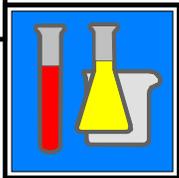




THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

A TSOP Newsletter Archive from 1984 to 2005

This PDF document contains all issues of The Society for Organic Petrology Newsletter from its inception with volume 1 number 1, in June, 1984, through volume 22 number 3, in September, 2005. Volume 1 included two issues, volume 2 included three issues, and volume 15 contained one issue; all other volumes have included four issues (volume 11 combined numbers 3 and 4). The Newsletter has been assigned ISSN number 0743-3816.

Articles in each issue have corresponding bookmarks which may be accessed from the bookmark navigation pane in Adobe Acrobat. Specific words may be sought using the program's 'Find' function. No search indexes have been constructed for this version.

The contents result from digital scanning and optical character recognition; there may be occasional errors, particularly where the original text was not a standard font on a white background. Some typographic errors from the original versions have been corrected. Images generally have been retained at 300 dpi for better results in printing.

TSOP is a society for scientists and engineers involved with the origin, occurrence, structure, chemistry, and history of sedimentary organic matter, including coal/ kerogen/ bitumen petrology, petroleum system evaluation, petrology of coke/ char/ graphite, and petrology for environmental applications. Programs and benefits include annual meetings (proceedings published in *International Journal of Coal Geology*) with short courses, field trips and a \$250 student paper award; the quarterly newsletter; Research Committee activities including the \$1000 Spackman Award for graduate student research; discount journal subscriptions; and a web site with bibliographic reference lists. For more recent issues of the TSOP Newsletter, to join TSOP, or to learn more, please visit the TSOP web site at

<http://www.tsop.org/>



NEWSLETTER

VOL. I NO. I

JUNE 1984

ISSN—0743-3816

FROM THE EDITOR:

It is my pleasure to bring you the first newsletter of The Society for Organic Petrology. I would like to welcome all new members to the Society including those who were not present at the founding meeting in March. For those who were unable to attend the founding meeting, a short history of the Society follows.

The organization began as an informal group of eighteen persons called the "Houston Committee for Organic Petrology"; the name was later changed to the Organizing Committee for Organic Petrology. The efforts of Helmut Schares (Schaes Instrument Company) and Pieter van Gijzel (Getty-Texaco) were indispensable in organizing meetings and sending questionnaires concerning the formation of a new society. More than 1000 people received questionnaires, and about one-third of them responded. More than 85% of the respondents favored the founding of a new organization and greater than 90% were interested in attending a technical meeting of the group. Many comments from the questionnaires were considered in drafting the objectives of the society and the constitution/bylaws.

The founding meeting was hosted by Amoco Production Company on Saturday March 10, 1984, and was attended by 38 persons from industry and universities. Elections were held for the March, 1984, to October, 1984, term and the results follow:

President: John A. Clendening, Amoco Production Co.

Vice-President: John R. Castano, Shell Development Co.

President-Elect: William Spackman, Pennsylvania State Univ.

Secretary/Treasurer: Ann Brooke Reaugh, Geo Chem Laboratories, Inc.

Editor: Margaret E. Hildick, Gulf Oil E&P Co.

Counselor: John Shane, Exxon, USA
and Joe Senftle, Union Oil Co.

What next? Our committees are now compiling a Procedures Manual, planning for the October annual meeting, and expanding our membership.

As Editor, I would greatly appreciate any comments or suggestions with respect to the newsletter and the Society. Once again, we welcome our new members to the Society and are looking forward to meeting you in October.

Margaret E. Hildick

SOCIETY NEWS

ANNUAL MEETING

The first annual meeting of the Society for Organic Petrology will be held Tuesday and Wednesday, October 16 and 17, 1984, at the Holiday Inn at Tyson's Corner, Virginia (the metropolitan Washington, D.C. area). There will be morning and afternoon technical sessions each day; papers will range from 10 to 25 minutes in length. Although no formal proceedings volume is planned at this time, abstracts will be published and available. Please use the AAPG format for abstracts.

We invite you to submit titles of proposed papers to any of the members of the meeting committee by the end of June. Camera-ready abstracts must be submitted by the fifteenth of September.

ANNUAL MEETING AGENDA

Monday, October 15, 1984:

Evening: Registration, Executive Council Meeting

Tuesday, October 16, 1984:

Morning: Registration, Technical Session,
Business Meeting

Afternoon: Technical Session

Evening: Icebreaker

Wednesday, October 17, 1984:

Morning: Technical Session, Committee Meetings

Afternoon: Technical Session

Additional details may be obtained from members of the meeting committee. We plan to mail registration and housing application forms, maps, and a general schedule of papers to TSOP members in mid-June. We expect to have a program available by mid-July.

ANNUAL MEETING COMMITTEE:

Chairman:

Ann Brooke Reaugh
Geochem Laboratories, Inc.
1143-C Brittmore
Houston, TX. 77043
(713)467-7011

Margaret E. Hildick
Gulf Oil E&P Co.
P.O.Box 36506
(713) 754-5583

Dennis D. Kaegi
Inland Steel Research Labs
3001 E. Columbus Dr.
East Chicago, Ind. 46312
(219) 392-5623

John A. Clendening
Amoco Production Co.
Houston, Tx. 77253
(713) 556-3549

MEMBERSHIP

The membership as of 18 May, 1984, is 104 individuals and 4 institutions; a three-fold increase from the 36 individuals and one institutional membership at the founding meeting.

There are three membership classes, as stated in the constitution and bylaws: individual, honorary and institutional. Eligibility requirements are unrestrictive and are stated in such a manner as to attract persons or institutions who are interested, but not necessarily active, in organic petrology.

Members should distribute copies of the enclosed application to all interested persons or institutions. Remember, the deadline for application as a founding member is July 1, 1984. A current list of members and addresses will accompany the next newsletter.

OTTENJANN SEMINAR

The Society sponsored its first seminar entitled "Improved Microphotometric Techniques for Maceral Measurements" with Karl Ottenjann as guest speaker. The seminar was held April 11, 1984, at the Adam's Mark Hotel in Houston, Texas, and was attended by approximately 50 people.

Mr. Ottenjann is currently employed by the Geologisches Landesamt (geological office) Nordrhein-Westfalia in Krefeld, West Germany. He is presently involved with research on the spectral distribution of organic matter fluorescence and also the bituminization of bituminites.

The seminar consisted of a morning and afternoon session. During the morning session, Mr. Ottenjann presented theoretical, historical and current technical aspects of fluorescence microscopy. A discussion period followed.

The afternoon session began with a presentation on fluorescence microscopy by Pieter van Gijzel (Getty-Texaco). A panel discussion period followed, moderated by Jack Burgess (Gulf Oil). Other panelists were Carolyn Thompson (Conoco), John Castano (Shell), and Pieter van Gijzel (Getty-Texaco).

The highlights of the seminar should be available at the annual meeting in October; some important topics discussed were:

- The characterization and classification of organic matter in kerogen strewn slides,
- Techniques for checking background fluorescence.
- Comparison of currently available instruments for fluorescence microscopy (including objectives, filters, oils, and monochrometers),
- Maintenance of instruments,
- Depth of the photochemical effect
- Mineral versus object fluorescence,
- Preparation of specimens for fluorescence microscopy,
- Problems with high-rank material,
- Chemical versus morphological alteration of organic material, due to UV-light exposure,
- Normalizing and characterizing fluorescence spectra,
- Quality control of instruments.

LOGO

The temporary logo appears in the newsletter heading. Any member wishing to submit a design for consideration as the permanent logo, should do so by September 15, 1984. Please send drawings (preferably black and white) to the address below. Remember, please keep it simple to reduce reproduction costs.

Margaret E. Hildick
Gulf Oil E&P Co.
P.O. Box 36506
Houston, Texas 77236

CALENDAR

1984

*These items are new or have been changed.

*June 11-15, 1984 Fossil-based synfuels, symposium, Atlanta. (Melvin W. Carter, School of Nuclear Engineering & Health Physics, Georgia Institute of Technology, Atlanta, 30332).

*June 18-21, 1984 Bio Energy, mtg & show Gothenburg, Sweden. (Bio Energy 84, Swedish Trade Fair Foundation, Box 5222, S-402 24 Gothenburg, Sweden).

*June 18-23, 1984 Peat, mtg, Dublin. (Intl) Peat Congress, Bord na Mona, Lower Baggot St., Dublin 2, Ireland).

*June 27-29, 1984 Tar Sand Symposium, Vail, Colo., by Western Research Institute and Dept. of Energy. (University of Wyoming, Conferences, & Institutes, Box 3274, University Station, Laramie, 82071).

●July 15-18, 1984 Energy geology of Europe, mtg, Geneva. (Kathy Watson, AAPG headquarters, Box. 979, Tulsa, 74101. Phone: (918) 584-2555).

THE SOCIETY FOR ORGANIC PETROLOGY

*Aug. 10-13, 1984 Society of Economic Paleontologists & Mineralogists, 1st mid-year ann. mtg, San Jose, Calif. (SEPM headquarters, Box 4756, Tulsa, 74104. Phone: (918) 743-9765).

*Aug. 18-24, 1984 Paleobotany, mtg, by the Intl Organization of Paleobotany, Edmonton, Alberta. (Ruth A. Stockey, Dept. of Botany, University of Alberta, Edmonton, T6G2E9).

*Aug. 26-Sept. 1, 1984 Palynology, mtg, Calgary, Alberta. (Lois Kokoski, Faculty of Continuing Education, Univ. of Calgary, Calgary, T2N1N4).

*Sept. 17-21, 1984, Survey of Dinoflagellate Biostratigraphy, 18th Palynology short course at LSU (George Hart, Dept. of Geology, LSU, Baton Rouge, La. 70803-4101).

*Oct. 8-10, 1984 Association of Earth Science Editors, ann. mtg. Portland, Ore. (Beverly Vogt, Oregon Dept. of Geology, 1005 State Office Bldg., Portland, 97201. Phone: (503) 229-5580).

*Oct. 14-18, 1984 Paleontology congress, Oaxtepec, near Mexico City, (Gloria Alencaster, Instituto de Geologia, National University of Mexico, Ciudad Universitaria, Apartado Postal 70-296. 04510 Mexico D.F.).

*Oct. 16-17, 1984 The Society for Organic Petrology Ann. mt., Tyson's Corner, Va. (Ann Brooke Reaugh, Geo Chem Labs 1143-C Brittmore Rd. Houston, Tx, 77043, Phone:(713)467-7011).

*Oct. 17-19, 1984 American Institute of Professional Geologists, ann. mtg, Orlando, Fla. (Bobby J. Timmons, Timmons Associates, Box 50606, Jacksonville, Fla. 33250. Phone: (904) 246-4533).

*Oct. 17-20, 1984 American Association of Stratigraphic Palynologists, ann. mtg, Arlington, Va., & field trip (Oct. 17) to classic Coastal Plain localities. (Norman Frederiksen, MS 970, U.S. Geological Survey, Reston, Va., 22092. Phone: (703) 860-7745).

*Nov. 5-8, 1984 Geological Society of America, ann. mtg, in Reno, with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean M. Latulippe, GSA headquarters, Box 9140, Boulder, Colo., 80301. Phone: (303) 447-2020).

*Nov. 5-9, 1984 Geopressures & hydrocarbon occurrences, symposium, by Canadian Society of Petroleum Geologists and University of Alberta, Banff, Alberta. (Pat Larlham, Faculty of Extension, University of Alberta, Banff, Alberta. (Pat Larlham, Faculty of Extension, University of Alberta, Edmonton, T6G 2G4).

*Dec. 2-5, 1984 Gulf Coast Section, Society of Economic Paleontologists & Mineralogists, ann. mtg, Austin, Tex. (Don G. Bebout, Texas Bureau of Economic Geology, University of Texas, Box X, University Station, Austin, 78712. Phone: (512) 471-7721).

*Dec. 2-5, 1984 Future petroleum provinces, Wallace E. Pratt Memorial Meeting, Phoenix. (AAPG headquarters, Box 979, Tulsa, 74101).

1985

*March 13-16, 1985 Northeast Section, Geological Society of America, ann. mtg. Lancaster, Pa. (Seymour S. Greenberg, Dept. of Geology & Astronomy, West Chester University, West Chester, Pa., 19383. Phone: (215)436-2788).

* March 20-23, 1985 Southeastern Section, Geological Society of America, mtg, Knoxville, Tenn. (K.R. Walker, Dept. of Geological Sciences, University of Tennessee, Knoxville, 37996. Phone: (615) 974-2366).

* March 24-27, 1985 American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, ann. mtg, New Orleans. (AAPG headquarters, Box 979, Tulsa, 74101. Phone: (918) 584-2555).

*May 8-11, 1985 Cordilleran Section, Geological Society of America, mtg, Vancouver, B.C. (William H. Mathews, Dept. of Geological Sciences, University of British Columbia, Vancouver, V6T 1W5. Phone: (604) 228-2449).

*May 23-28, 1985 American Association for the Advancement of Science, ann. mtg, Los Angeles. (AAAS headquarters, 1776 Massachusetts Ave. NW, Washington, D.C., 20036. Phone: (202) 467-4400).

*Aug. 11-14, 1985 Society of Economic Paleontologists & Mineralogists, 2nd mid-year ann. mtg, Golden, Colo. (SEPM headquarters, Box 4756, Tulsa, 74104. Phone: (918) 743-9765).

*Aug. 24-Sept. 2, 1985 Graptolite Working Group, mtg, Denmark, & field trips (before & after) to Norway, Sweden, Denmark. (Merete Bjerreskov, Institute of Historical Geology & Paleontology, University of Copenhagen, Oster Voldgade 10, DK-1350 Copenhagen K. Denmark).

*Oct. 28-31, 1985 Geological Society of America, ann. mtg, in Orlando, Fla., with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists, (Jean M. Latulippe, GSA headquarters, Box 9140, Boulder, Colo., 80301. Phone: (303) 447-2020).

CLASSIFIED ADVERTISEMENTS

.. The publication "Fluoreszenzmikroskopische Änderungen von Liptiniten und Vitriniten mit zunehmendem Inkohlungsgrad und ihre Beziehungen zu Bitumenbildung und Verkokungsverhalten" by Marlies Teichmüller (1982) is available to TSOP members for purchase. The publisher is Geologisches Landesamt Nordrhein-Westfalen, Krefeld. Please send \$6.30 U.S. currency to Raymond Pfeiffer, 9119 Benthos Dr., Houston, Tx., 77083.

The English translation of this work is in progress and will be announced when available - Ed.

THE SOCIETY FOR ORGANIC PETROLOGY

Names of two people who are familiar with your interests/activities in organic petrology.

1. Name _____
Address _____

2. Name _____
Address _____

I am familiar with the objectives of the Society (as stated in the Constitution) and agree to abide by its provisions.

Signature

Dues paid [] Cash
 Check number _____

Received by: _____

Date: _____

Dues are \$15.00 for individual members and \$75.00 for institutional members based on the calendar year. Please remit application and dues payment to: Harvey S. Zeiss, Shell Mining Company, P.O. Box 2906, Houston, Texas 77252. Checks should be made payable to The Society for Organic Petrology.



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

VOL. 1 NO. 2

SEPTEMBER 1984

ISSN—0743-3816

FROM THE PRESIDENT

The Society for Organic Petrology, founded in Houston, Texas, on March 10, 1984, is growing rapidly thanks to the efforts of Harvey Zeiss and his Membership Committee. As of July 29, 1984, this fledgling organization, not yet five months old, has 166 individual and five institutional members. This response seems to indicate clearly that there indeed was a need for a society dedicated to organic petrology and petroleum geochemistry. Response has been very encouraging for the first annual and technical meeting of the society, to be held at the Holiday Inn, Tyson's Corner, Virginia, on October 16 and 17, 1984. Ann Brooke Reaugh, Chairman of the 1984 Annual Meeting Committee, advises me that sufficient titles for papers have been received to organize a full two-day technical meeting. Arrangements with the hotel are complete and additional information regarding the meeting is included elsewhere in this Newsletter.

All members are strongly encouraged to support our new organization by attending and participating in the first annual meeting. These technical sessions and evening hours are perhaps the single best opportunity for many of us to get together and discuss mutual problems, to exchange ideas and information, and to just simply get to know each other. T.S.O.P. is of a size, and its members are of such diverse backgrounds, that it sees an ideal situation to bring together experience, technical expertise, and varied perspectives to accurately define and resolve technical problems. It is among our goals to establish working groups to solve various specific problems. The working groups will encourage imaginative technical thinking through exposure to group interaction and will offer solutions through written reports to problems we have all encountered.

Raymond Pheiffer is Chairman of the Procedures Manual Committee. This committee will make its recommendations to Council at the October meeting. If you have input regarding the direction you would like to see T.S.O.P. proceed, the first annual meeting will present you with an opportunity to "have your say" and to influence the society in the years ahead.

I urge each member to discuss T.S.O.P. with your colleagues, students, and other potentially interested persons and to encourage them to consider applying for membership in T.S.O.P.

I shall be looking forward to seeing a large percentage of you at Tyson's Corner in October; remember that Virginia and the Appalachian hardwoods are in their full glory about that time of year.

John A. Clendening

FROM THE EDITOR

It's time again for another Newsletter. It pleases me to see our organization growing by leaps and bounds. The very positive overall support T.S.O.P. has received from other professional societies (such as A.A.P.G., A.G.I., S.E.P.M., etc.) is very rewarding. The annual meeting is coming up very soon and after seeing the preliminary list of titles for the technical presentations, I feel sure the turnout will be a large one. The technical sessions and discussions should be very intellectually stimulating and the metropolitan Washington, D.C. area should provide for memorable experiences.

The publication of the membership directory has been delayed until after the October annual meeting, to enable persons registering at the meeting space in the 1984 Directory.

The Procedures Manual is nearing completion and should be ready for the annual meeting. Also, the English translation of Marlies Teichmüller's (1982) 'Fluoreszenz-mikroskopische Änderungen von Liptiniten und Vitriniten mit Zunehmendem Inkohlungsgrad und ihre Beziehungen Zu Bitumenbildung und Verkokungsverhalten' by Neely Bostick should be available for purchase at the annual meeting.

I would like to welcome all new members to T.S.O.P. and am looking forward to meeting you in October.

Margaret E. Hildick

ANNUAL MEETING

The first annual meeting of the Society for Organic Petrology will be held from Monday through Wednesday, October 15 to 17, 1984, in Tyson's Corner, Virginia. An information packet including a tentative program and housing and registration forms was mailed to T.S.O.P. members in late August. Please let us know if we have, by chance, missed you.

Arrangements have been made to hold the meeting at the Holiday Inn, 1960 Chain Bridge Road in McLean (Tyson's Corner), Virginia. Registration will begin on Monday, October 15, 1984, from 5:00-8:00 p.m. Late registration will be from 7:00-8:30 a.m. on the morning of the 16th.

The tentative program includes technical sessions, meetings of the Council and committees, an annual business meeting, and a tour of the U.S. Geological Survey Technical Center in Reston, Virginia.

THE SOCIETY FOR ORGANIC PETROLOGY

A volume of abstracts will be published of papers given at the meeting. Camera ready abstracts must be submitted by the fifteenth of September. Additional details may be obtained from members of the Annual Meeting Committee.

ANNUAL MEETING COMMITTEE

Ann Brooke Reaugh (Chairman)
GeoChem Laboratories, Inc.
1143-C Brittmore
Houston, Texas 77043
(713)467-7011

Dennis D. Kaegi
Inland Steel Research Labs
3001 E. Columbus Drive
East Chicago, Indiana 46312
(219) 392-5623

Margaret E. Hildick
Gulf Oil E & P Co.
P.O. Box 36506
Houston, Texas 77236
(713) 754-5583

John A. Clendening
Amoco Production Co.
Box 3092
Houston, Texas 77253
(713) 556-3549

1984 ANNUAL MEETING TENTATIVE PROGRAM

Monday, October 15, 1984:

5:00 p.m.-8:00 p.m. Registration
7:00 p.m. Council Meeting

Tuesday, October 16, 1984:

7:00 a.m.-8:30 a.m. Registration
8:30 a.m.-11:30 a.m. Technical Sessions
11:30 a.m. -1:00 p.m. Luncheon
1:00 p.m.-3:00 p.m. Technical Session
3:00 p.m.-5:30: p.m. Tour of U.S. Geological
Survey Technical Center
Reston, Virginia and Committee
Meetings
7:30 p.m. Ice Breaker

Wednesday, October 17, 1984:

8:00 a.m.-11:00 a.m. Technical Sessions
11:00 a.m.-11:30 a.m. Group Picture
11:30 a.m.-1:30 p.m. Luncheon and Annual
Business Meeting, Presentation
of Awards, Installation
of New Officers
1:30 p.m.-4:30 p.m. Technical Sessions
4:30 p.m. Adjournment
7:00 p.m. Meeting of Council for 1984-1985

COUNCIL MEETING,

The Council for the Society for Organic Petrology will meet at 7:00 p.m. E.D.T., on Monday, October 15, 1984, in the Holiday Inn at Tyson's Corner, Virginia, to review and conduct the business affairs of the society.

Any proposed amendments to the constitution or by-laws of the organization must be submitted in advance to the secretary-treasurer of the society for inclusion on the agenda.

All interested T.S.O.P. members are welcome to attend the Council Meeting.

ANNUAL BUSINESS MEETING

The Business Meeting will take place on Wednesday, October 17, 1984, at 12:30 p.m. in the Holiday Inn, Tyson's Corner, Virginia, to conduct the business of the society.

WORKING GROUPS

Initial steps to form working groups will be made at the annual meeting. If you are interested in a particular phase of organic petrology and wish to chair or be a member of a working group, please indicate your interest to a Council member. The working groups will not be restricted to persons attending the meeting.

LOGO

The deadline for submitting designs for consideration as the permanent logo is fast approaching. Please send suggestions to the address below.

Margaret E. Hildick
Gulf Oil E & P Co.
P.O. Box 36506
Houston, Texas 77236

ELECTION RESULTS

Results of the election for T.S.O.P. Council (1984-1985) are now in. Only three council members were elected for the 1984-1985 term due to carry over from the 1984 Council.

Newly elected are:

President-Elect: John R. Castano, Shell
Development, Co.
Vice-President: John Crelling, Southern Illinois Univ.,
Carbondale.
Editor: Margaret E. Hildick, Gulf Oil E & P Co.,
(re-elected)

THE SOCIETY FOR ORGANIC PETROLOGY

The other Council members for 1984-1985 will be:

President: William Spackman, Pennsylvania State Univ.

Secretary-Treasurer: Ann Brooke-Reaugh, GeoChem Laboratories, Inc.

Councilor: John Shane, Exxon, U.S.A. and Joe Senftle, Union Oil Co.

NOTICE OF DUES

Dues for the 1985 calendar year are due and payable on or before January 1, 1985. Checks should be in U.S. dollars and made payable to The Society for Organic Petrology. Dues currently are \$15.00 for individual members and \$75.00 for institutional members. You will be advised if dues are increased for the 1985 calendar year. Payment should be mailed to:

Anne Brooke Reaugh
GeoChem Laboratories, Inc.
1143-C Brittmore
Houston, Texas 77043

MEMBERSHIP

As of Mid-August we had 180 individual and 6 institutional members. The total number of founding members is 128 individual and 5 institutional.

As previously mentioned in this Newsletter, publication of the membership directory will be delayed until after the annual meeting. This will enable persons wishing to join T.S.O.P. at the founding meeting, space in the 1984 directory.

Members should distribute copies of the enclosed application to all interested persons or institutions.

PERSONALS

Dr. Raymond Pfeiffer has moved from Texaco Research, Houston, to Eastern Illinois University, Charleston, Ill., 61920. He will be an Assistant Professor of Geology in the Department of Geography and Geology.

CLASSIFIED ADVERTISEMENT

William Fairchild (International Biostratigraphers, Inc.) has moved his consulting operation to Taos, New Mexico, Phone (505) 758-3406.

WANT ADS

Coal Petrologist/Mineralogist

The Bureau of Economic Geology, The University of Texas at Austin, has an immediate opening for a Ph.D. research scientist to work within the Bureau's coal/lignite program to characterize Texas lignite. The scientist will also interface with the Bureau's Mineral. studies Laboratory.

The candidate must be highly qualified in coal petrology and mineralogy with some knowledge of organic geochemistry. Extensive publication is required.

Salary is dependent on experience and publication record.

Interested scientists should send a resume to: L.F. Brown, Jr., Associate Director, Bureau of Economic Geology, The University of Texas at Austin, University Station Box X, Austin, Texas, 78713. The University is an equal opportunity/affirmative action employer.

CALENDAR

1984

These items are new or have been changed.

Sept. 17-21, 1984, Survey of Dinoflagellate Biostratigraphy, 16th Palynology short course at LSU (George Hart, Dept. of Geology, LSU, Baton Rouge, La. 70803-4101).

*Sept. 25-27, 1984, International Council of Scientific Unions, symposium, Ottawa, Ont. Topic: Global change. Teaching science. (I.C.S.U. Secretariat, 51 Boulevard de Montmorency, 75016 Paris. Phone: 525 0329. Telex: 6350553F).

*Oct. 2-4, 1984, Rocky Mountain Coal symposium, Bismarck, N.D. (Robert L. Houghton, U.S. Geological Survey, 821 E. Interstate Ave., Bismarck, 58501. Phone: (701) 225-4011 Ext. 607).

*Oct. 8-10, 1984, Association of Earth Science Editors, ann. mtg. Portland, Ore. (Beverly Vought, Oregon Dept. of Geology, 1005 State Office Bldg., Portland, 97201. Phone: (503) 229-5580).

*Oct. 10-14, 1984, Eastern Section, American Association of Petroleum Geologists, ann. mtg. & field trips, Pittsburgh, Pa. (Christopher D. Lauthrey, Pennsylvania Geological Survey, 7th Floor, 121 S. Highland Ave., Pittsburgh, 15206. Phone: (412) 665-2155).

Oct. 14-18, 1984, Paleontology congress, Oaxtepec, near Mexico City, (Gloria Alencaster, Instituto de Geologica, National University of Mexico, Ciudad Universitaria, Apartado Postal 70-296. 04510 Mexico D.F.).

Oct. 16-17, 1984, The Society for Organic Petrology ann. mts., Tyson's Corner, Va. (Ann Brooke Reaugh, Geo Chem Labs 1143-C Brittmore Rd., Houston, Tx, 77043. Phone: (904) 246-4533).

Oct. 17-20, 1984, American Association of Stratigraphic Palynologist, ann. mtg. Arlington, Va., & field trip (Oct. 17) to classic Coastal Plain localities (Norman Frederiksen, MS 970, U.S. Geological Survey, Reston, Va. 22092. Phone: (703) 860-7745).

THE SOCIETY FOR ORGANIC PETROLOGY

*Oct. 29,-Nov. 2, 1984, Exploration Geochemistry, symposium, Rio de Janeiro (Technical & Scientific Committee for Geochemistry, Box 2432, Rio de Janeiro, RJ CEP 20 001. Phone: 021-2246528. Telex: 2132509 PMIN BR).

Nov. 5-8, 1984, Geological Society of America, ann. mtg., Reno, with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean M. Latulippe, GSA headquarters, Box 9140, Boulder, Colo., 80301. Phone: (303) 447-2020).

Nov. 5-9, 1984, Geopressures & Hydrocarbon Occurrences, symposium, Canadian Society of Petroleum Geologists and University of Alberta, Banff, Alberta. (Pat Larlham, Faculty of Extension, University of Alberta, Banff, Alberta, Edmonton, T6G 2G4).

*Nov. 6-7, 1984, North Atlantic Paleooceanography, mtg, London (N Shackleton, Dept. of Quaternary Research, Godwin Laboratory, Free School Lane, Cambridge, CB2 3RS, England).

Dec. 2-5, 1984, Gulf Coast Section, Society of Economic Paleontologists & Mineralogists, ann. mtg; Austin, Tex. (Don G. Bebout, Texas Bureau of Economic Geology, University of Texas, Box X., University Station, Austin, Tex., 78712. Phone: (512) 471-7721).

Dec. 2-5, 1984 Future Petroleum Provinces, Wallace E. Pratt Memorial Meeting, Phoenix, Arizona (AAPG headquarters, Box 979, Tulsa, Oklahoma, 74101).

1985

*Feb. 24-28, 1985, Society of Economic Geologists American Institute of Mining, Metallurgical & Petroleum Engineers, winter mtg, New York (Frederick T. Graybeat, ASARCO Inc., 180 Maiden Lane, New York, 10038).

*Feb. 25-March 1, 1985, Tropical Peat Resources, symposium, by Int. Peat Society, Kingston, Jamaica (Barry Wade, Petroleum Corp. of Jamaica, Box 579, Kingston 10. Phone: 809 92-29670. Telex: 2356PET-Corp JA).

* March 13-16, 1985, Hydrologic Transport of Organic Chemicals, mtg. by Geological Society of America, Lancaster, Pa. (Frank J. Wobber, Office of Energy Research, Dept of Energy, Washington, D.C., 20545. Phone: (301) 353-5549).

March 13-16, 1985, Northeast Section, Geological Society of America, ann. mtg., Lancaster, Pa. (Seymour S. Greenberg, Dept of Geology & Astronomy, West Chester University, West Chester, Pa., 19383. Phone: (215) 436-2788).

March 20-23, 1985, Southeastern Section, Geological Society of American mtg., Knoxville, Tenn. (D.R. Walker,

Dept. of Geological Sciences, University of Tennessee, Knoxville, 37996. Phone: (615) 974-2366).

March 24-27, 1985, American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, ann. mtg., New Orleans, La., (AAPG headquarters, Box 979, Tulsa, 74101. Phone: (918) 584-2555).

*April 15-17, 1985, Southeast Section, Geological Society of America, mtg., Fayetteville, Ark. (Robert C. Morris, Dept of Geology, University of Arkansas, Fayetteville, 72701. Phone: (501) 575-3355).

* April 22-24, 1985, Rocky Mountain Section, Geological Society of America, mtg., Boise, Idaho (Claude Spinosa, Dept. of Geology & Geophysics, Boise State University, Boise, 83725. Phone: (208) 385-1631).

May 8-11, 1985, Cordilleran Section, Geological Society of America, mtg., Vancouver, B.C. (William H. Mathews, Dept of Geological Sciences, University of British Columbia, Vancouver, V6T 1W5. Phone: (604) 228-2449).

*May 15-17, 1985, Geological Association of Canada; Mineralogical Association of Canada, ann. mtg., Fredericton, N.B. (W. Vande Poll, Dept of Geology, University of New Brunswick, Fredericton, E3B 5A3. Phone: (506) 453-4803).

May 23-28, 1985, American Association for the Advancement of Science, ann. mtg., Los Angeles. (AAAS Headquarters, 1776 Massachusetts Ave. NW, Washington, D.C., 20036. Phone: (202) 467-4400).

*June 2-5, 1985, Rocky Mountain Sections, American Association of Petroleum Geologists and Society of Economic, Paleontologists & Mineralogists, mtg., Denver. (Don Hembre, Rocky Mountain Association of Geologists, 1220 University Bldg., 910 16th St., Denver, 80202. Phone: (303)831-7755).

Aug. 11-14, 1985, Society of Economic Paleontologists & Mineralogists, 2nd mid-year ann. mtg., Golden, Colo. (SEPM Headquarters, Box 4756, Tulsa 74104. Phone: (918) 743-9765).

Aug. 24-Sept. 2, 1985, Graptolite Working Group, mtg, Denmark & field trips (before & after) to Norway, Sweden, Denmark. (Merete Bjerreskov, Institute of Historical Geology & Paleontology, University of Copenhagen, Oster Voldgade 10, DK-1350, Copenhagen K. Denmark).

*Sept. 16-20, 1985, Organic Geochemistry, mtg., Julian, West Germany. (Helga Bongartz, KFA Julich GmbH, Box 1913, D-5170 Julich) Topics: Organic matter in recent sediments. Generation & migration of oil & gas. Kerogen, coal & oil shales. Heavy oils & tar.

*Sept. 17-21, 1985, American Institute of Professional Geologists, ann. mtg., St. Paul. (Robert E. Pendergast, 1925 Oakcrest Ave., Roseville, Minn., 55113. Phone: (612) 636-7744).

THE SOCIETY FOR ORGANIC PETROLOGY

Names of two people who are familiar with your Interests/activities in organic petrology.

1. Name _____
Address _____

2. Name _____
Address _____

I am familiar with the objectives of the Society (as stated in the Constitution) and agree to abide by its provisions.

Signature

Dues paid Cash
 Check number _____

Received by: _____

Date: _____

Dues are \$15.00 for individual members and \$75.00 for institutional members based on the calendar year. Please remit application and dues payment to: Harvey S. Zeiss, Shell Mining Company, P.O. Box 2906, Houston, Texas 77252. Checks should be made payable to The Society for Organic Petrology.

THE SOCIETY FOR ORGANIC PETROLOGY

Oct 28-31, 1985, Geological Society of America, ann. mtg., in Orlando, Fla., with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America,, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists, (Jean M. Latulippe, GSA Headquarters, Box 9140, Boulder, Colo., 80301. Phone: (303) 447-2020).

Nov. 10-12, 1985, Eastern Section, American Association of Petroleum Geologists, Fort Magruder Inn, Williamsburg, Va. (Laure G. Wallace, Minerals Management Service, Sunrise Valley Drive. MS 643, Reston, Va. 22091). Phone: (703) 860-6483).



THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

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February 1985

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FROM THE EDITOR

It is my pleasure to bring you the first 1985 quarterly newsletter. As TSOP enters into its second year as an organization one can already notice good changes brought about mainly by the diverse interests and backgrounds of its members. Outside interest in the society has grown to the level where Editors of other organizations are contacting TSOP to trade newsletters.

TSOP is still a young organization, yet susceptible to strong outside influences to unite with a previously existing organization. Undoubtedly, the first years of any organizations existence are the toughest. However, the general feeling shown by all TSOP members is to remain independent. To affiliate with any other organization would victimize TSOP's purpose born from a specific need that was previously unrecognized by preexisting organizations.

We are looking forward to an exciting second year. Our plans include holding the 1985 Annual Meeting in Houston. We also plan to publish manuscripts or longer abstracts of all papers given at the 1984 Annual Meeting in a special edition of the International Journal of Coal Geology. Manuscripts should be submitted to the Publications Committee no later than April 1, 1985. We also hope to organize independent study groups (Working groups) to begin functioning this year. A suggestion for a drilling contaminants working group is contained in this newsletter.

The possibility of putting together a Journal for TSOP (possibly entitled the Journal of Organic Petrology) has been suggested. We are soliciting your comments and suggestions on this matter. TSOP needs your continuous support and feedback. I have enclosed a partial list of committees in this newsletter to help members direct their questions or suggestions to the proper persons. Do not hesitate to contact Bill Spackman or Myself if we can be of any assistance to you.

Margaret E. Hildick

Letters

FROM THE PRESIDENT

Although less than one year old. The Society for Organic Petrology displays the vigor and strength of a young adult. During the first eight months of the existence of our organization it has grown to include more than 200 members, we have issued our first publication and our first Annual Meeting proved to be a resounding success. The Society's growth and productivity are clear evidences of its vigor but equally important to its future is the diversity that characterizes the membership. The participation of coal petrologists, organic geochemists, geologists, palynologists, paleobotanists, and members representing a variety of other disciplines ensure continued support from diverse sectors and a stimulating environment for future efforts.

As a means of ensuring continuity of our efforts and integration of our activities, I am instituting a midyear conference of the officers of the society including the chairmen of all committees. This will be held in Houston in late April or early May (announcement follows: Ed.) This "working session" will facilitate progress in all of our activities and will provide an opportunity to review our policies and formulate plans for the future. A summary of the proceedings of this session will be conveyed to the membership via the Newsletter.

Another innovation is the creation of a Publications Committee. At this stage in our development it is important that thorough consideration be given to the question of whether a "Journal of Organic Petrology" should be created as a vehicle through which our products can be conveyed and permanently recorded. There are many ramifications associated with such an undertaking and these must be examined in detail. The English translation of Marlies Teichmüller's "Fluoreszenzmikroskopische Änderungen von Liptiniten und Vitriten mit zunehmendem Inkohlungsgrad und ihre Beziehungen zu Bitumenbildung und Verkokungsverhalten" has been issued by the Society as "Special Publication No. 1". If a journal is instituted will the issuance of the Special Publications series be continued? What will be the Society's total "publication program"? These and other related questions will be addressed by the new Committee and their recommendations will be presented to the membership at the 1985 Annual Meeting.

Please continue your efforts to enlist new members who can contribute to our cause and who can benefit from the interactions made possible by Society membership. Also, please know that I will always be receptive to your thoughts and suggestions concerning ways to improve the workings of our organization.

William Spackman

Letters

SHOULD TSOP MEETINGS BE HELD WITH AASP?

As you know, I attended the TSOP meeting in Vienna, Va. and I wanted to tell you how much I enjoyed it. I also attended the AASP meeting that followed it. I was trying to decide which meeting I learned the most from - and came to the conclusion that both meetings were important; both meetings had information vital to my research.

I took an informal poll of the people I saw at both meetings and inquired about their strategy on handling the problem of needing to attend two meetings at a time when our offices are cutting back on meetings. The people I talked to all agreed that we should try to keep the meetings together.

The scientists in both groups are working on the same tissues, but using different techniques. The petrologists are more aware of how processing affects the physical properties of the tissues than the Palynologists. I look some of this discussion about processing techniques over to the AASP meeting and was able to solve a specific problem I've been having with Archean rocks. There are a whole group of scientists, including myself, who are conversant in both vocabularies and need to know what is going on in both fields.

If we can succeed in keeping the meetings together, might it also be possible to have an extra form in the registration packages that reads: "joint registration for TSOP/AASP meeting" so it looks like we are only attending one meeting?

Eleanora I. Robbins

Society News

TSOP 1984 ANNUAL MEETING REPORT

The first annual meeting of the Society for Organic Petrology held in Tyson's Corner, Virginia, was a large success. The meeting was attended by 77 persons from industry and academic institutions. Two days of technical sessions were held Tuesday and Wednesday (October 16 and 17, 1981); and council, business and committee meetings were held from Monday to Wednesday (October 15 to 17, 1984).

The Society for Organic Petrology began in the Spring of 1983, as an informal group of eighteen persons. We named ourselves the "Houston Committee for Organic Petrology" informally known as "The Gang of Eighteen". The name was later changed to the "Organizing Committee for Organic Petrology". We met periodically during the evenings to draft the objectives of the society and constitution/bylaws; and to organize the founding meeting.

The founding meeting was held March 10, 1981, and our membership has grown from an initial 36 members to greater than 200 as of the first annual meeting.

The topics discussed at the annual meeting were not limited to discussions of organic petrology. The number of coal and oil related papers was about equal, and a surprisingly large number of student papers were given. Major advances are being made in the realms of UV fluorescence microscopy and the classification of organic matter (to encompass its chemical and morphologic nature). Papers given at the meeting will be published in mid 1985, in a special edition of the International Journal of Coal Geology, Elsevier Pub. Co.

The overall acceptance and enthusiastic support of The Society for Organic Petrology was well demonstrated by the large attendance and the quality of the papers given at the meeting. The meeting was a large success in uniting persons working for various industries and academic institutions toward a common goal; to consolidate and encourage growth in the science of Organic Petrology.

1985 EXECUTIVE COUNCIL

The TSOP Executive Council for 1985 was installed during the 1984 Annual Meeting.

President:	William Spackman, Pennsylvania State Univ.
Vice - President:	Jack Crelling, Southern Illinois Univ.
President - Elect:	John R. Castano, Shell Development Co.
Secretary/Treasurer:	Ann Brooke Reaugh, Geo Chem Laboratories, Inc.
Editor:	Margaret E. Hildick, Gulf Oil E&P Co.
Councilor:	John D. Shane, Exxon Co., U.S.A., and Joe Senftle, Union Oil Co.

Society News

TSOP COMMITTEES - 1985

For your information a partial list of committees nominated for the 1985 term follow. A more complete list will accompany the next newsletter.

Nominating Committee

Chairman: Jack Burgess, Gulf Oil Co.
Alex Cameron, ISPG - Geological Survey of Canada
Coleman Robison, Texaco
Dick Harvey, Illinois State Geol. Survey
Sue Rimmer, University of Kentucky

Membership Committee

Chairman: Stan Teerman, Chevron Oil Field Research Co.
Hoom-Bin Lo, Exxon Production Research
Roy Landin, Sun Oil Co.
Kenneth Yordy, ARCO Oil and Gas Co.
Dennis Kaegi, Inland Steel Co.
John Shane, Exxon Co., U.S.A.

Ballot Committee

Chairman: Jennifer A. Thompson, Shell Development Co.
Loretta Satchell, Exxon Company, U.S.A.
Brenda Claxton, Amoco Production Co.

By-Laws Committee

Chairman: Jack Burgess, Gulf Oil E&P Co.
Ann Brooke Reaugh, Geo Chem Laboratories, Inc.
John A. Clendening, Amoco Production Co.

Publications Committee

Chairman: John A. Clendening, Amoco Production Co.
Margaret E. Hildick, Gulf Oil E&P Co.
Peter Hacquebard, AGC-Bedford Institute,
Geological Survey of Canada

1985 Annual Meeting Committee

Chairman: Harvey S. Zeiss, Shell Mining Co.
Christine Hartman - Stroup, Exxon Production
Research
Jack Burgess, Gulf Oil E&P Co.
Anne Brooke Reaugh, GeoChem Laboratories, Inc.
John R. Castano, Shell Development Co.
Loretta S. Satchell, Exxon Co. U.S.A.
Ralph J. Gray, Monroeville, PA.

The Council of the Society for Organic Petrology will meet Friday, April 26, 1985 instead of Saturday, April 27.

Society News

MIDYEAR COUNCIL MEETING

The Council of the Society for Organic Petrology will meet Saturday, April 27, 1985; at 9 a.m. at the Hyatt Regency-West Houston to transact the business of the society. Members in good standing are welcome to attend this meeting.

If you wish to submit a change in bylaws or have other business to be placed on the agenda, please send the items to the Secretary-Treasurer by March 27, 1985, so they may be included on the agenda.

Room reservations for the meeting may be made directly with the Hyatt Regency-West Houston (713-558-1231) or on the Hyatt World Wide Reservations Line (800-228-9000). For a map and details of available transportation from Houston's two airports, call Ann Reaugh (713-167-7011) or John Shane (713-965-1490).

TSOP 1985 ANNUAL MEETING NOTICE AND CALL FOR PAPERS

The second annual meeting of The Society for Organic Petrology will be November 7 to 9, 1985, (Thursday to Saturday) at the Hyatt Regency-West Houston, Texas.

The 1985 Annual Meeting Committee invites you to submit abstracts of proposed papers for the technical and poster sessions to Loretta Satchell no later than August 15, 1985. The symposium is titled "Depositional Environments of Organic-Rich Rocks".

Organizations wishing to hold exhibits at the meeting are advised to contact the Conventions Services Manager of the Hyatt at (713) 558-1231 no later than July 1, 1985.

Since there are full intentions for publication of proceedings we encourage longer abstracts. They must be typewritten, single spaced and must not exceed two pages in length. Authors may include simple, concise illustrations as part of the abstract if the text and figures fit within the allocated space. Please leave a 1" left hand margin for binding. The title should be in capitals followed by a blank line; authors name and affiliation; and a second blank line followed by the body of the abstracts.

On a separate sheet of paper, please include the following:

Speakers identity and contact address:

NAME
AFFILIATION
ADDRESS
CITY STATE ZIP
OFFICE TELEPHONE: HOME PHONE:

Society News

Additional information may be obtained from members of the 1985 Annual Meeting Committee and subsequent newsletters.

1985 ANNUAL MEETING COMMITTEE:

Harvey S. Zeiss (Chairperson) Shell Mining Company P. O. Box 2906 Houston, TX 77252 (713) 870-2904	Ralph J. Gray 303 Drexel Monroeville, PA 15146 (412) 795-7170	Loretta S. Satchell Exxon Company USA P. O. Box 2189 Houston, TX 77001 (713) 965-4242
Jack Burgess Gulf Oil Expl. & Prod. Co. P. O. Box 36506 Houston, TX 77236 (713) 754-5242	Christine Hartman-Stroup Exxon Production Research P. O. Box 2189 Houston, TX 77001 (713) 965-7702	
John R. Castano Shell Development Co. P. O. Box 481 Houston, TX 77001 (713) 663-2630	Anne Brooke Reaugh GeoChem Laboratories 1143-C Brittmore Houston, TX 77043 (713) 467-7011	

POST 1985 ANNUAL MEETINGS

If you and your colleagues would like to host the TSOP annual meetings in 1986, 1987 and so on, the Council would like to receive from you a brief proposal for discussion at the midyear meeting. Your proposal should include the proposed dates, location, and hosts. In addition, convenience of transportation to the proposed meeting site, current room costs, and a general outline of the proposed meeting should be included. The Council hopes to establish the 1986 meeting date at the 1985 midyear meeting. We would like to receive and circulate written proposals before April 27, 1985, for discussion and decision at the midyear council meeting.

WORKING GROUPS:

Organic Contaminants

A recent letter from the SEPM Committee on Organic Geochemistry has raised some questions that I feel our Society needs to address. This is the second letter soliciting contributions for putting together a scrapbook of organic contaminants under the auspices of SEPM. This idea has been discussed by members of TSOP, notably Peter Van Gijssel, antedating the formal organization of TSOP. However, this is not a question of priority or precedent. The crux of the question is what organization is better suited for a working group on organic contaminants?

Society News

At the sixth Microscope Photometry/Electro-Optics meeting in Houston in November 10, 1983, I gave a short paper on the problems that drilling fluid additives can pose to visual kerogen analysis. It became very clear to me at that time that several people have been concerned about contaminants in their organic petrology analyses.

I think TSOP is the place for a working group on organic petrographic contaminants. I especially think this is true since the SEPM letter stated that a more exciting topic for a meeting than "procedural variations and their effect on geochemical results" would be, "interpreting the history of an oil from its chemistry".

Formal working groups are going to be organized soon under the auspices of TSOP. A group working to solve the problems associated with organic petrographic contaminants should be one of them.

The formation of this special group will not exclude interdisciplinary work that will involve more than one society. The Society for Organic Petrology just seems to be better suited for petrologic problems and the SEPM group better suited for chemical problems.

John D. Shane
Councilor

Editors Note:

I have been informed that the Geochemistry Section of SEPM is planning to compile a volume of drilling mud contaminants under the direction of Forest Haney at Sun Oil. This should in no way deter efforts to form a TSOP Working Group on Organic Petrographic Contaminants.

MEMBERSHIP

As of January 1985, TSOP has 230 members. The membership directory is being compiled by Stan Teerman and should be available in 2-3 months. Stan would like suggestions for how to organize the directory (alphabetical, geographic, etc.) Please let him know soon at (213) 69H-9210.

Members should distribute copies of the enclosed TSOP application to all interested persons or institutions.

PROCEDURES MANUAL - A DEFINITION

A number of TSOP members have expressed an interest in buying our so-called Procedures Manual. The Procedures Manual that is currently in the mill is a guide to the organization of the society, and details both responsibilities and how to get things done.

Society News

The manual that people appear to want is one that summarizes various procedures used in organic petrology. If you are interested in contributing to this, please contact any council member so that it can be discussed at the midyear meeting.

ASSOCIATION OF PETROLEUM GEOCHEMICAL EXPLORATIONISTS

The Association of Petroleum Geochemical Explorationists is a Denver based group dedicated to investigate and encourage the widespread use of unconventional techniques to detect surface geochemical anomalies caused by hydrocarbon microseepage.

The association is specifically oriented toward the practical use of modern geochemical, radiometric and electrical methods for hydrocarbon exploration. Source rock analyses and evaluation are considered valuable exploration techniques which are not within the scope of the new organization. APCE prefers to leave source rock geochemistry within the realm of groups such as the Society for Organic Petrology

Prospective members are invited to join the Association by writing for application forms: Association of Petroleum Geochemical Explorationists, P. O. Box 8287, Denver, Colorado 80201.

Officers of APGE are:

President:	Peter Groth, Amoco Production Co.
Vice President:	Brenda Gallagher, Texas Oil Production Co.
Secretary:	David Cole, Texaco, Inc.
Treasurer:	Alton Gallagher, Gallagher Research and Development
Editor:	Raymond Langan, PPG Industries, Inc.
Programs:	Alan Roberts, USGS - Denver
Education:	Ronald Kinsman, Colorado School of Mines
Memberships:	Steven Allexan, Ladd Petroleum Corp.

INTERNATIONAL COMMITTEE FOR COAL PETROLOGY

Professor Monika Wolf was elected to the position of General Secretary for the next 1 years at the ICCP meeting in Calgary (1981). She is resigning her position as the President of Commission 1 for ICCP.

Monika Wolf has been a member of ICCP since 1968 and has been involved in several working groups of Commission 1 and its precursor. From the time of the Newcastle meeting (1976) she has guided the Commission, first provisionally and then officially, following nomination at the meeting at Wegimont (1977). This lengthy term in office would have led to her resignation next year but events have made this unnecessary.

During her presidency she has had much help from the Commission secretary Dr. A. H. V. Smith whom she wishes to thank cordially. Thanks are also in order to the Chairmen of Working Groups and the Individual members of the Commission who have taken part in the meetings, the ring analyses and in the discussions thereby supporting the work of Commission 1.

Other Societies

Monika Wolf hopes that the contacts which have grown up during the long period of her presidency will continue into the future, and that she will continue to receive support as General Secretary.

Anyone wishing to participate in the ICCP Unfigured Liptinite Working Group exercises should contact Joe Senftle at Union Science and Technology Division, Union Oil Company of California, 276 South Valencia Avenue, Brea, California 92621. Phone (711) 528-7201.

Book Review

Petroleum Geochemistry and Basin Evaluation, edited by Gerard Demaison and Roelof J. Murriss. AAPG Memoir 35 (1984), 126 pp.

Years ago, the discovery of a single supergiant oil field permitted hundreds of wasted dry holes elsewhere to be written off as part of an overall strategy. The optimistic approach was to bid upon and drill all giant structures as though they were bound to contain huge reserves. But the great discoveries of the past are being depleted, and the new finds needed to replace them are lacking. The shock of the unexpected Mukluk dry hole in Alaska is symptomatic of the problem. The decline in exploration success is evident to us all.

Gerard Demaison has been one of the leaders in the application of organic geochemistry to exploration for hydrocarbons. He has done this by synthesizing organic geochemistry, geology, and geophysics to produce models that explain the distribution of oil and gas in some of the earth's major petroleum basins. Demaison's contribution on "The Generative Basin Concept" is a fitting opening paper in this important volume.

However, many other geologists and geochemists have played pivotal roles in the development of geochemical basin analysis as a useful tool. Some of these researchers have contributed to the additional twenty-two papers of Memoir 35. There are differences in quality among the papers, a few have appeared elsewhere in similar guise, and distracting typographic errors have persisted. Nevertheless, the volume should be of exceptional interest to anyone committed to the search for oil and gas.

The pervasive message of the Memoir is clear. A technology exists that can increase the effectiveness of exploration in the remaining frontier basins. There have been few times in the history of the petroleum industry when the need to apply such a technology has been so pressing.

Roger Sassen, Houston, Texas

CLASSIFIED ADVERTISEMENTS

Abstracts for the 1981 Meeting of the International Congress of Palynology (including several sessions in kerogen) held in Calgary, Alberta, Canada are available for Canadian \$20.00 prepaid, from Dr. L. V. Hills, Department of Geology, University of Calgary, Calgary, Alberta, Canada - T2N - 1N4 (403-284-5841).

CALENDAR

*These items are new

1985

Feb. 25-March 1, 1985, Tropical Peat Resources. Symposium, by Int. Peat Society, Kingston, Jamaica (Barry Wade, Petroleum Corp. of Jamaica, Box 579, Kingston 10. Phone: 809/92-29670. Telex: 2356PET-Corp JA).

*March 13-15, 1985, Petroleum refining, short course. Golden, Colo. (Special Programs 6 Continuing Education Office, Colorado School of Mines, Golden, 80401).

*March 13-16, 1985, Hydrologic Transport of Organic Chemicals, mtg. by Geological Society of America, Lancaster, Pa. (Frank J. Wobber, Office of Energy Research, Dept. of Energy, Washington, D.C., 20545. Phone: 301/353-5549).

March 13-16, 1985, Northeast Section, Geological Society of America, ann. mtg., Lancaster, Pa. (Seymour S. Greenberg, Dept. of Geology 6 Astronomy, West Chester University, West Chester, Pa., 19383. Phone: 215/436-2788).

March 20-22, 1985, Southeastern Section, Geological Society of America mtg., Knoxville, Tenn. (K.R. Walker, Dept. of Geological Sciences, University of Tennessee, Knoxville, 37996. Phone: 615/974-2366).

*March 20-22, 1985. AAPG Petroleum Formation and Occurrence School, New Orleans, LA., (AAPG Headquarters Box 979, Tulsa, OK 74101. Phone: 918/584-2555).

March 24-27, 1985, American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, ann. mtg., New Orleans, La., (AAPG Headquarters, Box 979, Tulsa. 74101. Phone: 918/584-2555).

*March 26-27, 1985, Energy, seminar, Erie, Pa. (Sharon A. Wood, College of Science & Engineering, Gannon University, Erie, 16541. Phone: 814/871-6720).

April 14-17, 1985, South Central Section, Geological Society of America, mtg., Fayetteville, Ark. (Robert C. Morris, Dept. of Geology, University of Arkansas. Fayetteville, 72701. Phone: 501/575-3355).

April 22-24, 1985. Rocky Mountain Section, Geological Society of America, mtg., Boise, Idaho (Claude Spinosa, Dept. of Geology & Geophysics, Boise State University, Boise, 83725. Phone: 208/385-1631).

*April 22-26, 1985, Oil shale, symposium, by Colorado School of Mines and Western Research Institute, Grand Junction, Colo. (Janice C. Hepworth, Colorado School of Mines, Golden, 80401. Phone: 303/273-3321).

*April 24-26, 1985, Western synfuels, symposium. Grand Junction, Colo.; by Colorado Plateau Section, Society of Mining Engineers of the American Institute of Mining, Metallurgical & Petroleum Engineers, Grand Junction Geological Society, and Ute Chapter of Professional Engineers of Colorado/NSPE. (Joseph F.T. Agapito, Agapito & Associates, Inc., 715 Horizon Drive, Grand Junction, 81501).

*April 25-26, 1985, North Central Section, Geological Society of America, mtg., De Kalb, Ill. (Clarence J. Casella, Dept. of Geology, Northern Illinois University, De Kalb, 60115. Phone: 815/753-1944).

*April 25-26, 1985, Organics & ore deposits symposium, by Denver Region Exploration Geologists Society, Denver. (Steger Communications, 7444 Queen Circle, Arvada, Colo. 80005. Phone: 303/424-0505)

*April 28/May 2, 1985. Geochemical exploration, symposium, Toronto, Ont. (R.E. Lett, Box 523, Rexdale, Ont. M9W 5L4. Phone: 416/675-3870).

May 8-11, 1985. Cordilleran Section, Geological Society of America, mtg., Vancouver, B.C. (William H. Mathews, Dept. of Geological Sciences, University of British Columbia, Vancouver, V6T 1W5. Phone: 604/228-2449).

*May 10-11, 1985, Neutral models in evolutionary biology, symposium, Chicago, (Matthew H. Nitecki, Dept. of Geology, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, 60605).

May 15-17, 1985, Geological Association of Canada/Mineralogical Association of Canada, ann. mtg., Fredericton, N.B. (W. Vadne Poll, Dept. of Geology, University of New Brunswick, Fredericton, E3B 5A3. Phone: 506/453-4803).

*May 22-24, 1985, Pacific Section, Society of Economic Paleontologists & Mineralogists, Anchorage. (Robert E. Garrison, Earth Science Board, Applied Science Bldg., University of California, Santa Cruz 95064).

May 26-31, 1985, American Association for the Advancement of Science, ann. mtg., Los Angeles. (AAAS Headquarters, 1776 Massachusetts Ave. NW, Washington, D.C., 20036. Phone: 202/467-4400).

June 2-5, 1985, Rocky Mountain Section, American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, mtg., Denver. (Don Hembre, Rocky Mountain Association of Geologists, 1220 University Bldg., 910 16th St., Denver, 80202. Phone: 303/831-7755).

*July 20/Aug. 2, 1985, Conodonts, symposium, Nottingham, England. (R.J. Aldridge, Dept. of Geology, The University, Nottingham, NG7 2RD).

- *Aug. 7-10, 1985, Tobacco Root Geological Society, ann. field mtg, Bozeman, Mont. (Robert A. Chadwick, Dept of Earth Sciences, Montana State University, Bozeman, 59715. Phone: 106/991-6906).
- Aug. 11-11, 1985, Society of Economic Paleontologists & Mineralogists, 2nd mid-year ann. mtg. Golden, Colo. (SEPM Headquarters, Box 1756, Tulsa 71101. Phone: 918/713-9765).
- *Aug. 11-17, 1985, Archean geochemistry, field mtg, Wind River Range, Wyoming. (John S. Stuckless, MS 963, U.S. Geological Survey, Denver, 80225).
- *Aug. 13-16, 1985, Petroleum exploration in the sub-Andean Basins, Bogota, Colombia, symposium, by Colombian Association of Petroleum Geologists. (Roberto A. Leigh, Box 92500, Bogota).
- Aug. 21-Sept. 2, 1985, Graptolite Working Group, mtg, Denmark & field trips (before 6 after) to Norway, Sweden, Denmark. (Merete Bjerreskov, Institute of Historical Geology & Paleontology, University of Copenhagen, Oster Voldgade 10, DK-1350, Copenhagen K. Denmark),
- *Sept. 10-11, 1985, Deposition environments of lacustrine source rocks, mtg, by Intl. Geological Correlation Program and Geological Society of London, London. (Kerry Kelts, Geological Institute ETH-Z, CH 8092 Zurich. Phone: 01/256-3703. Telex: 53178 ethz).
- *Sept. 15-22, 1985. International Union of Geological Sciences, International Subcommission on Neogene Stratigraphy, Regional Committee on Mediterranean Neogene Stratigraphy, mtg, Budapest. (Organizing Committee of the VIII Congress of the RCMNS Hungarian Geological Survey, Nepstadion ut 14, H-1442 Budapest, P.O.B. (Pf) 106).
- Sept. 16-20, 1985, Organic Geochemistry, mtg., Julich, West Germany. (Helga Bongartz, KFA Julich GmbH, Box 1913, D-5170 Julich) Topics: Organic matter in recent sediments. Generation 6 migration of oil & gas. Kerogen, coal & oil shales. Heavy oils & tar.
- Sept. 17-21, 1985, American Institute of Professional Geologists, ann. mtg., St. Paul. (Robert E. Pendergast, 1925 Oakcrest Ave., Roseville, Minn.. 55113. Phone: 612/636-7711).
- *Sept. 23-25, 1985, AAPG Petroleum Formation and Occurrence School, Rueil, France (AAPG Headquarters, Box 979. Tulsa, 74101. Phone: 918/581-2555).
- *Sept. 26-29, 1985, Society of Economic Paleontologists and Mineralogists, midyear mtg., McKimmon Center, North Carolina State Univ, Raleigh, N.C. (Charles A. Nittroer, General Chairman, SEPM, P.O. Box 1756, Tulsa, Okla, 71159. Phone: 918/713-9765).
- *Sept. 27-29. 1985, New York State Geological Association, ann. mtg, Saratoga Springs, N.Y. (Richard Lindemann, Dept. of Geology. Skidmore College, Saratoga Springs, 12866. Phone: 518/581-5000).

*Sept. 28-29, 1985, Canadian paleontology & biostratigraphy, seminar, Quebec City. (John Riva, Dept. of Geology, Laval University, Ste-Foy, Quebec, G1K 7P1).

*Oct. 16-19, 1985, American Association of Stratigraphic Palynologists, ann. mtg. El Paso, Tex. (William C. Cornell, Dept. of Geological Sciences, University of Texas, El Paso, 79968. Phone: 915/717-5218).

*Oct. 20-23, 1985, Association of Earth Science Editors, ann. mtg, Lawrence, Kan. (Maria Adkins-Heljeson, Kansas Geological Survey, 1930 Constant Ave., Campus West, University of Kansas, Lawrence, 66044. Phone: 913/861-3965),

Oct. 22-21, Gulf Coast Section, American Association of Petroleum Geologists, mtg.. Baton Rouge, LA. (AAPG Headquarters, Box 979, Tulsa, OK 71101. Phone: 918/581-2555).

*Oct. 28-31, 1985, Geological Society of America, ann. mtg, in Orlando, Fla., with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA Headquarters, Box 9110, Boulder, Colo., 80301. Phone: 303/117-2020).

*Oct. 28/Nov. 1, 1985, Coal science, mtg. Sydney, Australia. (R.W. Hinde, CSIRO, Division of Fossil Fuels, Box 136, North Ryde, NSW 2113, Australia).

Oct. 28-Nov. 1, 1985, Symposium on Evaporites and Hydrocarbons, Banff, Alberta, Canada. Sponsored in cooperation with the Canadian Society of Petroleum Geologists. (Mrs. Pat Larlham, Faculty of Extension, The University of Alberta, Edmonton, Alberta, Canada T6G 2G1).

Nov. 2-6, 1985, Society of Exploration Geophysicists Annual Meeting, Houston, Texas. (Sally Shanks, SEG, P.O. Box 3098, Tulsa, Okla. 71101. Phone: 918/713-1365).

*Nov. 9-12, 1985, Eastern Section, American Association of Petroleum Geologists, ann. mtg. (Nov. 11-12) & field trips (Nov. 9-11), Williamsburg, Va. (Laure G. Wallace, MS 613, Minerals Management Service, 12203 Sunrise Valley Drive, Reston, Va., 22092).

Nov. 10-13, 1985, Geological Society of America Annual Meeting, San Antonio, Texas. General Chairman, James O. Jones (Jean Kinney, GSA, P.O. Box 9110. Boulder, Colo. 80301. Phone: 303/117-2020.)

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*April 16-19, 1986. Pacific Section, AAPG, Bakersfield, Calif (General Chairman, Gene Tripp, c/o Challenger Minerals Inc. 5531 Business Park South. Bakersfield, Calif 93309, Phone: 805/327-5088).

*April 27-29, 1986. Southwest Section, AAPG, Mescalero, N.M. (General Chairman, Edward David, 731 Petroleum Bldg., Roswell, N.M. 88201. Phone: 505/622-8850).

*June 15-18, 1986. AAPG Annual Convention (with Divisions: SEPM, EMD and DPA), Atlanta, Ga., Georgia World Congress Center (General Chairman, Howard Cramer, Emory University Dept. of Geology, Atlanta, Ga 30322. Phone: 404/329-6491).

*Sept. 7-9, 1986, Rocky Mountain Section. AAPG, Casper, Wyo. (General and Co-chairman, Mark and Nancy Doelger, Barlow and Haun, Inc., 214 E. 13th, Casper Wyo. 82601. Phone: 307/235-1311).



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LETTERS

From The President

I am happy to report that the mid-year meeting of the Council with all Committee chairmen was very productive. It was held in the Hyatt-Regency-West in Houston, Texas, in order to make a final evaluation of this hotel as the site of our next Annual Meeting. As the result of our experience there, the Council is satisfied that you will be pleased with the services and facilities that will be made available to us.

As may be noted elsewhere in this Newsletter, the Council acted to accept the invitation from Drs. Hower and Summers to hold our 1986 Annual Meeting in Lexington, Kentucky. Many of us have had an opportunity to experience the first class way in which these two members host their meetings, so we can again be assured of a quality session. It is my understanding that they intend to include an optional field trip which, I am sure, will be of interest to many members.

At our November Annual Meeting I will entertain invitations from prospective hosts for our 1987 and 1988 Annual Meetings. My objective is to set the policy of having our meetings arranged at least two years in advance in order that ample opportunity is available for planning and scheduling by all members. If you are in a position to host a meeting and wish to have an invitation considered, please provide me with a written invitation prior to our Fall meeting.

It was gratifying to witness the strong support for giving special consideration and support for the participation of graduate students in Society activities. This will be evidenced by reduced membership fees, reduced annual meeting registration fees and the institution of an "Outstanding Student Presentation Award". Additional forms of financial aid coupled with a structured responsiveness to the need for research samples and information are items to be considered in the future. I hope you agree that this is a step in the right direction.

I am looking forward to seeing all of you in November.

William Spackman

Letters

From the Editor

It is interesting to notice that as the Society enters the second half of its second year in existence it is evolving, experiencing increased activity in committees. New committees are being formed to confront specific areas of interest in organic petrology. This evolution can be also seen in the newsletter because the newsletter is the voice of TSOP.

A calendar of TSOP activities for 1985 has been added to this edition of the newsletter to help remind members of upcoming deadlines and to give members a timetable for various items.

The previous very rapid increase in our membership has leveled off and given way to a much smaller but steady increase. We now have close to 250 members in TSOP. The 1985 membership directory will be distributed to members in July.

The July 1, 1985 deadline for submitting manuscripts of papers given at the 1984 TSOP Annual Meeting is coming up very soon. Authors, please let Bill Spackman know if there is any difficulty with this deadline.

Alan Davis, Chairman of the Research Committee, is ready to accommodate your suggestions and support for subcommittees of the Research Committee to attack specific problems in organic petrology.

As a result of the Gulf-Chevron merger, I will be relocating to San Ramon, California, after the first of August, 1985. Please note my new address and telephone number in the Newsletter section of the Mid-year Council Report. Last of all, keep those calls and letters coming.

Margaret Hildick Pytte

SOCIETY NEWS
CALENDAR OF TSOP ACTIVITIES FOR 1985

- July 1 Ballots for 1985-1986 term will be mailed to TSOP members
 Deadline to apply for exhibit space at the November Annual Meeting
 Deadline to submit manuscripts for the proceedings of the 1981 TSOP Annual Meeting
- August 1 Deadline to submit ballots to Ballot Committee
- August 15 Deadline to submit abstracts for TSOP 1985 Annual Meeting
- September 1 Deadline to submit material for Third Quarter Newsletter
- September 2 Letters of acceptance and suggestions to authors for papers to be given at the 1985 Annual Meeting will be mailed to TSOP members
- September 15 Complete 1985 Annual Meeting Program will be mailed to TSOP members
- September 30 Third Quarterly Newsletter will be mailed to TSOP members
- November 7-9 1985 Annual Meeting
- December 1 Deadline to submit material for Fourth Quarter Newsletter
- December 30 Deadline to submit manuscripts for 1985 Annual Meeting Proceedings volume

TSOP 1985 MID-YEAR COUNCIL MEETING

The mid-year council meeting was held in Houston, Texas on Friday, April 26, 1985, at the Hyatt Regency Hotel in West Houston. The meeting convened at approximately 9:00 A.M. and continued until approximately 5:00 P.M.

The principal purpose for this meeting was to provide an opportunity for the interaction of Council members and Committee Chairmen in the interests of moving the society toward its goals. The meeting was open to TSOP members in good standing.

An abbreviated agenda is listed below showing the major topics and the order in which they were discussed.

Agenda For TSOP 1985 Mid-Year Council Meeting

Morning Session:

- Review of minutes of 1981 Annual Meeting
- Treasurers Report
- Discussion and Approval of 1981-1985 Budget
- Status of Production, Stock, Distribution and Sale of Teichmuller Translation and Text
- Editors Report - Includes Publication Committee Report
- Discussion of Proposals to ICCP meeting in Dubrovnik, Yugoslavia
- Awards Committee Report
- Logo Committee Report

Afternoon Session:

- Membership Committee Report
- Research Committee Report
- Bylaws Committee Report
- Ballot Committee Report
- Newsletter Committee Report
- 1986 Annual Meeting
- Other Items.

Items of information from the meeting that are not discussed elsewhere in the newsletter are discussed below.

Budget and Tax Exempt Status

We are in the black with respect to the financial status of TSOP. There are two categories of expenditures in the budget (a) low level and (b) major expenses. The low level expenditures are less than \$200.00 and occur generally as unplanned one-time expenses such as special mailings for announcements. These expenses are not budgeted for and although they do not require council approval, they should be reported to the Secretary/ Treasurer prior to commitment. All expenses greater than \$200.00 require council approval and must be approved as a budget item.

The 1984-1985 Budget has been approved by the council and TSOP is now applying to be a tax exempt organization incorporated in the state of Texas.

Society News

Newsletter

The dates to submit information for the next two TSOP newsletters are September 1 and December 1, 1985. Please adhere to this schedule so the newsletter can be distributed by the end of each quarter. This material is to be submitted to me at the address below after August 1, 1985.

Margaret E. Hildick Pytte
Chevron USA Western Region
P. O. Box 5042
San Ramon, California 94583-0942
Phone #415-842-0731

Liaison With Coal Division of GSA

One person is to be appointed by the President to act as a liaison between TSOP and the Coal Division of GSA.

Publications Committee

As noted elsewhere in this newsletter, the Publications Committee will be publishing a symposium volume of papers presented at the 1985 Annual Meeting in Houston, Texas. The manuscripts are due by December 31, 1985.

TSOP Publications Review Board

TSOP has received little publicity compared to other organizations dealing with Geology, Organic Geochemistry and the like. Because numerous papers are being published in scientific journals that deal directly with organic petrology, an outside publications review board needs

Society News

to be established within TSOP to review these manuscripts prior to publication.

This group of reviewers will be a subcommittee under the Research Committee. The review board will be announced to societies such as AAPG, SEPM, GSA, etc., that have published articles dealing with organic petrology in their Journals or Bulletins.

If you are interested in becoming a member of the publications review board, please contact either the Editor or Alan Davis, the Chairman of the Research Committee.

1985 Annual Meeting

POST 1985 ANNUAL MEETING

1986 Annual Meeting

The 1986 TSOP Annual Meeting will be in Lexington, Kentucky, home of the University of Kentucky Institute for Mining and Minerals Research. The invitation was received from Dr. James Hower at IMMR. The meeting will be held at the Hyatt Regency Hotel in downtown Lexington, Kentucky in late September. You will be informed of the exact meeting dates when they are decided.

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1987 and 1988 Annual Meetings

Because we would like to plan the TSOP annual meetings a full two years in advance, please submit invitations to host the 1987 and 1988 annual meetings before the council meeting in November. This increased planning time will greatly help the annual meeting committees plan the meeting and field trips and organize activities for spouses.

TSOP 1985 ANNUAL MEETING

DATES: November 7, 8 6 9, 1985 (Thursday-Saturday)

PLACE: Hyatt Regency West Houston

TENTATIVE SCHEDULE:

7 Nov: Evening: Council Meeting

8 Nov: AM: Technical Session I *

LUNCH

PM:

Symposium: "Depositional environments of Organic-Rich Rocks" (1/2-day session).

Evening: ICEBREAKER 6 POSTER SESSION **

9 Nov. AM: Technical Session II *

LUNCH

PM: Technical Session III *

*- Technical sessions will consist of presentations relating to the field of organic petrology outside of the one-half day symposium topic. Suggested topics are the classification of sedimentary organic matter; applications of research in organic petrology and geochemistry, new technology, and other topics promoting research, education, or interdisciplinary activities.

*- Poster session topics should cover the same areas as mentioned above. ABSTRACTS for poster sessions should be submitted.

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CRITICAL DATES:

Exhibitor application deadline: 1 July 1985

- Those wishing to exhibit, please contact Hyatt Regency West Houston Convention Services Manager at (713) 558-1234.

Abstract deadline: 15 August 1985

- Response to abstract submittals will be made as they are received.

Acceptance response: 2 September 1985

- Letters will be mailed to those authors whose abstracts have been accepted.

Abstracts should be sent to the PROGRAM COORDINATOR:

Loretta S. Satchel]
Exxon Company, U.S.A.
P. O. Box 2189
Houston, Texas 77001
Phone: (713) 965-1212

Other meeting related items:

We are pleased to announce that a student meeting registration rate and multiple-student occupancy at the Hyatt, both at significant discounts, will be available.

There will not be a field trip associated with the meeting this year. Please note that we have full intentions of publishing a proceedings volume of the meeting. Full papers and long (6-8 page) abstracts will be accepted. Speakers will be contacted shortly after the meeting by the Publications Committee.

There are no planned activities for spouses. However, the Hyatt has limousine service to various areas of interest in Houston.

Please note that the address of the Annual Meeting Committee chairperson has changed to the following:

Harvey S. Zeiss
Shell Development Company
P. O. Box 181
Houston, Texas 77001
Phone: (713) 663-2021

TSOP COMMITTEES-1985

Annual Meeting Committee

Harvey Zeiss, Chairman
Anne B. Reaugh
Christine Hartman-Stroup
Jack Burgess
Ralph Cray
John Castano
Loretta Satchell, Program Coordinator

Membership Committee

Stan Teerman, Chairman
H. B. Lo
Ray Landin
Ken Yordy
Dennis Kaegi

Awards Committee

Cole Robinson, Chairman
Richard Harding
Karl Schwab

Newsletter Committee

John Shane, Co-Chairman
Joe Senftle, Co-Chairman
Alex Cameron, Co-Chairman

Ballot Committee

Jenny Thompson, Chairman
Loretta S. Satchell
Brenda Claxton

Nomination Committee

Jack Burgess, Chairman
Alex Cameron
Cole Robison
Dick Harvey
Sue Rimmer

Bylaws Committee

Jack Burgess, Chairman
John Clendening
Anne B. Reaugh

Publication Committee

John Clendening, Chairman
Margaret Hildick
Peter Hacquebard

Fluorescence Program Committee

Jack Burgess, Chairman
John Clendening
Ann Reaugh

Research Committee

Alan Davis, Chairman
John Castano
Neely Bostick
Dennis Kaegi

Logo Committee

John Shane, Chairman
Margaret Hildick
J. C. Crelling

NOMINATIONS FOR 1985

The Nominating Committee of TSOP is proposing the following slate of candidates for offices in The Society for Organic Petrology for the -years 1985-1986.

