grouping the components of coal, including coining the term "maceral" for the microscopically discernible constituents of coal. Her ideas, a number of which have been officially adopted by co-workers, represented a refinement of coal petrologic nomenclature and theory. Despite her preoccupation with other activities, she retained an active interest in geological (and particularly Paleobotanical) matters all through her life. She found time to follow current work, and was always disposed to take interest in an aspiring student in her old field.

For all intents and purposes, Marie gave up active participation in the birth control movement and changed her focus to literary endeavors in 1937. She still had a few social welfare books in her system (*Your Baby's First Year* [1939], *Black Breeding* [1941], *The Evidence of Dr. Marie C. Stopes to the Royal Commission on the Press* [1953]), but their appearance scarcely caused a stir. By August 1939, Marie and Humphrey had separated for good; she and Henry stayed on at the estate (Norbury Park) near Dorking, while Humphrey took separate lodgings in London. Humphrey was considered an unwelcome guest at Norbury Park and allowed to visit his son only infrequently. The situation soon degenerated to the point that his requests to see Henry were always refused. Humphrey Verdon Roe died indigent at a nursing home in Croyden in 1949. The same overbearing, controlling methods that Marie brought to her professional life, were now brought to bear in her relationship with Henry. She dominated him to an unhealthy extent — he was not allowed to read until age ten, did not attend school until age fifteen (although he did have tutors), and, oddly enough, was not allowed any form of sex education. Even when he was away at boarding school, Marie wrote letters to school superintendents attempting to interfere in her son's affairs. Eventually Henry fought for his independence and their relationship soured.

Over the course of the next sixteen years (1939 -1954), Marie held a literary court at Norbury Park. Prominent literary personalities of the day such as Thomas Hardy, Walter de la Mare, George Bernard Shaw, Sir Hugh Walpole, Lord Alfred Douglas, Havelock Ellis, and H.G. Wells, mixed with Marie's large coterie of young acquaintances. While remembered primarily for writing highly erotic love poetry (*Love Songs for Young Lovers* [1939], *The Bathe* [1946]), this period saw Marie author a dozen books of poetry, essays, and literary criticism. The war years gave ample opportunity for displays of Marie's purported megalomania and paranoia. In April

1940, convinced that the wartime government needed a woman statesman, Marie volunteered to serve in the Cabinet. Lord Halifax and Winston Churchill rebuffed her. Feelings of ill-will against Marie ran high in many circles. On April 3, 1940 during a session of parliamentary debates J.F. Coates, an M.P. from New South Wales (Australia), stated "The Empire today has three enemies — all from Munich. One is Hitler, the other Göbbels, and the third that doctor of German philosophy and science — Dr. Marie Stopes. The greatest of these is Marie Stopes." In July 1940, she began a two-decade long pamphleteering effort against milk pasteurization. When bombs hit Norbury Park during a German air raid in 1941, Marie claimed that Reichsmarshal Göring had ordered the Luftwaffe to kill her. On August 15, 1945 she sent a telegram to the King congratulating him on the Japanese surrender; it went unanswered. Marie had become a figure from the past and her books were out of print. However, she was not forgotten by her scientific colleagues. In 1946 Marie was made an honorary member of the Geologists' Association of London.

The last decade of Marie's life was primarily characterized by increased attempts to introduce herself into the affairs of others. In 1948, she tried everything possible to prevent her son Henry's wedding. Her attempt failed; everyone was tired of Marie's lifetime of bullying people to adopt her point of view. She never accepted her new daughter-in-law. In 1953 Marie tried to begin a campaign with the Royal Commission on the Press to have "Catholic control" of the media exposed. This paranoid effort went nowhere. Her last battle with the Catholic Church was over the Rouncefield Case (March 1958). Typically, Marie had no connection with either of the principals involved and unilaterally injected herself into the controversy. However, for all the ill-will she had both generated and been a victim of, the last four years of Marie's life held great happiness. In 1954, at the age of 74, Marie fell in love again. Her paramour was the 39-year old Baron Avro Manhattan, a best-selling author and painter. They spent much time together, taking frequent holidays to the French Riviera.

In September 1957 Marie was diagnosed with advanced inoperable cancer of the breast. She had been unwell for some time, but had not sought out a doctor due to her long-held distrust of the medical profession. Ever the stubborn and independent thinker, Marie disregarded her doctor's advice and researched unproven cancer cures on her own. In November she went for treatment to a Bavarian homeopathic clinic. After six weeks of extremely painful therapy with a supposedly cancer-specific salve to shrink, harden, and cause the body to reject the malignancy, Marie returned home believing

herself cured. Up to this point, she had not told *anyone* that she had a terminal illness.

In 1958, while on a summer holiday at the French Riviera with Avro Manhattan, Marie suddenly disappeared. She was found home alone at Norbury Park. The cancer had metastasized; a tumor had formed in her brain leaving her half-paralyzed and semi-speechless. She allowed no one to see her in this state. Her son, Harry, finally saw his mother after she had gone into a coma. Marie Charlotte Carmichael Stopes died on October 2, 1958. In her will she bequeathed most of her estate to the Royal Society of Literature; in accordance with her wishes, her ashes were scattered into the sea off Portland Bill in Dorset. When the British Museum came to remove her papers for their collection, a three ton truck was needed to do the job. Ironically, only a few months before her death, the Lambeth Council of the Anglican Church (which had so roundly condemned her progressive views in 1920) criticized her for being "reactionary" and behind the times.

Regardless of her personal foibles such as inordinate vanity, a relentless ferocity towards perceived enemies, and a claimed psychic sympathy for finding rocks and fossils (after all, who among us does not possess habits that might seem "extreme" if we were subjected to intense public scrutiny?), Marie C. Stopes was an unsurpassed trailblazer who made original contributions to social welfare, reproductive health, paleobotany, and coal petrology. Most of us would be satisfied enough to make a lasting imprint on one field. While paleobotany may have lost one of its outstanding figures, British society lost one of its social pioneers who, unlike many activists, was strong enough to withstand the flames that she fanned. Marie Stopes' ideas on the proper role of marital relations transformed the lives of millions of men and women and set the stage for many other social reforms to come. Margaret Pyke, Chairman of the Family Planning Association, came up with perhaps the fairest appraisal in 1962 when she said, "In a final estimate, Marie Stopes may well prove to have been one of the most important and outstanding influences of the twentieth century — a judgment with which, one feels sure, she would be in complete agreement." One of Marie's greatest ambitions had been to see the state accept responsibility for the provision of birth control services. Since 1975, every woman in Britain has had the right to free contraception.

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The Two Cultures

Gabor B. Levy

This was the title of the 1959 Rede lecture at Cambridge University by C.P. Snow. He held that scientists and writers are part of two separate cultures: "Literary intellectuals at one pole - at the other scientists, and as most representative, physical scientists. Between the two a gulf of mutual incomprehension - sometimes (particularly among the young) hostility and dislike, but most of all lack of understanding." He was correct, of course; this gulf does indeed exist. I personally escaped this trap. No close member of my family has been a scientist, and I grew up among literary intellectuals who were surprised and amused by my inclination toward science. Later, through my wife, who is an artist and who was a costume designer, I even got acquainted with the backstage of the theater.

I, too, found two cultures. However, they were *within* the scientific community. The chasm is between the physical and social sciences and scientists. This observation is shared by most physical scientists and engineers. To quote Snow again - but in a different context: "They have a curious distorted image of each other. Their attitudes are so different that, even on the level of emotion, they can't find much common ground."

I read that someone once asked Ernest Hemingway what he thought was a writer's most important tool. In his blunt manner, he replied that it was an infallible b.s. detector. In whatever manner science education may be deficient, it does equip scientists and engineers with an infallible b.s. detector. I certainly developed one, and whenever I encountered papers or talks in the social science area, my indicator rapidly rose and often pegged at maximum value. I found it so irritating that I gradually made a habit of evading possible exposure. I still enjoy music, good theater, and good fiction and seem to be immune to the gulf described by Snow. But I have developed a deep-seated prejudice toward social sciences and philosophy, which Jim Holt recently described in the *Wall Street Journal* as the "vague science." This is a polite euphemism to what my detector shows as b.s.

However, now that I have been banished from the laboratory due to my advanced age and joined the ranks

of writers, I have decided that I should try to overcome my prejudice and take a fresh look. I decided to concentrate on philosophers, who are in the center at the opposite shore of the gulf separating them from experimental scientists. In antiquity, philosophy just meant the love of knowledge (from $\Phi\iota\lambda\omicron\varsigma$ = to love, and $\Sigma\omicron\phi\iota\alpha$ = knowledge). But as the ancients ranged wide and far and the tree of knowledge bloomed, the fruits fell to the ground and created new trees. So natural philosophy became natural science, which then created numerous new disciplines. At the same time, psychology, economics, law, and politics all grew up as separate entities. I was curious about what was left - a barren tree perhaps. The first step of my exploration was to acquire the slim volume *Ideas of the Great Philosophers* by W.S. and M.L. Sahakian (New York: Barnes & Noble Books, 1993). It is a compact review replete with strange expressions and strange ideas. I learned the difference between phenomenalism and phenomenology. There is also epiphenomenalism and panphenomenalism, as well as interactionism and substantialism. I guess that is not much different from learning names like $(\pm)2$ -(p-butylphenyl)propionic acid (ibuprofen) or dihydro-4H-pyrazolo[3,4-cf]pyrimidine-4-one (allopurinol) - common drugs that people take daily. But even after getting familiar with the lingo, my b.s. detector still went wild. My worst prejudices were reinforced. It seemed to me that philosophy is like a hot air balloon ride: the hotter the air, the higher you soar; the less the substance, the more attention you get. But then I considered the sad state in which chemistry had been for centuries, when alchemists and iatrochemists were thrashing about. I also noticed that my little reference book was originally written some 30 years ago. So I decided to continue my hot air balloon ride and read a book by a contemporary philosopher. It landed me on the far side of the dividing gulf, and to my great surprise, I landed on solid ground.

I selected *Consciousness Explained* by Daniel C. Dennett (Boston: Little Brown and Co., 1991). I picked it because I have always considered consciousness, or human self-awareness, one of the great mysteries of nature. Moreover, I doubted that we could ever come to grips with it, because it requires the mind to explore

itself. This is akin to using a scientific instrument to measure itself. The book was a revelation. It is logical, and it systematically explores the problem step by step. Possible contrary opinions are duly considered and refuted. It is not the easiest book to read because it requires full attention. However, the style is light, and the author's sense of humor shines through. Most scientists and engineers reading Dennett's book would say: "This is our kind of guy." It even convinced me that I had been wrong, that perhaps we will truly understand our own mental processes sometime in the future. Besides the pleasure of recognizing a philosopher who walks on solid ground, I gathered from the numerous references that there are many others. I shall never have the time to explore this field fully, but I did read Dennett's recent book *Darwin's Dangerous Idea* (New York: Simon & Schuster, 1995). It is even more penetrating and should be recommended reading for all science majors.

I have come to the conclusion that at the lowest echelons of all sciences there is similar detail work of little distinction and interest. It is at the level of original research where there is a divergence between the hard and soft sciences. The starting point is always an assumption, a hypothesis. But in the natural sciences, which the Germans call "exact," all data are scrupulously considered. There is no tolerance of what Irving Langmuir called "pathological science." That is when adverse facts are bypassed and ignored, and only the supporting data are presented. In social sciences and philosophy, there seems to be little aversion to this. In fact, it seems to be the usual procedure. But in the highest, most cerebral levels of all disciplines, the differences fade. As Dennett wrote: "Another reasonable response [for philosophers] is to study, in one's armchair, the best fruits of the laboratory, the best efforts of the empirically anchored theoreticians, and then proceed with one's philosophy, trying to illuminate the conceptual obstacles and even going out on a limb occasionally, in the interest of getting clear, one way or other, about implications of some theoretical idea. When it comes to conceptual issues scientists are no more immune to confusion than lay people. After all, scientists spend quite a bit of time in their armchairs, trying to figure out how to interpret the results of everybody's experiments, and what they do in those moments blends imperceptibly into what philosophers do."

We must conclude that the gulf between all branches of science and philosophy can be bridged, as well as the gulfs between the sciences and the arts. There are also uncounted small ditches and obstacles that separate national, ethnic, and religious cultures. These, too, can eventually be overcome. But ultimately, there still remain two cultures, as recognized by Jonathan Swift

almost 300 years ago. There are the Gullivers - alert, observant, always curious, and governed by intellectual honesty, and then there are the Yahoos, who are none of the above. These two cultures are separated by a Grand Canyon of incomprehension and animosity that makes a union practically impossible.

Dr. Levy is a Contributing Editor, American Laboratory.

REPORTERS WANTED!

AAPG (Dallas; Vienna)
 7th NZ Coal Conference (Wellington)
 9th ICCS (Essen)
 Coal Prep 97 (Lexington)
 ICCP (Wellington)
 EAOG (Maastricht)
 GSA (Salt Lake City)
 IPS Peat (Amsterdam)

The *TSOP Newsletter* wishes to bring coverage of these important meetings to its many worldwide readers. If you are planning to attend one of the above conferences, or any others of interest to our membership, please consider submitting a meeting summary for publication in a future issue of the *TSOP Newsletter*. Interested parties should contact the newsletter editor (see page 2).

Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its members' ideas, observations, concerns, and interests. We are always in **dire** need of scientific, technical and historical articles, as well as publication reviews, news items, and opinion pieces. Our excessively large and ridiculously over-paid editorial staff needs your help! All that writing, editing, and re-writing eats away at valuable time that we'd rather spend on the Côte de Azur or at the baccarat tables in Monaco. *Only your efforts can increase our leisure.* Help the *TSOP Newsletter* stand out from the pack. Contribute today!

AGI, USGS Release Updated Strategic Plans

The month of June saw the release of two long-awaited strategic plans by the American Geological Institute (*AGI Strategic Plan : Planning for the 21st Century in a Time of Change*) and the U.S. Geological Survey (*Strategic Plan for the U.S. Geological Survey, 1996 - 2005*). Each plan addresses the revamped priorities of its organization in response to the changing role of the geosciences, as well as the continued erosion of financial support by federal and state governments as exemplified by the recent abolition and downsizing of various geoscience bureaus and programs and the threatened abolition of others.

Though coming from different starting points, the two plans agree on ten basic "elements of change" that are driving this need for a reassessment of priorities within the geosciences : increasing globalization; changing demographics and continued aspirations for an improved quality of life; ongoing skirmishes between economic growth and environmental ethics; declining research funding and employment opportunities; management of increasingly depleted natural resources; discipline specialization and fragmentation; an ongoing computer-driven information revolution; an increasing need for scientific applications to public health, safety, and welfare; a shift in the traditional emphasis from field data collection and surveys to prediction from data; and an increasing need for scientific literacy (especially the geosciences) in K-12 public education.

The AGI aims to meet these challenges in a number of ways. In addition to their already established databases and reference services (GeoRef, human resource and education directories, etc.), the AGI is proposing a National Geoscience Data Repository System [NGDRS]. Their publications and communications (*Geotimes*, WWW and gopher sites) will continue to focus on the importance of the geosciences in our daily lives. They also plan to lead a collaborative effort aimed at reshaping K-12 public school geoscience education in the United States. At the same time, the AGI will work actively in the decision-making process of public policy and governmental affairs. Of course, such an increased workload will require greater efforts from the AGI staff and members of its affiliated societies. In order to avoid the financial resource problems inherent in any period of restructuring and economization, the AGI will diversify its financial base, consider affiliating with international geoscience organizations, and monitor the international market demand for its products and services.

The USGS, which survived extinction at the hands of Congressional budget-cutters thanks to the testimony of its many customers, is still on the defensive and begins its strategic plan by identifying those "core competencies" (strongpoints) that make it a unique organization. Specifically cited are its : impartiality, credibility, and scientific excellence; relationships and partnerships at the state, national, and international levels; multidisciplinary workforce with a national presence; long-term national databases; and long-term, broad-scale multidisciplinary interpretive studies. The USGS plan goes on to forecast the following trends in its future research and business activities : water availability and quality (growth); hazards (growth); geographic and cartographic information (continued role); contaminated environments (growth potential); land and water use (growth); nonrenewable resources (fundamental change in focus, decreasing effort); and environmental effects (growth potential). It also states in no uncertain terms that the future USGS will have a decreased emphasis on traditional earth science disciplines, basic research studies, investigator-driven studies, and remediation studies.

Both plans are touted as "living documents" which they will have to be considering the storm clouds and ever-shifting winds on Capitol Hill. The USGS plan is already being modified due to its mandated takeover of the National Biological Service (downgraded from a separate agency to a new division within the USGS) slated to occur on 1 October 1996. If you would like to obtain a copy of either plan, please contact:

American Geological Institute
(703)-379-2480
(703)-379-7563 fax
agi@agi.umd.edu
gopher://agi.umd.edu71
<http://agi.umd.edu/agi/agi.html>

U.S. Geological Survey Library
12201 Sunrise Valley Drive
Reston, VA 22092-0001
<http://online.wr.usgs.gov/stratplans>.

To the extent that these plans accurately depict trends in the geosciences does not bode well for much of organic petrology in its current usage. Attendees at this year's TSOP Annual Meeting would be wise to pay close attention to the environmental and other new applications of organic petrology that will be covered there. TSOP and its members will face unpleasant consequences if they fail to stay abreast of the times.

ASTM D-5 Committee on Coal and Coke Update

The following revisions of standards have been approved by Ballot and the Committee on Standards :

Volume 05.05, 1996

- D1757-96, Test Method for Sulfate Sulfur in Ash from Coal and Coke
- D2795-95, Method for Analysis of Coal and Coke Ash

Volume 05.05, 1997

- D1756-96, Test Method for Determination As Carbon Dioxide of Carbonate Carbon in Coal
- D2798-96, Test Method for Microscopical Determination of the Reflectance of Vitrinite in a Polished Coal Specimen

The following items are currently being balloted by the Corresponding Main Committee through September 10 :

New Standards

- Test Method for Determination of Bulk Density of Stockpiled Material Using Nuclear Backscatter Methods
- Practice for Determining the Volume of Bulk Materials Using Contours or Cross Sections Created by Direct Operator Compilation Using Photogrammetric Procedures
- Practice for Bias Testing a Mechanical Coal Sampling System

Revision of Standards

- D2014-96, Test Method for Expansion or Contraction of Coal by the Sole-Heated Oven
- D2639-95, Test Method for Plastic Properties of Coal by the Constant-Torque Gieseler Plastometer
- D3682-91, Test Method for Major and Minor Elements in Coal and Coke Ash by the Atomic Absorption Method
- D4915-89 (1996) Practice for Manual Sampling of Coal From Tops of Railroad Cars

Reapproval of Standard

- D3173-87 (1992), Test Method for Moisture in the Analysis Sample of Coal and Coke

ASTM D-5 Committee on Coal and Coke will hold its next meeting on October 6 - 9 in Jackson, Wyoming. For further information regarding ASTM D-5 activities, contact Ronald W. Stanton at 703-648-6462 (phone), 703-648-6419 (fax), or rstanton@usgs.gov (email).

Still Available!
Energy & Fuels Special Issue

The Geochemistry and Petrography of Kerogen/Macerals

(published as Energy & Fuels, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology

**The American Chemical Society
1994 National Meeting
March 13 -15, 1994**

General topics include :

**Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
Chemistry of Kerogen/Macerals Types
Precursor Materials
Paleo-Depositional Environments and Diagenetic Provenance
Maceral Behavior during Maturation and Catagenesis
New Techniques and Applications
Case Histories**

Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "The Society for Organic Petrology". Sorry, no credit card orders can be accepted. Send all inquiries and orders to :

**TSOP
c/o Gretchen Tremoulet
University of Kentucky
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511-8433
USA**

Review - Views from my Underground Ivory Tower

Gabor B. Levy

International Scientific Communications, 1995, 232 pp.

James Theisen

As a consulting editor for International Scientific Communications (ISC), Dr. Gabor B. Levy has had more than an ample opportunity to share his insights on science and the human condition through a number of ISC scientific journals such as *American Laboratory*, *American Clinical Laboratory*, and *International Laboratory*, among others. If you have ever taken the time to actually read his essays (instead of bypassing them and heading straight to the technical papers) then you know what an intellectual treat they can be. For those who may have missed one of his editorials or regret that they did not keep a file of them, *Views from my Underground Ivory Tower* offers up an edited collection of 60 essays on science and society spanning a period of nine years.

Some of us are called upon to write editorials, but few do it with Levy's circumspection and style (for a sample, see his recent essay reprinted on pages 16-17 of this issue). He brings to his craft a life-long career in the fields of analytical chemistry, laboratory instrumentation design, and bioengineering; a refreshing sense of humor (he describes his time with a research laboratory as "years of busying myself writing scientific papers and patents of ephemeral importance"); a keenly-honed intellect; and a sense of outrage at all of the patently idiotic ideas that continue to burden and impoverish our society despite its much touted scientific advances.

The editorials are grouped into ten general categories : Our Society; Our Economy; Ethics; Of Lawyers and the Law; Health and Medicine; Lies, Damned Lies, and Statistics; Scientists and Science; Pseudoscience; Metrology; and New Directions. The range of topics covered is extensive and Levy shows convincingly, essay after essay, that he can cover that ground and then some. Whether the focus is on the use of the word "elite" as a slur, mankind's destruction of global ecosystems ("Homo Ecophagus"), language used as a political tool and its effects on the sciences, garbage and recycling, the prostitution of science in the service of advertising and junk law, the deliberate abuse of statistics in order to mislead the public, the shocking level of scientific illiteracy among the general populace and the ramifications thereof, or the misuse of scientific

methods by individuals with special hidden agendas ("Inverted Epidemiology"), Levy wields his rapier-like pen to eviscerate his subject and expose the heart of the matter. His opinions are clearly and forcefully stated, those less than nimble are advised not to stand in their way. Such uncommon honesty and insight is rare nowadays and often considered offensive.

Of course, many scientific journals feature editorials addressing the numerous intersections between science and society; not a few of them cover some of the same ground as Levy's essays. The crucial distinction, however, is the golden thread that binds his work together into a unitary whole : a *call for the active application of the scientific method to all aspects of the human condition*. Time after time, Levy demonstrates how scientific literacy can prevent the most egregious errors from being made by individuals and societies. The pity, of course, is that even a basic level of scientific literacy is lacking in the general population. In reference to the current world-wide tidal wave of pseudoscience and paranormalism that again threatens to envelop us, he notes that:

"The question we face is whether to join... [the active debunkers]... or just take in the spectacle and chuckle. The later is safer, because the public resents being robbed of illusions. Furthermore, the paranormal often merges with metaphysics; an emotionally highly charged subject. It is dangerous ground. Thus, we are generally inclined to be tolerant, or cowards, depending how you look at it."

In *Views from my Underground Ivory Tower*, Levy calls them as he sees them, critics be damned. His editorials summon each of us to become an *activist* for the scientific method and critical thinking skills in our daily lives. Considering the daunting amount of work at hand, it is not a second vocation to be taken lightly. It would be easier to ignore the outside world and retreat ostrich-like to the safe and cozy refuge of our offices and laboratories. But surely, in the long run, this is the most dangerous and misguided approach for scientists to adopt. As Carl Sagan recently reminded us in his book *The Demon-Haunted World*, "The method of science, as stodgy and grumpy as it may seem, is far more important than the findings of science."

Publications of Interest

Paleogeography, Paleoclimate, and Source Rocks

Alain-Yves Huc (ed.)
1996, AAPG Catalog # 568-06, 347 pp.

From the publisher's ad copy: "This volume covers marine, lacustrine, and terrigenous source rocks in various regions, Stratigraphic frameworks, and paleoenvironments. It is cross-disciplinary, up-to-date, comprehensive, and profusely illustrated." Subjects covered include :

Paleogeography of C_{org}-Rich Rocks
Paleoceanography of Marine Organic-Carbon-Rich Sediments
Development of Lacustrine Petroleum Source Rocks
Paleoclimate and Depositional Controls
Hydrocarbon Source Potential of Marginal Basins
Source Rock Occurrence in a Sequence Stratigraphic Framework
Paleolatitude Effects on Carbonate Sedimentation
Organic Geochemistry of Terrigenous Paleodepositional Environments

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Coal Science

J.A. Pajares & J.M.D. Tascon (eds.)
1995, Elsevier Science, 2074 pp. (2 vols.)

From the publisher's ad copy: "This volume contains papers presented at the 8th International Conference on Coal Science held in Oviedo, Spain, September 10-15, 1995. Volume I contains papers dealing with Fundamentals and General Aspects, Combustion and Gasification and Pyrolysis and Carbonization. Volume II covers papers discussing Liquefaction and Hydropyrolysis and Coal and the Environment. The scope of topics covered will give the reader a state-of-the-art impression of coal characterization and depolymerization, coal-derived carbons, coal carbonization and liquefaction, and the progress towards making coal an environmentally acceptable fuel during its combustion in electricity production. The use of modern physicochemical characterization techniques has advanced knowledge of coal composition and structure enormously in the last twenty years, and it is hoped that coal will enter the next millennium as a clean and efficient fuel." Moderately priced at US\$594.

Trace Elements in Peat Soils and Peat Landscapes of European Russia

V.N. Kreshtapova
1996, ISBN 5-85941-074-3, 148 pp.

From the publisher's ad copy: "The author is the chief researcher of the V.V. Dokuchaev Soil Institute. This monograph arises from the author's many years of investigations of peat soils and peat deposits of European Russia. The basic regularities and distribution of trace element content in peat soils and deposits are characterized as well as the peat soil's endurance with mobile forms of microelements. A summary is given on the trace elements dynamics in soils, and on the role of trace elements in plant growth. The agrogeochemical peat landscapes are specified and the agrogeochemical peat soils classification elaborated."

* * * * *

Non-biostratigraphical Methods of Dating and Correlation

R.E. Dunay & E.A. Hailwood (eds.)
1995, Geological Society Spec. Publ. 89, 265 pp.

From a recent review: "The present volume interprets wireline log patterns, trace element sequences, and heavy mineral distributions, as Stratigraphic time correlation and facies indicators in rock units barren or nearly barren of microfossils. Special Publication 89 brings together many diverse techniques and disciplines and explores their potential to solve Stratigraphic problems. Specific areas discussed are mostly in the North Sea, British Isles and adjacent regions. One Thailand example and an Australian area are also discussed. I would have liked greater discussion of the potential for bentonite ash beds or sequences of ash beds and other radioactive hot zones as time markers. Perhaps the most interesting of the dozen papers in this book is the final one by C-S. Yang and W.F.P. Koume, which analyzes wireline log cyclicity as a tool for correlating barren strata (siliciclastics and evaporites). This thought-provoking Netherlands Rotliegende article alone may be worth the purchase price."

Calendar of Events

1996

September 8 -11 : Second American Association of Petroleum Geologists/SVG International Congress and Exhibition, Caracas, Venezuela. For information contact the AAPG Convention Department at (918)-584-2555 (phone) or(918)-584-2274 (fax).

September 8 -14 : International Committee for Coal and Organic Petrography, Heerlen, The Netherlands. For information contact W. Fermont at 31-45-571-69-09 (fax) or orgchem@rgd.nl (e-mail).

September 16 - 17 : Thirteenth Annual Meeting of The Society for Organic Petrology, Carbondale, IL. Theme session : *New Applications of Organic Petrology*. For further information, contact Jack Crelling at 618-453-7361 (phone) or 618-453-7393 (fax).

September 23 - 25 : Coal Structure '96, Krakow, Poland. For information, contact Prof. A. Bylicki at 48-32-31-7410 (phone) or 48-32-31-2831 (fax).

October 6 - 9 : ASTM D-5 Committee on Coal and Coke Meeting, Jackson, WY. For additional information, contact Ron Stanton at 703-648-6462 (phone), 703-648-6419 (fax), or rstanton@usgs.gov (e-mail).

October 7 -11 : Fourth International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production, Cagliari, Italy. For information, contact Dr. Raj K. Singhal at (403)-241-9460 (fax - Canada).

October 28 - 31 : Annual Meeting of the Geological Society of America, Denver, CO. For more information call Charles L. Pillmore at (303)-236-1240.

November 10 -15 : Annual Meeting of the American Institute of Chemical Engineers, Palmer House, Chicago, IL. For information call (212)-705-7845.

December 2 - 4 : 7th Australian Coal Science Conference, Gippsland, Australia. For information, see the ad in the March 1996 *TSOP Newsletter* (vol. 13, no. 1, p. 9) or contact Dr. Geoff Perry at 61-0-51-321500 [phone], 61-0-51-321580 [fax], or perry@hrl.com.au [e-mail].

1997

February 13 -18 : AAAS Annual Meeting & Science Innovation Exposition, Seattle, WA. Abstracts deadline (10/15/96). For information, contact AAAS at 202-326-6450 (phone), 202-289-4021 (fax), amsie97@aaas.org (e-mail), or at <http://www.aaas.org/meetings/meetings.htm> (website).

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at(918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For information call (202)-872-4396. See also ACS Geochemistry Division Update (this issue, page 17).

April 29 - May 1 : Coal Prep 97, Lexington KY. Call for abstracts related to all aspects of coal preparation has been issued. For information, contact program chairman Al Deurbrouck at 412-653-0281 [phone] or 412-854-5963 [fax].

June 23 - 27 : International Symposium on Engineering Geology and the Environment, Athens, Greece. For information, contact the Hellenic Committee of Engineering Geology / Athens 1997 Symposium Secretariat at 30-1-3813900 (phone or fax).

September : 7th New Zealand Coal Conference, Wellington, New Zealand. For information, contact A. Herbert at 64-4-570-718 (phone), 64-4-570-3701 (fax), or A.Herbert@crl.co.nz (e-mail).

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For additional information, contact the AAPG Conventions Department at(918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV. For info Call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 (telephone) or 49-40-630-0736 (fax).

*Reaffirm your commitment to organic petrology,.....
renew your TSOP membership today!*

September 13 -17 : International Committee for Coal and Organic Petrography, Wellington, New Zealand. For information, contact T.A. Moore at 64-4-570-3708 (phone), 64-4-570-3701 (fax), or T.Moore@cti.co.nz (e-mail).

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands.

September 29 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.htm>

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.caer.uky.edu/ash/ashhome.htm>.

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 (telephone) or 31-591-301223 (fax).

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

July 5 -10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 (telephone) or 33-69-756-4201 (fax).

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

Fall : International Committee for Coal and Organic Petrography, Porto, Portugal.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyvaskyla, Finland.

1999

Fall : International Committee for Coal and Organic Petrography, Bucharest, Romania.

Fall : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, contact Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.esri.utah.edu).

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For information, contact GSA at (303)-447-2020 (phone) / (303)-447-6028 (fax).

2000

August 6 - 11 : Eleventh International Peat Congress, Quebec City, Quebec, Canada.

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Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

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The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

Kenneth W. Kuehn
 TSOP Archivist
 Geology, Western Kentucky University
 1 Big Red Way
 Bowling Green, KY 42101 USA

ph: 502-745-3082
 fax: 502-745-6410
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THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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Technology to Win:

Beating the Odds



The race is on at Lexington (KY) Thoroughbred Park. The 1997 Joint Meeting of TSOP and the Eastern AAPG will be held in Lexington on September 27 - 30, 1997 (see article on page 11). Photograph courtesy of James C. Hower.

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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 Kentucky Geological Survey
 228 Mining & Minerals Building
 University of Kentucky
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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
 U.S. Geological Survey
 432 National Center
 Reston, VA 20192 USA
 phone: (703)-648-4849
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 e-mail: jpontoli@usgs.gov

For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1996-97 TSOP Council

President	Jeffrey R. Levine
Vice-President	Charles Landis
President Elect	Kenneth W. Kuehn
Secretary/Treasurer	Lorraine B. Eglinton
Editor	James Pontolillo
Councilor (1995-97)	Ganjavar K. Khorasani
Councilor (1996-98)	David C. Glick

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
 (703)-648-4849 phone
 (703)-648-5832 fax
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For Membership Packets:

Cortland Eble
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Submittal Deadline Next Issue
 10 February 1997

President's Letter

Jeffrey R. Levine

I wish that all of you could have been there! But then again, no. If you all had been there, it wouldn't have been the same. I'm speaking of the 13th TSOP annual meeting, held this past September in Carbondale, Illinois. It was a somewhat small group who attended - with slightly fewer than 40 registrants, but it was a great meeting - full of positive energy, good feelings, and interesting ideas.

The size of our annual meetings has contributed to their overall success. Many of the participants know one another, and the combination of personal and professional camaraderie provides the basis for a very enjoyable and rewarding annual get-together. Yet on the other hand, any professional meeting requires a certain "critical mass" to be successful and, more importantly, a steady infusion of new faces and new ideas. One of the reasons that this year's meeting was so successful was the very interesting theme session on *New Applications of Organic Petrology*, organized by Jack Crelling and his co-conveners.

For some time I have been concerned about the impact on TSOP of the steady erosion of our member base in North America, for although we are an international organization, our North American members have always provided the main "core group" of the Society, providing all of our past Council members and most of the attendees at our annual meetings. (This is primarily a question of logistics and cost, as most of our members are located here.)

When one stops to consider it, we've been "hit" on all possible fronts. The domestic petroleum industry has been "downsizing" significantly for the past five years, accompanied by many losses of jobs relating to organic petrology. The domestic steel industry has undergone a similar transition. Government agencies employing organic petrologists are under ongoing threat in response to Congressional budget-cutting efforts. (My former employer, the US Bureau of Mines - the home of Reinhardt Thiessen - was completely eliminated this past year, after 86 years of commendable public service.) And in response to the decrease in research funding and job opportunities, our university programs have been dwindling as well. How does all of this bad news bode for the health of TSOP? Well, so far, we're doing OK, and I think that we can continue to flourish, but this will not occur without a conscientious effort on the part of all TSOP members.

Although the past may be a poor predictor of the future, I thought it might be interesting to take a look at the membership trends over the past ten years. An examination was made of the raw data contained in the annual membership directories (note : no directory was published in 1986 or 1990). While the data are not 100% accurate, they do reveal some interesting trends : 1) Total membership has declined steadily since 1991, but is presently no worse than in 1988. 2) Overseas membership is *not* growing as I had believed it was, but is holding roughly steady and, therefore, represents an increasing *percentage* of total membership. 3) Aside from a significant temporary "blip" associated with the 1990 Calgary Meeting, Canadian membership has held roughly constant.

Should we be concerned about the membership trends? What can we do to make TSOP more relevant and more valuable to our membership? Are we doing our job as well as we should? Why have we failed to attract a greater number of organic geochemists to our membership rolls? The founders of TSOP originally conceived it as an organization to serve the interests of microscopists as well as organic geochemists, but somehow we've never gained a strong foothold in the organic geochemistry community. Why?

I was surprised to discover that the international membership is not increasing, as a substantial proportion of the "new" members announced in the Newsletter are from overseas. I can only conclude, therefore, that international members are dropping out at the same rate that they are joining. Why? What can we do to help encourage our international members to retain their memberships? What can we do to reach out to a broader membership internationally?

I would very much appreciate getting some feedback from our present members regarding these and other issues. Please share your ideas with us so that we on the TSOP Council can help to make TSOP even more successful in the future. Please write to me at GeoMet, Inc.; 1825 3rd Avenue North; Bessemer, AL 35020, or preferably via e-mail at: 73014.2340@compuserve.com.

In closing, I would like to offer my heartfelt thanks and congratulations to our outgoing president, Brian Cardott. We in TSOP are very fortunate to have been the beneficiaries of his considerable dedication and talents as a leader. Thank you, Brian!!

Report on the 13th Annual Meeting of The Society for Organic Petrology

September 15-19, 1996

Southern Illinois University at Carbondale, Illinois, USA

Jack Crelling

The Thirteenth Annual Meeting of The Society for Organic Petrology was held at Southern Illinois University at Carbondale (SIUC) on 15 - 19 September 1996. The meeting was hosted by Jack Crelling, Russ Dutcher, Bill Huggett, and Mike Kruge and sponsored by the Department of Geology and the Coal Research Center at SIUC. The technical sessions and lunches took place in the SIUC Student Center and the banquet, a traditional southern Illinois buffalo tro, was held at the Touch of Nature Environmental Center.

Fifteen people took part in a pre-meeting short course on *The Petrology of Cokes, Chars, Carbons, and Graphites* presented by Professor Jack Crelling on Sunday, September 15th. The course covered the topics of the technology and petrology of metallurgical cokes, petroleum coke, combustion chars, carbon-carbon composites, natural graphite, aluminum anodes, and arc furnace electrodes. The course notebook included five atlas plates of forty photomicrographs each in color microfiche format.

Forty-five people attended the technical sessions held on Monday and Tuesday (September 16 and 17) that consisted of thirty-four papers — twenty-two oral presentations and twelve poster presentations. The session on Monday morning was a theme session devoted to *New Applications of Organic Petrology*. The keynote speaker at this theme session was Dr. Neil Murdie of Allied Signal Inc., who gave an excellent paper on "The Use of Organic Petrology in the Carbon Industry". Other new applications topics included the petrography of fly ash, atmospheric particulate matter, asphalts and asphalt/aggregate mixtures, ferroalloy coke, meteorite impact samples, organic pollutants, and pyrobitumens.

The general and poster sessions covered a very broad range of topics including coal petrology; the geochemistry of sulfur, trace elements, resinates, and peats; maturation; petroleum generation; activated carbons; and the techniques of fluorescence, FTIR, pyrolysis, and vitrinite reflectance.

The annual business meeting was held on Tuesday afternoon and featured the announcement of the

Honorary Member Award given to Ralph J. Gray for his outstanding contributions to organic petrology (see article on page 9, this issue).

A post-meeting field trip, led by Erik Kale and Maria Mastalerz of the Indiana Geological Survey, went into southwestern Indiana and examined the coal-bearing sequences of the Mansfield and Brazil formations (Morrowan and Atokan). The coal was deposited in a coastal plain environment, with a strong tidal influence and occasional marine transgressions. The coals are much duller than those in the upper part of the Pennsylvanian (Desmoinesian), and reflect a unique depositional environment. Low-sulfur coals in this part of the Pennsylvanian section are often overlain by laminated sediments characteristic of tidal rhythmities. The relationship between low-sulfur coal and tidal rhythmite facies is both intriguing and practically important and was closely examined during the field trip. The participants visited a quarry and a coal mine in Indiana and examined both coals and roof rocks. In addition, numerous cores from this part of the Pennsylvanian section were set up for observation at the Indiana Geological Survey in Bloomington.

One Down.... Eight to Go!

In an effort to provide a broader range of information, members are invited to become regional Corresponding Editors of the *TSOP Newsletter*. One brave member has already answered the call! Corresponding Editors will monitor government, academic, and private-sector activities related to organic petrology in a geographic "beat" and provide a minimum of one article per year for inclusion in the newsletter. Applicants need not reside in the region they wish to cover, but should be conversant with the region. Corresponding Editors are still being sought for the following regions: U.S., Canada, S. America, Western Europe, Eastern Europe & the former USSR, Africa, the Middle East, and the Pacific Basin. For further information or to apply, please contact the newsletter editor (see page 2).

1996 Outgoing TSOP Council Meeting Summary

Lorraine B. Eglinton

The 1996 Annual Outgoing Council Meeting was held on September 15, 1996 and called to order at 7:04 p.m. at the University of Southern Illinois (Carbondale). The president, Brian Cardott presided. The following members were in attendance: Brian Cardott, *President*; Jeffrey Levine, *President-elect*; Kenneth Kuehn, *Vice-president*; Lorraine B. Eglinton, *Secretary-treasurer*; Jack Crelling, Jack Castaño, Jim Hower, Prasanta Mukhopadhyay, Jeff Quick, David Glick, MaryAnn Malinconico, and Roger Trader. *Officers in Absentia* : James Pontolillo, *Editor*, Ganjavar Khorasani, *Councilor*; and Stephen Bend, *Councilor*.

A financial statement covering the period from January 31 - June 30, 1996 was distributed. On June 30, 1996 TSOP had a checking account balance of \$17,966.94 and a Vanguard (short-term Federal) account balance of \$13,777.55. Total assets of the society on that date were \$31,744.49. TSOP's Bank has now merged with the Wells Fargo Bank.

TSOP's member affiliations are:

Affiliat.	Indust (%)	Gov (%)	Acad (%)	Other (%)
Oil/Gas	27	4	15	
Coal	7	12	29	
Agricult		1		
Steel	1			
Retired				3

Ken Kuehn reported the 1995-96 honorary member selection committee comprises Brian Cardott, Sharon Crowley, Gary Mitchell and Ken Kuehn (chair). Ralph Gray accepted the 1996 honorary member award, but due to health issues could not attend the Carbondale meeting to accept his award. The procedures manual underwent substantial updates; incoming Vice-president Charles Landis will continue this task. TSOP's archives are virtually complete at this point and are available to all upon request.

Jim Pontolillo reported newsletter publication costs have stayed on budget and that council adopted an advertising policy/rate schedule since the Mid-year meeting. Attempts to recruit regional editors have largely been unsuccessful. Ken Kuehn officially praised the editor for publishing a great newsletter.

Brian Cardott announced the *Organic Geochemistry* proceedings of the 1994 Jackson Hole meeting contained a printing error: It stated the meeting was the twelfth but it was the eleventh annual meeting of the society. An erratum ran in Vol. 24 No. 6/7 of *Organic Geochemistry*. Jack Castaño reported on the *International Journal of Coal Geology* proceedings volume from the 1995 TSOP Annual Meeting. Seven papers are being reviewed with two of them pending submission. Concerning this year's annual meeting, Jack Crelling reported 13 members enrolled for the pre-meeting short-course, 44 registered for the technical sessions and 6 signed up for the field-trip - just enough to run it. The meeting had a running cost of \$4,500. Additional copies (6) of the short-course booklets will be sold for \$50.00 each. The president officially congratulated Jack Crelling for a good job.

James Hower discussed meeting arrangements for the 1997 TSOP Annual Meeting (Lexington) which will be a joint meeting with AAPG Eastern EMD. Abstracts are due June 1, 1997. The regional committee for the 1998 TSOP Annual Meeting (Halifax) comprises Prasanta Mukhopadhyay, John Calder and Mike Avery. They are expecting about 60 registrations, since this will be a joint meeting with the CSCOP, and the committee is hoping to attract European members. A short-course covering forensic chemistry and maturation is being arranged. A two-day field-trip is being organized by John Calder. Council approved Salt Lake City (Utah) as the site for the 1999 TSOP Annual Meeting. A regional committee of Jeff Quick and Dave Wavrek has been established. Two possible venues were discussed: Snowbird Resort and University Park; no final decision was made.

Roger Trader reported that TSOP's officers elected in the most recent cycle are as follows: *President-elect* (Kenneth Kuehn), *Vice-president* (Charles R. Landis), *Councilor* (David C. Glick), and *Editor* (James Pontolillo). David Glick reported TSOP has 209 paying members. Publication of the membership directory was delayed so the web address could be listed, however this was not possible. The directory now contains the TSOP Logo and a statement of copyright. Council approved Asbury Carbons (from Mr. Albert Tamashausky) as an institutional member of TSOP. Committee materials will be given to incoming membership committee chairperson Cortland Eble. Council voted by E-mail to accept Yuan Ping as a TSOP Member and waived her dues.

David Glick reported that the Internet committee's amended proposal had been approved by council by E-mail since the Mid-year meeting. The president commended Dave Glick for all his efforts as chair of the committee and stated that the website will prove to be a great benefit for TSOP members. Council decided

against publication of the *TSOP Newsletter* on the website at this time. Outreach chairperson, MaryAnn Malinconico is also now a member of the Internet committee.

MaryAnn Malinconico reported that announcements for the 1996 annual meeting appeared in the *AAPG Explorer*, *Geoscientist* and *Organic Geochemistry*. Next year, TSOP will advertise its annual meeting in *Geochimica et Cosmochimica Acta* and will try to advertise in *Chemical and Engineering News* and the semi-annual journal of the *Latin America Association of Organic Geochemists*. The donations of industrial Sustainers are on target and TSOP has received a total of \$1,600 from Exxon, Amoco and Shell.

Carolyn Thompson-Rizer asked the research sub-committee chairs to temporarily suspend their programs and in their place hold an open discussion on a research issue at annual meetings to stimulate exchange of ideas and foster communication among scientists. The consensus from the sub-committee chairs was a desire to run their research projects for one more year.

Brian Cardott reported that TSOP remains a member society of the AGI. The TSOP AGI government affairs program contribution (\$150) was matched by a grant from GSA. TSOP member Joseph Senftle serves as TSOP's representative on the AGI "Professional Career Pathways in the Geosciences" project and the AGI Government Affairs Program. Alan Davis, TSOP's ICCP liaison, is monitoring TSOP and ICCP meeting dates to avoid conflicts.

1996 Incoming TSOP Council Meeting Summary

Lorraine B. Eglinton

The 1996 Incoming TSOP Council Meeting was held at Southern Illinois University (Carbondale) on September 17, 1996. President Jeffrey Levine called the meeting to order at 4:50 p.m. Levine adopted a *Robert's Rules' procedure allowing council actions to be passed using general consensus (i.e., each action does not require a motion and second vote by council)*. In attendance were : Jeffrey Levine, *President*; Kenneth Kuehn, *President-elect*; Charles Landis, *Vice-president*; Lorraine Eglinton, *Secretary-treasurer*; David Glick, *Councilor and Internet Committee Chairman*] Brian Cardott, *Nominating Committee Chairman*; Renee Symanski, *Awards Committee Chairperson*; Carolyn Thompson-Rizer, *Research Committee Chairperson*; James Hower, *1997 Annual Meeting Chairman*; John Castaño, *Latin American Society Liaison*; and MaryAnn Malinconico, *Outreach Committee Chairperson*. In absentia were : James Pontolillo, *Editor*; Ganjavar Khorasani, *Councilor*; Jeff Quick, *1999 Annual Meeting Chairman*; Cortland Eble, *Membership Committee Chairman*; and Jack Crelling, *1996 Annual Meeting Chairman*.

A budget plan for the 1997 calendar year was distributed. In the course of the meeting Council approved an operating budget of \$11,010. The budget includes an increase in the best student paper award to \$250, copyright protection for the membership directory (\$20) and a \$500 award to bring honorary members to the annual meeting at which they receive their award. In addition, Council passed a one-time allocation of \$1,500 to the outreach committee for a TSOP promotional booth at the upcoming AAPG meeting in Dallas.

Jim Pontolillo reported that newsletter production costs will remain the same as last year. He was disappointed that an attempt to recruit regional corresponding editors for the newsletter has met with little success. He wrote, "the newsletter is the product of a handful of members and if they reduce their level of contribution the newsletter will suffer accordingly". Jim is also soliciting companies to place advertisements in the newsletter.

Council made various appointments for 1996-97 (see chart, opposite column). Council also approved a new liaison committee, appointing Dave Glick as chairman. Two groups of liaisons now exist: Group 1 : Canadian, European, South American and Asian, and Group 2 : US based institutional representative liaisons. Both groups fulfill the same functions. =>

1996-97 Committee/Liaison Appointments

Nominating Committee : Brian Cardott

Ballot Committee : Roger Trader

'97 Annual Meeting Committee : Jim Hower

'98 Annual Meeting Committee : P. Mukhopadhyay

Research Committee : Carolyn Thompson-Rizer

Outreach Committee : MaryAnn Malinconico

Membership Committee : Cortland Eble

Honorary Member Selection : Charles Landis

Awards Committee : Maria Mastalerz

Internet Committee : Dave Glick

Eastern AAPG/EMD : Jim Hower

ACS, Geochemistry Div. : Lorraine Eglinton

ACS, Fuel Div. : volunteers needed

CSCOP : Judith Potter

EAOG : Lorraine Eglinton

AGI : Brian Cardott

The following liaison posts remain unconfirmed : ASTM; GSA (Coal Geology Div.); ICCP; AIME (Iron & Steel Society); Standards Assn. of Australia.

Jeffrey Levine thanked Jack Crelling for hosting the 1996 annual meeting and said it had been a success. Based on Dave Glick's recommendation, Council voted four candidates into TSOP membership : Chen-Lin Chou, Tomasz Kuder, Sami Abdelbagi, and Jörgen Samuelson.

Council approved the making of an interactive discussion area on the TSOP web page so that it can conduct business on-line. The discussion area will be restricted to council members and password protected. Council voted to adopt Dave Glick's computer generated logo as the official TSOP logo. Dave will be the official keeper of the image and will provide it to each council member and to committee chairs.

Council passed the awards committee's proposal to increase the budget for the student awards given at annual meetings. Council concurred with the proposal which stated the future of the society lies with the upcoming students. The student best paper monetary award is now \$250 and furthest travelled award is \$50. Council was of the opinion that these awards should be well publicized in order to make students aware of their existence. In addition, TSOP presidents will be awarded a certificate of recognition for service to TSOP at the end of their term.

Carolyn Thompson-Rizer was happy to receive input and guidance from TSOP members during the research committee session held as part of the annual meeting. A proposal will be submitted by the research council next year to make research committee presentations a regular part of the annual meeting schedule. Carolyn tentatively proposed including a 30 minute slot for discussion on a specific topic. A moderator will be selected to lead these discussions.

Jim Hower is seeking \$11,500 in total funds to publish the CD-ROM Coal Atlas volume. TSOP has pledged \$1,000 towards the project from the 1996 research committee budget. AAPG Energy Minerals Division have matched the \$1,000 TSOP donation. No resolution was reached on providing additional funds towards completion of this project.

REPORTERS WANTED!

The *TSOP Newsletter* wishes to bring coverage of meetings to its worldwide readers. If you are planning to attend a conference, please consider submitting a meeting summary for publication in a future issue of the *TSOP Newsletter*. Interested parties should contact the newsletter editor (see page 2).