President-elect:	John C. Crelling John O. Shane
Vice-president:	Neely H. Bostick Harvey S. Zeiss
Councilors:	James C. Hower Karl W. Schwab Jennifer A. Thompson Edward A. Stanley
Editor:	Renee McLaughlin Carolyn L. Thompson-Rizer

The Nominating Committee has received written confirmation from each candidate of his/her willingness to serve if elected. The Committee has further determined that all nominees are members in good standing and thus qualified under the Bylaws to stand for office.

TSOP EMBLEM COMMITTEE

The Society for Organic petrology needs a logo! A logo will help give the Society identity. Our organization deserves to have a symbol of the kind that enhances publications and displays such as those of the AASP, GSA, AAPG, societies and others.

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A logo committee has been organized and is now taking designs for a suitable symbol. A cash prize of \$50.00 and a two year membership in TSOP have been approved by the Council to be awarded to the person with the winning design.

No deadline has been set to submit designs and their final appraisals. However, it would be nice to have at least several designs to display at the meeting in Houston.

Please submit your ideas to:

John Shane
Exxon Production Research Company
P. O. Box 2189
Houston, Texas 77001

TSOP SPECIAL PUBLICATION NO. 1

The TSOP Special Publication No. 1 or the translation by Neely Bostick of Marlies Teichmuller's work entitled "Fluoreszenz von Liptiniten und Vitriniten In Beziehung zu Inkohlungsgrad und Verkokungsverhalten" is available for purchase from the Publications Committee.

Prices are:

Special Pub. # 1 \$ 6.00 for TSOP Members
 \$ 10.00 for non-members

Original (in German)
and Special Pub. # 1 \$ 10.00 for TSOP Members
 \$ 15.00 for non-members

Plus \$ 3.0 Postage, Handling, etc.

Please note that if you do not have the original volume (in German) you will need it because the plates are not in the translation.

CONOCO-ZEISS FLUORESCENCE PROGRAM

Carl Zeiss Inc. has signed a release to Conoco permitting the program for measuring the spectral fluorescence of organic matter to be released to TSOP. This was necessary because the Conoco program used subroutines from the original Zeiss program.

Jack Burgess coordinated efforts between Zeiss and Conoco. A Fluorescence Program Committee was formed with Jack Burgess, John Clendening and Ann Reaugh as members to explore the future of this program and the extent to which TSOP should become involved in it.

It was decided to market the program for \$150.00. It is supplied on a 5 1/4" disk and comes with a brief list of operating instructions compiled by M. E. Hildick.

The program is designed to be used with the Zeiss Zonax Computer. The Conoco interface (signal enhancer) is also needed for this system and can be purchased through Schare's Instruments Corp., 2100 S. Gessner, Houston, Texas 77063 (713/468-4460). At this time there are no plans to modify the program for any other brand of minicomputer.

If you are interested in obtaining the program, please contact Jack Burgess, Gulf Oil Exploration and Production Company, P. O. Box 36506, Houston, Texas 77236 (Phone: 713/754-5242).

TSOP RESEARCH COMMITTEE

The following members kindly consented to be members of the Research Committee: John Castano as a representative for researchers involved in petroleum-related fields; Dennis Kaegi as a representative for industrial coal researchers; and Neely Bostick as representative for researchers in geologic applications of organic petrology. The Chairman, Alan Davis, solicited ideas regarding possible activities which might be undertaken by the Committee. As a result of the responses and the resolutions made at the 1985 Mid-year Council Meeting it now seems probable that initial Research Committee activities will be in the following

areas:

1. The Society hopes to be able to publish a manual on the techniques used in organic petrography. The Committee will establish appropriate subcommittees to oversee the compilation of material for this manual.
2. **As a first step towards holding a Workshop on Fluorescence Techniques and Applications, a group of experts will be convened to plan and co-ordinate the workshop.**
3. The Committee will solicit from members unpublished short research reports and summaries, well documented or not, which could be of interest to the membership. For example, experience using a

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particular standard, photographic film, objective, or immersion oil. The goal is to unearth those valuable, but possibly non-publishable tidbits which could greatly benefit our members. A notice soliciting brief reports or notes appears elsewhere in the Newsletter.

4. The Committee will attempt to produce some guidelines on point counting, to document the effects on precision of varying parameters such as particle size, interpoint distance, number of points and number of categories.
5. The Committee will seek to aid academic research by establishing a lending archive of specimens. The same archive might prove to be useful to the general membership as a means of promoting understanding and agreement on the terms used in organic petrology.

Other means of assisting academic study will be investigated.

"SOLICITATION OF "BRIEF RESEARCH
NOTES FROM THE PETROLOGY LABORATORY"

Neely Bostick has suggested that many useful studies in organic petrology have been conducted, the results of which have not found their way into the published literature. We would like to provide the means whereby some of this valuable resource can be brought to light. Examples of subjects sure to be of interest to our members are polishing or

embedding techniques, comparisons of kerogen separation techniques, rock color as related to type and amount of kerogen, comparisons of microscope objectives, the effects of solvent extraction and acid treatment on kerogen properties, and the advantages and disadvantages of various immersion media.

The kind of notes we envision probably would be too short or lack the documentation for a fully fledged paper in a scientific journal. An example might be one page of manuscript, possibly with one or two tables or figures.

So, please send your notes to the address below to be considered by the Research Committee and encourage your colleagues to do likewise. A decision on whether to publish the notes in the Newsletter or the Society's planned Journal will be made in conjunction with the Editor.

Alan Davis
513 Deike Building
The Pennsylvania State Univ.
University Park. PA 16802

MEMBERSHIP

As of mid-June 1985, we have approximately 250 members. A membership directory should be mailed to members in good standing in early July. Members who have not paid their 1985 dues will not receive a directory. This membership directory is for TSOP members use only and is not available for purchase and should not be distributed to an outside organization.

European members will be able to pay their 1985 dues at the next ICCP meeting in Dubrovnik, Yugoslavia, September 23-27, 1985. Joe Senftle and John Castano are the coordinators.

Canadian members should submit 1985 TSOP dues to Alex Cameron, ISPG Geological Survey of Canada, 3303 33rd St. N.W., Calgary, Alberta, Canada T2L 2A7.

OTHER SOCIETIES

INTERNATIONAL COMMITTEE FOR COAL PETROLOGY ICCP

The International Committee for Coal Petrology (ICCP) 37th meeting was held at the University of Calgary, Calgary, Alberta, August 20-21, 1984. The meeting was hosted by several groups, and was organized by Alex Cameron of the I.S.P.G.

Much interest was expressed in TSOP; the group was very supportive of our goals. Many people joined TSOP including officers of ICCP. Bill Spackman was awarded the Thiessen medal.

Over 100 people from 15 countries attended the Calgary meeting. The meeting consisted of plenary sessions, meetings of the three commissions, a half-day session on Western Canadian coal, a visit to the ISPG, and two field trips.

Some highlights are:

Commission I - General Coal Petrography

- Standardization of Reflectance Measurements. Discussion of calibration of standards. Will distribute standards and a paper discussing the problems of those agreeing to participate in measurements. The set of master standards will be based on a sapphire and synthetic garnet.

Other Societies

- Standardization of Fluorescence Measurements. Replies to the questionnaire circulated to group members showed that the determination of fluorescence spectra was the preferred method of measurement. It is intended to formulate proposals for standardization of filters, ranges of excitation and emission and finally for the standards and parameters used for measurement. Most people found the lambda max and the Red/Green ratio to be most useful.
- Standardization of Automated Systems. Interest has been revived in the subject. Image analysis and automated reflectance microscopy provide somewhat overlapping results. It was proposed to make a provisional description of what can be done with the two methods, then establish new working groups as seems appropriate.

Dave Pearson reported on a semi-automated system of maceral - Ro₂ analysis which he used successfully to predict the coking strength of Western Canadian coals with high inertinite content. Pearson employed a modified Swift point counter to record simultaneously reflectance and maceral data.

- Brown Coal Lithotypes. The Chairman, Monika Wolf, presented a scheme showing the lithotype groups and their subdivision into lithotypes and lithotype varieties.

Other Societies

- ISO Standards. Wolff-Fischer drew attention to the bias towards the coal of greatest vitrinite content when analyzing mixtures. According to ISO, movement is restricted to 10 microns when selecting fields for reflectance. It was recommended that one should move to the closest acceptable clear vitrinite in a particle.
- Coal Maceral Classification. Alan Cook presented a proposed classification of coal macerals applicable to low and high rank coals of all ages. The proposed system, to be published as an Australian standard, recognizes that huminite is a synonym of vitrinite, and that the use of the term huminite is confusing in the industrial context and that a simplified terminology is desirable.

i
Commission I - Geologic Applications
p Commission II - Geologic Applications

Ring Analysis MOD 30, 31. MOD 30 is the Puertollano oil shale, from Spain, provided by J. G. Prado; and MOD 31 is from the Monterey of California contributed by Joe Sentfle.

- MOD 30: Reflectance mean values were .30 to .50%; spectral fluorescence data are also very dispersed. A difficulty exists in distinguishing between alginite-liptodetrinite and bituminous ground mass. Regrettably, Dr. Prado had no opportunity to present his findings.

Other Societies

- MOD 31: Difficult to compare results because of terminology - I.e. is the "gray spongy mass" a bituminous groundmass, amorphous liptinite or solid bituminite or bituminite. Urgent problems to be solved include: Should the bituminous groundmass be considered as a maceral? And, also needed are precise definitions of terms cited above.

- "Unfigured Liptinite" Working Group

A survey conducted by Joe Sentfle emphasized these conclusions:

- The Stopes - Heerlen (modified) is the most accepted nomenclature.
- The study of "unfigured liptinite" requires the use of fluorescence microscopy.
- Solvent extraction could be a successful complementary tool, and
- Processing techniques employed are highly varied.

Future work Includes preparation of descriptive sheets for the main "unfigured" constituents to be discussed in 1985 in Dubrovnik. Joe Sentfle concludes that methods of sample preparation and examination are very important factors in kerogen classification.

Incidentally, practically no one likes the term "unfigured liptinite," yet it was impossible to agree on a better term.

Other Societies

- Bitumen Working Group. The descriptive sheet, "Optical Analysis of Bitumen" was accepted with few corrections. However, there was considerable discussion of the "migrabitumen" sheet, and considerable revision of the sheet was proposed.

Commission III - Industrial Application

Eleven labs reported on a round-robin analysis of a coal. Reflectance varied from .59-.72%, but the maceral analysis showed considerable variation. Agreement on the hydrogenation residues was very poor, mainly because of differences in terminology.

CANADIAN COAL PETROGRAPHERS

The Canadian Coal petrographers met in association with the Geological Association of Canada meeting in mid-May. Thirteen petrographers met and discussed the results of a round robin sample which had been circulated during the year. A similar sample has been sent to Dr. Alpern who will circulate it around the European labs.

During the Geological Association of Canada meeting a special session was held on "Image Analysis in problem solving in Geology". During this session a talk by Goodarzi and Smolej was given entitled "The use of automated image analysis in organic petrology".

BOOK REVIEW

The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry. 1981, A. D. Cohen, D. J. Casagrande, M. J. Andrejko, and G. R. Best, eds.. Wetlands Surveys, 4 Inca Lane, Los Alamos, NM, 87541. 709 pp.

I was in a quandary. As usual I was going to take a group of graduate students from two courses (Paleoecology and Coal Petrology) to one of my favorite places - Okefenokee Swamp. That splendid guidebook (Environments of Coal Formation, 1976; Spackman, Cohen, Given and Casagrande) was getting a bit dated and besides...I wanted more information, information on its human history, more about its ecology, paleoecology, biochemistry and a lot more on its geology. I can't remember where I happened to find out about this new book on the subject. I paid my money and got my book. I am truly glad I did. Despite some minor flaws (the inevitable repeats by different authors on the same subject), it's a very good, very detailed book about a very special place. It is what you would expect from a book with Art Cohen's and Dan Casagrande's names on it. That is not to say that the rest of the authors have to take any rear seating. It's just that when you visit the Swamp and talk with the rangers and the other human swamp inhabitants, those two frequent visitors are the ones the stories are told about (...the time that Art sank in up to his ankles and Dan up to his ear-lobes, into peat of the same consistency...the locals really do watch and wonder about us strange non-fishing researchers).

Chapter 1 starts out with a marvelous recounting of the history and archeology of the Swamp. It is interesting to learn that Dan Hebard of

Book Review

the Hebard Lumber Company (1904-1927) was so "modern" in his approach and outlook on taking care of our environment. We often think that in the bad old days they simply raped the land. His was a bourbon and branch water way of looking at and loving the Swamp and its people.

Next is a detailed account of the ecology with important contributions to the history of fire, rainfall and climate and their periodicity. We learn that the manner in which man has stopped the natural periodic swamp fires will lead to the demise of Okefenokee as it is today and has been for many years. Fire was and still should be such an integral part of this coal-forming environment.

The biogeochemistry of the swamp peats has always been of great consequence not only to the ecology but also to the manner in which organics have accumulated. I find this third chapter so very important when explaining to students why and how methane is produced and why organics are preserved at all and how it differs from, say, the Mississippi River delta.

The ancient macro-and microflora are explained and cataloged in a chapter on the paleoecology. Fred Rich describes the results of peat petrography, a very difficult skill indeed. His data, however, seem to be on solid ground. Diatoms and silicophytoliths (optically-isotropic, siliceous particles produced within many plants) are treated in depth. Is this where coal balls receive their supply of silica from?

In the geology and geomorphology chapter, it becomes clear that we can now tell what coal types that these peat macerals or pre-macerals will

Book Review

become, albeit with a certain amount of educated guessing on the author's part. After some disbelief in the past, and after trying it myself, I now think it can be done with some confidence. This is the meatiest chapter of all but I did feel a mite short-changed because the subsurface geology was given such short drift. The interpretations about Trail Ridge were just too pat. More drill cores need to be taken and look at. More sedimentology needs to be done in the area adjacent to the swamp. I would have loved to read about the fate of the dissolved (and not so dissolved) organics that exit down the St. Mary's and Suwannee rivers.

However, I must say that I have used this remarkable book to great advantage in my classes and field trips. The large Okefenokee Swamp Vegetation Map by Cheryl A. McCaffrey and David B. Hamilton tucked away in the back cover pocket is worth the price of the book alone.

The last time a job was totally and superbly finished was 20 years after the last grape juice became that product known as a bottle of 1929 Lafitte Rothchild! For the rest of us there is work to do.

Dr. Franz Froelicher
Department of Geology
University of Southern Mississippi
S. S. Box 9364
Hattiesburg, MS 39406-9364

CALENDAR

* These items are new

1985

July, 20, 1985/Aug. 2, 1985, Conodonts, symposium, Nottingham, England. (R.J. Aldridge, Dept. of Geology, The University, Nottingham. NC7 2RD).

* August. 10-11, 1985, Fluvial Deposition Systems and their Resource Potential, Short Course, Golden, Colo. (Continuing Education Dept. SEPM, Box 1756, Tulsa, 74159, Phone: 918/743-2498).

Aug. 11-14, 1985, Society of Economic Paleontologists & Mineralogists, 2nd mid-year ann. mtg., Golden, Colo. (SEPM Headquarters, Box 4756, Tulsa 74101. Phone: 918/743-9765).

Aug. 24-Sept. 2, 1985, Graptolite Working Group, mtg., Denmark & field trips (before & after) to Norway, Sweden, Denmark. (Merete Bjerrskov, Institute of Historical Geology & Paleontology, University of Copenhagen, Oster Voldgade 10, DK-1350, Copenhagen K. Denmark).

Sept. 10-11, 1985, Depositional environments of lacustrine source rocks, mtg., by Intl. Geological Correlation Program and Geological Society of London, London. (Kerry Kelts, Geological Institute ETH-Z, CH 8092 Zurich. Phone: 01/256-3703. Telex: 53178 ethz).

Sept. 16-20, 1985, Organic Geochemistry, mtg., Julich, West Germany. (Helga Bongartz, KFA Julich GmbH, Box 1913, D-5170 Julich) Topics: Organic matter in recent sediments. Generation & migration of oil & gas. Kerogen, coal & oil shales. Heavy oils & tar.

Sept. 17-21, 1985, American Institute of Professional Geologists, ann. mtg., St. Paul. (Robert E. Pendergast, 1925 Oakcrest Ave., Roseville, Minn.. 55113. Phone: 612/636-7744).

Sept. 23-25, 1985, AAPG Petroleum Formation and Occurrence School, Rueil, France (AAPG Headquarters, Box 979, Tulsa, 74101. Phone: 918/584-2555).

* Sept. 23-27, 1985, ICCP Meeting, Dubrovnik Yugoslavia (Prof. M. Ercegovac, Putnik Congress Dept., 11000 Beograd. Dragoslava Jovanovica 1, Dubrovnik, Yugoslavia).

Sept. 26-29, 1985, Society of Economic Paleontologists and Mineralogists, mid-year mtg., McKimmon Center, North Carolina State Univ. Raleigh, N.C. (Charles A. Nittrouer, General Chairman. SEPM, P.O. Box 4756, Tulsa, Okla.. 74159. Phone: 918/743-9765).

Sept. 28-29, 1985, Canadian paleontology & biostratigraphy, seminar. Quebec City. (John Riva. Dept. of Geology, Laval University, Ste-Foy. Quebec, G1K 7P4).

Calendar

* Oct. 1-3, 1985, Norwegian Oil and Gas Symposium. Stavanger, Norway. (Elizabeth Hotter, Norwegian Petroleum Society. Box 1897, Vika, N-0124 Oslo).

Oct. 16-19, 1985, American Association of Stratigraphic Palynologists, ann. mtg.. El Paso, Tex. (William C. Cornell, Dept. of Geological Sciences, University of Texas, El Paso, 79968. Phone: 915/747-5218).

* Oct. 16-19, 1985, Gulf Coast Association of Geological Scientists and Gulf Coast Section, SEPM, Annual Meeting, Austin, Tx. (Bill Ehni, Geotronics Corp., 10317 McKalla Place. Austin, Tx. 78758. Phone: 512/837-7564).

Oct. 22-24, 1985, Gulf Coast Section, American Association of Petroleum Geologists, mtg.. Baton Rouge, LA. (AAPG Headquarters, Box 979, Tulsa, OK 74101. Phone: 918/584-2555).

Oct. 28-31, 1985, Geological Society of America, ann. mtg.. In Orlando, Fla., with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA Headquarters, Box 9140, Boulder, Colo. 80301. Phone: 303/447-2020).

Oct. 28-Nov. 1, 1985, Coal science, mtg. Sydney, Australia. (R.W. Hinde, CSIRO. Division of fossil Fuels. Box 136, North Ryde, NSW 2113, Australia).

Oct. 28-Nov. 1, 1985, Symposium on Evaporites and Hydrocarbons. Banff, Alberta, Canada. Sponsored in cooperation with the Canadian Society of Petroleum Geologists. (Mrs. Pat Larham, Faculty of Extension, The University of Alberta, Edmonton, Alberta, Canada T6G 2G4).

Nov. 9-12, 1985, Eastern Section, American Association of Petroleum Geologists, ann. mtg. (Nov. 11-12) 6 field trips (Nov. 9-11), Williamsburg, VA. (Laure G. Wallace, MS 643, Minerals Management Service, 12203 Sunrise Valley Drive. Reston, VA., 22092).

Nov. 10-13, 1985, Geological Society of America Annual Meeting, San Antonio, Texas. General Chairman, James O. Jones (Jean Kinney, GSA. P.O. Box 9140, Boulder, Colo. 80301. Phone: 303/447-2020).

Dec. 1-4, 1985, Diagenesis of siliciclastic deposits in hydrocarbon exploration, mtg., by Gulf Coast Section, Society of Economic Paleontologists & Mineralogists, Austin, Tx. (Ernest A. Mancini, Geological Survey of Alabama, Drawer 0, University, 35486. Phone: 205/349-2852).

Calendar

1986

April 16-19, 1986. Pacific Section, AAPG. Bakersfield, Calif. (General Chairman, Gene Tripp, c/o Challenger Minerals Inc. 5531 Business Park South, Bakersfield, Calif. 93309. Phone: 805/327-5088).

April 27-29, 1986, Southwest Section. AAPG, Mescalero, N.M. (General Chairman, Edward David, 731 Petroleum Bldg., Roswell, N.M. 88201. Phone: 505/622-8850).

* May 19-21, 1986. Geological Association of Canada/Mineralogical Association of Canada, ann. mtg., Ottawa. Ont. (J.A. Donaldson, Dept. of Geology, Carlton University, Ottawa, K1S 5G6. Phone: 613/231-2630).

June 15-18, 1986, AAPG Annual Convention (with Divisions: SEPM, EMD and DPA), Atlanta, GA., Georgia World Congress Center (General Chairman, Howard Cramer, Emory University Dept. of Geology, Atlanta, GA 30322. Phone: 404/329-6191).

Sept. 7-9, 1986. Rocky Mountain Section, AAPG, Casper, Wyo. (General and Co-chairman. Mark and Nancy Doelger, Barlow and Haun, Inc.. 214 E. 13th, Casper Wyo. 82601. Phone: 307/235-1311).

* Sept. 26-28. 1986. Society of Economic Paleontologists & Mineralogists, mid-year ann. mtg., Raleigh, N.C. (Charles Nittrouer, Dept. of Marine, Earth & Atmospheric Sciences, North Carolina State University, Raleigh. 27695. Phone: 919/737-3711).

* Oct. 2-4, 1986, Eastern Section, AAPG, Ann Arbor, Mich. Sponsored by the Michigan Basin Geological Society and the University of Michigan (General Chairman, Paul Catacosinos. 6071 Quaker Hill Drive, West Bloomfield, Mich. 48033. Phone: 313/661-1929).

* Oct. 22-24, 1986, Gulf Coast Section, AAPG. Baton Rouge, LA. (General Chairman, Harry L. Rowland Jr., Louisiana Geological Survey, P.O. Box G, University Station, Baton Rouge, LA. 70893, Phone: 504/342-6754.

* Nov. 10-13, 1986, Geological Society of America, ann. mtg., in San Antonio, with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA headquarters. Box 9140, Boulder, Colo., 80301. Phone: 303/447-2020).

1987

* June 7-10, 1987, American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, ann. mtg., Los Angeles. (AAPG headquarters. Box 979, Tulsa, 74101. Phone: 918/584-2555).

* Oct. 26-29, 1987, Geological Society of America, ann. mtg., in Phoenix with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA headquarters, Box 9140, Boulder, Colo., 80301. Phone: 303/447-2020).



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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LETTERS

From the President

I would like to extend my apology to Sue Rimmer for the error contained in my letter as published in the last Newsletter. My letter referred to Drs. Hower and "Summers" as the hosts for our 1986 Annual Meeting which will be held in Lexington, Kentucky. Unless she changes her name in the meantime, Dr. Rimmer will be the co-host at our Kentucky meeting.

As regards the forthcoming Annual Meeting in Houston (November 8 and 9), I am informed by Harvey Zeiss that the program is both full and varied with something for everyone. This is further evidence of the vigor of our organization in spite of its youth. We seem to have matured instantaneously without experiencing the normal growing pains.

In order that our plans may be made well in advance, I again make known the Council's willingness to consider Invitations from prospective hosts for our 1987 and 1988 Annual Meetings. These should be submitted to me in writing prior to the 1985 meeting.

With the close of the Houston meeting, I will turn the reins of leadership over to John Castano who will serve as President for the next year. He could not be in better hands. Please supply him with the kind of support so generously given me and with this, our continued success will be assured.

William Spackman

LETTERS

From the Editor

It is with great pleasure that I bring you this third edition of the TSOP Newsletter. I will soon be passing the blue pencil to Carolyn Thompson-Rizer, whom I am sure will do a fine Job as Editor. As I look back on the past two years, I appreciate the support I have received from TSOP members. It is very Important that each TSOP member give feedback to the Council, even if you disagree with their objectives. Because the Newsletter is the voice of TSOP, it is extremely Important to use it so all TSOP members will hear your opinions or suggestions.

There are many areas on the horizon on which the Society will be focusing in the coming year. Several subjects that immediately come to mind are the application of spectral fluorescence to routine organic petrography, the TSOP Laboratory Procedures Manual, the TSOP outside publications review board, and the TSOP research sample repository. We must decide on a new emblem and whether or not TSOP should have a Journal.

It appears that the committees are where the action is really going to be in the next several years. Because TSOP has matured to a point where leadership and the council are no longer the single most Important thing, the committees will become the major focus of activity. TSOP will always need good, strong leadership but beyond this, TSOP will always need many people willing to work together in groups to try and resolve very fundamental problems in organic petrology. No member in TSOP should ever be a silent member no matter how distant you are located from the hubbub, be it Houston, Texas, or wherever.

I would like to thank you, TSOP members, for giving me the opportunity to serve as Editor for the last two years. I am now looking forward to an exciting year of committee work. I hope to see you in Houston.

Margaret E. Hildick-Pytte

SOCIETY NEWS

CALENDAR OF TSOP ACTIVITIES FOR 1985

November 7-9 1985 Annual Meeting
December 1 Deadline to submit material for Fourth Quarter Newsletter
December 30 Deadline to submit manuscripts for 1985 Annual Meeting Proceedings volume

PROCEEDINGS OF THE 1984 TSOP ANNUAL MEETING

This is a status report on the publication of the proceedings of the 1984 TSOP Annual Meeting held in Tyson's Corner, Virginia. Manuscripts for nine of the eighteen papers have been submitted and are in various stages of review and acceptance by Elsevier Pub. Co. The abstracts for manuscripts not submitted will be published in the Special Edition of the International Journal of Coal Geology, as contained in the original program volume. The publication date for the proceedings volume will be in the spring of 1986.

1985 ANNUAL MEETING

The 1985 Annual meeting committee has done a great job of organizing the Second Annual Meeting to be held in Houston, Texas, November 7 to 9, 1985.

The agenda for the 1985 Annual Meeting follows. Technical Sessions will be held in the morning and afternoons on Friday, November 8, and Saturday, November 9, 1985. The agenda for the 1985 Council meeting to be held on Thursday, November 7, 1985, follows the annual meeting program. The 1985 Council meeting includes reports from the council members and from chairmen of the committees. All council meetings are open to TSOP members.

Because there is full intention to publish a proceedings volume of this meeting, extended abstracts must be no longer than eight pages. Authors may include simple, concise illustrations as part of the abstract if the text and figures fit within the allocated space. Please leave a 1 to 1-1/2 inch lefthand margin for binding. The title should be in capitals followed by a blank line; authors name and affiliation; and a second blank line followed by the body of the abstract.

The 1985 Annual Meeting committee is:

Harvey S. Zeiss - Chairman	Loretta S. Satchell (Program Coordinator)
Ralph J. Gray	John R. Castano
Christine Hartman-Stroup	Anne Broke Reaugh
Jack Burgess	

SOCIETY NEWS

THE SOCIETY FOR ORGANIC PETROLOGY
2ND ANNUAL MEETING PROGRAM

THURSDAY, NOVEMBER 7

7:30 OUTGOING COUNCIL MEETING

FRIDAY, NOVEMBER 8

MORNING SESSION: CONVENOR - H. S. ZEISS

8:00 OPENING REMARKS - H. S. Zeiss

8:10 Cole, G., H. I. Halpern, R. A. Sedivy, and R. J. Drozd.
Relationship between sediment, thermal maturity and reservoir oils within Ohio.

8:40 Thompson-Rizer, C. L. Five kinds of amorphous kerogens and their relationship to the hydrocarbon generating potential of source rocks.

9:10 Mukhopadhyay, P. K. et al. Characterization of amorphous and other organic matter types by pyrolysis-gas chromatography: comparison of whole rock sample and isolated kerogens.

10:10 Crelling, J. Results of laser-induced fluorescence of organic materials.

10:40 REPORTS of recent International meetings - G. Bayliss, J. Crelling, J. Thompson.

11:30 LUNCH

AFTERNOON SESSION: CONVENOR - J. BURGESS

SYMPOSIUM: DEPOSITIONAL ENVIRONMENTS OF ORGANIC-RICH ROCKS

1:00 Burgess, J. Mud Lake revisited.

1:30 Rimmer, S. M. and A. Davis. Geologic controls on the maceral composition of the Lower Kittanning seam.

2:00 Satchell, L. S. A raised swamp model for Paleocene Glyptostrobus forest swamp coals in the Powder River Basin, Wyoming.

2:30 Kneller, W. A. and C-H Wu. Maceral composition and environment of deposition of Permian coals from the Parana Basin, Brazil.

3:30 *Wenger, L. M. Variations in vitrinite reflectance with organic fades, examples from Pennsylvanian cyclothem of the midcontinent, U.S.A.

* Denotes Student Paper

SOCIETY NEWS

- 4:00 Mukhopadhyay, P. K. et al. Organic petrography and geochemistry of Lower Tertiary coals of Texas and their relation to depositional environment.
- 4:30 Sassen, R. Distribution of source potential within the Jurassic Smackover carbonate.
- 5:00 Reaugh, A. Termination of Tasmanites accumulation in the Chattanooga Shale - a consequence of environmental change.
- 6:30 ICEBREAKER

SATURDAY, NOVEMBER 9

MORNING SESSION: CONVENOR-

- 8:00 Schwab, K. W. Vitrinite reflectance values derived from Staplin's (1969) visual kerogen standards.
- 8:30 Lo, H. B. A quantitative fluorescence technique for evaluating thermal maturity: Instrumentation and examples.
- 9:00 *Brunsman, M. J. and W. A. Kneller, 3-D fluorescence spectroscopy of the sporinite and resinite macerals from coals of different rank.
- 10:00 *Glick, D. C., and A. Davis. Variability in the organic element content of U.S. coals Including results of cluster analysis.
- 10:30 *Lin, R., A. Davis, D. F. Bensley and F. J. Derbyshire. The chemistry of vitrinite fluorescence.
- 11:00 Hartman-Stroup, C. The effect of organic matter type and organic carbon content on rock-eval hydrogen Index of oil shales.
- 11:30 GROUP PHOTO
- 12:00 LUNCH AND BUSINESS MEETING

AFTERNOON SESSION - CONVENOR

- 1:30 Levine, J. Characteristics and origin of fracture-hosted impsonite, Quebec City area.
- 2:00 Cohen, A. D., R. Raymond Jr., L. M. Archuleta, and D. A. Mann. Preliminary study of the reflectance of huminitic macerals in recent surface peats.
- 2:30 Sentfle, J. T., S. R. Larter, B. W. Bromley, and J. H. Brown. Chemical comparison of vitrinite concentrates from Carboniferous and Tertiary basins.

SOCIETY NEWS

- 3:00 Harvey, R. O. and P. J. DeMaris. Size and maceral association of pyrite in Illinois coals and their float-sink fractions.
- 3:30 Chung, M. Stable isotope changes with coalification jumps.
- 4:00 Lange, R. V. A blend analysis program for use with Zonax automated reflectance microscopy.
- 4:30 Ting, F.T.C. Optical anisotropism and its relationship with some physical and chemical properties of coal.
- 7:30 MEETING INCOMING COUNCIL

TSOP COUNCIL MEETING AGENDA
Thursday, November 7, 1985
7:30 P.M.

Review of minutes of the Mid-year Council Meeting	Reaugh
Report of the Treasurer	Reaugh
Report of the 1985 Annual Meeting Committee	Zeiss
Presentation of Hosts for 1986 Annual Meeting	Hower/Rimmer
Editors Report	Pytte
Awards Committee Report	Robison
Logo Committee Report	Shane
Report of Membership Committee	Teerman
Report of Research Committee	Davis
Report of Fluorescence Program Committee	Burgess
Report of Bylaws Committee	Burgess
Report of the Nominating Committee	Burgess
Report of the Ballot Committee	Thompson
Report of the Newsletter Committee	Cameron/Senfle
Other Old Business	
Discussion of invitations received from prospective hosts for the 1987 and 1988 Annual Meetings	
Other New Business	
Adjournment	

TSOP OFFICERS 1985-1986

The following nominees have been elected to the TSOP Council for the 1985-1986 term. Their installation into TSOP will take place during the Business Meeting of the 1985 Annual Meeting on Saturday, November 8, 1985.

President - John R. Castano
President-elect - John C. Crelling
Vice-president - Neely H. Bostick
Councilors - Karl W. Schwab
- Jennifer A. Thompson
Editor - Carolyn L. Thompson-Rizer

POST 1985 ANNUAL MEETINGS

1986 Annual Meeting

The 1986 TSOP Annual Meeting will be in Lexington, Kentucky, home of the University of Kentucky Institute for Mining and Minerals Research. The invitation was received from Dr. James Hower at IMMR. The meeting will be held at the Hyatt Regency Hotel in downtown Lexington, Kentucky in late September. You will be informed of the exact meeting dates when they are decided.

1987 and 1988 Annual Meetings

Because we would like to plan the TSOP annual meetings a full two years in advance, please submit Invitations to host the 1987 and 1988 annual meetings by council meeting in November. This increased planning time will greatly help the annual meeting committees plan the meetings and field trips, and organize activities for spouses.

BRIEF RESEARCH NOTES FROM THE PETROLOGY LABORATORY

In the last Newsletter I requested that Members consider submitting short notes of research which has not found its way into the published literature. The current issue contains the first such contribution, "A Method to Eliminate Troublesome Bubbles...During Petrographic Examination of Lignites" by Jeff Quick. I hope this will stimulate other members to share their findings.

Examples of subjects sure to be of interest are polishing or embedding techniques, comparisons of kerogen separation techniques, rock color as related to type and amount of kerogen, comparisons of microscope objectives, the effects of solvent extraction and add treatment on kerogen properties, and the advantages and disadvantages of various immersion media. However, the list is endless.

The kind of notes we envision probably would be too short or lack the documentation for a fully fledged paper in a scientific journal. An example might be one page of manuscript, possibly with one or two tables or figures.

SOCIETY NEWS

Please send your notes to me at the address below for the consideration of the Research Committee and encourage your colleagues to do likewise. A decision on whether to publish future notes in the Newsletter or the Society's planned journal will be made in conjunction with the Editor.

Alan Davis
513 Deike Building
The Pennsylvania State University
University Park, PA 16802

A Method to Eliminate "Troublesome Bubbles"
That Migrate Under the Objective During
Petrographic Examination of Lignites by

Jeff Quick
The Pennsylvania State University
University Park, PA 16802

Some time ago I had the opportunity to examine polished pellets of degraded lignites with reflected light and an oil immersion objective. Air contained in cracks and fissures present on the surface of the pellet often migrated through the immersion oil into the field of view directly under the objective lens. The resulting image was obscured or blocked. After several futile attempts to complete a petrographic analysis a method was devised that solved the problem of the migrating bubbles. Although other laboratories may have developed similar techniques, I hope the method described here will be useful to others who confront similar problems.

The surface of the coal pellet is completely covered with a generous amount of immersion oil then placed in a vacuum for a minute. After removal from the vacuum, the air trapped in cracks and fissures under the oil appears to have been displaced by the oil. Although a bit messy, the extra effort prior to analysis is more than compensated by a "bubble free" microscopic examination.

SOCIETY NEWS

TSOP COMMITTEES - 1985

Annual Meeting Committee

Harvey Zeiss, Chairman
Anne B. Reaugh
Christine Hartman-Stroup
Jack Burgess
John Castano
Loretta Satchell,
Program Coordinator

Awards Committee

Cole Robison, Chairman
Richard Harding
Karl Schwab

Ballot Committee

Jenny Thompson, Chairman
Loretta S. Satchell
Brenda Claxton

Bylaws Committee

Jack Burgess, Chairman
John Clendening
Ann Reaugh

Fluorescence Program Committee

Jack Burgess, Chairman
John Clendening
Ann Reaugh

Logo Committee

John Shane, Chairman
Margaret Hildick-Pytte
J. C. Crelling

Membership Committee

Stan Teerman, Chairman
H. B. Lo
Ray Landin
Ken Yordy
Dennis Kaegi

Newsletter Committee

John Shane, Co-Chairman
Joe Senftle, Co-Chairman
Alex Cameron, Co-Chairman

Nomination Committee

Jack Burgess, Chairman
Alex Cameron
Cole Robison
Dick Harvey
Sue Rimmer

Publication Committee

John Clendening, Chairman
Margaret Hildick-Pytte
Peter Hacquebard

Research Committee

Alan Davis, Chairman
John Castro
Neely Bostick
Dennis Kaegi

MEMBERSHIP

As of mid-October, 1985, we have approximately 260 members. A membership directory was mailed to members in good standing in October, 1985. This membership directory is for TSOP members use only and is not available for purchase and should not be distributed to an outside organization.

OTHER SOCIETIES/MEETINGS

International Committee for Coal Petrology (ICCP)

The International Committee for Coal Petrology 38th meeting was held in Dubrovnik, Yugoslavia, from September 23 to 27, 1985. Dr. Marco Ercegovac was a gracious host for this meeting.

Commission I (General Coal Petrography) discussed progress made in many of their working groups including; standardization of reflectance measurements, saprovitrinite, the vitrinite/inertinite boundary, standardization of fluorescence measurements, automation of petrographic analyses, coal microlithotypes, and coal classification and Gondwana coals. Mr. Karl Ottenjann presented a paper entitled "Fluorescence alteration and degree of bituminization and C. Diessel made a presentation entitled "Fluorescence measurements of Inertinite." Alpern summarized a paper prepared by Pittion and Bertrand entitled "Fundamental Fluorescence." Finally, a summary of E.C.E. decisions concerning coal classification was made by Dr. Alpern and was followed by a short presentation by Slavov. During the discussion of coal classification, Nancy Ng (ACURL) presented views summarized in a handout entitled "The Views of Australian Export Coal Industry of Proposed Classification System of the Economic Commission of Europe."

Commission 2 (Dispersed Organic Matter-Geological Applications) discussed progress made during the past year. During this session, W. Hiltmann began to review the working sheet prepared by H. Jacob concerning "migrabitumen." Much discussion occurred and this working group will review the sheet and terminology by written correspondence. Neely Bostick reviewed results of a round robin exercise prepared by W. Kalkreuth to investigate the influence of sapropelic levels on vitrinite reflectance. In addition, Dr. Bostick discussed results of a round robin exercise which included Pierre shale and artificial composite samples (two populations of reflectance levels). Results were variable and the exercise provoked discussion. The unfigured liptinite working group was renamed to the amorphous organic matter working group. Discussions of the terms amorphinite, bituminite and mineral bituminous groundmass were held. The final version of the bituminite work sheet was reviewed and final comments will be incorporated into the sheet by Dr. Marlies Teichmuller. Discussion concerning the use of the word "bituminite" occurred and a resolution will be sought through a questionnaire. Comments concerning the draft on "mineral bituminous groundmass" were requested. The use of the term "amorphinite" was discussed. Clear definition of need of such a term is not apparent. To resolve this issue, a round robin exercise including whole rock, kerogen strewn mount and polished thin section samples will be circulated by Dr. Joe Senftle to permit all participants to view similar sample preparations. A classification of alginite was presented by Dr. Alan Cook and a working sheet describing this classification has been prepared for circulation and subsequent discussions. A classification of kerogen prepared by Mukhopadhyay was distributed.

OTHER SOCIETIES/MEETINGS

Commission III (Industrial Applications of Coal Petrology) reviewed progress in their working groups during the past year. The combustion working group discussed the study of two coals and their corresponding fly ashes. The reactive inertinite group reviewed results from a ring analysis performed by French and Canadian petrographers. Results were variable. C. Diessel presented a paper concerning the application of inertinite fluorescence to coke strength prediction. B. Alpern reviewed results of a ring analysis exercise by French and Brazilian petrographers. They obtained fairly good agreement provoking an interest in establishing a new working group in this area of study. Information sheets on hydrogenation residues were discussed including an introduction sheet along with additional ones describing unreacted coal, vitroplasts and cenospheres. A paper prepared by Hagemann and Wolfrum concerning a petrographic investigation of residues from hydroliquefaction of lignites was presented by Hagemann. Finally, it was decided that the automated microscopy working group will now be part of Commission III.

A more detailed discussion concerning the working groups should be available shortly in the minutes of each commission.

During the plenary session, it was announced that the 1986 meeting will be hosted by Dr. A. H. V. Smith and will be held in England.

Joseph T. Senftle
Unocal Science and Technology
376 South Valencia Avenue
Brea, California 92621

12th International Meeting on Organic Geochemistry

The 12th International Meeting on Organic Geochemistry was held at the Julich Nuclear Research Center from September 16 to 20, 1985. A series of 45 oral presentations were made concerning too numerous a range of topics to be summarized in this short report. My general opinion is that there was a strong biomarker emphasis throughout the meeting. Tuesday afternoon's session was devoted to kerogen, coal and oil shales. This session started with an invited lecture by Or. Marlies Teichmuller entitled "Organic petrology-history and state-of-the-art."

In addition to the oral presentations, 127 poster presentations were made through the week. Again, the topics were highly variable. Numerous presentations relating kerogen petrography and chemical composition were made. Overall, the quality of the poster sessions was very good.

The location of the 13th International Meeting on Organic Geochemistry is planned for 1987 in Venice from September 20 to 25.

Joseph Senftle
Unocal Science and Technology
Brea, California 92621

CALENDAR

* These items are new.

1985

Nov. 9-12, 1985, Eastern Section, American Association of Petroleum Geologists, ann. mtg. (Nov. 11-12) & field trips (Nov. 9-11), Williamsburg, VA. (Laure G. Wallace, MS 643, Minerals Management Service, 12203 Sunrise Valley Drive, Reston, VA, 22092).

Nov. 10-13, 1985, Geological Society of America Annual Meeting, San Antonio, Texas. General Chairman, James O. Jones (Jean Kinney, GSA, P.O. Box 9140, Boulder, CO, 80301. Phone: 303/447-2020).

* Nov. 14-15, 1985, Organic-rich Sediments Meeting, Tours, France (J. Breheret, breco 52, Laboratoire de Geologie Faculte des Sciences, 37200 Tours. Phone: 47/28-12-80).

Dec. 1-4, 1985, Diagenesis of siliciclastic deposits in hydrocarbon exploration, met., by Gulf Coast Section, Society of Economic Paleontologists & Mineralogists, Austin, TX. (Ernest A. Mancini, Geological Survey of Alabama, Drawer 0, University, 35486. Phone: 205/349-2852).

1986

April 16-19, 1986, Pacific Section, AAPG, Bakersfield, Calif. (General Chairman, Gene Tripp. c/o Challenger Minerals Inc., 5531 Business Park South, Bakersfield, CA, 93309. Phone: 805/327-5088).

April 27-29, 1986, Southwest Section, AAPG, Mescalero, N.M. (General Chairman, Edward David, 731 Petroleum Bldg., Roswell, NM, 88201. Phone: 505/622-8850).

May 19-21, 1986, Geological Association of Canada/Mineralogical Association of Canada, ann. mtg., Ottawa, Ont. (J. A. Donaldson, Dept. of Geology, Carlton University. Ottawa, K1S 5B6. Phone: 613/231-2630).

June 15-18, 1986, AAPG Annual Convention (with Divisions: SEPM, EMD and DPA), Atlanta, GA., Georgia World Congress Center (General Chairman, Howard Cramer, Emory University Dept. of Geology, Atlanta, GA, 30322. Phone: 404/329-6491).

Sept. 7-9, 1986, Rocky Mountain Section, AAPG, Casper, Wyo. (General and Co-chairman, Mark and Nancy Oelger, Barlow and Haun, Inc., 214 E. 13th, Casper, WY, 82601. Phone: 307/235-1311).

* Sept. 19-21, 1986, Great Lakes Section Society of Economic Paleontologists & Mineralogists, ann. field trip. Northern Wisconsin or Upper Peninsula Michigan (Albert B. Dicas, Univ. of Wisconsin, 203 Administration Bldg., Superior, 54880. Phone: 715/394-8311).

CALENDAR

Sept. 26-28, 1986, Society of Economic Paleontologists & Mineralogists, mid-year ann. mtg., Raleigh, N.C. (Charles Nittrouer, Dept. of Marine, Earth & Atmospheric Sciences, North Carolina State University, Raleigh, 27695. Phone: 919/737-3711).

Oct. 2-4, 1986, Eastern Section, AAPG, Ann Arbor, Mich. Sponsored by the Michigan Basin Geological Society and the University of Michigan (General Chairman, Paul Catacosinos, 6071 Quaker Hill Drive, West Bloomfield, MI, 48033. Phone: 313/661-1929).

Oct. 22-24, 1986, Gulf Coast Section, AAPG, Baton Rouge, LA. (General Chairman, Harry L. Rowland, Jr., Louisiana Geological Survey, P.O. Box G, University Station, Baton Rouge, LA, 70893. Phone: 504/342-6754).

Nov. 10-13, 1986, Geological Society of America, ann. mtg., in San Antonio, with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA headquarters, Box 9140, Boulder, CO, 80301. Phone: 303/447-2020).

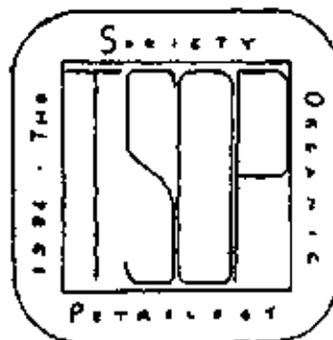
1987

June 7-10, 1987, American Association of Petroleum Geologists and Society of Economic Paleontologists & Mineralogists, ann. mtg., Los Angeles. (AAPG headquarters, Box 979, Tulsa, 74101. Phone: 918/584-2555).

Oct. 26-29, 1987, Geological Society of America, ann. mtg., in Phoenix with associated societies: Cushman Foundation, Geochemical Society, Geoscience Information Society, Mineralogical Society of America, National Association of Geology Teachers, Paleontological Society, Society of Economic Geologists. (Jean Kinney, GSA headquarters, Box 9140, Boulder, CO, 80301. Phone: 303/447-2020).



The Society for Organic Petrology



THE SOCIETY FOR ORGANIC PETROLOGY



K



The Logo Committee has been authorized by TSOP Council to offer a \$50 cash prize and a free two year membership to TSOP to the person(s) submitting the design chosen by the Society. Several have been submitted and are presented here. Please look the emblems over and fill in the brief questionnaire below. We welcome your ideas in any form.

Please note that this questionnaire does not constitute a vote.

___ My choice for the TSOP emblem is letter ___.

___ I do not like any of the emblems suggested herein and wish to submit my own,

___ I do not think TSOP should adopt any form of emblem.

___ I do not think TSOP Should adopt any form of emblem at this time.

Please indicate your preference and/or comments and send to:

John D. Shane
Exxon Production Research Company
P.O. Box 2189
Houston, Tx. 77001.

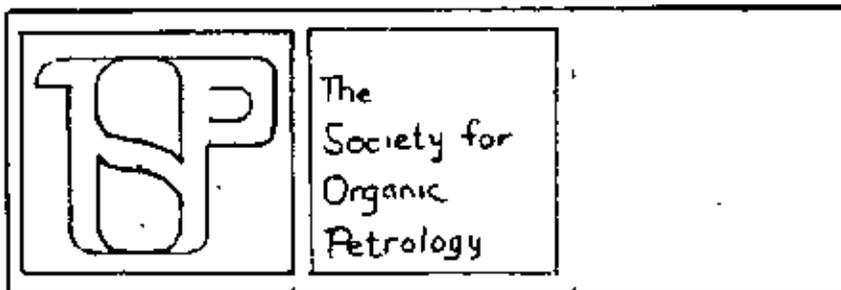


A

NEWSLETTER



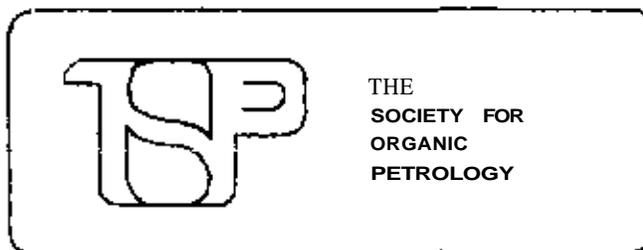
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C



E



D



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H

**NEWSLETTER DEADLINES**

<u>Issue No.</u>	<u>Info Due to Editor by</u>	<u>Issue to be Mailed First Week of</u>
2	May 15	June
3	July 15	August
4	October 15	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P.O. Box 1267
Ponca City, OK 74603 USA

1986 ANNUAL MEETING - FIRST ANNOUNCEMENT

The 1986 TSOP Annual Meeting will be held in Lexington, KY, and will be co-hosted by Dr. James C. Hower (Kentucky Center for Energy Research Laboratory - University of Louisville) and Dr. Sue M. Rimmer (University of Kentucky). The meeting is scheduled for September 22, 23, and 24 (with the option of a field trip on the 25th) at the Hyatt in downtown Lexington. Blocks of rooms have been reserved at the Hyatt (\$58.00 single; \$63.00 double) and at the Quality Inn (\$30.00 single; \$35.00 double). For general and registration information, contact Ms. Nancy Hopper, UK-IMMR-OISTL, 310 Bradley Hall, University of Kentucky, Lexington, KY, 40506-0058, Phone: (606) 257-2837. Preregistration and housing forms will be mailed in June.

In addition to general technical sessions, two symposia may be arranged, according to level of interest: (1) Eastern Coals, and (2) Applications of Fluorescence Microscopy. Titles should be submitted by April 25, 1986 to assist in program planning. A call for abstracts will go out in June with a due date of August 1st, 1986. Extended abstracts, up to 2 pages in length, are requested. As in previous years, we hope to publish selected papers following the meeting. For technical information, please contact either Sue Rimmer, Department of Geological Sciences, 333 Bowman Hall, University of Kentucky, Lexington, KY 40506-0059 (Phone: 606-257-3758 or 257-4607), or Jim Hower, Kentucky Center for Energy Research Laboratory, Iron Works Pike, P.O. Box 13015, Lexington, KY, 40512-3015 (Phone: 606-252-5535).

1986 OFFICERS

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Vice President	Neely Bostick 303-236-5764
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Councilor	Jennifer Thompson 713-663-2610
Councilor	Karl Schwab 713-464-8007

LETTER FROM THE EDITOR

I am looking forward to an interesting year of creating four issues of this newsletter for you. This publication should contain things that keep you informed about the Society for Organic Petrology (TSOP) as well as other major activities in organic petrology, organic geochemistry, coal petrology, and palynology. Although I try to keep up with the news in these areas, it is impossible for any single person to report on all these subjects, which is why I need your help. The TSOP Newsletter reflects the contributions of the membership, so please do not hesitate to drop me a note or give me a call. Let me know what you like and don't like about this issue so that Issue No. 2 can be improved. I am open to all suggestions and comments. Remember, without your input, the contents of this newsletter will be very limited.

I am anxious to hear from you.

Carolyn

Carolyn L. Thompson-Rizer

LEXINGTON

A one-day, post-meeting field trip will be held on September 25, and will examine black shale and coal sections in eastern Kentucky. We are fortunate to have the assistance and expertise of the Kentucky Geological Survey in this endeavor. We need some indication of the number of participants we can expect, and request that the enclosed field trip survey be returned by April 25. Cost of the trip will be approximately \$25-30. (We plan to return to Lexington by 6:30 pm that day).

LETTER FROM THE PRESIDENT

Several months ago, TSOP held its second annual meeting in Houston, which was gauged a great success. The affairs of the society and, especially a meeting of this caliber, takes a lot of effort on the part of many committee members, the speakers, and TSOP Council. Thanks to all!

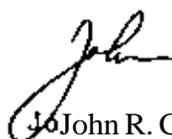
Soon, the nominating committee will be preparing a slate of candidates for the election which will take place this summer. If you are interested in serving as an officer or as a member of a committee, please let me know.

Three items of importance that I'd also like to mention are:

In a special council meeting in January 1986, we entered into an agreement with Pergamon Press to publish selected papers from our second annual meeting in Organic Geochemistry. We believe that this arrangement offers the Society the best means of publishing our papers at the present time.

TSOP is formulating plans to conduct a Fluorescence Workshop, which tentatively will be held at Southern Illinois University, Carbondale, Illinois, sometime in the fall of 1986.

The TSOP Council's midyear business meeting will be held at the Wyndham Hotel, Houston, Texas, on April 18. The meeting is open to all members, so if you want to place any items on the agenda and/or attend the meeting, please let me know in advance so we can make the necessary arrangements.



John R. Castano

SHELL DEVELOPMENT COMPANY
Bellaire Research Center
P. O. Box 481
Houston, TX 77001

SUMMARY OF THE 1985 ANNUAL MEETING

by Harvey Zeiss

The 1985 Annual Meeting was a resounding success with some 107 people in attendance. Twenty-five technical presentations were made, which included three student papers competing for the Best Student Presentation Award. Rui Lin (Penn State graduate student) won this honor with his presentation titled "The Chemistry of Vitrinite Fluorescence," coauthored by Alan Davis, Dave Bensley, and F. J. Derbyshire. The award consisted of a certificate and a check for \$100.

Jack Burgess convened an eight-paper symposium on "Depositional environments of organic-rich rocks," which included presentations from disciplines of coal petrology, kerogen petrology, organic geochemistry and palynology. I think it's the closest we've come thus far in the integration of these disciplines. Nice job, Jack. Other session conveners were Neely Bostick, Andy Gize, and myself.

Authors of presentations will be contacted by the Publications Committee Chair (me) for submission deadlines for publication. TSOP will enter an agreement with Organic Geochemistry for publication of the 1985 contributions.

Group photographs, if they come out, will be distributed at a later date to those in attendance. A limited number of abstract volumes for the 1985 Annual Meeting still are available (see PUBLICATIONS FOR SALE section).

I would like to take this final opportunity to thank those who participated in the organization of this successful meeting—Loretta Satchell, Ann Brooke Reaugh, Christine Hartman-Stroup, Jack Burgess, and John Castano. Thanks again, you can be on my team any time.

Your turn, Jim and Sue, with the 1986 Annual Meeting!

By Carolyn Thompson-Rizer

PUBLICATIONS & REVIEWS

We would like to include in this section of the newsletter not only reviews of recently published books but also recently published papers. Current thesis titles with brief description of the work and results will also be printed here when supplied to the newsletter editor. Contact the editor to discuss possible reviews you would like to make or send ideas of material you would like to see reviewed. The next issue will include a review of Cook and Robert's book on oil shales.

DID YOU KNOW

Professor Spackman of the Pennsylvania State University has retired.

Harold Gluskoter of Exxon Production Research is now the chief of the Branch of Coal Resources at the U.S.G.S., Reston, VA.

P. Mukhopadhyay of the Bureau of Economic Geology (TX) is on a Deep Sea Drilling Project cruise (January-February 1986).

Ann Reaugh of GeoChem. Labs (and TSOP Secretary-Treasurer) plans to marry and move to New Orleans!

Please let the editor know if you are doing something out of the ordinary or send other newsy items on people of interest to our membership.

PETROLOGY LAB TECHNIQUES

We all have a few "tricks" or "pet-methods" for better photomicrographs, better polishes, easier sample embedding or we may have a folder of data showing interesting comparisons of kero-gens before and after extraction, acidization, etc. The problem may be that these "tricks" and data are too short to be a published paper on their own. The TSOP Research Committee would very much like to publish these lab notes in this newsletter! Please send your contributions to: Alan Davis

513 Deike Building
The Pennsylvania State University
University Park, PA 16802

You have probably heard or read about the Continental Scientific Drilling Program sponsored by Deep Observation & Sampling of the Earth's Continental Crust Inc. (DOSECC), a non-profit corporation comprised of 23 U.S. universities, NSF, USGS, DOE, and a few others. Many of the holes are tentatively being planned (see Oil & Gas Jour., Aug. 26, 1985, AAPG Explorer, Jan. 1986, pp. 26-27) for technically active areas or "hard-rock" studies. On January 6-8, 1986, Paul Philp, of the University of Oklahoma, held a workshop which gathered about 50 people interested in the possibility of doing organic geochemical and microbiological studies in a deep hole. Those in attendance included John Hunt, Ian Kaplan, Wallace Dow, Bernd Simoneit, Colin Barker, George Claypool, representatives from eight different oil companies, several government labs, and universities. The workshop consisted of four working groups which addressed the following topics: (1) the scientific program of organic geochemistry in a deep hole, (2) the location of wells suitable for organic geochemistry, (3) the sample recovery treatment and procedures and, (4) the implementation of an organic geochemical program in the deep hole project.

The benefits from studying continuous core samples from a deep hole are many. The deep holes will extend our knowledge beyond the depth of typical oil wells, which usually terminate in reservoir rocks. The deep core samples will allow us to study diagenetic and catagenetic effects in organic richness, organic quality, and maturation. Those samples will give us continuous intervals in which we can "fine-tune" several maturation indicators and correlate to calculated maturities at depth. Possible locations of wells for organic geochemistry include the Anadarko Basin (OK), the Coastal Plain (south TX), drilling below the Columbia River basalt (WA), the Piedmont (eastern USA), the Michigan Basin, the Santa Maria Basin (CA), etc. Contamination of samples during drilling, recovery, and storage is of great concern and much discussion was devoted to this topic. To implement an organic geochemical program, it was decided that the answers to the questions listed below should be compiled to present an organic geochemical consensus to DOSECC and future workshops; this way we can make the rest of the scientific community aware of the fact that organic geochemists and petrologists are interested in this program and want to be involved in the next deep hole plans.

Please take a few minutes to respond to these questions, if you have any curiosity about such a program.

1. What routine organic geochemical/petrological analyses should be performed on all samples?
2. What additional analyses should be undertaken if sufficient material is available?
3. What criteria should be used for determining sampling intervals?
4. What volume of sample would you need to do the kind of analyses you want to do?
5. Write one paragraph summarizing your particular scientific program to be incorporated into a deep hole program. Include the rationale for your program and state whether it is basic research or will it also have industrial application.
6. What do you think are the organic geochemical/petrological priorities that should be promoted in the continental program?

Please send your comments and ideas to:

Paul Philp
School of Geology
University of Oklahoma
830 Van Vleet Oval
Norman, OK 73019

CALENDAR

1986

- April 6-11** American Chemical Society Geochemistry Division Symposium on "Organic Geochemistry of Petroleum and Source Beds," New York City; Clifford Walters 214-699-3200.
- April 8-11** International Symposium on "Coal & Coal-Bearing Strata," Surrey, England. A. C. Scott, Dept. of Geology, Royal Holloway & Bedford New College, Egham Hill, Surrey TW20 OEX England.
- May 8-9** Organic Matter & Mineral Diagenesis, Short Course by Society of Economic Paleontologists & Mineralogists, Houston. Joni Merkel 918-743-2498.
- June 1-6** Lacustrine Source Rocks & Reservoir Systems, Field Seminar, Salt Lake City. John Warne (Colorado School of Mines) 303-273-3816.
- June 10-13** Theory & Practice of Organic Petrology, Short Course, Pennsylvania State University. F. W. Lester, 814-865-3211.
- Aug. 4-8** Third International Humic Substances Society Meeting, Oslo, Norway. W. Campbell (USGS-Colorado) 303-236-3615 (or E. Gjessing, Norwegian Inst. for Water Res., Box 333, Blindern, N-Blindern Oslo 3, Norway, Phone 072-23-52-80).
- Aug. 11-14** Energy Resources Meeting, Hong Kong. K. N. Au, Asian Research Service, Box 2232, Hong Kong, Phone 5733641.
- Sept. 7-12** 39th Annual International Committee of Coal Petrology (ICCP) Meeting, Doncaster, England.
- Sept. 22-24** The Society for Organic Petrology Third Annual Meeting, Lexington, KY. Jim Hower 606-252-5935 or Sue Rimmer 606-257-4607.
- Oct. 26-29** Petroleum Geology of Northwest Europe Meeting, London. Phone 01-891-*951 or write 70 Richmond Rd., Twickenham, Middlesex TW1 3BE England.

1987

- Sept. 7-11** XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Palaeontology, Academia Sinica, Nanjing, China. (Abstract due March 15, 1986.)
- Sept. 20-25** Thirteenth International Meeting on Organic Geochemistry, Venice Italy.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

**CHANGE OF ADDRESS &
MEMBERSHIP APPLICATION**

Please notify Stan Teerman, Chevron Oil Field Research Company, P.O. Box 446, LaHabra, CA 90631 USA, Phone 213-694-9210, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Stan.

NEW MEMBERS

Present membership is 287 with seven institutional members. Recent additions to our membership include:

Mark A. Chapman
Dennis R. Blessing
Harold H. Schobert
Basil R. Johns
Mark A. Sholes
Alan Bailey
Manual L. DeSousa
Alan G. Collins
Peter A. Kelley
AGIP—A. Baduzzi

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to the sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), **to be used with the figures in the original German publication.** \$6.50
3. The original German copy of No. 2 "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkokungsverhalten," M. Teichmuller (1982). \$6.50

These publications are available from:

Harvey S. Zeiss
Shell Development Company
P. O. Box 481
Houston, Texas 77001



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

VOL. 3 NO. 2

JUNE 1986

ISSN—0743-3816

NEWSLETTER DEADLINES

<u>Issue No.</u>	<u>Info. Due to Editor by</u>	<u>Issue to be Mailed First Week of</u>
3	July 15	August
4	October 15	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 USA

1986 ANNUAL MEETING - SECOND ANNOUNCEMENT

CALL FOR ABSTRACTS

As a reminder, the 1986 TSOP Annual Meeting will be held in Lexington, KY, and will be co-hosted by Dr. James C. Hower (Kentucky Center for Energy Research Laboratory - University of Louisville; Phone: (606) 252-5535) and Dr. Sue M. Rimmer (University of Kentucky; Phone: (606) 257-3758/4607). The meeting is scheduled for September 22, 23, and 24 (with a field trip on the 25th) at the Hyatt in downtown Lexington. In addition to the proposed symposia on fluorescence microscopy and eastern coals, the Society is pleased to announce that Dr. Duncan Murchison has accepted our invitation to be a guest speaker.

First of all, thanks to all of you who responded to the first meeting announcement in the last newsletter and submitted titles by the deadline. We would like to follow up with our FIRST CALL FOR ABSTRACTS, requesting extended abstracts up to two pages in length (single-spaced), with the option of a third page for figures or tables. Some "exotic" inclusions may be possible (photos, fold-outs, etc.); please contact either Jim or Sue for further details. Please send abstracts BY AUGUST 1, 1986 to Dr. Sue M. Rimmer, Department of Geological Sciences, 333 Bowman Hall, University of Kentucky, Lexington, KY 40506-0059.

As in previous years, authors will be requested to submit papers for publication following the meeting. Arrangements have been made to publish

1986 OFFICERS

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President Elect	Jack Crelling 618-453-3351
Secretary- Treasurer	Ann Reaugh 713-467-7011
Newsletter Editor	Carolyn Thompson-Rizer 405-767-5138
Councilor	Jennifer Thompson 713-663-2610
Councilor	Karl Schwab 713-464-8007

LEXINGTON

selected papers from the 1986 meeting in "Organic Geochemistry". To permit timely publication, completed manuscripts will be requested by January 15, 1987.

Response to the field-trip questionnaire was very positive; therefore, a one-day, post-meeting field trip will be held on September 25 (returning to town by 6:30 pm), and will examine black shale and coal sections in eastern Kentucky. Registration forms will be mailed in June. Registration is limited to 25, therefore, those of you who returned the questionnaires will get first pick.

For those of you making plans to fly to the meeting there are several options available. Lexington is served by Delta, United, Piedmont, USAir, and commuter lines associated with American and Eastern. Airport shuttle service is provided by the Hyatt Regency (meeting headquarters). Alternatively, cheaper fares may be available to Louisville and Cincinnati, both of which are approximately 1 1/2 hours driving time from downtown Lexington.

Blocks of rooms have been reserved at the Hyatt (\$58.00 single; \$63.00 double) and at the Quality Inn (\$30.00 single; \$35.00 double). For general and registration information, contact Ms. Nancy Hopper, UK-IMMR-OISTL, 310 Bradley Hall, University of Kentucky, Lexington, KY, 40506-0058, Phone: (606) 257-2837. Preregistration and housing forms will be mailed in June.

BOOK REVIEW

Low rank oil shales: Part I—Organic Petrology, by N. R. Sherwood, with contributions from A. C. Cook (October 1984), 293 p. + Appendix 28 p. * 8 color plates of photomicrographs. Published by the University of Wollangong Printery, Northfields Avenue, Keirville, N.S.W.2500, Australia. Price: \$57.92 (Australia \$80.00).

This book is the final project report to the Department of National Development and Energy, Australia. Therefore, the style resembles a report more than a book. It includes eight chapters and nine appendices. There is no clear indication of which chapters are written by Sherwood and which by Cook; Topics include the oil yield, organic petrology, depositional environment, exploitation, and hydrocarbon potential of 40 oil shale deposits distributed throughout the world, however, only four of these deposits are emphasized.

The Introductory chapter contains an excellent history of exploration and resource estimates of different oil shale deposits of the world. It also contains an unnecessarily lengthy description of elemental analysis equipment (Perkin Elmer CHN analyzer 240B) and kerogen separation.

Maceral and oil shale terminology of ICCP (1971)/Stach et al., (1982) and of the author (i.e., lamalginitite-telalginitite) are discussed in Chapter 2. The generalized organic petrology of the various oil shale types (lamosites, torbanite, etc.) is interesting, but it seems to be inadequate. In reference to maceral terminology, the grouping of bituminite with micrinite and resinite with bitumen is not justified. For obvious reasons, the primary macerals (bituminite or resinite) should not be grouped together with secondary macerals/products, as it is known that micrinite or bitumen also can be formed from other macerals during the maturation process.

In Chapter 3, the authors review the organic petrology literature pertaining to different oil shales or other dispersed organic matter and their inferred depositional environments. This chapter also includes a brief survey of the literature on elemental analysis of oil shale and other organic matter, and the merits and demerits of demineralization for organic petrological study. These subjects are adequately detailed, but the topics are not treated sequentially, and therefore, there is some repetition of concepts presented in preceding chapters.

Chapters 4, 5, 6, and 7 cover four specific oil shale deposits. Chapter 4 deals with lamosites from Queensland (mainly Rundle), Chapter 5 with lamosites from Green River Formation, Chapter 6 with the lamosites from the Northwestern Thailand, and Chapter 7 with mixed oil shales from the Toolebec Formation, Australia. In each chapter, the geology, inorganic petrology, organic petrology (only whole rock pellets), and depositional environment of these oil shales are discussed in detail. In the discussion of organic petrology, the authors have identified several planktonic and benthonic algal forms and termed them lamalginitite. Except one, all the photomicrographs were taken perpendicular to the bedding, which makes specific identification of individual algae impossible. Therefore, the question

arises as to whether the authors identified these palynologically or by a high magnification (125x objective) in a section parallel to bedding (to which they sometimes referred). If done by the latter method, then for the benefit of future organic petrologists, the authors should have mentioned specific identification criteria for these algae in fluorescent mode. This seems especially important because it is implied in the title of the report. Study of the photomicrographs reveals that those macerals illustrated probably are algodetrinite. In this section, it is important to define the boundaries of lamalginitite and liptodetrinite (or algodetrinite?) according to grain size. Another notable aspect of their petrographic study is the apparent absence of amorphous liptinite in Rundle and Green River shale. It is surprising that no demineralized organic matter samples are represented among either the maceral composition data or the photomicrographs, although the authors gave a lengthy description on the demineralization process. Amorphous liptinites might better have been identified in demineralized samples. In various parts of these four chapters, the authors tried to define the origin of bituminite. One definition, on page 247, stands out: "bituminite possibly could be a coalification product of alginitite." The authors find some transition from lamalginitite to bituminite in Chattanooga oil shale. In that case, can we define the maceral as bituminite?

In Chapter 8, the authors give the elemental composition and Rock-Eval data for most of the oil shales studied and try to classify the oil shales using a van Krevelen's diagram (H/C versus O/C). Similarly, hydrocarbon potential of different types of oil shale and coals is shown using a histogram of oil shale types with Hydrogen Index (mg HC/gm C org). The maximum Hydrogen Index for some oil shale is found to be 1600 mg HC/gm C org, which seems too high.

In the appendices, the authors describe the organic petrology and oil yield from some different oil shales of the world, although, surprisingly, data for organic petrology of demineralized organic matter from these oil shales are not represented. Here, as in all chapters, no organic carbon data from any of the oil shales is provided.

In summary, this report is important because it contains some significant organic petrological and geochemical data from about 40 samples of the world's oil shales. The section on the depositional environments of four major oil shale deposits is excellent, although the results of organic petrologic analysis are inadequate. Like the authors' earlier publications, this report contains some excellent color photographs of polished whole rock pellets taken in fluorescent light. This report is a useful guide for work on the organic petrology and hydrocarbon potential of many oil shales of the world.

Reviewed by Prasanta K. Mukhopadhyay
Bureau of Economic Geology
The University of Texas at Austin
University Station, Box X
Austin, Texas 78713

LETTER FROM THE PRESIDENT

On April 18, 1986, TSOP held its mid-year business meeting in Houston, Texas. I'd like to briefly highlight some of the most significant topics that were discussed.

Thanks to a growing membership, a small profit on the 1985 meeting, and conservative expenditures, we have a health balance in our bank account. Consequently, we are taking several steps which will use our funds for the greater benefit of the membership. They include:

1. Beginning with the 1986 Annual Meeting, all TSOP members in good standing will receive (at no extra charge) the book of abstracts for the meeting. This is especially valuable for members who cannot attend the meeting.
2. Our featured speaker at the 1986 meeting will be Dr. Duncan Murchison, Newcastle-upon-Tyne, England. We will subsidize Dr. Murchison's travel expenses so he can attend our meeting.
3. On an "as needed" basis, we will subsidize certain travel expenses for council members and committee members to attend the mid-year meetings. The Council concluded that we should make it possible for officers to attend the meetings, even though they cannot obtain funding from their own Institutions. We do not want potential officers to be automatically disqualified from running for office just because they cannot afford to attend the meetings. This, however, does not apply to the Annual Meeting.
- 4A. Beginning with the 1985 Annual Meeting, we will publish selected papers of our meetings in a special issue of Organic Geochemistry. We will purchase copies of the special issue from Organic Geochemistry and sell them to the membership at cost. For those who attended the 1985 meeting, the issue will be available at a reduced price.
- 4B. For the 1986 Annual Meeting, part of the cost of the special issue of Organic Geochemistry containing selected papers from the TSOP meeting will be included in the registration fee. The remaining expenses for the publication will be provided by TSOP.

The Fluorescence Workshop has been tentatively rescheduled for sometime during the first half of 1987.

The Awards Committee, after much study, revised the guidelines for the qualifications for submitting a paper for the student paper award. For details, please contact either Jim Hower or Sue Rimmer, the Chairmen for the 1986 Annual Meeting.

John R. Castano
SHELL DEVELOPMENT COMPANY
Bellaire Research Center
P. O. Box 481
Houston, Texas 77001

PUBLICATION OF 1985 TSOP MEETING **

We are pleased to report that we have entered into an agreement with Pergamon Press, the publishers of Organic Geochemistry for the publication of selected papers from the 1985 TSOP meeting. Organic Geochemistry has a worldwide distribution, and it is the opinion of TSOP's Council that it represents the best way at present to get our papers published in a fairly rapid manner.

Important points to keep in mind are:

1. The editor of the journal, Dr. Earl Baker, and Mr. Michael Church, the Deputy Editorial Director, stressed that they would publish selected papers. In other words, those papers that are accepted after peer review. This also means that we can accept only original papers--those that have been published elsewhere will not be accepted. An exception can be made if a paper is clearly marked as a review of a particular subject. Please check with us if you have any questions on this.
2. Half-tones (black and white photographs) can be included at no extra cost.
3. Color plates will cost \$300-\$400 each; authors will have to pay for this. This rate is considerably cheaper than other journals that we are aware of.
4. There is a voluntary page charge of \$65 which entitled the author to 100 reprints. Otherwise, reprints are extra.
5. We will publish all abstracts of the talks that were presented at the meeting. However, we would like to give each author the opportunity to revise their abstract. Unless we receive a revised text by the time that we "go to press," we will use the text that we have.
6. Several authors submitted extended abstracts or short papers that were longer than the texts actually used for our abstracts volume. These authors could extend their short papers fairly easily into papers of greater length or may choose to leave them the way they are. We can discuss the matter individually. Let us know what your plans are.
7. Please check the Instructions to Contributors in a recent issue of Organic Geochemistry. There are two exceptions to the instructions:
 - A. Manuscripts should be sent to:

John D. Shane
Exxon Production Research
P. O. Box 2189 ST-4145
Houston, Texas 77252
 - B. Paragraph 2 states that "abstracts of up to 100 words." Judging from the length of abstracts that have appeared in recent issues of Organic Geochemistry, we would say that a 250-300 word limit is what is adhered to.
8. Peer review will be handled by the TSOP Publications Committee in conjunction with one of the Associates Editors of Organic Geochemistry. This should speed the process up considerably.
9. We would like to have the manuscripts returned to us on or before ** August 15, 1886.

We fully expect that the finished product will be a source of pride for all of TSOP.

Please contact either John Shane (713) 965-4490 or John Castano (713) 663-2630 if you have questions.

Publications Committee
John D. Shane
John R. Castano

RECENT PUBLICATIONS

1. Special Issue of Marine Geology (Int. J. of Marine Geology, Geochemistry and Geophysics) Vol. 70, No. 1, February 1986: Deep Ocean Black Shales: Organic Geochemistry and Paleocceanographic Setting, Edited by P. A. Meyers and R. M. Mitterer. Contains seven papers ranging from biomarker geochemistry to turbidity current transport of organic-rich sediments.
2. Jurassic Palynology of the Vilhelmsfalt Bore No. 1, Scania, Sweden Toarcian-Aalenian, by Dorothy Guy-Ohlson. Available from the Swedish Museum of Natural History, Box 50007, S-10405, Stockholm, Sweden.
3. The American Geophysical Union (AGU) is introducing a new journal "Global Biogeochemical Cycles" to fill the need for an interdisciplinary forum to explore the interfaces between the marine, atmospheric, geological, and biological sciences! For more info, contact the AGU, 2000 Florida Ave., N.W. Washington, D.C., U.S.A., phone 800-424-2488.
4. We asked four universities to provide lists of completed theses (M.S. and Ph.D.) since 1980 which are related to organic petrology. Because it is often difficult to keep with university research, all members (U.S.A. and foreign) are invited to send the newsletter editor lists of recent theses titles.

WEST VIRGINIA UNIVERSITY

PhD Dissertation

Tsai, Louis L.Y. (1985) Reflectance Indicatrix of Vitrinite: Its Orientation and Application

MS Theses

Getty, Phillip S. (1980) A Petrologic Study of the Stockton-Lewiston Coal Seam in West Virginia Using the Ting Lithotype Concept.

Halloran, Keith D. (1980) Cleat Frequency in Bituminous Coal Beds.

Kardosh, William F. (1980) Geologic Variables Affecting the Propagation of Microwaves in Coal

Imbus, Scott W. (1984) Organic Petrography of the Green River Formation Oil Shale, Parachute Creek Member, Piceance Creek Basin, Colorado

Wang, Paul B. (1985) Relationship Between Bireflectance Ratio of Vitrinite and Methane concentration in Coal

He, Guoqi (1986) The Effect of Stress on the Reflectance Ellipsoid

UNIVERSITY OF TOLEDO

TITLES OF THESES (M.S.) DIRECTED BY DR. WILLIAM A. KNELLER
UNIVERSITY OF TOLEDO, TOLEDO, OHIO

Coon, Cathy, August 1980, "Occurrence and Distribution of Trace Elements in Some Permian Coals from the Parana Basin, Brazil"

Tsai, Louis Loung-Yie, December 1980, "Characterization of the Pittsburgh No. 8 Coal from Three Localities in Southeastern Ohio"

Whitacre, Timothy P., March 1981, "Study of Mineral Catalyst and Organic Components of Several Ohio Coals, for a SRC II-Process"

Stump, Dennis G., October 1981, "The Characterization and Identification of Sodium Compounds in Coal Ash from a Catalytic Gasification Process"

Herringshaw, Dennis, December 1981, "The Germanium Content of the Lower Kittanning No. 5 Coal of Ohio"

Sattler, Joyce (Dunkin), December 1981, "Fluorescence of the Liptinite Macerals in Selected Ohio Coals"

Zaef, Gene, December 1981, "The Occurrence and Distribution of Minerals in the Pittsburgh No. 8 Coal of Southeastern Ohio"

Maxwell, Gary P., March 1982, "Size, Shape, and Distribution of Microscopic Pyrite in Selected Ohio Coals"

Dunkin, Ned Jr., June 1981, "Influence of Ohio Characteristics on the Free-Swelling Properties of Selected Ohio Coals"

Hansack, Lynn (Eller), July 1982, "Petrology and Petrography of Selected Seams of Pittsburgh No. 8 coal of Southeastern Ohio"

Hunt, Timothy J., December 1982, "Characterization of Selected Ohio Coal for Industrial Use-Porosimetry, Surface Area and Trace Element Content"

Fesko, Gregory, August 1983, "Regional Contour and Trend Surface Maps of Selected Coal Quality Parameters for the Pittsburgh No. 8 Coal of Ohio"

Tracy, Bradford, November 1983, "The Characterization of the Chemical and Trace Element Content of Selected Oil Shales of Ohio"

DiCesare, Joseph A., August 1984, "Physicochemical Characterization of Selected Power Plant Fly Ash"

Kose, Celal, August 1984, "Determination of Gas Content of a Waynesburg No. 11 Coal Bed in Belmont County, Ohio"

Quick, Jeffrey Charles, August 1984, "The Use of Dyes as an Aid to Coal Petrography"

McLaughlin, J.D., December 1984, "Organic Geochemistry of the Kerogen from the Ohio Shale by Pyrolysis-Gas Chromatography"

McLaughlin, R.L. (LaGrange), December 1984, "Organic Geochemistry of the Bitumen from the Ohio Shale by Gas Chromatography"

Lewis, Amy, December 1985, "Depositional Environment of the Harlem Coal Bed, Conemaugh Series Pennsylvanian System, In Ohio"

Brunsmann, Mark J., March 1986, "Three-Dimensional Fluorescence Spectroscopy of the Sporinite and Resinite Macerals from Coals of Different Rank"

Blesing, Dennis, June 1986, "Computer Methods for the Petrographic Prediction of the Coking and Blending Potential of Selected Ohio Coals"

Tipton, Ronald M., August 1986, "Evaluation of the Iowa Pore Index Test and Expected Durability Factor for Predicting the Frost Durability of Selected Carbonate Rocks"

SOUTHERN ILLINOIS UNIVERSITY

PENNSYLVANIA STATE UNIVERSITY

List of Master of Science in Geology theses completed since 1980 using Coal Characterization Laboratory facilities.

Coal Petrographic Theses Completed at
The Pennsylvania State University Since 1980

Babcock, Douglas Lee, "The Effects of Weathering on the Petrographic and Fluorescent Properties of Subbituminous Coal from the Fort Union Formation, Colorado," 1981.

Bauman, Dean R., "The Occurrence and Distribution of Mineral Matter in Coal Lithotypes in the Herrin (No. 6) Coal Seam Under Marine and Non-Marine Influences," 1982.

Bensley, David F., "Petrographic and Fluorescent Properties of Liptinite Macerals from Cutinite-Rich 'Paper Coal' from Indiana," 1981.

Brown, John H., "Changes in Fluorescence Spectra of Selected Liptinite Macerals with Progressive Weathering," 1984.

Burk, Mitchell Keith, "Fades and Depositional Environments of the Energy Shale (Pennsylvanian) in Southwestern Jefferson County, Illinois," 1982.

Cardott, Brian Joseph, "A Comparative Study on the Occurrence and Distribution of Fluorescent Macerals in Coals from Three Major Coal Basins of the United States," 1981.

Cascia, Malvin, "A Petrographic Study of Coals from the Trinidad Coal Field, Colorado, Including a Comparison of Fluorescence Spectra with Rank Parameters," 1980.

Childs, Susan, "The Petrographic Characterization, Coking Potential and Factors Affecting Coalification of Coal Along the Eastern and Southern Margins of Piceance Creek Basin in Colorado," 1980.

Cox, Gary Edward, "Changes in Spectral Fluorescence of Fossil Algae (Tasmanites) with Increasing Coalification," 1985.

DiStefano, Lee, "Correlation of Composition Changes in a Coal Core with Density as Recorded by a High Resolution Density Log," 1980.

Kravits, Christopher M., "The Effects of Overbank and Splay Deposition on the Quality and Maceral Composition of the Herrin (No. 6) Coal (Pennsylvanian) of Southern Illinois," 1980.

Landis, Charles R., "Changes in the Fluorescence of Selected Hartshorne Seam Coals with Rank," 1985.

Myers, James M., "Applications of Photoacoustic Microscopy to the Study of Inertinite Maceral and to the Detection of Oxidation in Vitrinite Macerals," 1985.

Oldham, Anne Verity, "Controls on Composition of the Illinois #6 Coal as Determined through Detailed Analysis of a Column Sample from Saline County, Illinois," 1980.

Padgett, Jeffrey Thomas, "The Nature and Occurrence of Pseudovitrinite in the Herrin (No. 6) Coal Seam of Southern Illinois," 1980.

Sirota, Thomas, "A Petrographic Analysis of Coke Containing Weathered Coal," 1982.

Teerman, Stanley C., "Petrographic and Fluorescence Properties of Coals from the Hanna Coal Field, Wyoming," 1982.

Brant, L.A., Ph.D., A Palynological Investigation of Postglacial Sediments at Two Locations Along the Continental Divide Near Helena, Montana, 1980.

Davies, T.D., Ph.D., Peat Formation in Florida Bay and its Significance in Interpreting the Recent Vegetational and Geological History of the Bay Area, 1980.

Hoover, D.S., Ph.D., The Development and Evaluation of an Automated Reflectance Microscope System for the Petrographic Characterization of Bituminous Coals, 1980.

Kuehn, D.W., M.S., Offshore Transgressive Peat Deposits of Southwest Florida: Evidence for a Late Holocene Rise of Sea Level, 1980.

Levine, J.R., M.S., Optical Anisotropy of Coals as an Indicator of Tectonic Deformation, Broad Top Coal Field, Pennsylvania, 1981.

Senftle, J.T., Ph.D., Relationships Between Coal Constitution, Thermoplastic Properties and Liquefaction Behavior of Coals and Vitrinite Concentrates from the Lower Kittanning Seam, 1981.

Yeakel, J.D., Ph.D., The Geochemistry and Petrography of Peats from the Okefenokee Swamp, Georgia and The Everglades and Coastal Regions of Southern Florida: A Study of Variable Interrelationships and Peat-Type Differences, 1981.

Gerencher, J.J., Jr., D.Ed., Multivariate Study of the Interrelationships Among Selected Variables of the Organic Fraction of Samples of United States' Coals, 1982.

Kuehn, K.W., Ph.D., The Petrographic Characterization of Coals by Automated Reflectance Microscopy and its Application to the Prediction of Yields in Coal Liquefaction, 1982.

Tsai, C-Y., M.S., Co-carbonization of Solvent Refined Coal with Selected Coal Types, 1982.

Kuehn, D.W., Ph.D., Characterization of the Organic Structure of the Lower Kittanning Coal Seam Using Fourier Transform Infrared Spectroscopy and Optical Properties, 1983.

Russell, S.J., Ph.D., Petrography and Depositional Environment of the Herrin (No. 6) Seam in Central, Eastern and Northwestern Illinois, 1983.

Allshouse, S.A., M.S., Petrographic Variation Due to Depositional Setting of the Kittanning Seam, Western Pennsylvania, 1984.

Glick, D.C., M.S., Variability in the Inorganic Content of United States' Coals - A Multivariate Statistical Study, 1984.

Stout, S.A., M.S., A Microscope Investigation of the Fate of Secondary Xylem During Peatification and the Early Stages of Coal Formation, 1985.

NOTES FROM
THE PETROLOGY LABORATORY

Editor's comment:

We are very appreciative that Neely Bostick has taken the time to write three Petrology Lab Notes to be published in successive issues of our newsletter. Neely has written his notes in the "old-fashioned" letter style to a fictitious Dr. Anthracos. It is hoped that this informal manner of communication will inspire others to write Petrology Lab Notes or Letters.

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

Difference in vitrinite reflectance and pyrolysis products possibly connected with difference in vitrinite type

April 8, 1986

Dr. C.H.O. Anthracos
The Society for Organic Petrology

Dear Dr. Anthracos:

I appreciate your interest in tracking down details of isolated laboratory experiments that don't usually get published. When Jim Foster and I did the study of reflectance of vitrinite from different kinds of rock in a 70-m-thick Pennsylvanian sequence of cyclothem in Illinois (Bostick and Foster, 1975), we did not have the resources to chemically evaluate the bulk type and maturation of the organic matter. After Ted Daws set up Rock-Eval pyrolysis equipment at the USGS in Denver in 1981, I obtained the original samples from Dick Harvey of the Illinois State Geological Survey and asked Ted to analyze them, see Table I for the results.

I did not send you the usual plot of hydrogen versus oxygen indexes. All the shales, sandstones, and limestones fall in the region of Type III organic matter on such a plot—with most of the limestones having extremely high oxygen indexes, which are probably not valid analyses because of the carbonate. The coals plot separately from the other rocks in a narrow vertical field along the evolution path of Type II organic matter—with an oxygen index of about 15 and hydrogen indexes ranging from 100 to 300.

Two other plots are of sufficient interest, however, that I enclose copies for you. Figure 1 shows the Tmax (temperature of maximum yield of hydrocarbon-like compounds in the course of increasing pyrolysis temperatures) and the reflectance of vitrinite from the same rocks. The large range of vitrinite reflectance found in our old study is duplicated by scatter in the Tmax, and there seems to be a systematic agreement between the Tmax and reflectance. That is, the same samples have high Tmax and high reflectance or low Tmax and low reflectance. Of course, this would come as no surprise if we were dealing with a suite of samples with a significant range of thermal maturation, but remember, here we have core samples separated by less than 70 m in a single borehole. So

it appears that both the Tmax and the reflectance are responding to some difference in the type of organic matter, especially in the type of vitrinite. This did not come as a complete surprise, of course, since Minchev (1977) and Hamberger (ICCP working group), and probably others, have spoken of "saprovitrite" with low reflectance for many years, and some Russian workers (review by Korzhenevskaya and others, 1979) attach great importance to "reduced vitrinite," which also has reduced reflectance.

There seems to be nothing in the "chemical" part of the Rock-Eval analyses, however, that ties in with the linked Tmax and reflectance variation—except possibly the ratio of the hydrogen index to the oxygen index (HI/OI) of only the coals. Figure 2 shows the vitrinite reflectance plotted against HI/OI ratio. (For the coals only; all other rocks in the suite have much lower OI and would lie nearly on the vertical axis on this plot.) Notice that there is possibly a connection between high HI/OI and low reflectance. This fits in with some other studies, for example, one published by Hutton and Cook in 1980, but in our case, in Illinois, we are dealing with slight variations in humic coals, not with coals with high alginite content. The linkage between Tmax and reflectance suggests to me a basic variation in vitrinite type. That is what Joe Hatch and I found in a set of Cretaceous coal and shale samples from Wyoming (Bostick et al., 1986); H-C analysis of shale kerogens of identical maturation showed that low reflectance appeared to be related to high H/C,

It is clear that no general conclusions are possible without a lot more detailed study to determine whether low reflectance is related to type of vitrinite, to bitumen in the vitrinite, to a bitumen film on polished vitrinite, to resinite-rich vitrinite, or to other causes. For example, Davis (1978) mentions the example of Northumberland (U.K.) coals in which relatively low reflectance is associated with generally LOWER hydrogen content of vitrinites. The Rock-Eval S1 values (low temperature volatiles) for our Illinois coals suggest that there is more bitumen in several of the samples with low reflectance. The S1 values are plotted on Figure 2.

I felt that it was not worth using such old samples for a study of the more subtle chemical properties which might be found in bitumen extracts. The Rock-Eval analyses may, however, be a useful supplement to the old publication if they give organic petrologists and geochemists some ideas for their own work.

Best wishes from,

Neely Bostick

References Cited:

Bostick, N. H., and Foster, J. N., 1975, Comparison of vitrinite reflectance in coal seams and in kerogen of sandstones, shales, and limestones in the same part of a sedimentary section, in Alpern, B., ed., Petrographie de la matiere organique des sediments, relations avec la paleotemperature et le potentiel petrolier: Paris, Centre National de la Recherche Scientifique, p. 13-25.

Bostick, N. H.; Hatch, J. R.; Daws, T. A.; Love, A. H.; Lubeck, C. M.; Threlkeld, C. N., 1986, Organic geochemistry and organic petrology, in Geological investigations of the Vermillion Creek coal bed in the Eocene Niland Tongue of the Wasatch Formation, Sweetwater County, Wyoming: USGS Prof. Paper 1314-H.

Bush, P. R., 1970, A rapid method for determination of carbonate carbon and organic carbon: Chemical Geology, v. 6, p. 59-62.

Davis, A., 1978, The reflectance of coal, in Analytical methods for coal and coal products, v. 1: Academic Press, p. 27-81.

Hutton, A. C. and Cook, A. C., 1980, Influence of alginite on the reflectance of vitrinite from Joadja, N.S.W., and some other coals and oil shales containing alginite: Fuel, v. 59, No. 10, p. 711-714.

Korzhenevskaya, Ye. S.; Drozdova, I. N.; and Lapo, A. V., 1979, K voprosu o "vosstanovlennosti" ugley [The question of coal "reductivity"], in Nakopleniya i preobrazovaniye sedikakhitov: Moscow, "Nauka," p. 105-111.

Minchev, D., 1977, Vitren i saprovitritin [Vitrinite and saprovitrinite]: Doklady Bolgarskol akademii nauk, v. 30, No. 11, p. 1609-1612.

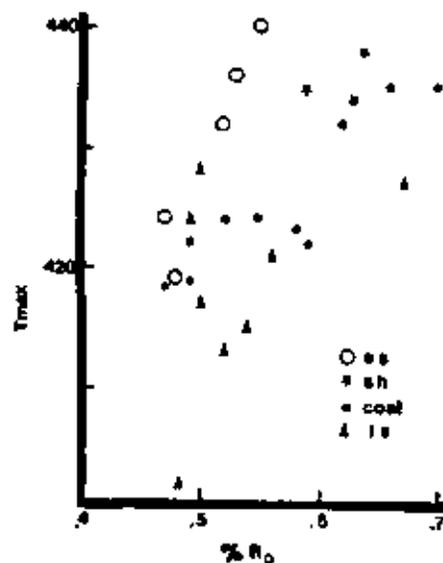


Fig. 1

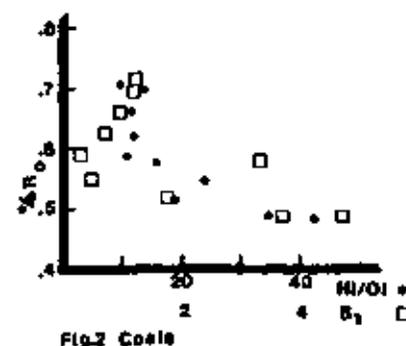


Fig. 2 Coals

THE SOCIETY FOR ORGANIC PETROLOGY

CALENDAR

1986

- June 10-13 Theory & Practice of Organic Petrology, Short Course, Pennsylvania State University, F., W. Lester, 814-865-3211.
- June 30- July 4 Carbon '86--International Conference on Carbon, Baden-Baden, FRG. Prof. von Sturm, Sigi Elektrographit GmbH, 8901 Meitingen bei Ausburg, Germany.
- July 20-24 6th World Hydrogen Energy Conference, Vienna, Austria. Interconvention P. O. Box 80, A-1107, Vienna, Austria.
- Aug. 4-8 Third International Humic Substances Society Meeting, Oslo, Norway. W. Campbell (USGS-Colorado) 303-236-3615 (or E. Gjessing, Norwegian Inst. for Water Res., Box 333, Blindern, N. Blindern Oslo 3, Norway, Phone 472-23-52-80).
- Aug. 11-14 Energy Resources Meeting, Hong Kong. K. N. Au, Asian Research Service, Box 2232, Hong Kong, Phone 5733641.
- Aug. 24-30 Sedimentological 7th International Congress, Canberra, Australia. G. Taylor ACTS, POB 1929 Canberra, ACT2601 Australia.
- Aug. 31- Sept. 5 Coal Preparation 10th International Congress & Exhibition, Edmonton, Canada. N. Duncan. Comp. 137, RR 1, 108 Ranch, 100 Mile House, BCVOK 2EO, Canada.
- Sept. 7-12 39th Annual International Committee of Coal Petrology (ICCP) Meeting, Doncaster, England.
- Sept. 8-11 International Gas Research Conference, Tokyo, Japan. G. Wayda Int. Rel., Gas Res. Inst., 8600 West Bryn Ave., Chicago, IL 60631, U.S.A.
- Sept. 15-19 7th Int. Symp. Anal. and Applied Pyrolysis, The Chromatography Society, Univ. Reading, U.K. Dr. Gutteridge, Cadbury Schweppes PLC, Group Res., Lord Zuckerman Res. Cent., Univ. Reading, P. O. Box 234, Reading RG6 2LA U.K.
- Sept. 22-24 The Society for Organic Petrology Third Annual Meeting, Lexington, KY. Jim Hower 606-252-5535 or Sue Rimmer 606-257-4607.
- Oct. 5-11 13th World Energy Conference, Cannes, France. E. Rutley, Sec. Gen., W.E.C. Headquarters, 34th St. James Street, London SW1A 1HD U.K.
- Oct. 26-29 Petroleum Geology of Northwest Europe Meeting, London. Phone 01-891-4951 or write 70 Richmond Rd., Twickenham, Middlesex TW1 JBE England.
- Oct. 29- Nov. 1 Annual Meeting of the International Stratigraphic Palynologists and CIMP (Com. Int. de Microflore du Paleozoique), New York City, N.Y. Dan Habib, City University of New York, 33 West 42nd Street, New York 10036, phone 212-790-4218.

NOTES FROM THE PETROLOGY LABORATORY

Table 1. RockEval and vitrinite reflectance data

1	2	3	4	5	6	7	8	8	8	9	
Depth No.	Lith.	TOC	%RO	Tmax	HI/01	HI	01	S1	S2	S3	TR
88	2w2 S	.53	.54	—	—	—	—	—	—	—	—
90	9c-2x S	.53	.53	436	.96	51	53	0.094	.27	.28	.26
92	9d-2y S	.12	.55	440	.21	27	13~	.025	.03	.15	.44
105	9b-2t C	—	.53	—	—	—	—	—	—	—	—
145	2s2 A	—	.44	—	—	—	—	—	—	—	—
148	2q A	—	.42	—	—	—	—	—	—	—	—
155	8y-2k C	54.0	.59	422	11.	14~	13	.32	77.	7.0	.004
156	8z-21 C	59.8	.58	433	16.	21~	13	3.3	128.	8.0	.03
156	9a-2m C	30.6	.62	432	12.	16~	13	.72	48.	4.0	.01
173	8v-2f L	.29	.56	421	.03	3	11~	.018	.008	.31	.70
174	8w-2g L	.12	.50	417	.01	4	29~	.035	.005	.35	.87
175	8x2hl L	.06	.50	—	—	0	66~	.018	0.0	.40	1.~
179	Su-2c A	2.90	.47	418	1.1	15	14	.036	.43	.40	.08
181	8r-1z C	64.6	.49	419	35.	28~	8	3.7	180.	5.0	.02
182	8s-2a C	57.3	.52	424	19.	21~	11	1.8	122.	6.2	.01
183	8t-2b C	65.9	.49	422	42.	33^	8	4.7	219.	5.5	.02
193	8q-1v C	47.1	.55	424	24.	21~	9	.46	101.	4.1	.005
199	8p-1u L	.04	.53	—	—	0	82~	.009	0.0	.33	1.~
201	8o-1t L	.07	.48	402	.03	12	37~	.051	.008	.26	.86
210	8L-1m S	.31	.48	419	.64	60	93	.054	.18	.29	.23
211	8m-1n S	.61	.51	432	.94	51	54	.060	.31	.33	.16
220	8n-1o S	.05	.47	424	.02	11	49~	.022	.006	.25	.80
230	8g-1j L	.30	.50	428	.85	80	94	.097	.24	.28	.29
231	8n-1k L	.69	.49	424	3.1	16~	50	.19	1.1	.34	.15
233	1L2 L	—	.50	—	—	—	—	—	—	—	—
278	9f-3g A	.56	.59	435	.34	38	11~	.091	.21	.63	.30
280	9e-3f A	.57	.63	434	.48	40	84	.093	.23	.48	.30
282	9g-3h A	.60	.64	438	.41	36	87	.090	.22	.52	.29
298	8f-1i C	68.7	.70	435	14.	13^	10	1.2	93.	6.9	.01
301	8e-1h C	68.4	.66	435	12.	14~	12	.98	98.	8.5	.01
303	8D-1g C	70.6	.71	434	10.	12^	12	1.2	84.	8.3	.01
304	8c-1c L	.10	.54	415	.02	5	27~	.008	.005	.27	.63
305	8b-1b L	.09	.67	427	.01	3	25~	.010	.002	.22	.80
306	8A-1A L	.07	.52	413	.03	38~	—	.046	.008	.26	.86

- 1) Feet below borehole surface
- 2) Lithology: C-coal, S-sandstone, A-clay or siltstone, L-limestone
- 3) Organic carbon determination by wet oxidation (Bush, 1970)
- 4) Mode of vitrinite reflectances, random orientation, oil immersion
- 5) Temperature (celsius) of maximum volatilization (S2 peak)
- 6) Hydrogen index (S2/TOC)
- 7) Oxygen index (S3/TOC)
- 8) mg/g
- 9) Transformation ratio from Rock-Eval (S1/(S1+S2))

1987

- May 25-27 Symposium on Coastal Lowlands Geology and Geotechnology, The Hague, The Netherlands, CONGREX-Keizersgracht 610, 1017 EP Amsterdam, The Netherlands.
- Sept. 7-11 XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Palaeontology, Academia Sinica, Nanjing, China.
- Sept. 20-25 Thirteenth International Meeting on Organic Geochemistry, Venice, Italy.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

NOMINATIONS FOR THE 1987 TSOP COUNCIL

Ballots for the election of our 1987 officers are being mailed out to the membership. The August Newsletter will carry the results.

- President-Elect: Neely H. Bostick
USGS, Denver,
Colorado
- Jack Burgess
Chevron, Houston,
Texas
- Vice-President: Stan C. Teerman
Chevron, La Habra,
California
- Harvey S. Zeiss
Shell Development Co.,
Houston, Texas
- Secretary -
Treasurer: Sue M. Rimmer
Univ. Kentucky,
Lexington, Kentucky.
- Coleman R. Robison
Texaco Research
Center, Houston, Texas
- Editor Carolyn L.
Thompson-Rizer
Conoco Inc., Ponca
City, Oklahoma
- Councilor (One) Wolfgang Kalkreuth
ISPG, Geological
Survey, Calgary,
Canada
- Eddie B. Robertson
Phillips Petroleum,
Bartlesville, Oklahoma

Submitted by Prasanta K. Mukhopadhyay,
Chairman, Nominating Committee.

CHANGE OF ADDRESS & MEMBERSHIP APPLICATION

Please notify Stan Teerman, Chevron Oil Field Research Company, P. O. Box 446, LaHabra, CA 90631 U.S.A., Phone 213-694-9210, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Stan.

NEW MEMBERS

Present membership is 291 with seven institutional members. Recent additions to our membership include:

- Jim A. Bucci (Marathon Oil, Houston, TX)
Jason D. Darby (LSU, Baton Rouge, LA)
Brian Greenwell (Univ. Toledo, Toledo, OH)
Nobuyori Takeda (Japex, Tokyo, Japan)

DID YOU KNOW

Steve Poe, formerly at Wyoming Analytical Lab, is now with the Kentucky Center for Energy Research Laboratory in Lexington working on a USDOE-funded project on coal liquefaction.

Jack Crelling, So. Ill. Univ., will spend the summer at Newcastle-upon-Tyne doing research.

John Castano, Shell Development Company (and TSOP President), plans to retire from Shell effective October 1, 1986.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. **TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior,"** by M. Teichmuller (1982), translated by N. Bostick (1984), to be used with the figures in the original German publication. \$6.50
3. The original German copy of M. Teichmuller (1982) "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkohlungsverhalten." \$6.50

These publications are available from:

Harvey S. Zeiss
16918 Judyleigh Dr.
Houston, Texas 77084
Phone (713) 463-2918

LOGO COMMITTEE REPORT
BY JOHN SHANE

Questionnaires have trickled in over the last few months and about 12 percent of the membership has voiced a preference. I have tallied the results as follows:

Choice B	=15
E	= 1
I	= 4
K	= 7
New	= 2
No	= 2
Total	<u>31</u>

Please send in your questionnaires if you have not already done so. I am including the two new designs in the enclosed flyers for your consideration.

The LOGO Committee has been authorized by TSOP Council to offer a \$50 cash prize and a free two-year membership to TSOP to the person(s) submitting the design chosen by the Society. Several have been submitted and are presented here. Please look the emblems over and fill in the brief questionnaire below. We welcome your ideas in any form.

Please note that this questionnaire does not constitute a vote.

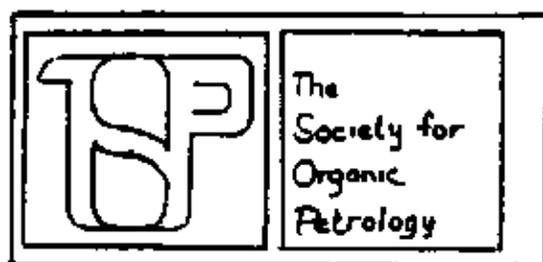
- My choice for the TSOP emblem in letter _____.
- I do not like any of the emblems suggested herein and wish to submit my own.
- I do not think TSOP should adopt any form of emblem.
- I do not think TSOP should adopt any form of emblem at this time.

Please indicate your preference and/or comments and send to:

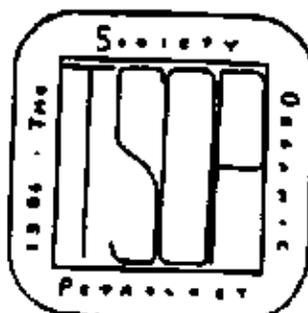
John D. Shane
Exxon Production Research Company
P. O. Box 2189
Houston, TX 77001.

~~PLEASE~~ PLEASE SEE OTHER SIDE FOR LOGO DESIGNS.

LOGOS



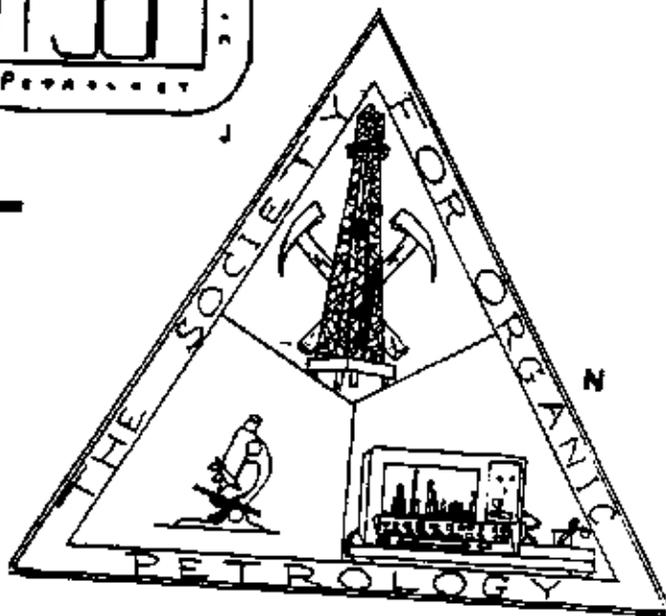
**The Society for
Organic Petrology**



THE SOCIETY FOR ORGANIC PETROLOGY



K



(COVER)



NEWSLETTER DEADLINE

Issue No.	Info. Due to Editor by	Issue to be Mailed First Week of
4	October 15	November

Please send all contributions to:

Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 USA

1986 ANNUAL MEETING - FINAL ANNOUNCEMENT

FINAL CALL FOR ABSTRACTS

As you are all aware by now, the 1986 TSOP Annual Meeting will be held in Lexington, KY, and will be co-hosted by Dr. Sue M. Rimmer (University of Kentucky; Phone: (606) 257-3758/4607) and Dr. James C. Hower (Kentucky Center for Energy Research Laboratory - University of Louisville; Phone: (606) 252-5535). The meeting is scheduled for September 22, 23, and 24 at the Hyatt Regency in downtown Lexington. Highlights this year will include a special presentation by Dr. Duncan Murchison, our guest speaker, and a one-day field trip (on the 25th) to look at black shales and coal-bearing sequences in eastern Kentucky.

We are pleased to announce that response to our call for titles and abstracts (see previous newsletters) has been very positive and we are looking forward to an excellent program of talks. By now you should have received our recent mailing that included format instructions for abstracts. Feel free to call if there are any questions and remember that the deadline is AUGUST 1, 1986. Abstracts should be mailed to Dr. Sue M. Rimmer, Department of Geological Sciences, 333 Bowman Hall, University of Kentucky, Lexington, KY 40506-0059. Authors of accepted papers will be notified by August 15, if not before. A tentative program will be mailed to all members shortly after that date.

In addition, keep in mind that the Society will be inviting manuscripts (by January 15, 1986) for publication in "Organic Geochemistry". All such submissions will of course be subject to the normal peer review process.

1986 OFFICERS

President	John Castano 713-663-2630
Vice President	Neely Bostick 303-236-5764
President Elect	Jack Crelling 618-453-3351
Secretary- Treasurer	Ann Reaugh 713-467-7011
Newsletter Editor	Carolyn Thompson-Rizer 405-767-5138
Councilor	Jennifer Thompson 713-663-2610
Councilor	Karl Schwab 713-464-8007

Pre-registration, housing and field registration forms have been mailed to all members and to those non-members who have expressed an interest in presenting a paper. Discounted room rates have been arranged at the Hyatt (\$58.00 single; \$63.00 double) and at the Quality Inn (\$30.00 single; \$35.00 double). Please remember to send your housing registration directly to the hotel of your choice by September 1. Also, be sure to take advantage of the lower rates by mailing your registration fees by September 1 to Ms. Nancy Hopper, UK-IMMR-OISTL, 310 Bradley Hall, University of Kentucky, Lexington, KY, 40506-0058, Phone: (606) 257-2837. If for any reason you did not receive the registration package, please contact Nancy.

For those of you making plans to fly to the meeting there are several options available. Lexington is served by Delta, United, Piedmont, USAir, and commuter lines associated with American and Eastern. Airport shuttle service is provided by the Hyatt Regency (meeting headquarters). Alternatively, cheaper fares may be available to Louisville and Cincinnati, both of which are approximately 1 1/2 hours driving time from downtown Lexington.

See you in September!!

LEXINGTON

LETTER FROM THE PRESIDENT

Although arrangements have not been completely finalized with the hotel, we plan to have TSOP's Fourth Annual Meeting in San Francisco, California, the first week of October, 1987. The hosts for the meeting are Margaret Pytte and Rehana Makada (both with Chevron USA). San Francisco is a marvelous place to go -- a great place for sightseeing - great restaurants - great geology, and a fine place to start a vacation in California (How did you guess I lived in California for 17 years?). I think that we can be very pleased to note that in our first four years our meetings have been very widely dispersed: Virginia-Washington,DC (east), Houston, Texas (south), Lexington, Kentucky (midwest), and San Francisco, California (west). Any volunteers to host our 1988 meeting? How about north to Canada in 1988?

In this issue we have two contributions to the "Notes from the Petrology Laboratory." I think that this newsletter is a perfect place for this type of material; but, in order to make it work we need to have your input. We are anxious to get contributions from our many foreign members, please send petrology lab notes to Alan Davis (see address in the mentioned section).

From time to time, the subject of the availability of reflectance standards comes up. Most petrographers have used the set of five glass standards, mounted in one plug which range in reflectance (R_o) from 0.3 to 1.67%. They are available from: Mr. Don Cole, 12121 Church Drive, North Huntingdon, PA 15642. He has an unlisted telephone number. Only recently

available in North America are the Klein and Becker standards manufactured in West Germany. They consist of individual crystals mounted and sold separately. The sapphire, zircon, garnet, and diamond standards range in R_o from 0.6 to 5.3%. They are available from Adolph Meller Company, P. O. Box 6001, Providence, Rhode Island 02904. You may call Mr. James Fox at (401) 331-3717 for information. We would appreciate finding out if suitable reflectance standards are available from other sources.

As you may be aware, both the Outgoing and Incoming TSOP Councils will meet in Lexington, KY in September. If you have any concerns about the Society - any problems that you have had - or, anything nice that you would like to say, please write me a short note about what is on your mind. The officers would like to be responsive to the needs of the members; but we need feedback from you in order to evaluate our activities.

Jack Crelling will be installed as the new President at Lexington. I'm sure that Jack and the new Council will have your support.

The Lexington meeting is shaping up very well - I hope to see many of you there!

John R. Castano
SHELL DEVELOPMENT COMPANY
Bellaire Research Center
P. O. Box 481
Houston, Texas 77001

THE SOCIETY FOR ORGANIC PETROLOGY

NOTES FROM THE PETROLOGY LABORATORY

CONCENTRATION OF DISPERSED SEDIMENTARY ORGANIC MATTER FOR VITRINITE REFLECTANCE ANALYSIS USING A SIMPLE CRUSH AND FLOAT METHOD

By Charles E. Barker and
Mark J. Pawlewicz
U.S. Geological Survey (USGS),
Denver, Colorado 80225 U.S.A.

Experience in the USGS Organic Petrology Laboratory shows that effective concentration of dispersed sedimentary organic matter (OM) can be accomplished using a simple crush and float method. Hymus and Basak (1949) show that simple crushing releases most of the OM in brittle rock samples. Our intent is to further develop the method summarized by Teichmuller (1982, p. 363; and others), and point out that multiple-stage acid digestion of samples is rarely necessary to concentrate OM for reflectance analysis. Carbonate-poor rock can be processed without any pretreatment. Carbonate-rich rock may have to be crushed and digested in dilute HCl to dissolve the carbonate. The crush and float method requires samples of about 20 g (OM-rich) to 40 g (OM-lean). OM tends to be more abundant in fine-grained, dark-colored rocks and these are the preferred sample type. The rock chips are fed into a small jaw crusher¹ that reduces the rock to about 5 mm chips. The crushed rock is then fed into a semi-micro pulverizer which grinds the rock to about 150 microns (100 mesh ASTM) in size. This powder is mixed in a 50 ml polycarbonate centrifuge tube with an aqueous zinc bromide solution adjusted to 2.0 g/cc. The solution density is controlled using glass standards. Enough zinc bromide solution is added to saturate the rock powder and immerse it to 1 cm depth in the centrifuge tube. The rock powder can be mixed using an ultrasonic probe or mechanical stirrers. We prefer a variable-speed stirring motor, set at about 1000 rpm, with

a polypropylene stirring paddle in its chuck. This strong stirring action is necessary to thoroughly mix the thick rock powder and zinc bromide solution. The mixture is settled in a centrifuge for 15 minutes at 3000 rpm. Centrifuging separates the floating OM from the powdered minerals, and compacts the waste, which promotes separation. After centrifuging, pour off the floating OM into a clean 50 ml centrifuge tube with as little ZnBr₂ solution as possible. Dilute the ZnBr-OM mixture by stirring and adding water to nearly fill the centrifuge tube. Centrifuge to settle the OM to the bottom of the centrifuge tube and decant the dilute ZnBr₂ solution. Repeat this wash cycle three times. A few drops of dilute HCl may be required to dissolve ZnOH₂ gel that may precipitate during the first wash cycle. The sample is then dried (freeze drying provides a superior product) to prepare it for mounting and polishing.

¹A list of the specific equipment and materials used in this method is available upon request.

REFERENCES

- Hymus, G. W., and Basak, G. C., 1949, Analysis of coals and carbonaceous materials containing high percentage of inherent mineral matter. *Fuel*, v. 28, p. 57-64.
- Teichmuller, M., 1982, Rank determinations on sedimentary rocks other than coal: In Stach, E. and others, *Stach's Textbook of Coal Petrology*, third edition. Gebruder Borntraeger, Berlin, p. 361-374.

THE SOCIETY FOR ORGANIC PETROLOGY
NOTES FROM
THE PETROLOGY LABORATORY

Editor's comment:

We are very appreciative that Neely Bostick has taken the time to write three Petrology Lab Notes to be published in successive issues of our newsletter. Neely has written his notes in the "old-fashioned" letter style to a fictitious Dr. Anthracos. It is hoped that this informal manner of communication will inspire others to write Petrology Lab Notes or Letters.

* If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. * Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

Smoothness and relief
of polished sections

April 10, 1986

Dr. C. H. O. Anthracos
The Society for Organic Petrology

Dear Dr. Anthracos:

I happened upon some old photomicrographs that show interesting features produced by the type of grinding and polishing sequence most commonly used in polishing coal. Here are two sets of photos with a simple story. Both sets show the result of progressively polishing a surface that was ground flat initially on wet 400 grit silicon carbide bonded on paper.

In both cases the polishing was done with a water slurry of gamma alumina (0.05 micrometers) powder on a fine thin silk cloth stretched on a rotating metal lap. The photo sequences were made with a 45x air objective, with a Berek prism in the illuminator (notice the oblique illumination) and with a constant setting of the aperture diaphragm. The circular field in each photo is about 290 micrometers across the specimen.

The first sequence, figures 1a-e, shows cold-setting epoxy in which easily abraded plastic spheres were embedded to simulate soft coal grains in epoxy—without the normal heterogeneity of a coal. The sequence shows how rapidly the initial rough surface is smoothed, and how much it develops relief in the process. In this case the embedding epoxy and the spheres apparently had similar abrasability to the 400 grit (fixed on paper) but had significantly different response to the alumina compound. I think there are two messages here: 1) excessive polishing still leaves some "wild scratches" and may cause increased relief, and 2) The cutting action of fixed abrasive grains does not produce much relief whereas the action of free polishing powders rapidly increases relief. This is why we have long sought finer fixed abrasives, such as diamond powder held by a metal plating. Unfortunately, plating a diamond coating finer than about 15 micrometers is difficult and the lap wears out quickly.

The second photo sequence, figures 2a-e, shows again the progressive polish of a surface ground initially with 400 grit. In this case the polished pellet is pure epoxy with just one plastic sphere (which plucked out and left a hole) to help relocate the same area after each additional polish. Notice again that the quick smoothing of the initial surface is followed by development of relief even on the relatively uniform epoxy. In this case longer polishing caused not only an increase of relief but also an increase of "wild scratches"—even though this was a clean pellet of epoxy without the mineral grains common in a coal.

FIG. 1A
400 GRIT



FIG. 2A
400 GRIT



FIG. 1B
0.05 μm ALUMINA
30 SEC.



FIG. 2B
0.05 μm ALUMINA
30 SEC.

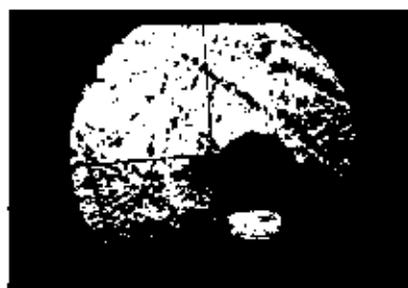


FIG. 1C
0.05 μm ALUMINA
60 SEC.



FIG. 2C
0.05 μm ALUMINA
90 SEC.

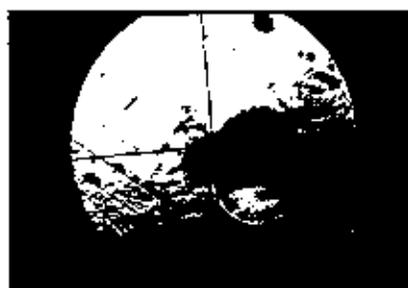


FIG. 1D
0.05 μm ALUMINA
90 SEC.



FIG. 2D
0.05 μm ALUMINA
150 SEC.



FIG. 1E
0.05 μm ALUMINA
150 SEC.



FIG. 2 E
0.05 μm ALUMINA
360 SEC.



Fig. 1: TIME SEQUENCE OF POLISHING: PLASTIC SPHERES SET IN EPOXY RESIN

Fig. 2: TIME SEQUENCE OF POLISHING: EPOXY RESIN

THE SOCIETY FOR ORGANIC PETROLOGY
NOTES FROM
THE PETROLOGY LABORATORY

I will describe a third experimental sequence but not send photographs because the surface changes they show are barely perceptible. In this case I polished a pellet of only epoxy with a typical sequence of polishing powders and measured the reflectance after each step. The reflectance was measured in air, of course, to avoid possible changes from cleaning or from a film of immersion oil. The glass standard used had not been calibrated absolutely in air. Here is a table of the numbers.

	<u>Seconds</u>	<u>%Rair</u>
600 grit		2.53

0.3 alumina	30	4.83
	60	4.70

0.05 alumina	30	5.10
	60	5.37
	90	5.38
	150	5.16

cerium oxide	30	5.59
	90	5.79

As you might expect, there was a general increase in reflectance as each step with finer powder was added. Notice, however, that there were two slight regressions with "excessive" polishing of the coarse and fine alumina. I did not measure reflectance after additional polishing with the final cerium oxide, but microphotos after two more polishing steps show a visible increase of relief shadows.

Overpolishing may lead to deterioration of mean reflectance in addition to the obvious increased reflectance scatter and errors of maximum reflectance caused by relief. I doubt that there are "chemical" reactions involved in polishing vitrinite

with different kinds of powder, as is said to happen in polishing metals. I have compared reflectance of epoxy polished with cerium oxide, chrome oxide and a special fine levigated alumina, and could find no consistent differences, but remember, many of the products on the market are actually blends. The "finish-pol" I have always used contains some alumina in addition to the cerium oxide, and the chrome oxide I now have contains some cerium oxide. At one time a major supplier sold cerium oxide suspension that another lab and I, independently, found to be badly clumped.

Sample preparation is a real craft which we tend to neglect in much of our routine work and which we do not document well in our publications. I recall working with some really beautiful polished preparations from Penn State, from Krefeld, and, most memorable, several from the British Carbonization Research Association. I would not make specific recommendations on the basis of this little experiment, but I think that it may serve to bring firm data "out of the woodwork" to improve our techniques.

Sincere best wishes,

Neely H. Bostick

RECENT PUBLICATIONS

The Journal of Coal Quality, published by the Center for Coal Science, Western Kentucky University. Deborah Kuehn, editor, says that it covers the latest innovations in coal technology and equipment. 417 TCCW, Western Kentucky University, Bowling Green, KY 42101 U.S.A. Tel. 502-745-6244.

Paleoceanography, another American Geophysical Union publication, edited by James Kennet. It will include papers dealing with the marine sedimentary record from the present ocean basins and margins and from exposures of ancient marine sediments on the continents. A wide range of approaches is employed, including sedimentology; isotope geochemistry; paleontology; seismic stratigraphy; physical, chemical and biological oceanography; marine geology and geophysics; Quaternary geology; modeling, and many others. The scope of the journal is global and regional rather than local, and of any age (Precambrian to the Quaternary, including modern analogs). Papers are being accepted now. Quality, not length, will be the overriding consideration in the selection process and all papers undergo a rigorous peer review prior to publication. There are no page charges for this journal. Papers published in camera-ready, author-prepared format. Interested authors should submit 3 copies of their manuscript to:

James Kennett
Editor, Paleoceanography
University of Rhode Island
Graduate School of Oceanography
Narragansett, RI 02822-1197

For further information on submitting papers, call James Kennett at 401-792-6616.

Geochemistry of Organic Matter in the Ocean by E. A. Romankevich. Springer Verlag, 1984. English translation of Russian volume published in 1978. Contains a lot of data (dissolved organic carbon, etc.) which is very different from that published in the west.

Organic Marine Geochemistry, edited by Mary Sohn, a Miami symposia book of the Div. of Geochemistry of the American Chemical Society. For info try Michael Moldowan, Chevron Research Co., P. O. Box 1627, Richmond, CA 94804, U.S.A. Tel. (415) 620-2085.

Available from the National Technical Information Service, U. S. Dept. of Commerce, Springfield, VA 22161 U.S.A.:

1. Geological and Geochemical Implications of Gas Hydrates in the Gulf of Mexico. Final Report by J. M. Brooks and W. R. Bryant, #DE86001011/WNR. This report is based primarily on data obtained from available seismic surveys of the Green Canyon, Garden Banks, Mississippi Canyon, and Orca Basins areas of the northern continental margin of the Gulf of Mexico. The study also includes the data and analysis obtained from several gas hydrate cores recovered in these areas. The report provides PPW data relevant to gas hydrate research and understanding of gas hydrate formations in the natural environment. The report contains several high resolution seismic surveys. In the four hydrate sites studied in detail, the seismic "wipeout" zones were all associated with collapsed structures, fault scarps, and/or salt piercement structures. These features provide conduits for the upward migration of either biogenic or thermogenic gas from depth. 35 refs, 47 figs, 9 tables.
2. Organic Geochemistry of Deep Ground Waters from the Palo Duro Basin, Texas: Implications for Radionuclide Complexation, Ground Water Origin, and Petroleum Exploration, by J. L. Means and N. J. Hubbard, #DE86004900/WNR. This report describes the organic geochemistry of 11 ground-water samples from the Palo Duro Basin, Texas, and discusses the implications of their organic geochemical compositions in terms of radionuclide complexation, ground-water origin, and the petroleum potential of two candidate repository sites in Deaf Smith and Swisher Counties. Short-chain aliphatic acid anions are the principal organic constituents present. Stability constant data and simple chemical equilibria calculations suggest that short-chain aliphatic acids are relatively weak complexing agents. The extent of complexation of a typical actinide by selected inorganic ligands present in these brines is expected to far outweigh actinide complexation by the aliphatic acid anions. Various lines of evidence suggest that some portion of the bromide concentrations in the brines is derived from the same

source as the short-chain aliphatic acid anions. When the postulated organic components are subtracted from total bromide concentrations, the origins of the Palo Duro brines, based on chloride versus bromide relationships, appear largely consistent with origins based on isotopic evidence. The short-chain aliphatic acid anion content of the Palo Duro brines is postulated to have been much greater in the geologic past. Aliphatic acid anions are but one of numerous petroleum proximity indicators, which consistently suggest a greater petroleum exploration potential for the area surrounding the Swisher County site than the region encompassing the candidate site in Deaf Smith County. Short-chain aliphatic acid anions appear to provide a useful petroleum exploration tool as long as the complex reactions that may diminish their concentrations in ground water are recognized. 71 refs, 10 figs, 10 tables.

ELECTION OF THE 1987 TSOP COUNCIL

This is a brief note to advise you of the TSOP ballot results and to thank you very much for your participation. The elected officers are:

- President-elect Neely H. Bostick, US Geological Survey
- Vice-president Stan C. Teerman, Chevron Oil Field Research
- Secretary/Treasurer Sue M. Rimmer, University of Kentucky
- Editor Carolyn Thompson-Rizer, Conoco Inc.
- Councilor Wolfgang D. Kalkreuth, ISPG Geological Survey of Canada

Submitted by:
Loretta Satchell
Ballot Committee

THE SOCIETY FOR ORGANIC PETROLOGY

CALENDAR

1986

- Aug. 11-14 Energy Resources Meeting, Hong Kong. K. N. Au, Asian Research Service, Box 2232, Hong Kong, Phone 5733641.
- Aug. 24-30 Sedimentological 7th International Congress, Canberra, Australia. G. Taylor ACTS, POB 1929 Canberra, ACT2601 Australia.
- Aug. 31- Sept. 5 Coal Preparation 10th International Congress & Exhibition, Edmonton, Canada. N. Duncan, Comp. 137, RR 1, 108 Ranch, 100 Mile House, BCVOK 2EO, Canada.
- Sept. 7-12 Div. of Geochemistry (Amer. Chem. Soc.), Anaheim, CA, U.S.A. Field trip to Miocene Monterey formation outcrops, four symposia: Geochemistry in Petroleum Exploration, Origin of Evolution of Brines in the Subsurface, Geochemical Aspects of Radioactive Waste Disposal, Biogeochemistry of Silicon. Dan Melchior Earth Technology Corp. 3777 Long Beach Blvd, Long Beach, CA 90807. Tel. 213-595-6611.
- Sept. 7-12 39th Annual International Committee of Coal Petrology (ICCP) Meeting, Doncaster, England.
- Sept. 8-11 International Gas Research Conference, Tokyo, Japan. G. Wayda Int. Rel., Gas Res. Inst., 8600 West Bryn Ave., Chicago, IL 60631, U.S.A.
- Sept. 15-19 7th Int. Symp. Anal. and Applied Pyrolysis, The Chromatography Society, Univ. Reading, U.K. Dr. Gutteridge, Cadbury Schweppes PLC, Group Res., Lord Zuckerman Res. Cent., Univ. Reading, P. O. Box 234, Reading RG6 2LA U.K.
- Sept. 22-24 **The Society for Organic Petrology Third Annual Meeting, Lexington, KY. Jim Hower 606-252-5535 or Sue Rimmer 606-257-4607.**
- Oct. 5-11 13th World Energy Conference, Cannes, France. E. Rutley, Sec. Gen., W.E.C. Headquarters, 34th St. James Street, London SW1A 1HD U.K.

Oct. 26-29 Petroleum Geology of Northwest Europe Meeting, London. Phone 01-891-4951 or write 70 Richmond Rd., Twickenham, Middlesex TW1 JBE England.

Oct. 29- Nov. 1 Annual AASP (Amer. Assoc. Stratigraphic Palynologists) and CIMP (Com. Int. de Microflore du Paleozoique), New York City, N.Y. Dan Habib, City University of New York, 33 West 42nd Street, New York 10036, phone 212-790-4218.

1987

- Apr. 5-10 Div. of Geochemistry (Amer. Chem. Soc.), Denver, CO, U.S.A. Abstract deadline Nov. 15, 1986. Seven planned symposia including: (1) Pyrolysis in Petroleum Exploration Geochemistry, (2) Advances in Oil Shale Chemistry, and Geochemical Standards. (1) K. E. Peters Chevron Research Co., P.O. Box 1627, Richmond, CA, 94802-0627, U.S.A. Tel. 415-620-3767. (2) P.P. Miknis Western Research Inst. P. O. Box 3395 University Station, Laramie, WY 82071, U.S.A. Tel 307-721-2307
- May 25-27 Symposium on Coastal Lowlands Geology and Geotechnology, The Hague, The Netherlands, CONGREX-Keizersgracht 610, 1017 EP Amsterdam, The Netherlands.
- Sept. 7-11 XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Paleontology, Academia Sinica, Nanjing, China.
- Sept. 20-25 Thirteenth International Meeting on Organic Geochemistry, Venice, Italy.

1988

- June 5-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic Matter in Hydrothermal Systems—Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

CHANGE OF ADDRESS & MEMBERSHIP APPLICATION

Please notify Stan Teerman, Chevron Oil Field Research Company, P. O. Box 446, LaHabra, CA 90631 U.S.A., Phone 213-694-9210, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Stan.

NEW MEMBER

Our new member since June is Lance Barron of the Kentucky Center for Energy Research, Lexington, KY, U.S.A.

DID YOU KNOW

We had six changes of address or returned newsletters during June-July. These are hectic days of job-changing, and if you want to continue receiving TSOP info, please let us know your current address.

Ed Stanley has left Phillips Petroleum Co. in Bartlesville, OK, to take up a life of crime...he is now the Director and Commanding Officer of the New York City Police Department Crime Laboratory.

Karl Ottenjann writes that laboratories in Germany appear to be getting behind in sample exchange studies (ring analyses) and that they are trying a workshop method where petrographers meet in the morning to discuss ideas, then work on sample measurements (maceral identifications, counts, etc.) that afternoon.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), **to be used with the figures in the original German publication.** \$6.50
3. The original German copy of M. Teichmuller (1982) "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkohlungsverhalten." \$6.50

These publications are available from:

Harvey S. Zeiss
16918 Judyleigh Dr.
Houston, Texas 77084
Phone (713) 463-2918



NEWSLETTER

VOL. 3 NO. 4

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1987 NEWSLETTER DEADLINES

Issue No.	Info. Due to Editor by	Issue to be Mailed First Week of
1	February 18	March
2	May 20	June
3	July 22	August
4	October 21	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 USA

LETTER FROM THE PRESIDENT

The third annual TSOP meeting held in Lexington in September was outstanding. There was a full schedule of papers on a variety of topics including organic geochemistry, thermal maturation, coal petrology, coking, and developments in instrumentation. As a society we can be proud of the high quality of the presentations and excellent slides at the meeting.

Our next annual meeting will be in San Francisco in October of 1987 and we are still accepting invitations for the 1988 meeting. At this time we have an invitation to meet in Houston in association with the AASP convention. Please contact me or someone else on the council if you are interested in hosting the 1988 or any future meeting.

There is a lot of work for TSOP that needs to be done this year by our various committees (including, awards, ballots, membership, nominating, and publications). If you are willing to help please contact me soon, as I must complete the committee appointments quickly.

One of the most successful features of our newsletter is the section on "Notes from the Petrology Lab" which helps to share and exchange ideas and experience on all aspects of organic petrology. If you have experience with any recent techniques or developments that you think would be of interest to the various members of TSOP please contact Alan Davis at Penn State with your contribution.

1987 OFFICERS

President	Jack Crelling 618-453-3351
Vice President	Stan Teerman 213-694-9210
President Elect	Neely Bostick 303-236-5764
Secretary-Treasurer	Sue Rimmer 606-257-4607
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A separate mailing will be made soon to collect the 1987 dues.

LETTER FROM THE CHAIRMAN OF THE RESEARCH COMMITTEE, ALAN DAVIS

When I agreed to become Chairman of the Research Committee, I thought very carefully about how such a committee should be constructed before asking anyone to serve. My objective was to obtain broad representation of the varied interests of Society members without having too unwieldy a committee. The following colleagues kindly consented to serve and I believe that their individual experience and dedication augments the balance between their areas of expertise. John Castano represents research in petroleum-related areas; Dennis Kaegi represents applied coal research; and Neely Bostick represents general geological problems which can be addressed through organic petrology. The possibility of adding an additional member to the committee is under consideration at the present time.

Early in its history, the Committee attempted to identify those needs of Society members which could be addressed through its Research Committee, and to establish some specific objectives. I would like to summarize for members the topics which we have discussed in the past 1 1/2 years; in parentheses are the consensus opinions of the Research Committee and/or the action which is being taken. Of

Continued, page 2

THE SOCIETY FOR ORGANIC PETROLOGY

LETTER FROM THE CHAIRMAN OF THE RESEARCH COMMITTEE, ALAN DAVIS

course, the needs of our membership are evolving constantly, and none of the Committee's decisions to support or not support an activity are irrevocable.

use of a wavelength of 546 nm in reflectance measurements), and the Committee is prepared to act when and if the need arises.)

1. The periodic preparation for the membership of a list of organic petrological research topics which are currently being pursued in North America, and by whom. (Decision: The Committee decided not to act. However, fortuitously, Neely Bostick has done much of the leg-work of such a review for ICCP and intends to publish a summary of this in the TSOP Newsletter in due course.)
2. The preparation for the membership, say every two years, of a list of research areas which it considers to be of major interest and importance to Society members and for the progress of the science of organic petrology. (Decision: Restrict to projects which, because of their large scope are necessarily interdisciplinary or multi-organizational. For example, the correlation of coal seams across state, basin, or province boundaries. Action taken: none.)
3. a) The compilation of unpublished work in areas of interest. Members would be encouraged to unearth reports, summaries, undocumented results and submit them for informal dissemination.
b) The need for a "short note" type of publication, i.e. small (about 1-page) articles on many subjects which would not otherwise see the light of day. (Action taken on a) and b): the publication in the Society's Newsletter of "Notes from the Petrology Laboratory".)
4. The writing of standard methods for the techniques of organic petrology. (Decision: there is not strong support for this by the Research Committee. A wide range of techniques is the sign of a healthy, developing science. However, there often is a need for common ground in these techniques (eg., the standard
5. The monitoring of organic petrological terminology. We could attempt to stem the proliferation of terms by examining pseudonyms and investigating precedence. (Decision: the best arena for this is the published literature. A more tangible contribution would be the establishment of a "lending archive" of materials which could be circulated to assist in establishing definitions.)
6. The funding of graduate research. (Decision: the idea needs critical review by the TSOP Executive Committee. Any activity should be restricted to areas of fundamental importance to the science, but which fall through the cracks of more conventional funding mechanisms. The provision of samples and specimens through the Society would be an appropriate and beneficial activity.)
7. The production of guidelines for point counting. The effect of particle size, interpoint distance, number of points and categories on the precision of point counting can be established mathematically. The trade-offs could be documented and probably would be very helpful. (Decision: the Committee will proceed with this activity. Dennis Kaegi has already done some work on the statistics of the problem. Members are invited to contribute their ideas.)
8. The screening or validation of equipment or software. (Decision: the Society must remain independent and objective. We should not provide unfair competitive advantage to any manufacturer. However, we should provide a forum for the individual evaluation of the properties, including the merits and idiosyncrasies, of new specialty accessories, such as objectives, filters, films, photometers, etc.,

THE SOCIETY FOR ORGANIC PETROLOGY

LETTER FROM THE CHAIRMAN OF THE
RESEARCH COMMITTEE, ALAN DAVIS

without giving the Society's stamp of approval or disapproval.)

9. The undertaking of an effort to throw some light on "humic groundmass" or "bituminous groundmass". (Decision: possibly the Committee should attempt to bring petrography, chemistry and terminology to bear on what must be a major problem for TSOP members. Organization and follow-through would be critical if this work were to be attempted.)
10. The holding of a Workshop on Fluorescence. (Action: A lengthy teleconference took place in February at which an organizing committee discussed the need for and nature of such a Workshop; members of the committee (Joe Senftle, John Castano, Jack Crelling and David Bensley) responded to a number of questions which had been circulated by Chairman Alan Davis. Although it was later recognized that the current economic climate rules out the immediate prospect for holding a Workshop, a number of details were agreed upon which will simplify the planning whenever the Workshop does take place. The following points summarize the conclusions drawn by the Committee. Ideally, the Workshop would be held in Carbondale, would last for 2 days and could accommodate up to 30 participants at a cost of \$300 - \$400 each. TSOP would be asked to provide up-front working capital and assistance with mailing and advertising. The Workshop would consist of about one-half lecture sessions, and one-half laboratory sessions at which participants would get hands-on experience. A minimum of 2 to 3 fluorescence systems will be needed, at least one of which should have quantitative capability. Various institutions would be called upon to lend systems or accessories. A manual would be prepared for the Workshop. Dr. Crelling has assumed prior responsibility for organizing the Workshop and preparing the manual, but all of the instructional staff will be involved. A list of

lecture topics and laboratory sessions was drawn up. At the TSOP Mid-Year Executive Committee meeting held in Houston, it was reluctantly agreed that the Workshop would have to be deferred beyond the originally proposed date of Fall, 1986. However, plans to prepare the manual will proceed.

11. The formation of a subcommittee on Reservoir Management. (Decision: the opinion of experts in this field will be sought.)

The Research Committee is currently reviewing proposals and enquiries from TSOP Members that the Society be concerned with a) the formulation of a Handbook of Organic Petrology (a further suggestion has been that a U.S. Geological Survey Procedures Manual could be used as a model for some sample preparation techniques), b) the publication of an Atlas of Petrology -- i.e. photomicrographs with descriptions of coal macerals and kerogen types, and c) informing members of important new developments in our science.

The interest and participation of all TSOP members in Research Committee activities is welcomed. If you believe that there are other activities in which the Society should be involved, please feel free to write to me or any Committee member.

Alan Davis
Coal Research Section
517 Deike Building
The Pennsylvania State University
University Park, PA 16802

THE SOCIETY FOR ORGANIC PETROLOGY
NOTES FROM
THE PETROLOGY LABORATORY

(Editor's Note: This is the third in a series of Lab Notes written by Neely Bostick.

Neely has written his notes in the "old-fashioned" letter style to a fictitious Dr. Anthracos. It is hoped that this informal manner of communication will inspire others to write Petrology Lab Notes or Letters.

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

Etching polished coal preparations with a low temperature asher (LTA) to reveal internal structure of vitrinite

Dr. C.H.O. Anthracos

The Society for Organic Petrology

April 14, 1986

Dear Dr. Anthracos:

From time to time, I have had requests to explain what advantage there is to etching polished coal surfaces in a low-temperature asher (LTA--also called radio-frequency asher and oxygen-plasma asher). This question comes up because in 1972, at the Illinois State Geological Survey, Bill Miller and I did a study of LTA etching of polished coal, and I made some microphotos that I have used frequently in lectures to illustrate telinite and collinite and the very arbitrary boundary between them, for which cryptotelinite is an apt term.

I can think of three advantages to etching with a low-temperature asher: 1) avoidance of cracking and swelling of the polished surface that sometimes occurs in etching liquids, 2) elimination of the use of hazardous etching chemicals, 3) convenience. I have used this etching technique only with high-volatile bituminous coals. I have not heard or read that chemical etching causes cracking and heaving in medium- or low-volatile coals.

Enclosed are some photos that show etching of a vitrain concentrate [13% moisture, 49% daf VM, 0.41% Ro] from the Colchester (No. 2) Coal Member of the Carbondale Formation, Banner Mine, Peoria County, Illinois.

Figures 1a-1c show the polished surface of vitrain V-13 etched by three different methods after repolishing: 1a was etched by Schulze's reagent, 1b by chromic acid glassware cleaner, and 1c in a low-temperature asher. Schulze's solution caused cracking, swelling, and heaving of the polished vitrain before any useful etching occurred. Chromic acid apparently brought some features in the polished vitrain into relief, but they were difficult to observe on the slightly cracked and heaved surface. Chromic acid did seem to be potentially more useful than Schulze's solution, but notice

that both caused drastic disruption of the surface in this coal even before scratches on the surface showed signs of etching. I found this to be true in solutions of several different concentrations. Figure 1c shows the good detail of cryptotelinite which etching in the LTA brings out even before surface scratches are etched away. We did not find any cracking or heaving of polished surfaces even after excessive LTA etching began to destroy visible detail.

The power of the asher was 135 watts, and the sample temperature did not exceed about 40°C. We simply set a polished pellet of crushed coal (imbedded in polyester) face up in the ashing chamber. Three minutes etching seemed to give the most useful results.

I know, Dr. Anthracos, that you often question some of our basic techniques or ideas in organic petrology. I remember our lengthy discussions with Dave Mason about the character of polished surfaces and the physical state of the contact between microscope immersion oil and vitrinite. We did not, unfortunately, follow our etching trials by study of the physical or chemical properties of the surface. However, here are a few additional photos that show some visible features of LTA etching. Figure 2a shows the fine detail brought out in a vitrinite by etching two minutes. Figure 2b is the same surface photographed after about 1/2 minute of "final" polishing with cerium oxide slurry subsequent to the etching. Notice that much of the cellular structure can be seen still--suggesting that the normal masking of internal structure on polished surfaces is at least in part a consequence of distortion "smearing" of the surface during normal grinding and polishing.

Overexposure in the LTA can be too much of a good thing. Figures 3a-3c illustrate a single sample (but not the same part of the surface) etched for progressively greater time. Very little of the internal structure shows in a vitrinite etched 1/2 minute in the LTA, Figure 3a, but 3 minutes etching brings out the structure very well. Ten minutes etching of this sample was, however, excessive and destroyed the continuity of the surface so that fine detail was lost (Figure 3c). It may be that removal of a surface layer that is distorted by normal grinding is the most significant part of the etching technique. It appears to be possible to restore detail on an "overetched" surface by gentle polishing after etching. The surface in Figure 4a was etched 8 minutes--an excessive amount which removed much fine detail. Twenty seconds of gentle polishing (cerium oxide slurry) restored the surface so that the fine cell wall/filling structure could be photographed, and even the difference in reflectance between cell walls and fillings shows clearly.

You old timers used chemical etching successfully, and I know that some people

use it to advantage today. I thought to write you, however, to keep up our contact and to pass on my old trials of etching with the LTA. There occurs to me, in closing, one feature of etching with the asher that I did not mention. I had the impression that pyrite was attacked by chemical etchants--but was not damaged in the LTA. This may lead to preparations that give a good look at the fine structure of pyrite clumps--otherwise difficult to see in polished surfaces except in rare very hard coals (such as silicified coal from northern Kentucky).

Best wishes from

Neely H. Bostick

PS: I spoke with Dave Mason after I wrote this; he happened to mention that he is using the LTA to bring mineral matter to relief for study on polished surfaces of coal.

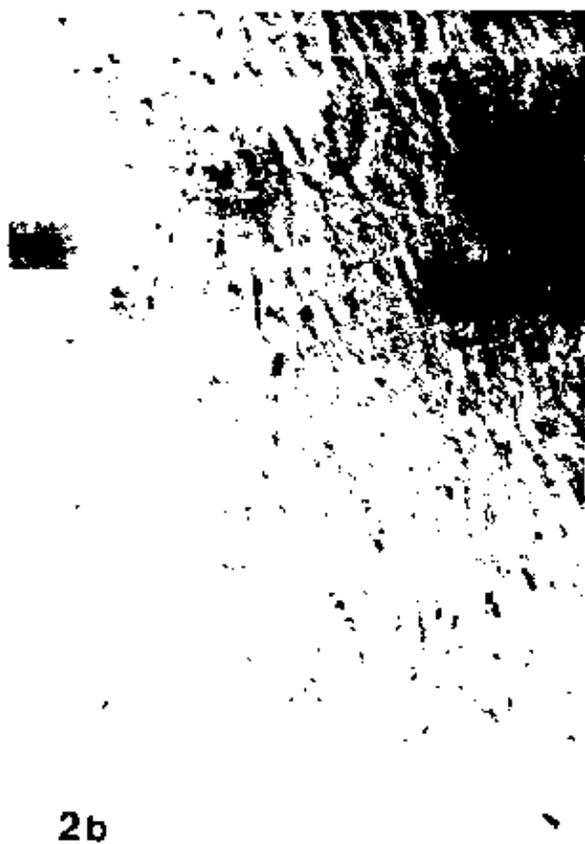
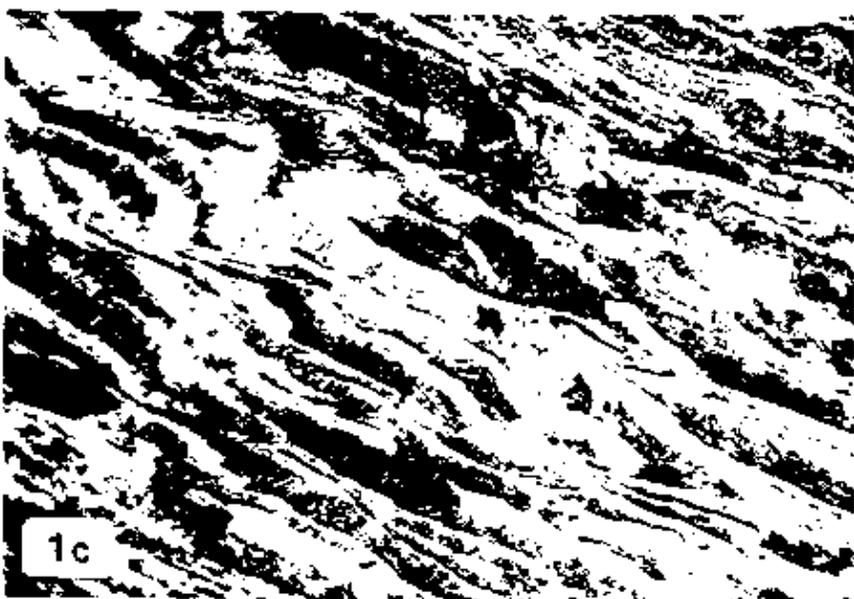
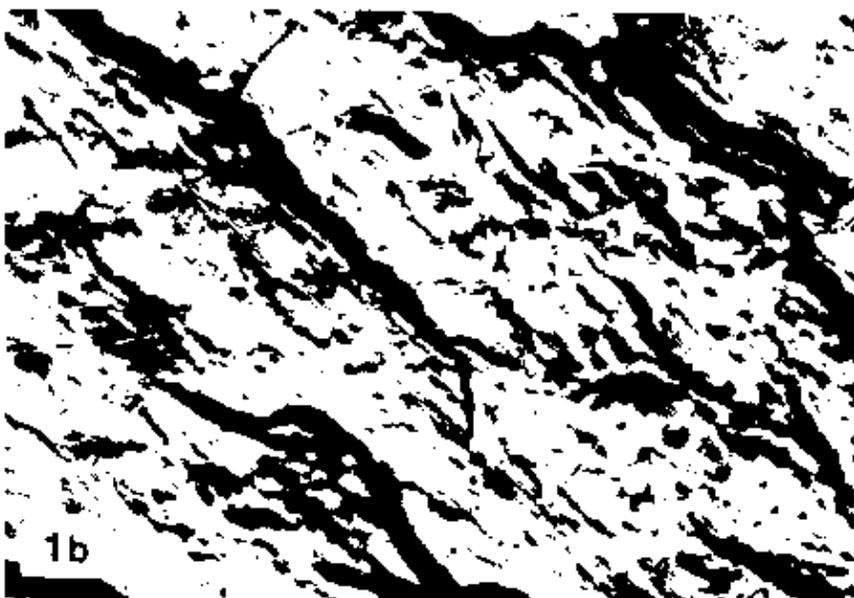
FIGURE CAPTIONS

Fig. 1. A single, polished pellet of vitrain etched by a) Schulze's solution (1/3 concentration in water, 70°C, 30 seconds; photo length 600 um), b) chromic acid glassware cleaner, 70°C, 1 minute; photo length 160 um, c) low-temperature ashing (2 minutes; photo length 160 um).