European Association of Organic Geochemists (EAOG) Update

Lorraine B. Eglinton

The first circular and call for papers has been received for the 18th International Meeting of the EAOG to be held in Maastricht, The Netherlands, 22-26 September 1997. A five-day meeting accommodating 80-100 oral and 250 poster presentations has been arranged. The conference proceedings will be published as *Advances in Organic Geochemistry 1997* (special issue of *Organic Geochemistry*). Both oral and poster presentations will qualify for inclusion. Extended abstracts should be submitted by January 31, 1997 to the conference secretariat together with the pre-registration form. Conference fees will be specified in the second circular. Contact the conference secretariat for information and a copy of the first circular. This call for papers is general. For simplicity's sake three subject areas have been identified: Biogeochemistry, Petroleum Geochemistry and Analytical Geochemistry. Detailed programming will be tailored to the submissions received.

Meeting Chairman

B. Horsfield

Scientific Committee

P. Bertrand & H.L. ten Haven - France
C.J. Clayton, R.J. Parkes & S.J. Rowland - UK
J.A. Curiale & J.M. Hayes - USA
B. Horsfield & W. Michaelis - Germany
R. Patience - Norway
J. Sinninghe-Damsté - The Netherlands

Local Committee

B. Horsfield, B. Krahl-Urban, M. Radke, R.G. Schaefer
and H. Wilkes - Germany
W.J.J. Fermont - Netherlands
B. Mycke - Belgium

Conference Secretariat

Ms Renate Mengels and Ms Andrea Deussen
Forschungszentrum Jülich GmbH
Conference Service
D-52425 Jülich, Germany

Tel: ++49(0)246161-3833
Fax: ++49 (0)2461 61 3830

Current Topics in Coal Geology Symposium Charleston, West Virginia, October 14-15, 1996

James C. Hower and Cortland F. Eble

Cortland Eble and Jim Hower organized the symposium *Current Topics in Coal Geology* as a joint effort between the American Association of Petroleum Geologists' Energy Minerals Division and TSOP at the 25th Annual Eastern Section Meeting of the AAPG. This represents the first collaborative effort between the two groups and serves as a prelude to the 1997 joint meeting between TSOP and the Eastern Section of AAPG.

The session began with Leslie Ruppert's (with co-authors Linda Bragg and Susan Tewalt, all of the U.S. Geological Survey) discussion of the National Coal Resource Assessment program in the Northern and Central Appalachian coal fields. The program, part of a nationwide effort, is seeking greater refinement of coal resource estimates with the further addition of coal quality information. Coal quality information, particularly trace element chemistry, is generally not available in the same detail as thickness information. Regional summaries may be substituted for mapped information in the latter cases. Leonard Lentz and John Neubaum of the Pennsylvania Geological Survey followed with a discussion of coal availability studies in the Hackett quadrangle in Washington County, Pennsylvania. The principal reserves are in the Pittsburgh and three younger coal beds. Future development is constrained by a variety of factors such as wetlands, parks, and populated areas. The area is fairly representative of mature mining areas in the region.

Mike McClure and Marshall Miller (Marshall Miller and Associates) used the USGS COALQUAL database to assess the As, Sb, Cr, Pb, and Hg levels of coals in the Central Appalachian coal field. They did gain some appreciation of the regional and Stratigraphic variation in the elemental trends but admitted that further study closer to the mine scale would be needed to properly characterize a mining prospect. Curtis Palmer (one of 14 USGS, Kentucky Geological Survey, and Center for Applied Energy Research co-authors on Bob Finkelman's paper) described early results from a collaborative study of the coal and combustion by-products from a Kentucky power plant. The study, described in a previous issue of the *TSOP Newsletter* (vol. 12, no. 1, pp. 8-9), is driven by the desire to better understand the distribution of potentially hazardous trace elements in coal combustion by-products.

Jack Pashin (Alabama Geological Survey) and Richard Groshong, Jr. (University of Alabama) described the interaction of geologic structure and Coalbed methane accumulation in the Black Warrior Basin, Alabama, one of the premier Coalbed methane fields in the United States. Toni Markowski, Pennsylvania Geological Survey, discussed Coalbed methane studies in southwestern Pennsylvania. She emphasized that coal quality needs to be an important part of reservoir characterization.

Steve Greb (Kentucky Geological Survey), along with Cortland Eble and Jim Hower, discussed the multiple-bench architecture of coal beds, using examples from the Pond Creek, Fire Clay, and Stockton coal beds in Kentucky and West Virginia. Using evidence from petrology, palynology, and geochemistry they demonstrated that doming was a dominant factor in about 10-20% of the vertical extent of these major coal beds. In the concurrent poster session, the same three authors, along with Tom Phillips (University of Illinois), also described coal balls, a rather significant mining hazard, in the Amburgy coal bed of eastern Kentucky. Jim Hower, with co-authors John Calder (Nova Scotia Department of Natural Resources), Cortland Eble, Andrew Scott (Royal Holloway University of London), and Dave Robertson and Lori Blanchard (University of Kentucky), reported the results of a study of several coal beds from the Carboniferous exposures at Joggins, Nova Scotia. The coals are all high vitrinite, although the vitrinite in several is poorly preserved, with a dominance of arboreous lycopod spores. The mires all appear to have been planar. Post-depositional mineralization has led to a very high pyritic sulfur content with high levels of Zn, seen as sphalerite accompanying pyrite in fusinite lumens, As, and Pb.

The closing part of the symposium featured several Geographic Information System (GIS) talks, complementing the coal availability discussions which opened the session. Craig Neidig, along with Nick Fedorko, Ed Maki, and Gregory Elmes, all representing government and university departments in West Virginia, discussed the enactment of state legislation mandating an assessment of mineral resources, specifically for the purposes of equitable mineral taxation. Nick Fedorko, Mitch Blake, Scott McCulloch,

⇒

Ralph Gray named TSOP Honorary Member

The TSOP Council is pleased to announce that Mr. Ralph J. Gray was elected as a TSOP honorary member by Council on September 15, 1996. His plaque states "Presented To Honorary Member, In Recognition of Distinguished Contributions and Devotion to Organic Petrology and Service to the Society, The Society for Organic Petrology, 1996."

Ralph J. Gray received a BS degree in Geology in 1950 and an MS degree in Geology in 1951 from West Virginia University. He also completed additional graduate work in Geology at Ohio State University. From 1952 - 1956 he worked as a geologist for the U.S.G.S, evaluating the microscopic characteristics of uranium-bearing lignites.

From 1957 until 1983 he held a position as research consultant for U.S. Steel Corporation where he worked on a variety of projects including the development of a microscope-based system for the analysis of coal, coke, and carbon and a petrographic technique for predicting the quality of metallurgical cokes that is still used widely. He also did research on the reactivity of metallurgical cokes and on the formulation of coking blends. He studied the nature of weathered coal and developed a petrographic technique for its detection and quantification. He also made major contributions to the development of automated coal petrography.

From 1983 to the present he has been an independent consultant. In recognition of Mr. Gray's outstanding scientific contributions to the coke-making industry, he was awarded the Joseph Becker Award (Ironmaking Division, Iron and Steel Society, A.I.M.E.) in 1986 and the Gilbert H. Cady Award of the Coal Geology Division of the Geological Society of America in 1988.

Honorary Members are elected for life with all of the privileges of membership in the Society. Ralph Gray joins William Spackman, Marlies Teichmüller, John Castaño and Peter Hacquebard as TSOP's Honorary Members. Honorary membership is the Society's highest mark of recognition. Congratulations!

Renew Your Membership Today

TSOP members are reminded that 1997 dues must be paid by 31 December 1996. Renew now and avoid those sleepless nights of guilt-wracked torment!

Hower named 1996 Wood Award Recipient

The TSOP Council wishes to extend its sincerest congratulations to former TSOP vice-president (1988-89) and president (1993-94) James C. Hower. On 15 October 1996 the Eastern Section of the AAPG Energy Minerals Division awarded him its prestigious Gordon H. Wood Jr. Memorial Award for 1996. The award was given in recognition of his scientific contributions to coal geology. Previous recipients have included Russell Dutcher*, Charles Weir, Jack Simon, Harold Gluskoter, Aureal Cross, Sam Friedman, and John Ferm*.

*TSOP member

Current Topics (continued)

and Kimberly Timberlake (all West Virginia Geological Survey) provided details of the levels of information needed to evaluate remaining coal resources. Colin Treworgy and Cheri Chenoweth, Illinois State Geological Survey, discussed a 9-month effort to assemble a GIS database containing information on major Illinois coals. In the concurrent poster session, Allan Axon and D.L. Crowell, Ohio Geological Survey, illustrated Ohio's effort in the USGS coal availability program.



Ralph Gray shows off his plaque.

Membership News

David C. Glick

Cortland Eble has been appointed new Chair of the Membership Committee. Address corrections and changes for the Membership Directory and mailing of all Society publications, and applications for membership, may now be addressed to him (see page 2). Materials sent to David Glick will be forwarded to Cortland Eble. The Society welcomes the following new members whose applications were approved at Council meetings September 15 and 17, 1996 :

Sami T. Abdelbagi
1501 W. Pleasant Hill Rd. 164-2
Carbondale, IL 62901
Phone: 618 457-2694
E-mail: staha@siu.edu

Dr. Abdelbagi has defended his Ph.D. in geochemistry at Southern Illinois University. His interests include the application of petrography to environmental problems.

Chen-Lin Chou
Illinois State Geological Survey
615 East Peabody Dr.
Champaign, IL 61820
Phone: 217 244-2492
E-mail: cchou@geoserv.isgs.uiuc.edu

Dr. Chou is a geologist and geochemist at ISGS and has worked and published on many topics in coal geochemistry.

Tomasz Kuder
Geology Dept.
Southern Illinois University at Carbondale
Carbondale, IL 62901
E-mail: tkuder@siu.edu

Mr. Kuder's graduate work has included organic geochemical investigation of Holocene peat. He is now a Ph.D. candidate.

Jörgen Samuelson
Chalmers University of Technology
Department of Geology
S-412 96 Göteborg
SWEDEN
phone: 4631 772 2051
fax: +4631 772 2070
email: samson@geo.chalmers.se

Mr. Samuelson's background includes petroleum exploration, and he is currently involved with kerogen petrology.

Albert V. Tamashausky
Asbury Carbons
405 Old Main St.
Asbury, NJ 08802
Phone: 908 537-2155
fax: 908 537-2908

Asbury Carbons, a company which specializes in naturally occurring carbons and graphite, was accepted as an institutional member. Mr. Tamashausky will be their representative to TSOP.

The Society also welcomes the following individuals whose applications for membership were received after the Annual Meeting:

Michelle I. Hawke
Department of Land Resource Science
University of Guelph
Guelph, ON N1G 2W1, CANADA
phone: 519 824-4120 x. 8175
fax: 519 824-5730
E-mail: mhawke@lrs.uoguelph.ca

Ms. Hawke is currently a M.Sc. student in Environmental Earth Sciences; her interests include coal petrology and the petrographic characteristics of recent peats.

Armando Ruggiero
4405 NW 73rd Ave, Suite 30-586
Miami, FL 33166
phone: 58-2-9086521
fax: 58-2-908
E-mail: armando@intevp.pdv.com

Mr. Ruggiero has worked with coal petrology and now works for Intevp in Caracas, Venezuela, in organic petrology.

Tang Yuegang
Beijing Graduate School
China University of Mining and Technology
D11 Xueyuan Road
Beijing 100083, CHINA
phone: 86-10-62331248
fax: 86-10-62325016

Dr. Tang is a coal petrologist whose experience includes brown coal petrology and its relation to liquefaction, as well as coke petrography.

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14th Annual TSOP
and
26th Annual Eastern Section AAPG Joint Meeting
Lexington, Kentucky, September 27-30, 1997

James C. Hower

TSOP's first joint meeting with an American Association of Petroleum Geologists' (AAPG) regional section will be held in Lexington, Kentucky. Several pre-meeting field trips, short courses, and core workshops are being planned for September 27th and 28th. The opportunity to choose among several options for Saturday and Sunday provides an added dimension to the meeting. The technical sessions on September 29th and 30th featuring three concurrent oral sessions plus poster sessions should provide plenty of opportunity for participants to find the most appropriate mix of technical talks for their specialty.

The opening reception on Sunday night will be held in the exhibit area. There were nineteen industrial and organizational exhibits at the 1996 Eastern AAPG meeting and we plan for more in 1997. The exhibits will remain open throughout the meeting. On Monday evening we are planning a dinner and entertainment at the Kentucky Horse Park. The park will be open for us to tour the museums, horse bams, and, weather permitting, to go on horse-drawn carriage rides.

Guests are welcome to attend the meeting. Guest activities will include a tour of Lexington area horse farms, including breakfast at Keeneland race track to watch the morning workouts, and an excursion to Berea, Kentucky, famous for hand-made Appalachian crafts manufactured by students at Berea College. The Berea trip will include lunch at the Boone Tavern.

Joint meetings such as this involve some compromise on the part of both organizations. TSOP will have a more formal abstract deadline date - **April 1st, 1997** - than in the past. This is necessary due to the publication of the short abstracts in the September *AAPG Bulletin*. Please note on the "Call for Papers" that abstract submission via the world wide web is possible and encouraged. As always, though, extended abstracts will be accepted at a later date and will be distributed to all meeting participants and later to all TSOP members not at the meeting. All papers presented in TSOP sponsored sessions, as well as any other appropriate papers from other sessions, will be open for consideration for publication in the *International Journal of Coal Geology*.

The Eastern Section of AAPG includes smaller petroleum plays than we would hear about at the national AAPG meeting. The Energy Minerals Division has some of its most active members in the Eastern Section and always puts on a fine program. With the inclusion of TSOP, though, this is NOT just a regional meeting. I trust that TSOP will put on a program that has as much national and international breadth as recent meetings. This is an excellent opportunity to show a major organization, or at least a quite active part of that organization, the expanse of research conducted by TSOP members. I look forward to seeing TSOP put on its best meeting ever in Lexington.

Membership News (cont.)

Changes and corrections

Please make the following changes to your 1996 Membership Directory:

Andrei Golitsyn
E-mail: amgolin@geol.msu.ru

MaryAnn Malinconico
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Easton, PA 18042-1659

Dr. Atul Kumar Varma
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Indian School of Mines
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Fei Yu Wang
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TSOP Research Committee Update

Carolyn L. Thompson-Rizer

TSOP scientists are working to improve our understanding of sedimentary organic matter and the Research Committee should be the focal point of our society! We have funds budgeted for the use of our subcommittees! We need some enthusiasm in 1997!

On September 17th, near the close of the oral presentation part of the Annual Meeting in Carbondale, a lively discussion about our Research Committee was held. I started the discussion by asking for ideas on the current role of the committee. I referred the audience to the recent publication by Alan Davis "Reporting on the activities of the International Committee for Coal and Organic Petrology during the period 1991 - 1995" (*Fuel*, 1996, vol. 75, no. 9, pp. 1151-1152) and voiced my concern that TSOP should not duplicate the efforts of the ICCP work groups. We agreed that "standardization" work should be left to ICCP and ASTM and the TSOP research subcommittee work will be more exploratory or applied. The need for TSOP round-robin studies was discussed as being there because some members are not asked to participate in ICCP or ASTM studies. Our emphasis should be on getting the results back to the participants and helping them find out what they are doing "wrong." Most of our subcommittee leaders are plugged into ICCP and ASTM groups so they'll try to avoid doing exercises in years when the other organizations are doing them, as we recognize the time drain on participants. The TSOP subcommittees will have clearly stated objectives. Research Committee reports at the annual meeting will become a part of the regular meeting schedule. We will explore the idea of holding "structured discussion sessions" at the annual meeting to allow more TSOP members to openly share thoughts on a topic, and perhaps eventually form a subcommittee to work on some aspect of the topic. Ganjavar Khorasani Michelsen, TSOP Councilor, had prepared a discussion on Coalbed methane for our meeting but business kept her in Egypt and we were not able to try this new format this year. Next year TSOP is meeting jointly with AAPG in Lexington so we may not get to try this forum until 1998.

Jeff Quick, the current leader of the reflectance - fluorescence subcommittee, told us about his plans for a vitrinite reflectance round-robin study in 1997 (he also apologized for this year's delay) in which we will compare vitrain, whole coal, and dispersed organic matter samples. The study's goal focuses on sample heterogeneity. He also discussed putting an annotated

vitrinite reflectance bibliography onto the TSOP world-wide web page or into the *TSOP Newsletter*, as well as lists of current equipment suppliers (who sells glass standards these days?).

Jim Hower, the current leader of the environmental organic petrology subcommittee, is participating in the ICCP environmental work group and hopes they will join in ours. He is getting samples from Boston Harbor (via Lorraine Eglinton) and plans to allow participants to do organic and/or inorganic characterization and interpretations. Results will be shared. This is different from the ICCP approach.

Stan Teerman, the current leader of the visual kerogen subcommittee, needs help. He is currently located in Perth (Australia) and feels a bit isolated. We feel that this subcommittee is really the basis of our society and it should be doing some work. Let Stan know if you are interested; his fax number is 61-9-263-6699.

Call for Council Nominations

Serving as a TSOP Officer is a privilege of TSOP Membership. Nominees for 1997-1998 TSOP Council positions are currently being sought by the Nominating Committee. Offices and terms for the next election are: President-Elect (1 year), Vice-President (1 year), Councilor (2 years), and Editor (1 year). TSOP Members interested in running for a Council position should contact Brian Cardott [telephone: (405) 325-3031; fax: (405) 325-7069; email: bcardott@ou.edu] by mid-January, 1997.

Correction

The following erratum for the 11th TSOP Annual Meeting proceedings is in *Organic Geochemistry*, 24 (6/7), p. "i" [following p. 750]: "Organic Geochemistry Volume 24, Issue 2. Please note that the reference on the cover, and throughout the interior, of this issue to the Twelfth Annual Meeting of The Society for Organic Petrology' is in error. The papers presented in issue 24:2 are collected from the Eleventh Annual Meeting of TSOP. The publisher regrets any inconvenience this error may have caused."

News of the Iron & Steel Society

Gareth Mitchell

The Iron and Steel Society (ISS) is one of four autonomous member societies of The American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME). The Society began in 1913 as a technical committee and became a division of AIME in 1923. Since that time, it gained Society status and grew to include five divisions that cover all aspects of steelmaking technology, from raw materials to finished products. Today, ISS has a membership of about 7000. Each division (i.e., Electric Furnace, Ironmaking, Mechanical Working and Steel Processing, Process Technology and Steelmaking), through its committee structure, annual conference, continuing education, exposition and publishing activities, provides a forum for the in-depth discussion of operating problems and solutions, new technologies and the latest results of research.

Activities of interest to members of The Society for Organic Petrology, coal and coke petrographic applications and research, fall under the jurisdiction of the Ironmaking Division. This division, besides covering the reduction of iron ore in blast furnaces, direct reduction modules or in-bath smelting vessels, also deals in technology encompassing cokemaking, agglomeration, sintering and pelletizing. It was under the predecessors of this division that many of the practical operating results using coal petrographic methods were first reported. Today, much of the petrographic applications research deals with the influence of non-coking, carbonaceous additives (non-coking coals, petroleum and coal tar pitches, waste coke by-products, and even automobile tires) on the cokemaking process, coke properties and economics; coal blending practices and coal quality; and, thermoplastic properties and plasticity-enhancing additives. Other, fertile areas of petrographic research include the growing use of pulverized and granular coal in blast furnace injection and direct reduction processes.

Each year the Ironmaking Division holds its annual meeting in conjunction with the Steelmaking meeting usually in late March or early April depending on the venue. Next year the 56th Ironmaking Conference will be held in Chicago, Illinois on April 13-16, 1997, at the Hyatt Regency Hotel and will consist of five cokemaking sessions, seven blast furnace sessions, and one session each on pelletizing, sintering, waste oxide recycling and direct reduction and smelting. In addition, there will be a full day continuing education short course on "Selecting

Coals for Quality Coke" given on Sunday, April 13, 1997. Each of the technical sessions contains 4 - 6 papers on a variety of subjects dealing with operating practices, oven or furnace rebuilds and repairs, research and development, new technology and equipment, etc. A preliminary program for this meeting will be published in the March 1997 issue of the *Iron & Steelmaker* magazine.

The 57th Ironmaking Conference will be held March 22 - 25, 1998, at the Sheraton Centre Toronto, Canada, in conjunction with the 2nd International Congress on the Science and Technology of Ironmaking (ICSTI '98). This association will provide a large international forum with expanded opportunities for fundamental research topics, new technology and techniques in ironmaking, cokemaking, and raw materials. Also, for the first time, the 1998 Ironmaking Conference Proceedings will be available at the meeting, which means that manuscript and publication schedules are accelerated. Because of this a "Call for Papers" for the 1998 conference already has been published. So if you are interested in submitting an abstract for the 1998 conference, contact the ISS Headquarters for details at 412-776-1535 Ext. 618 or visit their web site at <http://www.issource.org/>.

TSOP Newsletter Upcoming Special Issue!

In response to growing Council and membership concerns regarding the health and future of organic petrology (and the earth sciences in general) an upcoming issue of the newsletter will feature a review of organic petrology applications. Organic petrology and various aspects of its methodology are currently seeing widespread, but often little noted, use. TSOP members are invited to contact the newsletter editor (see information on page 2) regarding any new, unusual, little-known and/or speculative applications of organic petrology that should be brought to the attention of our worldwide membership. All suggestions and/or submissions need to be received by February 10, 1997 for inclusion in the final review.

Report on the 48th Meeting of the International Committee for Coal and Organic Petrology (ICCP)

Heerlen, The Netherlands, September 9-14, 1996

Paul C. Lyons

The ICCP held its 48th Meeting in Heerlen, The Netherlands, where it held its historic first meeting in 1953. The 48th meeting was organized by the Dutch Geological Survey under the leadership of Dr. Willem J. J. Fermont.

One of the highlights of the meeting was a presentation on the early history of the ICCP by Dr. D.W. van Krevelen (Fig. 1), founding member and world renowned coal chemist. Two other founding members were also in attendance, Dr. Marlies Teichmüller [Germany] (Fig. 1) and Dr. Harold (A.H.V.) Smith [UK]. Dr. Van Krevelen showed a series of historic photographs, including a group photograph from the First Meeting of the ICCP. Dr. M.J. Lemos de Sousa (Portugal), President of the ICCP, announced that a book on the history of the ICCP will be published in time for the 50th ICCP Meeting in Porto, Portugal (1998).

Sixty-one coal petrographers belonging to twenty-six laboratories worldwide applied for accreditation by the ICCP for 1995-96. This is the third year for applications for accreditation by the ICCP. Subscribers for ICCP accreditation should contact Aivars Depers (Wollongong, Australia) at fax (61-4221-42-50) or e-mail (A.DEPERS@now.EDU.AU) for further information. ICCP Secretary Z.C. Corrêa da Silva (Brazil) produced an excellent ICCP Directory, which was distributed at the meeting.

Commission I met under the leadership of A.C. Cook (Australia), newly elected President of this commission. Procedures for coal fluorescence spectrometry, which were summarized by A. Davis (USA), were accepted by members of Commission I. Monica Wolfe (Germany) presented a scheme for microlithotype classification; the editorial group consists of Wolfe, W. Pickel (Germany), and Z.C. Corrêa da Silva. J.G. Prado (Spain) gave a presentation on the electronic transfer of coal images.

A microscope session on vitrinite indicated considerable confusion on the identification of vitrinite, particularly where its structure and reflectance were gradational. Colloresinite, which has been taken out of the liptinite

maceral group, now does not have a maceral group home according to A.H.V. Smith (U.K.).

At the suggestion of P.C. Lyons (USA), the maceral sclerotinite of the inertinite maceral group has been abandoned by the ICCP and replaced by funginite and secretinite (Lyons *et. al.*, 1982) — the non-fungal bodies previously mixed with fungal masses. The former maceral sclerotinite, which was originally defined by Stach (1952) for only fungal components, has had a long history of confusion, particularly in Permo-Carboniferous coals, which rarely show true fungal masses. The sheets for inertinite group macerals, after major revision, will be reviewed again at the 49th meeting of the ICCP in Wellington, New Zealand.

David Pearson (Canada) presented data on the variation of glass standards used for reflectance; he found variation of 0.02 - 0.03% between the 1980 and 1993 glass standards. W. Pickel, leader of the editorial group for revision of the ICCP liptinite group macerals, requested photomicrographs be sent to him for use for descriptive purposes in preparing the updated ICCP liptinite maceral sheets. His address is: Lehrstuhl für Geologie, Geochemie und Lagerstätten des Erdöls und der Kohle, RWTH Aachen, Lochnerstrasse 4-20, 52056 Aachen, Germany.

B. Pradier (France) discussed the progress of using fluorescence as a thermal indicator. A.C. Cook showed a series of slides on the various kinds and botanical origins of alginite; the editorial group under Cook's leadership will assemble the alginite plates for approval at next year's meeting. The Coal Facies Working Group (G.J. Nowak, Poland, leader) postponed a white paper until next year's meeting. He requests from ICCP members some ideas and papers on new techniques relating to coal facies; his fax number is : +48-71-676952. A report on the isolation of organic matter was presented by W. Kalkreuth (Brazil) on behalf of J. Castaño (USA), who could not be present at the meeting in Heerlen; a round-robin exercise on the identification of liptinite macerals showed considerable disagreement. M. Teichmüller suggested that two sets of photomicrographs, one set in white light and the other in



Figure 1 : (L-R) Dr. Marlies Teichmüller and Dr. D.W. van Krevelen, founding members of the ICCP, and Mrs. Van Krevelen, at the 48th ICCP Meeting in Heerlen, The Netherlands, September 9, 1996. Photograph courtesy of Paul C. Lyons.

blue light, be used for identification of isolated organic matter.

A report by W.J.J. Fermont on the Working Group on Basin Modeling showed a plot of vitrinite reflectance with depth in one 1,500 m hole in Holland. The plot showed anomalous vitrinite reflectance data near the bottom of the hole. N.H. Bostick (USA) will provide five pellet mounts from a Canadian coal for a new exercise.

The Atlas of Environmental Applications has not progressed very well. According to J.G. Bailey (Australia), it is still A. Deper's (Australia) atlas at this point and not an ICCP atlas. Suggestions for publication of this atlas included ECE, EPA, and ACS (Petroleum Research Institute). A.C. Cook will inquire about funding the publication of Deper's atlas.

There was considerable discussion on the recognition and origin of Pseudovitrinite (Benedict *et al.*, 1968). L. Gurba (Germany) gave an informative slide presentation on this maceral and showed its fundamental characteristics. A.H.V. Smith did an earlier ICCP report on Pseudovitrinite, and there was considerable uncertainty about whether Smith's Pseudo-

vitrinite was the same as Gurba's Pseudovitrinite. Smith will forward his early report and some samples of his Pseudovitrinite to Gurba for new analyses.

A report on coke petrography was given by R. Javier (France). There was a poor response to the 1995 round-robin exercise on the recognition of coke components; only 5 results were received. A new set of samples will be prepared for a new round-robin exercise. J.G. Bailey also reported on round-robin exercises on char components for the period 1990-1995. The results were poor, and she maintains that there is a great need for computerized image analysis in the recognition of char components. A simple round-robin exercise on a two-component blend composed of two bituminous coals (hvA and mv bituminous) showed excellent agreement, including results from both manual and automated techniques, as reported by A. Davis (USA). The working group on automation, which has as its aim the development of rapid analyses using automated techniques, will evaluate a round-robin exercise at the 1997 New Zealand meeting. A.G. Borrego (Spain) reported on inertinite in combustion. She presented a classification of chars and proposed that a study of pyrolysis products be undertaken to compare the parent

inertinite components with the inertinite-derived components in the pyrolysis products.

Dr. Alan C. Cook of Australia received the Reinhardt Thiessen Medal of the ICCP for his extraordinary coal petrologic work spanning all ranks of coal and for his leadership in coal petrology, including the mentoring of 17 Ph.D. students, as noted in A. Davis' citation of Cook's contributions. Cook also made fundamental contributions to understanding coke properties and to blend design. Alan acknowledged in his acceptance speech his debt to many ICCP members, notably G.H. Taylor (Australia), who taught him coal petrology when he was at CSIRO (Australia) in the late 1950s.

T.A. Moore (NZ) gave a nice slide overview of what we should expect — weatherwise and otherwise — at the next ICCP Meeting in Wellington, New Zealand. The meeting will be held October 20 - 25, 1997, following the New Zealand Coal Conference (October 15-17, 1997). Further information on this meeting, including hotel suggestions, will be sent to ICCP members in the fall.

ICCP members visited Demkolec, the world's largest coal gasification plant in The Netherlands. It is an experimental plant now in its second year of operation. It delivers gas from coal to 31 companies. The gas is produced from coals from the USA, Australia, Indonesia, and other countries. The importance of fundamental data on coal's physical and chemical properties, also of fundamental importance to the ICCP, were highlighted in our briefing and tour of the plant.

A field trip to the Limburg Region of The Netherlands was led by the Dutch Geological Survey under the leadership of Hans van de Laar and W.J.J. Fermont. Highlights of the trip, which was both a cultural and geologic adventure, included visiting some classic Carboniferous localities of the legendary Dutch paleobotanist, W.J. Jongmans, and a visit to the Type Maastrichtian (Upper Cretaceous). Participants had an opportunity to collect some marine animal fossils, which were abundant in the limestone beds of the Maastrichtian.

An election will be held in the fall of 1996 for the position of ICCP Treasurer. Duncan Murchison (UK), Treasurer, who has unselfishly served the ICCP for a long period, including five years as President of the ICCP, indicated in a letter to ICCP President M.J. Lemos de Sousa his desire to pass along the Treasurer's reins, if the ICCP so desires. As a courtesy, unless he indicates that it be removed, his name will be on the ballot for Treasurer.

To make a long story short, the ICCP Meeting in Heerlen, which was attended by seventy-one ICCP members from about 20 countries, set a high standard to be followed in subsequent ICCP meetings. The fundamental work of the ICCP through its three commissions and its newly formulated accreditation procedures for coal petrographers will, undoubtedly, continue to be of primary importance to the international coal community.

Congratulations to the Dutch Geological Survey for being an outstanding host for the 48th meeting of the ICCP!

References

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Lyons, P.C., Hatcher, P.G., and Brown, F.W., 1982, Secretinite: a proposed new maceral of the inertinite maceral group, *Fuel*, 65: 1094-1098.

Stach, E., 1952, Heutiger Stand der genetischen Deutung der Kohlengefügebestandteile, *Cong. Int. Strat. Géol. Carbonifere (Heerlen 1951)*, C.R. 2: 585-590.

Call for Site Proposals

2000 TSOP Annual Meeting

The TSOP Council is soliciting proposals for the 2000 Annual Meeting site. It is desirable to select a site three years in advance of the meeting. Proposals submitted by **1 February 1997** can be considered at the 1997 Mid-Year Council Meeting in March. Guidelines for preparing an annual meeting proposal are in the TSOP Procedures Manual (chapter 1; summarized in the *TSOP Newsletter*, vol. 9, no. 3, p. 8), available from any council member. All proposals for the 2000 Annual Meeting site must be received by Secretary-Treasurer Lorraine Eglinton before the stated deadline. Jim Hower, chairman of the Annual Meeting Advisory Committee, is available to advise others on the planning of future TSOP meetings.

TSOP Web Site Now Operational!!!

<http://www.eos.ubc.ca/tsop/>

David Glick, Internet Committee Chairman

The TSOP World Wide Web site is now available and everyone is invited to see it, use it and contribute to it. It is expected that an "official" address will soon be registered, and should remain constant for the future. Until that registration is complete, the site can be found at <http://www.eos.ubc.ca/tsop/> and is fully functional. The Society is indebted to Michelle Lamberson who has developed this site in the Department of Earth and Ocean Sciences at the University of British Columbia.

This is every member's site! We need everyone's participation and contributions to make it useful and successful. Information on TSOP's goals, structure and activities are already provided there, and additions are being planned. A set of bibliographic references organized by topic has been submitted for inclusion, and an on-line membership list (for access by members only) is being investigated. What else should be included? Can you help us provide those features? The assistance of members in formatting HTML files, writing programs, and submitting information will be appreciated by all who use the site. Please contact David Glick or Michelle Lamberson if you can help.

The Org-Pet discussion group is intended to be an important tool to engender communication among all those interested in TSOP's areas of specialization. Please use it and invite others to use it as well! We hope it will be the forum for enthusiastic and productive discussion of scientific topics, Society activities and the web site itself. Help it get off to a good start by looking at it now and posting a message or responding to one. A valuable asset of the discussion group is the ability to reference and display an image file (such as a digitized photomicrograph) for all participants to see and discuss.

It is important to note that in these forums, there is no tone of voice, wink of an eye or smile to supplement the meaning of the words - subtlety is often lost. Courtesy is of great value - remember that every reader of your post has feelings! Be sure your meaning is clear! Keep in mind that readers with varying specialties and levels of training may not be aware of every abbreviation and bit of jargon, nor realize what assumptions are not being stated. A detailed, descriptive subject line has great value in permitting others to realize that your message will be of interest to them! For example, use "Carboxyl

content of Montana lignite" rather than "Chemistry," and "Seeking cheap reflectance microscope" rather than "Help me." Correct spelling, especially in subject lines, also will aid in a computer search for a specific message when the list of messages becomes long.

The Internet Committee will soon be announcing the site in print and electronic media. Join us before the rush!

1997 Membership Dues Early Deadline!!!

Once again, it's that time of year: time for membership renewal and payment of annual dues. *Please note, however, that the dues renewal date is earlier this year (end of December instead of the usual early February).* This change has been adopted to (hopefully) alleviate some problems. The TSOP Council would greatly appreciate it if you would take the time right now to renew your membership. Your efforts will save us both time and money that would otherwise be spent on processing renewal notices. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/96" appears, then you are paid only through December 1996 and need to pay dues for 1997 if you have not done so already. If you have paid dues in advance for several years, then the appropriate expiration date should appear on your mailing label.

Enclosed with this issue is a colored copy of the 1997 Dues Notice. We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

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Steve Voynick recently noted that "Mineral shows and museums display an awesome variety of rocks and minerals, but coal specimens are rarely included" (*Rock and Gem*, October 1996, p. 48). Voynick attributes this state of affairs to coal's "image problem" that we are all painfully aware of.

One museum that is unaware of or, more likely, unintimidated by the image problems of coal is the museum at the Technical University of Ostrava in Ostrava, Czech Republic. About one-third of this delightful museum is devoted to coal. It is not just the sheer volume of coal (almost 100 well-lit display cases of coal and coal-related materials!) that is impressive. The specimens are arranged in orderly, systematic, comprehensive displays that are designed to inform the visitor about virtually every aspect of coal science. There are separate displays organized by coal rank, type, texture, structure, and geographic distribution (with heavy emphasis on Eastern Europe and the former Soviet Union).



A Gem of a Coal Museum

Robert B. Finkelman

There are cases of minerals, fossils and fluids associated with coal and a liberal sprinkling of photomicrographs illustrating coal macerals and minerals. An entire room is devoted to the region's coal mining history. It contains specimens from every coal seam and coal mine that operated in the area in recent decades along with detailed displays of regional coal geology, stratigraphy, and mining. What permeates this impressive collection is a deep pride in the coal-mining heritage of the area.

Because they were booked solid with school children who are regularly bused to the museum, the staff kindly opened the museum for me an hour before its regular schedule. By the time I left, the museum isles were populated with scurrying children whose eyes were filled with the many wonders of coal. There is clearly enough here at the museum to inform, delight, and inspire innocent, wide-eyed children as well as jaded, experienced professionals.

[Readers, if you know of other museums of interest to our membership please contact me with details! —Ed.]



AGI Liaison Report

Brian J. Cardott

"The American Geological Institute is a nonprofit federation of 29 geoscientific and professional associations that represent more than 80,000 geologists, geophysicists, and other earth scientists. In addition, 115 colleges and universities are AGI Academic Associates and about 20 private companies are AGI Corporate Members. Founded in 1948, AGI provides information services to geoscientists, serves as a voice of shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in mankind's use of resources and interaction with the environment. AGI founded and directs *GeoRef*, an online bibliographic database of more than 2 million geological references, the most comprehensive geoscience database in the world, and publishes a variety of books and publications, including *Geotimes*, a monthly earth-science magazine" (from *AGI Spotlight* press releases).

TSOP applied for and was accepted as an AGI Member Society on June 15, 1995. AGI operations are overseen by a Member Society Council (MSC) and a ten-member Executive Committee. Each Member Society appoints a representative to the MSC that meets twice each year (at the AAPG and GSA annual meetings) to review program activities and assess AGI priorities. Member Society Council Representatives are usually current or immediate past presidents of their societies and are requested to serve on the AGI Member Society Council for a three-year term. I am serving as the TSOP representative from 1995-1998.

Annual AGI dues are US\$2 per stipulated member. Stipulated members are defined as "all those North American members in the society who pay 75% or more of the normal dues and are in a broad sense earth scientists." It does not include students or members residing overseas. The AGI 1996 annual society dues from TSOP was \$254. In October 1995, TSOP requested and was granted permission to use the AGI mailing address as our permanent mailing address for purposes of registration of the *TSOP Newsletter*. A major benefit in affiliating with AGI is that we share in a focused voice in Washington, D.C. to represent the needs of the geoscience community at the national level. TSOP is involved in several AGI projects.

TSOP Member Joseph Senftle serves as the TSOP representative on the AGI project "Professional Career

Pathways in the Geosciences." This project was initiated through an Alfred P. Sloan Foundation grant awarded to AGI. The project will provide high school and college students with information about career opportunities in the geosciences. The products of the project will include a videotape and CD-ROM that feature interviews with working geoscientists. The July/August 1996 issue of *GeoSpectrum*, an AGI newsletter, stated that project developers "decided to organize the presentation of career pathways along the lines of significant societal issues rather than by disciplines. Four areas were identified and a committee formed for each: Resources, Geohazards, Environment, and Understanding the Earth. The individual 'project teams' met in March to identify individuals to be interviewed for the videotape component of the Career Pathways project." AGI is continuing their efforts to develop an interactive, multimedia career guide for geosciences.

TSOP Member Joseph Senftle serves as the TSOP representative on the AGI Government Affairs Program (GAP). Since 1992, GAP has served as a link between the geoscience community and Washington, D.C., communicating concerns to Congress and federal agencies, in addition to informing the community on actions that affect it. At the 1996 Midyear Council Meeting, the TSOP Council voted to contribute \$150 to GAP, which was matched by a grant from the Geological Society of America. During a meeting at AGI headquarters in March, the committee developed a list of priority areas to pursue: (1) The government's role in collecting and preserving geoscience data to prevent its loss; (2) Federal support for geoscience research; (3) Improved communication and outreach; (4) Application of geoscience to the management of public lands; and (5) Environmental and public health concerns. This summer, a most pressing goal was to convince legislators not to cut appropriations for the National Geoscience Data Repository System (NGDRS) from the fiscal year 1997 federal budget. Data types to be preserved in the NGDRS include seismic data, drill core and well cuttings, paleontological collections, and environmental data. For a description of the project and an update on funding, see the AGI web site (<http://www.agiweb.org>) under "Government Affairs & Congressional Action Alerts." If TSOP has an issue of great importance, GAP stands ready to ensure that the member society's voice is heard, helping their spokespersons to present testimony or identify key government contacts.

Geologists look for Fossil Meteorites in Coal

Geologists at Pennsylvania State University, in State College, PA., are trying to develop a strategy for harvesting "fossil" meteorites from coal, employing "tramp" iron magnets in use at many prep plants. Researchers theorize that iron meteorites that fell into ancient coal swamps will be preserved in the coal. Meteorites have fallen to Earth throughout geologic time, but fossil meteorites (i.e., those that fell millions of years ago and have been preserved in sedimentary rocks) are quite rare. Iron meteorites oxidize rapidly, surviving only a few hundred to a few thousand years in most environments. Only a few "fossil" meteorites with terrestrial ages in terms of millions of years are known and their discoveries were matters of sheer chance.

An iron meteorite that fell into a coal swamp will develop a rind of pyrite that inhibits alteration of the interior of the meteorite. After coalification, an iron meteorite encased in coal will be preserved from further corrosion by the reduced state of the coal, particularly in a coal seam with a methane dominated vapor phase.

Estimates of the present-day flux of meteorites range from 100 to 1,000 metric tons of meteorites per day for the whole of the Earth's surface. About 1% of these, called macro-meteorites, are recoverable. About 5% of the meteorites are strongly magnetic (i.e., iron or stony iron meteorites). If coal accumulated at the rate of 0.1 millimeters per year, then every million short tons of coal should yield about 75 grams of magnetic macro-meteorites.

A large Pennsylvania coal operation that mines 3 million tons per year (tpy) for instance, could yield about 225 grams of magnetic macro-meteorites per year, while a larger Wyoming coal mine moving 30 million tpy could produce approximately 2.5 kilograms of iron meteorites or more each year.

Finding such meteorites is difficult, but researchers have begun a nationwide effort to search for meteorites by examining magnetic materials pulled out of the coal by tramp iron electromagnets. Many of these magnets are ideally designed for picking up any fossil iron meteorites that might be in the coal.

Many coal operators may be already unknowingly recovering iron meteorites and disposing of them with their scrap metal. Such meteorites may be difficult to recognize; they may be rusty, or they may be coated with pyrite or an iron carbonate material. In some cases

the original iron-nickel metallic structure of the meteorite may be almost completely corroded away.

Enlisting coal miners and processors is important to the success of this project. The researchers are asking coal miners and processors to examine the output of the tramp metal magnets when cleaning the magnets or the tramp metal bins. Anyone who finds an unusual object in coal is encouraged to contact Andrew Sicree or David Gold at Pennsylvania State University (814-865-6427).

[reprinted from *Coal Age*, September 1996]

Still Available!

The Geochemistry and Petrography of Kerogen/Macerals

(published as *Energy & Fuels*, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology.

General topics include:

- Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
- Chemistry of Kerogen/Macerals Types
- Precursor Materials
- Paleo-Depositional Environments and Diagenetic Provenance
- Maceral Behavior during Maturation and Catagenesis
- New Techniques and Applications
- Case Histories

Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "*The Society for Organic Petrology*". Sorry, no credit card orders can be accepted. Send all inquiries and orders to:

TSOP, c/o Gretchen Tremoulet
University of Kentucky
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511-8433 USA

Publications of Interest

Petroleum Geochemistry and Geology, 2nd Edition

John M. Hunt
1995, W.H. Freeman, 743 pp.

From a recent review: "Sixteen years ago John Hunt published one of the first textbooks for petroleum geochemistry and it was a monumental achievement. This new edition is not just a revision of the first, rather it is a whole new book that is both larger and more comprehensive, though retaining the very readable style of the original. Some of the high points of the book include: a superb introduction to organic molecules found in petroleum; probably the clearest explanation of petroleum generation pathways ever written; an excellent summary of biological markers as source and paleoenvironmental indicators; a lucid discussion of the role of transgressions and regressions of the oceans; excellent examples of the application of time-temperature history to source rocks; excellent illustrations of biodegradation; a careful analysis of petroleum geochemical prospecting; and numerous practical applications of petroleum geochemical techniques. It presents an outstanding summary of much of the new knowledge gained over the last fifteen years. This book is an absolute 'must have' for petroleum explorationists/geologists/geochemists and organic geochemists." Hardbound, ISBN 0-7167-2441-3.

* * * * *

Geology of Australian Coal Basins

C. Ward, et.al. (eds.)
1996, GSAustralia CGG Special Pub. #1

From the publisher's ad copy: "This 600 page book contains information on the geology of Australia's major coal basins, including details on the paleogeography, paleoclimate, floras, petrographic constituents, rank, minerals, history of discovery, and resources, as well as descriptions of some 40 coal basins around Australia." For further information or to order please fax the Editor of the GS Australia Coal Geology Group at 07-892-4407.

Global Peat Resources

Eino Lappalainen (ed.)
1996, International Peat Society, 300+ pp.

From the publisher's ad copy: "The most detailed up-to-date review on the world's peat resources... (it) is a joint effort of over 60 peat experts from all over the world. This important source features with more than 300 pages world-wide information on peatlands and wetlands. Numerous maps and color photos illustrate the distribution of mires and their special characteristics: mangrove swamps, aapa mires, blanket bogs, raised mires, etc." Topics covered include: the impact of peatlands and mires on the biosphere and climate change, variations in peat accumulation rates, carbon storage in peatlands, peat distribution, peat utilization, as well as peatlands and wetlands protection.

* * * * *

Historical Perspective of Early Twentieth Century Carboniferous Paleobotany

Paul C. Lyons, et.al. (eds.)
1995, GSA Memoir #185, 424 pp.

From the publisher's ad copy: "Contains a wealth of information on early 20th century Carboniferous paleobotany in North America. The 28 chapters focus on the interactions of European and American paleobotanists and the birth of discoveries in Carboniferous paleobotany. Central to these interactions and some of the discoveries is the research of W.C. Darrah, which is highlighted. Twenty-one chapters are portraits of European paleobotanists W.J. Jongmans, W. Gothan, P. Bertrand, C.R. Florin, and M. Stopes; American paleobotanists D. White, R. Thiessen, E.H. Sellards, M.K. Elias, A.C. Noé, W.A Bell, W.C. Darrah, F.D. Reed, J.M. Schopf, and seven others.... both amateur and professional. The remaining chapters deal with floral-zonation schemes, museum collections, coal-ball studies, and roof-shale floras. The book is rich in unpublished photographs and correspondence of W.C. Darrah, including humorous and controversial material of broad interest." Hardbound, ISBN 0-8137-1185-1.

Calendar of Events

1997

January 7 - 10 : Fifth Annual Clean Coal Technology Conference, Tampa, FL. For more information, contact Faith Cline at 202-586-7920.

January 26 - 30 : ACAA 12th International Symposium on Management and Use of Coal Combustion Byproducts, Orlando, FL. For further information contact Gregg Deinhart at 703-317-2400 [telephone], 703-317-2409 [fax], or ACAA@ix.netcom.com [e-mail].

February 13 - 18 : AAAS Annual Meeting & Science Innovation Exposition, Seattle, WA. Abstracts deadline (10/15/96). For information, contact AAAS at 202-326-6450 [phone], 202-289-4021 [fax], amsie97@aaas.org [e-mail], or at <http://www.aaas.org/meetings/meetings.htm> [website].

March 23 - 27 : Ninth Biennial Meeting of the European Union of Geosciences, Strasbourg, France. For information, contact Dr. A.W. Hofmann at 49-6131-305-280 [telephone], 49-6131-371-051 [telefax], or hofmann@geobar.mpch-mainz.mpg.de [e-mail].

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at (918)-584-2555.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For further information call (202)-872-4396.

April 29 - May 1 : Coal Prep 97, Lexington KY. Call for abstracts related to all aspects of coal preparation has been issued. For information, contact program chairman Al Deurbrouck at 412-653-0281 [phone] Or 412-854-5963 [fax].

May 5 - 10 : European Coal Conference '97, Izmir, Turkey. For information, please contact the convenors at 90-232-38-82-919 [phone] or 90-232-37-38-289 [fax].

May 9 - 21 : Joint Annual Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Ottawa, Ontario, Canada. For more information, please contact Dr. C. Vodden at 613-947-7649 [phone], 613-947-7650 [fax], or OTTAWA97@emr.ca [e-mail].

June 23 - 27 : International Symposium on Engineering Geology and the Environment, Athens,

Greece. For information, contact the Hellenic Committee of Engineering Geology / Athens 1997 Symposium Secretariat at 30-1-3813900 [phone/fax].

September : 7th New Zealand Coal Conference, Wellington, New Zealand. For information, contact A. Herbert at 64-4-570-718 [phone], 64-4-570-3701 [fax], or A.Herbert@crl.co.nz [e-mail].

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For info, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV For more information call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 [telephone] or 49-40-630-0736 [fax].

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands. For information contact, Conference Service - EAOG '97 at 49-2461-61-3833 [phone], 49-2461-61-4666 [fax], or R.MENGELS@KFA-JUELICH.DE [e-mail].

September 29 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.htm>

October 5 - 10 : Fourth International Symposium on Environmental Geochemistry, Vail, Colorado. Emphasizing themes of environmental analytical techniques, mine drainage, radiogenic hazards, geochemical monitoring, geomedical research, etc. For additional information and details, please contact Dr. R.C. Severson at 303-236-5514 [phone], 303-236-3200 [fax], iseg@helios.cr.usgs.gov [e-mail], or the web-site at <http://minerals.er.usgs.gov>.

October 13 - 20 : International Committee for Coal and Organic Petrography, Wellington, New Zealand. For information, contact T.A. Moore at 64-4-570-3708 [phone], 64-4-570-3701 [fax], or T.Moore@ci.co.nz [e-mail].

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more

information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.caer.uky.edu/ash/ashhome.htm>.

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 [telephone] or 31-591-301223 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

April : International Conference on Coal Seam Gas and Oil, Brisbane, Australia. For additional information please contact either Drs. S. Golding at 3365-1277 [fax] / s-goldin@sol.earthsciences.uq.edu.au [e-mail] or Dr. M. Mastalerz at 812-855-2862 [fax] / mmastale@indiana.edu.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For info, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telefax], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyvaskyla, Finland.

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-006i [phone/fax].

Fall : International Committee for Coal and Organic Petrography, Porto, Portugal.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

1999

August 17 - 21 : 14th International Carboniferous Congress, Calgary, Alberta, Canada. For information, contact Charles Henderson at 403-220-6170 [phone] or henderson@geo.ucalgary.ca [e-mail].

Fall : International Committee for Coal and Organic Petrography, Bucharest, Romania.

Fall : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For info, contact Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.esri.utah.edu).

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For info, contact GSA at 303-447-2020 / 303-447-6028 [phone/fax].

2000

August 6 - 11 : Eleventh International Peat Congress - "Sustaining the World's Peatlands", Quebec City, Quebec, Canada.

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TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower
 CAER
 3572 Iron Works Pike
 Lexington, KY 40511
 phone: (606)-257-0261
 fax: (606)-257-0302

An unsolicited endorsement from a satisfied TSOP mug owner:

I just don't know how I got through my life without my two brand-spanking new TSOP mugs. They're sturdy microwaveable, fabulous looking, and are great conversation starters too! I never leave home without them.... You shouldn't either!

**TSOP Archives
 Open for Business!**

The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

Kenneth W. Kuehn
 TSOP Archivist
 Geology, Western Kentucky University
 1 Big Red Way
 Bowling Green, KY 42101 USA

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THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 14, No. 1

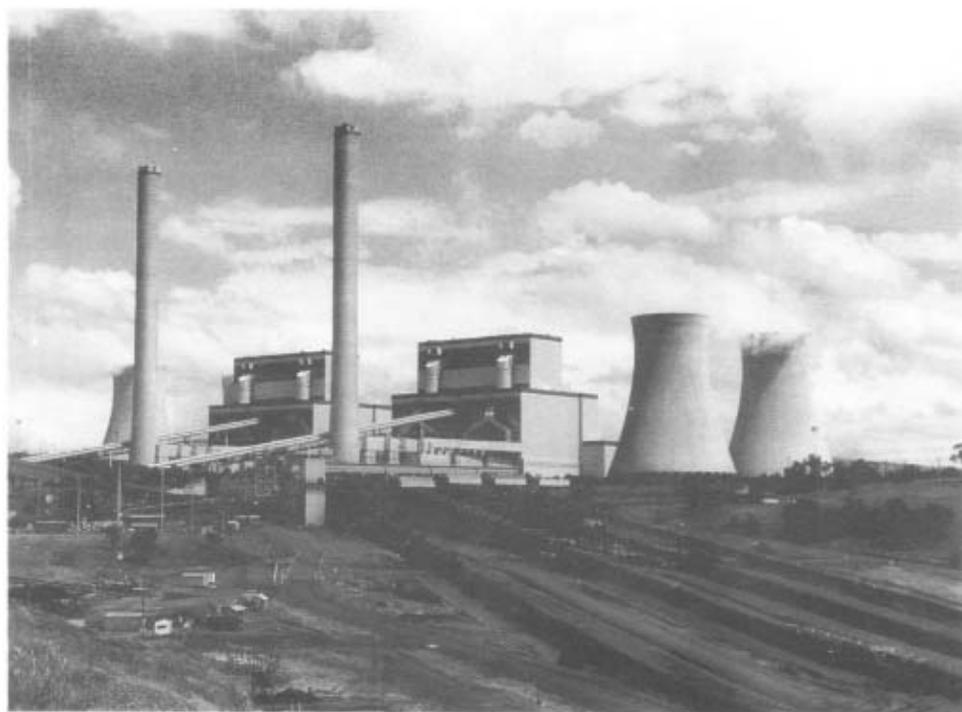
March 1997

ISSN-0743-3816

Bulli coal bed at Lifton, New South Wales. Bulli is the uppermost Permian coal and has been one of the prime coking coals mined in the Southern coal field of New South Wales. The Bulli at this location was mined from the sea cliffs. TSOP member Adrian Hutton at left. Photo courtesy of James C. Hower.



Seventh Australian Coal Conference



Monash University Churchill, Victoria

Loy Yang B and A, left to right, power stations with a total of four 500 Mw units. Note conveyor belts in foreground which bring lignite from mine to plant. (Loy Yang, Latrobe Valley, Victoria). Photo courtesy of James C. Hower.

*For coverage
see page 11*

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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 228 Mining & Minerals Building
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 Lexington, KY 40506 USA
 Phone: (606)-257-5500
 Fax: (606)-258-1049
 E-mail: eble@kgs.mm.uky.edu

Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
 U.S. Geological Survey
 432 National Center
 Reston, VA 20192 USA
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For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1996-97 TSOP Council

President	Jeffrey R. Levine
Vice-President	Charles Landis
President Elect	Kenneth W. Kuehn
Secretary/Treasurer	Lorraine B. Eglinton
Editor	James Pontolillo
Councilor (1995-97)	Ganjavar K. Khorasani
Councilor (1996-98)	David C. Glick

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

For Newsletters:

Jim Pontolillo
 (703)-648-4849 phone
 (703)-648-5832 fax
 jpontoli@usgs.gov

For Membership Packets:

Cortland Eble
 (606)-257-5500 phone
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Submittal Deadline Next Issue
 10 May 1997

TSOP Web Site
Officially Registered

<http://www.tsop.org>

David Glick
Internet Committee Chair

TSOP's world wide web site now has an officially registered URL address which should remain constant for the future. This allows the real address to change without the need for the user to know of the change. The address in the last *TSOP Newsletter* will continue to work for the foreseeable future but everyone should use the new address: <<http://www.tsop.org>>.

During January and February, nearly every part of the web site was updated, and this will be an ongoing process. In particular, the list of links to other sites was expanded and annotated. The Internet Committee now has procedures to allow small updates to be made quickly. Everyone is encouraged to participate and report errors, additions and comments to either David Glick <xid@psu.edu> or Michelle Lamberson <mlambers@eos.ubc.ca>. Comments regarding the organization of the web site are especially welcomed. Tell us what you'd like to see!

The Committee would welcome volunteers to take over specific tasks or add entire new sections to the site. Please contact us if you can help.

The Org-Pet discussion group is not operational at this time, but may be working soon. When it is, it will provide a forum for discussing expansion of the web site, as well as petrology and organic geochemistry topics.

The Internet Committee has contacted related web sites to encourage mutual links among the sites, and has submitted the TSOP web site for indexing by the major WWW index and search pages. This will also be an ongoing process.

Liaison Committee Organized

David Glick
Liaison Committee Chair

The Liaison Committee was formed at the Incoming Council Meeting in Carbondale last September. TSOP has had appointed Liaisons to other societies and groups for some time, to further TSOP's goal "to enhance professional and scientific interactions." The Committee will provide a structure to organize the Liaisons' reporting and activities. Liaisons are asked to provide at least one article per year to the *TSOP Newsletter* concerning their activities and items of interest to TSOP members.

A draft entry describing the Committee's mandate and guidelines has been written for TSOP's *Procedures Manual* and is under discussion by the Council and interested parties at this time. To receive a copy, please contact David Glick.

Volunteers are sought to serve as TSOP Liaisons to the Paleobotanical Section of the Botanical Society of America and the Fuel Chemistry Division of the American Chemical Society. The Committee will include Liaisons to specific societies as well as informal groups such as the South American Petrologists. Current Liaisons to specific societies are :

AAPG, Eastern Section - James C. Hower
AAPG, EMD - James C. Hower
AASP - Gordon D. Wood
ACS, Geochem. Div. -- Lorraine B. Eglinton
AGI -- Brian J. Cardott
ASTM - Ronald W. Stanton
CSCOP - Judith Potter
EAOG - Lorraine B. Eglinton
GSA, Coal Geology Div. - Cortland F. Eble
ICCP - Alan Davis
Iron & Steel Soc. (AIME) - Gareth D. Mitchell
Standards Assn. of Australia - Adrian Hutton

TSOP Newsletter Upcoming Special Issue!

In response to growing Council and membership concerns regarding the health and future of organic petrology the June issue of the newsletter will feature a review of organic petrology applications. Organic petrology and various aspects of its methodology are currently seeing widespread, but often little noted, use. TSOP members are invited to contact the Editor (see page two) with any new, unusual, little-known, and/or speculative applications of organic petrology that should be brought to the attention of our worldwide membership. All suggestions/submissions need to be received by May 10th for inclusion in the final review.

Better Living through Shale Leachate?

James Pontolillo

One of the many recent (actually, newly resurrected) fads in the alternative health community is an exaggerated concern over dietary mineral deficiencies. Many alternative health practitioners blame every malady known to man, from acne to AIDS, on such deficiencies.¹ A plethora of special vitamin and chelated mineral supplements of dubious efficacy have been sold to the unwary for decades. The latest in this long line of miracle products are *colloidal mineral supplements* water-leached from carbonaceous shales in the Emery Coal Field of central Utah (see Figure 1). According to widely circulated promotional materials, erosion and unwise farming methods "have led to mineral-depleted soils resulting in mineral-deficient plants, livestock, and people.... the alarming fact is that food now being raised on millions of acres of land that no longer contain enough of certain minerals are starving us — no matter how much of them we eat. No man of today can eat enough fruits and vegetables to supply his system with the minerals he requires for perfect health because his stomach isn't big enough to hold them.... Laboratory tests prove that the fruit, vegetables, grains, eggs, and even the milk and meats of today are not what they were a few generations ago... It is bad news to learn from our leading authorities that 99% of the American people are deficient in these minerals." ¹ Naturally, only colloidal mineral supplements can help us out of these dire straits.

As the story goes, the healing powers of colloidal minerals were discovered in 1926 by an old prospector in the mountains of central Utah who noticed that he felt better than he had in many years. Realizing that it was due to the stream water he was drinking, the prospector followed the stream back to its source in organic-rich shales. Alternatively, the discovery was made by an ailing rancher named Thomas Jefferson Clark who was told about a healing stream by Chief Soaring Eagle, a Piute Indian medicine man and elder. The miracle waters were well-known to the local natives who had "benefited from them for hundreds of years." ¹ Clark pursued several years of leaching experiments and by 1931 was selling his own brand of leachate tonic. A stirring taped radio drama is available detailing the redoubtable T.J. Clark and his adventures.²

Presently, two mines in Emery County, Utah supply a burgeoning network of multi-level independent distributors with bulk quantities of leachate that is repackaged and sold as distinct products. The T.J. Clark



Figure 1. Index Map of Utah Coal Fields (Doelling, 1972).

Mine (operated by T.J. Clark III) is the source of the *Doc's Colloidal Rocks, BHI Lifeminerals, Toddy, Golden Minerals*, and other product lines. Its larger competitor, the Rockland Mine, is the source of numerous product lines including *LifePlus, Body Booster, and Essential Minerals*. In both operations, the shale (usually referred to as a "special ancient rainforest deposit anywhere from 60-127 million years old"¹) is mined, crushed, ground to a powder-like consistency, and placed into large stainless steel vats. The vats are then submerged in "cool, contaminant free water at low temperatures." ¹ These conditions are stressed by many distributors since it is claimed that the use of acids, solvents, and high temperatures ruins the product; unnamed competitors are routinely accused of using such faster leaching methods. After 3 - 4 weeks, the bitter-tasting leachate is filtered off and ready for either tonic, capsule, or oral spray production. According to advertisements the final product contains the following 75 "colloidal minerals" (in reality, elements) : Ag, Al, As, Au, B, Ba, Be, Bi, Br, C, Ca, Cd, Ce, Cl, Co, Cr, Cs, Dy, Er, Eu, F, Fe, Ga, Gd, Ge, H, Hf, Hg, Ho, I, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, N, Na, Nb, Nd, Ni, O, Os, P, Pb, Pd, Pr, Pt, Re, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm,

V, W, Y, Yb, Zn, and Zr. Some distributors add flavorings and/or extracts to their leachate drinks; however, most sell it straight and emphasize their product's "all-natural" quality.

The main "scientist" backing this scam is Joel D. Wallach, a veterinarian and naturopathist³ (not an MD or PhD), who is frequently cited by supporters as a Nobel Prize nominee.⁴ In fact, he was nominated in 1991 by a naturopathic group with no scientific standing (the Association of Eclectic Physicians) for his research on the etiology of cystic fibrosis. His work has been thoroughly discredited by medical researchers as pseudoscientific and at odds with established cystic fibrosis research.⁵ Needless to say, the Nobel Committee paid no heed to Wallach's "nomination" and, in an unprecedented move, officially denied that he was ever a legitimate nominee.^{6,7} Wallach, who has a long history of involvement in fraudulent healthcare schemes such as laetrile, chelation therapy, hydrogen peroxide therapy, etc., is very active on the colloidal minerals circuit peddling audio and video tapes (*Dead Doctors Don't Lie!*) promoting his "theory" that all disease is due to mineral deficiencies.⁷ He also hosts an AM radio talk show in San Diego that is suitably titled *Let's Play Doctor*. Wallach is unequivocal in his support for the efficacy of colloidal minerals.... "Are these colloidal minerals important? You bet you're life they're important and every time you don't take them in every day, you're chopping off a few hours or a few days of your life."⁸ Wouldn't you trust someone who tells stories about people in China who live to be over 250 years old or about a 137 year-old cigar-smoking woman?

Typical of the pseudoscience surrounding colloidal minerals is the fact that the various distributors and authorities disagree about the "science" behind their miracle supplements. T.J. Clark Colloidal Minerals claims that the minerals in their product "attract toxins and heavy metals from the body and flush them out."¹ Most of their competitors, however, claim that the supplements somehow strengthen and rejuvenate the body. Unsurprisingly, most distributors claim that only they have the secret, patented process that results in an efficacious product... everyone else is a fraud! Some also claim that only the leachate coming out of their particular mine is in any way an effective product. For example, signed "certificates of authorization" are issued to distributors of leachate from the T.J. Clark Mine. This is particularly egregious in the case of Wallach who, while parading as an unbiased "expert," has a financial interest in the mine he promotes.⁷

When it comes to the geology of the shales used to produce the leachate, the various distributors can't come to much of an agreement on this subject either.

Some say that the deposit was only lightly covered by 20-30 feet of sandstone, "just enough to protect the deposit, but not enough to cause excessive heat and pressure that would have altered this pure form of the minerals."¹ Others however, note that the ancient forest was covered by thick deposits of sand, mud, and lava and then subjected to great pressures. Still others follow this same developmental line but claim that the sediments did not alter the plant matter.... its has retained its original woody texture. All of these statements are either false or inaccurate. Despite claims to the contrary, both mines are using Upper Cretaceous carbonaceous shales interlayered with bituminous coals ("G" bed /Middle coal zone of the Ferron Sandstone Member of the Mancos Shale) in the Emery Coal Field to produce their leachate.^{9,10} Apparently, it is assumed that the health conscious consumer finds phrases such as *ancient virgin rainforest*, *pristine*, and *natural* more appealing than *coal*, *shale*, and *industrial mining*. But after all, why should science be allowed to stand in the way of a good story and a potential sale? Even the health-obsessed creationist can benefit from colloidal minerals since at least one distributor claims that the Cretaceous source material for their elixir is a mere 2000 years old!

In the time-honored tradition of patent medicine quackery, no scientific demonstration of these supplements' efficacy is offered, nor will it ever be forthcoming. Only rarely does a distributor even bother to supply an analysis of their product.^{11,12} Typical of the extravagant claims are those of *LifePlus*, manufacturers of MICRO-MINS™ powdered leachate capsules and BERRY'D TREASURE™ flavored leachate drink, who boast that their "minerals" are the same ones that were responsible for Cretaceous trees and dinosaurs attaining such large dimensions. As advertisements point out, ".... this was a time when much of the earth may still have been very much in a 'Garden of Eden' or very rich, vibrant, and pristine state."¹ If such special "minerals" did that for prehistoric flora and fauna, just think what they can do for you.... and your wallet (a recommended year's supply can cost upwards of \$320). In lieu of any evidence the promotional literature offers the gullible a large dose of inaccurate, pseudoscientific double-talk, as well as a few passing references to "studies" performed at unaccredited bio-institutes. As is par for the course in the alternative health racket, you are encouraged to check your skepticism (along with your brain) at the door and go straight to the numerous old-wives' tales.... I mean testimonials.... that are available upon request. The lame are made to walk again, the blind see, and the deaf hear. High blood pressure, heartburn, sunburn, sprained ankles, swollen glands, aging, AIDS, hair loss, perforated ulcers, arthritis, psoriasis, rheumatism, sclerosis of the liver, hives,

pimples, leukemia, impotence, and menstrual problems all miraculously vanish. No wonder the medical profession scorns this miracle product...doctors could soon be obsolete! Of course, it is up to the consumer to infer that these cures were the result of colloidal mineral supplementation. The distributors generally have sense enough not to make explicit claims that would attract the attention of federal and state regulators.¹³ While it is true that elemental imbalances are causally-related to a number of diseases, medical research has demonstrated that for all practical purposes only 19 elements are essential to human well-being (F, Cr, Mn, Fe, Co, Cu, Zn, Se, Mo, I, Si, V, Ni, As, Cd, Sn, Li, B, and Ag). There is absolutely no evidence that any of the ailments cited by alternative health practitioners are associated with dietary elemental deficiencies. In fact, available data (see Table 1, below) refutes the claim that our food supply is "mineral deficient" and demonstrates conclusively that the American diet generally contains elemental quantities far in excess of those supplied by colloidal mineral supplements.^{11,12,14,15}

experiment conducted on samples of algae, in apparent ignorance of the fact that such inter-species comparisons are meaningless.¹ A glance at the shopping list of known toxic elements claimed to be in these products should be enough to get anyone's undivided attention. All trace elements can exhibit toxic effects when consumed in large quantity or for an extended period of time; for some (e.g., F and Cu) the margin between beneficent and toxic doses is quite small.¹⁴ Additionally, there have been few studies on the bioavailability of, and effects of concurrent exposure to, toxic trace elements. On the basis of two available analyses, one supplement (MIN RA SOL™) appears to be completely innocuous while the other (*Doc's Colloidal Rocks*) displays potential fluorine toxicity (the product contains 55 ppm F; drinking waters in the 20 - 50 ppm F range result in fluorosis).^{11,12,14} More importantly however, distributors seem oblivious to the fact that hazardous organic compounds may be present in their products. For instance, a daily dose of *Doc's Colloidal Rocks* contains 7.2 mg of unidentified total organic carbon.¹² Since these leachate tonics are popular with the people of Emery, they and thousands of other Americans are currently functioning as an unwitting test group for any health effects resulting from their use. Local geoscientists have become especially concerned with the widespread administration of these supplements to children since they often present increased trace element bioavailability.^{9,15} Unfortunately, since colloidal minerals are currently classified as dietary supplements by the U.S. Food and Drug Administration (FDA) no testing was required prior to their introduction into the marketplace.^{16, 17} Action to prohibit their sale can only be taken if it is demonstrated that the products are adulterated (*i.e.*, toxic), misbranded, or that specific medical treatment claims had been made for them.^{16,17} In the rush to hype their products, none of the distributors bothers to mention the fact that the only colloidal product ever sold commercially, *Body Toddy*, was pulled from health food stores and banned by the FDA due to its toxicity.¹⁸

Judging from the recent large-scale expansion of the Rockland Mine's processing facilities⁹, it would appear that colloidal mineral supplements are currently a healthy cash cow. They are certainly advertised that way on numerous Internet sites : become an independent distributor, work part-time, and makes lots of extra money. There is no denying that there is a handsome profit to be made out of selling this untested and potentially dangerous product. A small bottle of leachate (4 oz.) purchased directly at the plant in Emery for \$12 will net a \$20 return in Salt Lake City and \$30+ on the Internet.^{1,9} The basic appeal in all of the colloidal mineral literature is to "people who fear or are

Element	Plant-derived Foodstuffs		Doc's Colloidal Rocks	MIN RA SOL
	min	max		
Ag	1	5	0.0084	0.008
Al	200	1500	1310	1944
As	0.1	3.87	0.446	na
B	30	1000	1.02	2.8
Ba	5	1500	0.025	0.02
Be	0	0.7	na	0.399
Cd	0.1	1.2	0.116	0.143
Cl	0.04	300	5500	315.5
Co	0.02	70	na	3.34
Cr	7	30	0.082	na
F	0.2	2.8	55	na
Ge	0	20000	0.1	na
I	2	16	na	0.085
La	na	na	0.377	1.055
Li	0.1	9.8	na	4.35
Mb	5	70	3.25	na
Mg	na	na	835	963
Mn	300	400	14.2	14.2
Na	400	19900	88.8	71.7
Ni	5	100	0.588	7.9
Pb	10	70	na	0.056
Sb	na	na	na	8.6
Se	0.01	0.5	0.089	0.025
Si	na	na	40	49.89
V	5	700	na	0.67
Y	20	100	0.96	1.27
Yb	5	500	0.065	na
Zn	100	6000	1.42	32.38
Zr	20	700	0.246	0.2

Table 1. Elemental composition of common plant foodstuffs and two colloidal mineral supplements. All values in ppm.

Of course, this is not to imply that these supplements are necessarily safe for human consumption. The only assurance distributors provide that their products are non-toxic is the result of a so-called "life energy"

mistrustful of medical doctors and scientific knowledge.... [they offer].... hope to those who want to live a long time, hope to those with incurable diseases.... hope to those who wish to avoid disease.... the perfect elixir for those who want perfect health but don't want to eat right and exercise..."⁶ Perhaps Wallach and his fellow authorities will broaden the scope of their activities to help mankind. After all, who knows what the health benefits of ingesting acid mine drainage may be?

Notes

1. Assorted promotional literature downloaded from the Internet (LifePlus, KareMor, Changes Intl., New Vision, Doc's Colloidal Rocks, Body Booster Colloidal Minerals, Toddy Products, Golden Minerals, Higher Ideals, C&M Laboratories Intl., Soaring Eagle Ventures, Dynasty Intl., etc.). When quoting from these materials no distinction has been made as to the exact source since all distributors employ virtually identical literature.

2. *The Legend of T.J. Clark* (audio cassette), Light Energy Productions, 90 minutes.

3. naturopathy -- a discredited system of therapy which relies exclusively on natural remedies, such as sunlight supplemented with diet and massage, to treat the sick (*The Skeptic's Dictionary* [on-line] by Robert T. Carroll).

4. *Who is Dr. Joel Wallach?* (an Internet posting of biographical excerpts from the preface to *Rare Earths : Forbidden Cures?* by J.D. Wallach & M. Lan [n.d.], publisher?).

5. A fine example of Wallach's "research" that made it past a careless editor is : Wallach, J.D. and Garmaise, B., 1979, Cystic Fibrosis - A Perinatal Manifestation of Selenium Deficiency : *In* Hemphill, D.D. (ed.), *Trace Substances in Environmental Health XIII* (Proceedings of the 13th Annual Conference on Trace Substances in Environmental Health, University of Missouri-Columbia, June 4-7, 1979), pp. 469-476. Wallach's study group was non-randomized and self-selected, data gathering protocols were non-existent, and diagnoses were performed via questionnaire (a long-discredited practice). Any one of these criticisms on its own completely invalidates the "data" gathered. Additionally, the paper is full of sweeping claims regarding parallel data sets that are either unsupported or unreferenced.

6. *Joel D. Wallach, The Mineral Doctor*, *The Skeptic's Dictionary* [on-line] by Robert T. Carroll.

7. *Dead Doctors Don't Lie! But this Living Veterinarian Does!* National Council Against Health Fraud Newsletter, vol. 19, no. 2, March-April 1996.

8. *Dead Doctors Don't Lie!* (audio tape), Joel D. Wallach.

9. Private correspondence with J. Garrison, The Ferron Group (Emery, Utah).

10. Doelling, H.H., 1972, Central Utah Coal Fields (Sevier-Sanpete, Wasatch Plateau, Book Cliffs and Emery) : Utah Geological and Mineralogical Survey, Monograph Series No. 3, 571 pp.

11. MIN RA SOL™, Jacob's Enterprises Certificate of Analysis #88-008094 (downloaded from Internet).

12. Laboratory Analysis of *Doc's Colloidal Rocks*, Hummingbird Anna's / Higher Ideals (downloaded from the Internet).

13. The FDA is currently moving to ban unproved colloidal silver supplements for which specific health management claims have been made (FDA, 21 CFR Part 310, Docket No. 96N-0144, Proposed Rules, page 53685).

14. Oehme, Frederick W. [ed] (1979). *Toxicity of Heavy Metals in the Environment*, New York: Marcel Dekker, Inc., 970 pp.

15. Nriagu, J.O. [ed.] (1984). *Changing Metal Cycles and Human Health*, Berlin: Springer Verlag, 445 pp.

16. U.S. Congress, Dietary Supplement Health and Education Act of 1994 (summary).

17. Federal Food, Drug, and Cosmetic Act (1994, revised), chapter IV, "Food".

18. U.S. FDA Enforcement Report, dated 10/4/89.

REPORTERS WANTED!

AAPG (Dallas)
 European Coal Conf. (Izmir)
 9th Coal Science (Essen)
 EAOG (Maastricht)
 4th Environ. Geochemistry (Vail)
 ICCP (Wellington)
 GSA (Salt Lake City)

The *TSOP Newsletter* wishes to bring coverage of these important meetings to its many worldwide readers. If you are planning to attend one of the above conferences — or any others of potential interest to our membership — please consider submitting a meeting summary for publication in a future issue of the *TSOP Newsletter*. Interested parties should contact the newsletter editor (see page 2).

GSA Coal Geology Division Symposium Summary

Coalbed Methane: From Micropore to Pipeline

Thomas D. Demchuk
Amoco E & P Technology, Houston, Texas

The Coal Geology Division of the Geological Society of America (GSA) held its yearly symposium at the GSA Annual Meeting on Monday, October 28th, at the Colorado Convention Center in Denver, Colorado. This year's symposium, entitled *Coalbed Methane : From Micropore to Pipeline*, was organized and convened by James Staub (Southern Illinois University at Carbondale) and Thomas Demchuk (Amoco Exploration and Production Technology, Houston). The city of Denver offered the perfect venue for this symposium on Coalbed gas, being the commercial center of the North American western interior where Coalbed gas exploration and production is prevalent.

Ten speakers gave eleven oral presentations, covering all aspects of Coalbed methane including generation, exploration, production, and environmental concerns. The presentations included (presenter was lead author, unless otherwise indicated):

J.R. Levine : *Thermogenic and biogenic gas generation from San Juan Basin coals, New Mexico and Colorado*

J.C. Pashin and R.H. Groshong Jr. : *Structural control of Coalbed methane production in Alabama*

P.K. Mukhopadhyay, J.H. Calder*, J.D. MacDonald, D. Hughes and G. Patrick : *Integrated field and analytical research of Coalbed methane potential of Carboniferous basins of Nova Scotia*

R.J. Richardson, J.D. Hughes, B.A. Rottenfusser, T. Gentzis, W.D. Gunter and S. Bachu : *Coalbed methane and CO₂ disposal: the answer for Alberta?*

D.K. Murray : *Coalbed methane potential of Indonesia*

W.B. Hanson, D.J. Duhrkopf, S.F. Waller and W.L. Pelzmann : *Geotechnical uncertainty (risk) in Coalbed gas exploration*

A.R. Scott and W.R. Kaiser : *Hydrogeology in Coalbed methane exploration*

R.M. Bustin and C.R. Clarkson : *Importance of fabric and composition of permeability, gas capacity and gas desorption of coals from the Sydney Basin, Australia*

A.R. Scott and W.R. Kaiser : *Hydrogeologic factors affecting gas content variability in coal beds*

C.R. Clarkson and R.M. Bustin : *Application of adsorption potential theory to coal/methane adsorption isotherms at elevated temperature and pressure: implications for reservoir characterization*

Many thanks to the speakers who stayed within their time limits and kept everything on schedule. The presentations generated much discussion and many thought-provoking questions which continued through into the mixer and business meeting the next day. A number of the questions also provided ideas for future short courses and theme sessions.

1997 TSOP Membership Dues

Once again, it's that time of year: time for membership renewal and payment of annual dues. Your membership status is printed in the upper righthand corner of your newsletter mailing label. If the phrase "EXP 12/96" appears, then you are paid only through December 1996 and need to pay dues for 1997 if you have not done so already. If you have paid dues in advance for several years, then the appropriate expiration date should appear on your mailing label.

Enclosed with this issue is a colored copy of the 1997 Dues Notice. Please note that membership rates and categories have remained the same: Regular (US \$20/CAN \$30); Student (US \$15/CAN \$23). We ask that you complete the form and return it along with your dues payment as promptly as possible. If you misplace your Dues Notice or have not received one, send your name, address, and communication numbers with your payment to the address below. Please address all correspondence to:

Lorraine B. Eglington
Woods Hole Oceanographic Institute, Fye 120
Dept, of Marine Chemistry & Geochemistry
Woods Hole, MA 02543-1543 USA

National Coal Museum Opens!

Heinz Damberger

Bob Finkelman's article about a coal museum in Ostrava, Czech Republic, in the last issue of the *TSOP Newsletter* (December 1996, vol. 13, no. 4, p. 18) suggested that, because of coal's "image problem," museum efforts devoted to coal are rare. There is now a museum in the midst of the southern Illinois coal field that is devoted entirely to coal, The National Coal Museum, located in West Frankfort along I-57!

The National Coal Museum held its opening ceremony on August 15, 1996 and has already attracted droves of visitors. A main attraction is the museum's 600 ft deep

underground coal mine, donated in its entirety (both above ground and below) to the museum by the Old Ben Coal Company when it recently ceased production at the mine. Old Ben Mine No. 25 was built in 1977 and had a capacity of 4 million tons per year. A complete assortment of mining machinery is on display underground in realistic settings, in the 7 - 8 foot thick Herrin Coal (Illinois #6 Coal). The equipment was donated by a number of coal companies and is

in working condition. Additional exhibits will eventually be added, including a longwall operation. Mine safety courses will also be offered to coal industry workers.

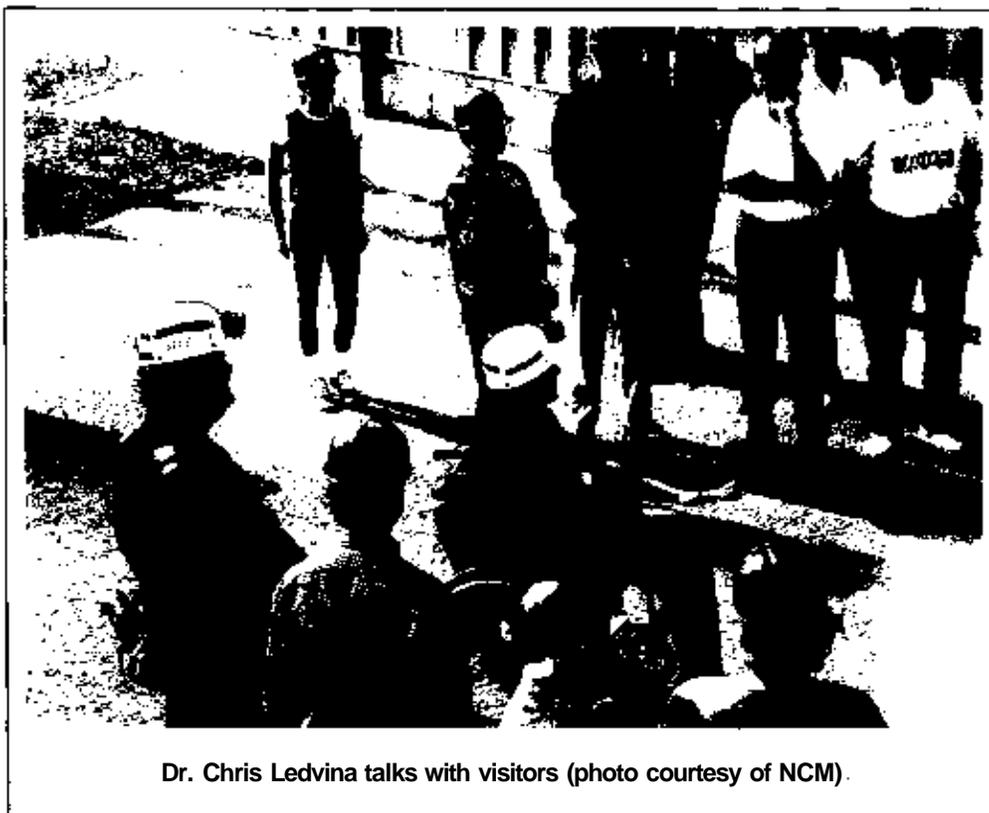
The donation process for the mine was difficult. A modern coal mine cannot simply be converted into a museum that is open to the public. Cooperation between the coal company, the museum, the state regulatory agency, and the U.S. Mine Health and Safety Administration were required.

The museum itself is located at the historic Orient No. 2 Mine in West Frankfort. This mine site is the only well preserved mine from the 1920's in the Illinois coalfield. It was the first mechanized mine in the U.S. and still holds the world's single-shift hoisting record. The surface buildings are being restored and serve as exhibit halls, archives, library, and a museum store. The restoration of the former main hoist house has been funded by the Buchanan family (founders of Old Ben).

The mover behind this impressive effort is Dr. Christopher T. Ledvina (Northeastern Illinois University).

He learned to love coal mining while on a roof study project with the Coal Section of the Illinois State Geological Survey. Ledvina eventually left the Survey to work first for Freeman-United, then for the Old Ben coal mining company. A roof fall nearly killed him 18 years ago and since then he has been confined to a wheelchair. His passion for coal mining was not diminished and he returned to school to get a PhD in mining. He also pursued a dream to open

a museum in the Illinois coalfield dedicated to documenting the history and impact of coal mining. His determination led to the donation of a portion of the property at the Orient No. 2 Mine by Freeman-United, the donation of Old Ben No. 25 Mine by Old Ben, and the acquisition of the remaining structures and land at Orient No. 2 when Freeman-United vacated the site where they had their Illinois operations office. For more information on this coal museum, call 618-YES-COAL. It's well worth a visit!



Dr. Chris Ledvina talks with visitors (photo courtesy of NCM).

TSOP Booth at Dallas AAPG Assistance Needed!

MaryAnn Love Malinconico, Outreach

TSOP is excited to announce that it will have a booth (#1952 right next to the secondary coffee bar) at the AAPG annual meeting exhibition in Dallas, April 6-9, 1997. The booth will feature descriptions of the variety of research done by organic petrologists, the benefits of belonging to TSOP (annual meetings, newsletters, publications, *etc.*), and information on this year's annual meeting with the Eastern Section of AAPG in Kentucky. We encourage all TSOP members attending the Dallas meeting to drop by (remember TSOP is an associated society of AAPG and as such you are entitled to the member registration price).

Volunteers are needed to man the booth for 1 - 2 hours at a time. This is easy duty : meet and greet people who stop or slow down at our booth, answer any questions about TSOP, give out Kentucky meeting information and complimentary pens, and write down badge numbers (if possible) so that AAPG can give us a list of who visited the booth. Exhibit hours are :

Sunday, April 6 : 5 - 8 pm (ice breaker party)

Monday, April 7 : 8:30 am - 5:30 pm

Tuesday, April 8 : 8:30 am - 6 pm

Wednesday, April 9 : 8:30 am - 1:30 pm

Any time you can fill in is welcome but I would like to attend a Tuesday afternoon oral session from 1:30 - 4:30 so volunteers for this time are particularly sought. Duty on Sunday evening would be with me, so you won't be holding down the fort alone during this busy time. To volunteer, please contact me either by e-mail at Love@LDDEO.columbia.edu or call 914-365-8621 (voice mail). There is one volunteer already. However, if I don't get much of a response likely AAPG conferees will be contacted!

TSOP Ads Work!

Need to advertise your services? Then look no farther than the *TSOP Newsletter*. An advertisement in organic petrology's fastest growing newsletter is sure to reach your target audience.... and at a price you can afford. For further details contact the Editor (see page 2).

TSOP '97 : Abstract Deadline

April 1st. ...No Fooling

James C. Hower

This year's TSOP meeting, combined with the eastern section meeting of the American Association of Petroleum Geologists, promises to be the most varied TSOP meeting yet. We will have three concurrent sessions on TSOP, petroleum geology, environmental geology, and many other topics. Be sure to get your short abstract in by April 1st and continue to check our web page for updated meeting information. All presenters will be invited to submit an extended abstract for the abstracts volume to be given out at the meeting. All presenters in TSOP sessions and other appropriate papers will be invited to submit a paper for review by the *International Journal of Coal Geology*. Students...don't forget that the monetary award for best student paper has been increased to \$250. What a great reason to participate in the 1997 meeting. See you in Lexington!

USGS Energy Program On-Line

Ronald W. Stanton

The Coal, Oil and Gas activities of the USGS Energy Resource Surveys Program can be visited at several interlinked web sites:

Energy Resources Program
<http://energy.usgs.gov/>

Eastern Region Energy Program
<http://lignite.er.usgs.gov/>

Central Region Energy Program
<http://sedwww.cr.usgs.gov:8080/>

One new feature at the Eastern Region Energy Site is an on-line version of the USGS Coal Quality CD-ROM. This CD will also be reissued soon under a different format that allows for interactive GIS use (stay tuned for details). Recent changes at the USGS have put an emphasis on digital communications and publications. More and more formal publications, maps, and databases will be made available on the Internet. Periodic visits to any of these sites or to the USGS homepage (<http://www.usgs.gov/>) should enable visitors to see the most recent products and activities.

Report on the 7th Australian Coal Conference 2-4 December 1996 Monash University, Gippsland, Churchill, Victoria

James C. Hower and Adrian Hutton

The Seventh Australian Coal Conference, sponsored by the Australian Institute of Energy, was held at the Gippsland campus of Monash University. Quite appropriately, the conference center overlooks several brown coal-fired power plants and is a short drive from all of the brown coal mines and mine mouth power plants of the Latrobe Valley. Many of the presentations were oriented towards the utilization of brown coal but bituminous coal technologies were well represented. One of the two field trips was to the Loy Yang mine and power plant, where the 200-meter thick brown coal deposit is mined by bucket wheel excavators and conveyed directly to the power plant.

In the following report of the technical papers we will limit the discussion to work by TSOP members. Harold Schobert (Pennsylvania State University) presented a plenary lecture on the potential future use of coal as a chemical feedstock. Use of by-products from coke manufacture has a long history and the potential exists to use coal liquids for non-fuel uses such as the production of polymers and carbon materials — the latter discussed in more detail by plenary lecturer Frank Derbyshire (University of Kentucky, CAER) and in the Baragwanath Award Address by Michael Wilson (University of Technology, Sydney). Judy Bailey (University of Newcastle, NSW) with co-authors Joan Esterle, G. O'Brian, Helen Beath, and G. Chambers demonstrated the maceral and microlithotype partitioning inherent in laboratory grinding and, therefore, in utility-scale pulverization. Distinct lithotypes from the same coal bed have distinct grinding characteristics and require different grinding-energy input to achieve the 80% passing 75 micron goal of pulverized-coal injection. Jim Hower, with co-authors Tom Robl, Bob Rathbone, Jack Groppo, Uschi Graham, and Darrell Taulbee (all University of Kentucky, CAER), discussed the impact on fly ash quality resulting from the conversion to low NO_x combustion, as mandated by the 1990 Clean Air Act Amendments. Fly ash carbon would be expected to increase with the conversion but a study of two power plants burning Appalachian coal showed that the expectation does not hold for every case. Adrian Hutton (Wollongong) and Uschi Graham (University of Kentucky, CAER) extended previous studies of the retorting potential of the Alpha torbanite and cannel coal (published as part of the collected

papers from the 1994 TSOP meeting) to study activated carbons produced from the retorting residues. The torbanite-derived carbon showed promising results for the adsorption of phenol. Vince Verheyen (HRL Technology Pty. Ltd., Morwell, Victoria) with co-authors Bob Rathbone, Marit Jagtoyen, and Frank Derbyshire (all University of Kentucky, CAER) found a strong rank dependency in KOH activation carbons derived from Victoria and North Dakota lignites and raw and oxidized Western Kentucky high volatile C bituminous coal. The oxidized bituminous coal produced higher surface area carbons than the parent coal. The oxidized bituminous coal-derived carbons were comparable to the lignite-derived carbons. Glenda Mackay (Swinburne University of Technology) and Grant Schluter (University of Adelaide) used optical microscopy to study the combustion reactions of brown coal.

Overall, the conference is of value to a wider audience than just the Australian coal community. The Australian coal, steel, and utility industries are similar in many respects to their U.S. counterparts. Australia and the U.S. are the leading exporters of coal (based on early 1990's figures they are tied in terms of quadrillion Btu's exported). The Australian utility industry, and consequently the coal industry, will be assessing the effects of retail wheeling of power, similar to the consequences of deregulation facing U.S. utilities. With the 1998 conference tentatively scheduled for Sydney, it would be worthwhile for non-Australian coal scientists to take the opportunity to attend the conference, as well as take the time to visit Sydney before it is totally inundated by preparations for the 2000 Summer Olympic Games.

In Memory of a Friend and Mentor

Raymond Douglas Manners
September 1, 1929 - December 18, 1996

The disease of mortality is in us from the womb, from the day of our birth we are on the way to our death. What matters is how we conduct the journey.

Feeling Alone Among 1.2 Billion

Robert B. Finkelman

The 30th International Geologic Congress (IGC) was held in Beijing, China from August 4-14, 1996. As in the recent past, the Congress attracted more than 6,000 geoscientists from more than 100 countries.

China is the leading coal producer in the world (1.3 vs 0.86 billion metric tons for the United States in 1995); approximately 80% of its electricity is generated from coal. Many Chinese coal scientists and coal-related organizations were in attendance at the conference. Several provinces had individual booths that highlighted the importance of coal through displays and promotional literature. Detailed maps depicting the coal geology and coal productivity of China were on sale.

Nevertheless, it was obvious that diminished representation of the coal community in scientific conferences is not a domestic phenomenon, it is an international problem. Only four of the 224 technical sessions (2%) were coal-related, as were about 86 of the more than 5,000 scheduled presentations (less than 2% of the total). The proportions of coal-related talks at previous IGC were similarly low, though it varied with location (e.g., coal topics constituted 2% of the sessions at the 1989 meeting held in Washington, DC, but less than 1% of the sessions at the 1992 meeting in Japan). For comparison, the 1996 Geological Society of America annual meeting in Denver, CO attracted 6,500 attendees. Three of 204 technical sessions (slightly more than 1%) were coal-related and only 23 of approximately 2,800 presentations were coal-related (less than 1%).

Back to China. Most coal science sessions revolved around traditional themes. There was a session on coal petrology, coalification, and coal-related hydrocarbons (30 scheduled presentations), a session on coal depositional environments and the geochemistry of coal bearing strata (35 scheduled presentations), a session on the organic geochemistry of fossil fuels (4 of the 31 presentations were coal-related), and a session on the geochemistry of coal and its impacts on the environment and human health (14 scheduled presentations). The quality of the presentations spanned the full spectrum. There were the usual annoying "no-shows," but I was a lot more sympathetic this time knowing that about 3/4 of the U.S. Geological Survey scientists who had submitted abstracts did not receive permission to attend the conference.

The Chinese were marvelous hosts and the coal science community went to special lengths to accommodate visiting coal scientists. As you might expect, the food was wonderful and the Great Wall was spectacular (although slippery when wet).

The venue for the IGC meeting in 2000 was hotly debated with Brazil prevailing over South Africa. Perhaps the coal science community will start its rebound in the next century and it won't be as lonely in sunny Rio de Janeiro with only 14 million citizens.

AEP and Ohio use coal by-product to seal mine

American Electric Power (AEP) and the state of Ohio will use a coal combustion by-product to seal a long-abandoned coal mine and block acid mine drainage. State Development Director Donald E. Jakeway gave final approval to the Ohio Coal Development Office's (OCDO) clean coal technology agreement. The \$2.35 million, two-year field project is funded by a coalition of public, private, and academic partners. The OCDO is contributing up to \$1.17 million.

The by-product to be used for this project is fixated flue gas desulfurization (FGD) material. The fixated FGD material is created when equipment installed to remove SO₂ from power plant exhaust gases generates a solid by-product, which is mixed with fly ash and lime for stabilization. The fixated FGD material has a low permeability and will be placed in mine openings to seal the mine. The mine will become flooded, preventing air from contacting the coal that remains, preventing further oxidation of pyrites.

The fixated FGD material - about 25,000 tons from AEP's Conesville plant - will be used as a grout and injected in the Roberts-Dawson mine, an abandoned underground mine near the Coshocton and Muskingum County line. The mine is on property owned by AEP, but was operated by various companies in the 1950s. Seal construction is scheduled for mid-1997.

(reprinted from *Coal Age*, January 1997)

Instrumental Method for Unmasking Forged Amber

Forging amber is evidently a thriving industry, but a relatively simple way to unmask the resulting fakes has been reported by Norbert Baer of the Institute of Fine Arts, New York University, and three colleagues [*J. Anal. Appl. Pyrolysis*, 25, 77 (1993)]. The method combines pyrolysis-gas chromatography (Py-GC) and pyrolysis-gas chromatography/mass spectrometry (Py-GC/MS).

Amber has long fascinated people because of its rumored healing power, the many dandy colors that make it so desirable for jewelry, and the critters - ranging from insects to small frogs and lizards - sometimes found permanently trapped in the material. As night follows day, say Baer and his coworkers, these attractive properties have drawn the attention of forgers from the earliest times. By forgery, the authors specify that they mean substitution of materials ranging from recent copals to synthetic polymers for real Baltic amber (succinate) or other fossilized resins.

The chronology of amber forgeries, say Baer and coworkers, "mirrors the development of synthetic polymer chemistry." Leo Baekeland patented his phenolformaldehyde resin (Bakelite) in 1907, and the first samples of the material were quite dark, mainly reddish or chocolate brown. This circumstance, the authors report, led to a legendary "very rare red Baltic amber."

The disadvantages of phenolformaldehyde (darkness and nontransparency) in faking amber were partly overcome in 1937 with the advent of commercial polystyrene. With judicious use of colorants in polystyrene, forgers could "obtain a very convincing amber look-alike material of various colors," but still could not achieve the transparency of real amber. During 1942-47, however, came unsaturated polyesters and epoxy resins.

These polymers, say Baer and coworkers, "created a small-scale revolution in amber forgeries, particularly in the area of forged inclusions.... One can prepare convincing imitations of large transparent amber pieces with a wide variety of inclusions (for example, ants, bees, lizards, mosquitoes).... The price of amber pieces with inclusions is substantially greater than that of clear amber.... In recent years a flood of forged amber inclusions have appeared for sale in major gem and mineral shops, and fossil shows, and have been purchased (sometimes for thousands of dollars) by private collectors."

Baer and his colleagues used Py-GC and Py-GC/MS on almost 100 amber beads, spurious and otherwise. They conclude that all major synthetic materials used to forge natural amber can be easily distinguished with these methods.

Although forgers are skilled at faking amber, the authors say, their inclusions tend to "look remarkably fresh." Tiny vertebrates preserved in real amber typically "have a distinctive dehydrated appearance. Typical natural inclusions often have groups of fine bubbles near them, probably formed as the trapped animal struggled." Authenticity, say Baer and his colleagues, has become particularly important for inclusions because of their potential as sources of DNA. They give the example of the scientists from the American Museum of Natural History who reported in 1992 their recovery of DNA gene fragments from an insect preserved in amber for almost 30 million years.

reprinted from C&E News (January 6, 1997)

Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its member's ideas, observations, concerns, and interests. We are **always in dire need** of scientific, technical and historical articles, as well as publication reviews, news items, and opinion pieces. *Foreign contributions are especially welcome.* Don't worry if your mastery of English is less than perfect, our expert staff will spruce up your prose and no one will be the wiser.

Our excessively large and ridiculously over-paid editorial staff needs your help! All that writing, editing, and re-writing eats away at valuable time that we'd rather spend on the Côte de Azur or at the baccarat tables in Monaco. *Only your efforts can increase our leisure.* Feel that your favorite topic is missing or getting short shrift in the newsletter? Don't just complain anonymously.... try submitting an article (you'll feel better for it). Help the *TSOP Newsletter* retain its place at the head of the pack. Please contribute today!

Membership News

Cortland F. Eble

Professional Changes

Members are invited to submit news/details of changes in their employment or positions, as well as address changes, for publication. Please send your news to Cortland Eble (see page 2).

Address Changes and Corrections

Please make the following changes to your 1996 Membership Directories.

Dr. Walter Pickel
 fax:241-8888-152
 E-mail: wal@ara.lih.rwth-aachen.de
 walter.pickel@t-online.de

Brian J. Cardott
 E-mail: bcardott@ou.edu

New Members

The Society welcomed no new members in this latest quarter. Members attending conferences are invited to distribute TSOP promotional materials (see page 2).

One Down.... Eight to Go!

In an effort to provide a broader range of information, members are invited to become regional Corresponding Editors of the *TSOP Newsletter*. One brave member has already answered the call! Corresponding Editors will monitor government, academic, and private-sector activities related to organic petrology in a geographic "beat" and provide a minimum of one article per year for inclusion in the newsletter. Applicants need not reside in the region they wish to cover, but should be conversant with the region. Corresponding Editors are still being sought for the following regions: U.S., Canada, S. America, Western Europe, Eastern Europe & the former USSR, Africa, the Middle East, and the Pacific Basin. For further information or to apply, please contact the newsletter editor (see page 2).

Still Available!