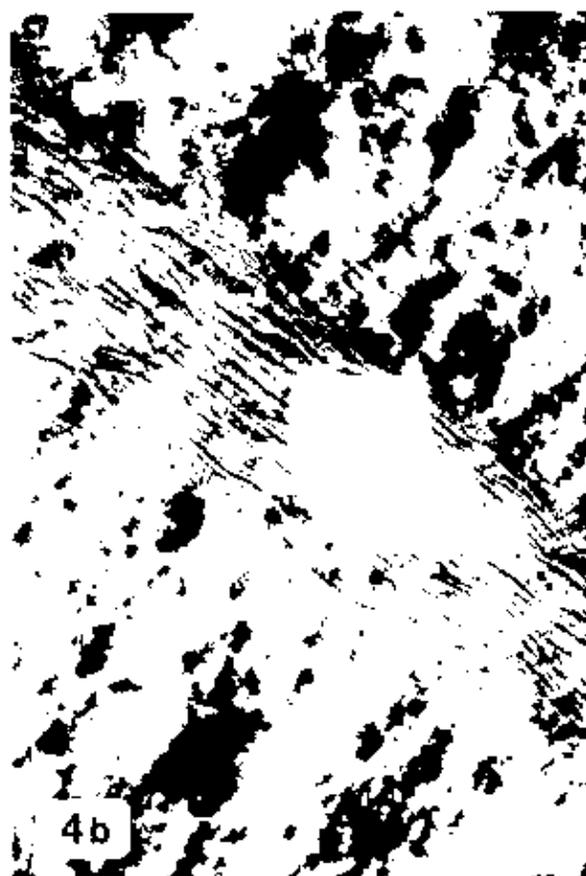
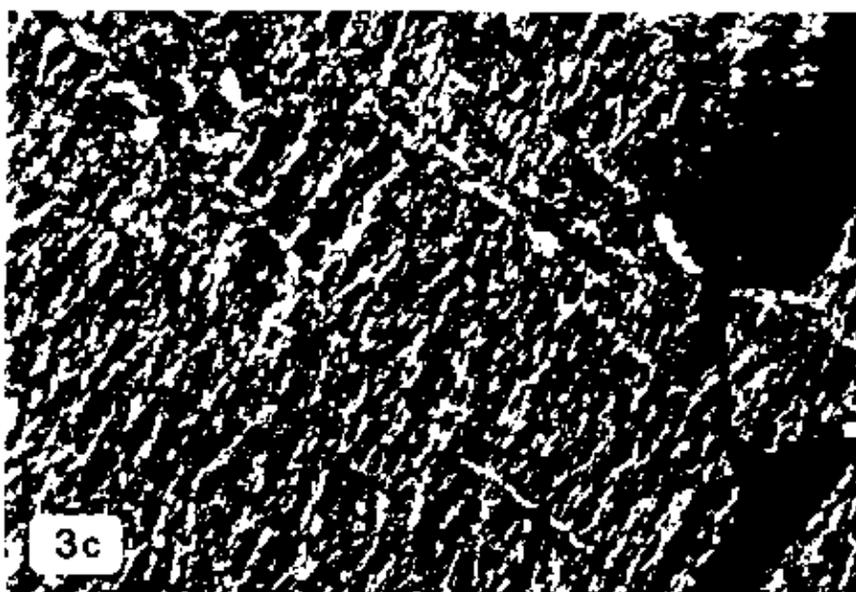
Fig. 2. Polished vitrinite etched 2 minutes by LTA. a) after etching, b) after 30 seconds polishing (cerium oxide on silk cloth) subsequent to etching. Both photos are 160 um long.

Continued, page 7

(Dr. Anthracos)



Dr. Anthracos 11/86



Dr. Anthracos 11/86

THE SOCIETY FOR ORGANIC PETROLOGY
NOTES FROM
THE PETROLOGY LABORATORY

CALENDAR

Calibration of Microphotometric Systems

by Karl Ottenjann

The following procedure has been adopted to improve the quality of calibration obtained during measurements of reflectance, fluorescence intensity, or any other microphotometry which involves the use of a standard. In this way, the calibration becomes more independent of accidents, such as air bubbles, defocussing, or imperfections and inhomogeneities of the standard surface.

All of our relevant software gives the prompt "Three Measurements on Different Areas of the Standard are Necessary." The calibration factor (i.e., the value by which readings on the unknown are multiplied) is calculated from the formula:

$$f = \frac{R_s \cdot x_1}{(x_1 + x_2 + x_3)}$$

where x_1 - x_3 are the three measured values on the standard, R_s is the % reflectance of the standard, and f is the calibration factor. These same values appear in the dialog on the interactive terminal and on the final printout as follows:

e.g. "0864 0864 0865 1.715 0.00198"

(Dr. Anthracos)

Fig. 3. Polished vitrinite etched progressively longer in the LTA. a) 30 seconds (photo 160 um long), b) 3 minutes (photo 210 um long), c) 10 minutes (photo 600 um long).

Fig. 4. Polished vitrinite. a) etched "excessively" in the LTA (8 minutes), b) much fine detail visible after subsequent polishing for 20 seconds (cerium oxide on silk cloth). The length of both photos is 160 um.

REFLECTANCE STANDARDS

Prices Quoted September 22, 1986

Ernest Scott
 14 Cleveland Road
 North Shields
 Northumberland NE29 ONG
 UNITED KINGDOM
 Telephone 0632-577401

	RO (546 nm)	\$U.S.
Glasses	0.26	80
	0.51	80
	0.79	80
	1.01	80
	1.43	80
	1.65	80

All glasses are single 10 x 10-mm pieces mounted in 25-mm-diameter mounts.

McCrone Research Associates Ltd.
 2 McCrone Mews
Belsize Lane
 London, NW3 5BG
 UNITED KINGDOM
 Telephone 01-035-2282 (or 3)

	R_o (546 nm)	Price (£) = \$U.S. 1.47
Silica Glass	0.038	36
Spinel	0.413	304
YAGarnet	0.917	319
GGGarnet	1.726	429*
Cubic		
Zirconium	3.256	285
Silicon Carbide	7.49	175

'Available off the shelf; other 6-8 weeks

1987

- Jan. 27-30 Canadian Reef Research Symposium, Banff, Alberta, Canada. The Can. Soc. Petrol. Geologists and the Univ. of Calgary. Dr. J. Packard (403-284-0425) or Canadian Reef Research Symposium, c/o The University Calgary, Conference Office, Faculty of Continuing Educ., 2500 University Dr. NW, Calgary, Alberta T2N1N4 Canada.
- Mar. 11-12 Third Annual R. E. McKelvey Forum on Mineral and Energy Resources, U.S. Geological Survey, Denver, Colorado. Dean Kleinkopf (303-236-1212).
- Apr. 5-10 Div. of Geochemistry (Amer. Chem. Soc.), Denver, CO, U.S.A. Abstract deadline Nov. 15, 1986. Seven planned symposia including: (1) Pyrolysis in Petroleum Exploration Geochemistry, (2) Advances in Oil Shale Chemistry, and Geochemical Standards. (1) K. E. Peters Chevron Research Co., P.O. Box 1627, Richmond, CA, 94802-0627, U.S.A. Tel. 415-620-3767. (2) F. P. Miknis Western Research Inst. P.O. Box 3395 University Station, Laramie, WY 82071, U.S.A. Tel. 307-721-2307
- Apr. 10 The Society for Organic Petrology Midyear Meeting, Denver, CO, Jack Crelling (618-453-3351).
- May 25-27 Symposium on Coastal Lowlands Geology and Geotechnology, The Hague, The Netherlands, CONGREX-Kelzergracht 610, 1017 EP Amsterdam, The Netherlands.
- Aug. 17-21 Second Int. Symp. on the Devonian System, Calgary, Alberta Canada. Topics include: basin evolution, biostratigraphy, black carbonates, and shales. Abstract deadline--February 1, 1987. The Canadian Soc. of Petroleum Geologists, 505, 206-7 Avenue SW, Calgary, Alberta, Canada T2P0W7 (403-264-5610).
- Sept. 7-11 XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Palaeontology, Academia Sinica, Nanjing, China.
- Sept. 21-25 13th Int. Meeting on Organic Geochemistry, Venice, Italy. Program to include: organic geochemistry in petroleum exploration, basin modeling, regional studies, biological markers, primary and secondary migration, kerogen, coal, and asphaltenes. Abstract deadline--Nov. 30, 1986. Conference Secretariat—Ms. Laura Nola, AGIP Sp.A., IMPU 1°P.U., 20097 San Donata Milanese (MI), Italy.

Sept. 24-25 Influence of Inorganic Constituents on Coal Combustion in small to medium-sized boilers, London, U.K., Dr. A. Sanyal, Babcock Power Ltd., 165 Great Dover Street, London SE14YB England.

Sept. 30-Oct. 3 The Society for Organic Petrology Fourth Annual Meeting. San Francisco, CA, Margaret Hildick-Pytte (415-842-0706).

1988

June 5-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic Matter in Hydrothermal Systems - - Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.

THE SOCIETY FOR ORGANIC PETROLOGY

LETTER FROM AUSTRALIA

(Editor's Note: The June 1986, Vol. 3. No. 2, issue, of this newsletter contained Prasanta Mukhopadhyay's Book Review of "Low Rank Oil Shales: Part I—Organic Petrology," by N. R. Sherwood and A. C. Cook. The following is a reply from the authors.)

We would like to thank the editor and P.K. Mukopadhyay for reviewing "Low Rank Oil Shales: Part 1 - Organic Petrology." It was a somewhat unexpected courtesy for, as mentioned in the review, the publication is only a report; some of its shortcomings are no doubt related to this fact. We found many of the criticisms valid and helpful, but we believe some comment from us may help advance the debate.

Firstly, for the possible future reference of society members, we would like to bring to notice some misspellings:

University of Wollongong;
Keiraville;
Toolebyc Formation.

With regard to the designation of the generic terms of 'bitumen/resinite' and 'bituminite/micrinite', the '/' symbolises 'or' or 'associated with'. This 'grouping' does not equate the terms, but rather exemplifies the difficulty in differentiation of these macerals on morphological bases or because of the limits of resolution of optical microscopy. As mentioned in the report, very fine disseminations of bitumen are indistinguishable from resinite. We also stated that incipient micrinitizations of the bituminite occurrences are common and the two are 'grouped' together, "because in most oil shales, gradations between the two, make differentiation impractical" (page 30). The authors realise that micrinite and bitumen are mostly secondary in origin and did not intend any inferences on similar geneses for micrinite and bituminite, and resinite and bitumen, to be made.

In paragraph 6, Mukopadhyay stated that benthonic algal forms were identified in the report. The authors did not do this although they did state that some alginite possibly originates from benthonic sources. Some planktonic forms have been identified by Palynologists and, where possible, the identifications were applied by us, to alginite studied mostly in sections parallel to bedding. Criteria used by Palynologists are commonly complex but once a genus is identified in a specific sample, the form of processes or general shape or both can commonly be used by petrologists for its future identification. In the report, some photographs of lamalginite in parallel section were presented but the alginite was not identified to a generic level. The title of the report (i.e. 'organic petrology') shows that palynology was not a primary aim of the study.

Mukopadhyay refers to much of the organic matter termed alginite in the report, as algodetrinite. We are unaware that algodetrinite is an accepted maceral term although some of the fine material could justifiably come under this name.

In the report, liptodetrinite was defined as "exinite fragments less than two micrometres in size" (page 31). Identifying alginite can be problematical. Distinguishing

"algal liptodetrinite" from "non-algal liptodetrinite", we believe, is commonly impossible.

Indeed, we did not identify 'amorphous liptinite' in Green River Formation or Rundle lamosites. We believe that organic matter in these deposits has substantial enough morphological characteristics to enable identification as alginite. From studies the authors have done on 'strew mounts' it is evident that pulverisation, maceration and demineralization are excellent methods to destroy some of these characteristics and therefore manufacture 'amorphous liptinite'! For this reason we believe that analytical examination of whole rock samples perpendicular and parallel to bedding is the superior method for examining organic matter in oil shales, although examination of strew mounts may produce additional information. Using the whole rock method not only allows the organic matter to remain intact because of limited sample preparation, but it also allows maceral - mineral

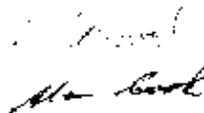
relationships and volumetric abundance of macerals to be determined. As mentioned on page 11 of the report, demineralization procedures were used mainly in the study for preparation of the samples for elemental analyses.

with regard to 'bituminite as a coalification product of alginite; in cases where a transition between fluorescing lamalginite and coalified (nonfluorescing, higher reflecting) lamalginite is evident, both should naturally be termed lamalginite. In the report bituminite was not defined as a coalification product, rather it was inferred that some material which would normally be identified as bituminite could possibly have originated from partial alteration of lamalginite (by very finely disseminated radioactive matter within the organic matter). If this type of alteration to algae occurred during 'near sediment surface' diagnosis the material should be termed 'bituminite'. Otherwise it should be considered as lamalginite.

A final comment is that, because of the wide scope of deposits studied and the homogeneity of many oil shale deposits (with regard to general organic petrology) we believe that the number of organic petrological analyses done were adequate for the interpretations made.

We hope that the comments made above clarify some of the apparent problems in the report and apologise for any ambiguities in our text.

Yours sincerely



ASTM ACTIVITIES OF INTEREST

by Dick Harvey

Some progress was achieved at the recent meeting of ASTM Committee on Coal and Coke in El Paso, TX that is of interest of many members of TSOP.

* The newly published 1986 Annual Book of ASTM Standards includes a new standard, practice for the collection of a channel sample of coal in the mine (D4596). It describes recommended procedures for collecting a coal samples from a channel extending from the top to bottom in a face of a coal seam.

* A definition of inertodetrinite is being balloted along with revised definitions of certain other inertinite macerals.

* A manuscript describing the procedures for drilling, logging, sampling and analysis of coal cores has been written and is being reviewed for an ASTM Special Technical Publication in 1987.

Contact Dick Harvey (217/344-1481) or Ron Stanton (703/860-6104) for further information. The next meeting of the Committee will be in Pittsburgh, PA, May 17-19, 1987. Visitors are welcome.

1986 ANNUAL MEETING RECAP

by Jim Hower and Sue Rimmer

The 1986 TSOP meeting was held September 22-24 in Lexington, Kentucky, and was followed on September 25 by a one-day field trip to coal and oil shale exposures in eastern Kentucky. As co-convenors we wish to thank all speakers and participants for their role in making the meeting a success. Duncan Murchison, as invited lecturer and ad-hoc luncheon speaker, provided special insight to discussions during the meeting and field trip. Special thanks go to Nancy Hopper of University of Kentucky OISTL whose work as conference coordinator made our job easier.

Meeting attendance was 58; including 15 from Kentucky, 7 from Illinois, and 6 each from Pennsylvania and Ohio. Field trip attendance was 25. On the field trip we were ably assisted by Lance Barron of the Kentucky Center for Energy Research and Don Chesnut of the Kentucky Geological Survey. While Jim Cobb (KGS) was unable to attend due to last-minute commitments, we are grateful for his support and his 9 role in writing the road log.

1. The American Association of Stratigraphic Palynologists (AASP) is having a special "Who knows what deductions will be allowed, or what lurks in the hearts(?) of the IRS for 1987" sale. Palynology books, field-trip guidebooks, abstract volumes (including thermal maturation and kerogen symposia), and 1979 Techniques Fluor. Microscopy. For a price list, contact Robert Clarke, AASP Foundation Treas., c/o Mobil Research-DRL, P.O. Box 819047, Dallas, TX 75381-9047 U.S.A. Tel. 214-851-8481.
 2. Organic Geochemistry of Continental Margin and Deep Ocean Sediments. Final Report. J. Hunt and J. Farrington. DE86010368/WNR available from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, U.S.A.
- The objective of this research was to Investigate basic petroleum generation and migration processes in continental margin and slope sediments. Detailed depth profiles of both light hydrocarbons and high molecular weight organic matter were examined for 5 wells from the Texas Gulf Coast and 8 wells from the Alaskan North Slope.
3. Siliceous Microfossil and Microplankton Studies of the Monterey Formation and Modern Analogs, SEPM Spec. Publ. Book No. 45 (Tulsa, 1986).
 4. Roles of Organic Matter in Sediment Diagenesis, SEPM Spec. Publ. No. 38 (Tulsa, 1986).

TSOP meetings continue to be impressive in terms of the overall quality and variety of the presentations and the attentiveness and participation of the audience. In addition to the papers presented, several members submitted titles but unfortunately had to withdraw due to funding problems. We hope to see them in San Francisco.

From the perspective of the speakers it is certainly more rewarding to present a paper before a receptive audience than in the near-empty rooms in the sessions of some recent national and regional meetings. TSOP meetings to date have attracted a good variety of quality papers, a trend we know will continue.

Best wishes to Margaret and Rehana in their preparation for the 1987 TSOP meeting. See you in San Francisco.

1987 TSOP ANNUAL MEETING - FIRST ANNOUNCEMENT
By M. H. Pytte

MEETING SITE AND HOTEL

The City of San Francisco, California, has been selected as the site for the 1987 TSOP Annual Meeting. The TSOP Council has approved the recommendation of the San Francisco Hilton and Tower as the convention hotel as well as the dates for the meeting. It will be from Wednesday, September 30, to Saturday, October 3, 1987. A block of 50 guest rooms have been reserved at the rate of \$75.00/single, \$85.00/double. The hotel reservation cards and call for papers will be mailed to TSOP members in the Spring of 1987.

The months of September and October in San Francisco are very pleasant with decreasing amounts of fog and daytime temperatures averaging in the 70's. I am told it is the best time of the year to visit the City hence many conventions are held during this time and travel reservations must be made well in advance.

MEETING AND FIELD TRIP

We are planning a two-day technical meeting beginning with arrival and registration on Wednesday, September 30, 1987. On Thursday and Friday (October 1 and 2, 1987) there will be technical sessions. Dr. Alan Cook of the University of Wollongong has agreed to be our invited speaker, and we are soliciting ideas for a half-day symposium such as the petrology and geochemistry of oil shales. We are planning space for a poster session and exhibitors and welcome any suggestions or comments.

We plan to have a one-day field trip to the Monterey Formation on Saturday, October 3, 1987. A suggestion was made to have a ring analysis (round robin) of several Monterey samples prior to the meeting. If you are interested in participating, please contact Jenny Thompson, (713) 663-2610.

SPOUSE ACTIVITIES

Because of the varied and interesting places to visit in the City and within a several hours drive, no formal spouse activities are planned.

ANNUAL MEETING COMMITTEE

The committee for the 1987 TSOP Meeting is listed below. Please contact any member with your ideas or suggestions for the meeting.

M. H. Pytte, Chevron U.S.A. - Co-Chairman (415) 842-0706	J. R. Senftle, Unocal (714) 528-7201, Ext. 2371
R. H. Makada, Chevron U.S.A. - Co-Chairman (415) 842-0652	S. C. Teerman, COFRC (213) 694-9210
T. A. Edison, San Francisco, CA (415) 842-1360	J. H. Brown, Unocal (714) 528-7201, Ext. 2688

CHANGE OF ADDRESS & MEMBERSHIP APPLICATION

Please notify Stan Teerman, Chevron Oil Field Research Company, P.O. Box 446, LaHabra, CA 90631 U.S.A., Phone 213-694-9210, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms ~~can be obtained~~ ~~obtained~~ from Stan.

DID YOU KNOW

John Castano is a consultant to the Gas Research Institute on the deep drill hole in Sweden (he says he still believes in the organic origin of oil and gas).

Christine Hartman-Stroup is now a private consultant for visual kerogen and Rock-Eval analyses.

Neely Bostick attended the ICCP Meeting in Doncaster, England, (Sept. 7-12) and, hopefully, will write some notes for the March 1987 newsletter.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), to be used with the figures in the original German publication. \$6.50
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These publications are available from:

Harvey S. Zeiss
16918 Judyleigh Dr.
Houston, Texas 77084
Phone (713) 463-2918



1987 NEWSLETTER DEADLINES

Issue No.	Info. Due to Editor by	Issue to be Mailed First Week of
2	May 20	June
3	July 22	August
4	October 21	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 USA

1987 TSOP ANNUAL MEETING

San Francisco

CALL FOR TITLES

The 1987 TSOP Annual Meeting will take place from September 30 to October 3, 1987, in San Francisco, California.

We are planning for:

- A 2-day conference that includes a symposium on oil shales.
- A 1-day field trip to the Monterey Formation.

Contributions are invited from TSOP members and nonmembers, and we are planning for both oral presentations and posters.

Please send preliminary titles for your oral or poster presentations to me at the address below. I would like to have the titles by April 8, 1987. Please do not hesitate to call me at (415) 842-0706 if there are any problems or questions.

Thank you for your help and cooperation.

Margaret H. Pytte
1987 TSOP Annual Meeting, Cochairman
Chevron U.S.A. Inc.
P.O. Box 5042
San Ramon, CA 94583-2398

1987 OFFICERS

President	Jack Crelling 618-453-3351
Vice President	Stan Teerman 213-694-9210
President Elect	Neely Bostick 303-236-5764
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Councilor	Wolf Kalkreuth 403-284-0110

NOTES FROM THE PETROLOGY LABORATORY

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. * Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

POLISHING METHOD FOR DISPERSED VITRINITE AND COAL SLIDES

MARK J. PAWLEWICZ
U.S. GEOLOGICAL SURVEY MS 940 DFC
DENVER, COLORADO 80225

A rapid method for polishing slides of dispersed vitrinite or kerogen and coal has been in use at the U.S. Geological Survey Organic Petrology Laboratory (Lakewood, CO) for several years. It is a simple method which produces virtually scratch-free slides.

The slides are first prepared using the method described by Baskin (1979). After that a level or parallel surface on the slide is cut by use of a thin section machine. It is usually necessary to remove the saw marks caused by the grinding using a fine sandpaper such as 600 grit with paper for cooling and lubrication. This can be done manually or with an automatic lapping and polishing

THE SOCIETY FOR ORGANIC PETROLOGY

Summary of the 39th meeting of the International Committee for Coal Petrology Doncaster, England. September 5-14, 1986.

Neely Bostick, U.S.G.S.

The following is my outline of the activities presented or discussed at the meeting. If you have an interest in more detail about particular items, I can furnish supplemental material or steer you to Alan Davis, Joe Senftle, or other members who can help you better than I can. My telephone is (303) 238-0581.

1. People involved with the meeting

a) Host and main organizer:

A. H. V. Smith, U.K., National Coal Board, Yorkshire Scientific Control Laboratory.

b) Main executives at working meetings:

B. Alpern	France	Orleans University
M. Wolf	Germany	Aachen University
Y. Somers	Belgium	INIEX
P. Robert	France	Elf-Aquitaine
A. Davis	USA	Penn. State Univ.
D. Murchison	U.K.	Univ. of Newcastle

c) Distribution of members and guests at the meeting:

Country	Work mainly coal quality	Mixed	Mainly gas, petroleum
Australia	1	1	
Belgium	2		
Brazil	2		
Canada	3	1	
Czechoslovakia	2		
Eire		2	
France	1	4	3
Germany	6	2	
Mexico		1	
Netherlands	2	1	
Norway			2
Poland	2		
Portugal	2		
S. Africa	2	1	
Spain	2		
U.K.	9	4	6
U.S.	1	1	1
U.S.S.R.	1	1	
Other (5 countr.)	4	1	1

2. Local sponsors of the meeting:

National Coal Board
 British Gas
 B.P. International, Ltd.
 British Steel Corporation (Main Host)
 Leitz Instruments
 PLC Hunwick Ltd.

3. Scientific/industry activities:

a) Introductory guest lectures:

G. Smith (British Coal, Director of Marketing): Application of CP in U.K. no longer blending for coking coal, but range of studies, including of imported coals; goals are finding more efficient ways to use low quality coals, lower costs - helping industry survive!

R. Ladner (Coal Board Research Director): Present emphasis at CB is combustion, liquefaction, gasification - use of lower quality coals in efficient pollution-free ways. Work on elimination of SO_x, NO_x gasses. Even improvement of mundane things like delivery and ash removal for industrial and group domestic users.

b) Commission I (General Applications)

1. Standardization of reflectance/maceral analysis (Pfisterer): Master standards tested in group of labs. Main dispersion came from poor definition of collesinite and use of fluorescence by some labs to separate vitrinite types. Future work: 1) maceral group analysis of a petrographically simple coal, 2) Reflectance analysis using standards calibrated at a single lab.

2. Lithotypes of Brown Coals (Black/Wolf): English version of handbook sheet completed; final discussion at '87 mtg. Analytical problems relate especially to "detrital / attrital", "groundmass", "fine granular". Some lithotype analysis is valid only for lignite that has not had diagenetic gelification.

3. Gondwana Coals (Cook): New atlas of S. African coals (by Falcon Research, Ltd.). Working group seeks Antarctic coals from U.S. and U.S.S.R. Gondwana breakup not until Cretaceous so coals besides Permian are important. Main research needed is how inertinite forms; the inertinite in Gondwana coals is mostly different in origin from that in other coals.

4. Fluorescence (Ottenjann): Completed work on "standard method" for monochromatic intensity, despite dependence on thickness of material and wavelength of maximum fluorescence. Diessel: method of measuring fluorescence at 650 nm. Wolff: Loss of fluorescence intensity with time after preparation of polished surface. Davis: Diode standards for fluorescence.

5. Effect of Facies on collinite (saprovitrite) (Kruszewska): All participants found desmocollinite with reflectance lower in sapropelic than in humic coals. Most did not distinguish separate saprocollinite. micrinite presence can be used to recognize sapropelic components in coal. Sharp split between workers whether term "sapro-" designates type of environment, influence of certain diagenetic products, or the presence of hydrogen-rich primary components. Decided to use the long-established term saprovitrite to indicate material in a particular depositional environment rather than as a constituent until such a constituent should be identified reliably. Future work: analysis of algal-rich coal provided by Cook.

THE SOCIETY FOR ORGANIC PETROLOGY

6. Coal classification (Lemos de Sousa/Alpern): The coal classification under consideration for adoption by the ECE applies to technology, not genetic/scientific types as the Alpern classification. Australian science and industry objections to the ECE proposal relate to use of inertinite as prime ("detrimental") factor in ECE codes, while ash and sulfur are relegated to secondary. This is critical not just because of high inertinite of some Gondwana coals, but because of poor reproducibility of analyses in labs not used to work on Gondwana coals.

7. Australian petrographic standard and nomenclature (Cook): Single standard and set of terms for lignite and bituminous coals, so much lignite terminology is included in general standard. Industry has always mistrusted separate standards for lignite and bituminous coal petrography.

c) Commission II (Geological and Petroleum ~~Petrology~~ Applications)

1. Bitumen (Hiltman): Most consider migrabitumens as microlithotype, not macerals. Many still use "bituminite" for primary maceral. Exsudatinitite is a problem term for petrography because it describes a habit, not a substance; ie, it includes mobilized bitumen, wax, resin, etc. Vote to consider micrabitumen (solid bitumen, exsudatinitite) as a lithotype did not receive complete approval.

2. Amorphous organic matter (Senftle): Results and discussion of round-robin analysis (42 labs) of kerogen from Devonian New Albany Shale. Good agreement on recognition of types of amorphous OM, but poor agreement on quantitative analysis.

3. U.S. Coal Petrographic Research (Bostick): Summary of current work and trends. Presented list of US petrographers with description of their present activities.

4. Image analysis (Magiscan) (Johnson) [See Automated Mic.]

5. Bituminite (Handbook chapter): Reviewed and discussed, Final comments should be sent to J. Senftle.

6. Mineral-Bituminous Groundmass (Handbook section): Presented but not discussed.

7. Alginite (telalginite, lamalginite) (Handbook section): General agreement has been reached on telalginite, but not on lamalginite.

d) Commission III (Industrial Applications)

1. Coke texture (Duchene). Franco-Brazilian work on coke texture analysis is proposed as basis for ICCP exchange exercise of four cokes from coals with 1.1, 1.26, 1.37, 1.50 %Ro(Vt).

2. Reactive Inertinite (Kruszewska). Report of two sample exchange exercises and questionnaires. Criteria for analyzing reactive inertinite have not been unified between labs. Most agreed that thermoplastic (pre-fusion) properties should be determined in coke and keyed to microchemical identification of reactive types of inertinite.

3. Coke strength prediction (Kosina). Main emphasis to improve strength prediction should be to adjust results of microscopic analysis by data from fluidity or atomic ratios. But proposal for formal working group not accepted by most because of difficulty of getting defined and reproducible conditions in actual coke making.

4. Combustion (Bengtsson). Report of analytical exercises on coals K1 and K2 and fly ash A1, A2, A2II. Diessel's I-650 fluorescence method appears good to distinguish reactive inertinite - at 1.5% fluorescence level. Drop-tube furnace char products have been prepared for K2 and are being analyzed by members.

5. Classification of combustion residues (Malichaux / Vleeskens). Presented draft proposals for analysis of morphology and surface structure of coal chars. Sizing of mosaic structures in early combustion is particularly diagnostic of combustion behavior and char formation. The type of combustion char classification by microscopy depends on whether point counting or line scanning is used.

6. Effect of macerals in combustion (Unsworth). Reported on softening behavior of inertinite in flame pyrolysis and more rapid oxidation of vitrinite than inertinite.

7. Automated microscopy (Unsworth). Reflectance distributions from 8 participating labs agree, and even "picked" ranges representing exinite, vitrinite and inertinite can be done within 10% - only about twice the dispersion from visual point counting. One lab showed that raster image analysis and scanning photometry gave equivalent results, but most labs are now working entirely with image analysis. Quantimet 900 now images 200 x 200 micrometers at once, with 0.3 micrometers per pixel.

8. Vitrinite/Inertinite boundary (Alpern / Pearson). For W.Canadian coals the boundary between reactive/inert components has been determined in reflectance distributions by statistical determination of the proportion of "inerts" (based on reflectance only) required to predict actual coke strength. This approach does not, however, aid the method of coke strength prediction by maceral analysis because it does not actually identify inert / reactive maceral components.

9. Hydrogenation residues (Davis/Potter). Handbook sheets were prepared and distributed for review on: Cenosphere, Carboplast, Granular Residue, Hydroplast, Vitriplast, Plasticoal, Partially Reacted Macerals, Unaltered Residues, and Introduction to Analysis of Hydrogenation Residue. Participants are collecting and editing photographs for the handbook sections - keyed to conditions of the experimental runs.

4. Visit to Yorkshire Regional Laboratory of British Coal: The main coal research and industrial analyses conducted are: Borehole program and detailed seam section preparation; mine planning; production quality control; coal

THE SOCIETY FOR ORGANIC PETROLOGY

preparation, petrology, palynology domestic and industrial solid fuel combustion and chimney design; use of ionizing radiation in analysis, airborne dust, mine air, remote instrumentation of mines, self rescue, behavior of mine equipment under fire conditions, mine dust and noise

5. Activities ancillary to the meeting:

Surface geologic tour of the Yorkshire (Selby) Coalfield, tour of old town of York, Tour of excavated Norse settlement at York; "mediaeval" banquet.

6. Deceased members: S Parkash, Canada; M.-Th. Mackowsky, Germany.

7. Next ICCP meeting: August 25-28, 1987, Beijing, China; at the time of the the International Carboniferous congress. The 1988 meeting will be September 5-9, at Aachen, Germany.

RECENT PUBLICATIONS

1. The papers from the First Annual Meeting of The Society for Organic Petrology (held in Virginia Oct. 15-17, 1984) have been published in a special issue of the International Journal of Coal Geology, Volume 7 (1987). Books from the American Chemical Society, P.O. Box 57136, West End Station, Washington, D.C. 20037, U.S.A.: "Organic Marine Geochemistry," by Mary Sohn (ACS Symposium Series No. 305 for \$74.95, foreign \$89.95); "Geochemical Processes at Mineral Surfaces," edited by James Davis and Kim Hayes (ACS Symposium Series No. 323 for \$99.95, foreign \$119.95); "Petroleum-derived carbons," edited by J. D. Bacha, J. W. Newman, and J. L. White, 1986, 406 pp (ACS Symposium Series No. 303 for \$74.95, foreign \$89.95); "Photochemistry of Environmental Aquatic Systems," edited by William Cooper and Rod Zika (ACS Symposium Series 327 for \$54.95, foreign \$65.95).
2. Palaeontographica Canadiana No. 2 Sponges of the Burgess Shale (Middle Cambrian) British Columbia, by J. Keith Rigby; 34 species described, 105 pages, 20 plates, 1986 - ISSN0821-7556, published by Can. Soc. Pet. Geol., Geol. Assoc. of Can., \$25.00 (plus \$4.50 mailing in Canada, \$6.75 elsewhere) in Canadian funds. Geol. Assoc. of Can. Publ., Business & Economic Service Ltd., 111 Peter Street, Suite 509, Toronto, Ontario, Canada M5V2H1.
3. New publications from the American Geophysical Union. Can be ordered directly from the publisher:
"The Changing Carbon Cycle: A Global Analysis," by J. R. Trabalka and D. E. Reichle (eds.). Springer-Verlag, New York, 592 pp, 1986, \$53.
"Coal Geophysics," by D. J. Buchanan and L. J. Jackson (eds.), Society of Exploration Geophysicists, Tulsa, OK, 466 pp, 1986, \$47.
"Notes on Sedimentary Basins in China," Open File Rep. Ser. No. 86-327, U.S. Geological Survey, Denver, CO, 1986, \$19.
"Unconventional Methods in Exploration for Petroleum and Natural Gas IV," by M. J. Davidson (ed.), Southern Methodist Univ. Press, Dallas, TX, 350 pp, 1986, \$50.
4. "Obscure" U.S.G.S. maps available from Map Center, USGS National Center, Reston, VA 22092, U.S.A.: MF-1655-F. CALIFORNIA. Map showing thermal alteration indices in roadless areas and the Santa Lucia Wilderness in the Los Padres National Forest, southwestern California, by N. O. Frederiksen. 1985. Lat 34°15' to 35°30', long 118°30' to 120°45'. Scale 1:250,000 (1 inch = about 4 miles). Sheet 36 by 46 inches. \$1.50.
5. "Coal Science: An Introduction to Chemistry, Technology and Utilization," by Rita K. Hessley, John W. Reasoner, and John T. Riley (Western Kentucky Univ.). John Wiley and Sons.

THE SOCIETY FOR ORGANIC PETROLOGY

CALENDAR

1987

- Mar. 11-12 Third Annual R. E. McKelvey Forum on Mineral and Energy Resources, U.S. Geological Survey, Denver, Colorado. Dean Kleinkopf (303-236-1212).
- Mar. 16-20 Geochemistry in deep sedimentary basins, a GSA Penrose Conf., Oxnard, CA. Lois Elms, 619-722-0027.
- Apr. 5-10 Div. of Geochemistry (Amer. Chem. Soc.), Denver, CO, U.S.A. Three technical sessions of note: Fuel Chemistry (Structure and property of low rank coals, surface chemistry of coals, advances in coal liquefaction), Geochemistry (atmospheric methane, pyrolysis in petroleum exploration), Petroleum Chemistry (Advances in oil shale chemistry). K. E. Peters, Chevron Research Co., P.O. Box 1627, Richmond, CA, 94802-0627, U.S.A. Tel. 415-620-3767.
- Apr. 24-25 Southern Regional Geochemistry Meeting, Dallas, TX. Cliff Walters, 214-470-1420.
- Apr. 26-
May 1 World Petroleum Congress, Houston, TX. C. T. Sawyer, Sec., 12th World Pet. Conf., Amer. Pet. Inst., 1220 L Street NW, Washington, D.C. 20005, U.S.A.
- May 12-14 Coastal Sediment Processes Meeting, New Orleans, LA. Nicholas Kraus, USAE Waterways Experiment Station, Coastal Engineering Res. Center, Box 631, Vicksburg, MS 39180, U.S.A.
- May 18-21 Technology and Utilization of Low-Rank Coals, Dallas, TX. Contact: 14th Biennial Lignite Symposium, University of North Dakota, Div. of Continuing Ed., Box 8277, University Station, Grand Forks, ND 58202, U.S.A.
- May 25-27 Symposium on Coastal Lowlands Geology and Geotechnology, The Hague, The Netherlands, CONGREX-Keizersgracht 610, 1017 EP Amsterdam, The Netherlands.
- June 3-5 AAPG Conference on Geochemistry in Exploration, Maturation and Migration Handbook of the Treatise of Petroleum Geology, Denver, CO. Doug Waples, Platte River Associates, 2000 West 120 Avenue, Suite 10, Denver, CO 80234, U.S.A.
- June 24-25 First European Dry Fine Coal Conference, Harrogate, Yorks, UK. Contact: Institute of Energy or Institution of Chemical Engineers. Tel.: UK-01:580 0008.

- Aug. 17-21 Second Int. Symp. on the Devonian System, Calgary, Alberta Canada. Topics include: basin evolution, biostratigraphy, black carbonates, and shales. The Canadian Soc. of Petroleum Geologists, 505, 206-7 Avenue SW, Calgary, Alberta, Canada T2P0W7 (403-264-5610).
- Aug. 24-27 Coal and Gas Conversion International Conference. Pretoria, South Africa. Contact: The Symposium Secretariat S. 380, CSIR, P.O. Box 395, Pretoria 0001, South Africa
- Sept. 7-11 XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Paleontology, Academia Sinica, Nanjing, China.
- Sept. 7-12 Computerized basin analysis in hydrocarbon exploration Szeged, Hungary. Laszlo Somos Geological Survey of Hungary, Pf. 106 H-1442, Budapest, Nepszadlonat 14
- Sept. 21-25 13th Int. Meeting on Organic Geochemistry, Venice, Italy. Program to include: organic geochemistry in petroleum exploration, basin modeling, regional studies, biological markers, primary and secondary migration, kerogen, coal, and asphaltene. Conference Secretariat--Ms. Laura Nola, AGIP Sp.A., IMPU 1 P.U., 20097 San Donata Milanese (MI), Italy.
- Sept. 24-25 Influence of Inorganic Constituents on Coal Combustion in small to medium-sized boilers, London, U.K., Dr. A. Sanyal, Babcock Power Ltd., 165 Great Dover Street, London SE14YB England.
- Sept. 28-
Oct. 2 Pittsburgh Coal Conference, Pittsburgh, PA. Contact: Pittsburgh Coal Conference, One Northgate Square, 2 Garden Center Drive, Suite 211, P.O. Box 270, Greensburg, PA 15601, U.S.A.
- ~~Sept. 30-
Oct. 3~~ ~~The Society for Organic Petrology Fourth Annual Meeting, San Francisco, CA, Margaret H. Pytte (415-842-0706).~~
- Oct. 26-30 Coal Science International Conference, Maastricht, The Netherlands. Contact: Dr. H.A.G. Chermin, Dutch Centre for Coal Specimens-SBN, P.O. Box 151, 6470 ED Eysgelshoven, The Netherlands.
- 1988
- June 5-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic

Matter in Hydrothermal Systems-Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.

August

Second Int. Conf. on Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China. Topics Include new analytical techniques, kerogen characterization, maturation parameters, kinetics of petroleum formation, geochemical facies, pyrolysis, migration, biomarkers, recent sediments, and regional studies. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

NOTES FROM THE PETROLOGY LABORATORY

machine. The first polish step uses 0.5 micron polish (alpha alumina) on a nap-free cloth with the lap turning at 60 RPMs for one and a half minutes. The slide is removed and thoroughly cleaned of all polishing compound with a stream of water (this polish washes easily and an ultrasonic cleaner is not necessary. The final step is a 1- minute polish, with the same lap speed, using the cerium oxide on a napped cloth. After washing the slide in water, while rubbing slightly with the fingers to help loosen the polish, the slides are cleaned in an ultrasonic cleaner and blown dry with a stream of air. The slides can be placed in a desiccator until ready for use.

This method is also good for coal pellets. One caution, if preparing lignites, because they are so soft, the final polishing step should be deleted.

REFERENCE

Baskin, D. K., 1979, A method of preparing phytoclasts for vitrinite reflectance, *Journal of Sedimentary Petrology*, v 49, p 633-635.

Use of brand names is for example only and does not constitute endorsement by the U.S. Geological Survey.

Note: For people wishing the names of the products used with this technique, please contact the author at (303) 236-5734.

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DID YOU KNOW

Prasanth Mukhopadhyay (Texas Bureau of Economic Geology) spent the month of December 1986 in China at the Petroleum Research Institute in Beijing and visiting the Daching and Shingli oil field research centers.

Kevin DeVanney (U.S. Steel Technical Center) and the UEC Coal & Coke Laboratory in Monroeville, PA, are considering offering an Applied Coal Petrography short course, if interested, call him at 412-825-2575.

Stan Teerman (TSOP vice president) is mailing out our new Membership Directories. If you do not receive one, perhaps we do not have your current address. Contact Stan at 213-694-9210, or write to him at Chevron Oil Field Research Company, P.O. Box 446, LaHabra, CA 90631, U.S.A.

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These publications are available from:

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NEWSLETTER

VOL. 4 NO. 2

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1987 NEWSLETTER DEADLINES

Issue No.	Info. Due to Editor by	Issue to be Mailed First Week of
3	July 22	August
4	October 21	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 U.S.A

LETTER FROM THE PRESIDENT

I am happy to report that the Society is in very good shape and that the plans for the annual meeting in San Francisco in early October are on schedule and going well. In a separate mailing, you all should soon be receiving a call for papers and more information about the meeting. You can help the Society and ensure the success of this meeting by responding promptly to this call.

The Society has been very successful in having the papers from the annual meetings published together in special issues of journals. The 1984 papers have already appeared in the International Journal of Coal Geology, the 1985 papers are now in press for a special issue of Organic Geochemistry, and the 1986 papers are in the final stages of review for another issue of Organic Geochemistry. Arrangements have again been made with Organic Geochemistry to publish the papers from this year's annual meeting.

The midyear council meeting was held in Denver in early April. At this meeting the treasurer reported the results of a successful audit. The Society is solvent, however, because the 1987 dues have been a little slow in being paid, a second dues notice will be sent out soon. I urge you to respond quickly if you have not already paid your dues. At this meeting the council also voted to accept the invitation of John Clendening and John Castano to host the 1988 annual meeting in Houston in conjunction with the AASP meeting. It was also decided to accept the invitation of

1987 OFFICERS

President	Jack Crelling 618-453-3351
Vice President	Stan Teerman 213-694-9210
President Elect	Neely Bostick 303-236-5764
Secretary-Treasurer	Sue Rimmer 606-257-4607
Newsletter Editor	Carolyn Thompson - Rizer 405-767-5138
Councilor	Jennifer Thompson 713-663-2610
Councilor	Wolf Kalkreuth 403-284-0110

Dick Harvey and Dennis Kaegi to host the 1989 meeting in Champaign-Urbana, Illinois.

We still need contributions for the "Notes from the Petrology Lab" section of the newsletter and information on new books and other publications that would be of interest to the membership. I again encourage you to contact me or any other member of the council with ideas about how we can improve the Society.

Jack Crelling

NOTES FROM THE PETROLOGY LABORATORY

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution.* Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

1987 TSOP ANNUAL MEETING

San Francisco

The 1987 TSOP Annual Meeting is coming up and we want it to be the best we have ever had! We petrographers and geochemists should use this event to show how useful our science is to industry, the government, and academic institutions. In addition to technical sessions, we are considering having a panel discussion following the Oil Shale Symposium.

The Program Committee was established at the TSOP Mid-Year Council Meeting April 5, 1987, in Denver, Colorado and consists of: Co-chairmen Stan Teerman and Tom Edison; and members Dennis Kaegi, John Brown, and Joe Senftle.

Meeting News

Dr. Alan Cook from the University of Wollongong in Australia is our invited speaker this year. He will be presenting a paper as part of the Oil Shale Symposium.

The call for abstracts was mailed to all TSOP members on May 22, 1987. Please mail abstracts to Tom Edison or Stan Teerman at the address below:

T. A. (Tom) Edison
1143 Guerrero
San Francisco, CA 94110

or

S. C. (Stan) Teerman
Chevron Oil Field Research Company
P. O. Box 446
La Habra, CA 90631

Abstracts are due July 15, 1987.

In addition, some important dates to note are:

- July 1 - Registration package and tentative program mailed to all TSOP members.
- September 1 - Deadline for hotel and advance registration.
- September 30 - October 2 - TSOP Annual Meeting.

October 3 - Monterey Field Trip.

December 31 - Manuscripts or extended abstracts due to Publications Committee.

We again plan to publish extended abstracts or manuscripts in the Journal "Organic Geochemistry."

Logistical Information

Because peak time for tourist and conference traffic in San Francisco is during the months of September and October, we strongly recommend making travel plans early. In addition, we need as many attendees to stay in the conference hotel as possible. The reservation cards for the San Francisco Hilton and Tower will be mailed to all TSOP members as part of the registration package on the first of July. The Hilton has given us excellent room rates for downtown San Francisco of \$75.00/single and \$85.00/double per night. In addition, there will be a large increase in the cost of the meeting room if less than 50 rooms are booked, so please consider staying at the Hilton.

The Bay Area public transportation system within the city is extremely efficient and there is an airport shuttle service to and from the Hilton. We are advising people not to rent cars for the conference due to the highly congested (and expensive) parking situation in downtown San Francisco.

Monterey Field Trip

Dr. Stephen A. Graham, a professor of geology from Stanford University, has offered to lead the field trip for TSOP to the Monterey Formation on Saturday, October 3, 1987. We plan to leave San Francisco between 6:00-6:30 AM on Saturday morning and will drive south to near the city of Monterey and then to the Salinas Basin to look at the Monterey Formation. The trip will take most of the day and we should arrive back in San Francisco sometime around 6:00 PM, in plenty of time to have a late dinner in the city.

Although it is not anticipated to be a problem, on rare occasions persons travelling in the area have come down with a respiratory ailment known as the "Valley

Fever." It causes flu-like symptoms after several days and in some extremely rare cases has been fatal. I have been in contact with Mr. Greg Blake of the Pacific Section of SEPM who has run field trips in the Salinas Valley. According to Mr. Blake, he has known of only one case of "Valley Fever" in the last 10 years and it was contracted in the southern San Joaquin and not the Salinas Valley. He knows of no one contracting the ailment in the area in which the TSOP field trip is going but I am obliged to warn would-be participants about it, because it is caused by a wind-borne fungus that lives in the soil. I am also required to inform you, for insurance purposes, that persons attending the TSOP Monterey field trip should do so at their own discretion and risk.

We have room for 45 participants per bus for the trip. Because we need to reserve buses early, please remember to mail the form at the bottom of the call for papers indicating interest in attending the meeting/field trip. Remember, this does not commit you to attending either, but gives us a rough idea of the number of people for which to plan. Please return these forms directly to me at the address below:

Margaret H. Pytte
Chevron U.S.A. Inc.
6001 Bellinger Canyon Road
San Ramon, CA. 94583-2398

If there are any comments, problems, complaints, or whatever, please contact either me at (415) 842-0706 or Rehana Makada at (415) 842-0652. We will be happy to hear from you.

BOOK REVIEW

GEOCHEMISTRY IN PETROLEUM EXPLORATION, by Douglas W. Waples (1985). 232 p. Published by International Human Resources Development Corporation,

Review by Jeffrey R. Levine
School of Mines and Energy Development
The University of Alabama
Tuscaloosa, Alabama 35487-1489

The first six chapters of the book provide an overview of the geochemical and geological evolution of sedimentary organic matter, including: a synopsis of organic

BOOK REVIEW

chemistry as applied to the study of kerogen, bitumen, and petroleum; the depositional origin of organic-rich sediments; the composition of solid sedimented organic matter (mainly kerogen) and its natural derivatives (bitumen, petroleum, and natural gas); geochemical partitioning of stable isotopes in organic compounds; and the geological processes of migration which bring about economic accumulations of these substances. Chapter 7 provides a valuable summary of the modern techniques of analysis and characterization of organic matter, including gas chromatography/mass spectrometry, optical microscopy, and Rock-Eval pyrolysis. Chapters 8 through 12 discuss applications to present day problems in petroleum exploration, including correlations of oil to source rock or to other oils, source rock evaluation, surface prospecting, and modelling of thermal maturity. The latter topic receives an extended treatment owing both to its widespread usage in petroleum exploration and basin analysis as well as to the author's own contributions in applying and testing Lopatin's Temperature-Time Index (TTI) model of organic maturation.

Within each chapter, topics are organized into an elaborate system of headings and subheadings, but in the absence of a corresponding numbering scheme it is very easy to become lost in the organizational hierarchy. Nevertheless, the headings impose a logical structure to the book and enable the reader to quickly locate material of special interest. Most chapters end with a short Summary section, and the latter chapters include solved practice problems by which the reader may test his/her understanding of the techniques. The book includes a helpful glossary providing concise definitions of the terminology and methodology used in the field of organic geochemistry. For example, terms such as "hydrocarbon" and "bitumen," which are often used ambiguously in the literature, are defined according to their most common current usage, and frequently used acronyms such as CAI, TOC, and MPI are also defined. The Index is also very thorough and complete.

The book's contracted introductory style does not permit thorough treatment of most topics discussed, so readers requiring additional information will have to refer to the "Suggested Readings" listed at the end

BOOK REVIEW

of each chapter or the references listed at the end of the book. Unfortunately, the book is flawed by a lack of adequate literature citations within the text, so the novice reader will have little idea of the origin of certain conclusions, or where to pursue topics in greater detail. Notwithstanding Waples' disclaimer in the Introduction that the book was not designed to serve as a reference volume, there are many places where specific references would have been not only appropriate but extremely useful. For readers requiring more information on these subjects, Waples recommends *Petroleum Formation and Occurrence* by Tissot and Welte or *Petroleum Geochemistry and Geology* by Hunt. I concur; but for a comprehensive, straightforward introduction to these topics, Waples' book is a good place to start.

RECENT PUBLICATIONS

1. Oklahoma Geological Survey Special Publication 86-2, *Temperature Gradient Information for Several Boreholes Drilled in Oklahoma*, prepared by petroleum geologist William E. Harrison and engineering geologist Kenneth V. Luza of the Survey, is modified from a report to the U.S. Department of Energy as part of an OGS contract with DOE to study the geothermal resources of Oklahoma.

One of the main purposes of the study was to examine the relationship between borehole temperatures from geophysical logs--the principal source of geothermal-gradient information--and postdrilling equilibrated formation temperatures. A microthermometer constructed by OGS was used to study six industry wells in central and eastern Oklahoma. The results serve as an independent check on a previously published and widely used geothermal-gradient map of Oklahoma.

SP 86-2 is available over the counter or postpaid from the Oklahoma Geological Survey, 830 VanVleet Oval, Norman, OK 73019 U.S.A. The price is \$3.

2. *Analyses of Natural Gases, 1985*. Analyses and related source data for 517 natural-gas samples from 25 states and one foreign country are included in this publication by B. J. Moore

and Stella Sigler. Of the total samples, 298 were collected during calendar year 1985; the remainder were collected earlier, but releases granting permission to publish were not received before 1985. All samples were obtained and analyzed as part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free-market economies. This survey has been conducted since 1917. The analyses published in this 182-page information circular were made by mass spectrometer and chromatograph.

Order IC 9096 from: U.S. Bureau of Mines, Publication Distribution, Cochran Mill Road, P.O. Box 18070, Pittsburgh, PA 15236. The book is available free of charge. Please enclose a self-addressed label.

3. The first issue of "Global Biogeochemical Cycles" was published by the American Geophysical Union in March 1987. It includes articles on fecal pellet fractionation and methane emissions from natural wetlands. AGU 2000 Florida Avenue, NW, Washington, DC 20009 U.S.A., Phone ~~800-424-2488~~.
4. *Petroleum Geochemistry* by R. E. Chapman, 1983, *Developments in Petroleum Science*, 16, Elsevier, Amsterdam, 416 pp., U.S. \$44.25 "This textbook attempts to explain past successes and failures of finding petroleum by examining the basic chemistry and physics of the creation and movement of petroleum fluids in the subsurface."
5. *Petroleum Geology of the North European Margin* by A. M. Spencer, 1984, Graham and Trotman Ltd., approx. U.S. \$100 (hardcover).
6. *Chinese Journal of Geochemistry*, published in English quarterly, edited under the auspices of The Chinese Society of Mineralogy, Petrology, and Geochemistry and the Institute of Geochemistry, Academia Sinica. Free sample copies available: VNU Science Press, P.O. Box 2903, 3500GB Utrecht, The Netherlands (Vol. 5, 1986, contained "Organic matter maturity and oil/gas prospects in middle-upper proterozoic and lower paleozoic carbonate rocks in northern China" by Liu Baoquan et al.)

CALENDAR

- 1987**
- June 10-12 Short Course in the Theory and Practice of Organic Petrology. Alan Davis, 533 Deike Building, The Pennsylvania State University, University Park, PA 16802 (814-865-6544).
- June 24-25 First European Dry Fine Coal Conference, Harrogate, Yorks, UK. Contact: Institute of Energy or Institution of Chemical Engineers. Tel.: UK--01: 580 0008.
- July 13-17 The 22nd Annual Meeting of the Microbeam Analysis Society, Hawaii. Minisymposium on Optical Microprobe Spectroscopy (fluorescence, Raman, etc.). Edgar Etz 301-975-3909.
- Aug. 17-21 Second Int. Symp. on the Devonian System. Calgary, Alberta Canada. Topics include: basin evolution, biostratigraphy, black carbonates, and shales. The Canadian Soc. of Petroleum Geologists, 505, 206-7 Avenue SW, Calgary, Alberta, Canada T2POW7 (403-264-5610).
- Aug. 24-27 Coal and Gas Conversion International Conference. Pretoria, South Africa. Contact: The Symposium Secretariat S. 380, CSIRO, P.O. Box 395, Pretoria 0001, South Africa.
- Aug. 30-Sept. 4 Division of Fuel Chemistry (Amer. Chem. Soc.), New Orleans, LA. Symposium on Modeling Coal Pyrolysis. Michael Serio 203-528-9806.
- Division of Geochemistry - Symposium on Geochemistry of Gulf Coast Basins. T. J. Weismann 412-434-5824.
- Also Organic Geochemistry: Techniques and Applications (MS, NMR, Biomarkers) and Statistical Methods in Organic Geochemistry, Martin Quirke 305-554-2606.
- Aug 31-Sept. 4 XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Palaeontology, Academia Sinica, Nanjing, China.
- Sept. 7-12 Computerized basin analysis in hydrocarbon exploration Szeged, Hungary. Laszlo Somos Geological Survey of Hungary, Pf. 106 H-1442, Budapest, Nepstadionat 14.
- Sept. 21-25 13th Int. Meeting on Organic Geochemistry, Venice, Italy. Program to include: organic geochemistry in petroleum exploration, basin modeling, regional studies, biological markers, primary and secondary migration, kerogen, coal, and asphaltenes. Conference Secretariat--Ms. Laura Nola, AGIP Sp.A., IMPU 1°P.U., 20097 San Donata Milanese (MI), Italy.

- Sept. 24-25 Influence of Inorganic Constituents on Coal Combustion in small to medium-sized boilers, London, U.K., Dr. A. Sanyal, Babcock Power Ltd., 165 Great Dover Street, London SK14YB England.
- Sept. 28-Sept. 30 Pittsburgh Coal Conference, Pittsburgh, PA. Contact: Pittsburgh Coal Conference, One Northgate Square, 2 Garden Center Drive, Suite 211, P.O. Box 270, Greensburg, PA 15601, U.S.A.
- Sept. 30-Oct. 3 The Society for Organic Petrology Fourth Annual Meeting, San Francisco, CA, Margaret H. Pytte (415-842-0706).
- Oct. 7-10 American Assoc. of Stratigraphic Palynologists, 20th Annual Meeting, Halifax, Nova Scotia, Canada. Abstracts due July 15. AASP 1987 Atlantic Geoscience Centre, P.O. Box 1006, Dartmouth, Nova Scotia B2Y4A2 Canada.
- Oct. 26-30 Coal Science International Conference, Maastricht, The Netherlands. Contact: Dr. H.A.G. Chermin, Dutch Centre for Coal Specimens-SBN, P.O. Box 151, 6470 ED Eygelshoven, The Netherlands.

1988

- June 7-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic Matter in Hydrothermal Systems-Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.
- August Second Int. Conf. on Petroleum Geochemistry and Exploration in the Afro Asian Region, Beijing, China. Topics include new analytical techniques, kerogen characterization, maturation parameters, kinetics of petroleum formation, geochemical facies, pyrolysis, migration, biomarkers, recent sediments, and regional studies. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.

1989

- July 9-19 The 28th International Geological Congress, Washington, D.C., U.S.A. Abstracts due by Feb. 1, 1989. Symposia on the Sedimentary Crust in Space and Time; Resources: Oil, Gas, Coal, and Mineral Deposits. Bruce Hanshaw, Secretary General, P.O. Box 1001, Herndon, VA 22070-1001 U.S.A. Phone 703-648-6053.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

TABLE OF THE VARIETY OF SUBJECTS COVERED AT ANNUAL TSOP MEETINGS

by Neely Bostick

Meeting Location Meeting Number (year)	VA (84)	TX II(85)	KY III(86)
General Geology, Paleogeothermics	1	1	1
Coal Geology & Mining and Preparation	1	1	1
Coal Properties, Technology	1	1	1
Organic Geochemistry	1	1	1
Petroleum Source, Sedimentology	1	1	1
Petrographic Technique	1	1	1
Ore Deposits	1	1	1
ICCP, etc.	1	1	1
Lab Tour	1	1	1

Total Number of Presentations 22 26 23

NOTES FROM
THE PETROLOGY LABORATORY

COMBINED WHITE-/BLUE-LIGHT MACERAL ANALYSIS

Alan Davis

Coal Research Section
517 Deike Building
The Pennsylvania State University
University Park, PA 16802

In prior publications, I have indicated how the use of white- and blue-light in combination can give improved estimates of the contents of liptinite macerals in petrographic analysis (Davis, 1975; 1984). However, details of the analytical technique have not been described. This article will outline some different means of deriving a combined analysis, depending upon the microscopic method used and the categories identified in the analysis.

A distinction should be drawn between a combination analysis arrived at by the Single-Scan method and the Two-Scan method. In the former, the means of illumination is changed repeatedly during analysis so that all appropriate points are examined in both white- and blue-light; a total of 1000-2000 points might be counted for a single coal. In the latter method, two separate analyses of 1000-2000 points each are performed, one entirely in white-light, the other entirely in blue light (though some peeking in white-light may be necessary).

Which method is used is mainly a matter of personal preference. I prefer the Two-Scan method in order to minimize switching between the two modes of illumination, although the Single-Scan method is probably quicker as well as more precise (because the white- and blue-light analyses both refer to the same points). The Two-Scan method will be preferred by those analysts who advocate the use of a dry lens for fluorescence examination. Because of these considerations it seems appropriate that any reported combination analysis should be accompanied by an indication of whether the method used in its determination was Single-Scan or Two-Scan,

Single-Scan Method

No special calculations are required for the Single-Scan method, which can be conducted on a mineral-free or mineral-containing basis. Mineral, as a category, can be counted in the white-light mode, or calculated from ash and sulfur values (ASTM, 1986; Davis, 1984). Calculation of volume % mineral species in this way for low-rank coals could result in incorrect values.

Two-Scan Method

Table 1 illustrates one way in which the results of separate white- and blue-light analyses can be combined. The footnotes give details of the calculations involved. In blue light, vitrinite, inertinite and mineral collectively appear black or only very weakly fluorescent and therefore are counted as a single category. Consequently the blue-light analysis is mineral-containing. A value for volume % mineral will have to be either determined during the white-light point count, or calculated from the percentages of ash and sulfur. This value can then be used to convert the percentages of the liptinite macerals, determined in blue light, to a mineral-free basis. These mineral-free liptinite values have been entered into the Combined column in Table 1; the blue-light values are accepted as being more accurate than those determined in white light. The remaining macerals (vitrinite + inertinite) in the combined analysis will sum to (100 - total liptinite) (mineral-free). Vitrinite and inertinite macerals in the Combined column are proportioned according to their relative amounts obtained in the white-light analysis. The percentages listed in Table 1 provide an example of how the combined analysis may be calculated.

If fluorescent vitrinite is counted as a separate category in the blue-light analysis, its value, converted to a mineral-free basis, is transferred to the Combined column in the same manner as for liptinite macerals. An adjustment is then needed to calculate the proportion of non-fluorescing vitrinite.

References

American Society for Testing and Materials (1986). Microscopical Determination of Volume Percent of Physical Components of Coal, Annu. Book ASTM Standards, D 2799-86, pp. 392-393.

Davis, A. (1975). Developments in the Techniques of Coal Microscopy, Microstructural Science, 3, Part B, pp. 973-990.

Davis, A. (1984). Coal Petrology, Chapt. 3 In Coal Geology and Coal Technology (C. Ward, ed.), Blackwell Scientific, Melbourne, pp. 74-112.

**NOTES FROM
THE PETROLOGY LABORATORY**

Table 1. Calculation of Combined White-/Blue-Light Maceral Analysis

	White Light ¹ (mineral-free)		Blue-Light ^{2,3} (mineral-containing)		Combined ^{4,7,8} (mineral-free)
Vitrinite	V (75.3)		—	V _c	└ (71.9)
Sporinite	E (4.2)		E _a (5.7)	E _b	└ (5.9)
Resinite	R (1.5)		R _a (1.4)	R _b	└ (1.5)
Cutinite	C (1.1)		C _{ab} (1.1)		C _c (1.1)
Alginite	A (0.0)		A _{ab} (0.0)		A _c (0.0)
Liptodetrinite	L (2.3)	L	ab(4.5)		L (4.7)
Fusinite	F (1.7)		—		F _c (1.6)
Semifusinite	S (9.0)		—	S _c	└ (8.6)
Macrinite	M (0.6)		—		M _c (0.6)
Micrinite	G (3.4)		—	G _c	└ (3.2)
Inertodetrinite	I (0.9)		—	I _c	└ (0.9)
Non-Fluorescing	NF ⁵ (87.3) ^{6,9}	---			--

TOTAL 100.0 100.0 100.0

1. Counted on mineral -free basis

2. Counted on mineral -containing basis

3. Categories may also include exudatinite, bituminite and fluorinite

4. Calculated on mineral-free basis

5. NF = Non-fluorescing macerals and minerals

6. Mineral Matter Volume %, counted or calculated as:

$$100[(1.08A + 0.55S) / 2.8]$$

$$[100 - (1.08A + 0.55S)] / 1.35 + (1.08A + 0.55S) / 2.8$$

where A and S are dry ash and sulfur, respectively (ASTM, 1986).

7. For example, $E_b = 100 E_a / (100 - MM)$

8. For example, $V_c = V[100 - (E_b + R_b + C_b + A_b + L_b)] / ((V + F + S + M + G + I))$

9. In numerical example, Mineral Matter (Vol. %) is 3.5..

DID YOU KNOW



Ken Yordy (ARCO) is our new Membership Chairman, please send all information about address changes etc., to Ken.

Mark Pasley (Southern Illinois University) won the Best Student Paper Award at the Annual TSOP Meeting in Lexington (September, 1986). A check for \$100 accompanies the award.

Alan Cook (University of Wollongong) will be the invited speaker at the Annual TSOP Meeting to be held in San Francisco September 30 through October 3, 1987. He also plans to go on the 1 day field trip.

**CHANGE OF ADDRESS &
MEMBERSHIP APPLICATION**

Please notify Ken Yordy, ARCO Oil and Gas Company, P.O. Box 2819, Dallas, TX 75221, U.S.A., Phone 214-422-6250, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Ken.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), to be used with the figures in the original German publication. \$6.50
3. The original German copy of M. Teichmuller (1982) "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkohlungsverhalten." \$6.50

These publications are available from:

Harvey S. Zeiss
16918 Judyleigh Dr.
Houston, Texas 77084
Phone (713) 463-2918



1987 NEWSLETTER DEADLINE

Issue No.	Info. Due to Editor by	Issue to be Mailed First Week of
4	October 21	November

Please send all contributions to:
Carolyn Thompson-Rizer
Conoco Inc.
P. O. Box 1267
Ponca City, OK 74603 U.S.A

1987 OFFICERS

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Vice President	Stan Teerman 213-694-9210
President Elect	Neely Bostick 303-236-5764
Secretary-Treasurer	Sue Rimmer 606-257-4607
Newsletter Editor	Carolyn Thompson-Rizer 405-767-5138
Councilor	Jennifer Thompson 713-663-2610
Councilor	Wolf Kalkreuth 403-284-0110

ELECTION OF THE 1988 TSOP COUNCIL

President-elect	Jack Burgess, Chevron
Vice-president	Dick Harvey, Illinois State Geological Survey
Editor	Eileen Williams, UNOCAL
Councilor	Jeff Levine, University of Alabama

The Nominating Committee was chaired by Dennis Kaegi, with the following members: Dick Harvey, Ron Stanton, John Shane, and Dan Pearson. The election results were reported by Neely Bostick, the chairman of the Balloting Committee, which included Peter Groth and Jim Jansen. The Article VII amendment passed, which hopefully will help next year's election to be conducted in a more timely fashion, we realize that this year's short return time was very difficult, particularly for members dealing with overseas mail. We thank all those who did participate, a total of 74 votes were counted.

1987 TSOP ANNUAL MEETING

So far, a total of 25 talks and several poster sessions on oil shales, coal, organic geochemistry, and palynology are planned for the October 1 and 2 meeting. To be ready for the meeting, it is strongly suggested that you arrive in San Francisco and register for the TSOP meeting on September 30. Do not forget the field trip opportunity to visit outcrops of the Monterey shale on October 3. **If you have either an oral or poster presentation (especially on oil shales or organic geochemistry) ready to go, please consider bringing your work to San Francisco. Last minute abstracts are still being reviewed, so call or write: Stan Teerman, Chevron Oil Field Research Company, P. O. Box 446, LaHabra, CA 90631 (Telephone 213-694-9210).**

San Francisco

NOTES FROM THE PETROLOGY LABORATORY

PERSPECTIVE ON VITRINITE
REFLECTANCE ANALYSIS AS A
THERMAL MATURITY PARAMETER

Joseph T. Senftle

Over the last six years, I have found myself explaining to colleagues that vitrinite reflectance data must be used in context. There is inherent error in reflectance analysis. Vitrinite reflectance measurement is a tool which can be used to illustrate maturity trends in an area. These data, however, should be used in conjunction with additional geochemical maturity parameters.

As you know, many sedimentary rocks are not full of little organic particles which are clearly discernible as indigenous vitrinite particles. Vitrinite is a very variable component, and even in coals, we will get a very considerable spread in reflectance values due to the occurrence of "Vitrinite A," "Vitrinite B," and pseudovitrinite." Added to this problem, we can get additional variation in reflectance values due to well caving, bitumen impregnation, oxidation, and drilling additives. Further, misidentification of solid bitumen, reworked vitrinite and low reflecting semifusinite from a representative cutting sample is a constant problem. Thus, even a "nice" shale sample will exhibit a considerable spread of results due to variation in the vitrinite itself plus the other factors mentioned above.

Compounding the problem of this analysis, vitrinite reflectance is performed by some workers using whole rock pellet mounts and by others using polished mounts of concentrated kerogen preparations. The latter analysis uses a statistical distinction of the indigenous reflectance population based on a relatively large number of reflectance measurements, while the former relies on a limited number of measurements made on vitrinite particles interpreted to be representative of the sample. Personally, I prefer to use whole-rock polished pellet mounts which allow me to look at the entire sample. I will restrict my further comments to this method of vitrinite reflectance measurement.

The actual selection of vitrinite particles for analysis from a polished whole-rock mount is very subjective. The choice is based not only upon the appearance of the vitrinite, its form, relief, association with pyrite, and the staining of the associated clays, but also the appearance of the sediments and the color of the bitumen in that sediment. By looking at the entire sample and by integrating all available information known about a series of samples, one can use not only his/her eyes but also his/her head to build up a maturity profile for a well.

For example, I recently studied a series of well cutting samples which contained a mixture of siltstone and shale fragments. The siltstone fragments contained well preserved vitrinite particles, but I didn't measure them because they were of high maturity and the character of the sediment was low maturity. I interpreted these vitrinite particles to represent reworked material. The appearance of these particles in the rock matrix supports this conclusion since the vitrinite occurred as rounded blebs and exhibited strong relief. Further, the higher level of maturity was not consistent throughout the well and did not correlate with the maturity of adjacent wells in the basin. In short, the vitrinite reflectance data for a well section have to make sense or I will question their validity, inferring possible contamination by caving, additives, oxidation, or reworking of organic matter. If there is really something anomalous in the succession of samples, I can generally discern it because subsequent samples will also be anomalous. At this time, I can go back and look again and determine whether the "odd" samples are real.

I cannot stress enough the importance of using all possible information while studying samples. It is unfortunate that many contract service laboratories are not told anything about the samples they are working on. Fundamental information such as the type of sample, geographic location, and age of the samples can be extremely useful to the petrographer. For example, if an unconformity is suspected, this information would be very useful to the petrographer, permitting him/her to be more alert and on the lookout for oddities.

NOTES FROM
THE PETROLOGY LABORATORY

It is quite reasonable for one to test and scrutinize vitrinite reflectance as an analytical method. It is just as important, however, for the geochemist or explorationist to look down a microscope and obtain an understanding of the material which is being used as a maturity parameter. Petrographic methods are by nature highly subjective and the results are very dependent upon the experience level of the operator. It is this subjective nature, however, which is a strong point of this analytical approach. Unlike methods such as Rock Eval and solvent extraction which yield information about the bulk sample, petrographic analysis of sediments permits the recognition of discrete organic constituents, including the distinction between indigenous from reworked or additive components.

I believe that I have just scratched the surface concerning the problems and benefits of vitrinite reflectance as a means to evaluate the maturity of a sediment. Clearly there is a need to improve our abilities to make this evaluation. I believe this improvement will not come in the form of more advanced instrumentation, but rather by the integration of geological information with petrographic information and that this combined knowledge will be used to better interpret a full suite of geochemical data.

NOTES FROM
THE PETROLOGY LABORATORY

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. Send all Petrology Lab Notes to Dr. Alan Davis, 513 Deike Building, The Pennsylvania State University, University Park, PA 16802.

1987 TSOP ANNUAL MEETING

San Francisco

AUGUST NEWSLETTER UPDATE

The 1987 TSOP Annual Meeting is coming up very soon. In addition to technical sessions, we are considering having a panel discussion following the Oil Shale Symposium.

The Program Committee consists of: Co-chairmen Stan Teerman and Tom Edison; and members Dennis Kaegi, John Brown, and Joe Senftle. Please contact either Stan or Tom if you have any questions about the program.

Meeting News

Dr. Alan Cook from the University of Wollongong in Australia is our invited speaker this year. He will be presenting a paper entitled "Organic Petrological Studies of Oil Shales" as part of the Oil Shale Symposium.

The registration package was mailed to all TSOP members in good standing in July 1987. If you have not received the registration materials please contact me at the address below.

Margaret H. Pytte
6001 Bollinger Canyon Road
San Ramon, CA 94583
(415) 842-0706

The pre-registration deadline is
September 1, 1987.

San Francisco.

In addition, some important dates to note are:

- September 1 - Deadline for registration at the San Franciscan Hilton.
- September 30 - October 2 - TSOP Annual Meeting.
- October 3 - Monterey Field Trip,
- December 31 - Manuscripts or extended abstracts due to Publications Committee.

We again plan to publish extended abstracts or manuscripts in the Journal "Organic Geochemistry."

Logistical Information

Because peak time for tourist and conference traffic in San Francisco is during the months of September and October, we strongly recommend making travel plans early. In addition, we need as many attendees to stay in the conference hotel as possible. The reservation cards for the San Francisco Hilton and Tower are part of the registration package. The Hilton has given us excellent room rates for downtown San Francisco of \$75.00/single and \$85.00/double per night. In addition, there will be a large increase in the cost of the meeting room if less than 50 rooms are booked, so please consider staying at the Hilton.

The Bay Area public transportation system within the city is extremely efficient and there is an airport shuttle service to and from the Hilton. We are advising people not to rent cars for the conference due to the highly congested (and expensive) parking situation in downtown San Francisco.

Monterey Field Trip

Dr. Stephen A. Graham, a professor of geology from Stanford University, has offered to lead the field trip for TSOP to the Monterey Formation on Saturday, October 3, 1987. We plan to leave San Francisco around 6:00 AM on Saturday morning and will drive south to near the city of Monterey and then to the Salinas Basin. The trip will take most of the day and we should arrive back in San Francisco sometime around 6:00 PM, in plenty of time to have a late dinner in the city.

We have room for 45 participants on the trip. Space is available on a first-come first-serve basis so make your reservations early.

If there are any comments, problems, complaints, or whatever, please contact either me at (415) 842-0706 or Rehana Makada at (415) 842-0652. We will be happy to hear from you.

This is your **LAST NEWSLETTER**, if you have not yet become a member of TSOP, please send a \$15 check to Sue H. University of Kentucky, Lexington KY 40502, U.S.A. (T

STUDENT PAPER AWARD
by Suzanne Russell

At the annual TSOP meeting a special award may be given for a Student Paper. The following guidelines for the Outstanding Student Paper award were approved by the TSOP council in April 1986:

1. The student should be a member in good standing of TSOP.
2. The subject presented must have been initiated and completed while the presenter was a student.
3. To be considered a student, a person should be actively enrolled at a college or university at the time of the presentation or have been enrolled within 12 months previous to the presentation.
4. The student must be the senior author and the presenter if a paper has multiple authors.
5. The award will not be given unless a minimum of 3 student papers are presented. If none of the student papers meet a minimum standard, as determined by the Awards Committee, no award will be given.

A copy of the evaluation form used to select the Outstanding Student Paper at the 1986 TSOP meeting is shown below.

**OUTSTANDING STUDENT PAPER AWARD
SPEAKER EVALUATION**

Speaker's Name _____

Title of Presentation _____

EVALUATION CRITERIA:

TECHNICAL CONTENT (maximum 50 pts.)

ORIGINALITY (20 pts.) _____
choice of and statement of topic, new concepts, interpretations

LOGIC AND EXPERIMENTAL DESIGN (10 pts.) _____
logical and smooth progression of the problem, the study, and the results

SIGNIFICANCE OF RESULTS (10 pts.) _____
new and useful to the field

CONCLUSIONS (10 pts.) _____
supported by the data, well-documented

PRESENTATION AND DELIVERY (maximum 50 pts.)

ORGANIZATION AND CLARITY (20 pts.) _____

VISUALS (10 pts.) _____
clarity, legibility, and support of speaker's points

DELIVERY (20 pts.) _____
poise, enthusiasm, smooth and well paced delivery, finished within time limit

aid your 1987 DUES. If you wish to continue to
paid your 1987 DUES. If you wish to continue to
Rimmer, Department of Geology, Bowman Hall,
1-800-255-8768

RECENT PUBLICATIONS

1. Australian Oil Shales: A Compendium of Geological and Chemical Data by P. T. Crisp, J. Ellis, A. C. Hutton, J. Korth, F. A. Martin, J. P. Saxby (1987). Copies can be requested through A. C. Hutton, Dept. of Geology, University of Wollongong, P.O. Box 1144, Wollongong, NSW 2500, Australia.

This volume includes seven plates of color photomicrographs often showing both incident white and blue light conditions; a glossary of terms; and a bibliography arranged in a historical format to illustrate more than 100 years of interest in Australian oil shales.

2. Names of coal beds in the northeastern Oklahoma shelf area by L. A. Hemish (1987) in Oklahoma Geology Notes, Vol. 47, No. 3, p. 96-113. Single copies for \$1.50 are available from the Oklahoma Geological Survey, 830 Van Vleet Oval, Room 163, Norman, OK 73019, U.S.A.

Since a list of coal bed names recognized by the Oklahoma Geological Survey has not been published in more than 30 years, an updated version is given in the figures and table of this publication.

3. Two volumes of the AAPG "Treatise of Petroleum Geology" are now available: Geologic Basins I (Classification, Modeling, Predictive Stratigraphy) and Geologic Basins II (Evaluation, Resource Appraisal, and World Occurrence of Oil and Gas). Each volume is over 400 pages. Contact AAPG Bookstore, P.O. Box 979, Tulsa, OK 74101-0979, U.S.A.

4. Marine Geology, Vol. 75, No. 1/4, 1987--Special Issue "Extant and Ancient Anoxic Basin Conditions in the Eastern Mediterranean," edited by J. E. Van Hinte, M. B. Cita, and C. H. Van der Weijden.

5. International Journal of Coal Geology, Vol. 8, No. 1/2, June 1987--Special Issue "Peat: Geochemistry, Research, and Utilization," edited by D. J. Boron. Eleven papers ranging from depositional environments to bitumen or wax yields from peats.

6. Journal of Petroleum Geology, Vol. 10, No. 2, April 1987--Five papers on the Orinoco oil belt of Venezuela.

1987

CALENDAR

- | | |
|-----------------|---|
| Aug. 17-21 | Second Int. Symp. on the Devonian System, Calgary, Alberta Canada. Topics include: basin evolution, biostratigraphy, black carbonates, and shales. The Canadian Soc. of Petroleum Geologists, 505, 206-7 Avenue SW, Calgary, Alberta, Canada T2F0W7 (403-264-5610). |
| Aug. 24-27 | Coal and Gas Conversion International Conference. Pretoria, South Africa. Contact: The Symposium Secretariat S. 380, CSIR, P.O. Box 395, Pretoria 0001, South Africa. |
| Aug. 30-Sept. 4 | Division of Fuel Chemistry (Amer. Chem. Soc.), New Orleans, LA, Symposium on Modeling Coal Pyrolysis. Michael Serio 203-528-9806. Division of Geochemistry--Symposium on Geochemistry of Gulf Coast Basins. T. J. Weismann 412-434-5824. |
| Aug. 31-Sept. 4 | Also Organic Geochemistry: Techniques and Applications (MS, NMR, Biomarkers) and Statistical Methods in Organic Geochemistry, Martin Quirke 305-554-2606. |
| Aug. 31-Sept. 4 | XI International Congress of Carboniferous Stratigraphy and Geology, Beijing, China. Yang Jingzhi, Nanjing Inst. of Geology & Paleontology, Academia Sinica, Nanjing, China. |
| Sept. 7-10 | Coal Combustion International Symposium, Beijing, China. Peter Mills, General Manager, Combustion Systems Ltd., Coal Research Establishment, Stoke Orchard, GL 52 4RZ, U.K. |
| Sept. 7-12 | Computerized basin analysis in hydrocarbon exploration Szeged, Hungary. Laszlo Somos Geological Survey of Hungary, Pf. 106 H-1442, Budapest, Nepstadionat 14. |
| Sept. 13-15 | 3rd Canadian Coal Conference, Jasper, Alberta, Canada. Coal Association of Canada, Suite 301, 1000 8th Avenue SW, Calgary, Alberta T2P 3M7, Canada. |
| Sept. 13-19 | Cokemaking: 1st International Congress and Exhibition, Essen, FRG. Steinkohlenbergbauverein, ICMC, P.O. Box 130140, 4300 Essen 13, FRG. |
| Sept. 14-16 | Petroleum and Chemical Industry Conference, Calgary, Alberta, Canada. D. Grant, Esso Resources, 237-4th Ave. SW, Calgary, Alberta T20 PSJ, Canada. |

CALENDAR

- Sept. 15-17 6th International Coal Testing Conference, Charleston, West Virginia, U.S.A. Kim Jarrell, Standard Laboratories, Inc., 3322 Pennsylvania Avenue, Charleston, WV 25302, U.S.A.
- Sept. 21-25 13th Int. Meeting on Organic Geochemistry, Venice, Italy. Program to include: organic geochemistry in petroleum exploration, basin modeling, regional studies, biological markers, primary and secondary migration, kerogen, coal, and asphaltenes. Conference Secretariat--Ms. Laura Nola, AGIP Sp.A., IMPU 1°P.U., 20097 San Donata Milanese (MI), Italy.
- Sept. 23-25 Polynuclear Aromatic Hydrocarbons 11th International Symposium, Gaithersburg, Maryland, U.S.A. K. C. Stang, National Bureau of Standards, A345 Physics Building, Gaithersburg, MD, 20899, U.S.A.
- Sept. 24-25 Influence of Inorganic Constituents on Coal Combustion Imperial College, London, U.K., Dr. A. Sanyal, Babcock Power Ltd., 165 Great Dover Street, London SE14YB England.
- Sept. 28-Oct. 1 Coal Committee Meeting, 83rd session, Geneva, Switzerland. Klaus Brendow, Director--Energy Division, U.N. Economic Commission for Europe, Palais des Nations, CH-1211 Geneva 10, Switzerland.
- Sept. 28-Oct. 2 Pittsburgh Coal Conference, Pittsburgh, PA. Contact: Pittsburgh Coal Conference, One Northgate Square, 2 Garden Center Drive, Suite 211, P.O. Box 270, Greensburg, PA 15601, U.S.A.
- Sept. 30-Oct. 3 **The Society for Organic Petrology Fourth Annual Meeting, San Francisco, CA, Margaret H. Pytte (415-842-0706).**
- Oct. 1-2 24th Coal Science Congress, Tokyo, Japan. Katsuyuki Takada, Coal Science Div., Kairaku Bldg., 6-5-4 Sotokanda, Chiyoda-Ku, Tokyo 100, Japan.
- Oct. 7-10 American Assoc. of Stratigraphic Palynologists, 20th Annual Meeting, Halifax, Nova Scotia, Canada. Abstracts due July 15. AASP 1987 Atlantic Geoscience Centre, P.O. Box 1006, Dartmouth, Nova Scotia B2Y4A2 Canada.
- Oct. 13-15 Effects of Coal Quality on Power Plants Conference, Atlanta, Georgia, U.S.A. Arun Mehta, EPRI, P.O. Box 10412, Palo Alto, California, 94303, U.S.A.
- Oct. 15-16 Fuel Society of Japan: 83rd Annual Meeting on Coke, Nagoya, Japan. Naoya Imano, Coke Div., The Fuel Society of Japan, Kairaku Bldg., 6-5-4 Stokanda, Chiyoda-Ku, Tokyo 100, Japan.
- Oct. 18, 21 American Coke and Coal Chemicals Institute National Meeting, White Sulphur Springs, West Virginia, U.S.A. American Coke and Coal Chem. Inst., 1255 23rd Street, NW, Washington, DC, 20037, U.S.A.
- Oct. 26-30 Coal Science International Conference, Maastricht, The Netherlands. Contact: Dr. H.A.G. Chermin, Dutch Centre for Coal Specimens-SBN, P.O. Box 151, 6470 ED Eygelshoven, The Netherlands.
- Oct. 28-31 Coal Ash Utilization 8th Int. Symposium, Washington, DC. American Coal Ash Assoc., 1819 H Street, NW, Suite 510, Washington, DC, 20006, U.S.A.
- Nov. 3-6 Characterization of Products from Coal Pyrolysis Symp., Metz, France. G. Kirsch, Colloque Pyrolyse-L.C.S.O., Faculte des Sciences, Universiti de Metz, 57045 Metz Cedex, France.
- Dec. 6-8 Applied Coal Technology Seminar, Copenhagen, Denmark. DELTA-H Inst., P.O. Box 1053, Springfield, NJ, 07081, U.S.A.
- May 11-13 V. M. Goldschmidt Conference, near Baltimore, Maryland, U.S.A. Symposia on paleoceanography, organic geochemistry and hydrocarbon exploration (R. P. Philp), origin and diagenesis of humic substances, coal, and kerogen (P. G. Hatcher). Abstracts due November 20, 1987. H. L. Barnes, 235 Deike Building, The Pennsylvania State University, University Park, PA 16802, U.S.A. Tel. 814-865-7573.
- June 5-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic Matter in Hydrothermal Systems-Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.
- August Second Int. Conf. on Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China. Topics include new analytical techniques, kerogen characterization, maturation parameters, kinetics of petroleum formation, geochemical facies, pyrolysis, migration, biomarkers, recent sediments, and regional studies. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.
- August 28-Sept. 3 The International Palynological Congress, University of Queensland, St. Lucia, Brisbane, Australia. Secretariat, 7IPC, Uniquet Ltd., Univ. of Queensland, St. Lucia, Qld. 4067, Australia, Tel. 6173772733. Abstract deadline, Jan. 31, 1988.
- 1989**
- July 9-19 The 28th International Geological Congress, Washington, DC, U.S.A. Abstracts due by Feb. 1, 1989. Symposia on the Sedimentary Crust in Space and Time; Resources: Oil, Gas, Coal, and Mineral Deposits. Bruce Hanshaw, Secretary General, P.O. Box 1001, Herndon, VA 22070-1001 U.S.A. Phone 703-648-6053.
- Dec. 17-22 Organic Geochemistry of Pacific Rim Basins, Amer. Chem. Soc., Dir. Geochem, Honolulu, Hawaii, U.S.A. J. Curiale Unocal, P.O. Box 76, Brea, CA, 92621, U.S.A. Tel. 714-528-7201, and R. Alexander, School of Applied Chem., W. Australia Inst. of Tech., Kent St., Bentley, W.A. 6102, Australia.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), **to be used with the figures in the original German publication.** \$6.50
3. The original German copy of M. Teichmuller (1982) "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkohlungsverhalten." \$6.50

These publications are available from:

John Shane
Exxon Company U.S.A.
P. O. Box 2189
Houston, TX 77001, U.S.A.
Phone (713) 965-4490

CHANGE OF ADDRESS & MEMBERSHIP APPLICATION

Please notify Ken Yordy, ARCO Oil and Gas Company, P.O. Box 2819, Dallas, TX 75221, U.S.A., Phone 214-422-6250, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Ken.

DID YOU KNOW

Paul Robert has retired from Elf-Aquitaine oil company, however, he writes to us that he expects to remain active in national and international surveys on organic matter and that papers on the subject will still be gratefully received.

Houston, Texas, will be the site of the November 7-8, 1988, TSOP annual meeting to be hosted by John Clendening and John Castano, just prior to the American Association of Stratigraphic Palynologists meeting in Houston on November 9-11.

A software package (FIESTA) developed in France at BRGM is available for IBM-AT or VAX Mini to model surface geochemical data, with a variety of statistical techniques to define, separate, and model background and anomalous data and can generate quality graphs and maps. More info--Geomath, 165 S. Union Blvd., Suite 410, Lakewood, CO 80228, U.S.A. Tel. 303-980-8625.



NEWSLETTER ITEMS

Please send all letters, articles, short notes, ideas, etc. to:

Eileen Williams
UNOCAL
376 Valencia Avenue
Brea, CA 92621 U.S.A.

LETTER FROM THE PRESIDENT

It is a pleasure to introduce the new TSOP year. My pleasure is derived especially from the fellowship with concerned and productive people — who are first and foremost friendly people with broad interests in life.

In review, here are some of the Society's visible mileposts and "goalposts":

1984

Founding meeting in Houston.

Seminar: "Improved microphotometric techniques for maceral measurement," by Karl Ottenjann and Pieter van Gijzel, with discussion panel following.

First Newsletter issue, edited by Margaret Pytte (subsequent issues quarterly).

Election of 2nd Council, 84-85, with annual elections thereafter.

First special publication (The English version of Dr. M. Teichmüller's Fluorescence book).

First annual meeting, near Washington, DC, with 18 papers presented in two days.

1985

First published membership directory.

Second meeting, Houston, with 26 technical papers.

1986

1988 OFFICERS

President	Neely Bostick 303-236-0581
Vice President	Dick Harvey 217-344-1481
President Elect	Jack Burgess 713-754-7867
Secretary - Treasurer	Sue Rimmer 606-257-4607
Newsletter Editor	Eileen Williams 714-528-7201 Ext. 2361
Councilor	Jeff Levine 205-348-4520
Councilor	Wolf Kalkreuth 403-284-0110

LETTER FROM THE EDITOR

I have enjoyed being the newsletter editor for two years. I feel that by being editor I was able to interact more with TSOP officers and members. Also I paid more attention to new publications and the activities of other professional societies. Starting in 1988, Eileen Williams will be the editor of this newsletter. Please support her and TSOP by sending in all the things (laboratory techniques, book reviews, meeting announcements) that you think would help to make our newsletter more interesting. I plan to become a contributor myself!

Carolyn Thompson-Rizer

MANUSCRIPTS WANTED FOR BOOK ON PALYNOLOGY OF ORE DEPOSITS

You are invited to write a paper for a book entitled: Palynology of Ore Deposits. Elsevier has expressed an interest to publish such a book in their "Ore Geology Reviews" series. The final deadline for manuscripts will be May 1, 1988.

Please contact Eleanora I. Robbins, U.S. Geological Survey, National Center MS956, Reston, VA 22092 (USA) Tel. 703-648-6527 for details.

LETTER FROM THE PRESIDENT

continued from previous page

1986

Third meeting, Lexington, with 24 technical papers, including a paper by invited guest Duncan Murchison, from Newcastle - upon-Tyne, U.K.

1987

First Proceedings, Edited by Bill Spackman, published in a special issue of International Journal of Coal Geology.

Second Proceedings volume galley proofs at printers (Organic Geochemistry).

Fourth meeting, San Francisco, with 24 papers and 4 posters, including a special paper and a video presentation on oil shale by invited guest Alan Cook from Wollongong, Australia.

Third Proceedings volume sent to journal editor (Organic Geochemistry).

1988

Fifth meeting in preparation, Houston, hosted by John Castano, John Clendening, and others, with a 1-day joint symposium with AASP,

1989

Sixth meeting in planning, Urbana, Illinois, hosted by Dick Harvey and others.

It seems clear that we owe special thanks for the most tangible achievements to: (1) Two skilled and dedicated Newsletter Editors, Margaret Pytte and Carolyn Thompson-Rizer; (2) Meeting hosts (and their employers) and willing helpers, including, Ann Reaugh, Margaret Pytte, John Clendening, Harvey Zeiss, Loretta Satchell, John Castano, Jack Burgess, Jim Hower, Sue Rimmer, Rehana Makada, Stan Teerman, Tom Edison, and, especially for the early meetings, Schares Instrument Company; (3) Editors of the Proceedings volumes, including Bill Spackman, John Castano, John Shane and Jim Hower, and the authors and reviewers.

The Secretary/Treasurer, Sue Rimmer, has taken us from a somewhat disorganized (though affluent) beginning, through a formal audit, to a condition of known finances and accurate records, and she has arranged for our tax-exempt status. These accomplishments of a fledgling society are remarkable. Clearly, the work and organizational skill of our Councilors and other active members have made a great contribution. I would like to thank especially our outgoing Councilors Jennifer Thompson, Stan Teerman (Vice President), and Jack Crelling (President).

The work ahead of us includes the upcoming meetings, publication of proceedings from the San Francisco meeting, publication of the newsletter, and other proposed activities to help further research and application of Organic Petrology.

The organizational structure in TSOP has served well in the past. The committee makeup for the immediate future is:

Editorial and Publications Committee:
Eileen Williams, Chairman

Newsletter: Eileen Williams, editor
Proceedings: Jim Hower & Margaret Pytte
Distribution: John Shane
Special Topics:

Research Committee: Joe Senftle, Chairman

Topics include the fluorescence workshop, organic matter classification, analysis of amorphous kerogen, analytical round-robins and cooperative research with ICCP.

Outreach and Membership Committee: Alan Davis, Chairman

Topics include: a) New membership and the directory, Ken Yordy; b) Foreign contacts, Wolfgang Kalkreuth; c) ASTM affairs; d) Technology affairs (carbon forms, petroleum coke, carbon fibers, etc.)

1988 Meeting Committee: John Castano, Chairman

The program chairman, Jack Burgess, and other members are from the active Houston TSOP membership, including John Clendening, chairman of the Joint TSOP-AASP symposium.

Meeting Procedures Committee: Rehana Makada, chairman, Jim Hower (past meeting), John Castano (current meeting), and Dick Harvey (future meeting).

Awards and Elections Committee: Suzanne Russell, Chairman, including the Nominating and Ballot Subcommittees.

Among the few changes from the previous structure included in the above are:

The new Meeting Procedures Committee will prepare a list of procedures for organizers of the annual meetings. The experience of TSOP and that of other organizations shows that it can be a tremendous help to have a checklist of items to consider in hosting a meeting.

The Outreach and Membership Committee will, I hope, address at least two particular concerns: (1) A predominance of our membership is associated with the petroleum industry; formerly we had many active members from the steel industry. Both industries have seen drastic cutbacks, especially steel. A task of this committee will be to help balance and diversify interests in our membership and to help the hosts of each annual meeting overcome the swings caused by localization of different industries, such as petroleum and steel. (2) Many of us work on one topic and become narrowly specialized, and there is a weakness if TSOP is too narrow. This committee could help increase inter-

THE SOCIETY FOR ORGANIC PETROLOGY

action with people in specialty fields [e.g., carbon fibers (aerospace), graphite (nuclear), petroleum coke (refining), luminescence (chemistry)] with a view of broadening our base, improving our scientific competence, and expanding the applications of petrology.

I encourage you to contact chairmen of these committees, other members of the Council, or me with any questions or with ideas how we can improve the service and strength of the Society.

Neely Bostick
Tel. 303-236-0581 or -8290

REPORT OF THE RESEARCH COMMITTEE

by Alan Davis, Chairman

Fluorescence Workshop Subcommittee

Because of the state of the industry, the Chairman of this subcommittee (Dr. J. C. Crelling) has decided that plans to hold the workshop should be postponed temporarily. However, the preparation of the manual for the workshop is proceeding and should be available later this year.

A New Subcommittee on Precision in Petrographic Analysis

Dr. Ken Kuehn has agreed to chair such a subcommittee. He has indicated that the role of the group will be to investigate through inter-lab exercises how various factors may influence the precision of a maceral analysis. Such factors might include the size of particles in a sample, inter-point distances, number of points counted, number of categories counted, etc.

Ken is seeking a few (5 or 6) members willing to serve on the committee. They should have two qualifications--one, considerable and ongoing experience in maceral analysis, and two, a willingness to perform a fairly large number of petrographic analyses. Ken will announce the objectives of the subcommittee and invite active participation in the Society's Newsletter.

A New Subcommittee on Organic Petrography

Several members have suggested the creation of a subcommittee to work in this area. Dr. Joe Senftle has consented to serve as its chairman; he is a particularly appropriate choice because he has an opportunity to liaise with the working group of the ICCP concerned with similar problems. See Joe's announcement of the plans for the subcommittee elsewhere in the newsletter.

Notes from the Petrology Laboratory

This feature has appeared regularly in the Newsletter, but more support is needed from members in the form of contributions.

Resignations

The Research Committee has served for nearly three years, and I think it is

appropriate for the incoming President of the TSOP to have the infusion of new ideas which a new committee would provide. Therefore, the committee is stepping down as a group. I would like to thank the members, Neely Bostick, John Castano, and Dennis Kaegi, for performing their duties in a conscientious and forward-looking manner.

ANNOUNCEMENT OF A NEW RESEARCH SUBCOMMITTEE

During the 1987 annual meeting in San Francisco, it was decided that the Research Committee should strive to develop applied organic petrography programs designed to permit interested members to work together on current petrographic-related problems through round-robin exercises and/or panel committee reviews.

At this time, I am requesting that interested members think about this proposal and contact me with your opinions and suggestions. Currently, I am proposing a preliminary series of possible topics for work:

- identification and classification of dispersed organic matter
- sample preparation methods and the influence of these sample preparation methods on organic matter content, distribution, and chemical composition
- petrographic characteristics of organic matter and their relationship to depositional environments
- analytical methods of chemical kerogen characterization and the integration with petrographic data
 - transmitted light, reflected light, fluorescence, infrared and photo-acoustic microscopy
- pyrolysis, solvent yields and characterization and biomarker composition

As you can see, there is no shortage of possible topics for groups of members to work together on. Hopefully, our efforts can be shared with other groups of scientists such as the ICCP, EAOG, ASTM, and ISO. First, however, we must organize ourselves to begin our work.

Please respond to the above proposal including your recommendation for working topics by January 15, 1988. After this date, I will contact those members who have responded to formalize the research subcommittee programs. Mail your comments to:

J. T. Senftle
ARCO Oil and Gas Co.
Exploration and Production Research
2300 West Plano Parkway
Plano, Texas 75023 U.S.A.

HIGHLIGHTS OF THE
FOURTH ANNUAL TSOP MEETING

by C. L. Thompson-Rizer

This year's annual meeting was held in beautiful San Francisco, "everybody's favorite city!" The fall weather was warm and dry, very unusual for San Francisco. The seafood and cable car rides to Fisherman's Wharf were fantastic. There were 56 people attending the meeting with 30 participating in the field trip. A total of 24 papers were presented and 4 poster-papers were displayed (see list below). Approximately 16 of the papers dealt with coals or peat, other topics included oil shales, kerogen characterization, maturity, fluorescence and a summary of the activities at the Siljan Ring well in Sweden, by John Castano. The invited speaker was A. C. Cook from the University of Wollongong, Australia, who described organic petrological studies of oil shales. He also shared a video tape with the audience showing views through the microscope and explanations of identifications of alginitic and liptinitic particles. Copies of that tape (VHS or Beta) can be obtained from TSOP for \$40, contact Margaret Pytte, Chevron USA, P.O. Box 5042, San Ramon, CA 74583-0942 U.S.A. (Tel. 415-842-0706.) We were also pleased to have a speaker from Beijing, China, Mr. Jin Kuili from the China Institute of Mining and Technology delivered a paper on the anomalous coalification of peat and brown coal in Tengcong basin in Western Yunnan. Overall, many of the papers given at this meeting showed increased attempts by workers to link petrographic observations to chemical measurements and to geology (depositional environments). Four student papers were presented, the award (\$100) for the best student paper was given to Scott Stout, formerly of Pennsylvania State University.

At the business luncheon on Friday, the new officers were recognized, the plans for the 1988 annual meeting in Houston were mentioned, and Alan Davis described the activities of the Research Committee (see details elsewhere in this newsletter) and recapped the ICCP meeting in Beijing for us (Davis will write a description of that meeting for the 1988 newsletter).

The field trip was led by S. Graham from Stanford University. The outcrops of the Monterey formation and seeps in the Salinas basin were interesting, the drive past the San Ardo oil field with hundreds (?) of closely spaced pumps using steam injection to recover the approximately 10°API oil was probably the high point for the oil company types on the trip.

The 1987 Meeting Committee: Margaret Pytte, Rehana Makada, Tom Edison, and Stan Teerman deserve a big "thank you" for a well-organized meeting. Rehana deserves special mention for all the good snacks she planned for the field trip.

1987 ANNUAL TSOP MEETING
LIST OF PAPERS

Heroux, Y.*., Michoux, D., Desjardins, M., and Sangster, D. F., Petrography and Geochemistry of Organic Matter from Lead-Zinc Bearing Carboniferous Sequences of Salmon River Basin, Nova Scotia, Canada

Moore, T. A.*+, Stanton, R. W., Flores, R. M., and Pocknall, D. T., Organic Petrography, Palynology, and Sedimentology of the Smith and Anderson Coal Beds (Paleocene), Powder River Basin, Wyoming and Montana

Hower, J. C.* and Klapheke, J. G., Liquefaction Residues of the Breckinridge Cannel, Western Kentucky

Bostick, N. H.*., Petrology of Some California Coals

Cardott, B. J.*., Petrography of Typical Oklahoma Coals

Mazumdar, M., Carlton, R. W., and Irdi, G. A.*., Pyrite Grain-Size Distribution and Pyritic Sulfur Reduction in Ohio Coals: A Statistical Relationship

Cook, A. C.*., Organic Petrological Studies of Oil Shales (Invited Speaker)

Kalkreuth, W.*., and Macauley, G., The Organic Petrology and Geochemistry of Selected Oil Shales from the Carboniferous of Eastern Canada

Barron, L. S.*., Robl, T. L., and Taulbee, D. N., Organic Petrography and Chemistry of Density-Concentrated Macerals of an Upper Devonian Black Shale from Kentucky

Pytte, M. H.*., Comparison of Monterey Formation Kerogens from the Salinas Basin and Santa Barbara Channel Areas, California

Mukhopadhyay, P. K.*., Characterization of Amorphous and Other Organic-Matter Types by Microscopy and Pyrolysis-Gas Chromatography

Castano, J. R.*., Geochemical Evaluation, Siljan Ring Well, Central Sweden

Stout, S. A.*+, Spackman, W., and Boon, J. J., Peatification and Early Coalification of Wood as Deduced by Analytical Pyrolysis and Microscopic Methods

Kuili, J.*., and Yong, Q., Transitional Characteristics and Unconventional Coalification on Middle and Late Pleistocene Buried Peat and Soft Brown Coal of Tengcong Basin, Western Yunnan, China

Esterle, J. S.*+, Micropetrographic Examination of Tropical Woody Peats from Indonesia and Malaysia

Winston, R. B., and Stanton, R. W.*, Lateral and Vertical Variation in Plant Megafossil Assemblages in the Upper Freeport Coal Bed (Middle Pennsylvanian, West-Central Pennsylvania)

Karytsas, C.*+ and Davis, A., Climatic Control of Stratigraphic Variation in the Petrography, Mineralogy and Palynology of Some Upper Pennsylvanian Coals in the Northern Appalachian Basin

Rimmer, S. M.*, Crelling, J. C., and Landis, C. R., Fluorescence Spectral Analysis of Sporinite in the Lower Kittanning Seam: Influence of Rank and Depositional Environment

Ting, F.T.C.*, and Sitler, J. A., Comparative Studies of Reflectivity of Vitrinite and Sporinite

Ganz, H. and Kalkreuth, W.*, Application of Infrared Spectroscopy for the Determination of Hydrocarbon Source and Reservoir Rock Characteristics and Qualities

Poe, S. H.*, Taulbee, D. N., Keogh, R. A., and Davis, B. H., Density Gradient Separations of -100 Mesh Coal

Lin, R.*, and Davis, A., Chemical Basis for the Industrial Application of Spectral Fluorescence Microscopy

Mukhopadhyay, P. K.*, Gormly, J. R., and Zumberge, J. E., Generation of Hydrocarbons from Tertiary Coals of Texas-Coal as Potential Source Rock for Liquid Hydrocarbons in a Deltaic Basin?

Levine, J. R.*, The Influence of Rank, Grade, and Petrographic Composition on Coal Bed Natural Gas Reservoirs

POSTERS

Bostick, N. H.*, and Collins, B. A., Petrography and Programmed Pyrolysis of Coal and Natural Coke Intruded by an Igneous Dike, Coal Basin, Pitkin County, Colorado

Crowley, S. S.*, Stanton, R. W., Bragg, L. J., and Oman, C. L., Chemical Variation Associated with Volcanic Ash Layers in the C Coal Bed, Perron Sandstone Member of the Mancos Shale (Cretaceous), Utah

Pearson, D. L.*, Visual Clues of Liquid Hydrocarbon Migration

Summer, N. S.*, and Verosub, K. L., Extraordinary Maturation Profiles of the Pacific Northwest

*Speakers
+Student papers

Manuscripts or extended abstracts are due to Margaret Pytte by December 31, 1987, for review and inclusion in the proceedings volume.

TSOP PUBLICATIONS

Many of the papers presented at all four annual TSOP meetings have been collected into separate proceedings volumes. The first volume, for our 1984 meeting, is a special issue of the International Journal of Coal Geology (Vol. 7, No. 1) published early this year, see the list of papers below (for information about obtaining a copy of this special issue contact Journal Information Center, Elsevier Science Publishing Co., Inc., 52 Vanderbilt Ave., New York, NY 10017, U.S.A. Tel. 212-916-1250.)

The second proceedings volume, for our 1985 meeting, will appear as a special issue of Organic Geochemistry (Vol. 11, No. 5) and is promised to be released early in November. This volume contains seven papers and four extended abstracts. (John Shane, editor).

The third proceedings volume, for our 1986 meeting, will appear as a special issue of Organic Geochemistry. Thirteen papers have been accepted and it is hoped that the volume will appear in early 1988 (Jim Hower and Sue Rimmer, editors).

The fourth proceedings volume, consisting of papers from the recently held San Francisco meeting, will also be in the form of a special issue of Organic Geochemistry (no date of issue set yet).

INTERNATIONAL JOURNAL OF

COAL GEOLOGY

VOLUME 7 NO. 1

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JANUARY 1987

(Abstracted/Indexed in: Chemical Abstracts; Current Contents Physical, Chemical and Earth Sciences; Geo Abstracts; and the Science Citation Index)

Special Issue

PROCEEDINGS OF THE 1984 ANNUAL MEETING OF THE SOCIETY OF ORGANIC PETROLOGY

WILLIAM SPACKMAN (Editor)

Ragged edge of the Herrin (No. 11) coal, western Kentucky
J.C. Hower, E.J. Trinkle, A.M. Graese and G.L. Neuder (Lexington, KY, U.S.A.).....1

Organic geochemistry of the kerogen and bitumen from the Ohio shale by pyrolysis-gas chromatography
J.D. McLaughlin, R.L. McLaughlin and W.A. Kneller (Toledo, OH, U.S.A.)..... 21

The use of dyes as an aid to coal petrology
J.C. Quick and W.A. Kneller (Toledo, OH, U.S.A.)..... 51

Coalification patterns of the Pittsburgh coal: their origin and bearing on hydrocarbon maturation
L.L. Chyi (Akron, OH, U.S.A.), R.G. Barnett (Girard, OH, U.S.A.), A.E. Burford and T.J. Quick (Akron, OH, U.S.A.), and R.J. Gray (Pittsburgh, PA, U.S.A.)..... 69

Microspectrofluorescence measurements of coals and petroleum source rocks
C.L. Thompson-Rizer and R.A. Woods (Ponca City, OK, U.S.A.)..... 85

Refinement of organic petrographic methods for kerogen characterization
J.T. Senftle, J.H. Brown and S.R. Larter (Brea, CA, U.S.A.).....105

Fluorescing macerals from wood precursors
S.A. Stout and D.F. Bensley (University Park, PA, U.S.A.).....119

Provenance, preservation, and transport of the detrital "coffee grounds" of the Mississippi delta
J.D. Burgess (Houston, TX, U.S.A.).....135

THE SOCIETY FOR ORGANIC PETROLOGY

CALENDAR

RECENT PUBLICATIONS

1987

Dec. 6-8 Applied Coal Technology Seminar, Copenhagen, Denmark. DELTA-H Inst., P.O. Box 1053, Springfield, NJ, 07081, U.S.A.

Aug. 14-21 Peat 8th International Congress, Leningrad, USSR. Organizing Committee, Ministry of Fuel Industry of the RSFSR, Sadovaya-Chernogryazskaya 8, Moscow 107813, USSR.

1988

Jan. 18-22 Ocean Sciences Meeting of the Amer. Geophys. Union and the Amer. Soc. of Limnology and Oceanography, New Orleans, Louisiana. Topics include: stable isotopes as biogeochemical tracers, microbial foodwebs, biogeochemical fluxes in the world ocean. AGU 2000 Florida Ave., N.W., Washington, DC 20009, Tel. 800-424-2488.

Aug. 28-Sept. 3 The International Palynological Congress, University of Queensland, St. Lucia, Brisbane, Australia. Secretariat, 7IPC, Uniquest Ltd., Univ. of Queensland, St. Lucia, Qld. 4067, Australia, Tel. 6173772733. Abstract deadline, Jan. 31, 1988.

May 11-13 V. M. Goldschmidt Conference, near Baltimore, Maryland, U.S.A. Symposia on paleoceanography, organic geochemistry and hydrocarbon exploration (R. P. Philp), origin and diagenesis of humic substances, coal, and kerogen (P. G. Hatcher). Abstracts due November 20, 1987. H. L. Barnes, 235 Deike Building, The Pennsylvania State University, University Park, PA 16802, U.S.A. Tel. 814-865-7573.

Nov. 7-8 **The Fifth Annual meeting of the Society of Organic Petrology, Houston, Texas. John Castano, 722 Oder Lane, Houston, TX 77090, U.S.A. Tel. 713-444-4901.**

Dec. 4-7 Geochemistry of Gulf Coast Oils and Gases, Ninth Annual GCS-SEPM Foundation Research Conference, New Orleans, LA. Abstracts due January 15, 1988. Contact D. Schumacher, P. O. Box 2967, Houston, TX 77252, U.S.A., Tel. 713-546-4028.

June 5-11 Div. of Geochemistry (Amer. Chem. Soc.), Toronto, Canada. Eight planned symposia, including: Organic Matter in Hydrothermal Systems-Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.

1989

July 9-19 The 28th International Geological Congress, Washington, DC, U.S.A. Abstracts due by Feb. 1, 1989. Symposia on the Sedimentary Crust in Space and Time; Resources: Oil, Gas, Coal, and Mineral Deposits. Bruce Hanshaw, Secretary General, P.O. Box 1001, Herndon, VA 22070-1001 U.S.A. Phone 703-648-6053.

August Second Int. Conf. on Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China. Topics include new analytical techniques, kerogen characterization, maturation parameters, kinetics of petroleum formation, geochemical facies, pyrolysis, migration, biomarkers, recent sediments, and regional studies. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.

Dec. 17-22 Organic Geochemistry of Pacific Rim Basins, Amer. Chem. Soc., Dir. Geochem, Honolulu, Hawaii, U.S.A. J. Curiale Unocal, P.O. Box 76, Brea, CA, 92621, U.S.A. Tel. 714-528-7201, and R. Alexander, School of Applied Chem., W. Australia Inst. of Tech., Kent St., Bentley, W.A. 6102, Australia.

Aug. 7-12 Heavy Crude and Tar Sands 4th International Conference, Edmonton, Alberta, Canada. Mr. R. Omana, UNITAR/UNDP Information Center, 801 United Nations Plaza, 5th Floor, New York, NY 10017 U.S.A.

Please help update this calendar with meetings, short courses, etc. that you feel would be of interest to organic petrologists. Send all contributions (corrections, updates, etc.) to the Newsletter Editor.

1. Biological Markers in the Sedimentary Record edited by R. B. Johns (1986) Elsevier, 372 p. \$124.50 includes chapter on biomarkers from coal, however, no papers on biomarkers in solid organic material which can be analyzed by PY-GC-MS.

2. Paleoalgology: Contemporary Research and Applications edited by D. F. Toomey and M. H. Nitecki (1985) Springer Verlag Berlin - 27 papers on six topics: Stromatolites and Precambrian algae; Systematics and Morphology; Reefs, Buildups and other Frameworks; Calcification; Microstructure and Growths; Algae and Sediments; Diversity and Evolution. One paper contains 162 photographs of algae in thin section.

3. The Carbon Cycle and Atmosphere CO₂ Natural Variations Archaean to Present (1985), Edited by E. T. Sundquist and W. S. Broecker, Geophysical Monograph Series Volume 32, 640 pages, hard bound, \$28 from American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009, Tel. 800-424-2488.

4. An Introduction to Coal Petrography: Atlas of Petrographic Constituents in Bituminous Coals of Southern Africa by R.M.S. Falcon and C. P. Snyman (1986), the Geological Society of South Africa, P.O. Box 61019, Marshall Town, 2107, South Africa (R41.45).

5. Marine Petroleum Source Rocks (1987) edited by J. Brooks and A. J. Fleet, Geological Society Special Publication No. 26, Blackwell Scientific Publications, Oxford, 444 p. Includes 26 papers on: Concepts and Methods, Depositional Processes and Environments, the Stratigraphic Record.

6. Advances in Petroleum Geochemistry Volume 2 (1987) edited by J. Brooks and D. Welte, Academic Press, 262 p. Contains four papers, including "Organic Facies" by R. W. Jones.

7. NMR of Humic Substances and Coal (1987) by R. L. Wershaw and M. A. Mikita, Lewis Publishers Inc., Chelsea, Michigan, 236 p. \$49.95.

8. World Coal: Economics, Policies and Prospects, by R. L. Gordon (1987) Cambridge Univ. Press, 146 p.

9. The Relationship between Coal Rank and Present Geothermal Gradient in the Arkoma Basin, Oklahoma, (1986) by B. J. Cardott, L. A. Hernish, C. R. Johnson, and K. V. Luza, Oklahoma Geological Survey Special Publication 86-4, 65 p., \$7.

THE SOCIETY FOR ORGANIC PETROLOGY

SECRETARY-TREASURER'S REPORT

1988 TSOP ANNUAL MEETING

by S. Rimmer

The following is a financial overview for September 30, 1986, to September 30, 1987. A formal audit was made this year of the TSOP bank account.

<u>Bank Account</u>	<u>Income</u>	<u>Expenses</u>
Beginning Balance (9-30-86)	\$8591.46	
Dues	\$2804.36	
Publications	238.65	
Secretary/Treasurer		\$904.99
Editor (Newsletter)		999.01
Membership		30.00
Annual Meetings (1986, partial for 1987)	2260.53	
Prudential Bache Account		5000.00
Student Awards		100.00
Research Committee		34.09
Ending Balance (9-30-87)	6826.95	

Prudential Bache Account

Invested in P-B money markets.....\$ 5000.00

(annual yield 6.15%)

Account opened 6-15-87

Current value (as 8-31).....\$ 5059.00

Summary of Secretary/Treasurer Expenses

Audit (bank records search.....)	\$ 85.00
Audit (accountant).....	\$ 200.00
Computerization of files.....	\$ 187.50
Xerox.....	\$ 134.02
Mailing.....	\$ 298.47
Total.....	\$ 904.99

The 1988 Annual Meeting of the Society will be held in Houston, Texas, November 6-9, at the Intercontinental Hotel. The format of the meeting will be a bit different from our previous sessions; registration on November 6 will be followed by two days of technical sessions on November 7 and 8. On November 9, TSOP and AASP will hold a joint symposium tentatively entitled, "The relationship of organic maturation, mineralogical changes, and temperature as related to the destructive phase of reservoirs and hydrocarbons." AASP will have its Annual Meeting November 10-12 at the Westin Oaks Hotel, which is across the street from the Intercontinental. The Chairman of the Annual Meeting Committee for TSOP is John Castano, Jack Burgess is the Technical Program Chairman, and John Clendening will be the convenor for the joint TSOP-AASP symposium. For more information, contact John R. Castano, 722 Oder Lane, Houston, Texas 77090, USA.





~~DID YOU KNOW~~

E. Stach, author of many papers on coal petrology, and of course, The Textbook, passed away in September this year.

A video tape (VHS or Beta) is available from TSOP for \$40, showing how A. C. Cook and the others at University of Wollongong (Australia) identify alginitic and liptinitic material in oil shales, using views through the microscope. To get a copy contact Margaret Pytte, Chevron USA, P.O. Box 5042, San Ramon, CA, 74583-0942, U.S.A. (Tel. 415-842-0706)

NOTES FROM THE PETROLOGY LABORATORY

If you have some lab data or "pet methods" of sample preparation that are too short to be published papers on their own, please consider sharing them with TSOP. The Research Committee will advise you on the suitability of your contribution. Send all Petrology Lab Notes to Neely Bostick, U.S.G.S., MS401, P.O. Box 25046 Federal Center, Denver, CO 80225-0046, U.S.A.

CHANGE OF ADDRESS & MEMBERSHIP APPLICATION

Please notify Ken Yordy, ARCO Oil and Gas Company, P.O. Box 2819, Dallas, TX 75221, U.S.A., Phone 214-422-6250, of any changes in your mailing address or phone number. If you know of people who would like to become members of the Society for Organic Petrology, membership application forms can be obtained from Ken.

PUBLICATIONS FOR SALE

The following publications are available from TSOP. The cost includes postage. Please send check or money order (payable to TSOP) to the address below. United States Dollars only, foreign currency will be returned to sender.

1. Abstracts 1985 TSOP Meeting. \$4.00
2. TSOP Special Publication No. 1, "Fluorescence-microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behavior," by M. Teichmuller (1982), translated by N. Bostick (1984), to be used with the figures in the original German publication. \$6.50
3. The original German copy of M. Teichmuller (1982) "Fluoreszenz von Liptiniten und Vitriniten in Beziehung zu Inkohlungsgrad und Verkohlungsverhalten." \$6.50

These publications are available from:

John Shane
Exxon Company U.S.A.
P. O. Box 2189
Houston, TX 77001, U.S.A.
Phone (713) 965-4490



Letter from the Editor

As the new TSOP Newsletter editor, I would like to take this opportunity to introduce myself and thank the membership for electing me to this position. I have been working for over six years as a biostratigrapher at Unocal's Science and Technology Division in Brea, California. During that time, I have devoted part of my research to visual kerogen and palynofacies studies. Prior to studying palynology, I completed a master's thesis on the coal petrology of the Tulameen Coal Field in south central British Columbia.

We owe Carolyn Thompson-Rizer a big round of applause for her efforts and hard work over the past two years. She set a fine example which I hope to follow. I would also like to personally thank Carolyn for all of her help and suggestions as to how to make my job a little easier.

I would like to encourage readers to participate in continuing to make our Society's newsletter a success. Any information, suggestions or comments you may have regarding either specific or more general topics will be welcomed. Please feel free to call or write, I look forward to hearing from you. My address and phone number are as follows:

V. Eileen Williams
Unocal Science and Technology
376 S. Valencia Avenue
Brea, CA 92621 U.S.A.

Phone: (714)528-7201 x2361

Mid-Year Meeting

The mid-year meeting of the TSOP Council will be in Houston on Sunday, March 20, 1988 at 9:00 am. Jack Burgess will host the meeting in the "Gulf Tower" at 1301 McKinney in the Biostratigraphy Conference Room on the 19th floor. Members are welcome to attend and contribute to the meeting, which may last until mid-afternoon. To enter, apply at the security desk on the Mezzanine floor. Jack's office phone number is (713) 754-2878.

Neeley Bostick

Joint TSOP/AASP Symposium

A joint symposium between TSOP and the American Association of Stratigraphic Palynologists (AASP) will be held in Houston on Wednesday, November 9, after the TSOP Annual Meeting. The tentative title of the symposium will be **Temperature, Mineralogical Alterations, and Related Phenomena in the Processes of Organic Maturation, Hydrocarbon Phases, and Reservoir Creation and Destruction.**

The program will include a review of vitrinite reflectance, interpretation of vitrinite data from dispersed organics, and its application to petroleum exploration. Additionally, interpretation of fluid inclusions and their applications to paleothermal histories will be discussed, as will generation of organic acids and their role in the creation of secondary porosity, etc. Porosity of reservoirs undergo a complex multi-stage chemical evolution in response to increasing thermal stress and burial depth. This evolution will be described and related to thermal maturation of organic matter (kerogen, vitrinite, hydrocarbons) in shales associated with potential reservoir rocks. Data relating stage of porosity evolution to vitrinite reflectance will be presented for several basins. Petrographic criteria for recognition of incipient metamorphism of sandstone and carbonates will be correlated with R_o measurements. Special emphasis will be placed on the destructive phase of hydrocarbons and reservoirs.

There will be a panel discussion following the presentation of papers. Participants presenting papers will include John Clendening (Amoco Production Co., Houston), Francis Ting (West Virginia University), Dennis Prezbindowski (Consultant, Tulsa, Oklahoma), Ron Surdan (University of Wyoming), John Hayes (Consultant, Littleton, Colorado), Rick Tobin (Amoco Production Co., Houston) and Roger Sassen (Louisiana State University).

John Clendening
Amoco Production Co.
P. O. Box 3092
Houston, TX 77253

Report on the Meeting of the
International Committee for Coal Petrology
Beijing, August 25-28, 1987
(Report presented at San Francisco TSOP
meeting, October 2)

Because of the low attendance (15-16 international members and about the same number of Chinese visitors), it was feared that the Beijing meeting would not result in great progress for the ICCP. It is true that with the absence of many of the Chairmen of working groups, little progress was realized by the three commissions. However, some decisions were made at the Beijing meeting which could have a profound influence on the direction and influence of the ICCP in the future.

Several changes to the Constitution of the ICCP have been proposed and will be submitted to the membership for a vote. These changes are:

1. To cut the formal relationship with the International Carboniferous Congress. The argument comes down to the fact that every four years the ICCP must hold its meeting at a venue chosen by the ICC; this may be at a location which is inappropriate for the ICCP. The time made available to the ICCP by the ICC has often been too short. Finally, the strictly geological theme of the Carboniferous (and now Permian) Congress no longer coincides well with the scope of interest of organic petrologists.
2. To award the Thiessen Medal as necessary, and not once every four years in coincidence with the ICC, as is the current practice.
3. To publish the President's Report every few years in a Newsletter and an appropriate journal, instead of every four years in the *Compte Rendu* of the ICC.
4. To publish a Newsletter. This recommendation clearly was made in recognition of the value of publications such as the TSOP Newsletter. The proposed change would also involve the election of a Newsletter Editor.
5. To promote the ICCP by the preparation of a brochure which states the objectives of the ICCP. One purpose of the brochure would be to assist petrologists in obtaining support for joining and attending ICCP meetings.

6. To introduce new conditions for the two classes of membership. Elevation to Full Membership would now require nomination, 5 years of experience, and a written account of qualifications and experience. Applicants for Associate Membership need not be actively engaged as organic petrologists.

7. To provide certification for coal petrologists. Initially, individuals requiring certification would be required to analyze 2-3 coals of varying petrographic composition for maceral groups and reflectance. Adoption of the principle of certification recognizes the need for the coal petrographic community to be able to obtain uniform results in their analyses.

Executive approval of draft changes to the Constitution is expected at the next meeting. Endorsement by the membership will require a 2/3 majority vote.

In the exercises of various working groups, although there was good reproducibility of maceral groups, there are obvious problems with full maceral analyses. This highlights the need for certification testing, especially since the proposed ECE Classification of Coals contains three petrographic indices, specifically 1) mean reflectance, 2) reflectance histogram shape and 3) inertinite and liptinite contents.

The report of the Fluorescence Working Group (Chairman: Mr. Ottenjann), showed that intensity is not linearly related to the area as measured by the photomultiplier stop. Therefore, it is not possible to achieve uniform intensity measurements when uranyl glass standards are employed. If the field diagram is used as a stop (with the photomultiplier stop fully open) then fluorescence readings on coal are not sufficiently intense after calibration with the uranyl glass. Two approaches will be investigated to overcome the problem. One is to achieve lower intensities from the uranyl glass standard by using only a thin slice of the glass. The other is the use of LEDs. Until a solution has been found for this very real difficulty, the Working Group will not complete the information sheet on fluorescence measurements.

In the Alginite Working Group, Dr. Wolf reported that she has observed a blue shift in the spectrum of white fluorescing alginite as a result of alteration/degradation. Mr. Ottenjann noted that the Scottish torbanite used in the group's exercise contains three kinds of algae: he suggested that the

darkest (in fluorescence mode) was the original, less altered material, that has not begun to generate oil; in contrast, the bright fluorescing alginite is the kind which has undergone the greatest extent of alteration. Dr. Cook, on the other hand, observed that early diagenesis can result in lower fluorescence intensities.

The 1988 meeting of the ICCP will take place in Aachen.

Alan Davis

Research **Subcommittees**

Precision in Maceral Analysis:

The research subcommittee on Precision in Maceral Analysis has begun its efforts to identify the significant sources of variation in the point-counting technique. We anticipate future work will involve a series of round robin analyses resulting in a working document on the subject.

Recently, I have learned of two similar efforts which are nearing completion. Dr. R. M. Bustin and the Canadian Coal Petrography Group are preparing results and conclusions of their two-year study. Ron Stanton and other members of the ASTM D05.28 Coal Petrography Task Group have compiled results from a detailed questionnaire and are beginning to analyze results of their round robin analyses. This subcommittee intends to add to these efforts, not duplicate them.

Will you please respond with your suggestions by April 15, 1988? Volunteers are needed for the round robins as well. Send your comments to:

Kenneth W. Kuehn
Dept. Geology, 304 EST
Western Kentucky University
Bowling Green, KY 42101

Applied Organic Petrography:

During the 1987 annual meeting, it was decided that the Research Committee should strive to develop applied petrography programs designed to permit interested members to work together on current petrographic and petrographic-related problems through round robin exercises and/or panel committee reviews. Incorporated within the last TSOP Newsletter was a call for interested members to identify themselves and to list poten-

tial areas of interest. As noted, responses to this proposal were requested by January 15, 1988. At this time, a small group has been established and will begin work.

A second call for interested parties is now made to allow any members who initially did not respond to do so. Interested members should respond by June 1, 1988. Mail your comments to:

J. T. Senftle
ARCO Oil and Gas Co.
Exploration and Production Research
2300 West Piano Parkway
Piano, TX 75023 USA

Notes from the Lab

When observing polished coal samples from Illinois seams 5 and 6, I would see some grains that had an etched appearance. This condition appeared to be very similar to the patchy vitrinite mentioned by B. J. Cardott at the San Francisco meeting this last fall. I have found that this condition in the Illinois coals could be controlled and/or prevented by the following technique.

I have found the use of TF Fluorcarbon solvent (trichlorotrifluoroethane) to be successful in reducing the etched condition. This solvent is placed in an ultrasonic bath, and the coal pellets, while still in the polishing holder, are immersed in the solution and ultrasonically cleaned for at least 30 seconds before and after the 0.3 micron alumina polishing step. The TF solvent does not attack the epoxy binder nor the coal particles.

Another aside for this solvent; I have found it very useful in cleaning the immersion oil off the coal pellets, from the glass standard, and from the objective lens. The solvent will clean without leaving any residue on the surfaces when used properly.

Charles H. Harrison
Staff Research Technician
Inland Steel Co., Research Dept.
3001 E. Columbus Dr.
East Chicago, IN 46312

Contributions to the Newsletter on innovative, time saving and/or interesting laboratory methods that can be shared with the readership are requested.

Book Reviews

NMR OF HUMIC SUBSTANCES AND COAL: TECHNIQUES, PROBLEMS AND SOLUTIONS. edited by Robert I. Wershaw and Michael A. Mikita (1987). 236p. Published by Lewis Publishers, Incorporated, Chelsea, Michigan, \$49.95.

This book, based on papers presented at the 8th Rocky Mountain Regional ACS meeting, is an attempt to comprehensively cover applications of nuclear magnetic resonance (NMR) studies to the analysis of humic substances. The book covers a wide variety of topics, but primarily emphasizes ^{13}C NMR.

The first three chapters contain an abbreviated introduction to NMR of humic substances, followed by a discussion of techniques and problems in solution- and solid-state NMR. Specific topics covered include: solution- and solid-state ^{15}N and ^{31}P NMR, as well as proton and ^{13}C NMR; experimental techniques, including ^1H CRAMPS (Combined Rotation and Multiple-Pulse Spectroscopy); problems and suggested solutions in cross polarization magic-angle spinning (CPMAS) ^1H NMR; and the relationship between solution- and solid-state NMR. Chapter 4 is a discussion of basic theory and problems associated with Electron Paramagnetic Resonance (EPR) of humic materials. The ENDOR experiment (Electron Nuclear Double Resonance) is briefly mentioned, but the Electron Spin Echo experiment is not discussed at all. Chapter 5 is a discussion of the application of selective chemistry to help better interpret ^{13}C NMR spectra of humic materials. Chapter 6 is a lengthy and detailed discussion of polarization transfer techniques and two-dimensional experiments for solution-state NMR of humic materials and liquid fossil fuels. Topics covered include: basic theory and relative advantages of DEPT (Distortionless Enhancement of Polarization Transfer) versus INEPT (Insensitive Nuclei Enhanced by Polarization Transfer); homonuclear and heteronuclear two-dimensional cross-correlated and J-Spectroscopy techniques.

Chapter 7 is a brief discussion of techniques and limitations of wide-line NMR. Chapters 8 and 9 discuss the detection of the mobile phase of humic materials and model systems. Chapter 7 contains a brief discussion of the dipolar dephasing experiment, and a valuable discussion of the aliphatic component of coal. Both chapters discuss in detail the effect of molecular mobility on spectra. Chap-

ter 10 discusses evidence for a membrane model for humic acids as deduced from NMR. Chapters 11 and 12 close the book with an important discussion of problems affecting the reliability of solid state ^{13}C NMR for quantitative use, and an overview of the status of nuclear magnetic resonance spectroscopy as applied to coal.

The book is not designed for a novice. Very little basic theory or basic experimental techniques are discussed. The book is, however, well referenced with recent literature citations. It is also profusely illustrated, especially with sample spectra. Advanced experimental techniques are also thoroughly discussed, with the possible exception of the dipolar dephasing experiment. The book is unquestionably a useful addition to the library of anyone interested in NMR of coal, peat and humic acids.

D. Ross Spears
Dept. of Chemistry
The University of Alabama
Tuscaloosa, AL 35486-1489

The English edition of Paul Robert's book **ORGANIC METAMORPHISM AND GEOTHERMAL HISTORY: MICROSCOPIC STUDY OF ORGANIC MATTER AND THERMAL EVOLUTION OF SEDIMENTARY BASINS** (Holland: D. Reidel Pub. Co., 1988) is now available. It is sold and distributed in the U.S.A. and Canada by

Kluwer Academic Publishers
101 Philip Drive
Norwell, MA 02061
U.S.A.

and in all other countries by

Kluwer Academic Publishers Group
P.O. Box 322
3300 AH Dordrecht
The Netherlands

A price for the English translation copy of the book was not quoted. (**Ed.'s Note:** Anyone who has read this book and would like to review it for the Newsletter, please do so!)

Electron Microbeam Interest Group

An interest group is being formed for TSOP members who are currently using, or who are interested in using, electron microbeam instruments (including SEM, TEM, STEM, Auger and electron probe) in the study of organic matter and its associated mineral matter in coal and other sedimentary rocks. The group will highlight common research interests, analytical methods, instrumentation, etc. Please contact:

Jeff Levine
School of Mines & Energy Development
The University of Alabama
P.O. Drawer A4
Tuscaloosa, AL 35487-1489

Phone: (205)348-1587

General Announcements

A firm date for submission of abstracts for the November 7-8 TSOP Meeting has not been established. However, the deadline will probably be sometime in July or August. This announcement is being put in the newsletter now, in order to give presenters more lead time for submitting their abstracts. The deadline will be decided upon at the mid-year meeting in Houston (March 20) and a flier announcing the deadline will be sent out to Society members.

For those who have not yet paid, please get your 1988 annual dues (\$15.00 U.S.) in NOW!

Calendar

1988

May 11-13. V. M. Goldschmidt Conference, near Baltimore, Maryland, U.S.A. Symposia on paleoceanography, organic geochemistry and hydrocarbon exploration (R. P. Philp), origin and diagenesis of humic substances, coal, and kerogen (P.G. Hatcher).

June 5-11. Division of Geochemistry (American Chemical Society), Toronto, Canada. Eight planned symposia, including: Organic Matter in

Hydrothermal Systems-Maturation, Migration, and Biogeochemistry; Chemistry and Geochemistry of Tar Sands; and Reservoir Microbiology and Geomicrobiology. R. H. Filby, Tel. 509-335-8641.

August ?. Second International Conference of Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.

Aug. 7-12. Heavy Crude and Tar Sands 4th International Conference, Edmonton Alberta, Canada. Mr. R. Omana, UNITAR/UNDP Information Center, 801 United Nations Plaza, 5th Floor, New York, NY 10017, U.S.A.

Aug. 14-21. Peat Eighth International Congress, Leningrad, U.S.S.R. Organizing Committee. Ministry of Fuel Industry of the RSFSR, Sadovaya-Chernogryazskaya 8, Moscow 107813, U.S.S.R.

Aug. 28-Sept. 3. The International Palynological Congress, University of Queensland, St. Lucia, Brisbane, Australia. Secretariat, 71 PC, Uniquet Ltd., Univ. of Queensland, St. Lucia, Qld. 4067, Australia, Tel. 6173772733.

Nov. 7-8. The Fifth Annual Meeting of the Society of Organic Petrology, Houston, Texas. John Castano, 722 Oder Lane, Houston, TX 77090, U.S.A. Tel. 713-444-4901.

Nov. 9. Joint TSOP/AASP Symposium, tentatively entitled "Temperature, Mineralogical Alterations, and Related Phenomena in the Processes of Organic Maturation, Hydrocarbon Phases, and Reservoir Creation and Destruction". John Clendenning, Amoco Production Co., P.O. Box 3092, Houston, TX 77253, U.S.A.

Nov. 10-12. The Twenty-first Annual Meeting of the American Association of Stratigraphic Palynologists. Half-day Symposia on the Paleozoic (Gordon Wood) and the Quaternary (Steve Hall and/or Owen Davis) will be held on Thursday; Friday and Saturday will be reserved for general technical sessions. Co-chairmen: John Clendenning, Vaughn Bryant and Bob Clarke.

Dec. 4-7. Geochemistry of Gulf Coast Oils and Gases, Ninth Annual GCS-SEPM Foundation Research Conference, New Orleans, LA. D. Schumacher, P. O. Box 2967, Houston, TX 77252, U.S.A., Tel. 713-546-4028.

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Letter from the Editor

I want to take this opportunity to thank TSOP members for their positive response to the March 1988 newsletter. The newsletter represents a forum from which TSOP members can express their opinions, discuss scientific and other topics of value, as well as keep informed about future meetings, recent publications, etc. For these reasons, I want to encourage you to contribute material to the newsletter which you feel would be of interest to others. Contributions for the September issue of the newsletter should be submitted to me by August 31st.

Papers presented at TSOP's annual meetings are written up and published as a special issue of *Organic Geochemistry*. The job involved with editing papers and overseeing the publication of these volumes is time consuming and requires considerable effort. We owe Jim Hower a lot of gratitude for voluntarily taking charge of this responsibility, and would also like to extend our appreciation to other individuals who take part in the process.

V. Eileen Williams

Upcoming TSOP Elections

The Nominating Committee for this year's election slate has been appointed by the President. The members of the committee are:

Brian Cardott
Sharon Crowley
Joyce Lucas-Clark
Suzanne Russell (chairperson)
Hardarshan Valia

Offices up for election this year are president-elect, vice-president, councilor and editor. V. Eileen Williams has consented to be slated again this year for editor. The Nominating Committee invites any interested person to submit himself or herself for consideration for an office. Duties of officers are discussed briefly in the TSOP Constitution and Bylaws. Officers should be available to attend the annual and the mid-year meetings. If you are interested, please contact a committee member as soon as possible.

Ballots for this year's election will be mailed separately sometime in July.

Suzanne Russell

TSOP Annual Meeting

The Fifth Annual Meeting of the Society for Organic Petrology is Monday and Tuesday, November 7-8, 1988 in Houston, Texas. The meeting will be held near the Galleria at the Inter-Continental Hotel on 5150 Westheimer. Room rates will be \$70.00 (single) and \$80.00 (double) per night. Information concerning the cost of registration will be announced in a forthcoming circular as well as in the September issue of the Newsletter.

Call for Papers

An official abstract form calling for papers to be presented at the TSOP 1988 Annual Meeting in Houston, Texas, is included in this newsletter. The form has been printed on yellow paper and must be submitted by September 1 to:

Jack Burgess
Chevron U.S.A. Inc.,
P.O. Box 1635
Houston, TX 77251 U.S.A.

Tel: (713)754-2878

Joint TSOP-AASP Symposium

The joint TSOP-AASP Symposium entitled "The Relationships of Temperature, Mineralogical Alterations and Related Phenomena in the Process of Organic Maturation, Hydrocarbon Phases and Reservoir Creation and Destruction" will be held on November 9, 1988 following the TSOP Annual Meeting. The registration fee for the Symposium is \$60.00 U.S.. A volume of the papers presented at the Symposium is included in the price of the registration. For further information contact:

John Clendening
Amoco Production Co.
P.O. Box 3092

Houston, TX 77253 U.S.A.

Secretary/Treasurer's Report

a. Financial Statement

The financial standing of the Society as of March 15, 1988 (Mid-Year Meeting) is summarized in table form at the top of page 2.

THE SOCIETY FOR ORGANIC PETROLOGY

Checking Account (First Interstate Bank of Texas)			
		Income	Expenses
Beginning Balance (9/30/87)	\$6826.95		
Dues		\$2406.00	
Publication Sales		\$ 73.00	
Secretary/Treasurer			\$ 238.93
Newsletter			\$ 161.24
Annual Meeting '87 + partial for '86			\$4700.62
Student Award			\$ 100.00
Organic Geochemistry Issue ('85 Mtg.)			\$2000.00
Ending Balance 3/15/88	\$2105.16		

First Interstate Bank (Texas) Checking Act. (#21-0007-7666)-----	\$2105.16
Prudential Bache Account (#OLT-217651-17)-----	\$5230.00
TOTAL BALANCE (3/15/88) -----	\$7335.16

b. Report of Mid-Year Meeting

The Mid-year meeting was held on March 20, 1988 at the Gulf Tower in Houston. Council members present were Neely Bostick (presiding), Jack Burgess, Eileen Williams, Suzanne Russell, Jeff Levine, Dick Harvey, John Castano, John Clendening and Sue Rimmer.

The main items raised and approved at this meeting were:

- 1) Major council decisions should be announced in the newsletter.
- 2) Despite the success of past meetings, considerable effort must be made to ensure that future annual meetings should not put us in debt.
- 3) Travel expenses were approved for Dick Harvey (\$220) and Sue Rimmer (\$268) to attend the mid-year business meeting.
- 4) The Society is obligated to pay \$2000 for 100 copies of the special issue of *Organic Geochemistry*, for both the 1986 (Lexington) and 1987 (San Francisco) meetings. This means a \$4000 debit. In future years, this cost will have to be included in the annual meeting costs.
- 5) For the Houston meeting (1988), the registration fee will include the cost of the proceedings. The program and expenses for the joint TSOP/AASP symposium were discussed.
- 6) The "Awards and Elections Committee", chaired by Suzanne Russell, was changed to the "Awards Committee". Neely Bostick will appoint an Elections committee and a Ballot committee.
- 7) Tentative plans for the 1989 Annual Meeting in Urbana, Illinois, were approved. A pre-/post-meeting fluorescence workshop was considered.
- 8) A proposal (submitted by Wolf Kalkreuth) to hold the 1990 Annual Meeting in Calgary was considered. The meeting will be held in September and will be hosted by the Institute of Sedimentary and Petroleum Geology, in cooperation with the Canadian Coal Petrographers Group. (Post script: Proposal was approved by Council in May).
- 9) In light of recent expenses (meeting and publication costs), it was suggested that dues be raised. Consideration of a dues increase was deferred until the Annual meeting in November.

Sue Rimmer

Membership Dues

178 TSOP members paid their dues in 1988!
Have you remembered to pay your dues?

Unfortunately, this is the last mailing you will receive from TSOP if you have not yet paid. Don't miss out on information about the annual meeting! Please reinstate your membership. Send dues to:

Sue M. Rimmer
Secretary/Treasurer
253 Bowman Hall
Department of Geological Sciences
University of Kentucky, KY 40506-0059

Research Subcommittee Reports

Applied Organic Petrography

The research subcommittee on Applied Organic Petrology has been established. Anticipated work will concentrate on a review of published work relating organic petrography to other analytical methods for organic matter classification. To date, a literature database search has been completed. This search will be circulated to the subcommittee to identify topics of review by individual members of this group.

It is hoped that the work of this small group will lead to a better understanding of the role of organic petrography in the Geosciences. Interested members of TSOP are encouraged to contact this subcommittee with suggestions. The group includes J. Senftle, C. Thompson-Rizer, R. Witmer, D. Logan and L. Leith.

Joseph T. Senftle

Precision in Maceral Analysis

The research subcommittee on Precision in Maceral Analysis plans to initiate some work this summer for the November annual meeting. Volunteers are still needed to serve on the committee. Please contact:

Kenneth W. Kuehn
Dept. Geology, 304 EST
Western Kentucky University
Bowling Green, KY 42101

Tel: (502)745-3082

Report on the Annual Meeting of the Canadian Coal Petrographers Group

The Canadian Coal Petrographers Group held its annual meeting at the University of Victoria, Victoria, British Columbia, May 30th and 31st. Approximately 30 attendees were present representing government, industry and universities. A number of papers touching on coal and kerogen composition were presented. Following the opening remarks at the meeting, R. M. Bustin led a discussion on the results of a Round Robin Exercise. Petrographic studies on coals from Alberta (W. Langenberg), Saskatchewan (W. J. McDougall; A. Beaton), the Northern Yukon and District of MacKenzie (A. Cameron), Vancouver Island (E. Van der Flier-Keller), Alaska (M. Lamberson) and Israel (S. Feinstein) were presented. An overview of the organic petrology of Paleozoic rocks was made by L. Stasiuk. P. Hacquebard talked about the petrography and provenance of detrital coal from bottom sediments in the Labrador Sea. Thermal maturation (T. Gentzis; D. Vellutini) and vitrinite reflectance (W. Kilby; D. Grieve) studies were also reported on. In addition, recent developments in automated microscopy at I.S.P.G. (K. Pratt) and in coal petrography at CANMET (N. Manery) were presented. M. Avery discussed upgrades to the Zonax microcomputer. The meeting was followed by a field trip to the Comox coal field in east-central Vancouver Island, led by Ward Kilby and Candace Kenyon of the British Columbia Department of Energy, Mines and Petroleum Resources and by Eileen Van der Flier-Keller of the University of Victoria.

The meeting in 1989 will be held in Ottawa at the CANMET laboratories of the Department of Energy, Mines and Resources. The timing will probably be in the spring or early summer, though the dates have not been fixed. Also announced at the meeting was TSOP's acceptance of an invitation to hold its 1990 meeting in Calgary in conjunction with the Canadian Petrographers Group. R. M. Bustin (University of British Columbia) is the President of the Canadian Petrography Group and Judith Potter (University of Regina, Saskatchewan) is Secretary.

A. Cameron
I.S.P.G.

Notes from the Lab

Maceral Composition of Single-Lithotype Coal Samples from Kentucky

Megascopic description of coal by KECL (now Kentucky Center for Applied Energy Research) geologists has followed the basic nomenclature of Stopes (1919) with modifications after Cameron (1978), Davis (1978) and Austin (1979). With the exception of fusains, which are recorded at any thickness, the 3 mm rule is followed in the determination of lithotypes. The division between bright clarain and clarain is assigned to 65% vitrain and the division between clarain and dull clarain is assigned to 35% vitrain. Vitrain has less than 10% thin dull bands and durain has less than 10% thin, frequently discontinuous, vitrain.

In practice, megascopic coal-bed description is hindered by a number of constraints that add to the inherent subjectivity of the description. Among the constraints involved in field descriptions of coal are: equipment movement and the resulting time constraints imposed on the geologist, unstable highwalls in surface mines, low and/or unstable roofs in underground mines, lighting conditions, and water covering the base of coals in some mines. While care should always be taken to provide as detailed a description as possible, few field descriptions are likely to be as detailed as the description of polished blocks in a laboratory environment.

The single-lithotype benches represented in this compilation were described by a limited number of KECL geologists, primarily Pollock and Hower, and all of the maceral analyses were conducted in the KECL petrography laboratory. The common basis for the megascopic descriptions and maceral analyses eliminates some of the discrepancies which would occur in inter-laboratory comparisons. All of the descriptions are of Pennsylvanian high-volatile bituminous coals from both the eastern Kentucky portion of the Appalachian Basin and the western Kentucky portion of the Illinois Basin (Eastern Interior Basin).

The compilations (see table on page 5) of maceral groups (mmf) ash, and total sulfur for the four lithotypes illustrates the basic petrographic trends expected among the lithotypes. Vitrinite decreases from bright clarain to durain while inertinite (fusinite, semifusinite and macrinite), micrinite, liptinite, and ash increase in the same manner.

The range and standard deviation of vitrinite and inertinite also increase from bright clarain to durain, providing a strong demonstration of the need for both megascopic and microscopic descriptions of coal. The wide range of the maceral compositions provide strong emphasis that the megascopic descriptions, particularly of the duller lithotypes, are really an indicator of the texture of the coal. The finely comminuted texture of durain, for example, can hide a wide range of compositions since each of the four maceral groups is known to exceed 50% (mmf) in lithotypes described as durain. The lithologic description of fine-grained coal should not be expected to be any better or worse as an indicator of the maceral composition than the description of a shale or siltstone would be as an indicator of mineralogic composition.

In summary, this brief communication outlines our experience with the petrology of single-lithotype benches. We would hope that other groups with similar megascopic/microscopic petrology comparisons would communicate their data so that we can all have a better appreciation of the heterogeneity of coal lithotypes.

References:

- Austin, S. A., 1979. Depositional environment of the Kentucky No. 12 coal bed (Middle Pennsylvanian) of western Kentucky, with special reference to the origin of coal lithotypes (Ph.D. Thesis). The Pennsylvania State University, 390 p.
- Cameron, A. R., 1978. Megascopic description of coal with particular reference to seams in southern Illinois. ASTM STP 661, p. 9-32.
- Davis, A., 1978. Compromise in coal seam description. ASTM STP 661, p. 33-40.
- Stopes, M. C., 1919. On the four visible ingredients in banded bituminous coal. Proc. Royal Soc., B., 90, p. 470-487.

James C. Hower
James D. Pollock
Garry D. Wild

Kentucky Center for Applied Energy
Research
Box 13015
Lexington, KY40512

THE SOCIETY FOR ORGANIC PETROLOGY

Statistics for lithotypes

STATISTIC	VIT	INERT	MIC	LIP	AD ASH	AD TSULF
BRIGHT CLARAIN						
Count	93.00	93.00	93.00	93.00	91.00	91.00
Mean	85.57	7.75	2.30	4.40	8.31	2.16
Median	87.70	6.50	1.90	3.80	6.94	1.76
St Dev	7.20	5.16	1.73	2.62	5.33	1.56
Maximum	95.90	27.60	10.60	13.10	27.66	8.41
Minimum	63.10	0.60	0.20	0.70	1.17	0.52
Skewness	-1.17	1.50	1.67	1.09	1.37	1.11
Kurtosis	1.06	2.70	4.76	1.07	2.56	1.51
CLARAIN						
Count	73.00	73.00	73.00	73.00	73.00	73.00
Mean	79.87	9.80	3.56	6.81	12.83	2.00
Median	83.10	8.60	2.60	6.20	10.26	1.14
St Dev	10.76	6.29	3.31	4.07	9.67	1.76
Maximum	95.50	26.50	16.80	23.10	46.10	7.41
Minimum	48.10	0.10	0.10	1.20	1.47	0.42
Skewness	-1.08	0.90	1.94	1.25	1.26	1.43
Kurtosis	0.55	0.27	4.44	2.47	1.30	1.45
DULL CLARAIN						
Count	30.00	30.00	30.00	30.00	30.00	30.00
Mean	71.10	15.75	4.68	8.56	13.08	2.23
Median	68.85	16.85	4.40	7.40	11.30	1.03
St Dev	16.39	10.00	3.10	4.86	11.45	3.17
Maximum	96.10	38.40	11.70	18.00	52.21	16.64
Minimum	38.30	0.70	0.30	1.10	1.70	0.25
Skewness	-0.28	0.51	0.57	0.23	1.67	3.60
Kurtosis	-0.90	-0.14	-0.27	-1.04	3.62	15.11
DURAIN						
Count	42.00	42.00	42.00	42.00	42.00	42.00
Mean	42.53	34.85	6.26	16.39	21.29	0.65
Median	40.60	36.30	5.00	16.15	16.33	0.53
St Dev	17.79	15.13	7.59	7.97	15.41	0.33
Maximum	87.20	67.60	50.70	54.10	66.86	2.14
Minimum	12.00	6.90	0.00	2.40	1.62	0.31
Skewness	0.82	-0.07	5.12	2.42	1.02	2.77
Kurtosis	0.53	-0.59	30.10	11.66	0.56	10.15

TSOP Publications Available

TSOP publications which are available for purchase and their cost are listed below.