Energy & Fuels Special Issue

The Geochemistry and Petrography of Kerogen/Macerals

(published as Energy & Fuels, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology

The American Chemical Society
 1994 National Meeting
 March 13-15, 1994

General topics include :

Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
 Chemistry of Kerogen/Macerals Types
 Precursor Materials
 Paleo-Depositional Environments and Diagenetic Provenance
 Maceral Behavior during Maturation and Catagenesis
 New Techniques and Applications
 Case Histories

Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "*The Society for Organic Petrology*". Sorry, no credit card orders can be accepted. Send all inquiries and orders to :

TSOP
 c/o Gretchen Tremoulet
 University of Kentucky
 Center for Applied Energy Research
 3572 Iron Works Pike
 Lexington, KY 40511-8433
 USA

Modern Geochemical Tools for Efficient Exploitation and Development

June 2-6, 1997
Houston, Texas

Instructor: Dr. Kenneth E. Peters

You Will Learn

How to identify reservoir compartments and quantify the contributions from different zones through time to optimize field development

How to identify petroleum systems and predict regional variations in organic facies, volumes of expelled petroleum, gas-to-oil ratios, and the risk of thermal maturity or biodegradation

How to recognize the pitfalls in geochemical interpretations

To become familiar with efficient, inexpensive geochemical tools, including Total Organic Carbon (TOC), Rock-Eval pyrolysis, vitrinite reflectance, thermal alteration index, kerogen elemental analysis, geochemical logs and maps, gas chromatography, stable isotope ratios, and biological markers

The latest in geochemical concepts and methods; how to design geochemical studies and collect samples

About the Course

Undiscovered reserves in prolific, mature basins or bypassed oil in developed fields are key targets for an oil company to increase reserves at minimal cost. It is widely overlooked that modern geochemistry can dramatically improve discovery success, add new reserves, and reduce exploration and development costs by identifying and exploiting these targets. Participants learn to interpret geochemical logs, predict volumes of oil generated and expelled, map organic facies variations, identify petroleum systems using multivariate data, establish reservoir continuity, and predict regional variations in oil quality, gas-to-oil ratios, and the extent of thermal maturity or biodegradation. Unique to this course are techniques which show how to evaluate reservoir compartments, the relative contributions of oil and gas from different zones to production, and how to optimize development by predicting vertical and lateral variations in API gravity and viscosity. The course provides attendees with interpretive guidelines to evaluate geochemical data. Interpretation pitfalls are illustrated using exercises. Sample collection techniques are discussed. The course is an ideal introduction or review for those who plan to use basin modeling programs. No background in geochemistry is needed. Participants receive: (1) a 300-page notebook containing the lecture figures, exercises, key published papers and a glossary of geochemical terms, and (2) Dr. J.M. Hunt's new (1996) second edition of *Petroleum Geochemistry and Geology*. Tuition US\$1,225.

For information, please contact:

OGCI Training
P.O. Box 35448
Tulsa, OK 74153-0448

1-800-821-5933 (toll free in North America)
1-918-742-7057 (phone)
1-918-742-2272 (fax)
4246918@mcimail.com (e-mail)

Stealing into Print

Fraud, Plagiarism, and Misconduct in Scientific Publishing

Marcel C. LaFollette
University of California Press, 1996, 293 pp

Reviewed by James Pontolillo

Considering the current wave of scientific information that threatens to overwhelm our society (in excess of 40,000 specialized science and engineering serials currently in print), it should come as no surprise that in those endless rows of peer-reviewed volumes there lurk examples of rank fraud and deception. How common scientific misconduct may be is anyone's guess since it is almost always discovered after the fact (in many cases *decades* later) and often quite by accident. Even though we hear of such problems infrequently at best, it is clear that scientific misconduct is underestimated and underreported for a variety of reasons, both personal and financial. As our knowledge base continues to expand, the worldwide scientific community is faced by the deceptively harmless tip of an iceberg of unknown dimensions.

The scientific community has reached such a crossroads because, like other organizations composed of fallible humans, it has preferred to ignore or paper over its problems rather than expose them to the light of day and work toward a meaningful solution. While the usual "shoot, shovel and shut-up" approach may ameliorate immediate symptoms (acute embarrassment, unwanted attention, *etc.*), it does nothing to address the circumstances that led to the development of the problem in the first place. Marcel LaFollette, a Research Professor of Science and Technology Policy at George Washington University, has decided to cast a much needed piercing light into scientific publishing's many dim corners in the hopes of raising our awareness to the problem of scientific misconduct.

The core of *Stealing into Print* is a careful examination of all aspects of scientific publishing and its peer-review process for judging manuscripts; especial attention is given to each strength and weakness of the current system and how it comes into play when accusations and/or suspicions of misconduct arise. The book is comprised of nine main subject areas : When interests collide - social and political reactions; Classifying violations; Scientific publishing - organization and economics; Authorship; Decision making - editors and referees; Exposure - the whistleblower, the nemesis,

and the press; Action - investigation and evidence; Resolution - correction, retraction, punishment; and On the horizon. Readers unfamiliar with actual instances of scientific misconduct may be surprised (and hopefully appalled) by the multiple forms of fraud possible and their brazen application by researchers gone astray.

The greatest strength of LaFollette's presentation lies in his ability to clarify the complex interaction of scientific publishing and special interests attendant upon an accusation of scientific misconduct. The most significant factor inhibiting a timely resolution is the fact that the principals involved (authors, co-authors, universities, publishers, government regulators, *etc.*) usually enter the fray with conflicting interests and agendas. For instance, while a university may request a publisher to issue a retraction regarding research it has found to be fraudulent, the publisher is under no obligation to do so. More often than not a retraction will not be published due to feared legal and financial consequences or simply because of editorial policies that disallow third-party retractions of published articles (*i.e.*, only the author in question can request a retraction).

While LaFollette discusses numerous cases of scientific misconduct in a considerable degree of depth, it is disappointing to see that this paperback version is somewhat dated. The original hardcover edition of *Stealing into Print* was released in 1992 and apparently no effort has been made to update this subsequent printing. As a case in point, the recent V.J. Gupta paleontological scandal in India (*TSOP Newsletter*, vol. 12, no. 1, pp 10-12), only receives coverage in passing. That is truly a shame since this astonishingly blatant case would well-illustrate numerous points that the author makes throughout his book. Overall, however, *Stealing into Print* is a wonderfully comprehensive and easy to read exploration of the many forms of scientific misconduct. It is a painless introduction into the world of research ethics and should be required reading for science and engineering undergraduates. The book is also heartily recommended to everyone concerned about the nature and health of the scientific method and the business of scientific communications.

Publications of Interest

Fluorescence Microscopy

F.W.D. Rost
1995, Cambridge University Press, 710 pp.

From a recent review: "This two-volume set covers the microscope and how to use it in Volume I and applications of fluorescence microscopy (FM) in Volume II. Although Volume I makes a useful reference in its own right, it is well worth completing the set with the second volume.... The chapter on setting up and using the fluorescence microscope is one of the most useful. It describes not only the basics such as maximizing brightness, reducing fading, and the possible risks associated with FM, but also includes useful extras such as a list of suitable immersion fluids for objective lenses.... In addition to the main sections in the books, Prof. Rost has included a number of appendices that cover troubleshooting and specific methods.... Overall these books form an ideal set for newcomers to FM. Anyone who teaches the subject would also do well to use these books as a base for lectures, since the clarity of explanations would be difficult to beat. Even the enthusiast will probably find something of interest amongst this enormous amount of information." Hardbound, ISBN 0-521-42277-9.

* * * * *

Coal -- Energy for the Future

National Academy Press (Washington, DC)

From a recent review: "The US Department of Energy (DOE) was given a mandate in the 1992 Energy Policy Act (EPACT) to pursue strategies in coal technology that promote a more competitive economy, a cleaner environment, and increased energy security. *Coal* evaluates DOE's performance and recommends the priorities to consider in updating its coal program and responding to EPACT. This volume provides a picture of likely future coal use and associated technology requirements through the year 2040 (based on near-, mid-, and long-term scenarios).... This book offers an overview of DOE coal-related programs and recent budget trends and explores the principal issues in future U.S. and foreign coal use."

Petroleum Source Rocks

J.B. Katz (ed.)
1995, Springer-Verlag, 327 pp.

From a recent review "This book is a collection of case histories rather than an analysis of petroleum source rocks in general. Each of the 15 main chapters provides a separate case history of an oil-prone petroleum source rock sequence.... the volume's stated objective is to provide a set of source rock analogues, a geochemical database, and information on the processes which control the incorporation of organic matter into sediments.... a useful addition to the libraries of oil companies and consultancies, and institutions with staff interested in organic geochemistry, petroleum geology, and black shales." Hardbound, ISBN 3-640-578641.

* * * * *

Aspects of Archaeological Palynology: Methodology and Applications

Owen K. Davis (ed.)
1994, AASP Contributions Series #29, 221 pp.

From a recent review: "This publication is an important contribution to the growing field of archaeological palynology.... As Davis notes in his introduction, the field is growing rapidly with over 100 papers per year from the American Southwest alone. This volume represents an attempt to provide a compilation of papers dealing with important fundamental issues in this field. The publication contains 17 articles covering a wide range of topics including vegetational reconstruction, disturbance and taphonomy, processing and extraction techniques, diet, artifact sourcing, dispersal and deposition, and preservation. The articles also cover a wide range of geographic areas and time periods within the Quaternary. Most papers cross-cut several of these topics.... This book is highly recommended for both students and professional Palynologists. The price alone (\$15) is a bargain compared to many textbooks. This volume contains much information about the ways in which pollen data can be used and interpreted from archaeological sites."

Calendar of Events

1997

March 16-21 : Pittcon '97, Atlanta, GA. For further information contact Pittcon, 300 Penn Center Blvd., Suite 332, Pittsburgh, PA, 15235-5503.

March 23 - 27 : Ninth Biennial Meeting of the European Union of Geosciences, Strasbourg, France. For information, contact Dr. A.W. Hofmann at 49-6131-305-280 [telephone], 49-6131-371-051 [telex], or hofmann@geobar.mpch-mainz.mpg.de [e-mail].

April 6 - 9 : Annual Meeting of the American Association of Petroleum Geologists, Dallas, TX. For information, contact the AAPG Convention Department at (918)-584-2555.

April 13 -16 : 56th Ironmaking Conference, Chicago, IL. For further information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://www.issource.org/>.

April 13 - 17 : 213th National Meeting of the American Chemical Society, San Francisco, CA. For further information call (202)-872-4396.

April 29 - May 1 : Coal Prep 97, Lexington KY. Call for abstracts related to all aspects of coal preparation has been issued. For information, contact program chairman Al Deurbrouck at 412-653-0281 [phone] Or 412-854-5963 [fax].

May 5 - 10 : European Coal Conference '97, Izmir, Turkey. For information, please contact the conveners at 90-232-38-82-919 [phone] or 90-232-37-38-289 [fax].

May 9 - 21 : Joint Annual Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Ottawa, Ontario, Canada. For more information, please contact Dr. C. Vodden at 613-947-7649 [phone], 613-947-7650 [fax], or OTTAWA97@emr.ca [e-mail].

June 23 - 27 : International Symposium on Engineering Geology and the Environment, Athens, Greece. For information, contact the Hellenic Committee of Engineering Geology / Athens 1997 Symposium Secretariat at 30-1-3813900 [phone/fax].

July 13 -18 : 23rd Biennial Conference on Carbon, University Park, PA. For additional information, contact Judy Hall at 814-863-5130 [phone], 814-863-5190 [fax], or conferencehfo1@cedpsu.edu [e-mail].

September : 7th New Zealand Coal Conference, Wellington, New Zealand. For information, contact A. Herbert at 64-4-570-718 [phone], 64-4-570-3701 [fax], or A.Herbert@crl.co.nz [e-mail].

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For info, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV For more information call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 [telephone] or 49-40-630-0736 [fax].

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands. For information contact, Conference Service - EAOG '97 at 49-2461-61-3833 [phone], 49-2461-61-4666 [fax], or R.MENGELS@KFA-JUELICH.DE [e-mail].

September 23 - 27 : 14th Annual International Pittsburgh Coal Conference & Workshop - "Clean Coal Technology and Coal Utilization", Taiyun, Shanxi, China. For information, contact the organizers at 412-624-7440 [phone], 412-624-1480 [fax], pcc@engrng.pitt.edu [e-mail] or visit and browse the website at <http://www.engrng.pitt.edu/~pccwww/>.

September 27 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For additional information, contact James Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.htm>

October 5 -10 : Fourth International Symposium on Environmental Geochemistry, Vail, Colorado. Emphasizing themes of environmental analytical techniques, mine drainage, radiogenic hazards, geochemical monitoring, geomedical research, etc. For additional information and details, please contact Dr. R.C. Severson at 303-236-5514 [phone], 303-236-3200 [fax], iseg@helios.cr.usgs.gov [e-mail], or the web-site at <http://minerals.er.usgs.gov>.

October 13 - 20 : International Committee for Coal and Organic Petrography, Wellington, New Zealand.

For additional information, please contact Timothy Moore at 644-570-3708 [phone], 644-570-3701 [fax], or T.Moore@cl.co.nz [e-mail].

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.caer.uky.edu/ash/ashhome.htm>.

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 [telephone] or 31-591-301223 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 22 - 25 : 57th Ironmaking Conference, Toronto, Ontario, Canada. This meeting will be held in conjunction with the 2nd International Congress on the Science and Technology of Ironmaking (ICSTI '98). The abstract deadline is 3/1/97. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://www.issource.org/>.

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

April : International Conference on Coal Seam Gas and Oil, Brisbane, Australia. For additional information

please contact either Drs. S. Golding at 3365-1277 [fax] / s-goldin@sol.earthsciences.uq.edu.au [e-mail] or Dr. M. Mastalerz at 812-855-2862 [fax] / mmastale@indiana.edu.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telefax], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyväskylä, Finland.

July 5 -10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 26 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

1999

March 21 - 24 : 68th Ironmaking Conference, Chicago, IL. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

Fall : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, contact either Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.esri.utah.edu).

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Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

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I just don't know how I got through my life without my two brand-spanking new TSOP mugs. They're sturdy, microwaveable, fabulous looking, and are great conversation starters too! I never leave home without them.... You shouldn't either!

TSOP Archives
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The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

Kenneth W. Kuehn
 TSOP Archivist
 Geology, Western Kentucky University
 1 Big Red Way
 Bowling Green, KY 42101 USA

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 fax: 502-745-6410
 kenneth.kuehn@wku.edu



THE SOCIETY FOR ORGANIC PETROLOGY

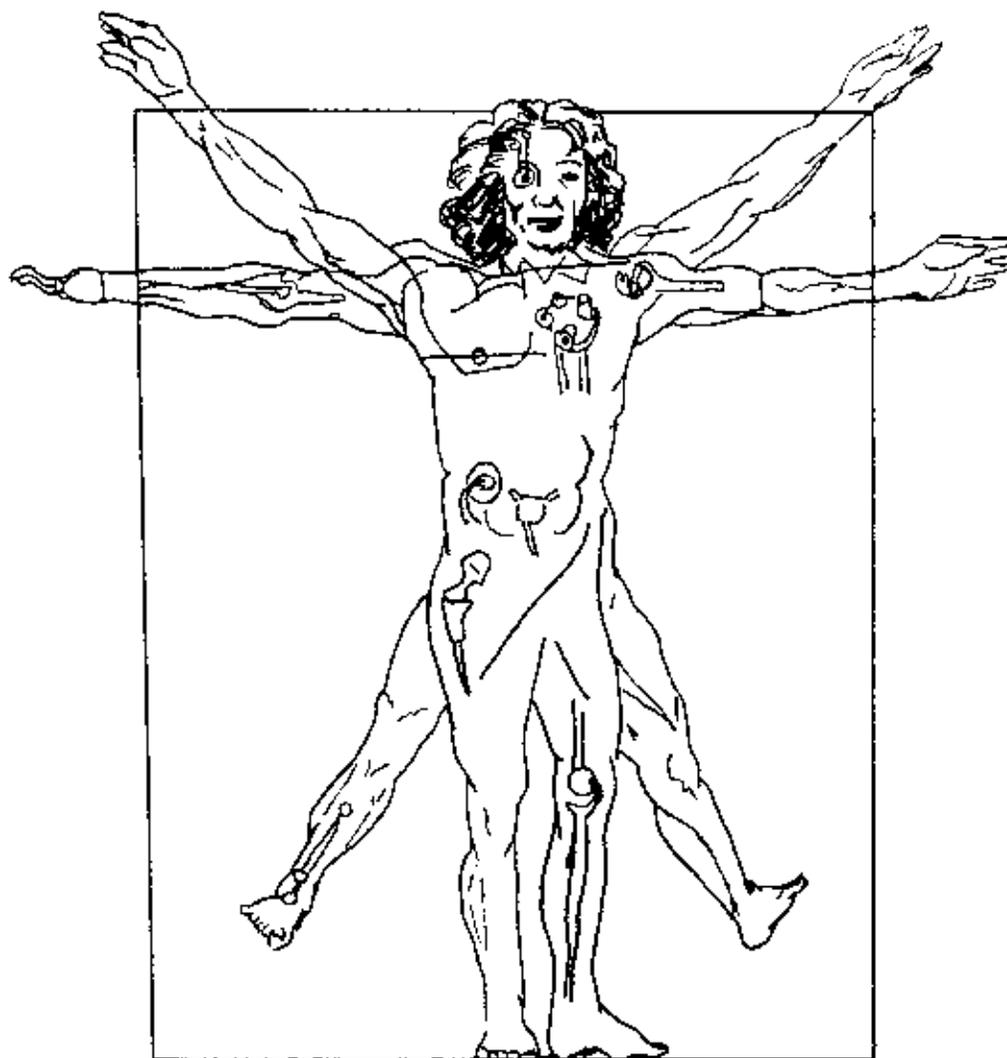
NEWSLETTER

Vol. 14, No. 2

June 1997

ISSN-0743-3816

Building a Better Petrologist.....



Non-Traditional Applications of OP (see page 4)

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

James Pontolillo
 U.S. Geological Survey
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Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

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John R. Castaño

June 10, 1926 - April 20, 1997

"He was a rare individual, thoroughly likable, dependable as a friend, and a seemingly inexhaustible source of knowledge in our field." These words on the TSOP web-site describe John R. Castaño, our friend and colleague, who passed away unexpectedly on April 20, 1997 in Houston, Texas.

We are saddened to no longer have his friendship, consultation, help and wit, but we retain the things which he contributed and can celebrate his numerous accomplishments. John, known to some of us as Jack, was a founding member of TSOP; however, his early experience was not in organic petrology. A New York native, John received his Bachelor of Science in Geology from City College of New York (It is reported that he enjoyed reverting to his "native" accent at opportune moments). John attended Northwestern University by which he was awarded his Master of Science in Geology with the thesis topic *Experiments on the Deposition of Iron with Special Reference to the Clinton Iron Ore Deposits*. It was at Northwestern that John met his wife, Loretta.

John's career with Shell Oil Company began in 1950 in Casper, Wyoming, as a stratigrapher and well site geologist. A few months later he pursued Stratigraphic and petrographic studies for one year at the Shell Bellaire Lab in Houston. John's involvement in geochemistry began during his assignment to Bakersfield, California, which lasted from late 1951 through 1960. As a "special problems" geologist he integrated petrography, stratigraphy, structure and geochemistry. John was among the first Shell geologists to study turbidites.

From 1961 to mid-1965, John was based in Seattle where his principal work involved south Alaska. John spent five months in the field and established the Stratigraphic framework for Cook Inlet and other basins. At this time, John was also conducting source rock-oil correlation studies. It was during John's Los Angeles assignment (1965-1973) that organic petrography



became a part of his career. John was responsible for introducing coal petrographic methods to Shell in 1967. Some years later with Peter Johnson and Al Killi, he developed a maturity based classification for structureless organic matter which is used routinely at Shell.

John was the first project leader of the Geochemistry Services Group at the Shell Bellaire Lab. Under his direction it grew from four people in 1973 to over twenty in 1984. Notable among his considerable accomplishments as project leader was the construction of the pyrolysis/flame ionization detector instrument, the introduction of quantitative fluorescence spectral analysis and the establishment of a

functioning computerized geochemical database.

In 1984 John joined the Hydrocarbon Charge Section at the Bellaire Lab where his assignment included research on the transformation of petroleum, consulting for Shell's operating companies and teaching duties within Shell's training program. In this year he was also elected as TSOP vice-president. On October 1, 1986 John chose to retire from Shell during a severance and early retirement program. A colleague remembers his decision was influenced by knowing that his retirement would prevent a younger person from receiving a severance package. John gave 36 years of service to Shell (a close friend revealed, however, that John routinely bought his gasoline at Conoco!).

John's "retirement" career was exceptionally vital and active. He served as TSOP President in 1986. Shortly after retirement from Shell, John accepted the position of Chief Scientist for the Swedish Deep Gas Project to which he provided the needed experience and objectivity for this controversial undertaking. Beginning in 1988, he worked part time for DGSI. He was instrumental in developing DGSI's kerogen microscopy and C7 gas chromatography analytical protocols and interpretive techniques. John represented DGSI at professional society meetings and conferences throughout the world. (continued on p. 20)

Non-Traditional Applications of Organic Petrology

James Pontolillo

In its current usage organic petrology deals with the origin, occurrence, structure, and history of sedimentary organic matter. Traditionally, organic petrology has applied a wide array of microscopical and geochemical techniques in pursuit of coal, oil shale, petroleum, and dispersed organic matter exploration, characterization, and utilization.⁽¹⁾ Organic petrology is a natural linkage among several scientific disciplines including palynology, paleobotany, fuel science and technology, coal geology, petroleum geology, and organic chemistry. Much of the early support for the development of organic petrology can be traced to industrial sources.⁽²⁾ Steel manufacturers initially funded coal petrology in order to improve carbonization practices related to metallurgical coke production. The petroleum industry has provided continued support for coal and kerogen characterization as related to the exploration for and appraisal of hydrocarbon prospects. The last two decades' continued erosion of governmental and industrial financial support for scientific research coupled with a changing focus from basic to applied research has resulted in unsettling times for many geoscience professionals. In response to growing TSOP Council and membership concerns regarding the health and future of organic petrology, it was decided that a review of non-traditional applications of organic petrology was long overdue. It is hoped that this review of new, unusual, little-known, and speculative uses will serve as a reminder that there is a world beyond the coal, petroleum, and kerogen research that have heretofore largely defined the borders of organic petrology. Already, organic petrology is being extended to include such topics as juvenile carbons of uncertain origin (coaly-graphitic inclusions in plutonic rocks), organic inclusions in impactites, carbonaceous materials in metamorphic rocks, and fossil fuel combustion by-products.^(1,3,4)

Current Potential

Medical Geology and Medical Applications

Medical geology, a field long-neglected by mainstream geoscientists, is the crossroads of geology, environmental science, environmental geochemistry, and medicine. It is primarily concerned with correlating

the environmental distribution of disease and health patterns with natural and anthropogenic distributions of minerals, trace elements, organic compounds, and radioactive materials. Medical geology, although established for some time, has been divided and weakened by various artificial designations such as medical geography, environmental epidemiology and risk assessment, and environmental medicine and health.⁽⁵⁻⁹⁾

Four broad causal factors lead to disease : etiology (*i.e.*, specific agents), contributory causes, heredity, and environmental conditions.⁽¹⁰⁾ The geoscientist's role is to isolate aspects of the geologic environment that may influence the incidence of disease. The contaminants of greatest concern include heavy metals and trace elements (Ag, As, Ba, Be, B, Cd, Cr, Co, Cu, F, Pb, Li, Hg, Mo, Ni, Se, Tl, V, W, Zn), radionuclides, and carcinogenic organic compounds (PAHs, etc.) from both point and non-point sources. The bioavailability and mobility of contaminants, as well as potential interactions among them, are over-riding concerns of most research.

Since epidemiological studies rely to a large extent on the geographic distribution of chemical and physical attributes of the environment, medical geology can provide valuable insight to the problems surrounding certain illnesses.⁽¹¹⁾ Whereas the chemical composition of soils and drinking water are more directly relevant to epidemiological studies than is the chemistry of the underlying rocks, the rock chemistry is the foundation for determining which elements are available for release into the secondary environment. Regional geochemical mapping can provide a rapid and cost-effective database for agencies wishing to monitor agriculture and land use, fresh water quality for irrigation and potable supplies, estuarine and coastal waters and fisheries, environmental degradation and pollution, and to investigate linkages to degenerative diseases in crops, animals, and humans.⁽¹²⁾ The importance of such studies, especially in developing countries, should not be underestimated.⁽¹³⁾ India is currently in the midst of a potentially devastating health crisis in West Bengal, where high levels of arsenic have leached from natural underground sources into thousands of village wells. It is estimated that more than 1 million Indians are drinking arsenic-laced waters, while another 10 million are at risk in untested areas. At least 200,000 people already have symptoms of arsenical poisoning.⁽¹⁴⁾

An important and growing subset of medical geology is urban geochemistry. Despite the fact that the majority of the world's population lives in urban areas, only limited research has been conducted into the modification of the chemical environment in towns and cities resulting from industrial development. For example, past work has identified suspected linkages between the distribution of Pb, Zn, Cu, and Ni sulfides and the incidence of central nervous system malformations among inhabitants of the South Wales Coalfield.⁽¹⁵⁾ Current concerns include organic, metal and trace element contamination of soils and groundwater resulting from mining and utilization activities (in some cases dating back centuries), organic contamination of soils due to tire wear along heavily used roadways, and metal, radionuclide and organic contamination of soils and groundwater from manufacturing activities.^(16, 17)

Some areas of medical geology that can benefit from the application of organic petrology include :

1) Particulate matter, much of it derived from fossil fuel combustion and industrial activities, is a suspected killer of 60,000 people each year in the United States alone. At present it is unclear what component in the mix of particles and compounds triggers the adverse health effects.⁽¹⁸⁾ Respirable sulfur oxides (from coal mining, oil and gas extraction, industrial processes, etc.) have been associated with adverse health effects and some evidence suggests a link with lung cancer.⁽¹⁹⁾

2) Severe arsenic and fluorine poisoning from indoor home coal combustion is estimated to affect at least one million people in rural China.⁽²⁰⁾

3) Coal dust and miners -- There has yet to be established a quantitative relationship between the severity of pathology of pneumoconiosis, emphysema, and chronic bronchitis and measurements of coal quartz, other minerals, and trace elements in the lung itself. Studies are currently underway by Australian NIOHS and other collaborating institutions to establish the dose response relationship between quantified coal, quartz, other minerals, trace elements, and quantified pathology in deceased coal workers' lungs.⁽²¹⁾

4) Perhaps the greatest threat in both developed and developing countries is the use of well or borehole water in locations where specific geochemical conditions have led to excessive concentrations of toxic or undesirable elements:

a) Links between endemic goiter and the contamination of drinking waters with sulfurated hydrocarbons leached from Tertiary sediments in Colombia.⁽²²⁾

b) As groundwater contamination from organic-rich sedimentary formations in Taiwan, Mexico, Argentina, and China.⁽²³⁾

c) Studies of elevated radon levels in Texas drinking waters have implicated lignites and other hydrocarbon accumulations as the suspected radionuclide sinks.⁽²⁴⁾

d) Cd, Mo, Pb, U and Se water and soil contamination from marine black shales in Korea.^(25, 26)

e) Suspected links between the kerogen-rich White Speckled Shale in Saskatchewan (Canada) and patterns of Multiple Sclerosis distribution.^(27, 28)

f) Hypothesized links between weathered low-rank coals (releasing water-soluble carcinogenic compounds into local groundwater supplies) and the occurrence of an incurable renal disease known as Balkan Endemic Nephropathy (BEN).⁽²⁹⁾

g) Coronary heart disease and cardiovascular disease mortality rates linked to the relative hardness of drinking water (dissolved Ca and Mg) and associated mobility of hazardous trace metals such as cadmium. Ohio counties with sulfate-rich drinking water derived from coal-bearing strata in the southeast part of the state have a higher mortality rate due to heart attack.⁽³⁰⁾

h) Correlations between digestive cancer mortality rates in Missouri and the consumption of drinking water from coal-bearing strata (possible causal factors include Zn, Co, and organic compounds).⁽⁶⁾

There are also a number of pharmaceutical applications involving fossil fuel-derived materials. Coal tar is the active ingredient in FOTOTAR (ICN Pharmaceuticals) an anti-itch, anti-irritation cream.⁽³¹⁾ Coal tar is also used in the manufacture of antiseptics and disinfectant soaps (phenol, cresol), antibacterials (sulfanilamide, chloramine-T), pain relievers (aspirin, phenacetin, acetanilide, antipyrine), local anesthetics (procaine HCl, amylocaine HCl), and antituberculins (Isotoben).⁽³²⁾ Researchers at the University of Illinois and Dartmouth University, among others, are using fusinite as a contrast enhancement agent for electron paramagnetic resonance (EPR) imaging. Small fusinite particles are placed in living cells and then report on oxygen and nitric oxide metabolism via EPR scans. Cardiologists are studying whether they can use fusinite to check for the effect of oxygen deprivation on the heart and surrounding areas in order to determine the likelihood of a successful coronary bypass. Fusinite and EPR oximetry have also been used to monitor irradiation-related changes in the partial pressure of oxygen in mouse mammary adenocarcinomas.⁽³³⁾ Extensive

animal testing has found fusinite to be safe and long-lasting in tissues. Fusinite's ability to report on oxygen levels while remaining inert and hydrophobic means that it could revolutionize the diagnosis of oxygen-related living tissue problems.⁽³⁴⁾

Product and By-Product Utilization

While primarily regarded as fuel sources, coal, oil shale, petroleum, and the many by-products derived from them see widespread use in the modern world. Petroleum and petroleum distillates are used in countless applications, the most notable of which are plastics and chemical feedstock production. Coals, coal-extracts, and a wide range of solid bitumens are used in the manufacture of hair coloring, dyes (over 900 sold under 1600 brand names!), linoleum, detergents, perfumes, food flavorings (including artificial vanilla, almond, lemon, and wintergreen), fungicides, insecticides, solvents, wood preservatives, waxes, and explosives.⁽³²⁾ Coke-making tar and pitch by-products are widely used as electrode binders, waterproof protective coatings, impregnants, fuels, and as a source of ammonia. Coal combustion by-products (CCBs - fly ash, slag, etc.) and preparation plant rejects (PPRs) have been successfully employed in numerous ways including :^(4 35-46)

Roadbuilding

- highway construction and surfacing materials
- anti-skid additives for highway curves

Agriculture

- synthetic soil production
- soil remediation and amendment
- potassium silicate fertilizers and fertilizer substitutes

Construction

- high-performance cement and concrete products
- fillers/extenders in plastics and in protective coating systems (paints, vinyl and ceramic epoxy mastics)⁽⁴⁷⁾
- construction materials (asphalt shingles, joint compounds, carpet backing, vinyl flooring)
- production of synthetic aggregates for use in concretes
- structural fills and embankments
- landfill liners and covers
- ceramic bricks/blocks⁽⁴⁸⁾

Environmental Reclamation

- surface subsidence and acid mine drainage abatement
- mine spoils reclamation and revegetation
- industrial and hazardous waste solidification, stabilization and/or treatment
- artificial reef and offshore island construction⁽⁴⁹⁾
- sanitary sewage sludge stabilization and disposal

Materials Fabrication

- recirculating sand filters
- FGD gypsum
- fly ash-rubber composite materials
- fly ash-aluminum (Ashalloy) composite materials⁽⁵⁰⁾
- new generation specialty refractories⁽⁵¹⁾
- composite ceramics
- binders (pelletizing, foundry sands, etc.)⁽⁵²⁾
- geotextiles (mineral wool)
- radio-translucent ceramics
- simulated fireplace logs and mining timbers
- magnetite and heavy media
- flame retardants⁽⁵³⁾
- specialty glasses⁽⁵⁴⁾
- mineral/metal recovery and use

Investigation into additional uses of CCBs and PPRs continues to be a hot field. Various researchers are also characterizing fly ash carbons and exploring the commercial possibilities of high-carbon fly ash.⁽⁵⁵⁾ For each of the above examples there exists the potential that organic petrology can be utilized for materials characterization, quality control, and related research.

Environmental Monitoring and Remediation

Aside from the environmentally-related uses cited in the preceding two sections, there are several additional applications of organic petrology in the area of environmental monitoring and remediation. These include the investigation of organic particulates in recent sediments, organic components of airborne particulates, materials responsible for soiling building exteriors, and wastewater pollutants.^(56 - 59) Preliminary research has been conducted examining the impact of combustion emissions — coal, soot, and char particles — on the chemical properties (e.g., sorption of hydrophobic organic compounds) of soils in industrial regions.⁽⁶⁰⁾ In the Martha Oil Field (Lawrence and Johnson counties, Kentucky) remediation is underway on oil field wastes heavily contaminated with radium. The source of the radium is local Devonian black shales.⁽⁶¹⁾ Recent research has also demonstrated the usefulness of some coals in the extraction of heavy metals and organic compounds from polluted soils and waters.^(62, 63) Detailed studies of the Oklo natural fission reactors in Gabon (Africa) have already demonstrated that solid graphitic bitumens are effective at radionuclide containment and may serve as useful performance assessment analogues at anthropogenic radioactive waste depositories.⁽⁶⁴⁾ The Center for Applied Energy Research at the University of Kentucky (Lexington) is currently investigating the applicability of lignites for the remediation of organic and radionuclide contamination

at the Paducah (KY) Gaseous Diffusion Plant.⁽⁶⁵⁾ In two recent legal cases, organic petrography has been used as a part of the expert testimony documenting the anthropogenic degradation of peat mires threatened by development.⁽⁶⁶⁾ Since it is unlikely that concern about environmental degradation will wane any time soon, this is probably the most under-exploited area of potential opportunities for organic petrologists.

Forensic Geology

The use of geologic materials has gained wide acceptance both in assisting investigations and as evidence in civil and criminal court cases. The FBI labs in Washington, DC are one of the world leaders in research and case examination in forensic geology. There are several types of physical evidence used in criminal cases that organic petrology can address : organic, botanical, and zoological materials and unknown stains; paint and asphalt traces; dust and ash traces; soil, inorganic, and mineralogical samples; and grease and oil traces.⁽⁶⁷⁾ While many forensic studies have tended to focus on the mineralogy of samples, the nature of the organic matter content cannot be discounted and often provides important information to the investigator. Coal fragments can be especially helpful clues as they are sometimes found in the sweepings from automobile floorboards, in the soils of older cities, and in many other locations removed from the original mines or outcrops because of their common use as fuel.⁽⁶⁷⁾ However, a note of caution is in order. Since the legal basis for deciding what scientific methods are admissible in a court of law is complex (evidence must be relevant and gathered/analyzed in a generally accepted manner) and considering the now-common practice of employing "expert" witnesses by both sides in a case, the geoscientist must work closely with an attorney throughout all phases of the case.

A number of criminal cases have benefited from the application of organic petrology. The first was the Eva Disch murder case in Germany (October 1904).⁽⁶⁸⁾ Coal and mineral particles were key evidence that tied her killer to the crime scene. In another case, that of a forcible rape, the suspect had an accumulation of sand in his trouser cuffs. An examination of this material revealed that it contained an unusual amount of anthracite fragments. These were matched to anthracite particles at the crime scene (the site of a former coal pile for a laundry). In a more recent example, mud deposited on a car fender from the spinning of its tires contained fragments of black slag, a CCB that has historically been crushed and used as anti-skid material for highway curves. This was one of a number of clues

that led investigators to the body of a slain policeman dumped downslope from a highway bend.⁽⁶⁸⁾ Another application of organic petrology to forensic geology is the examination of building materials (bricks, concrete, ceramics, cinder blocks, etc.) for their CCB composition. Many safes manufactured prior to 1936 contain natural cement (made by calcining limestone) as insulation which includes fragments of Unburned coal, char, and CCBs. Coal microscopy, differential thermal analysis, and chemical characterization have also proven useful to forensic geologists.

Interest in forensic geology has been slowly, but steadily, increasing of late. A course focusing on forensic geology (Geology 440 "Advanced Topics in Geologic Science") is currently being taught by TSOP member Dr. Jack Crelling at Southern Illinois University at Carbondale. Only one other university in the U.S. offers such a course. The U.S. Geological Survey is considering whether or not to form an informal forensic geology group. There is definitely a role for organic petrology in this nascent field.

Archaeological Applications

Another area of expansion for organic petrology that has heretofore remained under-exploited is that of archaeological applications. Its primary use would most likely be for the characterization and interpretation of geological materials associated with sites (sediments, soils, amber, etc.). The importance of natural and man-made fires on ecosystems also opens prospects for organic petrology to assist in archaeological fire reconstruction studies. At least one research project has already been performed to determine the composition and provenance of 81 ornaments (primarily made of jet, cannel and boghead coal, and sapropelite) recovered from a variety of ancient graves and settlements in Germany and Switzerland.⁽⁶⁹⁾ Equally critical may be the light that organic petrology can shed on the origin, manufacture, and composition of materials such as waxes, varnishes, pigments, dyes, resins, charcoals, and the organic contents of household vessels.

In 1995, Kieraville Konsultants provided a petrological examination of coke samples from the remains of the 1835 *Hive* shipwreck in Jervis Bay, New South Wales, Australia. The study indicated that all of the coke was probably of Welsh origin.⁽⁷⁰⁾ A similar application of organic petrology to archaeological investigations that is just getting underway involves the U.S. National Park Service Savannah Harbor Project. There are currently 14 located, but unidentified, Civil War-era shipwrecks being studied in the harbor. Researchers hope to

determine whether a ship was a Confederate blockade runner or a Union patrol ship by examining the coal each ship carried. Union ships primarily used clean-burning Pennsylvania anthracite, while the Confederate blockade runners used smoky Welsh cannel coals.⁽⁷¹⁾

Industrial Applications

In addition to previously mentioned examples related to product and by-product utilization, there are numerous other industrial venues where organic petrology can enhance both product and performance. After seeing extensive historical use in the petrographic quality control of metallurgical and petroleum cokes, organic petrology has recently been extended to encompass the study of ferroalloy cokes, the influence of non-coking, carbonaceous additives (non-coking coals; petroleum and coal tar pitches; waste coke by-products; automobile tires, etc.) on the cokemaking process, and the thermoplastic and plasticity-enhancing properties of additives in the coke-making process.⁽⁷²⁾ It has also been used to investigate lubricant contamination and other aspects of equipment failure monitoring.⁽⁷³⁾

Currently under-exploited possibilities include the characterization and quality control of carbon fibers and carbon-carbon composites (carbon fibers in carbon matrix) which are widely used in the aerospace and automobile industries as braking materials and, more generally, in tensile strength and electrical resistivity testing.⁽⁷²⁾ Organic petrology could also see application in the graphite industry. All four forms of graphite (micro-crystalline, crystalline flake, crystalline vein, and synthetic) are extensively used in airplanes, automobiles, batteries, computers, non-ferrous metals, iron and steel production, televisions, refractories, lubricants, coatings, carbon parts and formed goods, electrodes, high temperature seals and gaskets, etc.⁽⁷⁴⁾ Additional areas of research application include the weathering of road asphalts and asphalt-aggregate mixtures, the production of fullerenes via laser ablation of insoluble kerogen residues, carbonization studies involving the effects of various heat and acid treatment combinations, the use of microscopical fluorescence spectroscopy in petroleum exploration, and the use of graphitized carbon blacks for customized molecular separations in column chromatography.^(3, 65, 75-77)

Future Possibilities

Speculation concerning the direction and rate of technological and scientific advancement has a long and amusing history : predictions are usually so far off

the mark that they seem quaint in retrospect. All that we can be sure of is that unforeseen applications of organic petrology lie in the future and our discipline will evolve, with or without guidance. With this caveat in mind, here is a sampling of speculative near-term and long-term applications of organic petrology.

Near-Term

General Exo-Organic Petrology

Exobiology, a relatively recent discipline dating back to only 1960, "... extends the boundaries of biological investigations beyond the Earth, to other planets, comets, meteorites and space at large."⁽⁷⁸⁾ Despite its youth, the bibliography on exobiology already exceeds 7000 publications. The possible evidence for ancient life on Mars, the *Galileo* probe photos showing slushy ice and/or liquid water on Europa, the discovery of ice deposits at the Lunar South Pole by the *Clementine* orbiter, the favorable conditions for organic chemical evolution on present-day Titan and ancient Venus, and a renewed interest at NASA in the life sciences all suggest that an "off-Earth" future for organic petrology may be just around the corner.⁽⁷⁸⁻⁸²⁾ In addition to Mars-related missions (see below), other planetary missions of exobiological interest include the U.S./E.S.A. *Cassini-Huygens* mission to Titan and the U.S. *Lunar Prospector*, both scheduled to be launched in October 1998. It may seem presumptuous now, but sooner or later we will need an Exo-Organic Petrology discipline. A melding of exobiology, cosmochemistry, and planetary geology, Exo-OP will probably pursue many of the same research avenues as its Earth-bound cousin : analysis of rocks, sediments, and soils via microscopical and geochemical techniques. Of course, it is unclear how large a role Exo-OP will play due to both our fragmentary knowledge of solar system bodies and the likelihood that surface conditions (e.g., extensive oxidation on Mars) may have prevented organic chemical evolution and/or removed its traces.^(83, 84) However, even if solar system exploration continues at its present glacial pace, there are other research possibilities for Exo-OP including bolide impacts and their significance for fossil fuel geochemistry as well as the characterization of organic compounds in asteroids, comets, interstellar dust grains, and meteorites and micrometeorites.⁽⁸⁵⁻⁸⁹⁾

Martian Research

Despite a long history of scientific interest in Mars culminating in a series of U.S. and Soviet exploratory

missions in the 1970s, the meteorite ALH84001 will be popularly remembered as having set off the great *Mars Rush of '96*.^(79, 90 - 95) The life on Mars controversy resulting from this intriguing sample will continue for some time and undoubtedly help to promote NASA's Mars exploration efforts and bolster its budget requests.⁽⁹⁶⁾ For the next thirty years, Mars exploration will be the brightest star on Exo-OP's horizon and should be of interest to all organic petrologists.

NASA's *Mission From Planet Earth* Study Office has formally decided to make the search for life on Mars one of the primary goals of long-term solar system exploration. It is clear that, not only is planning for Mars exploration in a very active phase at this time, but exobiology is well placed to make a major contribution to that exploration. NASA plans to spend about \$150 million dollars per year over the next decade to launch a series of Mars-bound spacecraft every two years, culminating in a 2005 flight that will return soil and rock samples to Earth.⁽⁹⁶⁾ A summary of recent and upcoming Mars missions follows :

US Mars Global Surveyor (launched 11/7/96, arrival 9/97) : an orbiter slated to gather global reconnaissance data (geomorphology, geologic mapping, surface mineralogy, surface topography, gravity surveys, site selection and planning).⁽⁹⁷⁾

Russia Mars-96 (lost during launch due to faulty restart of final booster stage 11/17/96) : a mission designed for pilot surface measurements; composed of an orbiter (surface mapping, surface lithology, thermal anomalies, search for subsurface water ice, surface elemental distribution mapping, atmospheric studies), two penetrators (elemental concentrations, composition of regolith), and two small landers (atmospheric, magnetic, seismic, and meteorological measurements).^(97, 98)

US Mars Pathfinder (launched 12/4/96, landing 7/4/97) : primarily an engineering demonstration of direct-landing systems with a mini-rover named Sojourner to be deployed on the martian surface (limited mineralogy and lithologies in the immediate landing area).^(97, 99)

Russia Mars-98: mission status unknown.

Japan Planet B (launch 1998) : an orbiter to perform upper atmosphere studies.

US Mars Global Surveyor (launch 1998) : an orbiter to perform atmospheric studies and surface chemistry mapping; possible inclusion of a "Neolander" to study surface volatiles and climatology.⁽¹⁰⁰⁾

US Mars Global Surveyor (launch 2001): an orbiter and lander package for surface surveys.⁽¹⁰⁰⁾

Russia Mars 2001: mission status unknown.

US Mars 2003 : an orbiter and lander package for exobiological surveys.⁽¹⁰⁰⁾

US MESUR Network : a series of landers to comprise a geophysical/meteorological surface monitoring network; postponed indefinitely due to budget constraints; will miss the original 2003 launch window.⁽¹⁰⁰⁾

US Mars ISRU Sample Return (launch 2005) : small, robotic lander and two micro-rovers to collect rock, soil, and atmospheric samples which will be returned to Earth using propellants manufactured by the main craft during its stay on Mars.⁽¹⁰⁰⁾⁽¹⁰²⁾⁽¹⁰²⁾

Mars 2005+ : possible manned missions and/or base establishment; robotic and/or manned missions to Phobos and Deimos.⁽¹⁰³⁾

The principal strategy of NASA's *Mars Exobiology Program* is to locate and analyze aqueous sediments, particularly those that are good repositories for a fossil record such as thermal-spring deposits, sea and lake beds, evaporite deposits, and cemented regolith.⁽¹⁰⁰⁾ Landed experiments (*in-situ* measurements by landers and rovers) will study the preservation and texture of surface rocks, near-surface water abundance, mineralogy of surface materials, distribution of the surface oxidant, physical/chemical characteristics of the microenvironment, stable isotope values of surface materials, presence of organic carbon, elemental and isotope values of bulk organic material, and molecular identity of organic carbon. Samples returned to Earth will undergo the same testing and also be examined for morphological and sedimentological indicators of ancient life. Among the preliminary study sites of interest are:

suspected hydrothermal deposits (Vallis Marineris system, Dao Vallis-Hadriaca Patera, Harmakhis Vallis, Hellas Basin, Ares Vallis)

suspected sublacustrine spring deposits and carbonate cements (Margaritifer Sinus-Parana Vallis, Gusev Crater, Ma'adim Vallis)

suspected evaporites and lacustrine shales/clay stones (White Rock, Becquerel Crater)

suspected areas of cryopreservation (Ismenius Lacus, Elysium, North Polar Cap)

Obviously, the list of exobiological sites of interest may be modified as the surface chemistry mapping of Mars by the various orbiters progresses. NASA official statements notwithstanding, we currently possess the ability to conduct a manned mission to Mars by the year 2007 without recourse to either an exorbitantly expensive space station or a lunar base.⁽¹⁰⁴⁾ However, given the infighting at NASA and the excessive sensitivity of the American public where failures are concerned, there is no chance that the agency will adopt a fast-track to Mars. If Americans get there, it will only be after seemingly endless preliminaries.

Long-Term

After the reconnaissance phase of human space exploration will hopefully come the settlement phase.⁽¹⁰⁵⁾ Since the 1960s this has been repeatedly touted as being "on the horizon."⁽¹⁰⁶⁾ Sadly, the horizon still looks to be a long way off... but wherever mankind goes, his sciences will surely follow. On the positive side, the last five years have witnessed the detection of extrasolar planetary systems (HR 3522, 51 Pegasi, 47 Ursae Majoris, 70 Virginis, etc.) with increasing frequency, giving renewed life to the belief that the universe is brimming over with potentially habitable and/or inhabited worlds. A limited survey of the professional spaceflight literature for the last decade already reveals possible avenues for organic petrology.

Design and development of graphite cores needed in anti-proton collectors for anti-matter power production systems.⁽¹⁰⁷⁾

Use of CCBs in the manufacture of high-temperature and high-ablation resistant coatings for space propulsion systems, high-temperature resistant woven cloth (similar to Beta Silica fabric), and specially-engineered space products in general.^(107 - 110)

Use of CCBs in the production of specialized concrete and other cement-based composites for off-Earth construction needs.⁽¹⁰⁵⁾

Use of CCBs in the manufacture of artificial soils. NASA studies have established the viability and usefulness of artificial soils for off-Earth needs. Current data indicates that CCBs could be used to amend lunar and asteroidally-derived soils with regard to K, Cl, Ba, Sr, Ni, V, F, Zn, Cu, Mo, and N content deficiencies in order to meet agricultural requirements.⁽¹¹¹⁻¹¹⁴⁾

Environmental monitoring and control of organic materials in "closed" life support system habitats (NASA

"CELSS" - Controlled Ecological Life Support System).^(115, 116) Ongoing research in *Biosphere 2*, currently under the scientific management of Columbia University, indicates that CELSS need much more testing and modification before they will even begin to approximate naturally bioregenerative systems.⁽¹¹⁷⁾ However, more limited artificial systems (hydroponic gardens for food supply, air quality maintenance, and waste treatment/recycling) have already been tested and proven viable.⁽¹¹⁸⁾

Monitoring and control during the successive stages of planetary engineering : ecopoiesis (the fabrication of an uncontained, anaerobic biosphere on the surface of a sterile planet)^(78, 119-122) and terraforming.

Conclusions

Clearly, organic petrology has more options and potential applications than might have been suspected at first glance. The long-term health and stability of any discipline will only come about through both the reinforcement of current research activities and a dynamic expansion into previously unexploited niches. Perhaps the greatest barriers to such an expansion are individual and institutional prejudices against novel research and in favor of currently accepted disciplinary paradigms. Despite fears that expanding horizons will attenuate and weaken the focus of organic petrology, the greatest threats to its continuance remain insularity and research conservatism. These characteristics, when coupled with the forces of unstable or insufficient funding and a low public profile, will surely doom any discipline to eventual dissolution.

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TSOP - ICCP Liaison Report

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As TSOP's Liaison with the ICCP I am responsible for the establishment of interactions between the two organizations and of informing TSOP members of developments and activities within ICCP which will be of interest to TSOP members. This charge includes the preparation of an annual report for the TSOP Newsletter. Paul Lyons (*TSOP Newsletter*, 13/4, 1996) reported on the ICCP meeting held in Heerlen last Fall, so I believe that TSOP members have been made aware of the scope of ICCP activities and there is no need for me to repeat this. Instead, I will take the opportunity to concentrate on areas which I think might be of most direct and immediate interest to members.

Accreditation Program

This program was developed because of the perceived need to build confidence in the clientele of coal and organic petrographers in the precision of our petrographic analyses. The program also serves to inform participants how their results compare to those of their colleagues at large. The hope is eventually to provide guidance to newcomers in the conduct of petrographic analysis. Currently accreditation can be sought in random reflectance and maceral group analyses. The ICCP issues a certificate of accreditation to successful participants although all participants receive a statistical evaluation of their own and the group's results. To date a variety of statistical methods has been used to interpret consistency and bias. Extreme care is taken to ensure the confidentiality of results, and a select panel has been established to handle any complaints. Initial accreditation involves the analysis of six different coals; analysts who have been accredited need only analyze two additional coals in the next exercise. Sixty-four members and affiliates signed up for the 1996 program. The cost of initial participation is \$50 for ICCP members and \$300 for non-members. Since the annual membership dues are only \$30, with a reduction for a 3-year payment, the cheapest way to get involved is obvious. Aivars Depers is the Organizer and Co-ordinator of the Accreditation Program.