Baker, E. W. and P. A. Schenck (eds.), 1987. A Selection of Papers from the 2nd Annual Meeting of the Society for Organic Petrology, Houston, Texas, 7-9 November 1985. *Organic Geochemistry*, Vol. 11, No. 5. Cost: \$20.00 U.S.

Teichmuller, M., 1982. Fluorescence--microscopical changes of liptinites and vitrinites during coalification and their relationship to bitumen generation and coking behaviour (English translation: Neeley Bostick). TSOP Special Publication No. 1. Cost: \$7.50 U.S.

The original article in German (Fluoreszenzmikroskopische Änderungen von Liptiniten und Vitriniten mit zunehmendem Inkohlungsgrad und ihre Beziehungen zu Bitumenbildung und Verkokungsverhalten) is also available. Cost: \$7.50 U.S.

Orders should be sent to:

John D. Shane
Exxon Production Research Co.
P. O. Box 2189
Houston, TX 77252 U.S.A.
Tel. (713)965-4490

General Announcements

Volunteer Needed for Awards Committee

A volunteer is needed to join the Awards committee. There are presently two members, David Glick and Suzanne Russell (chairperson), both Penn State alumni. Duties of the committee include judging the Outstanding Student Paper at the annual meeting. The prospective committee member should be able to attend the annual meeting, have an interest in judging student papers and preferably not be a Penn State alum. Any TSOP member interested with the above qualifications please contact:

Suzanne Russell
Shell Development Company
3737 Bellaire Blvd.
Houston, TX 77025 U.S.A.

Tel. (713) 663-2633

Photo Contest!

A Photo Contest will be held in conjunction with the annual TSOP meeting in Houston in November. All members are invited to submit an 8" x 10" photograph or photomicrograph, black and white or color. Suggestions for subjects are scientific material, TSOP members at work or play, scenes from past meetings or any other imaginative topic. Good taste is recommended! First, second and third prize ribbons will be awarded and in addition, the first prize photo will be framed. All photos entered will be displayed at the annual meeting. Judging will be by ballot of the membership attending the meeting. The deadline for submission is October 15, 1988.

Photos should be submitted to:

Suzanne Russell
Shell Development Co.
3737 Bellaire Blvd.
Houston, TX 77025 U.S.A.

Address Changes

Please send any address changes to:

Kenneth L. Yordy
ARCO Oil and Gas Company
P. O. Box 2819
Dallas, TX 75221
U.S.A.

Tel. (214) 422-6250

Laboratory Name Change

The Kentucky Energy Cabinet Laboratory (KECL) has changed its name to the Kentucky Center for Applied Energy Research and is now being managed by the University of Kentucky. At present, the address and phone number of the laboratory remain the same. The title and affiliation change should be noted with regards to Jim Hower, Lance S. Barron and Eric J. Trinkle.

Publication of TSOP Meeting Papers

Margaret Pytte and Jim Hower are working on assembling papers and extended abstracts of the 1987 San Francisco TSOP meeting for publication.

Proceedings of the 1986 TSOP Lexington, Kentucky, meeting should be coming out soon (late summer or early fall) in *Organic Geochemistry*.

If you have any announcements you would like to see included in the next newsletter, please send or telephone them in to your newsletter editor!

Letter to the Editor

Dear Colleague:

I am pleased to send you some information related to two symposia to be held in Orléans, France, in 1988 and 1989.

The first concerns the French speaking researchers or analysts in Organic Petrology, including people mainly from France, but also from Belgium, Spain, Portugal, the Netherlands, Switzerland, Italy and North Africa. A selection of papers related to this meeting, either in French or English, will be published in the Bulletin of the "Société Géologique de France", I hope as a special volume.

The second is an international meeting on the sedimentology and geology of coals, and on their related properties (all aspects of composition, industrial properties etc.). I am sure that Organic Petrology will play an important role in this symposium.

Thank you in advance for spreading this information. I hope that, in the future, scientific relations based on research works could be established between our regional group and TSOP.

Philippe Bertrand
Université d'Orléans

Editors note:

The Colloque de Pétrologie Organique was held June 14-16, 1988. The second meeting, "Coal: Formation, Occurrence and Related Properties", will be held September 12-15, 1989, at the Université d'Orléans. The working languages of the meeting will be English and French. For information please contact:

B. Bertrand/Coal Meeting 1989
Unité de Recherche en Pétrologie
Organique
Université d'Orléans
45067 ORLEANS CEDEX 2 FRANCE

tel. (33) 38.69.35.30
telex: UNIVORL 783-388F

Meeting Calendar

1988

Aug. 7-12. Heavy Crude and Tar Sands 4th International Conference, Edmonton, Alberta, Canada. Mr. R. Omana, UNITAR/UNDP Information Center, 801 United Nations Plaza, 5th Floor, New York, NY 10017, U.S.A.

Aug. 14-21. Peat Eighth International Congress, Leningrad, U.S.S.R. Organizing Committee. Ministry of Fuel Industry of the RSFSR, Sadovaya-Chernogryazskaya 8, Moscow 107813, U.S.S.R.

August 28-31. Second International Conference of Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China. Prof. Fan Pu, Lanzhou Institute of Geology, Academia Sinica, Lanzhou, China.

Aug. 28-Sept. 3. The International Palynological Congress, University of Queensland, St. Lucia, Brisbane, Australia. Secretariat, 71 PC, Uniquet Ltd., Univ. of Queensland, St. Lucia, Qld. 4067, Australia, Tel. 6173772733.

Nov. 7-8. The Fifth Annual Meeting of the Society of Organic Petrology, Houston, Texas. John Castano, 722 Oder Lane, Houston, TX 77090, U.S.A. Tel. 713-444-4901.

Nov. 9. Joint TSOP/AASP Symposium, entitled "The Relationships of Temperature, Mineralogical Alteration, and Related Phenomena in the Process of Organic Maturation, Hydrocarbon Phases, and Reservoir Creation and Destruction". John Clendening, Amoco Production Co., P.O. Box 3092, Houston, TX 77253, U.S.A.

Nov. 10-12. The Twenty-first Annual Meeting of the American Association of Stratigraphic Palynologists. Half-day Symposia on the Paleozoic (Gordon Wood) and the Quaternary (Steve Hall and/or Owen Davis) will be held on Thursday; Friday and Saturday will be reserved for general technical sessions. Co-chairmen: John Clendening, Vaughn Bryant and Bob Clarke.

Dec. 4-7. Geochemistry of Gulf Coast Oils and Gases, Ninth Annual GCS-SEPM Foundation Research Conference, New Orleans, LA. D. Schumacher, P. O. Box 2967, Houston, TX 77252, U.S.A., Tel. 713-546-4028.

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TSOP Annual Meeting

The Fifth Annual Meeting of The Society for Organic Petrology is Monday and Tuesday, November 7-8, 1988 in Houston, Texas. A joint TSOP/AASP Symposium entitled "Prediction of Hydrocarbon Reservoir Potential from Paleotemperature and Petrographic Data" will be held on Wednesday, November 9, 1988.

The TSOP meeting and the Symposium will be held at the Intercontinental Hotel across the street from the Galleria at 5150 Westheimer. Room rates are \$70 single and \$80 double per night. The hotel operates a free shuttle bus service to the nearby Post Oak airport bus terminal.

Registration fees for the TSOP meeting are:

Preregistration, professionals.....	\$85
Preregistration, students.....	\$65
On-site registration.....	\$100

Registration fees for the Symposium are:

Professionals preregistered for TSOP....	\$40
Students preregistered for TSOP.....	\$30
All others, preregistered and on-site....	\$60

Included in the TSOP fees are the abstracts volume, business luncheon, coffee breaks, Icebreaker party and the special issue of *Organic Geochemistry*, which will contain the selected papers from the TSOP meeting and the Symposium.

TSOP Election Results

The results of the 1988 TSOP election are as follows:

President-Elect.....	Arthur D. Cohen
Vice President.....	James C. Hower
Councilor.....	Dennis D. Kaegi
Editor.....	V. Eileen Williams

Report on the 41st Meeting of the International Committee for Coal Petrology Aachen, Germany, September 2-11, 1988

The International Committee for Coal Petrology met in Aachen, Germany on September 2-11. Over 95 attendees representing 28 countries participated in the meetings. Professor Monica Wolf, Institute of Petroleum and Coal Geology and Geochemistry (Technical University of Rheinland-Westfalen, Germany) was the host and main organizer of the meeting. Included in the program was a special one-day symposium in memory of Erich Stach.

The ICCP has been instrumental in bringing cooperation, scientific and technical advancement and international agreement into many aspects of organic petrology. Many of the stars in this work are now retired or even dead--yet the ICCP has progressed into new areas with new, active participants. So, it is important that individual petrologists be aware of ICCP work and even participate in that work if they can make a contribution in special areas.

ICCP meetings are NOT conferences for presentation of scientific papers, instead, they are organized into 3 commissions (I--General Applications; II--Geological and Petroleum Applications; and III--Industrial Applications) which are divided into working groups that consider problems in identification, classification, methods and interpretation in applied cases. The scope of these sessions includes coals and dispersed sedimentary organic matter.

Fortunately, several TSOP members are actively involved in ICCP work. This gives all of us an opportunity to stay informed and even to ask for more detailed information where it is important. Alan Davis did not return to the U.S. in time to contribute to this summary so it does not reflect his expertise as chairman, for many years, of the Commission on Industrial Applications and now, as ICCP general secretary. The following summary was prepared by Joe Senftle, Wolfgang Kalkreuth and Neely Bostick. (N.B.)

THE SOCIETY FOR ORGANIC PETROLOGY

Introductory guest lectures:

The following guest lectures relating to Commissions II, III and I, respectively, were presented to all participants:

Hydrocarbon generation and migration in rich source rocks. D. Leythaeuser and R. Littke (KFA Juelich).

Review of applied coal petrology in Australia. J. Bailey and C. Diessel (Univ. Newcastle, NSW).

Chemical characterization of coal maceral concentrates. A. White (British Gas).

Commission I (General Applications)

Chairman: H. Smith, England; Secretary: A. Cook, Australia.

1. Lithotypes of Brown Coals (P. Black, New Zealand)

Objectives: To establish an internationally accepted classification of lithotypes in low rank coals.

The English version of a handbook sheet on classification was completed. Components such as "detrital/atrital", "groundmass" and "fine granular" still cause dispersion in analyses. Some lithotype analysis is valid only for lignite that has not had diagenetic gelification. The working group voted to continue in order to merge Australian, North American and European nomenclature and classification. A North American contribution is needed.

2. Standardization of reflectance/maceral analysis (W. Pfisterer, Germany)

Objectives: Establish internationally accepted standards and methods for reflectance measurements to attain comparable results between laboratories. Define more repeatable identifications of macerals for reflectance measurement.

Alpern proposed separation of Liptinite/Vitrinite/Inertinite based on standard deviation of random reflectances (e.g., "vitrinite" is = 1.55 s. d. from mean Rr of vitrinite). Ring analysis (28 members) gave good separation in some samples, but poor in others. Calculated %

liptinite deviated only little from counted, but a couple of individual labs were far off. A similar round robin of high-rank (circa 1.8% Rr-Vt) was proposed for next year.

3. Gondwana Coals (A. Cook, Australia)

Objectives: Define petrographic characteristics of Gondwana coals and assess related technological properties.

Ring analysis of two coals: both vitrinite and inertinite had too large standard deviations on the first round. Repeat analyses after discussion reduced the spread. Reflectance s. d. was greater than usually accepted for commercial analyses; the non-Australian labs had higher reflectance of vitrinite than Australian labs. Future analyses are intended, but results are best if coal has already been pelleted. Agreement on separation between semifusinite and fusinite is poor; possibly some fixed reflectance must be measured for maceral separation. Separation of semifusinite from vitrinite was fair.

What should the Gondwana working group do (many proposed activities overlap with other ICCP groups)? Wolf proposed circulating marked photos for component "vote" by members (which worked for lignites), but most felt actual side-by-side microscope calibration is best.

Smith suggested that it is time to form a general working group on the problem of separating inertinite macerals; not all Gondwana coals are inertinite rich.

4. Saprovitrinite working group (K. Kruszewska, South Africa).

Objectives: Study differences between vitrinite in humic and sapropelic coals.

Results of the ring analysis of two torbanites and a humic sample (whole blocks, not crushed coals) from the same seam were discussed. Vitrinite in the torbanites had only slightly lower average reflectance than vitrinite in the humic coal—because members were asked to measure all vitrinite in each sample. Some members feel that "saprovitrinite" should not be a maceral term, just a facies designation. The working group is not focused as to whether it is to study deposition of saprovitrinite or whether it is to solve the problems of "off" (mostly low) reflecting vitrinite.

In a few cases low reflectance can be recognized (e.g., from "scruffy" vitrinite or "filmed" vitrinite), but not some of the low reflecting vitrinite associated with alginite. "Anomalous" vitrinite can not be reliably identified by fluorescence. High sulfur analyses may warn of low-reflecting vitrinite. Black/Cook will try to get paired (high/low S) samples of the high-sulfur New Zealand coals that have odd reflectance.

5. Standardization of fluorescence measurements (K. Ottenjann, Germany).

Objectives: Establish procedures and standards that permit comparable measurement of fluorescence in different laboratories.

Work was completed on the English text of "standard method" for monochromatic intensity measurement. The method specifies rather narrow ranges of equipment that will do the job in a way that will compare between analyses. But the problem of standards that allow comparison between labs is not yet solved. Ottenjann reported on work with uranium glass that had been ground extra thin to overcome effects of numerical aperture on "observed" volume of standard. Also, the problem of oxidation in the first hours after grinding or polishing of samples is not solved, but some labs report uniform results after simply waiting a day after polishing.

6. Coal classification (Lemos de Sousa, Portugal).

Objectives: Establish an international scientific classification for coals of all types and ranks; and provide expert guidance for commercial classifications of coal.

The coal classification under consideration for adoption by the ECE (ISP 7404/5) applied to technology, not genetic/scientific types as does the Alpern classification. Proposed scientific classifications faced stormy discussion at the meeting because of their complexity and because they include still-unresolved problems of maceral analysis.

7. P. Lyons described his work on laser microprobe analyses (Published in 1987, International Journal of Coal Geology).

8. Bibliography of sedimentary organic matter (N. Bostick).

The old CBIB (circa 8,000 entries) has been imported from a mainframe computer to PC (MS-DOS). Three data formats were demonstrated using a key word software. A demo diskette will be distributed to 14 participants in October '88 with sections of the data in five formats, with two kinds of software samples for access and updating. Following agreement on format for exchanges, the complete CBIB will be distributed and several other existing data sets will be added. (N.B.)

Commission II (Geological and Petroleum Applications)

Chairman: Joe Senftle, U.S.A.; Secretary: Yvonne Somers, Belgium)

A total of six issues were discussed, resulting in the completion of three descriptive sheets (migrabitumen, bituminite in rocks other than coal and mineral bituminous groundmass). Two new working groups (isolation of sedimentary organic matter and thermal indices) have been established which are designed to increase the integration of petrographic, geologic and geochemical study of sedimentary organic matter. If you have contributions or comments concerning the current and proposed efforts of Commission II, please contact Dr. Joe Senftle. An outline of the work follows.

1. Migrabitumen Working Group (W. Hiltman)

The term "migrabitumen" describes bituminous material that has migrated. The purpose of this working group was to prepare a sheet describing these materials. The initial worksheet on migrabitumen was prepared by Dr. H. Jacob (distributed and discussed during the 1984 ICCP meeting in Calgary, Canada and subsequently revised and discussed during the 1985 ICCP meeting in Dubrovnik, Yugoslavia and the 1986 meeting in Doncaster, England).

During this meeting, Dr. W. Hiltman presented the final revisions which were based upon suggestions received in the mail by members of the working group. The final task for this group is the choice of photomicrographs to illustrate migrabitumen occurrence. A suite of photomicrographs were presented by Dr. H. Jacob and a final choke of

appropriate photomicrographs will be made via the mail by early 1989. We are indebted to Dr. H. Jacob who initiated this work and conducted the early activities of this working group and to Dr. W. Hiltman who subsequently coordinated the final work of this sheet.

2. Amorphous Organic Matter Working Group (J. Senftle).

This group which formed during the 1985 ICCP meeting in Dubrovnik, Yugoslavia is an extension of a previous working group concerning unfigured liptinite. The purpose of this group is to characterize the types and mode of occurrence of amorphous organic matter in rocks and in concentrated organic matter samples.

During this meeting, work concerning sample MOD-42 was completed. Senftle reviewed the geologic, Stratigraphic and geochemical characterization information known about this Devonian New Albany Shale sample from Bullit County, Kentucky. The primary purpose of this MOD-42 exercise was to compare different methods of sample preparation. The conclusions of this work are summarized below.

- 1) The most preferred preparations include a) whole rock polished pellets and polished pellets of concentrated organic matter which were both considered necessary and b) strewn slide mounts of concentrated organic matter and thin sections which were both considered important, but use depended upon the aim of study.
- 2) The preparation type has a significant influence on the fluorescence properties of the sample (Bertrand and Pradier)
- 3) The type of preparation had no influence on the vitrinite reflectance measurements (Nicolas).

Further, it was decided that two separate nomenclatures are necessary to characterize transmitted and reflected light sample preparations such as whole rock pellets and strewn slide mounts. It is not considered possible to combine them into a single system.

Finally, several proposals were made for future samples including a sample set from Bulgaria (suite of humic shales), Brazil (Parana Basin) and Spain (Puertollano Basin). A final decision of the next sample set and exercise will be made based upon a

questionnaire which will be sent to active members of the working group. The future work of this group will be coordinated by Dr. W. Hiltman.

3. Mineral Bituminous Groundmass Working Group (J. Senftle and M. Teichmuller).

The final revisions of this sheet were made during this meeting and it is now ready for publication. Again we are greatly indebted to Dr. M. Teichmuller for her efforts concerning this work.

4. Bituminite (in rocks other than coal) Working Group (J. Senftle and M. Teichmuller).

During this meeting, final revisions of the sheet describing "bituminite" in rocks other than coal were made. In 1975 the ICCP introduced the term bituminite for a lignite maceral of the liptinite group which is characterized by its lack of definite shape. This more recent sheet describes an unfigured autochthonous maceral of the liptinite group, occurring in rocks other than coal. The first draft of this sheet was presented by Dr. M. Teichmuller during the 1983 ICCP meeting in Oviedo, Spain. We are greatly indebted to Dr. Teichmuller for her ideas and perseverance in preparing this sheet.

Revisions to the text were discussed in light of comments made by members present at the meeting, in addition to comments mailed to the working group. A series of twenty photomicrographs were presented to allow members to discuss and choose appropriate images to illustrate the type and modes of occurrence of bituminite. Five sets of images were chosen which included white light, polarized light and fluorescence images.

5. Alginite Working Group (A. Cook)

This working sheet, which proposes the distinction of two alginite macerals, was first presented during the 1985 ICCP meeting in Dubrovnik, Yugoslavia. In short, it has been proposed that the large alginite bodies typically with well defined botanical structures be termed telalginite (telatissue) and that alginite which is seen in sections perpendicular to bedding as thin lenses or lamellae be termed lamalginite.

Dr. Cook reported the results of fluorescence studies performed by Mr. Ottenjann and from Dr. Pradier. The same suite of samples were used and

broadly similar results were obtained. Ottenjann placed the sample set in a rank order on the basis of fluorescence properties. The order obtained by using fluorescence parameters was not consistent with that reported by Cook who used vitrinite reflectance data from adjacent humic coals for most of the samples.

After further discussions, it was agreed that Cook would revise the working sheet to include the latest reported optical and chemical data available and would also send some samples to Senftle for additional chemical analyses.

6. Nomenclature and classification of dispersed organic matter (Mukhopadhyay's)

Dr. J. Senftle reviewed the classification of dispersed organic matter in sediments proposed by Dr. P. K. Mukhopadhyay, who was unable to attend the meeting. This classification proposed a nomenclature to classify organic matter observed in different sample preparation types within a single system.

The feeling of the ICCP members present at this meeting is that all new classification suggestions are welcome for review and that there are other somewhat equivalent classifications published. This commission, however, does not agree with the use of a single classification system for different sample preparation types and is committed to stand by terms already proposed and adopted by this commission, thus, it cannot consider terms which describe previously defined constituents.

The commission wishes to stress that they appreciate the efforts put forward by Dr. Mukhopadhyay.

(With the completion of three description sheets (to be included in the next revision of the ICCP handbook) during this meeting, Commission II is now able to move into new areas which a large number of workers have expressed interest. With that in mind, the commission initiated two new working groups. J.S.)

7. Isolation of sedimentary organic matter (A. van der Meulen)

Objectives: Development of a better understanding of the visual and chemical effects of isolating organic matter by chemical and physical methods.

8. Sensitivity, limitations and correlations of thermal indices (N. Bostick)

A large set of thermal indices were proposed by members present including reflectance of vitrinite, migrabitumens and graptolites, spore color index, Rock-Eval TMAX, biomarkers, fluorescence, conodont color index, clay diagenesis, gas data, isoprenoid/n-alkane distributions, atomic ratios, IR, ESR and many others. Clearly, this ambitious list can not be addressed by a single working group. It is hoped that this group will be able to define the magnitude of the issue and suggest ways in which we can approach a better understanding of where and when different thermal indices accurately assess thermal history. (J.S.)

Commission III (Industrial Applications) **Chairman: A. Davis, U.S.A.**

1. Hydrogenation residues (A. Davis, U.S.A. and J. Potter, Canada).

Objectives: Establish a useful international classification of coal hydrogenation residues.

Handbook sheets have been completed and revised. These 15 sheets include Cenosphere, Carboplast, Granular Residue, Hydroplast, Vitriplast, Plasticoal, Partially Reacted Macerals, Unaltered Residues and Introduction to Analysis of Hydrogenation Residue. Participants are collecting and editing photographs, and the sheets will be printed in the 3rd Handbook supplement just about as they now stand.

2. Reactive inertinite (K. Kruszewska, S. Africa).

Objectives: Investigate the possibility of evaluating the reactive inertinite content by use of all-maceral reflectance scans and evaluate the fusibility of inertinite macerals by coke microscopy.

Sample exchange exercises 3 and 4 and questionnaires were reported. Both exercises were on coals with 43-55% inertinite. Criteria for analyzing reactive inertinite have not been unified between labs—especially for crushed coals in which grains contain multiple constituents. The problem is that estimation of the reactivity depends on recognition of optical anisotropy, but that property is not definable at a single crosshair point on a grain. Also,

some grains seem to have anisotropy just at the borders.

In the ring analyses, agreement of total coked material was very good, but analyses of reactive/unchanged inertinite were highly scattered. Separation of vitrinite/inertinite based on cutoff of a certain spread in a reflectance scan gave good agreement between labs, and it was suggested that a similar method be applied to separate reactive/non-reactive inertinite. D. Pearson's method of calculation from reflectance scan came close to the average of values from the ring analysis for the Canadian sample.

Some results of long-wave fluorescence analysis to separate reactive/non-reactive inertinite were presented. Some of the difficulty in using microscope analyses to predict reactivity stem from the difference between maceral internal reactivity and the actual fusion of grains at the boundary in a coke.

3. Combustion (M. Bengtsson, Sweden).

Objectives: Study the relationships between petrographic characteristics of feed coals and resulting fly-ashes and chars.

Report of analytical exercises on coals, fly ash and drop-tube furnace chars was distributed. The working group met in Holland in the mid year so classification of combustion residues and effect of macerals in combustion were reported there.

4. Automated microscopy (R. Munnix, Belgium).

Objectives: Petrographic analyses of coals by photometer scanning and image-analysis systems.

The inter-lab exercise with specially prepared polished grain mounts included manual and automated analyses. In the manual maceral group analyses only a few analyses fell outside the plus or minus 2 s.d. acceptability for comparison between labs. The means of the manual exercises were used as reference values to evaluate the automated analyses. Reflectance analyses of the same blocks showed only one laboratory outside acceptable comparisons.

For the automated analyses, two labs used scanning photometers, the rest image analyzers. The reflectances from automated analyses were consistently slightly lower than from manual analysis,

but the labs using photometers obtained POSSIBLY (the number is small) better agreement between automated and manual reflectance analyses. Also, the total criteria used for calculating "vitrinite content" from the reflectograms gave good results for both the labs using photometers, but poor results for two of five labs using image analyzers. In any case, while reflectance and maceral calculation results agreed in general with previous studies in the Standardization working group, the dispersion of results does not reliably meet deviations allowed by ISO standard 7404/5.

5. Coke texture (Vogt).

Objectives: Establish workable classification according to isotropic and anisotropic domains and account for pore voids and edge effects in analyses.

Ring analysis of four samples was reported. The type of problem depended on the rank of the initial coal: low rank coals gave problems in coke texture analysis relating to recognition of softened/non-softened or isotropic/anisotropic constituents. High rank coals gave problems in separation of fine/medium/coarse mosaic. Some felt that the distinctions of some features are too many for practice—especially when dealing with real cokes from different parts of an oven rather than from a pilot oven. A classification that would include porosity would be handled best by image analysis rather than by visual analysis. The coke texture classification can not be applied to general carbon studies (electrode, fiber, petroleum products, etc.). TEM characterization of coke would add much, especially in analyzing products from low rank coals. (W.K.)

Stach Symposium (Sunday, September 11).

The following papers were presented at a special symposium by people who had studied or worked with Erich Stach, who died last year:

M. Teichmuller: Erich Stach: Life devoted to coal petrology.

D. Murchison: Effects of igneous activity on the organic maturation of Carboniferous rocks of the Midland Valley (Scotland).

C. P. Snyman: Role of coal petrography in the understanding of South African Coal.

R. Takahashi: Automated analysis of low rank coals.

G. H. Taylor: Micrinite: nature, origin and significance.

W. Pickhardt: Trace elements in minerals of German bituminous coals.

M. Wolf: Facies and rank of the Kupferschiefer of the Lower Rhine Embayment and N.W. Germany.

Future ICCP Meetings

The next ICCP meeting will be held in February 1990 at Wollongong, Australia (contact Prof. Alan Cook). Following meetings are planned in September 1991 at Porto Alegre, Brazil and in August 1992 at State College, Pennsylvania, U.S.A.

Joe Senftle
Wolfgang Kalkreuth
Neeley Bostick

Outreach to Steel-Industry Organic Petrologists

Alan Davis sent a letter in March of this year to scientists and engineers who do some organic petrology in applications that are not well represented among papers presented at TSOP meetings-to people also not well represented in TSOP membership. Since application in iron and steel making was the foundation of modern organic petrology, the lack of people from the steel industry was the most visible gap, but we could gain much from contact with others too, for example those working on carbon fibers, petroleum coke, combustion, gasification, etc.

The response to Alan's letter from Ralph Gray, probably the petrologist with the longest and broadest experience of any in North America, deserves attention by old hands and by scientists just establishing their career course. Note that Ralph's letter suggests some activities of a type normally pursued by organizations such as the ASTM and the ICCP and also occasionally by informal associations such as the French-speaking petrologists or the Australian or Canadian Coal Petrographers-namely, organized efforts to solve specific scientific and technical problems. This re-

ally means, I think, that we should question whether TSOP can keep a viable critical mass as just a scientific society that "passively" holds meetings, publishes proceedings, and distributes some news to members. I am not saying that TSOP does need to change or expand, because it is already providing a service of significant value to most members with a modest cost of time. But, I believe that we should consider Ralph's suggestions and that we should "put a toe into the water" with a little activity along these lines to help decide whether TSOP should change. The letter by Alan Davis and the reply by Ralph Gray are reprinted below.

Neely Bostick
U.S. Geological Survey

(Text of letter sent by Alan Davis to steel company representatives on March 1, 1988.)

March 1, 1988

Dear Colleague:

I am writing to you as Chairman of the Outreach and Membership Committee of the Society for Organic Petrology (TSOP). The President of the Society (Neely Bostick) and many of the members are concerned that coal petrographers within the steel and steel-related industries are poorly represented in the membership and attendance of our recent annual meetings. Consequently I am making an appeal to you and other steel industry representatives.

This is not a membership drive; TSOP is healthy both in terms of members (currently about 150) and finances. Rather it is a sincere effort to broaden the scientific base of the Society. You may remember that when TSOP was first founded, the hope was expressed by many that the new society would fulfill the functions of the informal North American Coal Petrographers group. Clearly this hope has not been realized, and TSOP is anxious to do whatever it can to make itself more attractive to our colleagues in the steel industry.

I think that the attached program from the 1987 TSOP meeting in San Francisco shows that the Society is far from dominated by members from the petroleum industry. Seventeen out of the 28 pa-

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pers and posters presented dealt with some aspect of coal, and I suspect that many of the topics discussed would be of interest to steel industry petrographers. I myself would like to see the inclusion of papers which deal explicitly with coal and coke petrography as applied in the metallurgical industries.

Whether you are a member of TSOP or not, I will ask our Secretary to send you the Call for Papers for the next meeting to be held in Houston on November 7-8, 1988. Please give special consideration to offering a paper for us. I will also ask the Secretary to send you a copy of the final program in the hope that we can entice you to join us even if you cannot present a paper—we really would like to see you there.

Eight papers from the first TSOP meeting were published in a special "Proceedings" issue of the International Journal of Coal Geology. Proceedings of subsequent meetings have been published in or are in preparation for the journal, Organic Chemistry.

The 1989 meeting will be held in Urbana, right in coal and steel country. TSOP has been invited to hold the 1990 Annual Meeting in Calgary, jointly with a meeting of the Canadian Coal Petrographers Group.

Finally, if you have any opinions which you are willing to express about TSOP's goals and direction, its organization, meetings, publications and so on, please drop me a line or call me. We are interested in hearing from you.

Alan Davis

(Text of Ralph Gray's March 22, 1988 reply to the Alan Davis letter.)

Dear Alan:

In your letter of March 1, 1988 you expressed your concern and that of many of the other members in The Society for Organic Petrology (TSOP) for poor representation of steel-related coal petrographers at TSOP annual meetings. You noted that 17 of the 28 papers and poster topics at the 1987 meeting dealt with coal. This information was cited as

proof that TSOP is not dominated by the petroleum industry. You might also have noted that none of these papers or poster topics were presented by any employee of the mining, beneficiation, carbonization, or steel making industries, or from commercial laboratories. There was not a single presentation that would justify attendance of steel-related coal petrographers. I'll grant that a general interest in coal was addressed, but if an individual industrial coal petrographer was limited to one or two meetings a year then Iron and Steelmaking of AIME would most likely be the first choice and many of us would consider attending ASTM on obligation.

I'm sure you realize that formulation of coal blends that produce high stability coke and produce acceptable oven wall pressures are the major concern of steel related coal petrographers. The existing coke batteries in the U.S. are relatively old and must be nursed along to prolong life and pushing problems must be minimized. Some of us have worked out petrographic schemes for predicting volume changes and maximum oven wall pressures, but these may need updating. I do not know of any petrographic prediction schemes that have been developed for foundry coke properties, so there is a need in this area.

Apparently, there is no proven scheme for selecting and blending coals for combustion based on petrographic data and such a blending scheme would be welcome. The use of coal petrography should be developed for selecting coals for the ferroalloy, silicon, activated carbon and other specialty carbon industries. Coke petrography as practiced at USX, CT&E, Koppers, CONSOL and PEMC has been extremely useful in the coke and carbon industry. Petrographic predictions of coke strength for preheated charges is also important. I could go on with a long list of things we need to do as coal petrographers, but I have cited enough areas to make my point without addressing either mining or beneficiation.

I feel certain that more coal petrographers from the steel-related industry will attend TSOP in Canada since some of them already attend meetings of the Canadian Coal Petrographers Group which meets May 30 and 31 of this year. However, this will not cure the problem of poor attendance of steel industry related coal petrographers at TSOP meetings. I believe this group of coal petrographers is near extinction or at least they are an endangered species. The most

we can expect from this group is to be able to salvage what they have developed and that which they have not been able to make available to others prior to this time. The steel industry has a research heritage that is rapidly being forgotten with a minimum of preservation of their data and accomplishments. A symposium on coal petrography in the steel industry in the eighties would be interesting.

It would be a valuable contribution if TSOP, as an organization, could send a representative to attend ASTM to address the problems of formulating an oxidation test, improving tests for moisture, upgrading maceral definitions, drafting a new HGI test, writing standards for the petrographic analysis of coke, and introducing a quantitative and/or qualitative statement of the implication of changes in coal type on the ASTM classification by rank. Coke reactivity testing is another important subject. I do not know of any subcommittee activity on coke testing in ASTM.

The new ECE international classification includes reflectance and macerals. We should also be working in this direction. The question of mineral matter in coal and its impact on significant analyses and on coal ranking is another problem being addressed by ASTM. It would also be nice if a TSOP member actively participated in the ECE effort to draft an international scientific classification for coal. TSOP views should be addressed to the various organizations that actively work on coal classifications and the procedures for determining the classification parameters.

I do think an organization like TSOP should set out goals and try to have a representative to act as liaison with the various organizations that are active in coal science and in the areas of fossil fuels. The North American Coal Petrographers Group was completely informal and had very narrow interests which should be easily addressed by TSOP with a minimum of effort. TSOP's goals should be broader based.

The extension of the industrial applications of coal, coke, and carbon petrography should be a broad enough goal to attract more participants that are interested in industrial coal petrography.

Sincerely,

Ralph J. Gray

Book Reviews

ORGANIC METAMORPHISM AND GEOTHERMAL HISTORY: MICROSCOPIC STUDY OF ORGANIC MATTER AND THERMAL EVOLUTION OF SEDIMENTARY BASINS. by Paul Robert (1968). 311p. Published by D. Reidel Publishing Company, P. O. Box 17, 3300 AH Dordrecht, Holland. Sold and distributed in the U.S.A. and Canada by Kluwer Academic Publishers Group, 101 Philip Drive, Norwell, Massachusetts 02061. \$59.00 (paperback); \$99.00 (hardback).

This book is the outcome of research on the petrography, geochemistry and metamorphism of sedimentary organic matter (OM), carried out since 1966 at the laboratories of Elf-Aquitaine in Boussens, France. Originally published in 1985 as *Histoire Geothermique et Diagenese Organique*, this valuable work was recently translated (very nicely) into English and republished. The major emphasis of the book is the analysis and classification of solid OM (organic matter) as related to thermal maturation and petroleum generation. Equally important is the interpretation of thermal history, as surmised on the basis of organic and inorganic diagenesis.

The book's 21 chapters are grouped into 4 parts, the first of which deals with general concepts concerning geothermal heat flow, the evolution of sedimentary basins and the modeling of organic maturation. Part 2 deals largely with the methods of analyzing and classifying sedimentary OM, especially by optical microscope, but also includes discussions of rank determination, coalification and hydrocarbon generation. Part 3 comprises 8 chapters, each one focusing on the geologic history of a particular sedimentary basin, from the standpoint of sedimentation, geothermal history and hydrocarbon evolution. The final grouping of chapters deals with mineral diagenesis and its relationship to organic diagenesis. The book includes 199 illustrations, many color photomicrographs and a comprehensive bibliography of over 400 references in French, English and German. Also included are three indexes (General, Geographical and Author), as well as a Glossary of Specialized Terms and a very handy set of abstracts summarizing each of the book's chapters.

Logical presentation of the topics covered in the first two parts of this book always poses a difficult logistical problem, in that the classification and

description of sedimentary organic matter is inextricably tied to its metamorphic history. OM present in the rocks today can be adequately understood only if we also understand its geologic precursors and the processes by which it evolved. Robert dodges this difficulty by launching directly into a discussion of thermal diagenesis of organic matter, and it is not until Part Two that we are given a thorough description of the materials in question and methods by which they are studied. Provided that the reader already has an adequate background in these topics, he/she should have no difficulty plunging right in.

Part Two provides a very thorough description of procedures for sample preparation and microscopic analysis, especially in reflected white light and fluorescence, emphasizing modifications made to the coal petrographic nomenclature as applied to the study of dispersed OM. The principal focus of the book is on solid sedimentary OM, and as such, there is only an incidental discussion of the composition and geochemistry of petroleum and natural gas. Vitrinite (or, where necessary, bitumen) reflectance is the principal gauge used in the interpretation of thermal history, although other diagenetic indicators are used as well; but don't look for any new insights or definitive answers on how this gauge is calibrated, or on the relative influence of temperature and time. The coalification models presented herein are basically the ones we've grown familiar with over the years.

The basins covered in Part Three represent a wide range of tectonic settings and ages, including the Congo basin (Cretaceous, rifted continental margin), Red Sea (neotectonic, oceanic rift basin), Japan (Tertiary to Recent, convergent island arc), plus several of the bewildering amalgam of basins comprising western Europe, including the Alpine foreland basin fold and thrust belt (Tertiary), the Rhenish massifs (Paleozoic), the Bramsche Massif (Mesozoic) and the Lacq region (sub-Pyreanean foreland trough, Mesozoic to Tertiary), which, according to the author, are "easier to decipher" by taking into account their patterns of organic diagenesis and (interpreted) geothermal histories. In the various examples described, the reader will learn how differing tectonic settings can influence the composition of sedimentary materials deposited, the rate and amount of subsidence, the rate and amount of geothermal heating and the timing of hydrocarbon generation vis-a-vis tectonic deformation. Another important point concerns the high variability-- laterally, stratigraphically and temporally--of temperatures experienced by the

strata in these basins during their geologic history; and that the present is, in most cases, a very unsatisfactory key to the past.

Robert's book is an invaluable reference on the use of sedimentary organic matter in petroleum exploration and in paleogeothermics, and could be used for graduate instruction as well. And one more thing; even if you never get around to reading it, the book's attractive cover will look great on any coffee table!

AUSTRALIAN OIL SHALES: A COMPENDIUM OF GEOLOGICAL AND CHEMICAL DATA, by P. T. Crisp, J. Ellis, A. C. Hutton, J. Korth, F. A. Martin and J. D. Saxby (1987). 109p. University of Wollongong, Australia.

This report presents the results of an investigation of oil shales conducted by researchers at the Departments of Chemistry and Geology (University of Wollongong) and the CSIRO (Sydney). The Introduction provides a brief overview of Australia's oil shale resources and production history, followed by a discussion of the analytical methods used to characterize each sample. In the main body of the report, a brief summary of key geologic and geochemical information is presented on each of 22 Australian oil shales and 5 overseas oil shales. Data are presented in a standardized 2-page format, each encompassing the following topics: Geology of the Deposit, (Production) History of the Deposit, Description of the Sample, (Organic) Petrography, Mineralogy, Fischer Assay, (Major Element) Chemical Analysis (of the Kerogen), Gas Chromatographic Analysis (of Fischer Oil and 560 C Flash Pyrolysate) and a list of Important References. Also included are eight pages of stunning color photomicrographs of each oil shale, taken in fluorescence and incident white illumination. Following the data section is an extensive Glossary of geologic and chemical terminology used in the report, followed in turn by a comprehensive bibliography of publications pertaining to the Australian oil shales.

This publication is intended primarily for use by individuals or organizations having particular interest in the petrography and organic geochemistry of oil shale and, as such, was not intended for wide distribution. Requests for limited additional copies can be made to:

Dr. A. C. Hutton
Department of Geology
University of Wollongong
P.O. Box 1144
Wollongong, NSW 2500
AUSTRALIA.

Jeff Levine
Tuscaloosa, Alabama

General Announcements

Outstanding Student Paper Award

The Awards committee for 1988-1989 consists of Dave Glick, Renee McLaughlin and Suzanne Russell (chairperson). At the annual TSOP meeting in November an award may be given for the outstanding student paper. Guidelines for making this award and for student eligibility were adopted by the TSOP council at the mid-year meeting in April 1986. They are presented below.

The student should be a member in good standing of TSOP

The subject presented must have been initiated and completed while the presenter was a student.

To be considered a student, a person should be actively enrolled at a college or university at the time of the presentation or have been enrolled within 12 months previous to the presentation.

The student must be the senior author and the presenter if a paper has multiple authors.

The award will not be given unless a minimum of 3 student papers are presented. If none of the student papers meet a minimum standard, as determined by the Awards Committee, no award will be given.

Papers will be evaluated on 1) technical content, i.e., originality, logic and experimental design, significance of results and conclusions (a maximum of 50 points); and 2) presentation and delivery, i.e., organization and clarity, visuals and style of delivery (maximum of 50 points).

Suzanne Russell

Attention Amateur Photographers

Wouldn't you like to display your best work for all to admire? Your opportunity exists at the TSOP national meeting in November in Houston. TSOP is sponsoring a PHOTOGRAPHY CONTEST for its members. All members are invited to submit an 8" x 10" photograph or photomicrograph, black and white or color. Suggestions for subjects are scientific material, TSOP members at work or play, scenes from past meetings and/or any imaginative topic-good taste is recommended! First, second and third prize ribbons will be awarded and, in addition, the first prize photo will be framed. All photos entered will be displayed at the annual meeting. Judging will be by ballot of the members attending the meeting.

Photos should be submitted to:

Suzanne Russell
Shell Development Co.
3737 Bellaire Blvd.
Houston, TX 77025

The deadline for submission is October 15, 1988.

*Isn't it time your talent was recognized?
Don't pass up this opportunity!!!*

Do you have any interesting news or observations you would like to share with TSOP members? If so, the deadline for submitting material for the next issue of the TSOP newsletter is December 9, 1988. I look forward to hearing from you! (V.E.W.)

Employment Opportunity

Shell Anticipates Need for Coal/Organic Petrographer/ Geochemist

Shell Development Company, Houston, anticipates the need to hire a coal/organic petrographer or organic geochemist at the master's or PhD level in the 1988-1989 year. If you are interested in this position and plan to attend the TSOP national meeting in November, please contact Peter R. Johnson (713-663-2603) or Suzanne J. Russell (713-663-2633) in advance to arrange an informal discussion during the meeting.



Letter from the Editor

The Fifth Annual Meeting of The Society for Organic Petrology was held this year in Houston, Texas, on November 7-8. This was followed on November 9 by a joint TSOP-AASP symposium on the "Prediction of Hydrocarbon Reservoir Potential from Paleotemperature and Petrographic Data". I wish to thank John Castano (Chairman), Jack Burgess (Program Chairman), John Clendening (Chairman of TSOP-AASP Symposium) and all the others who contributed towards making this meeting so successful. The meeting was well attended and the papers presented at the technical session covered a variety of interesting topics. Many of them related various aspects of coal petrography and maceral analysis to the geochemistry, depositional environment and/or thermal history of the organic matter. Other presentations included talks ranging from information retrieval, to hydrocarbon generation, coke microstructure and asphaltic pyrobitumen. For more complete information on these and other papers presented, consult the meeting abstracts, copies of which will be sent to all Society members.

The joint TSOP-AASP Symposium generated a lot of interest from both TSOP and AASP members, as well as from petroleum and other industry representatives not associated with either society. A number of comments were made with regards to how well organized, informative and useful the Symposium was. Attendees I talked to were especially impressed with how well the talks were able to integrate different disciplines towards the understanding and solving of problems related, in this case, to hydrocarbon reservoir prediction. A need was expressed for more such high quality symposia using a multidisciplinary approach to problem solving.

V. Eileen Williams

Deadline for Next Newsletter

The deadline for submitting articles for the March 1989 TSOP newsletter is March 10. Please send your information to the newsletter editor on time!

TSOP 1988-1989 Council Members

President	Jack Burgess (713)754-2878
Vice-President	Jim Hower (606) 252-5535
President-Elect	Art Cohen (808) 777-4148
Secretary/Treasurer	—Sue Rimmer (606) 257-3758
Editor	Eileen Williams (714)528-7201
Councilor	Jeff Levine (205) 348-4520
Councilor	Dennis Kaegi (219) 399-6207

Sixth Annual TSOP Meeting Urbana, Illinois

Look for information regarding the Sixth Annual Meeting of TSOP in the March issue of the newsletter. It will include a copy of the meeting "announcement" and a "call for papers". Richard D. Harvey, Senior Geologist in the Illinois State Geological Survey's Coal Section, will be in charge of the meeting. His address is:

Coal Section
Illinois State Geological Survey
Natural Resources Building
615 East Peabody Drive
Champaign, IL 61820

Secretary/Treasurer's Report

a). Financial Statement

The financial standing of the Society as of November 6, 1988 (Annual Meeting) was as follows:

THE SOCIETY FOR ORGANIC PETROLOGY

1. Checking Account (First Interstate Bank of Texas, Acct. No. 21-0007-7666)

	Income	Expenses	
Beginning Balance (9/30/87)-.....			\$6826.95
Dues.....	3045.00		
Bank Fees.....		0047.16	
Sale of Publications.....	0126.00		
Secretary/Treasurer.....		0521.18	
Newsletter Editor.....		0161.24	
Annual Meeting ('87).....		4980.86	
Organic Geochemistry ('85 Mtg.) -----	2000.00	Student Award-----	1000.00
Ending Balance (11/6/88).....			\$1654.79

2. Prudential Bache Account (Acct. No. OLT-217651-17)

Balance as of 10/30/1988.....\$5436.00

3. Encumbrances for Future Publications

Organic Geochemistry (1986 Meeting, Lexington)-----\$2000.00
Organic Geochemistry (1987 Meeting, San Francisco)-----\$2000.00

TOTAL ACTUAL ASSETS OF THE SOCIETY-----\$3090.79

b). Report of Annual Meeting

The following is a summary of Council actions taken at the Annual Meeting in Houston, November 6-8, 1988.

1. Financial report, submitted by S. Rimmer, accepted by Council (summary in this issue).
2. Awards Committee: No student paper award presented in 1988 due to insufficient number of student papers (less than 3). Photo contest will be held again next year.
3. 1988 Annual Meeting Committee: Abstracts for this year's meeting will be distributed to entire membership. Papers from the symposium and technical session will be published in *Organic Geochemistry*.
4. During Business Meeting, Article 11, Item 2 of by-laws was modified by vote of the membership to read "The appointment of Chairmen shall be at the direction of Council".
5. Council voted to establish Outside Publications Committee to oversee journal publications. Jim

Hower was elected Chairman of this committee.

6. Publications: Papers from the 1987 meeting (San Francisco) were submitted to *Organic Geochemistry* on October 28th. Shorter publication time than in the past has been assured. Individuals are responsible for cost of color plates (\$375/page). A proposal for publication of papers from the 1989 meeting (Urbana) will be submitted by the *International Journal of Coal Geology* and will be considered at the Midyear meeting.

7. Research Committee: Fluorescence workshop is planned for 1989 Urbana meeting. A draft of the workshop manual will be prepared before the Midyear meeting. J. Senftle will remain as Chairman of committee.

8. Dues: Following a straw poll at the Business Meeting, Incoming Council voted to raise professional dues to \$20.00; student dues will remain at \$15.00; corporate dues at \$75.00.

9. 1989 Annual Meeting: Tentative dates are October 30-November 1, Urbana, Illinois. Abstract deadline will be in April or May. Workshop (to be held in Carbondale, Illinois) will follow meeting.

10. 1990 Annual Meeting: The Calgary meeting will be held in late August-early September. One or two field trips will be planned.

11. 1991 Annual Meeting: A proposal to hold the annual meeting in Lexington (Rimmer and Hower) was accepted by Council. Proposals for following year (1992) are being requested.

12. Budget: \$250.00 budgets were pre-approved for each Committee.

13. Midyear Meeting: Tentatively set for April 8 or 9, in St. Louis, Missouri.

c). A Change in Dues:

By now you have received your annual dues notice and are aware that our dues for professional members have been raised from \$15.00 to \$20.00. Student dues will remain at \$15.00 and corporate memberships at \$75.00. Following input from the members who attended the Houston meeting, the Council decided this increase was necessary for several reasons. Firstly, there is the obvious problem of inflation: this is the first increase in dues since the Society was founded, and there have been increases in general operating costs such as copying and mailing. Secondly, the Society has continued to grow in scope and to offer many extras to its members, including field trips, symposia, and short courses, in addition to excellent annual meetings. These extra services necessarily require that sufficient operating funds be available well in advance of the time that meeting registration dues come in. To continue to do this we need, therefore, some kind of "cushion", something we have not had in the past. Thirdly, in terms of publications, we are now providing Abstracts from the meeting to the general membership, and publishing selected papers in an international journal (the *International Journal of Coal Geology* or *Organic Geochemistry*). In addition, we have a Special Publication series, such as the Teichmüller publication and translation, in which we hope to offer items such as short course notes. Lastly, we have some expenses associated with our active research committee that provides an invaluable service to the Society. We feel, therefore, as we hope you will, that this modest increase in dues is not only justifiable but necessary.

Sue Rimmer,
Secretary/Treasurer

Proceedings of 3rd Annual TSOP Meeting

The following is a list of papers selected from the Third Annual Meeting of TSOP (Lexington, Kentucky) published in the December 1988 issue of *Organic Geochemistry* (Vol. 12, No. 4). The magazine will be sent in early 1989 to members who attended the Lexington meeting. Additional copies can be purchased from Peter K. Johnson, who is now in charge of TSOP publication sales.

Hower, J. C. and J. D. Pollock. Petrology of the Pond Creek coal bed in Eastern Kentucky.

Lo, H. B. Photometric methods for measuring the thermal maturity on strew-mounted kerogen slides.

Ottenjann, K. Fluorescence alteration and its value for studies of maturation and bituminization.

Thompson-Rizer, C. L., R. A. Woods and K. Ottenjann. Quantitative fluorescence results from sample exchange studies.

Pasley, M. A. and J. C. Crelling. Fluorescent spectral types of selected Colorado bituminous coals.

Bensley, D. F. and A. Davis. The use of light-emitting diodes as fluorescence standards and the fluorescence intensity of macerals.

Sassen, R. Geochemical and carbon isotopic studies of crude oil destruction, bitumen precipitation, and sulfate reduction in the deep Smackover Formation.

Lin, R. and A. Davis. A fluorogeochemical model for coal macerals.

Rimmer, S. M. and A. Davis. The influence of depositional environments on coal petrographic composition of the Lower Kittanning seam, western Pennsylvania.

Warwick, P. D. and R. W. Stanton. Petrographic characteristics of the Wyodak-Anderson coal bed (Paleocene), Powder River Basin, Wyoming, U.S.A.

Fermont, W. J. J. Possible causes of abnormal vitrinite reflectance values in paralic deposits

of the Carboniferous in the Achterhoek area, The Netherlands.

Kuehn, K. W., W. G. Lloyd, J. T. Riley and D. W. Kuehn. Preparation and characterization of slurried micronized coals—I. Investigation of coal composition/particle size relations.

Senftle, J. T. and S. R. Larter. A discussion of modern resin and fossil resinite fluorescence.

Status and Scope of Publications

Just what is the status of TSOP's outside publications? Well, the proceedings of the 1986 meeting in Lexington have been printed in *Organic Geochemistry* and will be sent out by the end of this year, the reviewed papers from the 1987 San Francisco meeting were forwarded to *Organic Geochemistry* in October, and the call for papers has gone out to participants in the 1988 Houston meeting. The papers from the 1988 TSOP meeting, as well as from the joint TSOP-AASP symposium, will be published in *Organic Geochemistry*.

The cooperation of established journals in getting our proceedings published without having to add to the proliferation of scientific journals (at a time when many academic libraries are dropping journals in the face of diminishing or stagnant budgets) is greatly appreciated. It has obviously helped us gain wider recognition than would ordinarily be expected of a 5 year old society with about 200 members. Our agreements to publish reviewed papers from our annual meetings means that the proceedings reflect a much broader scope of interest than normally encountered in *Organic Geochemistry* or *Coal Geology*, the two journals we have dealt with, or likely to be encountered in any other established journal. Authors should not feel bound by limitations of a "normal" issue of a journal but rather encouraged to reflect the breadth of the Society's interests in the "special" issue. We are a society with diverse interests in topics ranging from dispersed kerogens to prediction of coking behavior and from palynology to liquefaction but with the common interest in organic petrology. This diversity of interests as well as our diversity of industrial, academic, and government working experiences keeps the meetings interesting and helps to ensure the vitality of the Society. Our continuing opportunity to publish our proceedings in such high visibility journals allows us to draw favorable attention to the uniqueness of TSOP.

In closing, I wish to thank all TSOP members for their continued cooperation in all phases of the publication process and look forward to their continuing involvement in the future.

Jim Hower

Sale of TSOP Publications

John Shane has quit Exxon in Houston and is now employed with ARCO Alaska Inc., in Anchorage. Peter R. Johnson has agreed to take over the sale of publications. Therefore, any orders for TSOP publications should be sent to:

Peter R. Johnson
22507 Vobe Court
Katy, TX 77449
U.S.A.

Research Subcommittee Report

Applied Organic Petrography

An initial accomplishment of the Applied Organic Petrology subcommittee was the selection of a reference sample of the Woodford Shale (RR-1). This sample was sent to a suite of contractors (7) in addition to the subcommittee members for preparation of whole rock pellets, kerogen isolation and kerogen strewn slide preparations. In addition to the sample preparations, Rock-Eval pyrolysis of the original rock was requested. The purpose of this exercise was to compare kerogen preparation methods and to observe the range of sample preparations made by the various labs.

Results to date have been collated and are currently being distributed and reviewed by the subcommittee members. The petrographic descriptions of these samples will be presented within the final report for this reference sample.

Joseph T. Senftle
Chairman

Letter to the Editor

The term lithotype is perhaps the most over-used yet ill-defined word employed in coal petrology and coal geology. It often means many things to many people, and different things to different people. This is perhaps why one is still trying to define and

to classify coal lithotypes (Hower, TSOP Newsletter, June 1988). The simple fact is that the four basic lithotypes as originally proposed by M. Stopes were not intended, and cannot be satisfactorily used, to depict the lithologic units and to describe the origin, composition, and depositional environment of coal. The Stopesian lithotypes and the Stachian microlithotypes can best serve as descriptive terms, qualifiers, and adjectives, in describing the megascopic and microscopic textures and grain sizes of coal.

True to the assertion by J. Hower, the present usage of the Stopesian lithotypes is often dependent on individual judgment and subjectivity. In the lack of comparison when describing a single bright coal bed, a layer that has been described as a durain can easily be called a bright clarain when examining an essentially dull coal bed. A dull layer in a low rank coal often becomes bright when converted to high rank coal. Durain is often the expression of grain size distribution with little effect of maceral composition. A dull durain can be composed of very fine grained vitrinite and sporinite alone without the slightest trace of inertinite.

Within the realm of the Stopesian concept, except for fusain, coal is made-up basically of vitrain and durain and the intermixing of the two in bands of different thickness and proportion. Stopes added clarain to describe the intermediate or mixed occurrence of vitrain and durain. She intended that these terms be used to describe hand specimens rather than genetic terms for coal types. Because originally Stopes defined clarain as a bright coal, Hacquebard (1950) subsequently proposed two other intermediate terms, duroclarain and clarodurain, to fill the gap between clarain and durain. Thus the Stopesian or International-Heerlen System becomes more and more a collection of texture qualifiers rather than true lithotypes. It becomes more like a Wentworth grain-size scheme. In my opinion, the best way to use these terms is to consider them as the equivalent of coarse, medium, or fine grained descriptors.

Stach initially borrowed and germanized the Stopes' terminology and called vitrit, durit, and clarit, lithotypes. Only after years of dispute involving almost national pride was the difference finally resolved in 1954 by renaming Stach's terminology microlithotypes. Mono-, bi-, and trimacerite and carbominerite were added later.

At the time when most coal petrographers were

involved in industrial application of coal petrography, one's concern was primarily with the substance rather than the genesis of those lithotypes or microlithotypes. Maceral, microlithotype, and lithotype composition did serve the purpose by providing some quantitative and semi-quantitative assessment of a coal for industrial application. As the modern concepts of sedimentation began in the 1950's and prevailed in the 1970's and 1980's, the Stopesian lithotype concept can no longer be successfully adapted to the modern concept of sedimentation.

To establish a truly genetic lithotype terminology, one must consider the concepts and wisdom in the classification of other sedimentary rocks for clues of properly classifying coals. The source material, other than just coarse and fine grained vitrinite, must also be taken into consideration. For example, material of the same size may consist of quartz, feldspar, rock fragments, and carbonate. Vitrain or vitrinite may derive from different plant sources. Sporinite may exhibit different shape, size and ornamentation, indicative of deriving from different source plants. The idea of plant assemblage and facies concept should be taken into consideration in classifying coal lithotypes. I have proposed in the past, in connection with my study of the Lower Kittanning coal bed in western Pennsylvania, a set of new lithotypes which are independent of the International-Heerlen lithotypes concept. The new lithotype can consist of vitrain, clarain, durain, and fusain in any proportion providing there is sufficient evidence to indicate that they were derived from a similar plant assemblage. Descriptive terms are used resembling the usage of the field classification of sedimentary rocks as proposed by P. D. Krynine. The lithotype names have recently been renamed as Kittosite, Klastosite, Herbosite, Arborosite, Allosite, etc., which will appear in a proceeding edited by Alpern and Lyons (in press) in connection with the 28th Meeting of the International Geological Congress in Washington, D.C.

The purpose of this letter is not to promote any new idea of lithotype classification but to open a discussion with other interested coal petrologists such that a more satisfactory classification of coal lithotypes can be achieved.

Francis T. C. Ting

Hacquebard, P. A., 1950. The nomenclature and classification of coal petrography. Conference on the Origin and Constitution of Coal, Crystal Cliffs, Nova Scotia, p. 8-48.

General Announcements

Impsonite Sample Available

A limited number of samples of impsonite are available via the courtesy of Brian J. Cardott, Oklahoma Geological Survey. Please send your requests to:

John Castano
722 Oder Lane
Houston, TX 77090
U.S.A.

Address Changes

A change of address form can be found on page 7. If you have any changes please send them to:

Kenneth L. Yordy
ARCO Oil and Gas Company
P. O. Box 2819
Dallas, TX 75221
U.S.A.

Area Code Correction

Jeff Levine's area code in the TSOP directory is 205 not 305.

1989 Meeting Calendar

March 12-14.

South-central Section, Geological Society of America, mtg., Arlington, Tex. (Sandra Rush, GSA, Communications Dept., Box 9140, 3300 Penrose Place, Boulder, Colorado., 80301. Phone: 303/443-8489).

March 19-21.

Southwest Section, American Association of Petroleum Geologists, mtg., San Angelo, Tex. (AAPG, Box 979, 1444 S. Boulder, Tulsa, Okla., 74101. Phone: 918/584-2555).

March 23-25.

Northeast Section, Geological Society of America, mtg., New Brunswick, N. J. (Sandra Rush, GSA, Communications Dept., Box 9140, 3300 Penrose Place, Boulder, Colorado., 80301. Phone: 303/443-8489).

April 6-7.

Southeast Section, Geological Society of America, mtg., Atlanta. (Sandra Rush, GSA, Communications Dept., Box 9140, 3300 Penrose Place, Boulder, Colorado., 80301. Phone: 303/443-8489).

Geological Association of Canada/Mineralogical Association of Canada, ann. mtg., Montreal. (Colin Steam, Room 238, 3450 University St., Montreal, H3A 2A7, Phone: 514/398-4082).

July 9-19.

28th Intl. Geological Congress, Washington, D. C. (Bruce B. Hanshaw, Box 1001, Herndon, Va., 22070-1001. Phone: 703/648-6053) (June '88).

Sept. 12-15.

Coal: formation, occurrence & related properties, intl. mtg., Orléans, France. (P. Bertrand, Unité de Recherche en Pétrologie, Organique, Université d'Orléans, 45067 Orléans, Cedex 2, Phone: 33/38.69.35.30. Telex: UNIVORL 783-399 F).

Sept. 18-22.

Organic geochemistry, mtg., Paris. (Yolande Rondot, Institut Francais du Petrole, BP 311, 92506 Rueil-Malmaison cedex, France. Telex: A 203050 F).

April 20-21.

North-Central Section, Geological Society of America, mtg., Notre Dame, Ind. (Sandra Rush, GSA, Communications Dept., Box 9140, 3300 Penrose Place, Boulder, Colorado., 80301. Phone: 303/443-8489).

April 23-26.

American Association of Petroleum Geologists, ann. mtg., San Antonio, Tex. (AAPG, Box 979, 1444 S. Boulder, Tulsa, Okla., 74101. Phone: 918/584-2555).

May 7-10.

Rocky Mountain & Cordilleran sections, Geological Society of America, mtg., Spokane, Wash. (Sandra Rush, GSA, Communications Dept., Box 9140, 3300 Penrose Place, Boulder, Colorado., 80301. Phone: 303/443-8489).

May 10-13.

Pacific Section, American Association of Petroleum Geologists, mtg., Palm Springs, Calif. (AAPG, Box 979, 1444 S. Boulder, Tulsa, Okla., 74101. Phone: 918/584-2555).

May 14-17.

Reminder!

The deadline for submitting material to the March issue of the TSOP newsletter is March 10.

CHANGE OF ADDRESS FORM

Listed name: _____

Name change: _____

Address change: _____

Telephone change: _____

Send to:

Kenneth L. Yordy
ARCO Oil and Gas Company
P. O. Box 2819
Dallas, TX 75221
U. S. A.

DECEMBER 1988

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TSOP 1988-1989 Council Members

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Editor	Eileen Williams (714) 528-7201
Councilor.....	Jeff Levine (205) 348-4520
Councilor.....	Dennis Kaegi (219) 399-6207

Memorial

PETER ROY JOHNSON 1955-1989

Peter R. Johnson died January 9, 1989 of an aortic aneurism in Katy, Texas. There was no previous history of heart problems. Peter was born on April 14, 1955 in Berwin, Wisconsin. When he was very young the family moved to Geneseo, Illinois, where he received his primary and secondary education. He received a B. S. in Geology from Iowa State University, where he completed a B.S. thesis under Don Biggs on macropetrographic coal seam description. Peter then went to the University of Illinois Champaign-Urbana, where he completed his M.S. degree in 1979. His thesis committee was Ralph Langenheim, Dick Harvey and Tom Phillips. His thesis was based on a study of the petrology of the Herrin (No. 6) coal member in a southern Illinois coal mine. Because the Geology Department at the University of Illinois does not have any facilities for studying coal, Peter learned coal petrology and did most of his work in the Coal Section of the Illinois State Geological Survey in Urbana.

Peter started his career with Shell in 1979, working in the Geochemistry Services Group at the Bellaire Research Lab in Houston, Texas, where he supervised the organic petrology activities and carried out geochemical interpretive studies. His next assignment was in Geology Research from 1984 to 1986. He developed (with others) improved programs for modeling the thermal history of sedimentary basins. These programs, "STRETCH" and "TTM", are the ones in use in Shell today. From 1986 to 1988 Peter worked in the North Alaska District where he was responsible for the geochemical studies in conjunction with two major lease sales in the Arctic Ocean. In 1988 he returned to the Research Lab where he became the Project Leader of the Geochemistry Services Group.

Peter was a founding member of TSOP, and a member of the AAPG. In his limited spare time he was a Cub Scout leader, and he was involved in flying radio controlled model airplanes.

On top of his considerable scientific achievements, Pete Johnson will always be remembered for his engaging personal qualities, his friendly personality, and the cheerful, enthusiastic attitude that he adopted no matter how many projects were heaped on him. He was genuinely interested in the welfare of his fellow workers, and he was proving to be an excellent supervisor. His presence will be sorely missed by his family and his friends.

He is survived by his wife Merry, three children, Sarah, Daniel and Jill, his mother, a brother and a sister.

John R. Castano
Houston, Texas

Manuscripts Needed

Authors of papers presented at the 1988 Houston TSOP meeting are requested to get their manuscripts to Jim Hower as soon as possible.

Deadline for Next Newsletter

Material for the June Newsletter should be submitted to the newsletter editor by mail or facsimile (714-528-7201-1610) by June 14.

New TSOP Committee Formed

A Public Relations Committee has been established in order to promote TSOP and its wide scope of interests. The major objectives of the committee will be to: 1. place announcements of TSOP meetings in other publications, e.g., *Geotimes*; 2. form affiliations with other societies, e.g., ICCP, AAPG and AASP; 3. solicit funds and new members; and 4. design and distribute a brochure advertising TSOP's purpose, accomplishments, etc.

Please give some careful consideration as to how **you** might serve on and contribute to the workings of this committee and send your responses to:

Jack Burgess
Chevron U.S.A., Inc.
Box 1635
Houston, Texas 77251.

Notes from the Lab

Lithologic Clues to Subtle Differences in Peat Paleotopography

A recurring theme in many of our recent studies of Kentucky coals has been the apparent relationship between coal quality, particularly petrology, and penecontemporaneous tectonism or, in certain cases, demonstrable relief within the scale of single exposures. The megascopic petrology, maceral composition, and geochemistry of the Pond Creek coal bed in Pike County, eastern Kentucky, was influenced by the growth of a northeastward-trending anticline contemporaneous with the development of the swamp (Hower and Pollock, 1988; Hower and Bland, 1989). Detailed studies of the palynology and petrology of the coal bed to the east of the anticline have further delineated evidence for subtle rises in elevation as the anticline is approached (Helfrich and Hower, 1988). The Upper **Otter** Creek coal bed in Hopkins County, western Kentucky, provides an example of changes in coal character brought about by relief within short distances in the swamps. Three outcrops of the coal bed within a few 10 square meters of each other have significantly different palynomorph assemblages, possibly reflecting the splitting and rolling of the coal evident in the roadcuts (Helfrich and Hower, 1989).

Exposures of the Herrin (No. 11) coal bed in the Western Kentucky coal field offer another view of a coal which may have been influenced by subtle

tectonism at the time of deposition. The mined unit is within a southwestward-dipping hinged graben (Figure 1). Mathis (1983) cited several ex-

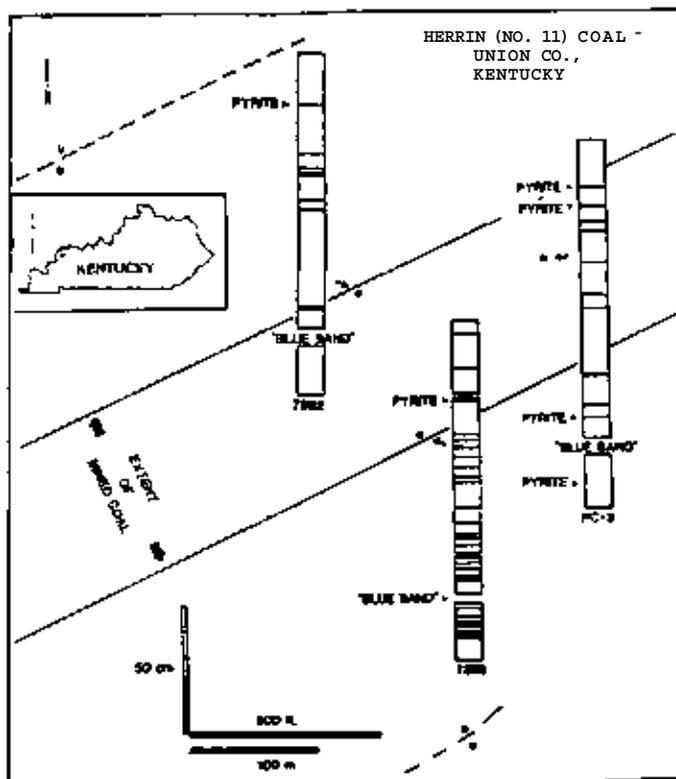


FIGURE 1 - Megascopic descriptions of coals within graben. Unshaded regions indicate bright lithotypes, predominantly bright clarain with some vitrain and clarain, and dark bands represent fusains. Locations of "Blue band" and pyrite layers noted.

Samples of the influence of penecontemporaneous tectonism and differential compaction on the thickness of the coals in the Springfield (No. 9) to the Wheatcroft (No. 13a; referred to as No. 13b in his informal nomenclature) interval but did not discuss the coals in the graben.

Our samples represent the width of the mined area at one time (sites 7892 and 7893) and a third site sampled one month later (site PC-3). The maceral, ash, and sulfur analyses (Table 1) indicate little

TABLE 1 - Petrographic analysis of whole coal from study sites

SAMPLE	VIT	FUS SFUS MAC	MIC	EX RES	DRY ASH	DRY ST
7892	84.6	6.1	4.5	4.8	11.87	3.75
7893	82.4	8.6	4.4	4.6	12.47	4.90
PC-3	88.2	8.4	1.5	1.6	10.45	3.33

difference between the sites; certainly no difference that could not be dismissed as expected variation with the possible exception of the sulfur percentages. The megascopic profiles shown on Figure 1 show more variation than might be expected from casual examination of the data. In particular, site 7893, on the southeast side of the graben, has more and thicker fusains within the high-vitrinite bright lithotypes, generally bright clarain, than the two sites on the northwest side of the graben. The "Blue band", the claystone parting common to the Herrin coal bed throughout the Illinois Basin, occurs in the lower third of the coal bed and is thinner at the southeastern site 7893. Evidence presented by Mathis (1983), and earlier by Soderberg and Keller (1981), suggested activity on the local fault systems at the time of peat deposition. In the context of this study the thicker and more abundant fusains and the thinner "Blue band" at site 7893 suggest that the southeastern side of the graben was slightly elevated at the time of peat deposition. The differences in coal thickness, both within the graben as well as compared to the coal outside of the graben, reinforce the petrographic evidence for penecontemporaneous tectonism.

James C. Hower*
James D. Pollock**
Garry D. Wild*

* University of Kentucky
Center for Applied Energy Research
Lexington, KY 40511

** Kentucky Revenue Cabinet
Frankfort, KY 40620

References Cited

- Helfrich, C. T. and Hower, J. C., 1988. Palynologic and petrographic variation in the Pond Creek coal bed, Pike County, Kentucky. Fifth Annual Meeting, The Society for Organic Petrology, Abst.
- Helfrich, C. T. and Hower, J. C., 1989. Palynologic and petrographic variation in the Otter Creek coal bed (Stephanian, Upper Carboniferous), Western Kentucky. *Review of Palaeobotany and Palynology* in review.
- Hower, J. C. and Bland, A. E., 1989. Geochemistry of the Pond Creek coal bed, Eastern Kentucky coal field. *Int. J. Coal Geology*, v. 11.

Hower, J. C. and Pollock, J. D., 1988. Petrology of the Pond Creek coal bed in eastern Kentucky. *Organic Geochemistry*, v. 12, p. 297-302.

Mathis, H. L., Jr., 1983. Structural and sedimentological study of the No. 9 coal to No. 13 coal zone interval in the western Kentucky coal field. University of Kentucky, M.S. thesis, 103 p.

Soderberg, R. K. and Keller, G. R., 1981. Geophysical evidence for deep basin in western Kentucky. *Am. Assoc. Petrol. Geol. Bull.*, v. 62, p. 226-234.

Guidelines for Selecting Annual Meeting Site

The purpose of annual meeting guidelines is to establish an orderly and consistent policy for selecting a host city for the TSOP Annual Meeting. Sites for the 1989 (Urbana, Illinois), 1990 (Calgary, Alberta) and 1991 (Lexington, Kentucky) annual meetings have already been determined. A local committee wishing to nominate a site for 1992 and beyond should be aware of its obligation to the Council to report progress and plans during the three year cycle from nomination to actual meeting. The Council in turn grants nearly complete autonomy to the local committee in their decisions and meeting plan arrangements, with the Council functioning primarily in a financial and advisory capacity.

The main criteria considered by the Council in choosing a meeting site are as follows:

1. Accessibility of proposed site to major air routes.
2. Proximity to former and planned host cities, keeping in mind geographic balance from meeting to meeting.
3. Is there an adequate number of enthusiastic members in the vicinity that want to host a meeting. Enthusiasm is exchangeable for numbers.
4. Adequacy of physical facilities-university campus or hotel, size of town, entertainment, potential for field trips.
5. Suitability of environment, fall weather cycle.

6. Financial considerations-cost of housing and facilities, suitable student accommodations, total registration fees, etc.

Once it has been decided by a member or group of members to nominate a city for an annual meeting site, the application should be mailed to the Secretary-Treasurer at least one month prior to the Annual or Mid-Year Meeting at which the application will be considered. For the 1992 TSOP annual meeting, however, the deadline for submitting proposals is July 1, 1989.

The nominating application should attempt to include:

1. Number of members willing to serve on the local committee.
2. Description of facility, hotel/motel with estimated room rate.
3. Proximity of facility to technical sessions or at same place. Most hotels and motels provide technical facilities for a specific number of registrations.
4. Field trip proposal.
5. Any anticipated problems or special arrangements because of proximity to transportation.
6. Theme of meeting, symposia, special programs.
7. Estimate of costs including registration fee, institutional assistance for printing, typing, mailing etc.

For more detailed information on the guidelines and procedures for submitting an invitation for an annual meeting site, please contact:

Sue Rimmer
 TSOP Secretary-Treasurer
 Dept. of Geological Sciences
 253 Bowman Hall
 University of Kentucky
 Lexington, KY 40506

Used Equipment Wanted

Small research group requires a pre-owned (used) ROCK-EVAL and Leitz ortho-plan microscope. Please contact Dave Pearson at (604) 477-2548.

Letter to the Editor

Further Comments on Coal Lithotypes (reply to F. Ting's letter in the Dec. 1988 issue of the newsletter)

Given and Dyrkacz (1988) asked, in reference to coal lithotypes, "...Of what value is a system based on lustre and fracture?" Ting (TSOP Newsletter, December 1988) has reached a conclusion similar to the one they stated: "...on balance, the lithotype classification is of limited value."

Upon examination of the ranges of maceral compositions reported for lithotypes from high volatile bituminous Kentucky coals (Hower et al., TSOP Newsletter, June 1988), the reader could easily conclude that we should also reach such a conclusion. Our experience in field and laboratory examination of coal has certainly taught us that lithotypes of similar appearance can have a significantly different composition. Single lithotypes, though, can have a similar composition over wide areas. An example from our studies is the lateral continuity and compositional consistency of the lithotypes in the Pond Creek coal bed in Pike County, Kentucky (Hower and Pollock, 1988; Helfrich and Hower, 1988). In cases such as this the description of lithotypes is a valuable tool in the overall analysis of the depositional environment. The power of the tool depends, in part, on the complexity of the laboratory analyses performed on that lithotype.

To what degree can, or should, laboratory descriptors affect the field description of a coal? In our experience, the answer would have to be "very little." While the lithotype appearance can hold clues to the composition of the lithotype, what we are truly describing is our first impression of the texture as well as "lustre and fracture." The durains at the bottom and top of the Pond Creek coal bed have maceral composition ranges of V22.2I55.7 L22.1 to V38.2 I49 L22.1 and VI30 I47.5 L39.5 to V29.7 I30.0 L30.0, respectively, with palynomorph assemblages at one site of 21% herbaceous lycopods and 45% tree ferns in the bottom versus 70% herbaceous lycopods and 7% tree forms at the top. Despite these differences, as well as geochemical differences, the position in the coal bed is the only megascopic differentiator between the durains. Similar durains cannot be given different megascopic descriptions on the basis of maceral/phyteral assemblages any more than similar bright clarains can be given different names on the basis of differences in trace element composition. The descriptors are invaluable in the final

assessment of the coal bed but cannot be used as part of a system of megascopic nomenclature if they are describing an attribute which cannot be distinguished megascopically.

James C. Hower
Garry D. Wild

University of Kentucky
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511

James D. Pollock

Kentucky Revenue Cabinet
Frankfort, KY 40620

References Cited:

Given, P. H. and Dyrkacz, G. R., 1988. The nature and origins of coal macerals, *in* Y. Yurum, ed., *New trends in coal science*: Kluwer, p. 53-72.

Helfrich, C. T. and Hower, J. C., 1988. Palynologic and petrographic variation in the Pond Creek coal bed, Pike County, Kentucky. *The Society for Organic Petrology*, 5th annual meeting, Houston, Nov. 7-8, 1988, abstract.

Hower, J. C. and Pollock, J. D., 1988. Petrology of the Pond Creek coal bed in eastern Kentucky. *Organic Geochemistry* v. 12, p. 297-302.

1990 GAC Meeting

At the Geological Association of Canada (GAC) meeting in Vancouver, British Columbia (May 16-18, 1990) there will be a special 3-session symposium entitled "Origin and organic maturation of petroleum source rocks and oil shales". The results will be published in a proceedings volume.

Interested contributors can contact me at:

Department of Geological Sciences
University of British Columbia
6339 Stores Road
Vancouver, B.C.
CANADA V6T 2B4

Thank you.

R. M. Bustin
Associate Professor

Sale of TSOP Publications

Due to the untimely passing of Peter Johnson, Suzanne Russell has graciously volunteered to take on the responsibility of overseeing the sale of TSOP publications. Please send all orders for publications to:

Suzanne J. Russell
Shell Development Company
P. O. Box 481
Houston, TX 77001
U.S.A.

(713) 663-2633

Membership Directory Changes

Please make the following address and telephone changes in the membership directory:

Brian Cardott
area code 405

John Daniel
R.R. 1
Box 34
Morris, MN 56267
U.S.A.

James C. Hower
(606)257-0261

William Huggett
R. R. 1
Box 586
Herrin, IL 62948
U.S.A.

Wolfgang Kalkreuth
3303 33rd Street N.W.

Jeff Levine
area code 205

Dennis Logan
245 Geosciences Bldg.

Judith Potter
104 Christie Knoll Heights S.W.
Calgary, Alberta
CANADA T3H 2V2
(403) 240-0240

Paul Robert
F-31800 St. Gaudens

Albert Warren
Arco Alaska Inc.
700 G Street (ANO 966)
Anchorage, AK 99501
U.S.A.
(907) 265-1535

I would like to extend my apologies to Jeff Levine for omitting his name as councilor replacing Wolfgang Kalkreuth. Please make this change in your directories (page ii in the front) as well. Also, I would encourage each member to double check his/her address and telephone number in the directory making sure it is correct. If it isn't, please send any corrections to me at the following address:

Ken Yorby
Arco Oil and Gas Company
2300 West Piano Parkway
Piano, Texas 75075
U.S.A.

Thank you.

Ken Yorby

APRIL 1989

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NEWSLETTER

VOL. 6, NO. 2

JUNE 1989

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TSOP 1988-1989 Council Members

President	Jack Burgess (713)754-2878
Vice-President	Jim Hower (606) 252-5535
President-Elect	Art Cohen (808)777-4148
Secretary/Treasurer—	Sue Rimmer (606) 257-3758
Editor	Eileen Williams (714)528-7201
Councilor.....Jeff	Levine (205) 348-4520
Councilor.....	Dennis Kaegi (219) 399-6207

TSOP Annual Meeting

The Sixth Annual Meeting of The Society for Organic Petrology will be Sunday through Tuesday, October 29-31, 1989, in Urbana, Illinois. Save by pre-registering with the enclosed form. We can plan a better meeting if you pre-register.

Registration Fees

Pre-registration, professionals.....	\$95
Pre-registration, students.....	\$80
Onsite registration, professionals.....	\$100
Onsite registration, students.....	\$80

Included in these fees are the abstracts volume, business luncheon, soda/coffee breaks, group photograph. Mixer party, and the special issue of the Proceedings journal (*Organic Geochemistry?*).

Program Subjects

The program will include papers on:

- Properties of macerals and kerogen
- Fluorescence microscopy
- Petrology & geochemistry of shales
- Applications for coke making

Lodging and Transportation

The meeting will be held in JUMER'S CASTLE LODGE, Lincoln Square, Urbana, IL 61801.

Rates: single, \$50.00; double, \$58.00

Phone in your room reservations now:

1-800-446-4690

Limousine service is available to JUMER'S from Champaign-Urbana's airport.

* * *

Let's attempt to set a TSOP record for attendance!! Please join us!!

A reminder to those of you who want to be on the program, your abstracts need to be sent to Dr. John Crelling by August 15.

A workshop on Fluorescence Microscopy will follow the TSOP meeting. It will be held Wednesday and Thursday (November 1-2) in Carbondale, Illinois. Contact Dr. John Crelling for more details:

Geology Department
Southern Illinois University
Carbondale, IL 62901

Telephone: (618)453-3351

Transportation from Urbana to Carbondale can be provided for a limited number of workshop registrants. Amtrack is available.

Dick Harvey
Illinois State Geological Survey

Deadline for Next Newsletter

Material for the September Newsletter should be submitted to the newsletter editor by mail or facsimile (714-528-7201-1610) by September 10, 1989.

Notes from the Lab

Microscopic photometric measurements of fluorescence intensity of spectral distribution are often influenced by: 1. the fluorescence of the microscope objective; and 2. filter systems which transmit light reflected from the sample.

Both of these permit additional light to contribute to the overall intensity or spectral distribution of an object's fluorescence. The former problem is specific to any given objective and to the intensity of the excitation light. For most weakly fluorescing objectives, this problem can be suppressed or compensated for electronically. The latter problem varies depending on the reflectance of the object being measured. Because macerals have different reflectances, the effect changes with each measurement. The error will be greater the higher the reflectance. This effect must also be suppressed or compensated for.

In order to test the suitability or efficiency of an objective or filter system the following procedures have been established and tested in our lab. My experience in interlab exchange studies have convinced me that the tests described below seem to be essential to reproducible results between laboratories.

Testing Your Objective:

This test can determine which of your objectives is best suited for fluorometric measurements. Perform this test in a darkened room with no sample under the microscope. With your normal incident excitation light on, replace one of the eyepieces with a telescoping eyepiece. (Do this if you have a common microscope tube, if you have a more sophisticated POL tube use a Bertrand lens.) As you focus the eyepiece (or Bertrand lens) to the back focal plane the image of the objective's fluorescence will appear as a bluish-white glare. Test all your objectives in this manner, the objective exhibiting the weakest fluorescence is best suited for quantitative measurements. (This test is also very useful in determining the fluorescence effect from various immersion media.)

Testing Your Filter Set:

This test will detect light reflected up through your objective which is allowed to pass through your filter system. Fluorescence intensity measurements can be made over the entire visible range or at specific wavelengths, i.e., whatever conditions you

normally measure fluorescence under. Computerized normalization of the fluorescence intensity (for instance to a maximum of 100%) should not be performed. Thus, depending on your system, you may need to perform these measurements manually.

In a darkened room with your normal incident excitation light on, adjust the microphotometric equipment so that it is sensitive enough to measure a normal object's fluorescence. Remove the object and lower the objective into a black-painted metal box or cylinder (i.e., any small container free from reflection and fluorescence). Alternatively, you may work in a completely darkened room but care must be taken so that absolutely no reflection light can reach the objective. Record a spectrum or single intensity value and do not correct it in any way. Call this spectrum or value, IO (intensity of the objective).

Place a highly reflective metal-surfaced mirror under the objective. The mirror must be free from dust, finger grease or any other fluorescing material. Focus on the mirror by momentarily switching to white light. Record a spectrum or single intensity as you did previously. Call this spectrum IM (intensity of the mirror).

Compare IO and IM. If the intensity of these two spectra are clearly different (e.g., if IM is greater than IO), the filter system is insufficient for that level of gain, i.e., reflected light is passing through the filters.

If the intensity readings for IO and IM are similar (excepting for a bit of noise), your filter system has not allowed reflected light to pass through and is thus, well-suited for fluorometric measurements. In this case you may be sure that the background correction using IO is sufficient for maceral measurement. The intensity value or values of IO represents the static background (objective fluorescence and electronic effects such as dark current) of your system. This IO should be used for background corrections by subtracting it from the maceral's value or values.

Karl Ottenjann
Geol.Landesamt Nordrhein Westfalen
Krefeld, Fed. Rep. of Germany

(Note: The editor wishes to thank Scott Stout and Rui Lin for their editorial assistance in readying this article for publication. V. E. Williams)

Comment:

The two tests described by Mr. K. Ottenjann are very crucial to ensure a reliable and reproducible maceral (kerogen) fluorescence measurement, especially for weakly fluorescing objects such as vitrinite and certain amorphous kerogens. At a few times, I found that a measured and uncorrected spectrum of bituminous vitrinite would peak at 430 nm or below. This peak is apparently a result of excitation-light reflection rather than fluorescence, probably due to contributions from the mercury emission bands at 405 and 435 nm. The reflected excitation light can be visible as a violet-blue 'tinting' on nonfluorescing or weakly fluorescing macerals.

The second test ("testing your filter set") is actually only for testing of the excitation filter. The 'IO' spectrum measured in a black-painted box (free from reflection and fluorescence) is basically electronic dark and random noise. The 'IM' spectrum measured with a mirror on focus, on the other hand, includes contributions from reflected excitation light as well as dark current and random noise. Therefore, the difference between TO' and TM', if any, is an evaluation of the excitation filter (band-pass or line-pass); a better (UV) excitation filter will be the one that permits the passage of a minimal amount of visible excitation light (400-700 nm). The emission optics which include lenses, objective, barrier filter(s) and the monochromator gratings need to be tested also. They, too, affect the spectral distribution and intensity of fluorescence.

Rui Lin
Unocal Science and Technology
Brea, California

Symposium Announcement

The Oklahoma Geological Survey announces sponsorship of its third symposium/workshop in as many years, the theme for this symposium is Source Rocks, Generation, and Migration of Hydrocarbons and Other Fluids in the Southern Midcontinent." Topics to be covered include: characterization, depositional environments, and diagenesis of known or potential source rocks; thermal and pressure influences on source rocks; generation, migration, and correlation of hydrocarbons; and the characteristics and flow dynamics of water and other fluids (such as paleohydrology). These topics need to be applied to some part of the Southern Midcontinent, which

includes all of Oklahoma, north Texas, Texas Panhandle, northeast New Mexico, southeast Colorado, southern Kansas, southwest Missouri, and western Arkansas. If you have been doing exploration in the Southern Midcontinent, or studies on any of these topics, and have an interesting paper or poster to present, we welcome your contribution toward making this a highly successful symposium/workshop.

The symposium/workshop will be held in Norman, Oklahoma on February 6-7, 1990. For further information please contact either Ken Johnson or Brian Cardott, Co-Chairman of the symposium. Brian Cardott may be reached at:

Oklahoma Geological Survey
830 van Vleet Oval
Norman, OK 73019
U.S.A

Phone: (403)325-3031

Coal as a Petroleum Source

The American Chemical Society is planning a symposium entitled "Coal and Terrestrial Organic Matter as a Source Rock for Petroleum" at their meeting in Boston in April, 1990. Topics will include geochemistry, organic petrology, sedimentary environments, generation and expulsion of oil and gas, and case histories from around the world. Anyone interested in submitting a paper is invited to contact:

Wallace G. Dow
DGS
P. O. Box 7568
The Woodlands, TX 77387
U.S.A.

Phone: (713)363-2176
FAX: (713)292-3528
TELEX: 881137

Address Changes

Please send any address changes to:

Ken Yordy
Arco Oil and Gas Company
2300 West Piano Parkway
Plano, TX 75075
U.S.A.

Phone: (214) 754-6250



Letter From Your President

This is the last opportunity I will have to address the membership of TSOP in print before the end of my term. Some random thoughts: members that I have asked to serve on the Ballot and Nominating Committee have gladly accepted this responsibility and seemed delighted to be chosen.

Response to the balloting was gratifying with 50.8%, 61.5% and 27.5% of the U.S., Canada and Foreign members, respectively, voting for their candidates, and indicating high interest in our future.

With a membership of 225 individuals we are not a large society, albeit an active one. We are able to do many things including holding two-day annual meetings filled with ideas; publishing our research in *Organic Geochemistry*, which reaches an international audience; sponsoring a two-day workshop on Fluorescence Microscopy; and co-hosting a symposium in 1988 on Prediction of Hydrocarbon Reservoir Potential from Paleotemperature and Petrographic Data. Not a bad track record for a five year old society. We all know this, but does anyone else, meaning corporate management. Are we viewed as a vital part of a research team, exploration program or coal quality assessment group?

To implement dissemination of public awareness of TSOP and its contributions, I have proposed a new committee imaginatively named the Publicity Committee. This group will deal with announcements, public relations, and interaction with other Societies and work toward making TSOP a more vital part of the public and scientific community.

Jack Burgess
President

TSOP Annual Meeting

The Sixth Annual Meeting of The Society for Organic Petrology is Sunday through Tuesday, October 29-31, 1989 in Urbana, Illinois. Dick Harvey has organized what looks to be an exciting TSOP Annual Meeting. Papers on the program will cover a variety of topics and should stimulate a lot of interesting discussion. The meeting will be held at

Jumer's Castle Lodge (Phone: 800-446-4690) at Lincoln Square. Room rates are \$50.00 (single) and \$58.00 (double). A limousine service is available to Jumer's from the Champaign-Urbana Airport.

Registration fees for the TSOP meeting are:

Pre-registration, professionals.....	\$ 95
Pre-registration, students.....	\$ 80
On-site registration, professionals....	\$100
On-site registration, students.....	\$ 80

A Fluorescence Microscopy workshop will be held on the Wednesday and Thursday (November 1 and 2) following the TSOP meeting in Carbondale, Illinois. For more information on the workshop and transportation to Carbondale, contact Dr. John Crelling:

Geology Department
Southern Illinois University
Carbondale, IL 62901

Telephone: (618) 453-3351

Attention!

The **Outgoing Council Meeting** will be held on Sunday, October 29, at 5:00 p.m. in the Maria Teresa Room at Jumer's Castle Lodge.

The **Incoming Council Meeting** will be held on Tuesday, October 31, at 6:30 p.m., also in the Maria Teresa Room.

Both meetings are open to all TSOP members, which are encouraged to attend.

TSOP Election Results

The new TSOP Council Members for 1989-1990 are:

President.....	Art Cohen
Vice President.....	Susan Rimmer
President-Elect.....	Joseph Senftle
Secretary/Treasurer.....	Renee McLaughlin
Editor.....	Jeffrey Levine
Councilor.....	Dennis Kaegi
Councilor.....	Scott Stout

MEMORIAL

Francis T. C. Ting
1934-1989

Dr. Francis T. C. Ting, Professor of Geology at West Virginia University, died July 20, 1989 of internal bleeding in June while vacationing in China with his wife, Susan. He returned to Taiwan for hospitalization and seemed to be recovering when internal bleeding recurred for the third and final time.

Francis was born on April 26, 1934 in Shantung Province, China. When he was a teenager the family moved to Taiwan where he received his high school and college education. He received a B.S. degree from National Taiwan University in 1957. Then, he came to the United States for his graduate studies. He received a M.S. degree from the University of Minnesota in 1962, and a Ph.D. degree from Pennsylvania State University in 1967. His coal research began with the work on his Ph.D. dissertation which was entitled "Petrology of the Lower Kittanning Coal Seam, Western Pennsylvania". The chairman of his dissertation committee was Dr. W. Spackman.

Professor Ting was interested in all aspects of coal research including petrography, environments of deposition and utilization. He has been known as a very creative scientist and he always offered provocative ideas during scientific meetings. He has published numerous papers in the following topics: Petrography of coal, lignite and peat; Optical properties of coal; Automated petrographic analysis; Fracture in coal; Residual stress analysis in coal beds; Relation between coalification and tectonic structure; Environments of coal deposition; Coalification patterns; Coal geochemistry; Coal utilizations; and Oil Shale petrography.

In addition to his great contribution to coal sciences, Francis T. C. Ting will always be remembered for his warm and optimistic personality.

He is survived by his wife, Susan; two children, Eric and Tracy; his father; and two brothers and one sister.

H. B. Lo
Houston, Texas

Secretary/Treasurer's Report

a. Council Actions, Mid-Year Meeting (April 8, 1989)

1. Present: Jack Burgess (Presiding), Art Cohen, Dick Harvey, Jim Hower, Dennis Kaegi, Sue Rimmer, Joe Senftle, and Eileen Williams.
2. Minutes of the outgoing and incoming council meetings were accepted.
3. The final report on the 1988 Annual Meeting in Houston was submitted by John Clendening and was accepted by Council. The combined profit to TSOP from the Annual Meeting and Symposium amounted to \$2093.03.
5. Jim Hower, reporting for the Publications Committee, indicated that the San Francisco papers had been submitted to *Organic Geochemistry* in October. As far as the Houston meeting was concerned, only four papers had been submitted to date.
6. Joe Senftle reported on progress of the Research Committee (Applied Petrography Subcommittee and Ultra-Fine Coal Subcommittee). The Committee is open to suggestions for future ideas and possible interaction with other working groups associated with ICCP, ASTM and GSA.
7. Dick Harvey, reporting for the 1989 Annual Meeting Committee, indicated that break-even attendance will be 73, based on a \$95.00 registration fee. Harvey indicated that we have a \$500 commitment from Massey. Council suggested that we have an invited speaker if possible.
8. Council accepted Alan Davis's resignation as Chairman of the Membership and Outreach Committee.
9. Council reviewed and accepted the proposal from Wolfgang Kalkreuth for the 1990 Meeting in Calgary. Minor details were to be clarified with Wolf. Dates and location were set for the 1991 Meeting, which will be held at the Hyatt, Lexington, KY (hosted by Rimmer and Hower), September 29 through October 2, 1991, with technical sessions on September 30 and October 1, and a one-day field trip on Wednesday, October 2.

10. Council will work on wording for changes in by-laws: to have audits coincide with the change-over in Secretary/Treasurer (i.e., switch to three years rather than two), and to change the number of members in the Nominations Committee (reduce from five to three).

11. Jack Burgess announced the Nominating Committee for 1989: Stan Teerman (Chairman), Gerry Waanders, Ron Stanton, Renee McLaughlin and Ken Yordy.

12. Council considered a change in publisher for TSOP. Options considered included *Organic Geochemistry*, *International Journal of Coal Geology*, *Journal of Sedimentary Petrology*, *AAPG Bulletin*, *Fuel* and *Journal of Coal Quality*. Following a lengthy discussion of concerns such as cost to the Society, costs for plates and reprints, audience, circulation, turn-around, editorial input and freedom of subject matter, Council opted to stay (at this time) with *Organic Geochemistry* to maintain continuity.

13. Council passed the motion that we change the name from "Abstracts" to "Proceedings", using volume numbers.

14. The Outreach Committee was renamed the Public Relations Committee and will deal with announcements, brochures, public relations materials; affiliations with other societies; and solicitation of funds and membership. This will include the Membership Subcommittee to be chaired by Ken Yordy, and would include the Treasurer.

15. Sue Rimmer and Jack Burgess raised the issue of whether the Secretary/Treasurer's position should be split into a Recording Secretary (for two years) and a Treasurer (for three years). Recording Secretary would take and distribute minutes, keep archives; Treasurer would keep track of membership roles and dues, pay bills etc. This issue will be brought before the general membership.

16. Travel funds to the mid-year meeting were approved for Rimmer (\$228) and Cohen (\$298).

Sue Rimmer
Secretary/Treasurer

b. Financial Statement

The financial standing of the Society as of March 31, 1989, as reported at the mid-year meeting, is as follows:

Income:

Checking Account Balance
(3/31/89 statement)..... \$7015.09
Prudential Bache Account
(2/28/89 statement)..... \$5594.00

Encumbrances:

Organic Geochemistry
(San Francisco).....\$2000.00
Organic Geochemistry
(Houston).....\$2500.00

Total assets: \$8109.09

The number of paid-up members in the Society totals 158, as of April 7.

Letter from the Editor

This is my last newsletter and I want to take this opportunity to thank those who have contributed to the newsletter during my editorship. I have enjoyed the job and appreciate the chance I have had to interact with you. It's been a real learning experience.

Jeff Levine is our new Newsletter Editor and his first issue will be December 1989. With Jeff's enthusiasm and imagination, I'm sure we can look forward to an exciting and informative newsletter. I want to encourage you to please give Jeff your support. Remember, the newsletter is an important means of sharing your ideas and knowledge.

V. Eileen Williams
Newsletter Editor

Next Issue of Newsletter

If you have information for the December issue of the TSOP Newsletter, please send it to:

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Letter from the Editor

I wish to extend my thanks to the TSOP members for giving me the opportunity to serve as TSOP Editor. My major duty will be to produce the Newsletter four times a year. This issue is my first.

As stated in our constitution, the objectives of our Society are "to stimulate interest and promote research in organic petrology, provide a forum, disseminate information..., work for acceptable classifications..., promote state of the art technologies..., and enhance professional and scientific interactions". We try to fulfill these goals primarily in two ways--through sponsorship our annual meeting and through publication of the Newsletter. Since relatively few of us can attend the meeting each year, the Newsletter must provide the major link among our widely dispersed membership and provide a format for the exchange of information and ideas.

As Editor, I can facilitate communications among members, but I must rely upon you to initiate them. Each is you is a "field correspondent"-sometimes stationed in remote locales-and we need you to file your stories. Previous editors have warned me that the greatest challenge I will face is getting TSOP members to provide materials for publication, either solicited or unsolicited.

So please, think of the the TSOP Newsletter as your connection with organic petrologists around the world. You are more than welcome to initiate pieces for the Newsletter without being specifically asked to do so. To keep channels of communication open and vital, we must speak as well as listen. Please offer your suggestions. You have lots of good ideas. Share them with us. This is **your** newsletter.

This issue of the Newsletter includes several new features which will appear regularly, depending upon reader response. Feedback or contributions will be greatly appreciated.

Let me close by offering thanks and appreciation on behalf of the entire Society to each of the contributors in the present issue of the Newsletter.

- Jeff Levine

Mid-Year Council Meeting

According to President Art Cohen, the TSOP Council will hold its mid-year meeting somewhere in Chicago sometime in April, 1990. (Details to be determined.) TSOP members having agenda items should contact a Council member prior to April.

-Renee McLaughlin
Irving, TX

TSOP 1989-90 Council Members

President	Art Cohen (808) 777-41488
Vice-President :	Sue Rimmer (606)257-3758
President Elect	Joe Senfle (214)764-3691
Secretary/Treasurer	Renee McLaughlin (214) 570-5055
Editor	Jeff Levine (205) 348-1587
Councilor	Dennis Kaegi (219)399-6207
Councilor	Scott Stout (714)528-7201 x1296

Items for March Newsletter

The next TSOP Newsletter is scheduled for publication in March, 1990. Please submit items as soon as possible prior to March 1

to:

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The University of Alabama
Tuscaloosa, AL 35487

Phone: 205-348-1587

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Bitnet: JLEVINE@UA1VM

DOS-compatible computer files sent on floppy diskette (3.5" or 5.25", DD or HD) or via Bitnet will be very much appreciated. Files should be formatted for Microsoft Word, Wordstar, or "unformatted" (ASCII format).

Meeting Reports:**6th Annual TSOP Meeting, Urbana**

Our Sixth Annual Meeting was held in Urbana, Illinois, Oct. 29-31, 1989. Fifty eight people registered. Attendees heard and discussed 26 very interesting talks and two well-displayed poster papers—each presentation describing results of current research on various topics related to organic matter in coal and oil shales. An enjoyable time was had by all at the mixer party, which was sponsored by A.T. Massey Coal Company of Richmond, VA.

Slightly over half of the papers at this year's meeting were coal-related, and covered diverse topics, including mineral matter, porosity studies, maceral separation methods, electron probe characterization, organic sulfur content, artificial coalification, and field studies in Bangladesh, British Columbia, Pennsylvania Anthracite region, Wyoming, and eastern Kentucky.

Other papers discussed fluorescence photochemistry, calibration procedures for microfluorimetry, stable isotope studies, and field studies in southern Bolivia, San Juan basin, and the Green River Formation.

The keynote talk at the Business Luncheon, entitled "Geochemistry of Lacustrine Source Rocks and Associated Oils", was presented by Dr. Andre van der Meulen, of Koninklijke Shell Exploratie en Produktie Lab., Rijswijk, The Netherlands.

The award for "Best Student Paper" was presented to Eric Daniels, a PhD candidate at the University of Illinois for his paper with Stephen Altaner, entitled, "Interpreting the Diagenetic History of Coal Seams from Clay Mineral Analysis". Mr. Daniels talk was based upon his Master's thesis research at U of I, conducted in the Pennsylvania Anthracite region. Aspects of this research will be published soon in an upcoming issue of *Geology* magazine. A \$100 cash prize accompanied the award.

The host committee has a few extra copies of the Proceedings available for those of you who were not able to attend the meeting. You will not want to be without a set of these excellent abstracts. Order your copy today at the bargain price of only \$10.00 to keep abreast of research in your field. Proceeds will go to TSOP. Make your check payable to the UNIVERSITY OF ILLINOIS and mail to Dick Harvey, ISGS, 615 E. Peabody Dr., Champaign, IL 61820. First come, first served, so don't delay!

--Dick Harvey, ISGS
Champaign, IL

Fluorescence Workshop, Carbondale

A very successful workshop on Fluorescence Microscopy was conducted by Dr. John C. Crelling at the Geology Department, Southern Illinois University -

Carbondale, Nov. 1-2, 1989. Crelling was ably assisted by other instructors: Sue Rimmer (University of Kentucky), David Bensley (SIU), and Charles Landis (Texas Tech University). Other assistance was provided by John Castano and Dick Harvey. Altogether, thirty people participated in the lively discussions that were held during the workshop.

Jack Crelling has generously donated 77 copies of the 142 page lecture notes for sale to interested persons, with proceeds benefitting TSOP. Sections are devoted to the following topics: fluorescence equipment, calibration techniques, fluorescence parameters, time-resolved fluorimetry, and applications. The notes include many useful tables, diagrams, and bibliographic references, plus 84 excellent color micrographs printed on microfiche. Jack wishes to advise prospective buyers that the Notes were not designed as a text and, as such, are not "polished" in every detail.

Short course notes can be purchased for \$35.00 from Suzanne Russell, Shell Development Company, P.O. Box 481, Houston, TX 77001.

- Dick Harvey, ISGS
Champaign, IL

1989 GSA Meeting, St. Louis

The 1989 annual meeting of the Geological Society of America in St. Louis, constituted the third, and final, leg of the "Midwest Marathon", following the TSOP annual meeting and Fluorescence Workshop.

The Coal Division programs were of overall better quality than in recent years. Organic petrology played a key role in a number of papers, particularly in the symposium on "Modern and Ancient Environments of Coal Formation". Abstracts of these papers are published on pages A25-A27, A50-A53, and A162-A163 of the GSA Program with Abstracts volume.

Several talks centered on the petrographic nature of modern day domed peats and the problems inherent in recognizing analogous trends in the ancient rock record. Grady and Eble and co-workers studied a domed peat in Sumatra. They noted that huminite degradation and fungal sclerotinite increased upwards in the center of the deposit while the margin of the deposit was dominated by well-preserved huminite. In a second paper they attributed the upwards decrease in vitrinite and *Lycospora* and the upwards increase in inertinite and *Densosporites* in the Stockton coal bed, West Virginia, to the progressive doming of the Stockton peat. Cohen, studying Central American peats, found that in the transition from planar to domed peats the domed portions of deposits are highest in pre-vitrinite macerals, with oxidized macerals and durainic lithotypes becoming more important towards the margins. Somewhat similar conclusions can be drawn from the work of Esterle and co-workers in Sarawak, Malaysia. Calder, working on the Cumberland Basin, Nova

Scotia, analyzed a Pennsylvanian coal using an "index of groundwater influence" (telocollinite vs. gelified, unstructured vitrinite and mineral matter) plotted against a "vegetation index" (macerals of forest origin vs. macerals of herbaceous and aquatic origin). In the central portion of the coal deposit, the interpreted transition from planar to domed peat is marked by an increase in telocollinite and a decrease in gelocollinite. Similar to the modern swamps studied by Cohen, the presence of inertinites and spores from herbaceous vegetation would be interpreted as a deposit-margin assemblage. Certainly there is a variety of interpretations represented here, but, as one of the participants noted, there is sufficient complexity in peat to account for many views.

- Jim Hower,
Lexington, KY

References Cited

- Calder, J.H., "Interpretation of ancient peat-forming ecosystems: an example from the Westphalian B (Early Middle Pennsylvanian), Cumberland Basin, Nova Scotia, Canada."
- Cohen, A.D., "Comparison of domed and planar peat deposits in Central America."
- Eble, C.F., and Grady, W.C., "Comparative palynologic and petrographic characteristics of Middle Pennsylvanian coal beds and a probable modern analog."
- Esterle, J.S., Staub, J.R., Raymond, A.L., and Tie, Y.L., "A comparison of domed peat deposits from micro- and mesotidal deltaic systems in Sarawak, Malaysia."
- Grady, W.C., Eble, C.F., and Neuzil, S.G., "Distribution of petrographic components in a modern domed tropical Indonesian peat: a possible analog for maceral distributions in Middle Pennsylvanian coal beds of the Appalachian Basin."

Coal Meeting 89: Coal: Formation, Occurrence and Related Properties, Orléans

This international meeting was held in Orléans, France, September 12-15, 1989, and was sponsored jointly by the Centre National de la Recherche Scientifique, the Société Géologique de France, and the Université d'Orléans. The meeting was organized by the "Unite de Recherche en Pétrologie Organique", under the chairmanship of Dr. Philippe Bertrand.

The meeting was highly successful in attracting 120 attendees, of which 2/3 were foreign, representing 18 different nationalities. 40 oral communications and keynotes, and 30 posters were presented in the different sessions, covering a

wide range of research themes, including "Composition of Peat and Coal", "Sedimentology of Coal and Coal-bearing Strata", "Coal Formation", and "Coal Properties". Around 30 of the contributions were related to organic petrology, on an investigation scale ranging from light microscopy to TEM.

In the field of coal composition and organic precursors of coal, multidisciplinary studies (botanic and petrographic) described the relationships between ancient coals and peats. Coal generating paleoenvironments reconstitution was established through sedimentologic, tectonic and palynologic studies, involving the relative variations of the sea levels.

Coal maturation was tackled through several laboratory experiments and natural case histories; The studies on coal properties concerned a wide range of aspects such as carbonization, oil generation, combustion or coking properties, taking into account the mineral and maceral composition of coals.

The schedule of this meeting was planned to allow time for informal discussions. Many attendees appreciated and took advantage of this opportunity. The proceedings will be published, after review, by the Société Géologique de France. This special volume is expected to be available at the end of 1990.

- Bernard Pradier
Orléans, France

Upcoming Meetings

Future TSOP Annual Meetings

1990. Calgary, Alberta, Canada. Wolfgang Kalkreuth, General Chairman. This meeting will coincide with the 1990 meeting of the Canadian Coal Petrographers Group. A two-day or three-day field trip is planned to coal fields in the Rocky Mountain fold-and-thrust belt. Additional details will be forthcoming soon.

1991. Lexington, Kentucky. Jim Hower and Sue Rimmer, Co-Chairs.

1992. TSOP is anticipating a formal proposal to hold the 1992 meeting in **State College, Pennsylvania**, beginning July 25, on the picturesque campus of Penn State University. This would coincide with the 1992 meeting of the International Committee for Coal Petrology, to be hosted by Dr. Alan Davis of Penn State. For additional information, contact Joe Senftle, Scott Stout, or Jim Hower.

1993. A preliminary suggestion has been forwarded by Ron Stanton of the USGS that the 1993 meeting be held in the **Washington, D.C.** area, possibly in conjunction with the annual meeting of the **AASP**.

(continued on p. 11)

Scenes from the 1989 Annual Meeting, Urbana, Illinois

Top left: Meeting Chairman Dick Harvey (seated, middle), past-President Neely Bostick (right), and Martin Reinhardt (standing) examine the Wild Fluorescence Macroscope in the exhibit area; **Top right:** Incoming President Art Cohen presides over the Incoming Council Meeting; **Center left:** Past president Jack Crelling and others enjoy conversation and hors d'oeuvres at the Social; **Center right:** Awards Committee Chairman Suzanne Russell attending the Outgoing Council meeting; **Bottom left:** Business luncheon speaker Andre van der Muelen addresses a rapt audience; **Bottom right:** Incoming Editor covers a breaking story at the Incoming Council meeting.

Membership Report

As of October 29, 1989, total Society membership stands at 229 individual members and 3 institutional members. During the past year the Society lost 7 individuals from the membership roles: 2 from death, 1 retiree, and 4 for unknown reasons. On the other hand, the Society has added 19 new members, one of whom is a reinstatement of a lapsed membership. This represents an overall increase of 8.2% over the 1988 membership. Canadian membership has increased from 14 in 1988 to 16 in 1989, while non-North American membership increased from 37 to 42. Total US membership increased slightly from 162 in 1988 to 174 in 1989. In terms of percentages, non-North American membership has increased from 12.4% to 18.0% over the past 5 years, reflecting a continuing shift toward an international membership in TSOP.

New Members

TSOP welcomes to its membership roles the following individuals who have joined or renewed their memberships since July, 1989:

Rejane Baranger, Pau, FRANCE
 Jim Collister, Bloomington, IN
 Eric Daniels, Urbana, IL
 Michelle Lamberson, Vancouver, BC, CANADA
 Paul Lyons, Reston, VA
 Maria Mastalerz, Wroclaw, Poland
 Jane Newman, Christchurch, New Zealand
 Stanley T. Paxton, Houston, TX
 Tang Yalan, Lexington, KY
 Roger Trader, Irving, TX

Need to Expand Membership

At the mid-year meeting, TSOP council members expressed the need to continue to expand our membership, especially in non-North American countries. This will serve both to bolster the stability of the Society and promote the interchange of ideas and information. In the coming year, the Outreach Chairperson (Jack Burgess) will be addressing means of increasing membership. Member input is essential on this important issue.

Membership Directory

The 1990 Membership Directory is ready for press. Printing and mailing will be done following the 1989 annual meeting. The cost of printing and mailing the 1989 Membership Directory (\$1,115.60) was fully underwritten by ARCO, who have once again agreed to underwrite the cost of the 1990 Directory. This year's directory will include a geographic

distribution of the total membership by country, state/province, and city.

- Ken Yordy,
 Membership Subcommittee,
 Plano, TX

* * *

Bureau of Missing Persons

Two individuals who attended the 1987 TSOP meeting in San Francisco, Harold Williams and John McCollum have not been sent their issues of the *Organic Geochemistry* because we do not have addresses for them. Anyone having information on these persons, please contact Jim Hower.

Constitutional Amendments

Two minor changes to the TSOP constitution were passed without dissent by members attending the 1989 Annual Business Meeting in Urbana, IL. Both amendments were instituted in an effort to streamline the Society's operations.

The first change (Article VIII, #3) establishes that future financial audits will coincide with the change in the Secretary/Treasurer's term of office-every three years rather than every two. Audits will be done at the conclusion of the outgoing Secretary/Treasurer's term and prior to the installation of the new one.

The second change (Article VII, #1) reduces the number of members of the nominating committee from 5 to 3.

Location Sought for TSOP Archives

TSOP is confronted with a problem of where to house the growing archive of documents pertaining to the Society's activities. Several options were discussed at the 1989 Annual Council Meeting, without resolution, including various company, university, and government libraries. The Council is eager for suggestions from the membership. Please contact any Council member prior to the mid-year Council Meeting in April.

-Renee McLaughlin,
 TSOP Secretary/Treasurer,
 Irving, Texas

SECRETARY/TREASURER'S REPORT

The outgoing Secretary/Treasurer, Sue Rimmer, filed the following financial report at the Annual Meeting in Urbana, IL. The general status is that the Society is solvent, but that readily available operating funds are modest.

-Renee McLaughlin
Irving, TX

Financial Statement: 10/26/89

1. Checking Account: II	Income	Expenses	Balance
Beginning Balance (11/6/88)			\$1,654.79
Outreach,.....		116.86	
Workshop		103.96	
Dues.....	3,355.00		
Sale of Publications	31.16		
Secretary/Treasurer		51.19	
Newsletter Editor		577.50	
Annual Meeting (1988)	4,510.89		
Organic Geochemistry (Lexington, San Francisco)		4,757.35	
Midyear Meeting, . .		636.09	
Ending Balance (10/26/89)..			\$3,308.89
2. Prudential Bache Account:			
Balance as of 9/30/1989			\$5,890.00
3. Encumbrances for Future Publications:			
Organic Geochemistry (1988 meeting, Houston)..		\$2,500.00	
TOTAL CURRENT ASSETS OF THE SOCIETY:			\$6,698.89

* * * * *

Focus on Laboratories:



Unite de Recherche en Petrologie
Organique (URPO)

(Editor's Note: This is the first of what I hope will be a regular feature of the TSOP Newsletter—focusing on the activities, facilities, and personnel at organic petrology laboratories. If you would like your lab to be featured in a future issue of the Newsletter, please submit a brief article describing your program to me.)

URPO was created in 1985 at the Earth Sciences Department of the Universite d'Orleans and is under the direction of Dr. P. Bertrand. It is part of the Laboratoire de Geologie de la Matiere Organique, directed by Pr. J. Trichet, and is associated with the Centre National de la Recherche Scientifique. The lab collaborates with a wide range of government and industry research organizations.

Beyond its research activities, URPO is involved in the university cycle through teaching modules, thematic conferences, and laboratory training. Since 1985, three theses were defended by URPO students, and an average of two doctoral candidates are admitted each year. There are 6 permanent staff members, including Drs. Bertrand, Laggoïn-Defarge, Lallier-Vergès, Martinez, and Pradier.

Principal research methods include light microscopy (reflected white light and fluorescence, and alteration of optical properties in hot stage), electron microscopy (SEM & TEM, including X-ray microanalysis by point and dot-mapping), and automated image analysis. Main research themes include preservation of OM in recent and ancient sediments, microtexture of OM-bearing rocks, thermal history of sediments, and oil genesis and expulsion.

* * *

Research Committee Report:

INFLUENCE OF KEROGEN ISOLATION METHODS ON PETROGRAPHIC AND BULK CHEMICAL COMPOSITION OF A WOODFORD SHALE SAMPLE

by Joe Senftle,
Research Committee Chairman,
Arco Research Labs, Plano, TX

(Note: The following report is a condensed version of a lengthier report prepared by a special subcommittee of the TSOP Research Committee. The complete report is on file with the TSOP Secretary-Treasurer. -Ed.)

In a Nutshell:

Samples of Devonian Woodford shale (a petroleum source rock) were sent to eight different laboratories for comparison of kerogen preparation procedures and analytical results. The resulting kerogen specimens differed from lab to lab in their particle size, dispersion of grains, and in the fluorescence of the mounting medium. Rock-Eval data on the kerogen concentrates (which were prepared at different labs but analyzed at a single lab); showed fairly consistent results, except for anomalously high Oxygen Indices on two specimens. Pyrolysis/gas chromatography results were similar for all the specimens analyzed

Introduction

At the 1987 TSOP annual meeting, a subcommittee of the TSOP Research Committee was formed to review problems related to the integration of organic petrographic data with other geologic and geochemical data. A general call for participants was issued through the TSOP newsletter. Based upon the response, an applied organic petrography subcommittee was established, comprised of J. Senftle, C. Thompson-Rizer, R. Witmer, D. Logan, L. Leith, K. Yordy, and R. Woods. The initial goal of the subcommittee was to compare the various kerogen preparation methods currently used in the labs, and evaluate their influence on the visual and chemical composition of kerogens. A decision was made to focus on a single reference sample of a petroleum source rock, which would be distributed among participating labs for analysis. The Devonian Woodford Shale was selected for this purpose.

Experimental

A reference sample of the Woodford Shale (RR-1) was collected from a outcrop along Interstate 35, in Center County, Oklahoma, (reported vitrinite reflectance 0.3%).

Representative subsamples were sent to seven geochemical contract laboratories as well as to each of the subcommittee member's laboratories for preparation of: 1) whole rock pellets, 2) kerogen concentrates, and 3) kerogen strewn slides. A written description of preparation procedure employed was requested from each of the participating labs (Appendix 1 of the complete report). In addition to the sample preparations, Rock-Eval pyrolysis and total organic carbon (TOC) of the original whole rock was requested. The identity of the participants has been kept confidential to ensure objectivity and to encourage the participation of industry laboratories.

Only six of the seven contract laboratories responded. Each lab prepared kerogen strewn slide mounts and aliquots of isolated kerogen stored in water. Several labs additionally prepared polished pellets of whole rocks and/or kerogen concentrates. Three subcommittee members provided strewn slide mounts of kerogens but only two provided isolated kerogen in water. A fourth subcommittee laboratory submitted only Rock-Eval and TOC data for the sample. Consequently, only eight sets of samples, representing six contract laboratories and two subcommittee laboratories could be used for comparison of results. These samples are referred to as LAB-1 through LAB-8.

The specimens prepared by the eight laboratories were forwarded to the subcommittee members for evaluation. In addition to the visual description of the strewn slide kerogen preparations, aliquots of the isolated kerogens were characterized using TOC, Rock-Eval, and pyrolysis-gas chromatography analyses. These analyses were performed in duplicate in a single laboratory, thereby minimizing interlaboratory variations.

For the pyrolysis/gas chromatography, approximately 500 micrograms of solvent extracted kerogen was pyrolyzed in a flow of helium using a CDS pyroprobe at 800°C for 20 sec. The pyrolysis products were analyzed with an HP-5890 gas chromatograph using a 25 meter fused silica column (coated with BP-1) isothermally cooled to -60°C for two minutes, then temperature programmed at 8°C/minute to 320°C with a helium carrier.

Results

Visual Characterization of Strewn Slide Mounts

In general, the samples consisted predominantly of amorphous organic matter (90-95%). The greatest variability among the preparations was in the kerogen particle size, the consistency and distribution of the strew, and the fluorescence of the mounting medium. Heavy mineral matter contamination was not considered a major problem since distinct differences among the laboratories was not noted. General observations concerning these preparations are summarized in Table 1. (Transmitted, reflected and fluorescence light photomicrographs of these preparations are presented in Appendix II of the full report)

Table 1: Kerogen Strewn Slide Characterization Comments

Sample:	Comments:
LAB-1	* strong fluorescing mounting medium difficult to focus
LAB-2	* moderate fluorescing mounting medium
LAB-3	" sample contains large chunks of kerogen * clumping of amorphous organic matter * focusing problem during study * strong fluorescing mounting medium
LAB-4	" low fluorescing mounting medium
LAB-5	* provided two preparations with different size of kerogen (may represent a sieved and whole kerogen fraction) * strong fluorescing mounting medium * significant clumps of amorphous material * focusing problem during study
LAB-6	" strong fluorescing mounting medium
LAB-7	• low fluorescing mounting medium
LAB-8	* medium fluorescing mounting medium

Bulk Geochemical Composition

Rock-Eval and TOC data for the isolated kerogen samples, measured at a single laboratory, are summarized in Table 2. TOC measurements range from 41% to 51%. Variation could be due to differences in the amount of mineral matter remaining after the kerogen isolation procedure or measurement error.

Figure 1 is a plot of Rock-Eval Hydrogen Index (S2/TOC) for the isolated kerogen samples. The Hydrogen Index of the kerogens ranged from 473 to 608 mgHC/gTOC. The Oxygen Index (S3/TOC) varied considerably, ranging from 21 to 96 mgCO2/gTOC. Most notably, LAB-5 and LAB-6 report significantly higher Oxygen Index than the other labs.

Table 3 reports Rock-Eval and TOC data for the whole rock samples. Figure 2 is a plot of Hydrogen Index versus Oxygen Index for the whole rock samples. Most interesting is the generally small variation in the Oxygen Index as compared with Hydrogen Index. The Hydrogen Index of the whole rocks ranges from 377 to 763 mgHC/gTOC while the corresponding Oxygen Index ranges from 18 to 25

Table 2: Rock-Eval Pyrolysis and Total Organic Carbon Content Data for Isolated Kerogen Samples

Sample ID	TOC (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Hydro- gen Index	Oxy- gen Index	Tmax (°C)
LAB-1	53.4	17.9	276.3	11.3	517	21.	421
LAB-2	46.9	13.5	243.2	14.0	519	29.	420
LAB-3	43.3	16.5	263.5	12.6	608	29.	409
LAB-4	51.5	11.8	271.2	14.7	527	28.	419
LAB-5	50.8	12.4	245.7	37.1	484	73.	418
LAB-6	41.3	62.6	201.7	40.0	488	96.	420
LAB-7	43.3	7.2	204.5	14.0	473	32.	418
LAB-8	49.9	9.5	265.0	11.8	531	23.	423

Table 3: Rock-Eval Pyrolysis and Total Organic Carbon Content Data for Whole Rock Samples, (as reported by contract laboratory)

Sample ID	TOC (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	Hydro- gen Index	Oxy- gen Index	Tmax (°C)
LAB-1	5.4	0.5	41.2	1.2	763.	22.	421
LAB-3	9.1	1.1	55.4	2.1	607.	23.	413
LAB-4	8.6	1.8	32.6	1.5	377.	21.	416
LAB-5	9.2	0.8	46.9	2.3	510.	25.	421
LaB ₆	8.6	3.1	54.8	1.5	639.	18.	420

Pyrolysis GC

The major pyrolysate components were identified based upon retention index data and co-injection of authentic standards. Prior to analysis, a poly-butylstyrene standard was mixed with each sample.

Based upon qualitative comparison of the pyrograms, the distribution of pyrolysis products is similar for kerogens derived from different isolation procedures. Since the major goal of this work was to evaluate changes in the bulk composition of kerogen due to preparation procedures, subtle variations in pyrolysis product composition will not be discussed here. (Detailed pyrograms are depicted in Appendix III of the complete report.) Toluene is a significant pyrolysis product in all samples. Alkane and alkene products are observed up to approximately C20-22. In all samples, C7 and

C8 alkyl benzenes, phenols, and simple alkyl phenols are observed, indicative of low rank kerogens.

Conclusions

This study was an initial attempt to evaluate variations related to isolation and preparation procedures for kerogens. The bulk of this report is a data summary. It is inappropriate to make broad conclusion based upon analyses of a single sample. The Woodford Shale sample studied here consists predominantly of amorphous organic matter, thus variations in maceral distribution due to isolation procedures was not critically studied. The most obvious variations due to sample isolation and preparation procedures were particle size and distribution within the strewn slide mounts. Rock-Eval pyrolysis data illustrated significant variation in Hydrogen and Oxygen Index values. The reason for the anomalously high Oxygen Index values is not certain, but is apparently related to the isolation procedure. Pyrolysis-gas chromatography illustrates that the pyrolysis products are similar and characteristic of a low rank kerogen.

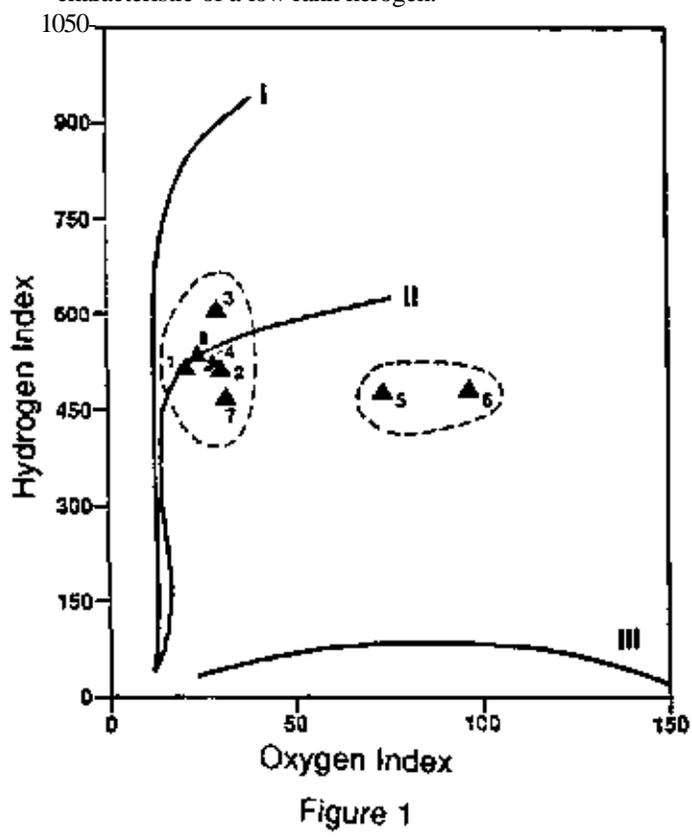


Figure 1

(Editor's Note: At the 1989 Annual Business Luncheon, Jim Hower was duly recognized and thanked for his considerable efforts on behalf of TSOP over the past three years in seeing that the annual meeting proceedings have been published in *Organic Geochemistry*. These proceedings volumes have added enormously to the prestige and stability of the Society. We truly owe Jim a debt of gratitude for his work.)

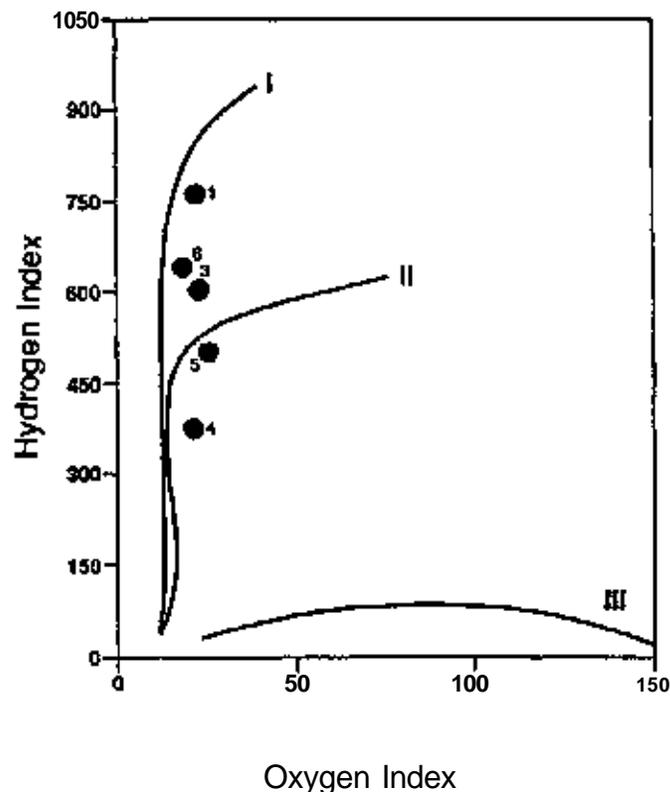


Figure 2

Hower Resigns as Outside Publications Editor

After three years of handling the review process for the annual meeting papers submitted for our *Organic Geochemistry* volumes, I have handed over the responsibilities to the 1989 annual meeting committee. This means that when I phone a TSOP member in the future, it will probably not be to solicit a review or to dig up a late manuscript. In this regard, I wish to thank all of the authors and reviewers of manuscripts from the 1986 through 1988 meetings.

Our rate of submission of manuscripts has fallen to about 25% of the papers presented at the meetings. Many factors contribute to this low rate. I am interested in hearing from annual meeting contributors who did not submit manuscripts, or from any other TSOP member, who wish to share their thoughts on problems in our publication process. If we are to continue to publish our proceedings in refereed journals we must strive to be responsive to the needs of the authors as well as to the journal readership.

-- Jim C. Hower,
Lexington, KY

**Product Information:****Struers, Inc.**

(Note: This is the first in a regular series of articles focusing on equipment for use in the organic petrology laboratory. In this Newsletter, we feature products of Struers/Logitech. TSOP members are urged to submit suggestions to me for future product-related articles —Ed.)

Struers, Inc. offers a diverse line of products for preparation of specimens for microscopy, including equipment for cutting, thin-sectioning, mounting, polishing, and automated image analysis, and most recently, the Tunnelscope 2400 for scanning tunneling microscopy. This past year, Struers acquired Logitech, Inc., a company that is already well-known in preparation of geological specimens.

In addition to offering highest quality, precision equipment and consumables, Struers/Logitech is committed to providing technology transfer and after-sale product support.

The following paragraphs briefly summarize just a few Struers' products that may be of particular interest to TSOP members. I'm particularly enthusiastic about the DAP-V/Pedemin polishing system which I purchased for my own lab at The University of Alabama. It has proven to be ideal for my applications, and consistently produces scratch-free polished specimens.

To prepare polished pellets of coal or DOM, I use a 5-step program of 3 grinding steps (320, 800, & 2400 grit), 1- μ diamond polishing, followed by 0.04- μ alumina polishing. TSOP members wanting additional details are welcome to contact me.

For More Information on Struers and Logitech products, contact Struers, Inc.; 26100 First Street; Westlake, Ohio 44145; Phone: 216-871-0071 or 1-800-321-5834 (orders).

-Jeff Levine, TSOP Editor
Tuscaloosa, AL

* * *

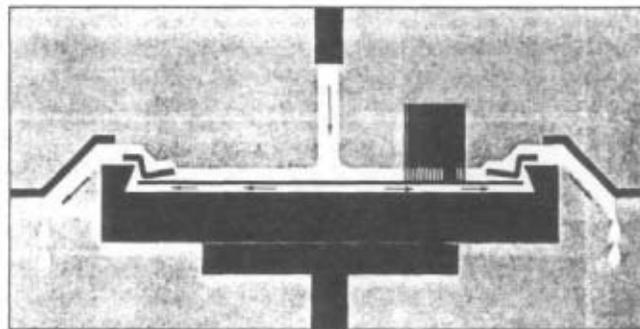


**DAP Polisher with
Pedemin sample mover**

The Struers DAP-V/Pedemin polishing system provides excellent results in the preparation of polished pellets and small blocks. This system is ideal for use in smaller laboratories handling only a moderate number of samples, although the combination of convenient design, versatility, and economy make it a good choice for any lab. Laboratories needing to handle a larger number of specimens could consider the Struers Planopol/Pedemax polishing system, such as the one used by Jim Hower at the CAER lab at the University of Kentucky.

Among the practical and convenient features of the DAP-V polisher are:

- unit sits on a bench top and has very small "footprint" (35 cm x 60 cm); easily portable, yet sturdy; no maintenance required.
- polishing speed is continuously variable, from 40 to 600 rpm. Drive motor is powerful yet smooth
- all grinding and polishing steps are performed on a single machine, by simply exchanging paper grinding disks or wheels in just seconds. 8" disks of non-adhesive grinding papers (80 to 4000 grit) are held in place using the patented Knuth-Rotor design (see diagram). Water beneath the paper is expelled by centrifugal force as the disc rotates, creating a vacuum. Paper is securely retained by atmospheric pressure and surface tension of water for a flat, firm surface



Knuth-Rotor Principle

For automated polishing, the DAP-V unit can be outfitted with the Pedemin motordriven specimen holder. With the Pedemin:

- no holders or clamps are required. Specimens can be quickly exchanged
- downward pressure on the specimen is continuously variable by means of knurled adjustment rings, to suit the particular material
- unit can hold 1, 2, or 3 specimens at once (25-40 mm), so it is not necessary to work with large batches
- unit can be easily raised to change discs or for unobstructed manual grinding.

* * *

Upcoming Meetings (continued from p. 3)

SOURCE ROCKS, GENERATION, AND MIGRATION OF HYDROCARBONS AND OTHER FLUIDS IN THE SOUTHERN MIDCONTINENT-A WORKSHOP,

February 6-7, 1990
Norman, Oklahoma

This meeting will include presentations and open discussions on a variety of topics relating to petroleum generation in the mid-continent, including current research dealing with the Woodford shale, oil characterization, organic geochemistry, and thermal maturation. Nineteen 1/2-hour-long technical presentations are scheduled over the two days, plus 12 poster presentations. A panel discussion on Day 2 will address the question, *Can Carbonates be Source Rocks for Commercial Petroleum Deposits?*.

Registration for the meeting is \$60 (\$30 for students), which includes lunches on both days and an "Early-Bird" Cocktail Party. Inexpensive housing is available on the University of Oklahoma campus. For room reservations, call Jimmie Gardner at (405) 325-1011.

For additional details on the technical program or for a copy of the program, contact Ken Johnson or Brian Cardott, General Co-Chairs, at (405) 325-3031.

* * *

AN INTRODUCTION TO COAL PETROLOGY WITH APPLICATIONS TO COALBED METHANE R & D

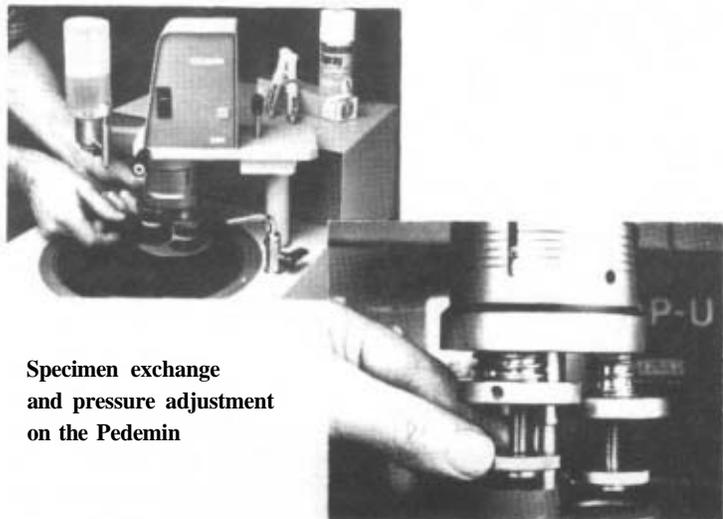
March 20-21, 1990
Tuscaloosa, Alabama

Designed for the non-specialist, this introductory short course will provide a brief overview of important topics in coal petrology, focusing especially on relationships between coal geology and coalbed gas reservoirs. The following topics will be covered, among others:

- megascopic and field description of coal seams
- microscopic examination of coal
- composition and origin of gas in coal
- influence of coal composition on reservoir characteristics (gas content, desorption, cleat, moisture content, etc.)

The course, which comprises one full day of lectures plus 1/2 day of laboratory demonstrations, is scheduled for the day following the Eastern Coalbed Methane Forum. A second short course, *Application of Hydrology to Evaluation of Coalbed Methane Reservoirs*, taught by In Situ, Inc., is scheduled the day before the Forum.

For additional information contact course instructor, Jeff Levine, at (205) 348-1587. To register, or to request a more detailed announcement, call the University of Alabama College of Continuing Studies at (205) 348-3000.



Specimen exchange and pressure adjustment on the Pedemin

* * *



The Struers Epovac provides a simple apparatus for epoxy impregnation of porous materials. The sample is initially evacuated for as long as required. Epoxy is introduced through a disposable plastic tube. The chamber is then returned to atmospheric pressure. Cleanup is quick and easy.

* * *

Thin sections of organic matter rich sediments, coals, or oil shales can be prepared using the new Logitech Compact 30 system, which allows 30 u sections to be prepared without hand finishing. This equipment is competitively priced, with academic budgets in mind.

Featured in this Issue:

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Items for June Newsletter

The next TSOP Newsletter is scheduled for publication in June, 1990. Please submit items as soon as possible prior to June 1, 1990 to:

Jeff Levine, TSOP Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487
Phone: 205-348-1587
FAX: 205-348-7612

Unsolicited contributions for the Newsletter are greatly appreciated and are essential to its success. DOS-compatible computer files sent on floppy diskette (3.5" or 5.25", DD or HD), formatted for Microsoft Word, Wordstar, or "unformatted" (ASCII format) save time in preparation.

- Ed.

TSOP Council Affairs

TSOP Mid-year Council Meeting Chicago, March 9, 1990

The TSOP Council met on March 9 in Chicago, one month earlier than planned, owing to scheduling conflicts in April. The Council regrets any inconvenience resulting from this rescheduling. Any additional business requiring immediate action by Council can be handled by telephone.

Meeting highlights include the following:

Annual Meeting Reports. Jim Hower reports that proceedings of the 1988 Annual Meeting and TSOP/AASP joint symposium will be published this year in v. 15, no. 6 of Organic Geochemistry. Meeting attendees will each receive copies.... Dick Harvey reports from Champaign/Urbana that the 1989 Annual Meeting showed a net profit of \$37.14. (Congratulations to Dick for careful fiscal management!) A total of fourteen manuscripts are being reviewed for publication in the meeting proceedings.... Plans are progressing for an exciting meeting this year in Calgary under the auspices of the Institute for Sedimentary and Petroleum Geology (See this issue for further details). Owing to the good response to requests for abstracts, speakers may be limited to 20 minute presentations this year to allow for more talks. Poster session may also be expanded. Sue Rimmer and Jim Hower tell us that things are shaping up for a good meeting in Lexington in 1991. A special workshop is being

considered. Please direct comments to Sue Rimmer.... Joe Senftle, Scott Stout, and Jim Hower constitute the committee for the 1992 Meeting, planned for State College, PA, in conjunction with the meeting of the ICCP. Many details are still being worked out concerning logistics. A one-day field trip is tentatively planned to the Pennsylvania Anthracite region.... Ron Stanton is working with Norrie Robbins on the possibility of a joint TSOP/AASP meeting in the Washington, D.C. area in 1993. AASP council will discuss this issue at their meeting in late April.

TSOP Committees. A review of Society activities shows that the following committees are active: **Annual Meeting Committee(s)** (several active at once), **Awards Committee** (Suzanne Russell, Chair), **Ballot Committee** (no current Chair), **Nominating Committee** (J. Crelling, Chair), **Outreach Committee** (Ken Yordy and Jack Burgess), **Research Committee** (Jim Hower, Chair). The **Publications Committee** and **Elections Committee** have been dissolved, since their functions are already being performed by other TSOP committees.

TSOP Archives. Ron Stanton at the USGS in Reston, has offered the services of the USGS library to archive TSOP's documents. It is essentially up to us as to how we wish to have the library set up the files. Council agreed to accept this offer, with the following stipulations: 1) archive items will be organized by year, 2) items are not to be removed from the library, except by authorization of the TSOP president, and 3) the name and date will be recorded when files are accessed.

The Council voted in favor of continuing our relationship with Organic Geochemistry for publication of annual meetings proceedings. A number of factors, particularly financial, would favor a switch to Fuel. However, the continuity of using one journal over many years coupled with the membership's strong preference for Organic Geochemistry (see p. 14) were the main factors influencing the Council's decision.

OFFICIAL LIAISON ESTABLISHED WITH ICCP

The TSOP council has voted to accept an invitation from Alan Davis, General Secretary of the International Committee for Coal Petrology, to exchange Newsletters between our two societies. For this purpose, ICCP has been provided with a complementary TSOP membership. Given the strong overlapping interests between our two organizations, this dialog will certainly be beneficial. In this spirit, we look forward to the possibility of a joint TSOP/ICCP meeting in State College, Pennsylvania, in 1992.

Membership Report

by Ken Yordy, Membership Subcommittee

New Members

TSOP welcomes to its membership roles the following individuals who have either joined or reinstated lapsed memberships during the past three months:

Richard W. Harding
The Robertson Group plc
Llandudno
GwyneddLL30 1SA UK
Phone: 0492-81811
Fax: 0492-83416

Grzegorz Nowak
State Geological Institute
Lower Silesian Branch
AL. Jaworowa 19
53-122 Wroclaw
POLAND

Darrell N. Taulbee
University of Kentucky
Center for Applied
Energy Research
3572 Iron Works Pike
Lexington, KY 40511
Phone: 606-257-0238

Larry M. Ross
Amoco Production Company
P.O. Box 3385
Tulsa, OK 74014

Membership Directory

All TSOP members should have received their new membership directories. Please note the following corrections. The changes are indicated in **highlighted** text. **PLEASE TAKE SPECIAL NOTE OF THE NEW MAILING ADDRESS FOR RENEE McLAUGHLIN, TSOP SECRETARY TREASURER.** Report any additional corrections to Ken Yordy.

David Batten
0970-622573

MJ. Lemos de Sousa
Mineralogia e Geologia
Faculdade de Ciencias do Porto
Praca de Gomes Teixeira
4000 Porto, Portugal

Alex Cameron
403-292-7110

Alan Collins
The Robertson Group plc
0492-88416 ext 461

Jeffrey R. Levine
Department of Geology
The University of Alabama
Box 870338

John A. Daniel
612-589-2222

Tuscaloosa, AL 35487-0338

Alan Davis
517 Deike Building

Renee McLaughlin
Core Laboratories
1875 Monetary Drive
Carrollton, TX 75006

Thomas Demchuk
University of Calgary
2500 **University Dr.**

phone: **204-466-2673**
fax: **204-323-3930**

Jesse Ellard
Taurus Exploration
P.O. Box 1372

Prasanta Mukhopadhyay
Phone 902-443-4298
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Toledo, OH **43614**

Oattis Parks
fax 904-897-3396

Andrew Gize
Fax no. 016-275-3947

Daniel Pearson
phone **918-333-8511**
fax 918-662-2047

Ralph Gray
Fax no 412-795-2222

Dr. Fan Pu
phone 0931-2531 ext 576

M Tabib Hasan
42-R Block 6 P.E.C.H.S.

Jeff Quick
phone 03-667-001 ext 7700
or 7777

Patrick Hickey
Worldwide Geoscience, Inc
6100 Corporate Dr. Suite 320
Houston, TX 77479
phone no. 713-988-9402
fax 713-988-8784

Coleman **Robison**
(not Robinson)

Dave Houseknecht
phone 314-882-6285

Gary Strathearn
fax 213-825-9433

Wolfgang Kalkreuth
403-292-7119

Stan Teerman
phone 213-694-9210
213-694-7122

Issac Kaplan
Fax 818-992-8940

Jean Trichet
phone 33-38-41-70-08
fax 33-38-41-70-69

Bureau of Missing Persons

Three recent members of TSOP cannot be located, as their forwarding address orders have lapsed: Gary Cole, James Hill, and Hugh Mitchell-Tapping. Anyone having information on these persons, please contact Ken Yordy.

As yet we've received no information on the whereabouts of Harold Williams and John McCollum, who were reported missing in the last Newsletter. Someone must know where they are.

Interested in Joining TSOP?

Please write to:

Ken Yordy
ARCO Oil and Gas Company
2300 West Piano Parkway
Piano, TX 75075
Phone: 214-754-6250

Meeting Reports:

Source Rocks, Generation, and Migration of Hydrocarbons and Other Fluids in the Southern Midcontinent

This workshop, co-sponsored by the Oklahoma Geological Survey and the Bartlesville Project Office of the U.S. Department of Energy, was held on February 6-7, 1990, on the Norman campus of the University of Oklahoma. An attendance of more than 200 was roughly evenly divided among representatives of major and minor oil companies, independents, consultants, academe, and government agencies.

The workshop, which had an emphasis on organic geochemical data, was especially beneficial in summarizing and bringing up to date the knowledge of hydrocarbon source rocks in the southern midcontinent. Several explorationists commented that the workshop significantly increased their understanding and appreciation of hydrocarbon source rock and migration.

An informal poll, taken before and after the panel discussion "Can Carbonates be Source Rocks for Commercial Petroleum Deposits?", indicated a roughly 50-50 split of opinions on this subject. In the absence of the evidence required to inspire a consensus on this question, there is clearly a need for more geochemical data.

The proceedings from the 18 oral presentations and 11 poster sessions, plus the transcript of the panel discussion will be published as a Circular by the Oklahoma Geological Survey in late 1990.

* * * *

Upcoming Meetings:

Coal and Terrestrial Organic Matter as a Source Rock for Petroleum

a symposium held in association with the 1990 Annual Meeting the American Chemical Society

April 23-24, 1990
Boston, Massachusetts

Thirty four interdisciplinary papers have been accepted for this ACS Symposium. Speakers from nine

countries, including seven from the Peoples Republic of China, will discuss a wide range of topics pertaining to terrigenous OM as a source for petroleum, including organic geochemistry, organic petrology, sedimentary environments and organic matter preservation, petroleum generation, expulsion and primary migration, and case histories from around the world. The keynote address, to be delivered by Dr. John M. Hunt, is entitled, "Generation of Gas and Oil from Coal and Terrestrial Organic Matter".

For further information, contact the American Chemical Society, or Symposium conveners W.G. Dow or P.K., Mukhopadhyay, both of whom are TSOP members.

- Wallace Dow
The Woodlands, TX

* * *

Coal Structure and Reactivity: Chemical, Physical, and Petrographic Aspects

September 5-7, 1990
Queen's College, Cambridge, UK

This international conference, sponsored jointly by the journal *Fuel* and by IEA Coal Research, will address a wide range of topics pertaining to coal structure, focusing especially on environmental issues related to coal utilization. Among the broad questions to be addressed include: How can coal processing be made "environment-friendly"? What are the similarities in reactivity of coals from different parts of the globe? How is coal's structure affected by the processes it undergoes? and What is the structure of coal?

Invited speakers from research centers around the world will present papers ranging from basic research to practical applied topics and new technologies. The closing date for abstracts was January 16, 1990.

For registration details or copy of meeting announcement, contact: Kathy Gaitonde, Coal Structure and Reactivity Conference, Butterworth Scientific, Ltd., PO Box 63, Westbury House, Bury Street, Guilford, Surrey GU2 5BH, UK. Additional information might be obtained from TSOP member Alan Davis, who is a member of the Scientific Committee for the meeting.

* * *

7th Annual Meeting of The Society for Organic Petrology

September 9-14, 1990
Calgary, Alberta, Canada

The 1989 TSOP Annual Meeting will be held outside of the United States for the first time, and will be hosted jointly by the Canadian Coal Petrographers Group, the Geological Survey of Canada, and The University of Calgary. All TSOP members should already have received the first circular, which included a form to request the final program and registration package. It has been decided, however, that the second mailing will be sent to all TSOP members, not only the respondents to the first circular.

The meeting will commence on Sunday, September 9, with a one day field trip to Cretaceous coal measures of the Horseshoe Canyon Formation of the Alberta Plains Region. This field trip is sponsored by the Institute for Sedimentary and Petroleum Geology and there is no charge for participants. Technical sessions will begin on September 10th, with presentations and posters on all aspects of organic petrology. The third day of the meeting (Sept. 11) is devoted to a symposium in honour of Dr. Peter Hacquebard. The program will comprise a series of invited presentations and posters on current research in organic petrology in Canada. The meeting will conclude with a 3-day field trip to Cretaceous coal measures of the Rocky Mountain Foothills.

The papers from the technical sessions are to be published in an international journal. However, the meeting organizers encourage anyone who would like to participate to submit a manuscript for inclusion in the proceedings volume.

- F. Goodarzi, Organizing Committee
Calgary, Alberta, Canada

Abstracts of 1989 Annual Meeting Reprinted by Inland Steel

TSOP Councilor Dennis Kaegi of has arranged for the reproduction of the Abstracts from the 1989 Annual Meeting (Urbana, Illinois) at Inland Steel. Abstracts books will be mailed to all TSOP members some time in April.