Maceral Classification

The ICCP is in the throes of rewriting its Handbook, the past two editions of which have provided authoritative definitions (with photomicrographs) and methods for 40

years. Although the Stopes-Heerlen terms developed within those years have been surprisingly resilient, outlasting several other systems, it has been felt that the changing needs of petrologists could be better served by a set of terms which were defined more clearly and classified more logically and consistently. So far a new set of terms for the vitrinite maceral group has been finalized and approved. The inertinite group terms are near completion and should be submitted for comments and a vote in the near future. Work is under way on the liptinite group terms. Photomicrographs to accompany the new definitions continue to be selected.

The maceral groups are defined on the basis of reflectance, the vitrinite maceral subgroups by degree of destruction, and the vitrinite macerals on the basis of morphology and/or degree of gelification. In this, the new vitrinite classification is consistent with the structure of the huminite maceral classification in use for many years. Within the vitrinite terminology it is now possible to tell from the name which level of classification is being used. The following table lists the new terms for the vitrinite group. For example, *collotelinite*, a maceral within the subgroup *telovitrinite*, replaces the Stopes-Heerlen submaceral term "telocollinite."

group	subgroup	maceral
v i t r i n i t e	telovitrinite	telinite collotelinite
	detrovitrinite	vitrodetrinite collodetrinite
	gelovitrinite	corpogelinite gelinite

It is expected that the **ICCP System 1994** vitrinite classification will be published, with photomicrographs, in *Fuel*. Monika Wolf is chairing the activities of the Editorial Group for the new Handbook.

Information Sheets on the Measurement of Fluorescence Spectral Distribution

A new set of Information Sheets has been written to replace partially those in the 1975 Handbook Supplement. This was a difficult and time-consuming effort, which really represents a joint undertaking of the ICCP and TSOP. Several individuals contributed greatly to this task, notably Karl Ottenjann, Jeff Quick, Rui Lin and Carolyn Thompson-Rizer. The result is a document which will benefit those seeking guidance on how to undertake such analysis. Steve Bend is Co-ordinator of the Fluorescence Working Group.

Thermal Indices

This working group has completed a ring analysis to determine spectral fluorescence parameters on a *Tasmanites* specimen. Calibrated light sources were used to generate calibration curves and so improve interlaboratory reproducibility. The results were judged to be excellent; the average of each laboratory's standard deviation for the wavelength of maximum intensity was 4 nm (for nine participating laboratories). Current goals of the working group include expanding the number of future laboratory participants, standardizing the parameters, and establishing equivalence with vitrinite reflectance.

Past work undertaken by this group has shown that petrographically determined values can have better inter-lab precision than some common geochemical parameters. The new Co-ordinator of the Working group on Thermal Indices is Angelika Vieth-Redemann.

Environmental Applications of Petrology

In 1994 a White Paper was prepared consisting of an introduction, bibliography and abstracts addressing a range of applications in this area. Other abstracts and references are solicited for inclusion in the final version to be published this year. A round robin exercise also is planned for this year, working on a contaminated or polluted sample. ICCP/TSOP interactions in this field have been proposed and a set of the ICCP round robin materials will be sent to TSOP (Jim Hower). The Co-Convenors of this working group are Judy Bailey and Aivars Depers.

Petrographic Analysis of Coal Blends

Many laboratories are called upon to perform analyses of blends. In cases where there is familiarity with the range and nature of the component coals this should not prove to be overly difficult. However, without this

background information a blend can present the petrographer with the difficulty of distinguishing between vitrinite of higher rank and inertinite of lower rank coals. An ICCP working group was established in 1995 to determine the limits of petrographers abilities to handle such problems. The results of the first exercise were reported at last year's meeting in Heerlen and, even allowing for the fact that the two components in the blend should have been readily distinguished visually, were most encouraging. Two methods were used by conventional analysts to estimate the blend proportions. One was point-counting of particles, distinguishing visually between the higher and lower rank components on the basis of appearance. The second was a vitrinite reflectance analysis. The mean estimated blend proportion was the same for both methods, 34.6% of one coal component compared to the actual content of 36.9%. However, the standard deviation was significantly less for the point-count method, being 2.8; this is attributed to the fact that a much greater number of readings (1000) was taken in this method. The nine participants employing conventional petrographic methods were able to determine the random reflectances of the two coals with standard deviations of only 0.02 - 0.03.

Four analysts submitted results obtained using automated systems. Three of these reported blend compositions which were very close to those obtained using conventional petrographic methods; however, the vitrinite random reflectances of the component coals were very slightly higher by the automated method.

A second, more taxing exercise is now under way. It involves a two-component blend, one component of which contains a significant proportion of inertinite. I am Co-ordinator of the Working Group on Coal Blends.

Coke Petrography

The goal of a working group in this field is the establishment of a coke texture classification which optimizes the generation of petrographically reproducible and technologically relevant results. In the current exercise, sets of photomicrographs representing the same fields of view in different orientations of polarized light are being circulated. Individual points and areas for identification are marked. A very precise protocol for making the identifications has been set up by the exercise Convener, Raphael Javier, and a working convention has been adopted as to the extent to which material and structure surrounding the point in question can be taken into consideration. The experience gained in well-focused exercises such as this should help to improve reproducibility. =>

Future Meetings

In 1997, the 49th meeting of the ICCP will take place in Wellington, New Zealand on October 19-26. Attendees will have an opportunity to participate in the New Zealand Coal Conference, also in Wellington, a few days prior to the ICCP meeting.

In 1998, the meeting will be held at the University of Porto, Portugal and will celebrate the Committee's 50th assembly. The provisional dates for the meeting are September 20 - 26.

The host city for the 1999 meeting will be Bucharest, Romania.

General Information

Inquiries regarding ICCP membership or publications should be addressed to the General Secretary, Prof. Z.C. Correa da Silva, Rua Eça de Queiros 682/402, 90670-020 Porto Alegre RS, Brazil.

Web-Site Now Includes Discussion Forum

David C. Glick

The TSOP web-site at <http://www.tsop.org> now includes a forum for discussion of all organic petrology and Society topics. It can be accessed from a link on the main page (toward the bottom right). Everyone is encouraged to participate! Register once as a member of the forum (by choosing the 'Members' icon), and remember your user name and password. From then on, you can post new messages and reply to others. TSOP membership is not a requirement, so tell all those non-member colleagues that they're welcome to participate as well. To find out more about registering as a member, go to the forum, choose 'Help' on HyperNews, and then see the 'Becoming a Member' section.

HyperNews also has a 'subscription' feature which forwards posted responses to a member's article to that member by e-mail. This can be turned off, or expanded to include every posting in the forum or in selected message threads. Choose the 'subscribe' button in the forum, or choose 'help' to learn more.

One of the useful features is the ability to show digital images, such as photomicrographs, for discussion. Details and examples are available in the forum.

Some suggestions for using the forum were presented (a bit prematurely) in the December newsletter (page 17), so they won't be repeated here. In summary, please be courteous, write clearly for your world-wide audience, and use an informative and properly spelled subject line! The program may be slow at times, so the Internet Committee asks for everyone's patience.

The Internet Committee would welcome volunteers to help with the web-site. Please contact David Glick or Michelle Lamberson if you can help.

TSOP '97 Update

James C. Hower

Thank you for the great response to the call for abstracts. In particular, I want to thank TSOP contributors for their response to the options for electronic submission of abstracts. The 1997 TSOP/E-AAPG meeting was fully subscribed on April 1st.

TSOP will have a program starting with a coal bed methane symposium Monday morning followed by an organic petrology and organic geochemistry session. Tuesday will start with coal petrology papers in the morning followed by another session of organic petrology/organic geochemistry papers in the afternoon. Tuesday will conclude with a research committee panel discussion. There will be two AAPG sessions concurrent to the TSOP sessions, offering the opportunity to select the mix of papers of most interest. The TSOP poster session is planned for all-day Tuesday.

Registration materials will be mailed in early August and will be available on the web site prior to the mailing. Watch the web Site (<http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.html>) for postings of updated meeting information.

TSOP Publications Sale!

A recently revised price list for TSOP Publications has been included in this issue (see enclosed color flyer). Prices on many publications have been dramatically slashed; all older merchandise must go to make room for newly-arrived stock. Don't miss this perfect opportunity to complete your library and help TSOP in the process!

reprinted from IAEA *Inside Technical Co-Operation*, Vol. 2, No. 3, September 1996

Nuclear Technology Cleans Coal Emissions

Fresh air is a luxury around Poland's northern industrial city of Szczecin, near the port of Gdansk. Heavy use of low grade coal for power generation pollutes the atmosphere with large quantities of sulphur dioxide (SO₂) and nitrogen oxide (NO_x). As a consequence, the surrounding forests are damaged and the incidence of many respiratory diseases is alarmingly high.

When fossil fuels (especially coal and oil) are burned, "acid rain" is produced as SO₂ aerosols become sulphuric acid and NO_x aerosols change into nitric acid by photochemical conversion in the atmosphere. Not only does acid rain destroy vegetation and buildings, the gases are also believed to contribute to "global warming". Most nations around the world are now committed to containing them, and recent global treaties require all countries to pass and implement laws limiting national SO₂ emissions.

One way is to switch from coal to other primary energy sources such as hydropower, natural gas or nuclear. But for Poland these are not currently options: It has no viable hydro source; it cannot afford to pay hard currency to import natural gas from Russia; and its nuclear power program is postponed indefinitely. For the foreseeable future, Poland must rely on its reserves of brown coal (~14+ billion tons). Indeed, the livelihoods of hundreds of thousands depend on the industry.

The key question is how to insure that new industrial production is not as environmentally damaging as in the past and that gas emissions are in line with EU standards. Polish legislation enacted in the early 1990s requires utilities to progressively reduce SO₂ emissions, beginning in 1997. Technologies are readily available for removing either SO₂ or NO_x from the flue gases of individual coal-fired power plants before they are emitted into the atmosphere, but to date there was none that could extract both in one single-stage process.

A coal-fired power plant in Szczecin is now the site of a four-year IAEA technical cooperation Model Project to demonstrate, on an industrial scale, a "novel" technology that can do just that. Electron beam dry scrubbing (EBDS) works by recycling the flue gases through a chamber, before they escape from the chimney, and exposing them to low-energy electron radiation from an accelerator. As a result the toxic SO₂ and NO_x are transformed to other chemical forms. By

adding ammonia to the chamber, the resulting by-product, a dry powder, can be used as fertilizer. Other cleaning systems do not have this beneficial effect and produce a lot of waste. Although it is a radiation process, no radioactivity is produced in the operation and there is no residual radiation.

EBDS was developed some 20 years ago, principally in Germany and Japan. It is novel only in that it has not been used on an industrial scale, except in demonstration plants in Germany, Japan, and the USA. By the time it came out of the laboratory and became available for industrial-scale use in the mid-80s, utilities in these heavily regulated countries had already fitted most older coal-fired power plants with other proven scrubbing techniques, or had committed to installing more efficient boilers that would produce less emissions.

Studies carried out in Germany, Japan, USA, as well as in Poland - where an earlier Agency technical cooperation project helped set up a pilot EBDS plant near Warsaw in 1988 - have shown that the technique is 25 - 30% less costly to install and to operate than conventional systems. When NO_x removal also becomes compulsory, the advantages of EBDS will be greater. The value of the agricultural by-product and the relatively much smaller waste disposal problem make it additionally attractive.

There is a strong interest in EBDS across the energy sector in Poland, among its neighbors and in developing countries that are industrializing fast and have large coal reserves. Ukraine has an ongoing program and the Agency has just launched a new technical cooperation project to assess the option in Bulgaria.

Poland has opened the doors to the Szczecin plant, allowing the IAEA to bring visitors from other countries who are keen to see it operating. Of these, China which plans to install cleaning systems in some 60 power plants has recently contracted with a Japanese company to fit a power plant with EBDS. Further down the road are India, Indonesia, Malaysia, the Republic of Korea, Singapore and Thailand. In Latin America, Brazil, Chile and Mexico already have pilot projects and are closely watching progress in Szczecin.

(continued on page 20)

Coalbed Methane and Coal Geology

R. Gayer and I. Harris (eds.)

Geological Society of London Special Publication No. 109, 1996, 344 pp.

Reviewed by Maria Mastalerz

The coal bed methane (CBM) industry has made impressive achievements in the United States with regard to exploration and production and several quality publications on this subject are available to the reader. In other parts of the world, the industry is still in its initial stages, although it is developing quickly. Little material from outside the U.S. has been published and the book *Coalbed Methane and Coal Geology* attempts to fill the gap. The book's contents reflect the many stages of CBM development outside the U.S. with the contributions varying in regard to the amount of Coalbed methane-related information presented. For some countries and/or basins, the discussion of CBM potential is based on numerous exploratory holes and even a few production wells. In a number of cases no exploratory holes (or only a few) are available, CBM resources are unknown, and only coal characteristics are presented.

The book is divided into three separate sections: Coalbed Methane Resources in U.S.A. and Europe, Coal as a Reservoir, and Coal Geological Studies Related to Coalbed Methane. The first section is comprised of seven articles and D.K. Murray opens with a comprehensive review of Coalbed methane in the United States. T.G. Fails discusses the Coalbed methane potential of selected German and British Variscan foredeep basins, comparing them to the Black Warrior Coal Basin in Alabama. These basins are characterized by much thicker coal than in the Black Warrior Basin but, in spite of their similar origin, CBM potential depends on the characteristics unique to individual basins. Only limited areas in these European basins appear to have potential for CBM development. Two papers cover British basins. F.J. MacCarthy *et al.* discuss geological controls on Coalbed gas potential in part of the North Staffordshire Coalfield and identifies gas resource trends, while J.L. Knight *et al.* discuss coal thickness distribution on the U.K. continental shelf. Two articles also focus on Coalbed gas resources in Germany. D. Juch assesses West German hard coal resources at $454 \times 10^9 \text{ m}^3$, in addition to making general estimates of Coalbed gas. U. Freudenberg *et al.* investigate the factors controlling Coalbed methane distribution in the Ruhr District and conclude that a combination of factors related to burial, erosion, and reburial influences Coalbed gas distribution. In the last

paper of this section, J.S. Marshall *et al.* outline opportunities for the development and utilization of Coalbed methane in the Donetsk, Kuznetsk, and Lvov-Volyn Basins (Russia and Ukraine) and give a short overview of these three basins, pointing to the vast resources waiting to be recovered.

The second section, Coal as a Reservoir, constitutes the major portion of the book and is composed of ten articles. Eight authors discuss permeability of coal as the critical parameter that influences gas recovery. Fracture systems, the effects of coal microstructure on methane release, effects of fracture mineralization on reservoir permeability, a model study of the influence of matrix shrinkage on the permeability of Coalbed reservoirs (J.R. Levine), and techniques to measure gas permeability (P. Konechny and A. Kozusnikova) are discussed. Contributions from the South Wales Basin (R.A. Gayer *et al.*, T.M. Hathaway and R.A. Gayer, and I.H. Harris *et al.*) and the Australian Bowen Basin (C.L. Pattison *et al.*, B.S.M. Faraj *et al.*, and P. Gamson *et al.*) are also included. Of the two remaining papers in this section, one discusses the influence of roof facies on some coal characteristics, suggesting that roof rock porosity may play a role in methane retention (A. Kozusnikova), and the other characterizes surface properties of anthracite (M.I. Davidson *et al.*).

The last section consists of six papers and covers coal-related topics, mostly without or with very limited reference to Coalbed methane. E. Lester *et al.* describe the usage of image analysis for microlithotype composition; I. Sykorova *et al.* discuss petrological and spectroscopic characteristics of Bohemian and Moravian coals; and G. Nowak presents coal facies analysis of the coal from the Lower Silesian Coal Basin, Poland. Minerals and major elements in density-separated coal fractions from the Point of Ayr Coal (Wales, U.K.) is discussed by J. Barraza *et al.*, while mineralogy, geochemistry, and pyrite content in Bulgarian subbituminous coals is the subject of a paper by I. Kostova *et al.* D. McLean and I. Murray discuss inter-seam resolution of correlation based on palynology; A.I. Karayigit *et al.* discuss coal geology, chemical, and petrographic characteristics of Eocene subbituminous coals from the Sorgun and Suluova Basins in Turkey. =>

Because of its scope, *Coalbed Methane and Coal Geology* will be of interest to those involved in Coalbed gas exploration and to oil and gas companies interested in pursuing CBM development. Companies looking for potential investments in Coalbed gas fields, coal geologists, organic petrologists, and students working on Coalbed gas projects will also find this book useful. The extensive references from basins around the world are of special value.

AGI Awarded DOE Grant for Data Preservation Project

In February, the American Geological Institute (AGI) was awarded a \$1.5 million grant from the Department of Energy to develop a metadata repository and begin transferring geoscience data from industry to public-domain repositories. This grant initiates the Phase III implementation of the National Geoscience Data Repository System (NGDRS), a public-private partnership to preserve geoscientific data in jeopardy of being destroyed, and to make that data available to those who have a need to use it in future investigations.

DOE funding for the Phase III component of the project will provide for (1) a coordinated and orderly transfer of significant volumes of geoscience data from the private sector to public-sector repositories, and (2) improved access to the data. DOE funds will also be used to develop an electronic listing, called a metadata (data of the data) catalog, that will provide access to information about the existence and characteristics of data in the repository system. Corporations will not only donate data but will provide funds to endow their continued curation. AGI will act as a clearinghouse to manage the relationship between data contributors and the receiving data repositories.

The initial transfers will focus on cores and cuttings. Due to their bulk, these data represent the largest storage costs for industry and are the most vulnerable to disposal. Eventually, seismic data and paleontological collections will also be transferred to the NGDRS.

AGI initiated the NGDRS project in 1994 to address problems created by the downsizing of the domestic oil industry. Companies that were shifting their exploration operations overseas no longer needed the vast amounts of geologic data that had been collected, and the data were in danger of being lost forever. The many uses of these data include environmental protection, reducing risks from earthquakes and other natural hazards, water resource management, nuclear waste disposal, natural

resource development, and basic and applied research. The data contributed to the NGDRS will become available to the public for the first time. Much of it is unique and of value to researchers and industry alike.

Phase I of the NGDRS project was a feasibility study to determine how much data companies were willing to donate to a geographically distributed, national repository system - if one were established. The petroleum and mining companies surveyed indicated that they were willing to donate huge quantities of well logs, seismic data, maps, core, and other types of data.

During Phase II of the project, indexing and cataloging standards were established, and the cost of creating and operating a system of geographically distributed data repositories was determined. Pilot projects evaluated the feasibility of the system for different types of data, and a directory of existing repositories was prepared. The directory will be released this summer.

The NGDRS project has been widely endorsed within the geoscience community, including the petroleum industry. AGI is working to ensure that funding for this project exists in future years and that other federal agencies involved with geoscience data support the effort. Last August, AGI convened a Washington workshop on geoscience data preservation to broaden support for the NGDRS initiative and to focus attention on other data issues (*GeoSpectrum*, September/October 1996). Additional information about NGDRS is found on AGI's home page : (<http://www.agiweb.org>).

reprinted from *GeoSpectrum* (March/April 1997)

Journal Subscription Deals

TSOP members can subscribe to the *International Journal of Coal Geology* at a reduced rate, the amount dependant upon the monetary conversion at the time of subscription. For details contact:

Friso Veenstra, Publishing Editor
Elsevier Science
P.O. Box 1930
1000 BX Amsterdam, The Netherlands.

The most inexpensive way to get *Organic Geochemistry* is to join EAOG. Membership applications can be found in back issues of *Organic Geochemistry*. Contact:

Prof. S.J. Rowland, Membership Officer EAOG
Department of Environmental Sciences
University of Plymouth
Drake Circus, Plymouth
PL4 8AA, United Kingdom

Castaño (cont. from p. 3)

Remembrances of John include his tremendous interest in and support of young scientists and students; his warm welcome of new TSOP members; his exceptional talent as a storyteller; his love of opera and support of the Houston Opera Guild.

John was not only very active in TSOP, but also in the American Association of Petroleum Geologists, the Society of Economical Paleontologists and Mineralogists, the International Committee for Coal Petrology and he was a fellow of the Geological Society of America. From 1978 - 1980 he was a member of the National Academy of Science's U.S. National Committee on Geochemistry. In acknowledgment of our great respect for him, TSOP awarded John honorary membership in 1985.

John worked hard to pass on his extensive knowledge and experience through lectures, publications, training courses and society activities. He enriched the professional and personal lives of all who knew him. He will be greatly missed.

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Nuclear Technology (cont. from p17)

The Polish Government is investing 60% of the \$20 million needed to setup the EBDS system, and all the personnel and operating costs. The remaining 40% is shared between Japan, the Republic of Korea and the IAEA. Sweden and the USA may also contribute. The project plant is scheduled to be fully operational by the end of 1998. Hopefully, it will show Poland a way to attain European emission standards without having to compromise industrial growth and demonstrate to the energy sector a cost efficient and environment friendly technology. Currently industrial restructuring and privatization are influencing the energy sector and, at the end of the day, the economics and efficacy of EBDS itself may also decide its future in Poland and in many other developing countries.

Your Contributions are Needed!

The *TSOP Newsletter* is a forum for its members' ideas and interests. We are always in need of articles, reviews, news, and opinion pieces. Help the *TSOP Newsletter* stand out from the pack. Contribute today!

Membership News

Cortland F. Eble

Professional Changes

Members are invited to submit news/details of changes in their employment or positions, as well as address changes, for publication. Please send your news to Cortland Eble (see page 2).

Address Changes and Corrections

Please make the following changes to your 1996 Membership Directories.

Dr. James C. Hower
University of Kentucky
Center for Applied Energy Research
2540 Research Park Drive
Lexington, KY 40511-8410

Thomas D. Demchuk
Conoco Inc.
Permian 3048
600 North Dairy Ashford
P.O. Box 2197
Houston, TX 77252-2197

Phone:281-293-3189
fax:281-293-3833
e-mail: thomas.d.demchuk@conoco.dupont.com

New Members

The Society welcomed no new members in this latest quarter. Members attending conferences are invited to distribute TSOP promotional materials (see page 2).

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TSOP Member Nets Award

On April 18, 1997 TSOP member James C. Hower (University of Kentucky, CAER) received the 1997 "Outstanding Kentucky Geologist" Award from the Kentucky Section of the American Institute of Professional Geologists. This presentation marked the first time that the award was given.

Publications of Interest

*Sedimentary Organic Matter:
Organic Facies and Palynofacies*

R.V. Tyson
1995, Chapman and Hall, 615 pp.

From a recent review: "The main purpose of this book is to illustrate the usefulness of combined transmitted light microscopy and bulk geochemical analyses in studies of sedimentary organic matter. That goal is fully achieved.... [this book] is pleasant to read, discussions are clearly presented and supported by numerous tables, figures and a plate section. A number of references, including some very recent ones, are critically discussed.... this book reflects an impressive piece of work and provides a very large amount of interesting, well documented, critically reviewed and generally well discussed information.... This is a rewarding book, extremely useful for geochemists, that promotes the presently developing (and fruitful) trend to systematically correlate chemical analyses and morphological observations." ISBN 0-412-36350-X.

* * * * *

Rethinking Science as a Career

S. Tobias, D.E. Chubin & K. Aylesworth
1995, Research Corp. (Tucson), 157 pp.

From a recent review: "The authors clearly state the bases for their concern - the market for scientists is variable and not free, being affected by governmental intervention through federal support, and a coherent plan is needed for universities to deal with supply and demand.... this book is not a balanced examination of existing views but an indictment of the present system by which physical scientists are trained.... the anecdotal quotes that condemn the existing system for poorly preparing and treating its graduates have a poignant ring of truth and will probably lead many to conclude that a more systematic study would reach similar conclusions - there is a need for significant change in our educational approach.... Clearly, a strong case exists that our nation cannot face the many challenges that lie ahead without a public that understands, appreciates, and therefore supports science."

*Coal Preparation:
Automation and Control*

Gordon Couch
1996, IEA Coal Research, 61 pp.

From a recent review: "It's not often that a publication devoted to coal preparation appears, so when one does, it's worth noting. This publication was the result of a several month effort by IEA Coal Research to review state-of-the-art instrumentation and control systems used in coal preparation. This included many visits to preparation plants and manufacturers around the globe. Topics covered include : process control principles, component instrumentation, evaluating separation processes, feed coal quality, conventional plant and unit operations, advanced cleaning methods, and whole plant systems.... the reference section listing 94 documents, the vast majority published between 1990 - 1995, is a very good collection of state-of-the-art literature on the subject matter."

* * * * *

*Hydrocarbon Migration and its
Near-Surface Expression*

D. Schumacher & M.A. Abrams (eds.)
1996, AAPG Memoir #66, 450 pp.

From the publisher's ad copy: "This volume resulted as an outgrowth of the AAPG Hedberg Conference (April 24 - 28, 1994) in Vancouver, British Columbia, Canada. The book opens with a foreword by noted researcher H.D. Hedberg (*Utilization of Hydrocarbon Seep Information*). This is followed by thirty-three papers which are divided into five main categories : Characteristics of Hydrocarbon Seepage (five papers), Hydrocarbon-Induced Alteration (five papers), Hydrocarbon Migration Mechanisms and Seepage Models (six papers), Interpretive Methods and Analytical Techniques (twelve papers), and Exploration Case Histories (five papers). Among the regions covered includes the Gulf of Mexico, Azerbaijan, Alberta Basin, South Caribbean, Beaufort and Chukchi Seas (Alaska), Amazon Basin, and Huasna Basin (California)." Color plates and index; ISBN 0-89181-345-4.

Calendar of Events

1997

June 23 - 27 : International Symposium on Engineering Geology and the Environment, Athens, Greece. For information, contact the Hellenic Committee of Engineering Geology / Athens 1997 Symposium Secretariat at 30-1-3813900 [phone/fax].

July 13 - 18 : 23rd Biennial Conference on Carbon, University Park, PA. For additional information, contact Judy Hall at 814-863-5130 [phone], 814-863-5190 [fax], or conferenceinfo1@cde.psu.edu [e-mail].

September : 7th New Zealand Coal Conference, Wellington, New Zealand. For information, contact A. Herbert at 64-4-570-718 [phone], 64-4-570-3701 [fax], or A.Herbert@crl.co.nz [e-mail].

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For info, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV For more information call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 [telephone] or 49-40-630-0736 [fax].

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands. For information contact, Conference Service - EAOG '97 at 49-2461-61-3833 [phone], 49-2461-61-4666 [fax], or R.MENGELS@KFA-JUELICH.DE [e-mail].

September 23 - 27 : 14th Annual International Pittsburgh Coal Conference & Workshop - "Clean Coal Technology and Coal Utilization", Taiyun, Shanxi, China. For information, contact the organizers at 412-624-7440 [phone], 412-624-1480 [fax], pcc@engmg.pitt.edu [e-mail] or visit and browse the website at <http://www.engmg.pitt.edu/~pccwww/>.

September 27 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For additional information, contact James Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or browse the website <http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.htm>

Symposium

Appalachian Coal Bed Methane

Eastern AAPG -TSOP Joint Meeting
(Lexington, KY - September 27 - 30, 1997)

Organizer and Chairman, Paul C. Lyons

A critical look at the geologic and reservoir controls on producing Appalachian basin Coalbed methane

V.A. Kuuskraa, J. Kelafant, and J.A. Kuuskraa

High-pressure methane adsorption/desorption isotherms - application to predicting reservoir capacity and drainage

C. Clarkson and R.M. Bustin

Tectonic & hydrologic influences on coalification & hydrocarbon generation in the Warrior and Cahaba coal fields, Alabama

R.E. Carroll and J.C. Pashin

Development of Coalbed methane resources in the Virginia portion of the Appalachian Basin

J. Nolde and D. Spears

Coalbed methane resources in the northern Appalachian basin, southwest Pennsylvania & north-central West Virginia

A.K. Markowski, W.C. Grady, and D.L. Matchen

Evolution of methane from chemical structures in vitrain

P.G. Hatcher, P.K. Mukhopadhyay, and F. Behar

Relationship between methane-holding capacity and permeability with coal composition and maturation — examples from the Appalachian coals of the Maritime basins, eastern Canada

P.K. Mukhopadhyay, D.J. MacDonald, J.H. Calder, D. Hughes, P.G. Hatcher, and A. Simoun

October 5 -10 : Fourth International Symposium on Environmental Geochemistry, Vail, Colorado.

Emphasizing themes of environmental analytical techniques, mine drainage, radiogenic hazards, geochemical monitoring, geomedical research, etc. For additional information and details, please contact Dr. R.C. Severson at 303-236-5514 [phone], 303-236-3200 [fax], iseg@helios.cr.usgs.gov [e-mail], or the web-site at <http://minerals.er.usgs.gov>.

October 19 - 26 : International Committee for Coal and Organic Petrography, Wellington, New Zealand. For additional information, please contact Timothy Moore at 64-4-570-3708 [phone], 64-4-570-3701 [fax], or T.Moore@ot.co.nz [e-mail].

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.caer.uky.edu/ash/ashhome.htm>.

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 [telephone] or 31-591-301223 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 22 - 25 : 57th Ironmaking Conference, Toronto, Ontario, Canada. This meeting will be held in conjunction with the 2nd International Congress on the Science and Technology of Ironmaking (ICSTI '98). The abstract deadline is 3/1/97. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://www.issource.org/>.

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

April : International Conference on Coal Seam Gas and Oil, Brisbane, Australia. For additional information please contact either Drs. S. Golding at 3365-1277 [fax] / s-goldin@sol.earthsciences.uq.edu.au [e-mail] or Dr. M. Mastalerz at 812-855-2862 [fax] / mmastale@indiana.edu.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telex], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyväskylä, Finland.

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

July 26 - 30 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

September 20 - 26 : International Committee for Coal and Organic Petrography, Porto, Portugal.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

1999

Fall : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, please contact either Jeff Quick (801)-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801)-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.utah.edu).

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TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower
 CAER
 2540 Research Park Drive
 Lexington, KY 40511-8410
 phone: (606)-257-0261
 fax: (606)-257-0302

An unsolicited endorsement from a satisfied TSOP mug owner:

I just don't know how I got through my life without my two brand-spanking new TSOP mugs. They're sturdy microwaveable, fabulous looking, and are great conversation starters too! I never leave home without them.... You shouldn't either!

TSOP Archives
 Open for Business!

The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

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THE SOCIETY FOR ORGANIC PETROLOGY

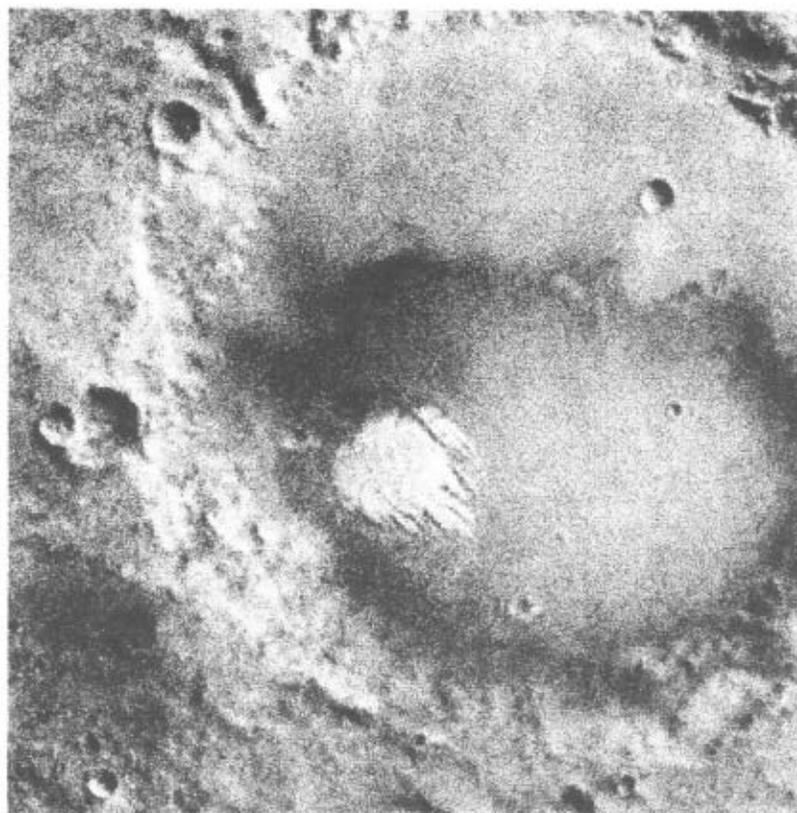
NEWSLETTER

Vol. 14, No. 3

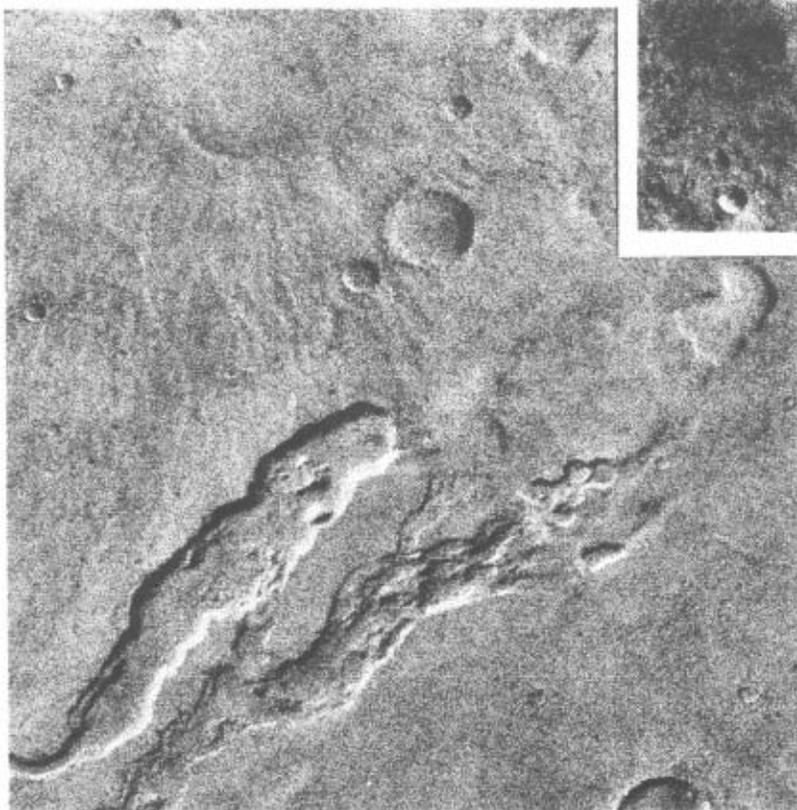
September 1997

ISSN-0743-3816

Now that the Mars Pathfinder lander and its Sojourner probe have proven astoundingly successful, the inevitable question is; *Where next?* On September 11, 1997 the Mars Global Surveyor will arrive at the red planet and begin mapping it in unprecedented detail. The data gathered will be used for future site selection. Already, two sites of high exobiological promise have been identified. Will organic petrologists be active participants in the search for the remains of ancient life, or will we merely be interested bystanders?



Organic Petrology....



and the Red Planet?

Above: Sinus Sabaeus NE (site 147; 8° S, 335° W), in the Hesperian plains/Plateau Sequence, consists of a high-albedo feature lying in an 80 km crater in the Sinus Sabaeus quadrangle. The site may contain evaporites or other fossiliferous lacustrine deposits.

Left: Dao Vallis (site 032; 33° S, 266° W) is an apparent outflow channel lying between Hadriaca Patera eruption and smooth Hesperian plains materials. The site is of interest as a region of possible hydrothermal activity and associated mineralization.

The TSOP Newsletter

James Pontolillo, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette (DOS format only; ASCII preferred), as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor.

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The 1996-97 TSOP Council

President	Jeffrey R. Levine
Vice-President	Charles Landis
President Elect	Kenneth W. Kuehn
Secretary/Treasurer	Lorraine B. Eglinton
Editor	James Pontolillo
Councilor (1995-97)	Ganjavar K. Khorasani
Councilor (1996-98)	David C. Glick

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in proselytizing for TSOP and need some handouts, please contact:

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Submission Deadline Next Issue
 10 November 1997

The "Little Society That Could"

Jeffrey R. Levine
 TSOP President, 1996 - 97

I get a little thrill each time I receive a letter from the American Geologic Institute (AGI). For there, at the bottom of the official AGI stationery, listed among the names of the AGI Member Societies, is "The Society for Organic Petrology." We're right there — along with the American Association of Petroleum Geologists (with some 31,000 members), the Geological Society of America (with some 16,000 members), and the American Geophysical Union (with some 35,000 members). OK, there are some other small, "specialty" societies appearing on the list as well, but I think ours is *extra* special, and feel very proud that TSOP has proved to have the stability, the excellent organization, and the committed membership that has allowed us to gain a stature in the geoscience community disproportionate to our small numbers.

To what might we attribute our stability and success? Obviously, one factor is our shared common interest in organic petrology, but that has played just a small role, in my opinion. Much more important has been the extraordinary commitment of our members over the years, who have worked so hard to make TSOP succeed. So many have done so much for the Society, it is at great peril that I venture to single out a few for special mention. Nevertheless, I feel obliged to extend some special recognition to several members who have made contributions "above and beyond..." over the past year, notably our outgoing Editor Jim Pontolillo for his exceptional work on the *TSOP Newsletter*, MaryAnn Love Malinconico, for her work on the Outreach Committee, Councilor Dave Glick, for his contributions as (past) Membership Committee Chair and co-organizer, along with Michelle Lamberson, of our new web-site, Jack Crelling, for his considerable efforts organizing last year's annual meeting in Carbondale, and Jim Hower, for organizing this year's meeting in Lexington (as well as many other activities on behalf of TSOP). Thanks, y'all!!

As I approach the end of my term as President, I feel a bit disappointed not to have made more progress in several areas that I think are very important to TSOP's future, specifically:

1) Expanding TSOP's international focus. It takes a special effort to keep our overseas members actively involved in the Society's business, but as our

core industrial base increasingly shifts away from North America, so must TSOP's focus broaden as well. A vital web-site, and effective electronic communications will be important elements in maintaining coherency as our membership becomes more-and-more geographically dispersed.

2) Developing a stronger presence in the "organic geochemistry" community. I still feel that we need more balance in the geochemical side of organic petrology. The TSOP logo gives equal weight to optical microscopy and geochemistry, and so should we in other facets of our organization as well.

3) Increasing our membership. There are lots of scientists "doing" organic petrology who are not members of TSOP. I think we could benefit from some "new blood." Let's try to draw them in more.

All TSOP members can help work toward these goals, and I personally plan to continue to do so in the coming year. So if you agree with me, then do your part.... Talk TSOP, and help us continue to stay strong!!

* * * * *

TSOP Election Results

Roger Trader

The ballots have been counted and the following individuals have been elected by the membership to serve in the designated positions:

President-Elect — Charles E. Barker
 Vice-President — Sharon Crowley
 Councilor (1997-99) — Maria Mastalerz
 Editor — William (Drew) Andrews

The new council members will assume their duties at the upcoming annual meeting in Lexington. At that time, President Jeffrey R. Levine will pass the gavel to current President-Elect Kenneth W. Kuehn. David C. Glick will serve out the final year of his two-year Councilor position (1996-98) and Lorraine Eglinton will continue on as Secretary/Treasurer.



TSOP- Halifax'96

TSOP / CSCOP - Joint Annual Meeting July 26-28, 1998

The Society for Organic Petrology (TSOP)

Canadian Society for Coal Science and Organic Petrology (CSCOP)



"Sailing into the New Millennium"

Experience ike Maritime hospitality when you join us in TSOP - Halifax'98

Venue: World Trade and Convention Centre, Halifax, Nova Scotia, Canada
Meeting Announcements and Call for Papers

TECHNICAL SESSIONS: Special Symposia

Monday, My 27, AM: Environmental Implications of Fossil Fuel Use
Tuesday, My 28, PM: **John Castano Memorial** - Maturation and Hydrocarbon Generation from Petroleum Source Rocks and Coal: World Basin Perspective

Potter Stiffens: *Sunday (July 26, 1998), evening - Tuesday (My 28, 1998), noon.*

General Sessions *Monday, July 22, 1998 & Tuesday, July 28, 1998 - Coal/Organic Petrology and Geochemistry*

ABSTRACT DEADLINE: *APRIL 1, 1998*

•• You can send your abstract by post (with a diskette in Microsoft Word or Wordperfect) or electronically (see our homepage)

***For Technical session enquiries, please contact **P. K. Mukhopadhyay (Muki)** (tel/fax: 902-453-0061; e-mail: Muki@auracom.com or **J. H. Calder** (e-mail: jhcalder@gov.ns.ca; tel: 902-424-2778)

SHORT COURSES, FIELD TRIP, AND GUEST PROGRAMS

Short Courses: *Sunday, My 26, 1998:* Forensic Geochemistry (Instructors: Prof. I. Kaplan; Dr. M.H.Alimi) and Apatite Fission Track Analysis (AFTA) (Instructors: Prof. M. Zenulli, Mr. M. Graves)

Field Trip: *July 29 and July 30, 1998:* Horton Bluff/ Cheverie and Joggins (Lr. Carboniferous source and reservoir rocks and Up. Carboniferous coal seams, fossils, etc.)

Guest Programs: *July 27 and 28, 1998:* Panoromic trip to Peggy's Cove, Lunenburg, and South Shore & Lobster Supper on Harbour Cruise (Halifax Harbour)

FOR MORE DETAILS ON HOTEL, MOTEL, AND UNIVERSITY ACCOMMODATIONS (INCLUDING PRICE), REGISTRATION, SIGHT SEEING, TECHNICAL PROGRAMS, SHORT COURSE, GUEST PROGRAM, COMMITTEES, ETC. SEE OUR HOME PAGE.

HOME PAGE: <http://agc.bio.ns.ca/tsophalifax98>

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TSOP Booth at Dallas AAPG a Hit!

MaryAnn Malinconico, Outreach Committee Chair

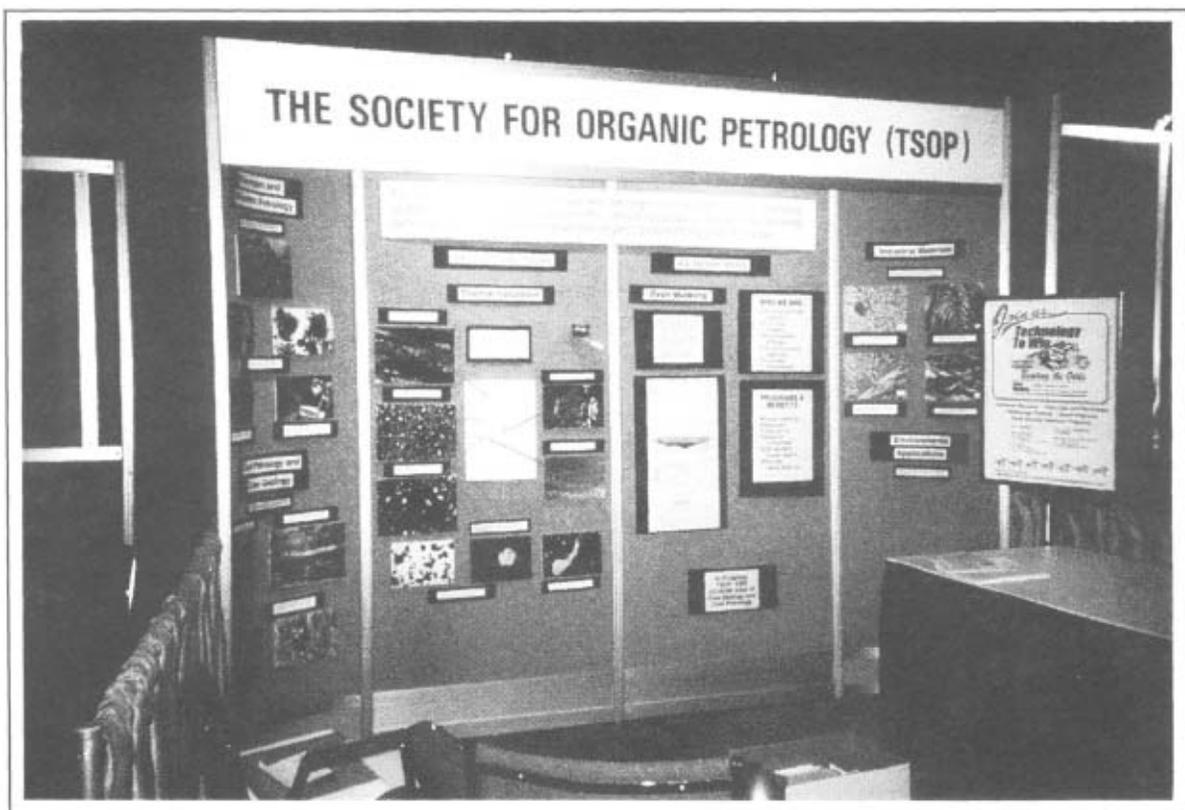
The TSOP exhibit booth debuted at the Annual Meeting of the American Association of Petroleum Geologists (AAPG) in Dallas, Texas, April 6 - 9, 1997. The purpose of the booth was to gain exposure for the society and for the discipline of organic petrology. The backwall display of the booth featured major subject areas which organic petrology encompasses or is prominently used in. The highlighted topics were well-illustrated and designed to spark the interest of passing conference delegates and draw them from the aisle and into the booth. The photo display was topped by a large banner that described the goals and purpose of the society and organic petrology; adjacent panels listed the many benefits of membership and member job type distribution. Sample copies of several TSOP publications and issues of the newsletter were on prominent display; collections of tables of contents from

annual meeting proceedings volumes were available for delegates to take, along with order forms to purchase publications at a meeting discount. Information was also available on the joint TSOP - Eastern Section AAPG Meeting in Lexington scheduled for September. Gold and silver TSOP click pens were free promotional items that actually had people seeking out the booth for a pen. Chairs in the booth allowed relaxed conversation.

The booth, by choice, was not located with the bulk of the many non-profit exhibitors, but next to the secondary coffee bar (the only one with breakfast danish) which got quite a bit of traffic. The booth was also not far from the International Pavilion, which resulted in plenty of foreign exposure for TSOP's displays. Updated membership

applications were not available in time for the meeting, but many were subsequently sent out this summer to U.S. and foreign conference delegates who expressed an interest in the society.

The booth was organized by the Outreach Committee (MaryAnn Malinconico, Chair) and can attribute much of



its success to the generous help of numerous TSOP members. Photo contributors included J. Castaño, J. Crelling, J. Hower, M-A. Malinconico, D. Pearson, and V. Stasiuk. Booth greeters included J. Burgess, B. Cardott, J. Castaño, S. Crowley, G. Khorasani, H.B. Lo, M-A. Malinconico, M. Mastalerz, R. Symanski, C. Thompson-Rizer, and P. Warwick. Brian Cardott also compiled and transported the various TSOP publications on display at the booth. Wally Dow kindly gave permission to use a Van Krevelen plot with maturation trends from his recent AAPG Memoir #60. Many thanks also to John Diebold (geophysicist!) of the Multi-Seismic Laboratory, Lamont-Doherty Earth Observatory, for saving the committee \$100 by producing the TSOP banner with his group's large format printer.

TSOP Mid-Year Council Meeting Summary

Lorraine Eglinton, Secretary-Treasurer

Officers in Attendance

Jeffrey Levine, *President*; Kenneth Kuehn, *Vice-President*; Lorraine B. Eglinton, *Secretary-Treasurer*; Jim Pontolillo, *Editor*; David Glick, *Councilor*; Ganjavar Khorasani, *Councilor*; Jim Hower, *1997 Annual Meeting Committee Chairperson*.

Others Present

Sharon Crowley; Ron Stanton, *1994 Annual Meeting Chairperson*.

In Absentia

Charles Landis, *President-elect*; MaryAnn Malinconico, *Outreach Committee Chairperson*; Cortland Eble, *Membership Committee Chairperson*

Call to Order

President Jeffrey Levine called the TSOP Mid-Year Council Meeting to order at 8:40 a.m. EST, Friday, March 7, 1997.

Approval of Agenda

A tentative agenda was distributed and approved after changes.

Approval of Minutes

Amended minutes of the 1996 Outgoing and Incoming Council Meetings at Carbondale, Illinois were approved (see original minutes for changes).

President's Report

Liaison appointees who have agreed to act in that capacity are as follows:

Cortland Eble - GSA Coal Geology Division
 Gary Mitchell - Iron & Steel Society of AIME
 Ronald W. Stanton - ASTM
 Adrian Hutton - Standards Assn. of Australia

Secretary-Treasurer's Report

A financial statement covering the period from January 1, 1996 to December 31, 1996 states that on December 31, 1996 TSOP's checking account balance was \$20,468.22 and Vanguard (short-term federal) account

balance was \$14,290.74. The total assets of the society on that date were \$34,758.96. A table of membership dues paid to date was presented. TSOP's bank is now operated by the Wells Fargo Bank. Lorraine Eglinton and Ken Kuehn moved to transfer \$5000 from the Wells Fargo checking account to the Vanguard account.

Publications

Editor's Report

Membership response to the newsletter remains limited. Three ads placed in the newsletter were all canceled for various reasons. Jim Pontolillo reluctantly has to resign as TSOP's Editor, however, he discussed prospective replacement candidates. A page limit for the newsletter was not imposed since it is considered the prime way of communicating with TSOP's members. Congratulations were extended to Jim on an excellent job as Editor.

Stipend for Editor

Ken Kuehn proposed to reimburse the Editor for expenses incurred during travel, photography shoots, and special reports. He also suggested that the Editor should have funds to attend and cover the Annual Meeting. Jim Pontolillo has previously donated these costs to the society. An Editor "special status" for reimbursement of expenses to fulfill his required duties was suggested. The issue was put aside for discussion with future Editors.

Price Reduction for Publications

Brian Cardott proposed a reduction in the purchase price of some TSOP publications. The purchase prices for TSOP publications will be reduced according to the following schedule.

Organic Geochemistry 1987-89	\$5
Organic Geochemistry 1991-1994	\$10
Field Guide Trip Guides 1991 and 1995	\$5
1996 TSOP meeting Short Course Notes	\$50

Relationship with Elsevier

Jim Hower is negotiating with Elsevier Publishing to create a more formal link with TSOP. Elsevier offered a reduced personal subscription to the *International Journal of Coal Geology* to TSOP members provided

their institutional libraries subscribe to the journal. Elsevier requested a free ad page in the newsletter and table-top display facilities at the annual meeting. Jim Hower will continue negotiations with Elsevier.

Status of Past Meeting Proceedings

Peter Henn, Elsevier U.K., has agreed to ship the 80 copies of the 1994 proceedings at the negotiated price of \$2,800. They will be shipped to Ron Stanton for distribution. Proceedings from the 1995 Woodlands Annual Meeting: any paper not received by March 31st will not be included in the proceedings volume.

Honorary Member Awards Committee

No formal proposal was received from Charles Landis. Ken Kuehn pointed out the need to have a procedure in place for honorary member selection, *i.e.* have a list of nominated, eligible members. Concerns aired included a coal bias in the existing honorary members.

Annual Meetings Update

Carbondale, Illinois, 1996 Annual Meeting: The financial report from the 13th TSOP Annual Meeting indicated that the society cleared \$214.48 from the meeting.

TSOP/AAPG Joint Meeting, Lexington, Kentucky, 1997: Hower distributed projected budgets based on 200, 225, 275 and 300 attendees for the Lexington meeting. Hower has procured \$7,600 in contributions for the meeting. This figure excludes advances from TSOP and AAPG. He predicts a reasonable registration fee will be set and projects TSOP will come close to offsetting the expense. A web-site is evolving for the meeting. TSOP will still have a separate business luncheon.

Halifax, Nova Scotia, 1998: Jim Hower circulated an E-mail from Prasanta Mukhopadhyay detailing his activities to date; plans are progressing smoothly.

Salt Lake City, Utah, 1999: Jeff Quick will host the 1999 annual meeting at the Snowbird Resort in Salt Lake City, Utah. Jeff was asked to select dates and check conflicts with other meetings in the third week of September 1999.

Bloomington, Indiana, 2000: A proposal submitted by Maria Mastalerz to host the 2000 TSOP Annual Meeting in Bloomington, Indiana was approved.

CD-ROM Atlas of Coal Macerals

Since the production of the Energy and Minerals Division of AAPG was on hold due to an inability to cover the projected \$10,000 - \$20,000 publication costs, Ron Stanton of the U.S. Geological Survey presented an alternative way to produce the volume. All USGS

publications are now digital and so it is feasible for the USGS to produce the Atlas. The volume would carry the USGS, AAPG, and TSOP identification logos. Ideally all aspects of duplication, distribution and sale would be managed by AAPG.

Outreach Committee Report

Activity Report

MaryAnn Malinconico has been busy placing ads in several journals and newsletters and council approved an ad design to be posted in *Geotimes*. She has put tremendous effort into organizing a promotional booth at AAPG (Dallas) and is still busy with the industrial sustainer program. Ken Kuehn extended an official "well-done" to MaryAnn for her ceaseless efforts.

Membership Campaign

Jeff Levine distributed a composite membership chart based on numbers that appeared in past TSOP membership directories. There has been a steady downward trend in membership (particularly U.S.). Council approved the creation of an Ad-hoc Member Drive Committee. The committee is required to develop a membership package and to generate a mailing list of potential new members. Sharon Crowley was appointed as the Ad-hoc Member Drive Committee Chairperson.

Liaison Committee

Dave Glick circulated a liaison committee report listing 19 professional bodies with which to liaise, with six liaisons yet to be appointed: Europe, Canada, South America, Asia, Botanical Society of America (Paleobotanical Section) and the American Chemical Society (Fuel Chemistry Division). Discussion ensued regarding area liaisons, *i.e.* they report on events and news and do not overlap with reports from association and society liaisons.

AGI-GAP Contribution Request

Council approved an increase in TSOP's contribution to support GAP to \$200. Ken Kuehn commented the membership should be informed how this program benefits TSOP.

Internet Committee Report

Dave Glick and Michelle Lamberson are maintaining the web-site. They hope to have the council discussion group (Hypernews) up and running by the end of March. Jeff Levine expressed dissatisfaction with the speed at which the web-site was progressing. He suggested some improvements and comments as follows:

- 1) The web-site should be a venue for organic petrologists, TSOP members and non-members to interact with one another on an informal basis as well as

(continued on page 16)

Non-Traditional Applications Addenda

James Pontolillo

In a recent issue of the *TSOP Newsletter* (vol. 14, no. 2, June 1997, pp. 4-13), I presented what I hoped would be a wide-ranging and complete review of non-traditional applications of organic petrology. It was inevitable, perhaps, that in trying to address such a plethora of topics relevant source material would be inadvertently overlooked. Additionally, in the intervening months numerous related articles have appeared in the scientific literature. Hence, this addenda. Of course, the on-going development of such applications points toward the necessity of a regular review series. This article has been organized identically as the original.

Introduction

Van Gijzel¹ has provided an excellent brief overview of the development of organic petrology. He notes that "OP is a classic example of the interaction between developments in microscopy and their scientific applications" and concludes that the field will continue to be driven by the evolution of microscopic and photometric instruments. The same can be said for the potentially far-reaching impacts of automated control and computerized imaging systems on the methodology of organic petrology.

Medical Applications

For those interested in the health effects of home coal combustion, the journal *Lung Cancer* devoted an entire special issue (vol. 14, no. 1, 1995) to coverage of the International Symposium on Lifestyle Factors and Human Lung Cancer (Guangzhou, China, December 12 - 16, 1994). Florig has also just produced a comprehensive overview of the problem presented by household fuel burning and its contribution to mortality in China.² Concern about indoor air pollution has been extended to urban residential areas in South Africa where links between upper respiratory tract infection rates in children and home coal combustion have been demonstrated.³ In a related vein, data on suspected links between home coal combustion and fluorosis in China has appeared.⁴⁻⁶ An examination of the influence of coal dust on coal miner's pneumoconiosis⁷ and an evaluation of the health risks relating to exposure to polycyclic aromatic hydrocarbons (PAHs) in coal tar-based shampoo⁸ have also recently been published.

Product and By-Product Utilization

Unfortunately, my original review completely overlooked two important works on coal as a chemical and material feedstock. Marsh⁹ has provided a good introduction to the diverse field of carbon science, with a special emphasis on carbon fiber reinforced plastics. Song and Schobert^{10, 11} have published two excellent overviews highlighting the advantage of coal as a feedstock - it is abundant and rich in chemicals, especially aromatics which are in growing demand for the production of new-generation polymers and engineering plastics. They also project an improved economic viability for coal liquefaction as oil reserves are depleted; many value-added chemicals and specialty materials can be obtained during liquefaction. Coal is also being used as a raw material for the development of pharmaceutical feedstocks (acridine, quinoline, isoquinoline, etc.),¹² in silicon nitride production,¹³ in the synthesis of fullerenes,¹⁴ and in carbon and graphite products.¹⁵ The recovery of coal resins for use as a value-added product has also been investigated.¹⁶

There continues to be apparently no end of use for fossil fuel combustion by-products. *Fuel* has just published a special issue devoted to the utilization of coal fly ash.¹⁷ Other recently documented uses include:

- incinerator gas stream cleanup¹⁸
- organic/inorganic hazardous waste stabilization^{19, 20}
- amelioration of dump soils²¹
- artificial reef technology developments²²
- production of zeolites^{23, 24, 4}
- abrasive blasting substitutes²⁵
- custom polyester mortars²⁶
- fly ash-aluminum (Ashalloy) developments²⁷
- carbon blacks and elastomers²⁸

Environmental Monitoring and Remediation

Peat research continues to result in interesting applications. One recent study²⁹ demonstrated that essentially no post-depositional movement of fly ash particles occurred within moss sequences. Thus, the trapped particles are reliable monitors of historical air pollution levels. In a related study, carbonaceous particle analysis has been used to determine whether lake sites are receiving local, regional, or background

levels of contaminant deposition from fossil fuel combustion.³⁰ Peat has also been shown to be a source of proxy climatic and human impact data through regional paleoreconstruction studies³¹ and useful as a biofilter medium for on-site wastewater treatment.³²

Much interest has been focused lately on the production and use of carbon-based materials for environmental remediation.³² Another growing, though hardly new, area of environmental concern is the large-scale coal tar and chemical contamination at former manufactured gas plant sites (MGP). The U.S. EPA has identified 1,800 MGPs in need of remediation; New Jersey has 78 of the sites and is leading the way in cleanup. In many cases there are sizable economic incentives driving the remediation and return of these lands to active industrial and non-industrial use.^{34,38} Another urban pollution issue that organic petrology can address is that of combustion-sourced organic fouling of building surfaces (black crusts) and the all-important role played by chemoorganotrophic microbes in weathering stone surfaces.^{39,42} A recent special section of the *Journal of Geophysical Research* contained twenty-two papers on carbonaceous particles in the atmosphere.⁴³ Finally, work continues apace on the link between mortality rates and fine particulate matter air pollution.^{44,46}

Forensic Geology

There are several excellent generalized guides for those scientists with limited prior experience as experts.⁴⁷⁻⁴⁸ The key dictum not to be forgotten: *the substance of opinions given by an expert should be the same irrespective of who has retained him.*

Archaeological Applications

Organic petrology (specifically, coal microscopy) has been used to assist in C₁₄ dating and interpretations. There have been instances of C₁₄ dates being taken from ancient reworked coals incorrectly assumed by investigators to be recent charcoals.⁴⁹

Industrial Applications

Exotic specialty carbon materials (e.g., single-walled nanotubes, nanotube bundles and toroids produced from graphite and other source materials) are currently at the cutting-edge of research and are finding use in fuel cell, high-conductivity, magnetic, and high-tensile strength applications.⁵⁰⁻⁵³

Future Possibilities

At the time of my first review, NASA's *Pathfinder* probe was still on its way to Mars and an uncertain fate. The mission has subsequently developed into an unequalled success. Detailed information on the Mars *Pathfinder* Mission and its Ares Vallis landing site can be found in a special issue of the *Journal of Geophysical Research*.⁵⁴

Coal, oil, and their by-products will undoubtedly see use in the specialty plastics and ceramics required for envisioned spacecraft thermal control systems.⁵⁵ Numerous additional applications will be needed for the development of bioregenerative life support systems.⁵⁶

References

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(continued on page 13)

Where's the Beef ?

Carolyn Thompson-Rizer

Do you have opinions about organic petrology? Do you have questions about the role of TSOP? Do you want to be heard? Then come to the September 30th discussion session on the **Health and Future of Organic Petrology** sponsored by the TSOP Research Committee at the Joint TSOP / Eastern AAPG Meeting in Lexington, KY. The session was inspired by recent issues of the *TSOP Newsletter*, Jack Crelling's comments and symposia at last year's annual meeting, and from discussions with Jeff Levine over the years. A panel of TSOP members (Alan Davis, Suzanne Russell, Sharon Crowley and Brian Cardott) representing academia, industry, and government will help to get us talking to each other. Audience participation will be the key to a stimulating session, so come let us hear your ideas. Topics may range from jobs in the 90's, to the use of the Internet for organic petrology exchanges, to the role of TSOP in visual kerogen standardization, to the use of organic petrology in archaeology and other nontraditional applications. A call for topics was posted on the TSOP web-site discussion forum. Let me know if you have a burning issue to discuss (281-293-3160). The duration of discussion of a particular topic will depend on audience enthusiasm. The session will last approximately one hour. Hope to hear you there!

* * * * *

Web-Site Discussion Forum Now Available

David C. Glick

TSOP's web-site at <http://www.tsop.org> and the Hypernews Discussion Forum included there are available to all organic petrologists. Please use them and encourage others to do so!

To use the Hypernews Discussion Forum, register as a member by choosing the 'Members' icon, and remember your name and password for future use. There is a 'subscription' feature which can be activated to send notification of new articles. Image files, such as digitized photomicrographs, can be shown within postings; this should be a great aid to petrographic discussions. Further information is available within the Forum.

Membership News

Cortland F. Eble

Well, it finally happened. We ran out of TSOP flyers, which isn't all that bad seeing that the ones we had were a bit dated. Currently, Jeff Levine, Dave Glick, and myself are working towards updating the brochure and getting several made, as cheaply as possible, prior to the annual meeting in Lexington. The membership application form has also been updated and now is in an EXCEL file format, which should facilitate membership application via E-mail.

Two individuals have applied for membership in TSOP:

Barry Ryan, Geological Survey Branch, British Columbia Ministry of Employment and Investment

Rex Hoover, optical and scanning equipment designer and developer for Tritex Corporation (Summerduck, VA)

Address Changes and Corrections

Please make the following changes to your 1996 Membership Directories.

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(reprinted from *Nature*, vol. 386, 24 April 1997)

Lights Turning Red on Amber

Bryan Sykes

Were science to be judged on entertainment value alone, there is little doubt that the fastest route to the glittering prizes would be to work on fossil DNA. If you doubt that, take a look at the British tabloids of 9 March, where a report linking the DNA from a Palaeolithic tooth to a twentieth-century schoolteacher got the full treatment which, for one paper, meant two topless models posing with hastily assembled flint axes. Very little captures the public imagination quite so much as recovering the DNA from our ancestors and other extinct organisms, with the unspoken promise of re-creating them. Nowhere was this better realized, of course, than in the film *Jurassic Park*. An excellent film in many ways, but whose appeal was certainly enhanced by reports that the basic scientific premise - that DNA could survive for millions of years, especially when protected by amber - was essentially correct. The findings were widely reported in the scientific press which, like the tabloids (but with a restrained repertoire for pictorial embellishment), know a good story when they see one.

So are the stories about amber true? A paper by Austin *et al.*¹, published this week in *Proceedings of the Royal Society*, comes up with a resounding "no". In an exhaustive series of experiments using insects trapped in Oligocene Dominican amber, as well as insects in the much younger Quaternary East African copal (a resin from tropical trees), they have been unable to find any traces of credibly ancient DNA in the sort of specimens that have been reported as being abundant sources of the real thing. The authors examined more specimens than all six of the previous studies combined - studies that had reported success in 13 out of 14 cases. Although Austin *et al.* could not reproduce the results because the individual samples were, of course, different, the findings nonetheless cast doubt on the original reports.

What's to be made of the claims for the revival of dead DNA after several million years? In one case - the celebrated retrieval of DNA from an unidentified Cretaceous dinosaur fossil (not in amber, I hasten to add) - the reported sequences² were almost certainly from nuclear inserts derived from human mitochondria³. In another study, a 20-million-year old magnolia leaf produced sequences that were enticingly like modern magnolias⁴. When the derived sequences are similar,

but not identical, to those of living relatives, there has been an understandable temptation to use this as evidence of authenticity for the ancient DNA, through phylogenetic affinity blurred by time. But it now seems clear, from the accumulated experience of a number of laboratories, that when the polymerase chain reaction (PCR) is used to amplify minute amounts of damaged template, it can create bizarre amplified sequences) from low-level modern contaminant DNA, the sequence of which has been scrambled by 'jumping' PCR⁵.

Both leaves and dinosaurs were fully exposed to water and oxygen, the agents which, through the inexorable processes of hydrolysis and oxidation, set a theoretical upper limit of 50,000 to 100,000 years, beyond which no amplifiable material would survive^{6,7}. Only amber - in which entombed specimens are completely dehydrated - had the potential to thwart this logic. Studies of levels of the D and L enantiomers of aspartic acid from amber-trapped insects raised hopes that this might be the case⁸. They showed that the normal diagenetic process that would equilibrate these two optical isomers after a million years or so under normal hydrated conditions, and which seemed to correlate with the ability to recover endogenous DNA, had apparently been halted. However, Austin *et al.* have effectively snuffed out this glimmer of optimism.

Where does this leave the original reports? For a start, they have not crossed the hurdle of independent verification. But whether these reports owe their existence to serendipity or to overenthusiastic interpretation, I can't help feeling a tinge of disappointment that the sober and meticulous efforts of Austin *et al.* have ended the way that they have. Spoilsports? Yes, a little, but now the ball is firmly back in the court of the original protagonists, who must in future be more prepared than hitherto to share whatever samples they are claiming to be authentic. Although Austin *et al.* have a point when they conclude that "the primary value of amber-preserved fossils lies in their excellent morphological preservation and not in the fragmented remains of any DNA whose existence remains speculative at best", I, for one, hope that the authors of the original reports will rise to the challenge.

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Your Contributions are Needed!

The *TSOP Newsletter* is an open forum for its members' ideas, observations, concerns, and interests. We are always in dire need of scientific, technical and historical articles, as well as publication reviews, news items, and opinion pieces. Our excessively large and ridiculously over-paid editorial staff needs your help! All that writing, editing, and re-writing eats away at valuable time that we'd rather spend on the Côte de Azur or at the baccarat tables in Monaco. *Only your efforts can increase our leisure.* Help the *TSOP Newsletter* stand out from the pack. Contribute today!

* * * * *

New Applications Addenda (continued)

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Renew Your Membership Today

TSOP members are reminded that 1998 dues must be paid to the Secretary-Treasurer by December 31, 1997. Renew now and avoid those frantic sleepless nights of guilt-wracked torment!

Still Available!
Energy & Fuels Special Issue

The Geochemistry and Petrography of Kerogen/Macerals

(published as Energy & Fuels, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology

The American Chemical Society
 1994 National Meeting
 March 13-15, 1994

General topics include :

- Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
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- Maceral Behavior during Maturation and Catagenesis
- New Techniques and Applications
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Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "*The Society for Organic Petrology*". Sorry, no credit card orders can be accepted. Send all inquiries and orders to :

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8th Coal Geology Conference

June 22 -27, 1998

Faculty of Science, Charles University
Prague, Czech Republic

On the occasion of the 650th anniversary of the foundation of Charles University and to commemorate the 70th unaccomplished birthday of Professor Vaclav Havlena, D.Sc, a prominent Czech coal geologist, the Faculty of Science of Charles University in cooperation with the Czech Geological Survey and the Institute of Geonics of the Academy of Sciences of the Czech Republic will organize the 8th Coal Geology Conference. This Conference follows seven similar meetings which were organized by the Faculty of Science during the years 1972 -1993. The Conference will take place at the Faculty of Science, Charles University, Albertov 6, 128 43 Praha 2, on June 23 - 26, 1998. Papers will be allowed 20 minutes for presentation and 10 minutes for discussion. Short communications will be allowed 10 minutes for presentation and 5 minutes for discussion. Manuscripts submitted and accepted before June 26, 1998 will be published in the proceedings volume of the Conference. The official language for oral presentations will be English.

Pre- and Post-Conference Field Trips

July 22 and July 26 (one day field trips) - *Limnic Permo-Carboniferous formations of the Krkonose piedmont and Intra-Sudetic basins (geology, sedimentology, and stratigraphy) and/or Sokolov Tertiary lignite basin (open pit mining operations, impact of mining and lignite combustion on the environment)*

July 26 - 27 (two and a half day field trip) - *Paralic Carboniferous formations of the Upper Silesian basin*

Costs

The registration fee has been tentatively established at US\$ 170 (US\$ 40 for students). One day field trips will cost around US\$ 40. The excursion to the Upper Silesian basin will cost about US\$ 140. The convenors are ready to arrange for those interested an accommodation at a student residence during the Conference in Prague. Preliminary registration form including titles of papers, short communications, and posters are to be returned before September 30, 1997 to the address given below. Abstracts not exceeding 250 words should be delivered before January 31, 1998, at the latest. Complete manuscripts should be submitted before June 26, 1998. Instructions for authors will be given in the second circular made available in November 1997 to those who return the preliminary registration form. All correspondence should be addressed to:

8th Coal Geology Conference
Professor Jiri Pesek, D.Sc.
Albertov 6
128 43 Praha 2
Czech Republic

phone: + + 420-2-21952438 / fax: + + 420-2-296025 or 291425

AGI Publishes Trio of Reference Books

National Directory of Geoscience Data Repositories (1st Edition)

Throughout most of this century, petroleum companies, minerals companies, and geological surveys in the United States have systematically acquired a vast amount of information about our nation's physical resources. Much of the data was stored in company offices, warehouses, and repositories for decades. But as more and more U.S. corporations transfer their oil, gas, and minerals exploration activities overseas, the American Geological Institute (AGI) is coordinating a nationwide effort - involving industry, academia, and government agencies - to preserve the data in public repositories. As part of that endeavor, AGI has just published the first *National Directory of Geoscience Data Repositories* to enable all users to locate the geological data that they need.

Data listed in the new directory include maps, well logs, core, seismic data, and a variety of other types of geoscience information.

To prepare the directory, questionnaires were mailed to state geologists, more than 60 geological societies, private-sector data centers selected from oil and gas directories, and to the membership committee of the American Association of Petroleum Geologists, one of AGI's member societies.

The directory contains 124 repository listings, organized alphabetically by state. Listings include the repository's name, address, contact person, telephone and fax numbers, and e-mail address. Facts about the size of the staff, repository type, data-access fee, catalog and index type, data delivery media (online, paper, film, fiche), quantity and type of holdings, data-center services, and geographic areas (*i.e.*, Colorado Plateau, mid-continent, Eastern onshore) of the holdings (by type and media) are also included.

Appendix I consists of a cross-referenced matrix of broad data types (such as geophysical data, drill-hole data, field/pool information, maps and location information, and geographic areas of holdings). Appendix II is the survey questionnaire. AGI plans to issue new editions of the directory on a two-year cycle, and a continuously updated version will be available on the World Wide Web later this year.

The *Directory*, edited by Nicholas H. Claudy, costs \$9.95, including shipping. Prepayment is required, and checks should be made payable to the American Geological Institute. To order, contact David Stevens at AGI, 4220 King St., Alexandria, VA. 22302-1502. Phone: (703) 379-2480; fax: (703) 379-7563; e-mail: geopubs@agiweb.org.

Glossary of Geology (4th Edition)

The fourth edition of the *Glossary of Geology*, just published by the American Geological Institute, reflects the dramatic technological changes affecting the earth-science profession. Geoscientists, for example, now use geographic information systems (GIS) and global positioning systems (GPS) as well as new tools and techniques for analysis, modeling, exploration, and communication. New discoveries, serving to advance scientific thought, inevitably lead to changes in terminology and usage. Editor Julia A. Jackson invited more than 100 geoscience experts to review and update terms and definitions for the latest edition of the *Glossary*. As a result, approximately 3,400 new entries have been added and another 9,000 definitions have been updated in the fourth edition, bringing the number of entries to 37,000.

The revision applies to nearly every discipline in the geosciences, including active fields such as carbonate sedimentology, environmental geology and geophysics, GIS, GPS, sequence stratigraphy, hydrogeology and hydraulics, marine and coastal geology, organic geochemistry, and Paleocology. The number of definitions for traditional fields such as seismology, stratigraphy, speleology and karst, structural geology and tectonics, paleontology, and igneous petrology has expanded as well.

The 4,000 mineral listings in the *Glossary* constitute the largest single group of terms. Since 1987, so much has been learned through the analysis of crystal structure that many of the mineral definitions required updating. Revised formulas are expressed in a form to emphasize crystal chemistry and structure.

Editor Julia A. Jackson worked as co-editor with the late Robert L. Bates on the second and third editions of the *Glossary*, published in 1979 and 1987. Until recently, she directed the communications and publications

programs at the American Geological Institute and was editor of AGI's monthly earth-science magazine, *Geotimes*. A geologist, writer, and editor, Jackson is past president of the Association of Earth Science Editors (AESE) and writes a column, "It's About Time," for the *Blueline*, AESE's newsletter.

The fourth edition of the *Glossary of Geology* can be ordered from AGI's Publications Center, P.O. Box 205, Annapolis Junction, MD, 20701. Telephone: (301) 953-1744; fax: (301) 206-9789. ISBN 0-922152-34-9, hardbound, 8-1/2" x 11", 800 pages. List price is \$110.00; AGI Member Society price is \$88.00, plus postage and handling.

Dictionary of Mining and Mineral Related Terms (2nd Edition)

The second edition of the *Dictionary of Mining and Mineral Related Terms* is the culmination of a five-year effort between the U.S. Bureau of Mines and the American Geological Institute (AGI) to produce an up-to-date reference book to serve the needs of today's mining industry. The *Dictionary* is published in cooperation with the Society for Mining, Metallurgy, and Exploration (SME). Technological developments and environmental laws and regulations that affect the mining industry have proliferated since 1968, when the previous edition of the mining dictionary was published. Concurrently, the need for a modern mining dictionary - one that incorporates not only standard mining-related terms but also references to the environment, pollution, automation, health, and safety- has grown more acute.

The second edition contains approximately 28,500 listings, focusing on mining industry terms. Geological terms that relate to mining are also included, as well as new terms on marine mining, leaching, automation, pollution, and the environment. Many of these terms now have a legal definition based on law or regulation.

More than 100 minerals and mining specialists at the U.S. Bureau of Mines as well as outside experts joined AGI's publications team to produce the *Dictionary*. Although the bureau has closed, its minerals information functions have been transferred to the U.S. Geological Survey.

Definitions were reviewed by subject specialists, who judged what terms should be retained or deleted; they added and revised definitions as needed. Final judgment regarding the inclusion of existing terms or the addition of new ones was left to the collective discretion

of the Dictionary Revision Group, a panel of experts who also cross-checked items with terms listed in SME's *Mining Engineering Handbook*.

The *Dictionary of Mining and Mineral Related Terms*, 2nd edition, can be ordered from AGI's Publications Center, P.O. Box 205, Annapolis Junction, MD, 20701. Telephone:(301) 953-1744; fax: (301) 206-9789. ISBN 0-922152-36-5. Hardbound, 8-1/2 x 11, 800 pages. List price \$110.00; AGI Member Society price \$88.00, plus shipping and handling. Contact the Publications Center for more detailed information.

Mid-Year Meeting (continued)

on a professional or technical basis. TSOP members should become familiar with each other here, ask questions, share information, see photographs of one another and catch up on gossip. TSOP needs a place to connect and interact with other members. The web-site must be fun and interesting; people love stimulation and discovery. A web-page should be technical, but fun and dynamic. New stuff should be appearing constantly. All users should be able to contribute, not just the web master. However, it must also be organized.

2) The web-site should be a source of information regarding TSOP affairs and business news.

3) The web-site should be a way for newcomers to learn about TSOP and be induced to join.

Council discussed these points and how realistic such goals are. The Hypernews discussion group will help address some of these comments. Jeff Levine will add links to his home page where he can add daily updates. Council members' photographs and mail-to links will shortly be added to the web-site.

Nomination Committee

Council accepted candidate suggestions from the Nominating Committee for the upcoming elections.

Research Committee

Updated guidelines for the role of the research committee were drafted by Carolyn Thompson-Rizer. These new changes were tabled so council members can review them and check the consistency of these procedures with other TSOP procedures.

TSOP Archives Guidelines

Ken Kuehn's new archive guidelines entry for the procedures manual was adopted by council.

The meeting adjourned at 6:45 p.m. EST

Publications of Interest

Palynological Correlation of Major Pennsylvanian Chronostratigraphic Boundaries in the Illinois and Other Coal Basins

R.A. Peppers

1996, GSA Memoir #188, 118 pp.

From the publisher's ad copy: "Major chronostratigraphic boundaries in the Middle and Upper Carboniferous of the Illinois Basin, Western Interior Coal Province, Appalachian Coal Region, western Europe, and the Donets Basin in Russia are correlated by use of palynomorphs... The major palynological changes at the Middle-Upper Pennsylvanian boundary are discussed in detail. The study evaluates new as well as published palynological data... Major divisions used in the various classification systems of Carboniferous strata are discussed. This investigation reinforces some previous biostratigraphic correlations and offers different interpretations of other correlations."

* * * * *

Peer Instruction: A User's Manual

E. Mazur

1997, Prentice Hall, 272 pp.

From a recent review: "Dismayed at his student's poor performance, Mazur developed a teaching method, which he calls peer instruction, designed specifically to foster conceptual understanding. This book details his allocation of class time between short periods of lecturing followed by multiple-choice conceptual questions - ConcepTests... The cycle of short discussion and ConcepTest question is repeated - perhaps four times during an hour's class. The results are impressive: scores on conceptual tests have risen dramatically, and student enthusiasm for the course has increased markedly... Mazur discusses ways to organize a lecture around the ConcepTests and to set up the course to make use of peer instruction... Why does peer instruction work? The crucial point is that students are forced to articulate and defend their conceptual understanding... Peer instruction is a pedagogical strategy that can be applied, in principle, to a wide variety of courses."

Ancient DNA: Recovery and Analysis of Genetic Material from Paleontological, Archaeological, Museum, Medical, and Forensic Specimens

B. Herrmann & S. Hummel (eds.)

1994, Springer-Verlag, 263 pp.

From a recent review: "In just the past five years or so, an explosion of studies of ancient DNA has spawned a new subfield of genetics that is concerned with methods to detect and analyze partially degraded DNA from preserved tissues. This book is both a review of the systems and tissue types to which these methods have been applied, as well as a primer of techniques and protocols for working with ancient DNA... The strength of this volume is in its attention to detail. Each chapter includes exact descriptions of protocols for DNA extraction, amplification and laboratory analysis of results... I recommend this book as an affordable primer for individuals and laboratories interested in prospecting for and applying ancient DNA."

* * * * *

Palynology: Principles and Applications

J. Jansonius & C. McGregor (eds.)

1996, AASP Foundation, 1330 pp.

This long-awaited three volume book contains 32 major chapters and 125 photographic plates (14 in color) with coverage including:

- Nomenclature and taxonomy
- Palynological techniques
- Archean and Proterozoic paleontology
- New frontiers in palynology
- Personal computers in palynology
- Analytical biostratigraphy and correlation
- Aquatic and non-aquatic Quaternary
- Pollen and spores in plant evolution
- Palynofacies
- Fecal Pellets
- Palynomorphs in ores and petroleum
- Vegetational history
- Economic applications of palynology

Calendar of Events

1997

September 7 - 10 : AAPG International Conference and Exhibition, Vienna, Austria. For info, contact the AAPG Conventions Department at (918)-584-2555.

September 7 - 11 : 214th National Meeting of the American Chemical Society, Las Vegas, NV For more information call (202)-872-4396.

September 7 - 12 : Ninth International Conference on Coal Science, Essen, Germany. For more information, contact the Conference Secretariat at 49-40-639-0040 [telephone] or 49-40-630-0736 [fax].

September 22 - 26 : European Association of Organic Geochemists Annual Meeting, Maastricht, The Netherlands. For information contact, Conference Service - EAOG '97 at 49-2461-61-3833 [phone], 49-2461-61-4666 [fax], or R.MENGELS@KFA-JUELICH.DE [e-mail].

September 23 - 27 : 14th Annual International Pittsburgh Coal Conference & Workshop - "Clean Coal Technology and Coal Utilization", Taiyun, Shanxi, China. For information, contact the organizers at 412-624-7440 [phone], 412-624-1480 [fax], pcc@engmg.pitt.edu [e-mail] or visit and browse the website at <http://www.engrng.pitt.edu/~pccwww/>.

September 27 - 30 : Fourteenth Annual Meeting of The Society for Organic Petrology, Lexington, KY. For additional information, contact James Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or browse the website <http://wwwAV.uky.edu/ArtsSciences/Geology/eaapg/welcome.htm>

October 5 -10 : Fourth International Symposium on Environmental Geochemistry, Vail, Colorado. Emphasizing themes of environmental analytical techniques, mine drainage, radiogenic hazards, geochemical monitoring, geomedical research, etc. For additional information and details, please contact Dr. R.C. Severson at 303-236-5514 [phone], 303-236-3200 [fax], iseg@helios.cr.usgs.gov [e-mail], or the web-site at <http://minerals.er.usgs.gov>.

October 19 - 26 : International Committee for Coal and Organic Petrography, Wellington, New Zealand. For additional information, please contact Timothy Moore at 64-4-570-3708 [phone], 64-4-570-3701 [fax], or T.Moore@ctl.co.nz [e-mail].

October 20 - 22 : Second International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.caer.uky.edu/ash/ashhome.htm>.

October 20 - 23 : Annual Meeting of the Geological Society of America, Salt Lake City, Utah. For information, contact the GSA at (303)-447-2020 [phone] Or(303)-447-6028 [fax].

October 28 - 31 : 2nd International Seminar on Improvements in Practices of Oil and Gas Exploration, Lima, Peru. For information, contact Girard Alvarez at 51-14-442500 ext. 1830 [phone] or 51-14-4425587 [fax].

November 2 - 7 : IPS Conference on Peat in Horticulture, its Use and Sustainability, Amsterdam, The Netherlands. For information, contact Wim Tonnis at 31-591-301331 [telephone] or 31-591-301223 [fax].

November 11 - 15 : Fifth Chemical Congress of North America, Cancun, Mexico. For information call (202)-872-4396.

November 18 - 19 : Coal - Science, Technology, Business, Industry, and Environment, Dhanbad, Bihar, India. For information, contact Dr. K.S. Narasimhan, Central Fuel Research Institute F.R.I., PO, Dhanbad, Bihar 828 108, India.

1998

March 22 - 25 : 57th Ironmaking Conference, Toronto, Ontario, Canada. This meeting will be held in conjunction with the 2nd International Congress on the Science and Technology of Ironmaking (ICSTI '98). The abstract deadline is 3/1/97. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://www.issource.org/>.

March 29-31 : Southeastern Section, Geological Society of America Symposium "Applied Topics in Coal Geology", Charleston, WV. A coal field trip is also planned to accompany this symposium. For further information, please contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

March 29 - April 3 : 216th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

April : International Conference on Coal Seam Gas and Oil, Brisbane, Australia. For additional information please contact either Drs. S. Golding at 3365-1277 [fax] / s-goldin@sol.earthsciences.uq.edu.au [e-mail] or Dr. M. Mastalerz at 812-855-2862 [fax] / mmastale@indiana.edu.

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telefax], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyväskylä, Finland.

June 22 - 27 : 8th Coal Geology Conference, Charles University, Prague, Czech Republic. For additional information, please contact Prof. Jiri Pesek at 420-2-21952438 [phone] or 420-2-296025 [fax].

June 30 - July 2 : International Conference on the Formation and Quality of Southeast Asian Coal Deposits, Bandung, Indonesia. Flyer enclosed with this issue. For further information, please contact : Dr. T.A. Moore (64-4-570-3708 [phone], 64-4-570-3701 [fax], T.Moore@crl.co.nz [e-mail]) or Dr. M. Hikman Manaf (62-22-630-558 [phone], 62-22-635-506 [fax]).

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

August 24 - 25 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

September 20 - 26 : International Committee for Coal and Organic Petrography, Porto, Portugal.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

1999

March 21 - 24 : 68th Ironmaking Conference, Chicago, IL. For information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

Fall : International Committee for Coal and Organic Petrography, Bucharest, Romania.

Fall : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, contact either Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.utah.edu).

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For additional information, contact GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

2000

March 26 - 29 : 59th Ironmaking Conference, Pittsburgh, PA. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

August 6 - 11 : Eleventh International Peat Congress - "Sustaining the World's Peatlands", Quebec City, Quebec, Canada.

2001

March 26 - 28 : 60th Ironmaking Conference, Baltimore, MD. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

*What's the Web's hottest organic petrology site?
www.tsop.org.....of course!*

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TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely too. To place orders contact:

Jim Hower
 CAER
 3572 Iron Works Pike
 Lexington, KY 40511
 phone: (606)-257-0261
 fax: (606)-257-0302

An unsolicited endorsement from a satisfied TSOP mug owner:

I just don't know how I got through my life without my two brand-spanking new TSOP mugs. They're sturdy microwaveable, fabulous looking, and are great conversation starters too! I never leave home without them.... You shouldn't either!

**TSOP Archives
 Open for Business!**

The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

Kenneth W. Kuehn
 TSOP Archivist
 Geology, Western Kentucky University
 1 Big Red Way
 Bowling Green, KY 42101 USA

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THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 14, No. 4

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Lexington, Kentucky: Joint TSOP-AAPG (Eastern Section) Meeting September 27-30, 1997



*Field trip participants examine an outcrop
along Interstate Highway 64.*

Field Trip: Cyclic Deposition of Black Shales

*Field trip leaders Barry Maynard (left) and Tom
Algeo (right) of the University of Cincinnati.*



Photos by Jim Hower

The TSOP Newsletter

William Andrews, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette, as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

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For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1997-98 TSOP Council

President	Kenneth W. Kuehn
Vice President	Sharon Crowley
President Elect	Charles E. Barker
Secretary/Treasurer	Lorraine B. Eglinton
Editor	William M. Andrews
Councilor (1996-98)	David C. Glick
Councilor (1997-99)	Maria Mastalerz

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

TSOP web page: <http://www.tsop.org>

Going to a Meeting? Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in promoting TSOP and need some handouts, please contact the following individuals:

For Newsletters:
 William Andrews
 (606)-257-5500 phone
 (606)-257-1147 fax
 wandrews@kgs.mm.uky.edu

For Membership Packets:
 Cortland Eble
 (606)-257-5500 phone
 (606)-257-1147 fax
 eble@kgs.mm.uky.edu



Printed on recycled paper.

**Submission Deadline Next Issue
 10 February 1998**

Letter from the President

Well, it wasn't what we're used to, that's for sure! Our 14th Annual Meeting, held jointly with the Eastern Section of AAPG in Lexington, Kentucky, had more than 450 registrants! There were three simultaneous technical sessions, and a variety of excellent workshops and field trips from which to choose...incredible! The interaction we enjoyed with our colleagues from AAPG did much to enhance the renown of our Society, and the large attendance ensured a financial success as well. Many kudos are owed the entire Organizing Committee, but especially Jim Hower, who served as a General Co-chairman and looked out for TSOP interests throughout the two-year planning process. Jim has also graciously written a summary of the meeting for this Newsletter. If you did not attend this year, you missed out!

My term as your President began on September 29th at the conclusion of the annual business meeting. The Presidency begins my seventh consecutive year of service on the TSOP governing Council and these have been tremendously rewarding ones, both personally and professionally. I appreciate your confidence and I will continue to work diligently on your behalf. I wish to thank and to recognize the efforts of the departing members of the 1996-97 Council: Jeff Levine, President; Charles Landis, Vice President; Jim Pontolillo, Editor; and Ganjavar Khorasani, Councilor. Each contributed significantly to our activities and progress this past year.

At the Incoming Council meeting, I identified two major areas of emphasis for 1997-98. First, our Councilors Dave Glick and Maria Mastalerz will cooperate on the Internet Committee and develop a plan for our effective use of this new information resource. I am especially interested in new ideas for the discussion group; the posting of learning, teaching, and reference materials; and further developing the site as a regular forum for communication among members. We also will establish links to other Societies for information sharing. Why not begin to take advantage of our web site? It's located at (<http://www.tsop.org>). Please contact Dave Glick if you would like to participate in the activities of the Internet Committee.

My second main thrust concerns the ad hoc Membership Drive Committee, chaired by our Vice President, Sharon Crowley. She will work with President-elect, Charles Barker, to bring in new members and to broaden our membership base geographically. Right now, we have approximately 270 listed members, but we can do better! If you wish to participate in these activities, contact Sharon; she will appreciate your help! If you have friends and colleagues who may be interested in joining TSOP

please direct them to her, or to Cortland Eble, who chairs our regular Membership Committee.

Looking ahead this year, I foresee many positive developments for the Society and I will keep you informed of Council's progress. I encourage your involvement in any of our Committees, and in all of our activities. Please mark your calendar and join us at our 15th Annual Meeting (July 26-28, 1998) to be held in Halifax, Nova Scotia. P.K. Mukhopadhyay (Muki) is leading the Organizing Committee and I'm sure we'll enjoy many new and unique experiences as his guests in this exciting venue! Best wishes for a healthy and prosperous 1998!

In your service,

Kenneth W. Kuehn
1997-98 President



Outgoing President (1996-97) Jeff Levine at the TSOP luncheon.

14th Annual Meeting of The Society for Organic Petrology 26th Annual Meeting of the Eastern Section, American Association of Petroleum Geologists

Lexington, Kentucky, 27-30 September, 1997

TSOP and the Eastern Section of the American Association of Petroleum Geologists combined their annual meetings for the first time in September in Lexington, Kentucky. TSOP had met in Lexington in 1986 and 1991 while AAPG had not visited the city since the 1970's. The combination of interests was of mutual benefit to the societies, drawing 456 registrants to the combined meeting.

The TSOP functions started with a pre-meeting field trip and core workshop led by Tom Algeo and Barry Maynard of the University of Cincinnati. The Saturday field trip, conducted in perfect weather, ventured east of Lexington to study Devonian, Mississippian, and Pennsylvanian black shale sequences. The Sunday workshop provided the opportunity to further study shale cores.

TSOP sessions included the Coalbed methane symposium (featured elsewhere in this newsletter) chaired by Paul Lyons, an organic petrology and geochemistry session chaired by Suzanne Russell, a coal petrology session chaired by Cortland Eble, and a general session and research committee panel discussion chaired by Carolyn Thompson-Rizer. TSOP also sponsored a poster session concurrent with the Tuesday sessions. TSOP sessions were hindered somewhat by "no show/no cancellation notice speakers," an epidemic many meetings are facing. Our solution was to have several substitute speakers available, all willing to come to the meeting prepared to give a talk but not knowing if they would be able to speak. Special thanks to Marc Bustin, Mitch Blake, Cortland Eble, Jeff Levine, Charles Barker, and poster presenters Esual Gutierrez and Jose Perez, who joined me in filling holes in the program created by the no-shows. Apologies to everyone anticipating a talk not given.

A meeting this size cannot succeed without the participation of an active planning committee. Jim Drahovzal and I thank everyone involved in making the first TSOP/Eastern AAPG meeting a greater success than we ever imagined possible.

Jim Hower
1997 Annual Meeting General Co-chairman

This very successful meeting was characterized by an impressive number of available activities spanning four days, September 27-30, 1997. Pre-meeting field trips and workshops took place all day Saturday and Sunday. Although many TSOP attendees were participating in field trips or still traveling, the meeting began on Sunday afternoon with an Opening Session and Awards Ceremony. Jeff Levine reportedly wowwed the crowd during his Presidential Address, using color photomicrographs to illustrate the variety of techniques used in and the detailed information revealed by organic petrography. Sunday evening's meeting registration was concurrent with a well-attended icebreaker, with music, food, and the opportunity to visit with the many exhibitors.

Monday morning began with a breakfast for all those presenting, presiding, or judging in the technical sessions. Once the technical sessions started, the parallel AAPG and TSOP sessions afforded the opportunity to choose between talks on a variety of topics, and poster sessions provided another appealing alternative. The variety of backgrounds represented among the large audiences was another illustration of the breadth of this meeting.

The first TSOP session, on Coalbed Methane in the Appalachian Basin, covered resources from Alabama to Pennsylvania and Nova Scotia, with comparisons to fields on other continents as well. See the article in this issue for more detailed coverage.

The TSOP luncheon was held in the Kentucky Restaurant within the Heritage Hall conference complex. After lunch, Jeff Levine presided at the annual Business Meeting. Jeff introduced the other current Council members who were present. He then spoke briefly about TSOP's third visit to Lexington for this meeting, and expressed thanks to Jim Hower for his contribution to organizing all of those meetings, particularly the current one. Jeff reported that his year as President had been a busy one, that TSOP is on a steady course and is financially quite sound.

Ken Kuehn presented the Secretary-Treasurer's report for Lorraine Eglinton, who could not attend. Meeting Committee reports were presented, and the status of proceedings volumes resulting from past meetings were reviewed. The Organic Geochemistry volume from the 1994 Jackson meeting has been mailed. The

Woodlands meeting proceedings from 1995 will be the first of a series to be published in the International Journal of Coal Geology, and will be printed in December. The 1996 Carbondale proceedings volume preparations are moving along well. From the current meeting, proceedings of both the Coalbed Methane session and the general meeting will be published.

Other reports were presented by David Glick for the Liaison and Internet Committees, Cortland Eble for Membership, Carolyn Thompson-Rizer for Research, and MaryAnn Malinconico for Outreach. The Honorary Member Selection Committee had been active, but no Honorary Memberships were awarded this year.

The members present voted on four amendments to the Bylaws; they involved accepting Canadian funds, expanding Council discussions to electronic media, reporting of Ballot Committee vote counts, and appointing of Committee chairs. All were passed.

Members, both new and continuing, of the incoming Council for the year were introduced. Jeff Levine thanked the membership for the opportunity to serve as president of TSOP, noting that he had found it worthwhile and enumerating some of the positive accomplishments which had taken place during his term. He then turned the meeting over to incoming president Ken Kuehn.

The Monday afternoon TSOP session was on Organic Petrology and Geochemistry, with Suzanne Russell presiding. A concurrent session on Coal Resource Assessment and Public Policy also drew many TSOP members. In addition to geological aspects, it included views from those studying public policy and economics in coal-producing areas. Poster sessions were conducted all day Monday and Tuesday.

Monday evening's enjoyable social hour and dinner, strikingly large by TSOP meeting standards, was followed by traditional Bluegrass music and entertainment from Homer Ledford and the Cabin Creek Band.

On Tuesday, TSOP again held a coal-oriented session in the morning and a geochemistry and organic petrology session in the afternoon, and TSOP members presented papers in concurrent sessions as well. Throughout the meeting, the potential problem of no-show speakers was solved by the organizers, as they took the opportunity to invite substitute presenters. These turned out to include some very well organized and stimulating talks.

Awards Committee Chair Maria Mastalerz presented TSOP's Outstanding Student Paper Award to Mark Obermajer, for his presentation "Acritarch fluorescence

as a new thermal maturity indicator." The less official but now traditional Farthest Traveled Award went to N. Tsuzuki, from Chiba, Japan.

Within the TSOP sessions, the grand finale on Tuesday afternoon was a well attended Research Committee Panel Discussion with extensive audience participation. It covered the job situation in organic petrology, activities of the Research Committee, and use of the Internet. Details can be found elsewhere in this issue.

For those interested in further information, as of this writing the meeting web site with abstracts was still accessible at <http://www.uky.edu/ArtsSciences/Geology/eaapg/welcome.html>.

Dave Glick
TSOP Councilor



Mark Obermajer - Best Student Paper Award



Naohide Tsuzuki - Farthest Traveled Award

Report on Appalachian Coalbed Methane Symposium

There has been increasing interest in Appalachian Coalbed methane (CBM) since 1980, when commercial production began in the Black Warrior Basin of Alabama. In 1988, commercial CBM production began in the Southwest Virginia coal fields. About 147.8 Bcf (billion cubic feet) of CBM was produced in the Appalachian Basin (including the Black Warrior Basin) in 1996, which makes it the second largest CBM-producing basin in the world. The San Juan Basin of Colorado and New Mexico is the leading CBM-producing basin.

Seven presentations on Appalachian Coalbed methane were given in a symposium at the Eastern AAPG-TSOP Joint Meeting (Lexington, Kentucky, September 27-30, 1997). The symposium was sponsored by The Society of Organic Petrology (TSOP) and was organized and chaired by Paul C. Lyons of the U.S. Geological Survey. An article on Appalachian Coalbed methane (Oil & Gas Journal, July 7, 1997) was distributed during the symposium and is available from Paul Lyons (e-mail: plyons@usgs.gov).

An unscheduled talk entitled "Maximizing production and profitability without tax credit incentives, White Oak Creek Field, Alabama" was presented by Jeffrey R. Levine, GeoMet, Inc. Jeff reported on the development of about 170 CBM wells in the Black Warrior Basin that have average production close to 300 Mcf/day. He described how costs are kept down and how faulting and permeability are related. This talk highlighted the interference of water production with gas production during the first 12 months of operation while demonstrating that CBM development can be economic without federal tax incentives. A companion talk by Richard Carroll and Jack Pashin of the Geological Survey of Alabama focused on the tectonic and hydrologic influences on CBM development in the Warrior and Cahaba coal fields of Alabama. They showed that the greatest CBM production is in the southeastern edge of the Warrior field, where the coal ranks are as high as low volatile bituminous. There is also a relationship between CBM production and structure and basin hydrology in the Warrior field.

The application of high pressure adsorption/desorption isotherms to reservoir capacity and drainage was the subject of the presentation by C.R. Clarkson and R. M. Bustin of the University of British Columbia. On the basis of data from the Permian coal beds of the Sydney Basin of Australia and Lower Cretaceous coals of Canada, a comparison of desorption and adsorption data indicates that these coals are undersaturated with Coalbed gas and that erosion or other factors appear to have changed

the adsorption capacity after equilibrium was established. Higher reservoir temperature, inertinite and moisture contents, and higher ash yields have a negative relationship on the methane adsorption capacity of a coal bed, as opposed to vitrinite content and rank that are positively related to adsorption capacity.

CBM development in the Virginia portion of the central Appalachian basin was presented by Jack Nolde and David Spears of the Virginia Division of Mineral Resources. High-gas-content of Lower and Middle Pennsylvanian coals, thick overburden, favorable state regulations, and federal tax incentives were the major factors in CBM development in Virginia, where there are 821 CBM wells that contribute about 61% of the gas production in Virginia. The forced pooling legislation (Virginia Gas and Oil Act of 1990) that resolved ownership disputes was a major factor in CBM development.

A joint paper by Toni Markowski of the Pennsylvania Geological Survey and David Matchen representing the West Virginia Geological and Economic Survey summarized exploration and development of CBM in Pennsylvania and northern West Virginia. A regional study in the northern Appalachian basin, where there is an estimated 61 Tcf (trillion cubic feet) of CBM in place, indicated that the most promising interval for CBM development is within the "operational" Middle Pennsylvanian Allegheny Formation, which includes the Kittanning and Freeport coal beds. The principal development and production is in Indiana County, PA, where about 30 CBM wells are producing from this interval. Ash yield, structure, overburden depth, rank, and petrographic composition are factors that were noted as favorable for CBM development in the northern Appalachian basin.

P.K. Mukhopadhyay summarized the CBM potential of Appalachian coals in Nova Scotia. These Pennsylvanian coals have an adsorption capacity generally greater than 300 Scf/ton that increases with coal rank from high volatile to medium volatile bituminous. A new model suggests that various types of micro-cleat porosity, maceral porosity, and maceral composition are related to permeability and methane generation.

The final talk in the symposium entitled "Coalbed methane in Kentucky" was presented by Brandon Nuttall and co-authors from the Kentucky Geological Survey and the Center for Applied Energy Research. The results of early desorption tests had suggested that there was little potential for CBM development in Kentucky.

However, coal depth (as much as 2000 ft locally), rank, and structure indicate that there are favorable areas for development in both western Kentucky (Illinois basin) and eastern Kentucky (Appalachian basin). There is ongoing CBM exploration that suggests that Kentucky is a frontier region for CBM development. More data need to be gathered to determine the potential of Kentucky coals.

Discussion dealt with issues such as CBM ownership, the federal tax credit for unconventional fuels, and geologic and technological factors in CBM development. The scheduled papers in the symposium and a few others will constitute a special issue of the International Journal of Coal Geology. The papers will probably be published in 1998 by Elsevier Science (Amsterdam). Paul Lyons is the guest editor.

Paul C. Lyons
 U.S. Geological Survey
 M.S. 956 National Center
 Reston, VA 20192

Research Subcommittee Reactivated

The TSOP Subcommittee on source rock dispersed organic matter characterization was reactivated at the 14th Annual Meeting, Lexington, KY, with the objective of creating a standardized classification of dispersed organic matter. Also, the subcommittee will interface and cooperate with a similar effort underway with the ICCP working group on dispersed organic matter: convenors Adrian Hutton, Lavern Stasiuk and Jack Burgess.

The TSOP participants are Carolyn Thompson-Rizer and Brian Cardott. We would encourage interested members from either organization participating in this exercise to contact Carolyn Thompson-Rizer. Discussion of the Research Committee's plans for the classification may be reviewed on our website (<http://www.tsop.org>). We plan to utilize the website as a means of communication with working group members.

Qualifications for the working group include genuine desire to help perform round-robin exercises, have fluorescence microscopy capability for liptinite and bituminite identification, and willingness to photographically document maceral identifications.

Jack Burgess

* * * * *

Research Committee Discussion: The Health and Future of Organic Petrology

The Research Committee held a discussion session, on "the health and future of organic petrology," in the afternoon of Sept. 30 at the joint E-AAPG and TSOP meeting in Lexington, KY. About twenty five people participated for approximately one and a half hours, which was amazing considering that the last time slot of the second day is often when people start traveling. A panel of four, representing academia, Dr. Alan Davis; industry, Suzanne Russell; and government, Sharon Crowley and Brian Cardott; helped to get the discussions started.

The first topic of discussion was "Jobs in the 90's" with opening statements commenting on the new positions in the oil and gas industry for biostratigraphers, basin modelers, and organic geochemists. Alan Davis told us that from the university perspective hiring did appear to be up and recruiters appear to value graduates with good communication skills and computer know-how. Also, second languages are important as overseas assignments are becoming more common. He cautioned that to survive, the new hire must be multi-skilled and

able to easily switch among skills as the job market changes.

Sharon Crowley explained that the US Geological Survey Branch of Coal Resources currently has the high priority National Coal Assessment underway, a project which involves the creation of numerous digital databases (stratigraphy, chemistry, etc.) which will ultimately go onto the Internet and/or CD ROMs. There is some hiring of GIS people on two- to four-year term appointments; obviously computer experience is important. Harold Gluskoter, current Branch Chief, is hopeful that soon there will be opportunities for post docs working in the Branch, although he remains concerned about the government's support of basic coal research. The oil and gas branch is bigger and located in Denver, and no one was able to comment on the current job related activities there.

Suzanne Russell shared some of her opinions regarding the current hiring of three geochemists at Shell USA, all foreign nationals as there were no US candidates. Shell has also started a retention program for three years to

help stabilize the work force. In frontier exploration areas petroleum system and basic source rock evaluation are still important. In mature areas, such as the Gulf of Mexico, hydrocarbon characterization, show analysis, reservoir connectivity via biomarkers, and production support by determining the origin of organic deposits (waxes, asphaltenes) in wells and pipes are in demand. Coming challenges include predicting hydrocarbon properties away from the well (models) and improved tools to analyze small and often contaminated samples. Industry must maintain vital university programs for training organic geochemists and organic petrologists in the USA.

The impending retirement of Dr. Davis from Penn State was discussed with Suzanne putting forward the idea of an industry-funded Chair (\$1 million) for organic petrology at Penn State, which allows for much interdisciplinary exposure. The university sees little need for such a program; the past job instability has created the low enrollment. Mark Bustin added that the University of British Columbia has many students and should be considered for the chair. Student fellowships may be another way to support organic petrology. Maria Mastalerz commented that Indiana University at Bloomington has about five to ten graduate students, and there is a need for more organic geochemistry background. Sue Rimmer added that University of Kentucky supplied a geochemist student to Maria (which Suzanne mentioned was supported originally by Shell) and that they too would like consideration for the chair. She went on to say that UK has a difficult time keeping students interested in its coal program, a situation compounded by the fact that UK's coal program plays such a large role in the community. Student fellowships at multiple schools may help. It was noted by William Andrews that the student projectionist/helpers at the Lexington meeting preferred to work the AAPG oil and gas sessions rather than the TSOP sessions. Renee Symanski suggested that TSOP should go to the universities which have organic petrology programs to meet and recruit members, that TSOP should establish a grant program to help fund student research projects, and that TSOP should consider establishing a "distinguished lecturer" through AAPG to publicize the use of organic petrology.

Brian Cardott started the next topic of discussion on the "role of TSOP in visual kerogen standardization." He made the audience aware of the current "function of the TSOP Research Committee is not to standardize procedures for everybody to follow in a strict sense. Rather, it is to recommend general procedural guidelines for terminology, analysis, and presentation of results. This should help to improve interlaboratory data comparability and reproducibility " as described in the

Procedures Manual. Discussion centered on the roles of TSOP and ICCP in the classification of dispersed organic matter. Jack Burgess will attend the October ICCP meeting in New Zealand and try to follow-up on the work that John Castaño had started within ICCP on a classification system. Several people mentioned the desire for TSOP not to duplicate round robin sample analyses of ICCP and ASTM. Muki stated that we need a jointly agreed upon nomenclature, perhaps something similar to the Canadian Geological Society handbook/glossary which lists several equivalent names. It was noted that it may take many years to finalize nomenclature for a dispersed organic matter atlas. Jeff Levine felt that TSOP could work on this if there is a groundswell of members who can devote time. Alan Davis suggested that perhaps, the best path would be for TSOP and ICCP to work together. There are several people who are members of both organizations (it only costs \$20 to join either one) and they may be the people most interested in solving the nomenclature situation. *Brian Cardott is continuing the discussion on this subject on the TSOP website (<http://www.tsop.org>). If you care about classification, please share your thoughts with other TSOP members.*

A brief discussion about TSOP and the Internet yielded the following ideas: use it to teach the dispersed organic matter classification; to share kerogen isolation techniques, to advertise more in-depth packages of information, which might be marketable, such as photo atlases, etc. (Muki), although too much marketing can be discouraging to students (Bustin); to help find and fund student fellowships in organic petrology (Russell); public relations and making organic petrology more visible; and to explain the basics of what we do on our website (Rimmer). Once again the idea of a distinguished lecturer to spread our discipline to structural geology and basin modeling students and practitioners was discussed. Teaching TSOP short courses connected to a AAPG meeting (Russell) and/or to basin modeling (Thompson-Rizer) was mentioned. Bustin's website (<http://borg.geology.ubc.ca>) is inundated with students; so should be TSOP's website (<http://www.tsop.org>). Oddly, a show of hands indicated most people in the room had logged onto TSOP website but they left no "footprints," or comments because most were disappointed by the lack of things to read or do. So let's start putting stuff on our website. Brian's discussion about TSOP and nomenclature was an obvious choice. Jeff Quick has a bibliography on suppressed vitrinite reflectance which can go on. Other items are welcome!! Our new Editor William Andrews asked about putting the newsletter on the website and there was considerable discussion, but no final decision.

Even our membership directory would be convenient there, but privacy fears may prevent that. Membership

passwords or keys may help protect some items. Our website could entice more people to join to be able to access the detailed information.

After 90 minutes of lively and fun discussion, I ended the event, thanked the audience for their outstanding participation, and thanked the panelists with chocolate Kentucky souvenirs. Immediately, there was a demand for a similar discussion session at the next TSOP meeting in Halifax!

Carolyn Thompson-Rizer
Research Committee Chair



Carolyn Thompson-Rizer

* * * * *

1997 TSOP Council Meeting Summaries

Outgoing Council

Recorded by Carolyn Thompson-Rizer and David Glick for Lorraine B. Eglinton, Secretary-Treasurer.

The 1997 outgoing council meeting was held on September 28th, 1997, at the Hyatt-Patterson H, Hyatt Regency Hotel, Lexington, Kentucky. President Jeffrey Levine called the meeting to order at 8:43 p.m. EDT.

Attendees:

Jeffrey Levine, *president*; Kenneth Kuehn, *president-elect*; Charles Landis, *vice-president*; Dave Glick, *councilor*; Cortland Eble, *membership committee chairperson*; MaryAnn Malinconico, *outreach committee chairperson*; Carolyn Thompson-Rizer, *research committee chairperson*; Roger Trader, *ballots committee chairperson*; Jim Hower, *1997 annual meeting committee chairperson*; Jack Crelling, *1996 annual meeting committee chairperson*; Prasanta Mukhopadhyay, *7998 annual meeting committee chairperson*; Jeff Quick, *7999 annual meeting committee chairperson*; Charles Barker, Sharon Crowley, Maria Mastalerz, William Andrews, Brian Cardott and Margaret Ann Rogers.

Minutes from the 1997 Mid-Year Council Meeting, held at the USGS Reston, Virginia, were unanimously approved with some emendations.

Annual meeting reports:

- 1997: Jim Hower, chairperson, Lexington, Kentucky, stated the joint-meeting registration was 434. Only three TSOP student papers had been submitted. ES-AAPG will skim 50% of any profit the meeting generates; TSOP and Kentucky Geological Society will skim 25% each. 100% of any loss will be borne exclusively by ES-AAPG.

- 1998: Prasanta Mukhopadhyay, chairperson, Halifax, Nova Scotia, reported the registration fee is set at \$135 USD (\$165 CAN). Student registration is still under consideration. The field trip is still being planned. TSOP homepage will have updated information and can be used to access hotel information. There are no special hotel rates for hotels close to the venue but cheaper hotels and university halls of residence are available with bus transportation to the meeting site. Tourist brochures will be available with the registration package.
- 1999: Jeff Quick, chairperson, Salt Lake City, Utah, stated the site will be the Snowbird Resort about 25 miles from Salt Lake City. A pre-meeting workshop on either biomarker geochemistry or sedimentary organic matter will be planned by Dave Wavrek and Richard Tyson (Newcastle Research Group, UK) respectively. A post-meeting field trip is still in the planning and feasibility stage. Jeff will be very appreciative of help from TSOP members to expedite planning and organization of the meeting.
- 2000: Maria Mastalerz, chairperson, Bloomington, Indiana. Maria is trying to get more involvement from geochemists. A short-course on geochemistry of Indiana cyclic sediments and New Albany oil shale will be taught by Lisa Pratt. TSOP membership is set at \$145, but the student fee is still undecided. Meeting rooms will cost in the range of \$60 - 70. Two special sessions on geochemistry and petrography are under consideration. Jim Hower will check for any date conflicts with other meetings before a date is set.

Publications report

The 1996 meeting proceedings will be dedicated to Peter van Gijssel, as was the wish of John Castaño who edited the volume up to his death. Jack Crelling will write a statement about John Castaño's bereavement to be included as an editor's note along with a photograph of John in that volume of Coal Geology. The note will mention that John will be honored at the 1998 Halifax meeting.

Jim Hower will make a formal agreement with Coal Geology for publication of the proceedings from the Halifax meeting.

AAPG-TSOP Coal Geology CD-ROM Atlas. Margaret Ann Rogers (president of AAPG-EMD) stated all funds (\$13,000) have been procured by the publishers. It will be a 2-volume CD-ROM with no hard copy and will be on sale for about \$30-40. Margaret hopes to release the volume at the 1998 AAPG meeting in Salt Lake City. She hopes that once the product is complete AAPG will fund additional reproductions.

Brian Cardott reported that only two orders had been placed for TSOP publications this year. He pointed out an error in the Jackson Hole proceedings volume cover which had 12th annual meeting instead of the 11th annual meeting. No TSOP publications were on sale at Lexington or at Dallas AAPG.

Ballot committee Report.

Roger Trader reported the results of the 1997 ballot. The results are as follows:

- President-elect: Charles E. Barker
- Vice-president: Sharon S. Crowley
- Councilor: Maria Mastalerz
- Editor: William Andrews, Jr.

Membership committee report

Cortland Eble reported on committee affairs. A membership brochure is available. 1100 TSOP brochures were printed and 400 distributed at the Lexington meeting. The 1997 TSOP membership directory will be published at the end of 1997 or the beginning of 1998.

Honorary member awards committee

Charles Landis presented his report and described problems he encountered with the current process. Council adopted Ken Kuehn's motion to use five criteria to improve the process. These are the following: 1) input will be solicited via newsletter, 2) eligibility criteria will be defined and published in the newsletter, 3) notification of honorary members will occur only after

their selection, 4) a sponsor of a nominee will write a vitae, not the nominee, and 5) non-selected nominees will be kept on lists for future consideration.

Research committee report

Council deferred approval of the revision of the research committee section of the procedures manual to the incoming council meeting. Also deferred was the discussion of a student grant program similar to AAPG and GSA to support research in organic petrology.

Outreach committee report

The AAPG booth at Dallas was a success. Thirty membership letters were sent to individuals showing a strong interest in the Society. One new industrial sustainer from Humble Instruments resulted from the booth. Taking into the account the financial outlay, MaryAnn recommended that this type of venture be carried out on an irregular basis at carefully chosen major events.

Eight industrial Sustainers (an all-time high) were pledged by Amoco, Conoco, Unocal, Shell, Phillips, American Colloid, Texaco and Arco.

The committee and Prasanta Mukhopadhyay are planning announcements for the 1998 annual meeting in Halifax.

Secretary's-treasurers report

Ken Kuehn reported on behalf of Lorraine Eglington.

A financial statement covering the period from January 1, 1997, to June 30, 1997, was presented. On June 30, 1997, TSOP's Wells Fargo checking account balance was \$14,400.56, and the Vanguard account balance was \$14,685.90. The total assets of the society on this date were \$29,086.46.

A statement of membership listed 204 paying (voting) members. Discussion of IRS tax issues was deferred to the incoming council meeting.

President's report

Jeff Levine presented a summary of nine votes taken by council by Email.

Council approved the following motions:

- 1) TSOP's sponsorship of Coal Geology Symposium for SE GSA,
- 2) proposal to offer 10% discount on publications at AAPG booth,
- 3) allocation of \$400 for printing TSOP brochures,
- 4) allocation of \$400 for the group photograph at the Lexington meeting,
- 5) increasing TSOP's contribution to the CD-ROM atlas publication to \$2000,

- 6) amendment to Article III, Section 6 of the Bylaws,
- 7) amendment to Article V, Section 3 of the Bylaws,
- 8) amendment to Article VII, Section 2 of the Bylaws,
- 9) amendment to Article XI, Section 2 of the Bylaws.

Jeff Levine will amend procedures to include a method for officially recording these council decisions into minutes of an official council meeting.

Levine read letters mailed to Loretta Castaño expressing condolences on behalf of TSOP on the death of John Castaño. Jeff then read a letter sent to Dr. MacGreggor of the USGS, commending the contributions made to TSOP by outgoing Editor James Pontolillo.

Internet and Liaison Committee reports were deferred to the incoming council meeting.

There being no further business, a Landis/Kuehn motion to adjourn at 12:13 a.m. EDT passed unanimously.

1997 Incoming Council

Attendees:

Kenneth W. Kuehn, President; Charles Barker, President-elect; Sharon Crowley, Vice President; David Glick, Councilor; Maria Mastalerz, Councilor; William Andrews, Editor; Brian Cardott; Jeff Levine, Past President; Mary Ann Malinconico, Chairperson, Outreach Committee; Prasanta Mukhopadhyay Chairperson, 1998 Annual Meeting Committee; Carolyn Thompson-Rizer, Chairperson, Research Committee; Suzanne Russell.

1. President Ken Kuehn announced the Committee Chairpersons for 1997-98:
 Nominating Committee - Jeff Levine
 Ballot Committee - Roger Trader
 Research Committee - Carolyn Thompson-Rizer
 Outreach Committee - Mary Ann Malinconico
 Membership Committee - Cortland Eble
 Honorary Member Selection Committee - Sharon Crowley
 Awards Committee-Maria Mastalerz
 Internet Committee - David Glick
 Liaison Committee - David Glick
 1998 Annual Meeting - Prasanta Mukhopadhyay
 1999 Annual Meeting - Jeff Quick
 2000 Annual Meeting - Maria Mastalerz

2. As of June 30, 1997, TSOP's checking account balance was \$14,400.56 and TSOP's Vanguard account balance was \$14,685.90 for a total of \$29,086.46. The proposed operating budget for 1997-98 was amended and approved at \$14,900.

3. Jim Hower reported on the 1997 Annual Meeting held in Lexington, Kentucky, noting that 462 people were registered and that a profit is expected for TSOP.

4. Prasanta Mukhopadhyay reported on the 1998 Annual Meeting to be held in Halifax, Nova Scotia, July 26-28. The meeting now has a web page that features on-line registration. Fees will be finalized at the midyear Council meeting. Home page for the meeting:
<http://agc.bio.ns.ca/tsophalifax98>

5. Carolyn Thompson-Rizer, Chairperson, Research Committee, will develop a proposal for Council to enable TSOP grants for students.

6. Cortland Eble, Chairperson, Membership Committee, reported that TSOP presently has 270 members on the books.

7. Maria Mastalerz, Chairperson, Awards Committee, reported that the 1997 awardee for Best Student Paper was Mark Obermajer. The Longest Traveled Award went to Naohide Tsuzuki from Japan.

8. President Ken Kuehn made various assignments to Council, placing special emphasis on developing the Society's internet communications and increasing Society membership for 1998.

TSOP is looking for meeting sites for 2001 and beyond. Anyone wishing to host a meeting is invited to contact Jim Hower (hower@caer.uky.edu).



TSOP - Halifax '98



Joint Annual Meeting - July 26-30, 1998
The Society for Organic Petrology (TSOP)
Canadian Society for Coal Science and Organic Petrology (CSCOP)

"Sailing into the New Millennium "

Meeting Announcement and Call for Papers

Venue: **World Trade and Convention Centre, Halifax, Nova Scotia, Canada**

TECHNICAL SESSIONS: Special Symposia

Monday, July 27th, am: Symposium I - Environmental Implications of Fossil Fuel Use

Tuesday, July 28th: **John Castaño Memorial**

Symposium II - Depositional Environment of Coal and Petroleum Source Rocks

Symposium III - Maturation and Hydrocarbon Generation from Petroleum Source Rock and Coal:
World Basin Perspective.

General Sessions: Monday, July 27th, pm - Coal/Organic Petrology and Geochemistry

Poster Sessions: Sunday, July 26th, evening to Tuesday, July 28th, noon.

ABSTRACT DEADLINE: *April 1, 1998.*

You can send your abstract by post (on diskette in Word or WordPerfect) or electronically (see web site).
For technical session enquiries contact: **P.K. Mukhopadhyay (Muki)** or **J.H. Calder**.

SHORT COURSES, FIELD TRIP AND GUEST PROGRAMS

Short Courses: Sunday, July 26th

am: Forensic Geochemistry (Instructors: Prof. I. Kaplan; Dr. M.H. Alimi)

pm: Apatite Fission Track Analysis (Instructors: Prof. M. Zentilli; Mr. S. Grist; Mr. M. Graves)

Field Trip: July 29-30th: Bay of Fundy area (two days with overnight in Amherst, NS) : Tentative Schedule

Wednesday: Lr. Carboniferous (Horton Bluff and Cheverie) - petroleum source and reservoir rocks

Thursday: Up. Carb. (Joggins Section) - coal seams, fossils, environmental aspects and sedimentary sequence

Guest Programs: (Details to be announced; Tentative Schedule)

Panoramic trip to Peggy's Cove, South Shore and Lunenburg; Walking tour of Halifax water front area;
Lobster Supper on Halifax Harbour Cruise.

TSOP - Halifax '98 web page address: <http://agc.bio.ns.ca/tsophalifax98> The site will contain the most current meeting and accommodation information as well as provide online registration and abstract submission.

Join us in Halifax

Conveners

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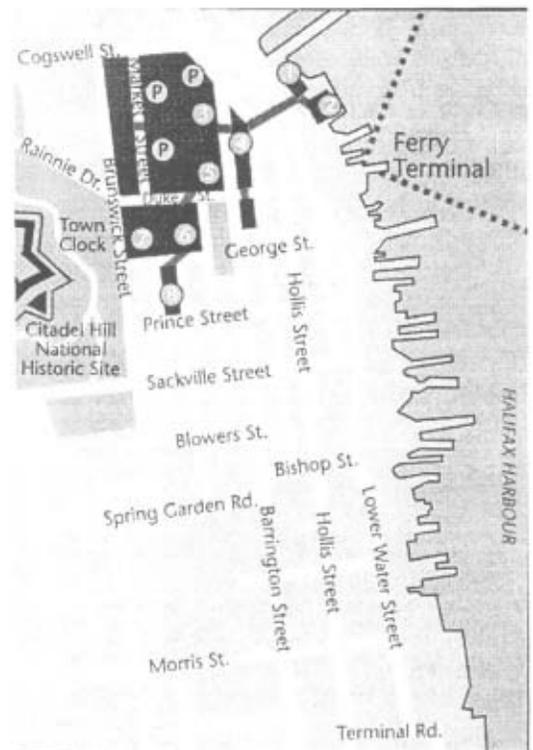


View of Halifax Harbour / Skyline

World Trade and Convention Centre, Halifax, Nova Scotia, Canada

July 26-30, 1998

Map of section of downtown Halifax showing location of World Trade and Convention Centre and designated hotel, Prince George (see legend below).



Guide To Halifax Downtown Pedway/Tunnel System

- | | |
|---------------------------------|---------------------------------|
| Parking | Pedways / Tunnels |
| Xerox Building | Scotia Square |
| Sheraton Halifax Hotel & Casino | World Trade & Convention Centre |
| Hotel Halifax-CP Hotels | Metro Centre |
| Delta Barrington | Prince George Hotel |

Meeting Review: 1997 International Ash Utilization Symposium

Lexington, Kentucky, October 20-22, 1997

More than 320 coal and coal ash researchers from 24 countries gathered in Lexington for the second biennial ash utilization symposium. Sessions were devoted to a diverse set of topics including cement and concrete, new products, agricultural applications, environmental aspects of ash, legal and regulatory issues, haulback of ash to mine sites, high carbon ash, dry separation technologies, and chemistry and mineralogy of ash.

issues surrounding coal ash, including the utilization or disposal of coal combustion by-products (CCB), may, at first glance, appear to be distant to organic petrographers. Coal petrographers, however, do concern themselves with the whole coal, including the mineral matter. The nature of the carbons remaining in the fly ash is also of particular concern in the utilization of the ash.

The evolution of clean air regulations in the US and elsewhere has had a marked effect on the quality of the by-products of coal combustion. No change in combustion practices made in response to a mandate to improve air quality, be it SO₂, NO_x, particulates, or toxic trace elements, can be accomplished without influencing coal combustion by-product quality. This meeting brought out many in the coal characterization community, including several TSOP members, to present research on varied aspects of CCB quality and utilization. The impact of coal chemists and petrographers on the quality of research on CCBs, still a relatively new science, should continue to be positive, particularly in industry-dominated forums such as this meeting.

The third ash utilization symposium will be held 18-20 October, 1999. Information on this meeting will be available at <http://Uwww.flyash.org>

Jim Hower

Membership Committee Report

Cortland F. Eble

It was good seeing many of you at the TSOP/AAPG meeting in Lexington. I am in the process of assembling the new membership directory and would greatly appreciate having any changes to members' addresses, phone/FAX numbers or URL's sent to me before Christmas. Thanks.

In addition, the following people have petitioned for membership in TSOP:

Dr. Christopher Toles
USDA-ARS-SRRC
1100 R.E. Lee Blvd.
P.O. Box 19687
New Orleans, LA 70179

Ms. Aleksandra Moch
370 Washington Blvd.
Stamford, CT 06902

Dr. Mark Obermajer
Geological Survey of Canada
3303-33rd Street NW
Calgary, Alberta T2L 2A7
CANADA

Dr. Gerald R. Friedman
P.O. Box 746
Troy, NY 12180

Please note the following change for Carolyn L. Thompson-Rizer:

Phone:281-298-3160
fax:281-293-3883
carolyn.thompson-rizer@usa.conoco.com

Congratulations to Dr. Barry Ryan, who was recently accepted as a new member of TSOP. Dr. Ryan is a coal geologist.

Dr. Barry D. Ryan
Geological Survey Branch
BC Ministry of Employment and Investment
PO Box 9320
Victoria BC, V8W 9N3, Canada
Phone:250-952-0418
fax: 250-952-0381
bryan@galaxy.gov.bc.ca

Meeting Review: 49th Meeting of the International Committee for Coal and Organic Petrology (ICCP)

Wellington, New Zealand, October 20-24, 1997

The 49th Meeting of the ICCP was attended by 38 participants from 15 countries: Australia (11), Spain (5), Germany (4), UK (4), USA (2), New Zealand (2), Denmark (2), and one each from Brazil, Poland, Portugal, Romania, S. Africa, Mozambique, Netherlands, and Canada. This was the first time in the history of the ICCP that its meeting was held in New Zealand, which is well known for its Tertiary and Cretaceous coals.

Rudi Schwab (UK) was elected the new Treasurer of the ICCP and Rosa Menendez (Spain) was re-elected as Secretary of Commission III. Eleven new associate members and two full members were approved for membership, which brings the membership of the ICCP to 278, representing virtually all of the coal-producing countries of the world.

Commission I was chaired by Alan Cook (Aus.). The accreditation program is now in full swing thanks to the leadership of Aivars Depers (Aus.). There are 31 laboratories throughout the world awarded accreditation by the ICCP based on analyses of six well-characterized coals. Certificates will be awarded in 1998 and will last for 2 years, after which the laboratories re-apply for accreditation by measuring two additional coal samples. The Standardization Working Group (WG) reported that there was a difference of 0.02% reflectance in the same glass standards manufactured by the same company. There was discussion that some of this variance may be due to temperature differences in the immersion oils in the various laboratories. The Inertinite WG met under the leadership of Monika Wolf (Germ.). Paul Lyons (USA) gave a presentation on the two new inertinite macerals—secretinite and funginite—which replace the abandoned maceral sclerotinite. The writeups for these two new macerals and the other five inertinite macerals (fusinite, Semifusinite, inertodetrinite, macrinite, and micrinite) were given approval in principle for the new ICCP Handbook by members of Commission I. This is the first major revision of the classification of the inertinite macerals in about 30 years. Paul Lyons (USGS, MS 956, Reston, VA 20192) requests that he be sent photographs of secretinite and funginite to be considered for the new ICCP Handbook. The size limit for inertodetrinite was placed at $<10\ \mu\text{m}$ and the size limit for micrinite placed at $<2\ \mu\text{m}$. At the next ICCP meeting, photographs will be added to the writeups for the seven inertinite macerals. Colloresinite was added to the Liptinite Maceral Group, although A.H.V. Smith (UK), who proposed the maceral and wrote the description, maintains it belongs in the Vitrinite Maceral Group.

Mineral bituminous groundmass was taken out of the Liptinite Maceral Group and will be included in a miscellaneous section of the Handbook—which will also include bitumens, cokes, carbons—to be organized and written by A. Cook. President M.J. Lemos de Sousa gave a progress report on coal classification including the ISO and UN classifications. Codification for low-rank coals (lignites and subbituminous coals) is now in progress in the UN. The purpose of the UN classification is to calculate world coal reserves and resources. A new advisory group on coal classification, which will report to the President of the ICCP, consists of W. Pickel (Europe), A. Davis (No. Am.), Z. Corrêa da Silva (So. Am.), H. Pinheiro (So. Africa), and A. Cook (Aus.). The Microlithotype Editorial Group met under the leadership of M. Wolf (Germ.). The minimum size for a microlithotype is $50\ \mu\text{m}$. Carbominerite is a new microlithotype group. Fusite was removed as a microlithotype and placed as a subdivision of the microlithotype inertite. The microlithotype sheets for the new Handbook were approved in principle by voting members of Commission I. Final versions of both the inertinite and liptinite macerals will be distributed by M. Wolf early next year to members of the two working groups for minor correction. The ICCP training program is being considered, and various options such as videos, courses at meetings, and optics training were among the possibilities mentioned. It was suggested by A.H.V. Smith that an ICCP video could be a source of income for the ICCP. A new huminite macerals editorial group will be formed under the leadership of G. Taylor (Aus.).

Commission II was chaired by Wolfgang Kalkreuth (Brazil). Jack Burgess (USA) substituted for the late John Castaño (USA) in discussing the results from the Isolation of Organic Matter WG. The results of a round-robin analyses were not good because of problems with the identification of alginite and vitrinite. Burgess noted that Marlies Teichmüller (Germ.) maintained in a 1994 letter to him that maceral names can only be applied to coal in polished section under oil immersion and should not be used in characterizing dispersed organic matter (DOM). She suggested such terms as vitrinitic, inertinitic, and liptinitic could be used instead. Curiously, the 1983 Senfle Classification (updated in 1992) has the same problem and it took over a decade for this problem to surface. It was suggested that the ICCP cooperate with TSOP in a new classification of DOM. The new leaders of this working group will be Adrian Hutton (Aus.) and V. Stasiuk (Can.). A. Depers (Aus.) gave an update for the Environmental Applications of Organic Petrology WG;

little progress was reported over the last year but there were some minor additions to the Atlas on Environmental Applications, which is a now again a one-person effort by Depers. Three samples from the Wollongong (Aus.) area were selected by Depers for round-robin analysis early next year. It is uncertain when the Atlas will be published. A demonstration was made of the new ICCP homepage on the Internet. The server will probably be in Porto Alegre (Brazil) and plans are to have it up by next year. The homepage will include such items as what the organization does, lists of officers and publications, and information on membership and meetings. A white paper consisting of a bibliography and articles on coal facies and consisting of 61 pages was handed out at the meeting. Also there will be an ICCP Atlas with the title: The Petrology of Dispersed Organic Matter (DOM) in Sedimentary Rocks. It will include color plates to be done at Aachen Germany by Hans Hagemann. The alginite sheets will include about 22 photographs to be assembled by A. Cook; members are asked to forward photographs to him. The WG on Fluorescence Thermal Indices reported good results on a round-robin exercise. New coal samples with a rank range from about 0.5 to 1.1% R_o for a new exercise will be supplied by A. Hutton. There was a presentation by Lila Gurba (Aus.) on Pseudovitrinite, and a heated discussion resulted about its characterization. Round-robin samples containing Pseudovitrinite will go to members of this working group next year.

Commission III was chaired by Judy Bailey (Aus.). The Coke Texture WG's report under the leadership of Raphael Javier was read by Rosa Menendez. Javier's company does not support this work so that he has to pay for all expenses himself. ICCP support was requested to pay for the round-robin exercises of this WG. One of the most important responsibilities of this group is the generation of descriptions of coke structure for the new ICCP Handbook. The Coal Blends WG's report was read by A. Gomez Borrego substituting for Alan Davis (USA), who has resigned as convener. The group reported good results with the round-robin exercise of two blends composed of a mixture of high volatile and low volatile bituminous coal. Borrego also reported for the Inertinite in Combustion WG. A round-robin exercise on chars using seven classification groups was reported and there was a large spread in the data; about 40% of the inertinite showed plasticity. Edward Lester (UK) and D. Alvarez (Spain) reported for the WG on Combustion. Four samples from an American power plant that was having burnout problems were used in a round-robin exercise. There was general agreement between laboratories for unfused, fused, massive, and thin and thick-wall chars. The thickness of the char and burnout problems were positively correlated. Future work will involve using an image analysis system for less

subjective analysis. The WG on Automation report by Petra David (Neth.) was read by Professor Prado (Spain). The purpose of this group is to develop procedures for automatic analysis of coal. Three coal blocks and six analysts were involved in a round-robin exercise. The standard deviation of telocollinite increases with increasing rank; therefore, there has to be a limit on the standard deviation to characterize vitrinite by automation. The limit of standard deviation of vitrinite is the job of Commission I, and this is vital to make a sharp distinction with other maceral groups.

At the Closing Plenary Session it was announced by R. Schwab that the ICCP Treasury is in good shape but that many members are delinquent in their dues. There will be a letter going out to those delinquent members to determine if they want to maintain their membership. Also there was a note of appreciation from the Executive Council for Duncan Murchison's (UK) long and dedicated work as Treasurer of the ICCP. There will be a ballot vote on the introduction of institutional members to the ICCP. The ICCP Archives will probably be in Heerlen, The Netherlands, under the control of Wm. Fermont, The Netherlands, where the old ICCP Handbooks are now located. Sadly, the deaths of John Castaño (USA) and R. Takahashi (Japan) were announced.

Dr. Geoffrey H. Taylor (Fig.) of Australia received the Reinhardt Thiessen Medal of the ICCP for his outstanding contributions as a researcher on the organic petrology of the ultrafine structure of coal, cokes, and carbons as revealed by light and electron microscopy, and for his discovery of the mesophase mechanism of carbonization. Alan Cook summarized his career accomplishments and read the laudatio. In his response, Dr. Taylor made reference to the portrait of Thiessen by Lyons and Teichmüller (GSA Mem. 185) and noted that Thiessen's (1920) paper correctly interpreted the Paleobotanical origin of so-called resin rodlets [a misnomer according to Lyons], now included under the new maceral secretinite as proposed by Lyons. Dr. Taylor acknowledged former colleagues, Alan Cook and Alan Bennett, among others, who made enormous contributions to his research. Finally, he noted the availability (at a much reduced cost to ICCP members) of a limited number of copies of the major work "Permian Coals of Eastern Australia" by H.J. Harrington and others. To order contact Dr. Taylor at: 15 Hawkesbury Crescent, Farrer, ACT 2607, Australia.

The post-meeting ICCP excursion was to the coal fields of the northern part of the South Island of New Zealand. This was a geological, botanical, and scenic delight to all participants. The trip was led by Jane Newman (University of Canterbury) and Jane Shearer (Victoria

University). Stops included the famous incline for transporting mined coal about 750 m down to the barges in Denniston, a visit to the Stockton opencast mine where Eocene coal of very low ash yield and low sulfur content is mined, viewing a 2-ton block of gem-quality jade (nephrite) from the deep crust and plate boundary in New Zealand, and also a trip to Greymouth to see Cretaceous and Paleocene coals. Cretaceous coals at Greymouth are being considered as sources of Coalbed methane, an unconventional fossil fuel. The historic Brunner coke ovens were also visited, and there was a delightful scenic trip via Arthurs Pass to Christchurch, where the field trip ended.

The next meeting of the ICCP will be held in Porto, Portugal, September 20-26, 1998. Contact M.J. Lemos de Sousa (Fax: 351 2 31 6456) for details.

Paul C. Lyons
 U.S. Geological Survey
 M.S. 956 National Center
 Reston, VA 20192 U.S.A.



Geoffrey H. Taylor (left) of the Australian National University, Canberra, Australia, receiving the Reinhardt Thiessen Medal from ICCP President M.J. Manuel de Sousa. Photograph by Paul C. Lyons.

Congratulations!

Michelle Lamberson (University of British Columbia) recently received the Educom Medal from the Geological Society of America for her work creating educational materials on the Internet. She also helps run the TSOP website (<http://www.tsop.org>) with **Dave Glick**.

TSOP President **Kenneth W. Kuehn** was honored with a "Distinguished Service Award" from the Kentucky Society of Professional Geologists at their annual banquet held in Lexington, KY on September 27, 1997.

Jim Hower recently received the Distinguished Service Award from the GSA Coal Division.

Mitch Blake and **Jim Hower** were elected secretary and treasurer, respectively, of the AAPG Energy Minerals Division.

C.R. Clarkson and **Marc R. Bustin** will receive the A.I. Levenson Memorial Award (for best overall paper) for their paper "High pressure adsorption/desorption isotherms: application to predicting reservoir capacity and drainage," presented at the AAPG-TSOP joint meeting in Lexington, Kentucky.

If you know of any recent awards, elections, or other professional honors of TSOP members, please contact the Editor:

*William Andrews
 phone: 606-257-5500
 email: wandrews@kgs.mm.uky.edu*

Have you paid your 1998 dues yet?

The dues payment form is on the last page of this issue!

Honorary Member Selection Committee - Solicitation for Nominees

The Honorary Member Selection Committee invites you to nominate the person of your choice for Honorary Membership. As you know, Honorary Membership is the most prestigious award in TSOP and acknowledges sustained professional excellence in research, service, or education to the Society. The awardees are formally recognized at the annual meeting, presented with a plaque, and granted a lifetime membership in the Society.

If you would like to suggest a candidate for Honorary Membership, please submit a letter of nomination or brief vitae to Sharon Crowley (USGS, National Center, MS 956, Reston, Virginia, 20192). The letter or vitae should explain, in some detail, how the information will be reviewed by the Honorary Member Selection Committee. The guidelines listed below will be followed by the committee in the selection process. The letter or vitae should address the criteria for Honorary Membership, as explained in the TSOP bylaws (*Article I section 1B*).

Thank you in advance for your participation in the nominations for Honorary Membership.

Guidelines for Selection of Honorary Members:

1. The selection process for Honorary Members (excluding eligibility criteria) shall be confidential.
2. Nominees do not need to be former or current members of TSOP.
3. Nominees must have demonstrated contributions in one or more of the following categories:

A. Research contribution: Significant research contributions in organic petrology or related disciplines. Contributions must demonstrate a high degree of original research in organic petrology or related disciplines.

To qualify within this category, nominees must possess a sustained record of professional publication and achievement. Contributions (publications, state-of-the-art technologies, or other contributions) must demonstrate international impact.

OR

B. Service Contribution to TSOP: Significant contributions to TSOP in a leadership role that have enabled the Society to stimulate interest and promote research in organic petrology.

Various contributions are possible in this category. For example, contributions may be related to educational activities, administrative duties, or the development of TSOP as a society. Contributions must demonstrate a high degree of dedication and of TSOP.

OR

C. Education Contribution: Significant contributions as a teacher in organic petrology or related disciplines.

To qualify in this category, nominees must have demonstrated a high degree of dedication and significant impact as a teacher of organic petrology or related disciplines.

Journal Subscription Deals

TSOP members can subscribe to the *International Journal of Coal Geology* for a reduced price, the amount dependant upon the monetary conversion at the time of subscription. For details contact:

Friso Veenstra, Publishing Editor
Elsevier Science
P.O. Box 1930
1000 BX Amsterdam, The Netherlands.

The most inexpensive way to get *Organic Geochemistry* is to join the European Association of Organic Geochemists. Membership applications can be found in the back of any issue of *Organic Geochemistry*. Contact:

Prof. S.J. Rowland, Membership Officer EAOG
Department of Environmental Sciences
University of Plymouth
Drake Circus, Plymouth
PL4 8AA, United Kingdom

AGI Liaison Update

Brian J. Cardott

AGI Announces 1998-1999 Congressional Science Fellowship

The American Geological Institute (AGI) is pleased to offer a new Congressional Science Fellowship for the geosciences. The successful candidate will spend a year (September 1998 - August 1999) in Washington working as a staff member in the office of a member of Congress or a congressional committee. The fellowship represents a unique opportunity to gain first-hand experience with the federal legislative process and make practical contributions to the effective and timely use of geoscientific knowledge on issues relating to the environment, resources, natural hazards, and federal science policy.

The AGI Fellow will join more than two dozen other scientists and engineers for an intensive orientation program on the legislative and executive branches, organized by the American Association for the Advancement of Science (AAAS), which also guides the placement process and provides educational and collegial programs for the fellows throughout the year.

Prospective applicants should have a broad geoscience background and excellent written and oral communications skills. Minimum requirements are a master's degree with at least three years of post-degree work experience or a Ph.D. at the time of appointment. Although prior experience in public policy is not necessary, a demonstrable interest in applying science to the solution of public problems is desirable.

The AGI Congressional Science Fellowship carries a stipend of up to \$42,000 plus allowances for health insurance, relocation, and travel. Funding for the fellowship is provided through the AGI Foundation.

Interested candidates should submit a cover letter and a curriculum vitae with three letters of reference to AGI Congressional Science Fellowship, 4220 King Street, Alexandria VA 22302-1502. All application materials must be postmarked by February 1, 1998. For further details, visit the AGI web site <www.agiweb.org>, call 703-379-2480, or email <govt@agiweb.org>. AGI is an equal opportunity employer and especially welcomes applications from women and minorities.

The American Geological Institute (AGI), a nonprofit federation of 31 geoscientific and professional associations representing more than 100,000 geologists, geophysicists, and other earth and environmental scientists, was founded in 1948. TSOP joined AGI in 1995 as the 28th member society.

AGI will celebrate its 50th Anniversary in 1998. As part of this celebration, a series of short articles on member society background and activities will be published in *Geotimes*, AGI monthly earth-science magazine, alphabetically in six supplements. Jeffrey Levine will write the article about TSOP, which will appear toward the end of 1998.

AGI has four departments: Education and Human Resources, Government Affairs, GeoRef Information Systems, and Communications and Publications. Here I will highlight one department, the Government Affairs Program (GAP). Established in 1992, GAP has a mission to represent the geoscience community in Washington, D.C., provide geoscience information to federal agency policy-makers, and inform geoscientists of federal policies that affect them. AGI will have a Congressional Science Fellowship in 1998 (see advertisements in the November and December issues of *Geotimes*; the application deadline is February 1). GAP participated in and endorsed a statement with 105 organizations, representing over 3 million scientists and engineers, to call on Congress and the President to support the doubling of federal funding for research and development of science and technology in the next decade. AGI 1996-1997 President Ed Roy filed a protest letter to USGS Director Gordon Eaton opposing a cut to the acquisitions budget for USGS libraries by half; this and other protests from the geoscience community resulted in the cancellation of the proposal. GAP "provided testimony on behalf of the National Geologic Mapping Reauthorization Act of 1997, testified before the House Interior Appropriations Subcommittee in support of the U.S. Geological Survey and the Department of Energy's Fossil Energy Program, and before the House VA/HUD Independent Agencies Subcommittee on behalf of the National Science Foundation (NSF)." These and many other examples of program activities by GAP and important developments on Capitol Hill and in the federal agencies are described in monthly and special updates sent by e-mail to the leadership of AGI's member societies and other interested geoscientists. To request these updates by e-mail, contact AGI at govt@agiweb.org. A summary of GAP activities is available on the AGI web page (<http://www.agiweb.org>). David Applegate, GAP

Director, writes a monthly "Political Scene" column in *Geotimes*. GAP is wholly supported by member society contributions. TSOP has supported GAP with annual contributions of \$150 in 1996 and \$200 in 1997; the contributions were matched by the Geological Society of America.

"In February [1997], AGI was awarded a \$1.5 million grant from the U.S. Department of Energy to initiate Phase III of the National Geoscience Data Repository System (NGDRS). The Phase III funds will support development of the Web-based metadata catalog and transfer of data — cores, cuttings, paleontological collections, seismic tapes, etc. from the private sector to public domain repositories. The NGDRS is a public-private sector partnership established to preserve geoscientific data in jeopardy of being destroyed. These data will be made available to the general scientific community...." (from National Geoscience Data Repository System report by Marcus E. Milling, AGI Executive Director, AGI Member Society Council Meeting Agenda Book, October 20, 1997). I expressed the interest of TSOP in this program at the Member Society Council Meeting in Dallas on April 7, 1997. Phase I of this program, initiated in 1994, identified companies willing to donate 5 million feet of core, 1.5 million boxes of cuttings, 5 million well logs, 1.5 million microfiche, 2.5 million scout tickets, 500,000 geochemical analyses, 30,000 thin sections, and 100 million miles of seismic data. TSOP members who are aware of samples, preparations, and data collections that are in jeopardy of being discarded are encouraged to contact me for our participation in this program. Be aware, "The key requirement of the repository proposal is that companies contributing samples will also have to donate a fee toward an endowment to make the new facility self supporting." Additional information about NGDRS is found in the *TSOP Newsletter* (v. 14, no. 2, p. 19) and on the AGI web page.

Being a member society of AGI is good for TSOP in providing exposure and a focused, equal voice in the geoscience community. Literature provided by the AGI indicates that, for the foreseeable future, the institute will focus on the following: "(1) Disseminating geoscience information through a variety of electronic and print media; and creating large, accessible databases vital to geoscience professionals in geological literature, geoscience data, and career information; (2) Contributing to the long-term viability of the earth-science educational system at all levels, improve the scientific literacy of the general population and ensure an adequate supply of talented people for the future of the profession; (3) Analyzing and communicating the impact of government actions on the profession and providing critically compiled scientific information to national decision-

makers to ensure improved federal policies and regulations; (4) Improving public awareness of the contributions made by the geosciences to the well-being of society in basic research, education, development of natural resources, preservation of our environment, and monitoring of natural hazards; (5) Maintaining a broad perspective to help enlighten and guide the geoscience profession in times of rapid technical and institutional change, the globalization of professional activities, and the need for increased interaction with other scientific disciplines; (6) Offering a clear, strong single voice for the geoscience profession in matters critical to the mutually beneficial relationship between the geosciences and society; and (7) Advocating the utility of the geosciences in developing national science policy and ensuring the necessary public-sector investment in the continued health of the geosciences."

Still Available!

The Geochemistry and Petrography of Kerogen/Macerals

(published as *Energy & Fuels*, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology

The American Chemical Society
1994 National Meeting, March 13 - 15, 1994

General topics include :

Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
Chemistry of Kerogen/Macerals Types
Precursor Materials
Paleo-Depositional Environments and Diagenetic Provenance
Maceral Behavior during Maturation and Catagenesis
New Techniques and Applications
Case Histories

Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "The Society for Organic Petrology". Sorry, no credit card orders can be accepted. Send all inquiries and orders to:

TSOP
c/o Gretchen Tremoulet
University of Kentucky
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511-8433 USA

Calendar of Events

1998

January 26-29, Tailings and Mine Waste '98, Fort Collins, Colorado. Information: Linda Hinshaw, Dept. of Civil Engineering, Colorado State University, Fort Collins, CO 80523-1372, (970) 491-6081, fax 970-491-3584 or 7727.

February 12-17, AAAS Annual Meeting and Science Innovation Exposition, Philadelphia, Pennsylvania. Information: AMSIE'98, American Association for the Advancement of Science, 1200 New York Ave., NW, Washington, DC 20005, (202)326-6450. (Symposium proposals due April 1, 1997.)

March 9-11, Society for Mining, Metallurgy, and Exploration (SME) Annual Meeting, Orlando, Florida. Information: Meetings Dept., SME, P.O. Box 625002, Littleton, CO 80162-5002, (800) 763-3132, (303) 973-9550, fax 303-979-3461, smenet@aol.com, <http://www.smenet.org>.

March 22 - 25 : 57th Ironmaking Conference, Toronto, Ontario, Canada. This meeting will be held in conjunction with the 2nd International Congress on the Science and Technology of Ironmaking (ICSTI '98). The abstract deadline is 3/1/97. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://www.issource.org/>.

March 29 - 31 : Southeastern Section, Geological Society of America Symposium "Applied Topics in Coal Geology", Charleston, WV. A coal field trip is also planned to accompany this symposium. For further information, please contact Jim Hower at (606)-257-0261 [phone] or (606)-257-0302 [fax].

March 29 - April 3 : 215th National Meeting of the American Chemical Society, Dallas, TX. For information call (202)-872-4396.

April : International Conference on Coal Seam Gas and Oil, Brisbane, Australia. For additional information please contact either Drs. S. Golding at 3365-1277 [fax] / s-goldin@sol.earthsciences.uq.edu.au [e-mail] or Dr. M. Mastalerz at 812-855-2862 [fax] / mmastale@indiana.edu.

April 7-8, Pennsylvanian and Permian Geology and Petroleum in the Southern Midcontinent, Norman, Oklahoma. Information: Kenneth S. Johnson, Oklahoma Geological Survey, University of Oklahoma, 100 E. Boyd St., Room N-131, Norman, OK 73019, (405) 325-3031 or 1-800-330-3996, fax 405-325-7069.

April 14-18, Geoscience 98, Keele, UK. Information: Conference Dept., Geological Society, Burlington House, Piccadilly, London W1V 0JU, UK, phone 44-171-434-9944, fax 44-171-439-8975, conf@geolsoc.cityscape.co.uk.

May 3-7, Canadian Institute of Mining, Metallurgy and Petroleum-Council of Mining and Metallurgical Institutions, Montreal, Quebec. Information: Chantal Murphy, Canadian Institute of Mining, Metallurgy and Petroleum, 3400 de Maisonneuve Blvd. West, Suite 1210, Montreal, Quebec H3Z 3B8, Canada, (514) 939-2710, ext. 304, fax 514-939-2714, cmcim@login.net

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telefax], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyväskylä, Finland.

June 22 - 27 : 8th Coal Geology Conference, Charles University, Prague, Czech Republic. For additional information, please contact Prof. Jiri Pesek at 420-2-21952438 [phone] or 420-2-296025 [fax].

June 30 - July 2 : International Conference on the Formation and Quality of Southeast Asian Coal Deposits, Bandung, Indonesia. For further information, please contact : Dr. T.A. Moore (64-4-570-3708 [phone], 64-4-570-3701 [fax], T.Moore@crl.co.nz [e-mail]) or Dr. M. Hikman Manaf (62-22-630-558 [phone], 62-22-635-506 [fax]).

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

July 26 - 30 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information, contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

September 20 - 26 : International Committee for Coal and Organic Petrography, Porto, Portugal. For information, contact M.J. Lemos de Sousa, (e-mail) mlsousa@fc.up.pt or (fax) 351-2-31-6456.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

November 4-7, Global Mining Opportunities, Vancouver, British Columbia. Information: Randol International Ltd., 21578 Mountsfield Dr., Golden, CO 80401, (303) 526-1626, fax 303-526-1650. (Abstract deadline: June 1, 1997.)

November 8 -11 : AAPG International Conference and Exhibition, Rio de Janeiro, Brazil. For info, contact the AAPG Conventions Department at (918)-584-2555.

December 7 - 9 : 8th Australian Coal Science Conference, The University of New South Wales, Sydney, Australia; organized by Australian Institute of Energy. For additional information, visit www.materials.unsw.edu.au/coalscienceconference or www.aie.org.au

1999

March 21 - 24 : 58th Ironmaking Conference, Chicago, IL. For information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

Fall : International Committee for Coal and Organic Petrography, Bucharest, Romania.

September : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, contact either Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.esri.utah.edu).

September 12 - 15 : AAPG International Conference and Exhibition, Birmingham, England. For info, contact the AAPG Conventions Department at (918)-584-2555.

October 18 - 20 : Third International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.flyash.org>

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For additional information, contact GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

2000

March 26 - 29 : 59th Ironmaking Conference, Pittsburgh, PA. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

August 6 -11 : Eleventh International Peat Congress - "Sustaining the World's Peatlands", Quebec City, Quebec, Canada.

2001

March 25 - 28 : 60th Ironmaking Conference, Baltimore, MD. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

This list is compiled from various Internet sources as well as information submitted by individuals. Accuracy of information cannot be guaranteed.

Please notify the editor of any errors, changes, submissions, or deletions.

TSOP is looking for meeting sites for 2001 and beyond. Anyone wishing to host a meeting is invited to contact Jim Hower (hower@caer.uky.edu).

Facing page: TSOP 1998 dues form. Xerox or detach the facing page, and send (with your dues) to Lorraine Eglinton.

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TSOP Mugs for Sale!

Help support TSOP activities and get an elegant, genuine Louisville stoneware mug for your coffee, tea, chocolate, etc. At only US \$10, these mugs are a steal and make wonderful gifts. Be sure to buy several, mugs get lonely, too. To place orders contact:

Jim Hower
CAER
2540 Research Park Drive
Lexington, KY 40511-8410
phone: 606-257-0261
fax: 606-257-0302
hower@caer.uky.edu

An unsolicited endorsement from a satisfied TSOP mug owner:

I just don't know how I got through my life without my two brand-spanking new TSOP mugs. They're sturdy, microwaveable, fabulous looking, and are great conversation starters too! I never leave home without them.... You shouldn't either!

TSOP Archives Open for Business

The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

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**Submittal Deadline Next Issue
10 February 1998**



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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March 1998

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The Aerial View of Downtown Halifax and Halifax Harbour

TSOP-Halifax, 1998

15th Annual Meeting of TSOP, Halifax, Nova Scotia, Canada, July 26-30, 1998

Join us in TSOP - Halifax, 1998 and experience the maritime hospitality of Nova Scotia, Eastern Canada during July 26-30, 1998 (for details see inside)

In this issue:

- TSOP 1998 - Halifax meeting information
- Article on petrographer Matthew Carey Lea
- TSOP membership application form
- TSOP 1998 - Halifax registration form
- TSOP Mid-year Council Mtg. summary
- The ever-so-useful Calendar of Events

The TSOP Newsletter

William Andrews, Editor

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 international and is open to all individuals having an interest in the field of organic petrology. For more information on membership and Society activities, call or write:

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 228 Mining & Minerals Building
 University of Kentucky
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Newsletter Contributions

The *TSOP Newsletter* welcomes contributions from members and non-members alike. Items may be submitted on computer diskette, as an e-mail file, or as printed text via fax or regular mail. Send all contributions to the Editor:

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 228 Mining & Minerals Building
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 For purposes of registration of the *TSOP Newsletter* a permanent mailing address is: The Society for Organic Petrology; c/o American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 USA.

The 1997-98 TSOP Council

President	Kenneth W. Kuehn
Vice President	Sharon Crowley
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Editor	William M. Andrews
Councilor (1996-98)	David C. Glick
Councilor (1997-99)	Maria Mastalerz

The Constitution & Bylaws of The Society for Organic Petrology were adopted on March 10, 1984. With revisions through October 1993, they are printed in the 1995 Membership Directory and Bylaws. For further information, see the Editor's box (this page, adjacent column).

TSOP web page: <http://www.tsop.org>

Going to a Meeting?

Why not spread the TSOP message?

A limited number of recent back issues of the *TSOP Newsletter* are available for members to take to conferences they are going to attend. Membership information packets and application forms are also available for distribution to interested parties. TSOP is an all-volunteer organization that relies on an active, growing membership base in order to remain healthy. Only through the efforts of all of its members can TSOP continue to meet its membership goals. If you are interested in promoting TSOP and need some handouts, please contact the following individuals:

For Newsletters:
 William Andrews
 (606)-257-5500 phone
 (606)-257-1147 fax
 wandrews@kgs.mm.uky.edu

For Membership Packets:
 Cortland Eble
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Printed on recycled paper.

**Submittal Deadline Next Issue
 31 May 1998**

Editor's
President's ^ Letter
 Konnoth-Kuehn
William Andrews

With the production of my second issue of the TSOP Newsletter, I thought it would be appropriate to introduce myself to the loyal readership.

First of all, I must express my own personal admiration of my predecessor, Jim Pontolillo. After producing my first issue, I understand (all too well) how much time and effort Jim has been giving to the Society to produce a professional and timely newsletter. In recognition of Jim's work, TSOP awarded him the (first ever) TSOP Distinguished Service Award. The official announcement is on page XX of this issue. I just wanted to take this opportunity to give Jim a "wow" of my own.

Hopefully, most of you didn't notice that the last issue (vol. 14, no. 4) was produced by a different editor... that was my plan, anyway. I will continue the newsletter layout, style and schedule developed by Jim Pontolillo.

As usual, ALL submissions to the newsletter are MOST welcome. The TSOP newsletter is a forum for information exchange for all members of the Society, but only functions as such when many people contribute to the content. Welcome topics include anything of interest and relevance to the Society: historical articles, brief technical reports and summaries, meeting reports, book and article reviews, awards and honors of TSOP members, meeting dates, news and special interest notes. I will accept submissions in almost any format, but I *prefer* to receive digital files of unformatted text for articles and either photographic prints or digital images for the figures. Deadlines for each issue will be published in the preceding issue.

Most of my organic petrology experience is limited to bituminous coal microscopy. If you happen to have a review article on another area of organic petrology, I would love to receive a reprint. Having a broader knowledge of our field will inevitably help me produce a better newsletter for the Society.

Take care of yourself,

About your Editor



William M. ("Drew") Andrews, Jr.

B.S., 1993, University of Kentucky, Dept, of Geological Sciences

M.S., 1997, University of Kentucky, Dept, of Geological Sciences; thesis title: *Structural control on the origin and nature of the Brassfield Formation (Lower Silurian) west of the Cincinnati arch, Kentucky*; Dr. Frank Etensohn, advisor.

Current Employment: Geologist, Kentucky Geological Survey, Coal and Industrial Minerals Section; geographic information systems (GIS), coal resources and coal availability, responses to requests for public data.

Past Employment: Student assistant, Center for Applied Energy Research, Coal Petrography Laboratory, Dr. Jim Hower, supervisor; eastern Kentucky bituminous coal petrology and geology.

Hobbies: genealogy, American Civil War reenacting and history, camping & hiking, photography, Internet web page design

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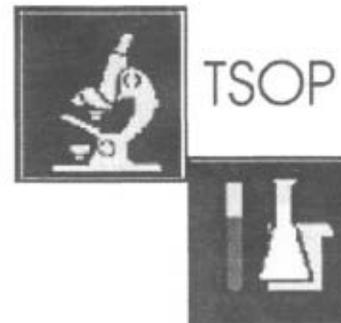


TSOP - Halifax '98

15th Annual Meeting

July 26-30, 1998

The Society for Organic Petrology (TSOP)
"Sailing into the New Millennium"



Prasanta K. Mukhopadhyay (Muki), Joint Convener

You are cordially invited to attend the fifteenth annual meeting of The Society for Organic Petrology (TSOP) at the World Trade and Convention Center, Halifax, Nova Scotia, Eastern Canada during July 26-30, 1998. The meeting will be organized by **Prasanta K. Mukhopadhyay (Muki)**, Global Geoenery Research Ltd., **Mike Avery**, Geological Survey of Canada, Atlantic, **John Calder**, Nova Scotia Department of Natural Resources, and **Fari Goodarzi**, Geological Survey of Canada, Calgary who are joint conveners. P. K. Mukhopadhyay (Muki) is the coordinator for the technical sessions. Mike Avery is the coordinator of the home page and is the Secretary-Treasurer for the meeting. John Calder is the Field Trip Coordinator. The meeting will be hosted in collaboration with the Canadian Society for Coal Science and Organic Petrology (CSCOP). TSOP - Halifax, 1998 consists of an organizing committee whose members include **Jack MacDonald** and **Paul Harvey** of the Petroleum Directorate, Nova Scotia, **Dave Brown** of the Canada-Nova Scotia Offshore Petroleum Board, **Prof. Marcos Zentilli** and **Milton Graves** of the Dalhousie University, Halifax, Nova Scotia, and **Don McAlpine** of the Geological Survey of Canada, Atlantic and the four Conveners (**Muki, Avery, Calder, Goodarzi**).

The city of Halifax is situated on the Atlantic Ocean in Eastern Canada. Both Halifax and rural Nova Scotia are considered to be the most attractive tourist spots of Canada. We hope that during your visit to Nova Scotia, you can explore the natural beauty of the rugged coast, fishing villages, and romantic lighthouse routes. You will also enjoy our organized scientific programs, which will provide you with new thoughts and insights about organic petrology, organic geochemistry, and environmental geochemistry. For details concerning the location of the meeting, please see our Web page:

<http://agc.bio.ns.ca/tsophalifax98>

Halifax is about six hours drive from the US border (Maine). Daily flights are available from Newark, Boston, Toronto, Montreal, and London (England) to the Halifax International Airport. Downtown Halifax is a 35 minute drive from the Halifax International Airport. Shuttle buses (Airporter) are available from the Halifax Airport to all of the downtown hotels for which you pay either Cdn \$12.00 (one way) or Cdn \$20.00 (round trip). Taxis and all car rental companies are available or located at the airport. Normal taxi cab (yellow cab, etc.) charges Cdn \$36.00 (one way). For a comfortable share-a-cab ride from airport to downtown hotel, you can call sunshine share-a-cab- tel: 1-800-565-1567 (toll-free in North America). Call them one day in advance. They charge Cdn \$20.00. As soon as you register for the meeting, Halifax Tourism Bureau will send you package containing all the informations, brochures, and maps of the region.

For the meeting, we have organized pre-meeting short courses, three special symposiums, a special session, and post meeting field trip to classical Carboniferous exposures. One full day session will be devoted to the memory of our beloved TSOP member **John Castaño** who left us last year. **Prof. I. R. Kaplan** from Global Geochemistry Corporation of California will be our Guest Speaker and **Wallace G. Dow** of DGSI, the Woodlands will speak on the memories and contributions of late **John Castaño**.

Pre-Meeting Short Courses

Two half day short courses on "Forensic Geochemistry" (Instructor: **Prof. Ian. R. Kaplan**) and "Apatite Fission Track Analysis" (Instructors: **Prof. M. Zentilli, Sandy Grist, and Milton Graves**) will be held on the 26th of July, 1998. The "Forensic Geochemistry" will illustrate the methods of fingerprinting fugitive hydrocarbons and its refined products that have impacted the soil, groundwater, and an aqueous environment which poses a major ecological threat. The course will also

demonstrate some numerous environmental legal cases where petroleum geochemistry was used as a tool. The "Apatite Fission Track Analysis" is a thermochronological technique, which is extensively used for the modelling of the thermal histories in sedimentary basins. The short course will demonstrate the theoretical and laboratory analysis, and modelling methods.

Abstract for the Technical Sessions

The abstract for the oral and poster presentation of the scientific session is due by the **First week of April, 1998**.

Scientific Sessions and Other Activities

The oral presentation will be held on both Monday (July 27, 1998) and Tuesday (July 28, 1998) at the Highland Room No. 6 in the World Trade and Convention Center, Halifax. There are three special symposium and one special session. Posters will be displayed between 6 p.m. on Sunday, July 26th, 1998 through 6-30 p.m of Monday, July 27, 1998 at the Highland Lounge of the World Trade and Convention Center (WTCC), Halifax. There will be a speaker's ready room close to the Highland Room No. 6. The schedule of events is shown later.

Meeting Registration

The meeting registration form is included in this Newsletter. Please fill in the form carefully and include the events, which you want to participate. Advance registration is US \$135.00, which include the conference bag, abstract volume, icebreaker, TSOP General Body meeting lunch on Monday (July 27, 1998), and the group photo. All other items which include short courses, field trip, lobster supper, harbor cruise etc. are to be paid separately. We are also organizing a spouse/guest program, which includes a whole day trip to the famous Peggy's Cove and Lunenburg (including free ticket to Lunenburg's Museum), and a lunch. This program will be conducted through *Ambassador Tours* who owns and operates the luxury buses. Please return the registration form with the money (in US \$) to Dr. P. K. Mukhopadhyay, TSOP - Halifax, 1998, P. O. Box 9469, Station A, Halifax, Nova Scotia, Canada B3K 5S3. You can also register by e-mail. For details, see our web page (agc.bio.ns.ca/tsophalifax98).

Accommodations

The Prince George Hotel is designated as the Convention Hotel. A block of 30 rooms have been reserved at the Prince George Hotel under the TSOP-Halifax, 1998. The hotel is one of the finest in Halifax and contains all the modern amenities. The conference rate for the hotel is Cdn \$ 95.00 (US\$ 65.00) + 15% tax for both single and double (refundable to non-Canadian) which is extremely good rate for summer. Please book it

early (before June 11, 1998). For hotel booking, please call 1-800-565-1567 (toll-free) or (902) 425-1986 and mention the name "TSOP". The hotel provides underground parking to its patrons at a rate of \$11.00 Canadian for 24 hours. The hotel is linked to the Conference Rooms at the World Trade and Convention Center through a corridor. You do not have to walk on the street. The other hotels that are close to the WTCC are the Radisson, Sheraton, Cambridge Suites and Citadel Inn. For details on the price of the other hotels, please see our web page. If you have any problem regarding accommodations, please contact us immediately: Muki (Tel:902-453-0061), John Calder (tel: 902-424-2778) and Mike Avery (tel: 902-426-6761).

Field Trip: Organic Deposits of Clastic Carboniferous Sections in the Minas and Cumberland Basins, Nova Scotia

J. H. Calder (Field Trip Leader), R. C. Boehner, M. R. Gibling, P. K. Mukhopadhyay, R. J. Ryan, and D. M. Skilliter

During the two day field trip, we will explore classic (and very scenic) coastal exposures of early and late Carboniferous rocks on the Bay of Fundy, where the world's highest tides rise and fall. These strata occur within the component Minas and Cumberland basins of the Maritimes Basin complex of eastern Canada. The Maritimes Basin serves as the keystone between European and North American basins of the Carboniferous.

We will focus on the development of source rocks and coals in the context of basin evolution, paleogeography, and paleoenvironments. Stops the first day will include the latest Devonian-Tournaisian (Mississippian) Horton Group of nearshore and lacustrine affinity as well as petroliferous rocks of the Viséan (Mississippian) marine Windsor Group. On the second day we will visit the world famous fossil cliffs of Joggins and the exceptional exposure of Westphalian A (early Pennsylvanian) coal-bearing strata of the Cumberland Group, with its fossil forests and basin-wide organic-rich limestone beds of questionable environment. The traditional non-marine affinity of the Horton and Cumberland source rocks will be debated. Road stops will include the Joggins Fossil Center and the Fundy Geological Museum.

TSOP 1998-Halifax Tentative Schedule of Events

Sunday July 26 **Short Courses - Registration - Ice Breaker**

morning **Forensic Geochemistry** (Instructors: Prof. I. Kaplan)

afternoon Registration for General Sessions (Short Courses by pre-registration only)

Apatite Fission Track Analysis (Instructors: Prof. M. Zentilli; Mr. S. Grist; Mr. M. Graves)

evening Ice Breaker & Posters TSOP - Outgoing council meeting

Monday July 27 **General Session and Symposium - Oral & Poster Presentations**

all day Registration open

day tour Spouse/Guest Program - Lunenburg via Peggy's Cove

morning **Symposium I** - Environmental Implications of Fossil Fuel Use - Geochemical and Petrological Perspectives.
General Session - Any topic related to Coal and Organic Petrology and Geochemistry

noon TSOP - Annual Luncheon and General Business Meeting CSCOP - Hacquebard Award Presentation

afternoon **Special Session** - Eastern Canadian basins with implications for hydrocarbon resources
General Session - Any topic related to Coal and Organic Petrology and Geochemistry

evening TSOP - Incoming council meeting CSCOP - General Membership meeting

Tuesday July 28 **John Castaño Memorial Symposiums - Oral & Poster Presentations**

all day Registration open

morning **Symposium II** - Depositional Environment of Coal and Petroleum Source Rocks

noon Group Photo; then Lunch on your own (Time to explore local food, drink, shopping, etc.)

afternoon **Symposium III** - Maturation and Hydrocarbon Generation from Petroleum Source Rock and Coal - World Basin Perspective.

evening Harbour Cruise, Lobster Supper etc.

Wednesday July 29 **Field trip - Day One (leaving from WTCC in morning)**

all day Horton Bluff/ Cheverie - Hydrocarbon Source Rock / Reservoir, Lr. Carboniferous

Thursday July 30 **Field trip - Day Two (returning to WTCC in late evening)**

all day Joggins - Coal Seams, Fossils, Fossiliferous Limestone, Up. Carboniferous

Note: Exact times of events will be provided when they become fixed by planning committee.

Check **TSOP'98 Home Page** for changes in this schedule: <http://agc.bio.ns.ca/tsophalifax98>

Matthew Carey Lea: Contributions to Geologic Studies of the Pennsylvania Anthracite Fields

James C. Hower
Center for Applied Energy Research
University of Kentucky, Lexington, KY 40511

In the centenary of the death of Matthew Carey Lea (1823-1897) it is appropriate to remember his brief contributions to the understanding of the geology of the Pennsylvania Anthracite Fields. His extensive bibliography contains hundreds of contributions, most of them on the chemistry of the platinum group metals and on the chemistry of photographic processes, the latter important in the development of color photography. Among Lea's first contributions were a series of papers on the rank of the coals in the Southern Anthracite Field and on the comparison of those coals to other producing coal fields.

Lea was the son of Isaac Lea, a Philadelphia publisher and paleontologist specializing in Tertiary invertebrate faunas. In the latter capacity, Isaac Lea was elected president of the American Association for the Advancement of Science, the primary scientific society for American geologists at the time, in 1860. His brother, Henry, was also a geologist. Matthew was never educated in school or college, rather he was tutored at home and further educated through contacts with the prominent European and American scientists of the 1830's (Barker, 1905).

Lea's first geologic contribution was not on coal. Together with his supervisor, James C. Booth, later state geologist of Delaware, he authored a brief paper on chromic iron ores from Cuba (Booth and Lea, 1840). Illustrating the small circle of practicing geologists at that time, the ore analyzed was discovered by Richard Cowling Taylor, another geologist prominent in geologic studies of the Southern Anthracite Field.

Matthew Carey Lea published his most important paper in coal geology in 1841 (Lea, 1841). Lea was 17 years old when the paper was submitted to the *American Journal of Science*. In that paper, he presented, through a form of proximate analysis (he did not provide exact details of the procedure and modern procedures were not standardized until 1913), the rank of coals spanning the Southern Anthracite Field. The analyses documented the decrease in rank from the east to the west, from high carbon anthracites to low volatile bituminous coals, verifying a concept he attributed to his father. His report of the coal rank variations appears to be the first formally published coal rank study backed by chemical analyses in the Anthracite Fields and perhaps in the United States. Taylor (1840a, b) used Lea's analyses in his reports, published the same year as Lea's submission to the *American Journal of Science*.

Both Taylor and Lea were employed by Isaac Lea, Taylor contracted to investigate Isaac Lea's coal tracts in the Southern Anthracite Field. Considering the origin of the data, Lea remains as the originator of coal rank studies in the Anthracite Fields.

Lea (1845b) later noted the coal rank trends in a paper largely devoted to discussions of the transportation of anthracite to market. In "Coal of Pennsylvania and other states" (Lea, 1845a), he supplemented his analyses with other coal analyses, most notably from W.R. Johnson who investigated the combustion properties of coals for the U.S. Navy. Coal's place in the fuel economy of 1845 is summarized by Lea's statement: "Coal is evidently destined at some future period to entirely supersede wood as fuel. . ." Lea's emphasis was on the comparative rank of coals, with particular attention to the best use for coals of varying rank. Pennsylvania anthracites were still relatively new additions to the domestic market, competition coming from the Triassic coals near Richmond, Virginia, and from the Pennsylvanian coal fields along the eastern edge of the Allegheny Plateau in Maryland and Pennsylvania.

Lea's contributions to coal science ended with the 1845 papers. He was admitted to law practice in 1847 but his poor health prevented him from continuing in the profession. He returned to chemical research, performing experiments at his home in Philadelphia. Lea was elected to the National Academy of Science in 1895. He died on March 15, 1897, following surgery for prostate cancer (Barker, 1905).

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Applied Topics in Coal Geology

co-sponsored by the Geological Society of America Coal Geology Division and The Society for Organic Petrology
47th Annual Meeting, Southeastern Section of the Geological Society of America
30-31 March 1998, Charleston, West Virginia

The *Applied Topics in Coal Geology* symposium, organized by Jim Hower and Cortland Eble, featured ten papers on industrial applications of coal petrology and coal geology. In addition, a complementary session, *GIS Applications in Coal Geology*, organized by Nick Fedorko and Craig Neidig, attracted nine papers from government survey and coal company geologists.

Adrian Hutton, with co-author Rosemary Falcon, lead off the symposium with a discussion of three problems where organic petrology played an important role in the solution. In the first case, an oil shale mined in Australia was retorted in Canada, but with less yield than predicted from preliminary Australian tests. Petrographic analysis indicated the presence of coked organics, leading to the admission that the shale was dewatered by heating before being shipped to Canada. The second study focused on the separation of gold from gangue. Gold is typically recovered through adsorption on carbons. In this case, however, the operation was less efficient than hoped due to the presence of organic-rich zones in the ore. The third case study examined iron staining on buildings and sidewalks in Wollongong, a problem conveniently blamed on the local steel plant. Careful examination of construction materials revealed that the staining could be traced to the river gravel used in construction. Included charcoal had pyrite in the lumens.

Bill Grady discussed the petrographic implications for N-methyl-2-pyrrolidinone solvent refining of West Virginia coals, a potential route to low ash, low sulfur fuels. The process works best with high vitrinite coals in the 0.9-1.3% R_{max} range.

Penny Padgett, with Maria Mastalerz, investigated the variations in petrography and chemistry associated with the beneficiation of the Danville coal of Indiana.

Jim Hower, with Tom Robl, had the opportunity to study the changes in the quality of coals delivered to Kentucky power plants from 1978 to 1997. The 1997 coal quality reflects the continued evolution of Clean Air Act standards. Coal burned in 1997 had a significantly lower sulfur content than in 1978 although one of the response mechanisms to the need for reduced SO_2 was the addition of flue gas desulfurization units, currently at 485 of the state's generating capacity. Other means of coping with tighter standards include the purchase of a wider range of coals, including western US subbituminous and bituminous coals and eastern US medium and low volatile bituminous coals and the

inclusion of non-coal solid fuels, such as petroleum coke, in the feedstock.

Steve Greb and co-workers reported on the mining problems associated with syn- and post-depositional channels in the Pond Creek coal bed in Pike County, Kentucky. The channel system contributes to mining and roof control problems.

Scott Keim and Marshall Miller noted similar problems in a West Virginia longwall operation which was ultimately abandoned due to the strata control problems.

Leslie Ruppert and co-workers described GIS approaches to regional assessments of the availability and quality of the Pittsburgh coal bed in the northern Appalachians.

Dave Wunsch and Jim Dinger provided details of the changes in the groundwater regime associated with a large reclaimed mine area in central eastern Kentucky. Large spoil areas have some groundwater flow patterns characteristic of karst regions.

Jason Willett and co-authors presented preliminary results from a round-robin exercise aimed at determining the modes of occurrence of trace elements in coals. Selective leaching is employed to provide greater details of the nature of the element associations.

Blaine Cecil and Frank Dulong described comparisons of chemical analyses of cores with down-hole prompt-neutron activation chemical logging of the boreholes. Acceptable correlations between PNA and chemical analyses of the rocks were achieved for several boreholes, providing encouragement for the use of geochemical logging in the prediction of the acid-producing characteristics of coal overburden.

Check out the TSOP website!

<http://www.tsop.org>

You will find the TSOP discussion forum, links to other related internet sites, and other useful information.

International Conference on Coal Seam Gas and Oil in Brisbane, Australia
Maria Mastalerz

The International Conference on Coal Seam Gas and Oil was held in Brisbane, Australia on 23-25 March, 1998. The conference was organized by The University of Queensland, Australia and Indiana University, USA. The main sponsors of the event were Department of Mines and Energy in Queensland, The Department of Earth Sciences at the University of Queensland, Santos, and Oil Company of Australia. The Conference Organizing Committee included: S. Golding, C. Boreham, A. Edgar, M. Glikson, T. Harvey, B. Lowe-Young, M. Mastalerz, A. Scott, and S. Scott.

The conference was preceded by a workshop on "Geologic and hydrologic controls critical to Coalbed methane production and resource assessment - the United States experience: analogs useful to Australian coal basins" presented by A. Scott and R. Taylor from Texas Bureau of Economic Geology. The workshop was well attended and highly evaluated by the participants.

The conference was attended by about 180 delegates from 13 countries. The international participation was impressive with the following countries represented: Canada (5 participants), Czech Republic (10), France (2), Indonesia (4), Japan (7), New Zealand (6), Norway (2), Philippines (1), Poland (3), China (8), Tanzania (1) and the United States (11). Indiana University was represented by Dr. Erik Kvale and Dr. Maria Mastalerz from Indiana Geological Survey.

The conference was opened by Sue Golding from the University of Queensland and Robert Day from General Queensland Department of Mines and Energy. Two keynote addresses were delivered by Alan Cook and Michael Hood who presented talks 'Oil occurrence, source rocks and generation history of some coal-bearing Tertiary basins' and "Recent advances in the technology of drilling for gas drainage", respectively.

During the first day of the conference there were two simultaneous sessions; one on "Fundamental research in hydrocarbon exploration" and the other one on "Coal seam methane economics and regulatory requirements". In the "Fundamental research on hydrocarbon exploration" session, nine papers were delivered, with the morning session concentrated on oil from coal and the afternoon session on gas from coal. In the morning session, Jane Newman and others discussed floral influences on the petroleum source potential of New Zealand coals. Flora Mpanju and others presented organic petrology and geochemistry of coals and dispersed organic matter from the Karoo Basins in Tanzania and Noriyuki Suzuki and others described

geochemical characteristics of Eocene oil-prone terrestrial source rocks from Hokkaido, Japan. In the afternoon session, Erik Kvale and Maria Mastalerz discussed controls on coal-seam gas in the Illinois Basin in Indiana, Miryam Glikson and others presented a paper on coal composition, temperature and heating rates as determining factors in gas generation, whereas Ganjavar Khavari-Khorosani and Johan Michelson convincingly discussed causes of undersaturation. Papers on Australian basins, their gas potential and gas properties were presented by Sue Golding and others, John Smith and Mohinudeen Faiz and A. Saghafi.

In the "Coal seam methane economics session," Steve Scott presented a paper on the Fairview coal seam gas field in Queensland, Dave Dare and others discussed the Peat coal seam methane resource in Australia and Murry Cave described investigations in New Zealand on gas from coal. Hadiyanto and Faiz presented coal bed methane prospects in Indonesia and Paul Massarotto made cost/benefit comparison of coal bed methane stimulation and enhancement technologies used in New Zealand. Michael Zuber and Walter Sawyer presented Monte Carlo analysis to evaluate prospective Coalbed methane projects. Stephen Matheson discussed a new coal seam gas regime for Queensland and Janyth Tolson Pashin presented Coalbed methane rules and regulations in Alabama, USA.

During the second day three sessions were held in the morning: "Fundamental research in hydrocarbon exploration," "Coal seam methane reservoir evaluation" and "Coal seam methane reservoir characterization by specialized methodology." In the "Fundamental research in hydrocarbon exploration" session, two papers on petroleum generation and expulsion from coals and coaly shales in New Zealand were presented by Richard Sykes and others and Robert Funnell and others. Colin Ward and Lila Gurba presented a paper on influences of depositional and maturation factors on the coal rank in the Gunnedah Basin. Johan Michelson and Ganjavar Khavari Khorosani discussed the effect of expulsion dynamics on economic oil and gas accumulations, Toyohiko Yamazaki and Susan Roces demonstrated relationship between the gas in coal seams and artificial coalification rate under high-hydrothermal pressure systems and Calvin Bartholomew discusses mineral-catalyzed formation of natural gas during coal maturation.

Coal seam methane reservoir evaluation session was very well attended. Several excellent presentations on reservoir quality and evaluation such as those by Mike Dawson and Dave Marchioni, Brooce Moore and Peter

Moore, Jack Pashin Jim Enever and others and Andrew Scott were followed by lengthy and fruitful discussions.

The session on "Coal seam methane reservoir characterization by specialized methodology" concentrated on coal sorption characteristics and microstructures. Sorption characteristics were discussed by Basil Beamish and others, Peter Crosdale, and Chikatamarla Laxminarayana. This session also included talks on specialized techniques such as a small angle scattering and SEM to study pore space microstructure in coal (Andrzej Radlinski and E. Radlinska) and a new technique to determine residual gas content (Ireneusz Grzybek)

Two sessions were held in the afternoon: "Simulation/modeling of hydrocarbon generation" and "Management of gas emissions from coal mines." The former included a very interesting talk by Roger Tylor and Andrew Scott on defining Coalbed methane exploration fairways, and two talks on modeling of Coalbed gas in hydrothermal systems (Dina Lopez and others and Richard Bruce). The last two talks were followed by a vigorous discussion of whether hydrothermally-generated heat could account for economic reserves of Coalbed gas. Three talks were presented in the last session ("Management of gas emissions from coal mines"): Bruce Robertson presented opportunities and challenges of utilizing coal mine gas in Australia, Kotaro Ohga and others discussed prevention of methane emission into the atmosphere in Japan, whereas Georges Takla and Zdenek Vavrusak closed the session with a talk on gas emissions in the Czech Republic.

Poster sessions were held during both conference days and more than 10 posters were presented.

The conference ended with a panel session on energy and environmental economics of coal-seam gas and other energy options. Panel participants included delegates from academia and industry; some of them represented Australia at the recent Kyoto Conference.

In summary, the conference was a great success. It was very well organized with impressive content of technical sessions. Full papers of the conference will be included in the Proceedings that will be published by Chapman & Hall: "Coal seam methane reservoir characterization by specialized methodology."

Jim Pontolillo Receives Distinguished Service Award

Kenneth W. Kuehn
TSOP President

At the 1997-98 Incoming Council Meeting held in Lexington, Kentucky, this past September, Council voted unanimously to award Jim Pontolillo a distinguished service plaque in recognition of his "...Outstanding contribution to the Society as Editor."

Jim was elected to the position of Editor in 1994 and served for three years ending in September, 1997. His Newsletters (Vol. 11, no. 3/4 through Vol. 14, no. 3) were remarkable for their size, their quality, and their punctuality. Jim also committed much of his personal time to composing feature articles, all of which were extremely well-written and well-received by the membership. Notable among them was an illuminating three-part summary (Vol.13, nos.1-3) on the life and times of Dr. Marie Stopes, who was an outstanding scientist, social crusader, and eccentric, as well as one of the pioneers in coal petrology. Another of Jim's coups were two installments on "Non-Traditional Applications of Organic Petrology" (Vol. 14, nos. 2-3). At a time when membership concerns were being expressed about declining professional opportunities in our discipline, Jim succeeded in opening our eyes to many new and potentially rewarding areas. In short, through his diligent, skillful, and generous efforts, Jim Pontolillo established a new paradigm for our Newsletter; one that has enhanced TSOP's status as a professional society and one that will serve us well into the future.

Jim, who is now with the Water Resources Division at the USGS in Reston, Virginia, was presented the award in January by our Vice President Sharon Crowley. Several TSOP members were in attendance for the ceremony. Thank you, Jim, and congratulations! Your outstanding work on behalf of the Society is much appreciated!

Know someone who should join TSOP?

A membership application is inside the back cover. Just copy the form, complete the information, and send it to Cortland Eble, Membership Chairman (address on page 2). What could be simpler?

Council Update and Mid-year Meeting Report

Kenneth W. Kuehn
1997-98 President

Greetings! I am pleased to report to you on Council's activities to this point and to summarize the business conducted at our Midyear Council Meeting held Saturday, March 7, in Providence, Rhode Island. As you know, Council's two main thrusts this year are to improve the utility of our website and to attract new members to the Society. Dave Glick, Chair of the Internet Committee, with help from Councilor Maria Mastalerz, has made significant strides with our home page. It now has a new appearance, and some new features. Please take a few minutes and visit us at <http://www.tsop.org> and see them for yourself! In future, we will be adding more items related to TSOP structure and functions, educational materials, and information dissemination. On the membership front, Vice President Sharon Crowley, Chair of the ad hoc Membership Drive Committee, with help from President-elect Charles Barker, has prepared materials for mailing to approximately 125 potential candidates. We are looking to expand this list and would appreciate your input, especially in the form of names and lists of attendees at recent meetings who may share interests with our own. Thanks for your support!

Summary of the Mid-year Council Meeting:

President Kenneth W. Kuehn called the meeting to order at 8:43 a.m. EST.

Officers in Attendance: Kenneth W. Kuehn, President; Charles Barker, President-elect; Lorraine B. Eglinton, Secretary-treasurer; William Andrews, Editor; Dave Glick, Councilor; Maria Mastalerz, Councilor.

Others present: Prasanta Mukhopadhyay, Chair, 1998 Annual Meeting Committee.

In absentia: Sharon Crowley, Vice-president.

1. Lorraine Eglinton circulated a **financial statement** covering the period January 1, 1997 through December 31, 1997. On December 31, 1997 TSOP had a checking account balance of \$9,142.64 and a Vanguard account balance \$15,214.53. Total assets of the society on this date were \$24,357.17.

A total of **206 members** are paid up to date. This figure includes all those whose dues expired on 31/12/97 but not those whose dues expired 31/12/96.

There has been a **change in procedure** for notification of expired dues. This was done by directly mailing 1998

membership dues forms, filled out with current member details, to all members whose dues expired or were due to expire 31/12/97. An addressed envelope was included for return of dues.

2. William Andrews' first **Newsletter** issue was the final issue of 1997 (Volume 14, no. 4) and was 24 pages long. 300 copies were made and the total publication cost was \$815.94.

The contract for the mastering of our pending **Coal Geology/Coal Petrology CD-ROM** went out for bid and was awarded to the University of Texas at El Paso. The process is underway; there will be about 600 slides with captions and some text. This is a joint project between TSOP and AAPG. Margaret Anne Rogers, President of AAPG's Energy Minerals Division is still planning to debut the CD-ROM at the 1998 Annual AAPG meeting, May 17th-20th in Salt Lake City. She is expecting to have it running on a computer in the AAPG booth at this meeting.

3. Five **new member applications** were reviewed: Aleksandra Moch, Dan Jarvie (institutional member), Mark Obermajer, Therese Buo, and Niall James McCormack. The five were unanimously approved by council.

4. A quarter-page **advertisement for TSOP** is scheduled to appear in the May 1998 issue of Geotimes magazine.

5. A proposal from Carolyn Thompson-Rizer, Chair of the Research Committee, sought to establish a program of **Research Grants for students** world-wide who are engaged in some aspect of coal petrology or related research. The report included reviews and description of similar programs at the AAPG and GSA. Applications will be judged by a panel and awards will be made up to \$1,000. Council approved this new program after discussion and minor revision.

6. The **Proceedings of 1995 Annual Meeting** held at The Woodlands, Texas, has been published as International Journal of Coal Geology, Vol. 34 No. 3 and 4. Proceedings volumes for the 1996 and 1997 Annual Meetings are in progress.

7. Our **1997 Annual Meeting in Lexington, Kentucky**, was held jointly with the Eastern Section of AAPG. The meeting represented the largest technical program ever presented at an Eastern Section meeting and included 180 papers in 14 technical sessions, four workshops and three field-trips. However, after accounting for the start-up funds (\$1000), group photograph (\$400) and mailings costs (\$725), TSOP made a small financial loss of \$75.00 on this otherwise very successful venture.

8. Prasanta Mukhopadhyay presented an extensive report on his plans for the **1998 TSOP Annual Meeting in Halifax**, Nova Scotia, which will be sponsored by CSCOP, the Canadian Society for Coal and Organic Petrology. Three industrial sponsors have contributed their financial support as well. Muki presented a slide show of the Halifax area and the conference/hotel facilities. Council was extremely impressed with the proposed technical programs and scheduled special events.

9. Council discussed the progress report submitted by Jeff Quick, Chair of the **1999 Annual Meeting Committee** to be held in **Salt Lake City, Utah**.

10. Council discussed a report from Jim Hower who recently reinvestigated the **feasibility for TSOP to accept credit cards and Internet cash**. This was found to be financially unfeasible at the present time but further research into the E-cash system on Internet for transfer of foreign funds will be undertaken.

11. President-elect Charles Barker will serve as the TSOP Representative to the American Geological Institute's Member Society Council replacing Brian Cardott whose term has expired.

12. Concerns about the timeliness of the Annual Meeting Proceedings and a need to standardize TSOP's other publications such as short-course notes and abstract volumes resulted in the creation of a **new Publications Committee**. This committee is responsible for overseeing all publications of the Society, except the Newsletter, and will be chaired by Brian Cardott.

13. Council will undertake a review of the Society's existing awards and the desirability of creating new awards, to be completed by the 1998 Annual Meeting.

The meeting was adjourned at 7:30 pm. Complete copies of the Minutes are available from Lorraine Eglinton, secretary/treasurer.

Alex Cameron Given Hacquebard Award

The Canadian Society for Coal and Organic petrology (CSCOP) has named Dr. Alexander R. Cameron as the first recipient of The Hacquebard Award. This honorary award was established by CSCOP in 1990 in recognition of the contributions made by CSCOP member Dr. P. A. Hacquebard to the advancement of coal geoscience in Canada. It is awarded to members of CSCOP who have distinguished themselves in the field of coal science in Canada and whose work has been recognized nationally and internationally.

Through his research and associated activities during his long and distinguished career with the Geological Survey of Canada, Dr. Cameron has contributed in many ways to the advancement of coal science in Canada.

The presentation of the Hacquebard Award to Dr. Alex Cameron will be made during the TSOP luncheon at the Halifax meeting

(Reprinted in part from the CSCOP newsletter.)

Coal fields on Asteroids?

James Goode, a poet, author, and professor of English at the University of Kentucky's Lexington Community College, was given the assignment to name features on the carbonaceous asteroid, Mathilde. Cornell University's Astronomy Department approached the staff of the mining museum in Benham, Kentucky, who recommended Goode. The recommendations approved by Cornell were names of coal fields of the world. On a side note, Goode collected the names from an encyclopedia article by James Hower, Adrian Hutton, B. K. Parekh, Andrew Scott and Bukin Dauley.

Mathilde can be visited on the Internet at:
<http://sd-www.jhuapl.edu/NEAR/Mathilde/>

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Calendar of Events

1998

May 3-7, Canadian Institute of Mining, Metallurgy and Petroleum-Council of Mining and Metallurgical Institutions, Montreal, Quebec. Information: Chantal Murphy, Canadian Institute of Mining, Metallurgy and Petroleum, 3400 de Maisonneuve Blvd. West, Suite 1210, Montreal, Quebec H3Z 3B8, Canada, (514) 939-2710, ext. 304, fax 514-939-2714, cmcim@login.net

May 17 - 20 : Annual Meeting of the American Association of Petroleum Geologists, Salt Lake City, UT. For more information, contact the AAPG Convention Department at (918)-584-2555 [phone] or (918)-584-2274 [fax].

May 18 - 20 : Joint Meeting of the Geological Association of Canada and Mineralogical Association of Canada, Quebec City, Canada. For more information, please contact Dr. A. Morin at 418-656-2193 [telephone], 418-656-7339 [telex], or quebec1998@ggl.ulaval.ca [e-mail].

June : 30th Anniversary Jubilee Symposium of the International Peat Society - Production and Use of Energy Peat, Jyvaskyla, Finland.

June 14 - 18 : Field/Lecture Course on Modern Coal-Forming Environments With Emphasis On Predicting Sources And Distributions Of Methane & Oil In Coal Beds - Amelia Island, Florida and Okefenokee Swamp, Georgia, USA. For more information, contact Dr. Arthur D. Cohen at 803-777-4502 (phone), 803-777-6610 (fax), cohen@geol.sc.edu (email).

June 22 - 27 : 8th Coal Geology Conference, Charles University, Prague, Czech Republic. For additional information, please contact Prof. Jiri Pesek at 420-2-21952438 [phone] or 420-2-296025 [fax].

June 30 - July 2 : International Conference on the Formation and Quality of Southeast Asian Coal Deposits, Bandung, Indonesia. Flyer enclosed with this issue. For further information, please contact : Dr. T.A. Moore (64-4-570-3708 [phone], 64-4-570-3701 [fax], T.Moore@crl.co.nz [e-mail]) or Dr. M. Hikman Manaf (62-22-630-558 [phone], 62-22-635-506 [fax]).

July 5 - 10 : Euro Carbon'98, Strasbourg, France. For more information contact Dr. G. Collin at 33-69-756-4338 [telephone] or 33-69-756-4201 [fax].

August 23 - 28 : 216th National Meeting of the American Chemical Society, Orlando, FL. For more information call (202)-872-4396.

July 26 - 30 : Fifteenth Annual Meeting of The Society for Organic Petrology, Halifax, Nova Scotia, Canada. For information, contact Prasanta K. Mukhopadhyay at (902)-453-0061 [phone/fax].

September 20 - 26 : International Committee for Coal and Organic Petrography, Porto, Portugal. For information, contact M.J. Lemos de Sousa, (e-mail) mlsousa@fc.up.pt or (fax) 351-2-31-6456.

October 26 - 29 : Annual Meeting of the Geological Society of America, Toronto, Ontario, Canada. For information, contact the GSA at (303)-447-2020 (phone) or (303)-447-6028 (fax).

November 4-7, Global Mining Opportunities, Vancouver, British Columbia. Information: Randol International Ltd., 21578 Mountsfield Dr., Golden, CO 80401, (303) 526-1626, fax 303-526-1650. (Abstract deadline: June 1, 1997.)

November 8 -11 : AAPG International Conference and Exhibition, Rio de Janeiro, Brazil. For info, contact the AAPG Conventions Department at (918)-584-2555.

December 7 - 9 : 8th Australian Coal Science Conference, The University of New South Wales, Sydney, Australia; organized by Australian Institute of Energy. For additional information, visit www.materials.unsw.edu.au/coalscienceconference or www.aie.org.au

1999

March 21 - 24 : 58th Ironmaking Conference, Chicago, IL. For information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

Fall : International Committee for Coal and Organic Petrography, Bucharest, Romania.

September : Sixteenth Annual Meeting of The Society for Organic Petrology, Salt Lake City, Utah. For further information, contact either Jeff Quick (801-585-7851 [phone], 801-585-7873 [fax], jquick@esri.utah.edu) or Dave Wavrek (801-585-7907 [phone], 801-585-7873 [fax], dwavrek@esri.esri.utah.edu).

September 12 - 15 : AAPG International Conference and Exhibition, Birmingham, England. For info, contact the AAPG Conventions Department at (918)-584-2555.

October 18 - 20 : Third International Ash Utilization Symposium, Lexington, KY. For more information, contact Jim Hower at (606)-257-0261 [phone] / (606)-257-0302 [fax] or contact the web-site address at <http://www.flyash.org>

October 25 - 28 : Annual Meeting of the Geological Society of America, Denver, Colorado. For additional information, contact GSA at (303)-447-2020 [phone] or (303)-447-6028 [fax].

2000

March 26 - 29 : 59th Ironmaking Conference, Pittsburgh, PA. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

August 6 -11 : Eleventh International Peat Congress - "Sustaining the World's Peatlands", Quebec City, Quebec, Canada.

2001

March 25 - 28 : 60th Ironmaking Conference, Baltimore, MD. For more information contact ISS Headquarters at (412)-776-1535 [ext. 618] or visit <http://issource.org/>.

This list is compiled from various Internet sources as well as information submitted by individuals. Accuracy of information cannot be guaranteed. All submissions are welcomed.

Please notify the editor of any errors, changes, submissions, or deletions.

TSOP is looking for meeting sites for 2001 and beyond. Anyone wishing to host a meeting is invited to contact Jim Hower (hower@caer.uky.edu).

Still Available!

The Geochemistry and Petrography of Kerogen/Macerals

(published as Energy & Fuels, vol.8, no. 6, Nov/Dec 1994)

Selected papers presented at a Joint Symposium sponsored by: The American Chemical Society Division of Geochemistry and The Society for Organic Petrology

The American Chemical Society
1994 National Meeting
March 13-15, 1994

General topics include :

- Petrographic/Geochemical Classification of Kerogen and Kerogen Macerals
- Chemistry of Kerogen/Macerals Types
- Precursor Materials
- Paleo-Depositional Environments and Diagenetic Provenance
- Maceral Behavior during Maturation and Catagenesis
- New Techniques and Applications
- Case Histories

Cost is US \$40.00; payment can be made as check, money order, or purchase order. Please make payable to "The Society for Organic Petrology". Sorry, no credit card orders can be accepted. Send all inquiries and orders to :

TSOP
c/o Gretchen Tremoulet
University of Kentucky
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511-8433 USA

TSOP membership form:

If you or someone you know would like to join TSOP, just copy this form, complete all of the information, and return to Cortland Eble, Membership Chairman (address of page 2).





THE SOCIETY FOR ORGANIC PETROLOGY

**Instructions:**

- 1) Print out form and provide necessary information
- 2) Check box, or sign, at bottom of form
- 3) Mail to: *Cortland Eble, TSOP Membership Chair*
Kentucky Geological Survey, 228 MMRB
University of Kentucky, Lexington KY 40506

**Membership
Application Form
Please Print**

Questions?
606/257-5500
phone
606/257-1147
FAX

eble@kgs.mm.uky.edu

Name _____
Last First MI

Address _____

City State/Province Zip Code Country

Business or Day Telephone Number Fax Number

E-mail Address _____

Education _____
degree year institution major subject

Principal activities and interests _____
Coal Petrology
Organic Geochemistry
Kerogen Petrology
Other (please describe) _____

Professional experience and interests relative to organic petrology _____

Names and addresses of two people who are familiar with your interests/activities in organic petrology

	1	2
_____	_____	_____
_____	_____	_____
_____	_____	_____

Membership category _____ full member (\$20.00 US, \$30.00 CN)
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The official TSOP archival collection is now available for your use. The collection contains all of the Society's newsletters, publications, programs, field guides, short-course notes, Research Committee reports, minutes of Council meetings, and member directories. Photocopies of desired materials will be provided at cost immediately upon approval of your completed request form. Sorry, but no copies of publications which are currently offered for sale by TSOP can be provided. Please make all inquiries to:

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 1 Big Red Way
 Bowling Green, KY 42101 USA
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 kenneth.kuehn@wku.edu

**Submission Deadline Next Issue
 31 May 1998**