Publications of Note

ORGANIC PETROGRAPHY AND ORGANIC GEOCHEMISTRY OF TEXAS TERTIARY COALS IN RELATION TO DEPOSITIONAL ENVIRONMENT AND HYDROCARBON GENERATION by Prasanta K. Mukhopadhyay, Report of Investigations Bureau of Economic Geology, University of Texas, Austin, TX, 1989, 118 pp.

Until recently and in comparison with the compositional information available for other U.S. coal provinces, it has always seemed that there was scant representation of data, especially petrographic, for the Gulf Coast Tertiary lignites. Now, "Muki" Mukhopadhyay apparently has tried to correct this disparity single-handedly, by assembling lithologic, maceral, palynological, chemical and geochemical data on 156 Texas samples. Based on the compilation of palynological and petrographic data, Mukhopadhyay has made a thorough interpretation of the depositional environments of coals in the Wilcox, Claiborne and Jackson Groups and in different geographic areas. The report examines the geographic distribution of rank in the Texas lignites (measured by reflectance), with anomalies being plausibly explained by post-depositional ground-water movement.

The data provided in this report also could be a resource for future studies. The author presents several bivariate plots, but the bases to which the data are calculated could be varied with advantage; for example the rank-related properties should be interrelated on a dry, ash-free basis. Consideration also could be given to the appropriateness of the Parr mineral-matter calculation for these low-rank coals.

Possibly the most controversial aspect of this report is Mukhopadhyay's conclusion regarding the hydrocarbon-generating potential of these coals. Many organic geochemists doubt that coals have such potential; others claim that humic coals are the only available source of petroleum in some basins. Mukhopadhyay has taken on both camps by concluding that only the high-liptinite mixed coals are potential source rocks for liquid hydrocarbons; he also speculates that crude oils in the Wilcox and Claiborne Groups of south and east Texas may have been sourced in Wilcox coals. Mechanisms for primary migration of hydrocarbons from the coal network are proposed.

The Bureau of Economic Geology's Report of Investigations No. 188 will be an important resource of basic data for those concerned with Texas lignites; its utility is complemented by a broad selection of photomicrographs.

- Alan Davis
State College, PA

PEAT AND COAL: ORIGIN, FACIES, AND DEPOSITIONAL MODELS, edited by P.C. Lyons and B. Alpern, published by Elsevier, Amsterdam, 882 p., \$202.75 (US)/Dfl. 385.00.

and

COAL: CLASSIFICATION, COALIFICATION, MINERALOGY, TRACE-ELEMENT CHEMISTRY, AND OIL AND GAS POTENTIAL, edited by P.C. Lyons and B. Alpern, published by Elsevier, Amsterdam, 678 p., \$176.25 (US)/Dfl. 335.00.

TSOP members Paul Lyons and Boris Alpern have collaborated in the compilation of two important new volumes pertaining to peat and coal, recently published by Elsevier. The two books together comprise papers presented at a symposium on peat and coal at the 28th International Geological Congress, held in Washington, D.C., July 9-19, 1989. With the addition of detailed indexes and hard-cover bindings, these papers have been reprinted from the International Journal of Coal Geology, v. 13, nos. 1-4.

The first volume of the set, entitled *Peat and Coal: Origin, Facies, and Depositional Models*, includes 25 papers which deal with an overview of the genesis of coal, modern peat systems, peat depositional models, and ancient peat-forming systems, as related to peat and coal facies. Both tropical and temperate peat-forming systems, as well as Gondwanan and Sinoeuroamerican coal basins of Devonian through Tertiary age are covered by the papers. Various aspects of peat and coal origin are addressed from different viewpoints, including botanical, paleoecological, palynological, coal petrological, geochemical, sedimentological, and tectonic.

The second volume, entitled *Coal: Classification, Coalification, Mineralogy, Trace-element Chemistry, and Oil and Gas Potential*, includes 22 papers. General and detailed studies of major coal basins of the world are presented in relation to their geothermy, basinal setting, plate tectonics and orogenesis, and coal genesis and transformation. A variety of coal basins worldwide, from Carboniferous to Tertiary in age, are used to illustrate the basic processes of coalification, as related to sedimentary burial, tectonics, and diagenesis, in both foredeep and intermountain settings. New and traditional approaches are applied to decipher the origin of coal, as well as the generation of oil and gas from coal. Also included is a modern approach to an international system of coal classification.

Both volumes are hard bound and include three indexes-subject, geographic, and author-allowing easy

access to detailed information. Also, an Introduction written by the editors provides a general guide to the content of the individual papers.

Editors Lyons and Alpern deserve special commendation for getting these papers into press in such a timely fashion.

-Ed.

Thesis Watch

(Editor's Note: Much of the innovative work involving new experimental methods, applications, and interpretations in organic petrology is initially published in the form of graduate theses. Even when this work eventually finds its way into scientific journals, there is often a long time lapse involved; and of course, many theses containing valuable data are never published in any other form. With the cooperation of TSOP members at academic institutions, the Newsletter will regularly list recent graduate theses involving the study of organic petrology. The intent is to bring these works to the immediate attention of our membership. I have initiated this effort this month by inviting submittals from several institutions which regularly produce graduate theses relating to organic petrology. In the future, I will rely on members to perpetuate this effort by voluntarily submitting information on theses. Items may be brief, listing merely the author, title, date, and academic institution; however, submitters are encouraged to include a few additional sentences summarizing the main points of the work.)

Close, J.C., 1988, Coalbed methane potential of the Raton basin, Colorado and New Mexico [Ph.D. Thesis]: Carbondale, IL, Southern Illinois University.

Hasan, M.T., 1989, Petrographical characterization of Sonda-Thatta coal field, Sind Province, Pakistan [Master's Thesis]: Carbondale, IL, Southern Illinois University

Hatton, A.R., 1989, Palynology and petrology of the Path Fork coal bed as potential indicators of depositional environment [M.S. Thesis]: Richmond, KY, Eastern Kentucky University, 108 p.

Study of bench samples from the Middle Pennsylvanian Path Fork coal bed in Bell and Harlan Counties, southeastern Kentucky. This coal is characterized by alternating Lycospora-rich and Densosporites-rich zones, generally associated with high and low vitrinite, respectively. Sites in the northeast show signs of marine influence by high sulfur content throughout the seam as compared with the southwestern sites which are enriched in sulfur only at the top of the coal.

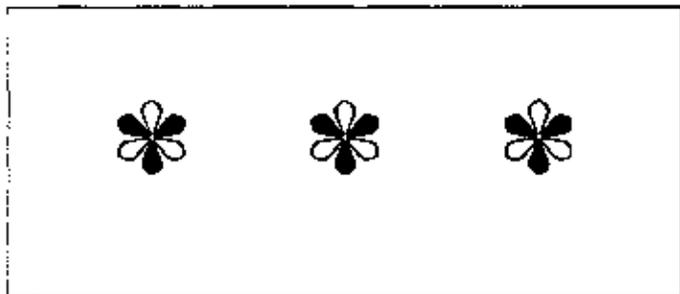
Markowski, T., 1989, Geology and petrology of Tertiary lignites adjacent to the Beartooth Mountain front, Montana-Wyoming [Master's Thesis]: Carbondale, IL, Southern Illinois University

Moore, T.A., 1990, An alternative method for sampling and petrographically characterizing an Eocene coal bed, southeast Kalimantan, Indonesia [Ph.D. Thesis]: Lexington, KY, The University of Kentucky, 244 p.

Characterization of a high volatile C bituminous coal using an array of maceral classes, plant parts, matrix, and particle size. Methods are described for extracting petrographic information from a limited number of block samples, a technique particularly suited for sampling in remote areas from which portage of large or numerous samples may be impossible.

Morrison, J.L., 1988, A study of factors controlling the severity of acid mine drainage in the Allegheny Group of western Pennsylvania [Master's Thesis]: University Park, PA, The Pennsylvania State University

Investigation of petrologic factors (e.g. amount and morphology of pyrite, amount and type of carbonate) that control the occurrence and severity of acid mine drainage in study area.



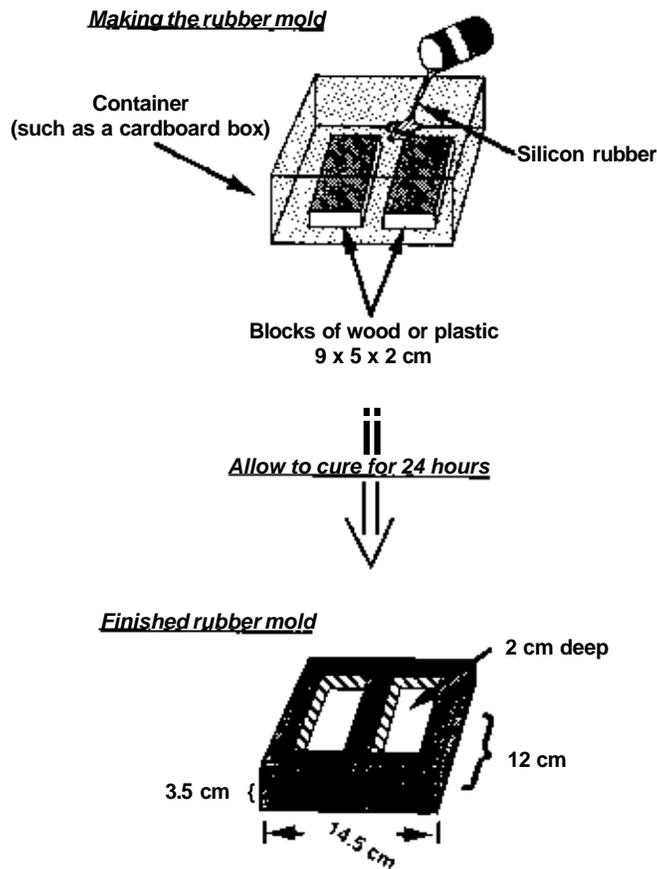
Pollen/Spore Color Standard to be Reprinted by Phillips

Daniel Pearson of Phillips Petroleum informs us that his company has given him permission to reprint approximately 600 copies of the 1984 Pollen/Spore color standard. The colors will be the same as in the original version. One copy will be mailed to each TSOP member listed in the membership directory. TSOP members already having a copy of the 1984 edition are encouraged to pass it on to a colleague who may need it. Any remaining copies will be distributed by request.

Laboratory Notes:

Custom-made Silicon Rubber Molds to Cast Blocks of Peat and Coal

Blocks of coal or peat are commonly cast in epoxy or polyester-based resin before polishing for microscopic analysis. To encapsulate the blocks in resin, molds made of steel or aluminum foil are commonly used. However, steel molds are costly and difficult to make and can leak. Molds made of aluminum foil are inexpensive, but are too flexible to provide adequate support. Premanufactured plastic and rubber molds provide another alternative, but are usually available only in small, preset sizes (typically 3 x 3 x 3 cm). Custom-made silicon rubber molds, however, are ideal for resin impregnations of large specimens in the laboratory, as they are strong, flexible, durable, leak-proof, inexpensive (less than \$25.00), and easy to make.



To manufacture such molds yourself requires liquid silicon rubber and a curing agent for "potting"--available through most plastics dealers. The silicon rubber is poured around an object of any desired shape or size to produce the mold, as illustrated in the accompanying diagram.

We used the following procedure to make our molds at the University of Kentucky: Two blocks of wood or cured epoxy were cut to the size and shape desired for casting. Because we used an automated polisher requiring blocks of a specific size, our molds were made to 9 x 5 x 2 cm in dimension. The blocks were then placed inside a larger container, such as a cardboard box, having dimensions at least 1.5 cm greater than the blocks. A mixture of liquid silicon rubber and curing agent was poured over the blocks and allowed to cure for 24 hours. After curing was complete, the outer box was removed or torn away. The blocks should pop out very simply to produce the mold.

We have reused our molds to cast over 50 blocks of resin-impregnated peat and coal, with no signs of wear.

- T.A. Moore, U.S. Geological Survey
Reston, VA 22029

- J.S. Esterle, University of Canterbury
Christchurch 1, New Zealand

* * *

APPLICATIONS OF MICROLITHOTYPE NOMENCLATURE IN ULTRAFINE COAL PROCESSING

Microlithotypes, the maceral associations within a 50 μ diameter circle, are ideally suited as descriptors on block samples. In such cases, the hierarchy from macerals to microlithotypes to lithotypes can be observed. With 20 mesh particles, the transition to lithotypes is lost but, with the exception of the finest particles, the microlithotype descriptors can be applied to the 50 μ diameter area surrounding the cross hair intersection. The standard microlithotype nomenclature is also useful, though, for samples in which few, if any, of the particles exceed 50 μ in any dimension.

Oil agglomeration and froth flotation are both used in the beneficiation of fine coals. The deeper the cleaning, the lower the ash and sulfur, the finer the particles required for processing. Utilization of coal as a coal oil or coal water slurry would require particles in the range of a few microns. Oil agglomeration experiments at the Center for Applied Energy Research (CAER) are utilizing coals ground to greater than 80% passing 325 mesh (45 μ). Partitioning of coal particles by oil agglomeration is a function of the response of

the surface properties of the coal particle to the processing conditions (pH, oil properties). The combined maceral/microlithotype approach to the description of the particles not only provides an assessment of the maceral/mineral assemblages, the microlithotypes; but also gives an average maceral composition of the individual microlithotypes. As the objective is the description of all of the particles in the system, and, in particular, since most of the particles are going to be less than 50 μ , it is necessary to deviate from the "rules" and consider all particles in the microlithotype count. Microlithotype nomenclature thus provides a description of the entire particle, or at least a cross section of the particle which we assume is representative of the whole particle composition and, by extension, the surface composition and consequent surface chemistry.

Column flotation, a derivation of froth flotation developed as the Ken-Flote process at the CAER by B.K. Parekh (Parekh et al., 1988), utilizes ultra-fine coal, much of it <10 μ . Recent work has focused on Illinois Basin coals for which the primary objective is the reduction of the pyritic sulfur. The overall microlithotype composition does not vary significantly, with froth and tailings samples being dominated by vitrinite-rich microlithotypes. The pyrite associations are studied with a procedure modified after the work of Frankie and Hower (1985). Frankie described the pyrite by its size, form, and microlithotype association. In our current studies the pulverization process constrains the size of the pyrite. Very few grains are larger than 5 μ . (Other coals would have different properties and could have more particles in the >5 μ range). Most of the pyrite consists of isolated euhedral grains and framboidal clusters of individual micron size grains (overgrown framboidal clusters make up most of the >5 μ forms). The only significant variable is the microlithotype association. The overall particle size in the flotation studies is finer than with the agglomeration studies. Therefore, particles even close to 50 μ are exceedingly rare. The microlithotype designation for a pyrite-bearing particle thus describes the entire cross-section seen. A second important deviation from the standard microlithotype rules is that the name applied to the assemblage excludes the pyrite. Vitrites with no pyrite, one pyrite grain, or twenty pyrite grains are all considered to be vitrite. Of course, the vitrite with no pyrite would not be considered in our counts of pyrite-bearing microlithotypes). Pyrite with no apparent maceral association is classed as carbominerite. Convention would classify virtually all pyrite-bearing assemblages as the carbopyrite microlithotype. Such a trivial exercise is not our objective; rather, we wish to learn as much as possible about the total mineral-maceral assemblage in order to gain an understanding of the interaction of the process conditions with the coal particles.

The techniques discussed above are limited by virtue of being two-dimensional representations of three-dimensional objects. Particle cross-sections may not be as representative of the surface as we are assuming. Pyrite with the appearance

of being free from any maceral association could actually be the surviving, polished portion of a maceral-mineral complex. Further, particles less than a few microns are difficult to categorize. If pyrite is among a cluster of micron-size particles, the pyrite brightness increases the difficulty of identifying surrounding particles and, in particular, the remainder of the pyrite-bearing particle. The problems with the technique are outweighed by the potential of using microlithotype nomenclature as a whole particle descriptor.

References Cited

- Frankie, K.A., and Hower, J.C., 1985, Pyrite/marcasite size, form, and microlithotype association in western Kentucky prepared coals: Fuel Processing Technology, v. 10, p. 269-283.
- Parekh, B.K., Bland, A.E., and Groppo, J.G., 1988, Recovery of fine coal from preparation plant refuse using column flotation: Proc., Int. Column Rotation Symposium, Phoenix, Arizona, Jan. 1988, p. 227-233.

- James C. Hower
Center for Applied Energy Research
University of Kentucky
Lexington, KY

* * *

Request for Research Proposals and Participants for Dispersed Organic Matter Subcommittee

At the 1987 TSOP annual meeting, a subcommittee of the TSOP Research Committee was formed to review problems related to the integration of organic petrographic data with other geologic and geochemical data. This subcommittee, with Joe Senftle serving as chairman, completed work evaluating organic matter preparation methods and their influence on the visual and chemical properties of kerogen.

I will be taking over the responsibility for continuing the work of this subcommittee and request interested members to contact me with suggestions for future direction. In addition to continuing previous work, possible topics include:

- standardization of kerogen preparation techniques
- identification and classification of dispersed organic matter
- chemical characterization methods of kerogen and integration with petrographic data
- petrographic properties of organic matter and their relationship to depositional environments
- properties of amorphous organic matter
- microscopic instrumentation and techniques
- chemical characterization of individual maceral
- application of thermal maturation parameters

Other suggestions will be gladly accepted

The efforts and input of interested individuals is essential to the activities of the TSOP Research Committee. Our goal is to contribute to the development and applications of organic petrology, and its integration with other disciplines. Project objectives will be designed to permit committed members to work together on well-defined problems through round-robin exercises and/or panel reviews. The activities of this subcommittee should complement and contribute to ICCP and other existing working groups.

Please send me your recommendations or indicate your interest in participating in Subcommittee activities prior to July 1, 1990. I will contact those members who have responded to discuss ideas and formalize a research program. Mail your response to:

Stan Teerman
Chevron Oil Field Research Co.
P.O. Box 446
La Habra, CA 90633-0446

Research Committee Report:**REPRODUCIBILITY OF
COAL MACERAL ANALYSES**

by Kenneth W. Kuehn
Research Subcommittee Chairman
Center for Coal Science
Western Kentucky University
Bowling Green, KY

(Editor's note: The following is a progress report of the TSOP-sponsored round-robin study designed to evaluate reproducibility of maceral analyses in coal, including an assessment of the influence of specimen grain size on maceral identification. A complete report will be submitted to the TSOP Research Committee at the completion of the work.)

In a Nutshell:

Samples of three high volatile bituminous coals from eastern Kentucky were prepared at four different particle sizes, ranging from 20 down to 325 mesh, then sent to seven participating petrographers for "round robin" maceral analyses. Results differ significantly among the participants, and point to a disagreement concerning the identification of some macerals, especially micrinite. Particle size of the sample preparation has a significant impact on results, with the reported volume percentage of micrinite decreasing at smaller particle sizes.

Introduction

It was decided at the 1987 TSOP annual meeting that a subcommittee of the TSOP Research Committee should be formed to investigate the precision and reproducibility of petrographic analyses. A call for participants was announced in the TSOP newsletter. Based on the response of the membership, a subcommittee was formed, including Kenneth W. Kuehn, James C. Hower and Garry D. Wild. It was agreed that a round-robin exercise would be designed to meet the following objectives: 1) evaluate overall reproducibility in maceral identification among participating laboratories, 2) identify specific 'trouble spots' of high variability, 3) assess the effect of different particle sizes on repeatability and reproducibility and 4) examine the possibility of adopting a standard format for reporting routine maceral analysis data, satisfactory to special interest parties such as academic researchers, steel companies and energy companies. The round-robin study was initiated in June 1988 and to date seven sets of analyses have been completed.

The full set of data and attendant analysis requires many tables, charts and graphs for complete discussion. Only

a few of these, selected for their illustrative value, are included herein. A detailed final report will be submitted to the TSOP Research Committee when results of all work in progress have been received and analyzed.

Experimental

Three high volatile A bituminous coals from eastern Kentucky (R_{\max} 0.75% to 0.95%), possessing an appropriate range of maceral compositions, were selected for the round-robin analysis. For each coal, duplicate pellets were prepared at -20 mesh, -60 mesh, -200 mesh and -325 mesh sizes. Samples were successively ground until the entire sample passed through the specified sieve size, and then split by a riffler. Each participant was sent two pellets for each of the 12 samples, for a total of 24 pellets. 500-point (mmf) maceral analyses were conducted on each pellet according to the following specifications: 1) total magnification between 400 and 625 diameters was used, 2) one point counted per field of view, 3) point-to-point distance of at least .5 mm. Participants were instructed to use the same maceral categories as would be used for a routine petrographic analysis in their lab.

Results

Presented in Table 1 are the results for each operator for one of the coals, #2160. Here, the results for all four size preparations have been combined, so that each value represents an average of eight pellets from the same coal.

Evaluating overall reproducibility. The arithmetic mean provides the best linear unbiased estimate of the actual maceral composition of coal #2160. The sample standard deviation (sdev) is a measure of dispersion around the mean value and is an indicator of 'curve width'. If the data represent random population, these two statistics are independent. One can readily observe that the data by operator are dispersed widely about the mean value. For example, the mean vitrinite content is calculated to be 59.5% but individual operator estimates range from 51.5% to 71.3%. Calculation of another statistic, the standard error (serr), permits establishment of confidence intervals about the mean. In the Gaussian distribution, it is expected that approximately 68% of the values should lie within the interval defined by plus-or-minus one sdev. It also is expected that 95% of the values should lie within the larger interval defined by plus-or-minus two sdev. When applied to a distribution of mean values, the confidence intervals are calculated by using either one or two sdev and dividing by the number of operators minus one. The 95% confidence limits for each maceral group as calculated from the above data appear in Table 2.

Table 1. Maceral Data for Coal #2160 by operator (%vol, mmf basis)

Operator	Semi-				
	Vitrinite	Fusinite	fusinite	Micrinite	Liptinite
A	57.4	14.0	13.1	6.2	9.5
B	60.1	13.8	12.5	5.3	10.3
C	58.6	----	----	4.8	11.3*
F	56.7*	17.6**	6.4**	6.8	12.4**
K	61.2	10.5*	13.8*	4.7	9.9
P	71.3**	13.1	7.5**	1.1**	6.9**
R	51.5**	9.7**	15.5**	12.6**	10.8
mean	59.5	13.1	11.5	5.9	10.1 (%)
sdev	6.0	2.8	3.7	3.5	1.7 (%)
serr	2.4	1.3	1.7	1.4	0.7 (%)
cvar	0.10	0.21	0.32	0.59	0.17

Notes: Fusinite and Semifusinite percentages are omitted for operator C due to use of 'inertodetrinite' category.

mean = the arithmetic average

sdev = sample standard deviation

serr = standard error of the mean, = sdev/(#ops.-1)

cvar = coefficient of variation, = sdev/mean

* = .05 probability <.32, (1*serr)

** = probability <.05, (2*serr)

Table 2. 95% Confidence Limits for Maceral Analyses of Coal #2160 (%vol, mmf basis)

Vitrinite	Fusinite	Semi-fusinite	Micrinite	Liptinite
54.7-64.3	10.5-15.7	8.1-14.9	3.1-8.7	8.7-11.5

Two problems become apparent immediately. First, these intervals are so wide that any real differences in composition between coals could easily be masked by them. The second is revealed when the relation of individual results to these bounds is examined. At the 95% level only one operator in twenty should produce a result that lies outside the intervals defined in Table 2. As can be seen by the use of ** in Table 1, every maceral group has at least two operators (29% of total) outside these bounds. This may indicate that very different definitions of the macerals exist among our operators and that we are not simply observing random errors from a normally distributed population. Though it is inappropriate to generalize from such a small sampling (7 operators) the problem areas seem quite clear and should become better defined as more participants complete the

round-robin exercise. It also should be mentioned that these problem areas exist for the other two coals in the study as well.

Identifying specific trouble spots. As trained petrographers we should first define limits for acceptable reproducibility, then work as a body to achieve them in practice. The statistic known as the coefficient of variation (cvar) provides a means of identifying specific problem areas as a starting point for reaching these broader goals. When the sdev is expressed as a percentage of the mean value, a dimensionless ratio is generated which permits direct comparison of variability in the different maceral groups. Examination of the cvar values in Table 1, indicates a range from .10 to .59. Vitrinite(.10) shows the least actual variation, while micrinite(.59) and semifusinite(.32) show the highest. This either indicates problems with our definition of micrinite or points up serious practical limitations in distinguishing these inertinite macerals by ordinary optical methods.

The effects of particle size on maceral identification. Another aspect of the experimental design permits study of the relations between particle size and maceral identification. Once again, micrinite seems to be the main area of concern. The data in Table 3 for all coals by all sizes indicate that as particle size decreases, the amount of micrinite identified tends to decrease as well. Each tabled value represents the average of 14 analyses (2 pellets x 7 operators).

Table 3. Micrinite Percentages by Size by Coal for Seven Operators. (%vol, mmf basis).

MESH SIZE	Coal Identification:		
	#2160	#91812	#91832
-20	6.5	7.7	4.9
-60	6.9	6.4	6.0
-200	5.5	5.3	4.4
-325	4.8	5.7	3.6

It is also interesting to note that as particle size decreases, the variability of micrinite estimates increases as well. This trend is indicated in Table 4 where the cvar values for micrinite tend to be lowest at the -20 mesh size and highest at -325 mesh. Here again, each tabled value was calculated based on fourteen results (2 pellets x 7 operators).

Table 4. Coefficients of Variation for Micrinite Percentages by Size by Coal for Seven Operators.

Coal Identification:			
MESH SIZE	#2160	#91812	#91832
-20	13.85	34.83	49.27
-60	64.04	58.67	48.94
-200	45.37	55.24	50.07
-325	53.80	69.57	75.49

Micrinite is the only maceral for which the data show clear links to particle size. Further investigation of these relations is warranted before interpretation can be offered. Even though most of us do not routinely perform petrographic analyses on such small particles, there is implication here for controlling the amount of fines produced during the normal pellet preparation process. As these fines increase, our confidence in reliably identifying micrinite correspondingly decreases.

Conclusions

The data presented here indicate the need to improve overall reproducibility of our maceral analyses. They also reveal micrinite to be a particular trouble spot of high variability. To address these problems the subcommittee is planning an exercise to focus on the definition and identification of inertinite macerals, especially micrinite.

Addenda

These results were presented at the 1989 TSOP annual meeting in Urbana, IL. Ferocious debating and questioning ensued, including the following:

Q:(R. Stanton) If the majority of the problems are centered around micrinite, couldn't the data be recalculated to a micrinite-free basis and give a better look at the other macerals?

A:(K. Kuehn) If the data were recalculated to a micrinite-free basis, each remaining maceral category would be increased proportionately. However, it is clear that any identification errors made by the operator during the analysis would not have been made in this way. In other words, a petrographer is not equally likely to confuse micrinite with vitrinite and micrinite with Semifusinite, for example. Further, maceral data are already somewhat confounded by the fact they are calculated to sum to 100%. As micrinite is an integral part of

the routine maceral analysis, it is better to deal with all the data, as taken together.

Q:(M. Lamberson) Would it be better to know from the start how much of a certain maceral is present- to have a standard for comparison?

A:(K. Kuehn) The mean values calculated from the experiment are reliable estimators of the actual population values within certain bounds as described by the standard error. Probabilities of the true value actually lying beyond these bounds are very small. Our main task is to shrink the width of these bounds, thus giving us more confidence in our experimental results. This could be achieved through training sessions and discussions with colleagues.

An invitation to all TSOP colleagues

If you would like to participate in these research activities, please contact any subcommittee member. We would also appreciate your input in the form of comments and suggestions.

* * *

- Ken Kuehn

(Editor's Note: I did not have the opportunity to comment on Dr. Kuehn's paper at the Urbana meeting, owing to the expiration of time available for questions. However, exercising my editorial prerogative, I can now take the liberty of interjecting the following:

The data reported by Dr. Kuehn certainly reveal a disconcerting lack of agreement in identifying some coal macerals (at least among the 7 participants in this study, but probably within the coal petrology community in general as well). However, the widely differing results may be as much reflective of the psychological predisposition and/or political orientation of the individual petrographer, as it is reflective of disagreement over what is or is not micrinite, etc. If so, there may not be a whole lot we can do to correct the problem.

Some years ago, while participating in a maceral seminar at Penn State (in which Dr. Kuehn, coincidentally, was one of the other participants), we addressed ourselves to many of the same sorts of issues as are raised in this paper. In spite of lengthy discussion about maceral classifications, there always remained a certain degree of scatter in the results. In examining the results, I began to believe that the more conservative members of the class consistently had the highest percentage of vitrinite, while the more liberally inclined petrographers tended to report a greater diversity of macerals present. Each side clung tenaciously to their point of view. It seemed as if a battle was being waged, in the microcosm of a

polished coal pellet, between the "Silent Majority" on the one hand and the "Rainbow Coalition" on the other.

In trying to understand how one's political perspective might be manifested in a maceral analysis, it occurred to me that one potential area of disagreement might lie in the decision as to whether the ocular cross hair lay precisely on a particular maceral or on its neighbor. Faced with such a decision, it seems quite conceivable that the liberal Democrat petrographer, enjoying diversity, might tend to squint an eye in favor of the less common maceral, while the conservative Republican petrographer, favoring conformity, might squint in favor of the more abundant maceral. This sort of decision would occur all the more frequently in the case of micrinite, owing to its small size and correspondingly high ratio of perimeter to surface area.

Is there anything to be done about this problem? Well, the results reported by Dr. Kuehn can clearly be improved upon and must be improved upon, but it is equally clear that we'll always have to live with a certain amount of scatter in maceral analyses (although we might diminish this by subjecting potential coal petrographers to psychological prescreening to determine their reliability). As to whose results to believe... Well it's fairly well documented that conservative newspapers tend to distort their news coverage more than their liberal counterparts. You can draw your own conclusions regarding the accuracy of micrinite point counts.

In any case, it is only through very worthwhile round-robin exercises such as this one that we can begin to assess and remedy the problems inherent in the analytical methods we use in organic petrology. In this light, and lest we each begin to accept our own data as Truth, please give careful consideration to the call for Research Sub-Committee participants issued by Stan Teerman in this Newsletter (p. 8).
-Ed.



"It was a blind test. None of us knew what we were doing."

The Awards Committee Cordially Reminds You:

Best Student Paper Award and a Photography Contest will be offered at the upcoming TSOP Annual Meeting in Calgary.

The following guidelines for eligibility for the Outstanding Student Paper Award have been approved by TSOP Council:

- 1) The recipient must be a member of TSOP
- 2) The subject presented must have been initiated and completed while the presenter was a student
- 3) The presenter must be actively enrolled in a college or university at the time of presentation or must have been enrolled during the 12 months previous to the presentation. Further, the recipient should be pursuing a college degree as his/her primary activity.
- 4) If the paper has multiple authors the recipient must be both the senior author and the presenter.

* * *

Focus on Laboratories:



Institut national de la recherche scientifique

INRS - Georessources

INRS-Géoressources was created on September 15, 1981, when the former INRS-Pétrole became a research center of the Université du Québec's "Institut national de la recherche scientifique". To the original mandate, focused on research in sedimentary geology and on evaluation of the fossil fuel potential of basins, was added a research programme in metallogeny and in the evaluation of the mineral potential of sedimentary rocks.

For more than ten years, the group carried out research which helped to increase the geological knowledge of Québec, and arrive at a better assessment of its oil potential. Studies were also undertaken in offshore basins of Québec, the Maritime Provinces and Labrador. Most of the non-confidential part of this research has been published.

By adding sedimentology specifically applied to mineral deposition, ore-deposit geology and metallogeny to its activities, the Centre is now able to ensure a worthy contribution to the evaluation of the mineral potential of sedimentary terranes.

In 1988-89, INRS-Géoressources and the Geological Survey of Canada joined their efforts to create the "Centre

geoscientifique de Quebec" (CGQ). This agreement added 22 researchers of the Federal Government to the INRS-Géoresources team that is, at the moment, composed of 12 scientists and 11 invited researchers.

Research Program

Studies of organic matter (OM) are mainly focused in the following areas:

1) Evolution and Diagenesis of Sedimentary Basins, which includes determination and use of palynostratigraphic zonations for time stratigraphy; determination of the state of thermal evolution of sedimentary rocks as evidenced by organic and clay mineral indicators; definition of paleotemperature zoneographies in order to represent, in three dimensions, the distribution of zones which have reached the same stage of evolution; establishment of sedimentological models in order to better understand the relations between paleoenvironmental conditions of deposits, content of OM, clay mineral assemblages, and palynological associations; and establishment of metallogenic models aimed at clarifying processes of precipitation, remobilization, and concentrations of economically important constituents of sedimentary rocks.

2) Mineralization in Sedimentary Basins, which is concerned with inorganic mineral substances in sedimentary basins. Within this program, the characterization of OM and clay minerals sheds light on possible ancillary modifications of the mineralized terrane, and points out the influence the OM may have had in the migration, concentration, and accumulation of mineral forming elements. Finally, palynology, which is useful both in establishing Stratigraphic zonations and thermal maturation indexes, may also serve to correlate non-metamorphosed sedimentary series and, hence, contribute to a better definition of favorable horizons for stratiform and stratabound mineral deposits.

3) Fossil Fuels, which encompasses the study of sedimentology, palynostratigraphy, petrography, and geochemistry of OM and clay mineralogy. These studies lead to the establishment of the zoneography of paleotemperatures and to the determination of the properties and the space/time relations of source, reservoir, and cover rock. The characterization of potential source rocks consists in defining their content of oil-prone and gas-prone OM. Thermal maturation studies lead to the evaluation of the hydrocarbon generation stage. A better knowledge of the space/time relations between source, reservoir, and cover rocks, acquired through the establishment of correlations with equivalent strata at the surface, helps in the Stratigraphic bracketing of the source rock and in the evaluation of the thermal maturation of the sedimentary sequences cut by studied wells.

Graduate Studies

Though the Centre does not offer formal graduate programs, INRS-Géoresources contributes to the scientific training of graduate students by welcoming as "stagiaires", M.Sc. and Ph.D. students registered in other establishments.

Joint Masters and Doctoral programs are planned with Laval University and the "Universités du Québec" at Chicoutimi and at Montreal. These programs should be implemented in the next two years. Nearly ten Ph.D. and M.Sc. students were registered at INRS-Géoresources each year for the last three years.

Laboratory Facilities

The Centre has laboratory facilities equipped with modern instrumentation in palynology, sedimentology and mineralogy (including optical microscopes, SEM with X-ray microanalysis, luminoscope), in mineral chemistry (AA spectrometer, NA system, and XRF spectrometer), in metallogeny (refractometer, microdurometer, fluid-inclusion stage), in clay mineralogy (X-ray diffractometer), in organic petrography and geochemistry (microscope for reflectance and fluorescence analysis coupled with on-line processor-programmed pyrolysis-Rock Eval, Perkin Elmer 240 B for CHONS analysis, and sohxlet extraction apparatus).

For Further Information:

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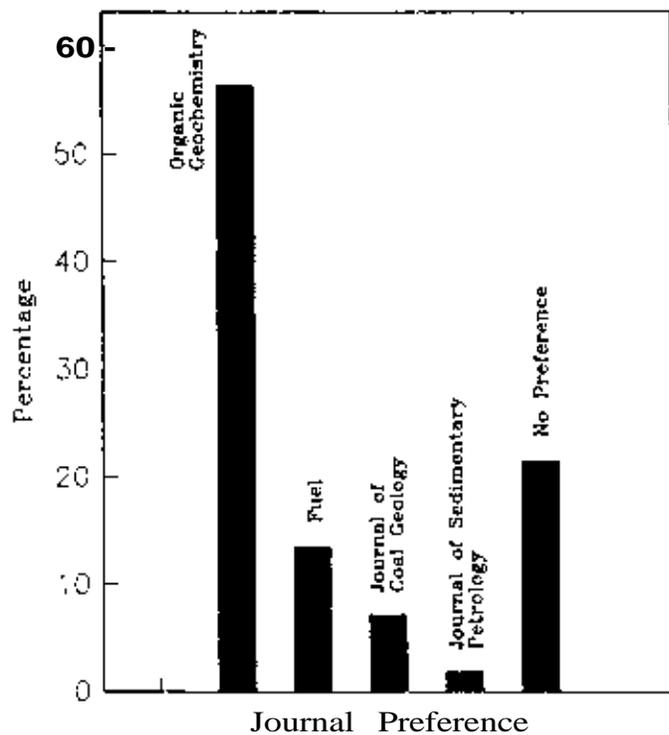
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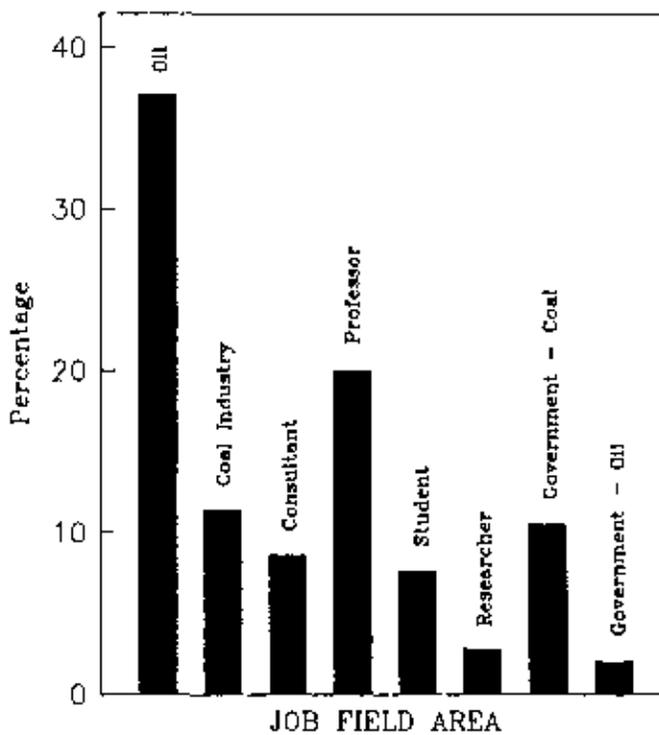
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THE SOCIETY FOR ORGANIC PETROLOGY



TSOP JOURNAL PREFERENCE FOR MEETING PROCEEDINGS

TSOP MEMBERSHIP JOB FIELD AREAS



THE SOCIETY FOR ORGANIC PETROLOGY

TSOP Newsletter, Vol. 7, No. 1

April, 1990

TSOP Publications

The publications listed below are presently available through The Society for Organic Petrology. Members are encouraged to order these items for their personal or organizational libraries. In addition to the personal benefit of having these high quality references readily at hand, you will be adding to the TSOP treasury, while helping to reduce our inventory of back publications. The modest prices make each of these publications a real bargain. Please place your order today by completing and mailing the attached order form along with your payment.

Item 1 (Proceedings of 2nd Annual Meeting, Houston, 1985) includes articles by Harvey and DeMaris on pyrite in Illinois coals, Hartman-Stroup on Rock-Eval hydrogen index, Thompson-Rizer on optical characteristics of solid bitumen, and Lin et al. on vitrinite fluorescence, plus much, much more. Item 2 (3rd Annual Meeting, Lexington, 1986) offers 13 papers, including Ottenjahn on fluorescence alteration, Sassen on Smackover crude oil destruction, Rimmer and Davis on Lower Kittanning coal petrography, and

Fermont on abnormal vitrinite reflectance in The Netherlands. Item 3 (4th Annual Meeting, San Francisco, 1987) includes 11 articles, including Héroux et al. on organic petrography of Pb-Zn deposits, Poe et al. on DGC of coals, and Mukhopadhyay on py-GC of DOM.

New TSOP members can catch up on past meeting proceedings by ordering items 4 and 5. Item 6, by Dr. Marlies Teichmüller, discusses the changes in fluorescence properties of liptinite and vitrinite macerals during coalification and their relationship to bitumen generation and coking behavior. The original article (Item 6) is in German and includes beautiful color plates. Item 7 is an English translation by Neely Bostick of Item 6, minus the color plates.

The December, 1989 issue of the TSOP Newsletter incorrectly stated that manuals from last October's Fluorescence workshop in Carbondale, Illinois are available for sale. The manuals are now undergoing final revision before being reprinted soon. Watch this space for further information regarding their availability!

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Order Form - TSOP Publications

Item:	Description:	Unit* Price	# Ordered	Total
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5	4th Annual TSOP Abstracts, 1987	5.		
6	Fluorescence microscopy (in German)	10.		
7	Fluorescence microscopy (in English)	5.		
Total:				

\$ * - Prices and payment in U.S. dollars only.

-- Be sure your name and address is on the reverse of this form.

- Send order form, including check or money order, payable to The Society for Organic Petrology to:

Suzanne Russell
Shell Development Company
3737 Bellaire Blvd.
Houston, TX 77025

TSOP Newsletter
April, 1990
Volume 7, No. 1

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487

Calgary 1990!



Calgary Skyline with Saddledome in Foreground, home of the NHL Calgary Flames (Photo courtesy of G. Edwards, ISPG)

Welcome

The Calgary Organizing Committee informs us that things are shaping up nicely for a terrific TSOP Annual Meeting on September 9-14 on the campus of The University of Calgary. The meeting is being hosted jointly by the Canadian Coal Petrographers Group, the Geological Survey of Canada, and The University of Calgary.

The 8-page second circular, which includes a complete listing of papers, posters, and field trip descriptions, is being sent out shortly and should be received by all TSOP members. To request additional copies of the circular see the addresses listed below.

Scientific Presentations

The committee received a truly worldwide response to the first circular and is expecting participants from Australia, Canada, China, France, Germany, India, Italy, Japan, New Zealand, Poland, Spain, Switzerland and the U.S.A. Thirty two oral presentations have been scheduled, of which 18 are planned for the first day of technical sessions (Sept. 10) and 14 for the Peter Hacquebard Symposium on the second day. In addition, 30 poster displays will be presented during scheduled sessions on September 9, 10, and 11.

Field Trips

A premeeting field trip on Sunday, September 9 will examine Upper Cretaceous coal measures of the Horseshoe Canyon Formation near Drumheller, Alberta. The trip will pass through the Drumheller Oilfield and will also visit the world-renowned dinosaur exhibit at the Tyrrell Museum of Palaeontology. This trip is sponsored by Institute for Sedimentary and Petroleum Geology and there is no charge to participants. (Trip leaders caution that there may be hoodoos about!)

A three-day post-meeting field trip will examine the Lower Cretaceous/Tertiary coal measures of the Rocky Mountain Foothills and Front Ranges. Sensational geology and spectacular scenery await participants in a variety of locales. There is a fee of \$200.00 per participant. Limit 45.

The Organizing Committee urges all meeting participants to **register early** for the field trips. **The deadline for field trip registration is August 1**, and Trip #2 may fill up fast



Photomontage of tectonically thickened Jewel seam at Cardinal River Mine, Cadomin-Luscar coalfield, Field Trip No. 2

Food and Entertainment

An Icebreaker is scheduled at the University on Sunday evening from 8:00 p.m. until midnight. Poster presentations will be available for viewing at that time. On Monday night, there will be a Western-style Bar-B-Que with local entertainment at the Elkana ranch located near Calgary. On Tuesday a luncheon and business meeting is scheduled at noon, and in the evening there is a dinner in honor of Peter Hacquebard at the Wainwright Hotel, Heritage Park, Calgary.

Registration

Registration for the meeting is \$120 (CDN) for TSOP members, \$140 for non-members (which includes a one-year membership in TSOP), and \$100 for students. The Monday BBQ will cost \$30 and the Peter Hacquebard dinner will cost \$25, including transportation. Inexpensive accommodations are available through the meeting registration services.

Participants should be aware that discount air fares are available for travellers staying over a Saturday night. So come a day early and see some of the city.

For additional information, please contact:



Coal-bearing Horseshoe Canyon Fm. with hoodoos. Red Deer Valley, Drumheller, Field Trip No. 1 (Photo courtesy of B. Rutley, ISPG)

Registration:	Technical Information & Field Trips:
Madeleine Aldridge Conference Office The University of Calgary 2500 University Drive N.W. Calgary, Alberta, CANADA T2N 1N4	Dr. Wolfgang Kalkreuth I.S.P.G. Geological Survey of Canada 3303 33rd Street N.W. Calgary, Alberta, CANADA T2L2A7
Phone: 403-220-7319 Fax: 403-289-7287	Phone: 403-292-7000 Fax: 403-292-5377 Telex: 03-825686

See you in Calgary!

From the Editor

Thanks to Amoco and Shell!

Recent changes in the format of the TSOP Newsletter have entailed significantly higher production costs than in the past. What's more, the Society is now required to pay for many operating expenses that were previously absorbed by the past editors' employers, placing an added burden on the TSOP treasury. We are, therefore, extremely grateful to Amoco Production Company in Houston, TX and Shell Research Laboratories in Bellaire, TX for their recent generous support of the TSOP Editor's functions.

Last month, Shell Research mailed out copies of the Proceedings from the 1989 TSOP Annual Meeting in Urbana, Illinois. These booklets should now have been received by all members who did not attend the meeting. (As noted in the April issue, Dennis Kaegi arranged to have these Proceedings printed at Inland Steel.)

The present issue of the TSOP Newsletter was printed and mailed by Amoco.

My special thanks go to TSOP members John Clendening at Amoco and Suzanne Russell at Shell who made the necessary arrangements with their respective companies.



•*•

Have you received your December (1989) and April (1990) issues of the TSOP Newsletter?

As noted, the present issue of the Newsletter is being mailed out by Amoco, and should be received reliably by all members whose addresses are up to date. The previous two issues (December, 1989 and April, 1990) were sent out via "bulk mailing service" here in Tuscaloosa and were apparently not received by some TSOP members. Anyone who failed to receive either or both of these issues, please notify me.

•

Please become a truly active member in your Society by submitting materials for publication in the Newsletter. Book reviews, research notes, notices of upcoming meetings, and letters to the Editor are all welcome contributions.

In this regard, I'd like to express my thanks to all the contributors of materials in the present issue.

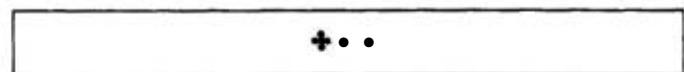
-Ed.

Items for September Newsletter

The next TSOP Newsletter is scheduled for publication in September, 1990. Please submit items as soon as possible prior to September 1, 1990 to:

Jeff Levine, TSOP Editor
 Department of Geology
 The University of Alabama
 Tuscaloosa, AL 35487
 Phone: 205-348-1587
 FAX: 205-348-7612

Please note: DOS-compatible computer files sent via floppy diskette (3.5" or 5.25", DD or HD), formatted for Microsoft Word, Wordstar, or "unformatted" (ASCII format) save time in typing and editing.



-- Photo Contest!

The TSOP Awards Committee will sponsor a photography contest in conjunction with this year's annual meeting in Calgary. All TSOP members, including those not planning to attend the meeting, are invited to submit 8" x 10" photographs or photomicrographs, in black-and-white or in color. We recommend that prints mounted on a stiff backing, to aid in displaying your photo and to protect it from damage. Suggestions for appropriate subject material include scientific themes as well as scenes from past meetings or any other imaginative topic. (Good taste, of course, is advised.)

All entries will be displayed at the meeting and judged by ballot by the members attending. First, second, and third place ribbons will be awarded. In addition, the first place winner will receive a prize. The winning photos will be reproduced in an upcoming issue of the Newsletter. All entries will be returned after the meeting.

Photos may either be delivered in person at the beginning of the meeting, or sent by mail. In either case, please indicate your intention to submit an entry prior to August 15 so we can anticipate space needs and print titles. Please include the following information: submitter's name, number of entries, and titles or descriptions.

Photos and information should be sent to:

Dave Glick
 513 Deike Building
 Penn State University
 University Park, PA 16802

Membership Report

Change of Address:

Please take note of the following address change:

Gary Strathearn (formerly at UCLA)
335 24th Street Dept of Environmental Biology
Santa Monica, CA 90402

* • *

**New Position, New Mailing Address for TSOP
Secretary-Treasurer**

Congratulations to TSOP Secretary/
Treasurer Renee McLaughlin, who has recently been
promoted to Laboratory Supervisor of geochemical services at
Core Laboratories. Renee's laboratory has also moved to a
new location. Effective immediately, Renee's new address is:

Renee McLaughlin
Core Laboratories
1875 Monetary Drive
Carrollton, TX 75006

Phone: 214-466-2673
Fax: 214-323-3930

Please make note of the change, as the forwarding address
order expires soon. (Note: The April issue of the Newsletter
incorrectly listed Renee's area code as 204 rather than 214. My
apologies to any of you who reached Manitoba when trying to call
Renee in Dallas. -Ed.)

* * *

**TSOP Members Valia and Kaegi Receive
1989 AISI Award**

TSOP members Hardarshan Valia and (current
Councilor) Dennis Kaegi were among four recipients of the
1989 Institute Medal presented by the American Iron and
Steel Institute. Also receiving this year's award were Valery
Addes and Donald Zuke. The four are employed at Inland
Steel Research Laboratories in East Chicago, Indiana. The
award is given annually for the previous year's outstanding
technical publication of significance to the steel industry.

The winning paper, entitled "Production and Use of
High CSR Coke at Inland Steel Company", described means
for improving coke quality to contribute to more economical
and more efficient use of coke in modern blast furnaces. The
paper was presented at the American Institute of Mining,
Metallurgical, and Petroleum Engineering annual meeting last
year in Chicago.

The acronym CSR in the title of the paper denotes
"coke strength after reaction", which is a property of coke that
reflects its behavior in the blast furnace. The research
centered on developing relationships among coal and coke
microstructures, cokemaking parameters, and blast furnace
performance.

* * *

Interested in Joining TSOP?

**Please write to: Ken Yordy
ARCO Oil and Gas Company
2300 West Piano Parkway
Piano, TX 75075
Phone: 214-754-6250**

Meeting Report:

Gulf Coast Lignite Consortium

The Gulf Coast Lignite Consortium held its third
meeting in May of this year in Shreveport, LA. The meeting
was preceded by tours of the Dolet Hills lignite mine and the
newly opened Oxbow mine.

The Consortium is made up of representatives from
state and federal agencies, universities, mining companies,
and utilities. The purpose of the group is to promote
educational awareness, research, development, and utilization
of the Gulf Coast's lignite resources. Jim Luppens of Phillips
Coal Co. is the newly elected head of the Steering Committee
and Joe Sarnecki of the Alabama Geological Survey is the
editor of a proposed newsletter.

For more information on the Consortium's activities,
or to have your name added to the mailing list, contact Sue
Tewalt at (703) 648-6437.

- Bob Finkelman
U.S. Geological Survey
Reston, Virginia

Upcoming Meetings:

GSA Annual Meeting

**October 29 - November 1, 1990
Dallas, Texas**

Coal Geology Division

The Coal Geology Division of the Geological Society of
America has a variety of activities planned in conjunction with
the upcoming GSA annual meeting in Dallas. The Division
will sponsor a pre-meeting field trip (October 25-28) to be led
by Sam Friedman of the Oklahoma Geological Survey. The
trip will visit sites in the Western Region of the Interior Coal
Province in Kansas, Missouri, and Oklahoma.

During the meeting, the Coal Division will sponsor a Symposium (comprised of invited papers) and associated Theme Session (comprised of volunteered papers) devoted to the topic of "Practical Applications of Coal Geology". These two sessions will highlight some of the many pragmatic contributions that coal geology has made to the energy industry in helping to make coal utilization more economical, efficient, and environmentally acceptable.

In addition to these two sessions, the Coal Geology Division will also sponsor a general technical session and poster session on coal science.

For more information contact Bob Finkelman at (703) 648-6412.

- Bob Finkelman
U.S. Geological Survey
Reston, VA

Organic Geochemistry Division

The Organic Geochemistry Division of GSA will sponsor a symposium at the annual meeting entitled, "Applications of Organic Molecular Markers in Sedimentary Geology". Potential participants are instructed to send their abstracts (on GSA standard forms) to:

Michael Kruge
Department of Geology
Southern Illinois University
Carbondale, IL 62901

Abstracts must be received before July 11, 1990

* * *

American Chemical Society Division of Fuel Chemistry

1991 Planned Symposia

The Fuel Chemistry Division of the American Chemical Society has planned a variety of symposia relating to organic petrology in the coming year. Listed below are the symposium titles and last names of the session Chairs.

Abstracts are limited to 150 words and should be submitted prior to the deadline dates indicated.

Atlanta, Georgia, April 14-19, 1991 (Deadline: Nov. 1, 1990):

- **Fuel Treatment for Conversion (R. Warzinski)**
- **Ash Chemistry and Physics (T. Peterson)**
- **Pyrolysis of Natural and Synthetic Macromolecules (H. Meuzelaar and M.T. Klein)**

- **Environmental and Health Effects of Fuel Choice (W.A. Peters, J.J. Reuther, and G.J. Antos)**
- **Computer Applications in Fuel Chemistry (G.A. Carlson)**
- **liquefaction Mechanisms (R. Malhotra)**

New York, August 25-30, 1991 (Deadline: March 15, 1991)

- **Combustion Chemistry (P.R. Westmoreland)**
- **Gasification Mechanisms (G.R. Gavalas)**
- **Workshop on Carbon Active Sites (L.R. Radovic)**
- **New Fuel Derived Materials (P.W. Morrison)**
- **Novel Analytical Techniques (H.L. Retcofsky)**
- **Research on Argonne Premium Coal Samples (K. Vorres)**
- **Advanced Gasifiers and Combustors: Applications to Coal and Waste (R. Khan)**

For additional information, write to:

M.A. Serio
Advanced Fuel Research, Inc.
87 Church Street
East Hartford, CT 06108

Phone: 203-528-9806

* * *

3rd Coalbed Methane Symposium

**May 13-16, 1991
Tuscaloosa, Alabama**

The Gas Research Institute, The University of Alabama, the U.S. Mine Safety and Health Administration, and the Geological Survey of Alabama will jointly sponsor this 3rd symposium on the topic of "coalbed methane" on May 13-16, 1991 on the campus of The University of Alabama.

Papers are requested on a broad range of topics, including coal science, basin studies, reservoir characterization, and environmental aspects as well as a wide range of engineering and technological subjects.

Abstracts should be submitted by August 3, 1990 for consideration by the program committee. Full papers will be published in a proceedings volume which will be available during and after the symposium.

For more information, including a First Announcement and Call for Papers, contact Dan A. Thompson, Symposium Chairman, College of Continuing Studies, The University of Alabama, Box 870338, Tuscaloosa, AL 35487-0338.

* * *

Coalbed Methane of
Western North America

September 18-20, 1991
Western Colorado

A call for papers has been issued for a guidebook to accompany the 1991 field conference of the Rocky Mountain Association of Geologists, to be held in an as yet unspecified locale in western Colorado.

Major topics for this meeting include Regional Coal Geology and Tectonics, Geochemistry and Coal Petrology, Field Studies, Exploration, Resource Evaluation, and Resource Development.

The deadline date for submittal of abstracts is June 30, 1990. For more information, write to:

Steven Schwochow
1991 RMAG Guidebook Editor
c/o Colorado School of Mines
Golden, CO 80401-3888

Telephone: 303-273-3888



Laboratory Notes

A METHOD FOR ELECTRON
MICROPROBE EXAMINATION OF
COAL MACERALS

by Charles H. Harrison
Inland Steel Industries, Inc.,
East Chicago, IN 46312

Electron microprobe (EMP) studies of coal macerals have been reported many times over the past twenty years, but details of sample preparation and operating conditions of the microscope are usually not described in sufficient detail. This note is intended to provide an aid for researchers who may wish to employ this useful tool in their work.

In preparing epoxy grain mounts we use ASTM procedures to ensure that random, representative samples are obtained. Pellets are then polished in the following sequence to provide a surface free of contamination:

1. coarse grind sample on a 9 micron diamond impregnated disk for 2 minutes.
2. finish grind sample on a 6 micron diamond impregnated disk for 2 minutes.
3. rough polish with 1 micron diamond paste or slurry on a hard cloth such as- Buehler's Texmet or Dunnington's Kempad for 2 minutes.

4. medium polish with 1/4 micron diamond paste or slurry on cloth similar as in step 3.
5. the final polishing step use a 0.06 micron colloidal silica solution - Buehler or Struers on silk cloth.
6. Ultrasonically clean in a high purity soap solution such as Micro from International Products Corp. after steps 1 to 5 and rinsed with distilled water.

Each coal pellet polished surface is scribed into nine areas to establish a coordinate system for identifying macerals. The pellet is then examined by optical microscope in immersion oil so macerals can be properly identified. Randomly selected macerals are identified, then scribed with a diamond marker' (Minken, 1982). Photographs are taken of each area encircled and labeled using the coordinate system. Once all the marked areas on each pellet are photographed, the pellets are cleaned ultrasonically in a Freon TF solution for a minimum of five minutes to remove immersion oil and any debris from scribing. The coal pellets should then be vacuum desiccated for a minimum of 30 minutes to remove any remaining Freon TF solution and/or inherent moisture.

The samples are coated with a high purity carbon (at least 99.999%) before examination by the EMP. To aid in identifying the macerals, the carbon should be cast at approximately a 45° angle. The thickness will be adequate when a white paper background turns a light grey. This combination is critical to being able to identify macerals in the EMP. The samples should then be stored in a standard desiccator until examinations are to be conducted.

At Inland Steel, we used a JEOL 8600 Superprobe operated at 20 kV, and 10 μA. Magnifications are typically 500 to 1000X. We have found that these conditions produce sufficient x-rays for analysis with minimal beam penetration. Each maceral measured has three one-micron diameter (beam spot size) areas examined by the EMP. We use a Tracor Northern X-ray analysis system for determining the elements and their percentages detected using standards that were also carbon coated. The EMP was estimated to have a detectable limit of approximately 100 ppm and a standard deviation of approximately 5%. The accuracy of the EMP analysis is affected by:

1. the homogeneity and purity of the standards.
2. the sample's surface condition.
3. the alignment of the EMP beam.
4. the cleanliness of the EMP's apertures.

References

Minken, J.A., et al., Proton Microprobe Determination of Elemental Concentrations in Coal Macerals. Scanning Electron Microscopy, Proc. SEM Inc., AMF O'Hare (Chicago), IL, 1982,175-184.

An Open LetterThoughts Concerning the Role of
Fluorescence Spectroscopy In Organic
Petrology

The phenomenon of fluorescence is much more than the dry representation of electronic transitions induced by a user-selected amount of energy. With the emergence of new theories concerning coal structure, the recognition of a technology-driven oil industry, and the broad interest in fluorescence among all segments of the research community, the timing is appropriate to open discussion concerning the future of fluorescence spectroscopy in organic matter characterization. Clearly, fluorescence is an invitation for organic petrologists to interact with organic chemists, physical chemists, analytical chemists, physicists, and forensic and biomedical scientists. There is opportunity for growth in the scientific community in interdisciplinary industrial and academic research. Integration of disciplines will require organic petrologists to arrive at the microscope with a strong fundamental background in general chemistry, spectroscopy, and an understanding of the limitations of the fluorescence phenomenon.

What is the role of fluorescence?

After nearly 30 years of intriguing and essential research, it is evident that near-UV fluorescence is a spectator to other analytical techniques regarding the precise molecular characterization of kerogen. Mass spectrometry, magnetic resonance, and gas and liquid chromatography adequately resolve molecules and ions from samples that would remain largely unknown if left solely to the inherent limitations of UV-Visible fluorescence spectroscopy. This is due, in large measure, to the unavoidable limitations of the fluorescence phenomenon.

What are these limitations?

Absorption bands for organic molecules are broad and their intensities are dependent on concentration as well as composition. Since fluorescence is an electronic process, saturated molecules are not studied directly, although the magnitude of their interactions with fluorophores remains an important unknown. Among the unsaturated molecules, absorption bands are wavelength dependent, reflecting molecular structure and size. This fact encumbers the petrologist to either focus upon a particular group of molecules or to expand the analytical capability to excite and detect over a much wider range of wavelengths. In the former case, an assumption is that the behavior of one group of molecules is indicative of all molecules.

On the emission side, the story is again complicated. Organic petrologists now openly express their dismay over the broad structureless spectra that liptinites typically yield. Unnecessary smoothing commonly masks spectral structure and common spectral parameters do not always alert the petrologist of underlying photochemical information.

Do all liptinites alter?

Given that most organic petrologists utilize long wavelengths of excitation (>365 nm), research to date has focused, for the most part, on the most microenvironmentally sensitive group of molecules, the aromatics and heteroaromatics. Due to their abundances in geologic samples and their unique structure, a number of competitive processes influence their fluorescence. As expected, the spectral output expresses a composite of these processes.

But this leads to the promise of fluorescence, in the sense of process oriented research to build upon the results of previous work. Fluorescence microscopy offers distinct advantages as an analytical tool. Most other analytical techniques destroy the sample during analysis in the name of identification. Fluorescence microscopy, on the other hand, is a relatively non-destructive technique. Fluorescence is uniquely an optical probe of chemical composition and physical microenvironment. The same molecule(s) in different environments will yield different emission spectra. If viewed as offering a combination of information, fluorescence microscopy / spectroscopy can contribute greatly in studies of geomolecular structure and kerogen kinetics. Fluorescence microscopy promises to extend the kerogen / asphaltene / bitumen concept, probing the individual constituents that in their totality define the properties of coals and source rocks. Finally, fluorescence microscopy offers a means to observe hydrocarbon migration, providing a tool to study inclusions of oil and constraining the history of oil migration in a basin.

Potential along these lines has been recognized recently, particularly in light of mobile-network phase theory proposed from studies of coal. Spectral fluorescence analysis has been applied to this type of problem and the results seem promising. One photochemical process, i.e., electron delocalization, has already been proposed. When grounded in integrated chemical and spectroscopic data, we suspect that the list of common photochemical processes will grow and be mechanistically linked to various stages of coal rank and organic maturation. New applications in the environmental sciences will exploit the fact that many undesirable molecules are capable of fluorescence. But as always, it is difficult to predict where the science will lead the scientist.

- Charles R. Landis and Joseph T. Senftle
ARCO Oil and Gas Co.
2300 West Plano Parkway
Plano, TX 75075



TSOP Newsletter
June, 1990
Volume 7, No. 2

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



TSOP1990-91 Council Members

President	Joe Senftle
Vice-President	Dick Harvey
President Elect	Sue Rimmer
Secretary/Treasurer	Renee McLaughlin
Editor	Jeff Levine
Councilor (1989-91)	Scott Stout
Councilor (1990-92)	Ken Kuehn

Publications Committee	Jeff Levine, University of Alabama Tuscaloosa, Alabama
Membership Committee	Ken Yordy, ARCO, Piano, Texas
Research Committee	Rui Lin, Unocal, Brea, California
Outreach Committee	Charlie Landis, ARCO, Piano, Texas

Suzanne Russell is stepping down as Awards Committee chairman after serving several years in this capacity. TSOP is very much indebted to Suzanne for her past efforts, especially in administering the Best Student Paper Award program. Ken Yordy has also announced his intention to step down as Outreach/Membership chairman after the 1991 Lexington meeting.

TSOP Council Affairs

The TSOP Council met twice in conjunction with the annual meeting in Calgary. President Art Cohen presided over the Outgoing Council meeting on Sunday, September 9 and current President Joe Senftle presided over the incoming Council meeting on Tuesday, September 11. TSOP Council also conducted an Annual Business Luncheon on Monday, September 10.

Selected highlights of these meetings are summarized in the following committee reports. Additional information regarding business transacted in Calgary will be forthcoming in the upcoming December issue of the Newsletter.

New Committee Assignments. President Joe Senftle announced the following committee appointments for the coming year:

Election Committee	P.K. "Muki" Mukhopadhyay, Global GeoEnergy Research Dartmouth, Nova Scotia
Awards Committee	Bob Rathbone, Kentucky Center for Energy Research Laboratories, Lexington, Kentucky
Nominating Committee	Art Cohen, Univ. of South Carolina Columbia, South Carolina

Outreach Committee. At the incoming Council meeting, President Joe Senftle identified 6 important areas in which the Outreach Committee ought to be serving TSOP: 1) maintaining active communication and interaction with other professional organizations, 2) increasing membership, 3) developing and enhancing external financial support, 4) providing insights on current and upcoming scientific trends relating to organic petrology, 5) aiding in integration with other disciplines, and 6) publicizing TSOP activities. Charlie Landis has been encharged with the responsibility for developing priorities and strategies aimed at fulfilling these objectives. Charlie will be presenting a report and making recommendations at the mid-year Council meeting next April in Dallas. In the interim, TSOP members are encouraged to share any ideas they might have regarding the Outreach Committee, its mission, and its program.

Research Committee. The Research Committee is undertaking an effort to re-assess its mission and objectives. The ultimate goal is to develop a program that will best address the many important interests of TSOP members. New Committee chair Rui Lin will be developing goals and strategies over the next several months and will make a report to Council at the Mid-Year meeting (Please see announcement on p. 4 in the present issue of the Newsletter). Activities of the Sub-Committee on Dispersed Organics have been temporarily suspended pending the completion of this report.

Annual Meetings Committees. The Lexington committee (1991) reports good progress in preparation for next year's annual meeting, including a planned 1-day field trip. A preliminary announcement and request for abstracts will appear in the December issue of the Newsletter. The State College (1992) committee reports progress in arranging the proposed joint meeting with ICCP, although several uncertainties remain regarding the scheduling of activities. The most difficult problem is to satisfy the time requirements of both TSOP and ICCP, while keeping the overall meeting length manageable-hopefully not exceeding 6 days. A one-day field excursion to the Pennsylvania Anthracite region is also being planned in conjunction with the meeting. Plans for the Annual Meeting in 1993 remain unsettled. A proposal to hold the 1993 meeting in conjunction with the annual meeting of AASP may not come to pass, and several alternatives are still being considered, including a site in northern Virginia (near Reston) or, alternatively, in the Powder River basin near Gillette, Wyoming.



1990 Election Results

TSOP Secretary/Treasurer Renee McLaughlin reported the results of the recent election for vacant positions in the TSOP Council. The following individuals were elected and have accepted their positions:

Sue Rimmer	President-Elect
Richard Harvey	Vice-President
Ken Kuehn	Councilor

Congratulations to the winning candidates and thanks to all who participated in the electoral process, including nominating committee, candidates, ballot committee, and most importantly, the voters.

Membership Report

by Ken Yordy, Membership Committee

Since the April, 1990 Newsletter, and prior to the 1990 annual meeting in Calgary, 11 new members have joined the Society (see listing below), bringing total membership to 251, as of August 31, 1990. Since the 1989 Annual meeting we have added 22 new members, of whom 10 are outside North America, reflecting a growing international interest in TSOP.

The registration fees charged to non-members at the 1990 Annual Meeting in Calgary included a 1 year "trial" membership in TSOP. This will certainly produce a significant increase in the membership roles, especially amongst "Canadian coal petrographers". The names and professional affiliations of these recent members have not yet been compiled, but will be reported in the December issue of the Newsletter.

The "Bureau of Missing Persons", has located former TSOP member Gary Cole, who is now working for BP in Houston. Still at large are James Hill and Hugh Mitchell-Tapping, and Judith Pilgrim. Anyone having information on these persons should contact Ken Yordy.

1990-91 Membership Directory

The new 1990-91 Membership Directory will be published by ARCO sometime around December, 1990. Please check your entry in the 1989-1990 Directory and be sure your name, address, telephone and fax numbers are correct. Send any additions or corrections as soon as possible to Ken Yordy.

Address Changes

Please note the following changes to the 1989-90 (green) Membership Directory:

Gary Strathearn 335 24th Street Santa Monica, CA 90402	James M. Hill 231 Washington Ave. Santa Fe, NM 87501-1926
Timothy White Box 393 R.D. 1 Centre Hall, PA 16828 Phone 814-231-2170 Fax 814-231-2174	Hans Kerp Laboratory of Palaeobotany and Palynology Heidelberglaan 2 3584 CS Utrecht The Netherlands 532636 Fax 0031-(0)30-531357

U.S. mail for John A. Clendening, Brenda Claxton, and Gordon Wood at Amoco should be sent to the following (postal) address. Courier and UPS parcels should be sent the street address listed in the Directory:

Amoco Production Company
P.O. Box 3092
Houston, TX 77253

Interested in Joining TSOP?

Please write or call: Ken Yordy
 ARCO Oil and Gas Company
 2300 West Piano Parkway
 Piano, TX 75075

Phone 214-754-6250
 Fax 214-754-6807

Secretary/Treasurer's Report

(Note: An interim financial report for the Society was presented to Council at the 1990 Annual meeting. A full financial report will appear in the December issue of the Newsletter.)

1990 Membership Dues

As we all know, time passes by quickly and we all are very busy in our daily lives. This is why I am reminding those TSOP members who have not paid their 1990 dues to please take the time to do so. If you are uncertain as to whether you have paid your membership fees for this year, I will be more than happy to help you out; please phone (214/466-2673), telefax (214/323-3930) or write to me (1875 Monetary Drive; Carrollton, TX 75006).

1991 dues notices will be mailed in November. Individuals who have not paid their past and current dues by the February 1, 1991 deadline will be dropped from the membership list effective April 1, 1991. Some members prefer to pay their annual dues at the yearly meeting. This is encouraged, as long as the member is paying for dues in advance and not for the current year. Please, let's all do our best to pay our dues in a timely fashion. Your cooperation in this matter is greatly appreciated.

Individuals who joined TSOP through their attendance at the 1990 Calgary meeting have already paid their 1991 membership dues by paying the non-member registration fee. Thank you and welcome to TSOP!

One final note: Dues are to be paid in U.S. funds only. I hope in the near future, members will have the option of charging their dues payments to their VISA accounts, or send funds via bank transfer. In the past, several international members have sent U.S. dollars through the mail. This has proven successful, however, the treasurer can not be responsible for funds not received. A receipt will be sent for acknowledgment of cash received through the mail.

Thanks very much,

Renee

Renee McLaughlin

You gotta pay your dues, if you wanna get the TSOP news!

You gotta pay your dues, if you wanna get the TSOP news!

You gotta pay your dues, if you wanna get the TS&P news!

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Meeting Report

**1990 TSOP Annual Meeting
Calgary, Alberta, Canada**

Meeting Summary. The 1990 Annual Meeting in Calgary attracted 109 registrants. An unprecedented number of countries were represented, with the host country having the largest contingent: Canada (53); USA (41); Germany (5); France (2); Italy (2); and Poland, Spain, Switzerland, Austria, New Zealand, Australia, Japan, and India (1 each).

The impressive new Student Union building on the campus of the University of Calgary provided a very pleasant setting for the technical sessions. The talks and posters provided a diverse mix of topics relating to both coal and petroleum. The poster sessions were especially successful, and provided a focus of lively discussion throughout the meeting.

The Pre-meeting field trip was led by Prof. Len Hills of the University of Calgary, along with Tom Demchuk (UC), Alex Cameron (ISPG), and Bill McDougall. The trip attracted 65 attendees who visited a number of interesting localities in the Upper Cretaceous to Lower Tertiary coal-bearing strata northeast of Calgary. The post-meeting trip, attended by 42 persons, passed through the Canadian Rocky Mountain front ranges on the way to the coal fields west of Edmonton. Trip leaders were Wolfgang Kalkreuth (ISPG), Willem Langenberg (Alberta Geological Survey), and Ken Pratt (ISPG). The weather was perfect throughout the meeting, with cool mornings and warm sunny afternoons.

The Society is truly grateful to Wolfgang Kalkreuth and the rest of the Calgary organizing committee (M. Bustin, A. Cameron, F. Goodarzi, L. Hills, D. Marchioni, and J. Potter) for the excellent job they did in putting together a well-run, stimulating, and entertaining meeting.

Awards and Honors. Peter Hacquebard was saluted at a full-day Symposium on Tuesday, in recognition of his many contributions to organic petrology in Canada and internationally. There was also a testimonial dinner in his honor on Tuesday night at the Wainwright Hotel in Heritage Park (a reconstructed Frontier town, situated near downtown

Calgary). At the dinner, Dr. Hacquebard received an award from the Canadian Coal Petrographers Group, presented by Marc Bustin and a framed certificate of appreciation, signed by geologists of Nova Scotia and presented by John Calder. Dal Swain of CSIRO in Australia also presented a gift from the Australian coal geologists.

The recipient of this year's Best Student Paper award was **Lavern Stasiuk**, a Ph.D. candidate at the University of **Regina** for his talk entitled "Sedimentary basin evolution and tectonic control on organic facies distribution; a comparative study of dispersed organic matter from intracratonic and foreland basin settings". Mr. Stasiuk was selected over 8 very worthy competitors for the award. His talk emphasized the importance of defining "organic facies" for dispersed organic matter and the value of using these facies to characterize different tectono-stratigraphic sequences. The talk was complemented by some stunning color photomicrographs, principally taken in fluorescence illumination.

Abstracts and Program. A few additional copies remain of the Abstracts and Program volume that was distributed to meeting attendees. The volume is spiral bound and includes over 80 pages of abstracts for both the technical sessions and poster sessions. To receive a copy, send a check for \$10.00 (US or CDN, postage paid) to:

Wolfgang Kalkreuth
Institute of Sedimentary and Petroleum
Geology
3303 33rd St N.W.
Calgary, Alberta, Canada
T2L 2A7

Annual Meeting Scenes: **Left column, Top:** Prof. Len Hills interprets local geology in Drumheller area on Pre-Meeting field trip, **Middle:** The poster sessions were a popular element of this year's meeting, **Bottom:** Local committee members Marc Bustin and Judith Potter attend the Business Luncheon; **Center column, Top:** Examining a coal outcrop on the Premeeting field trip, **Upper center:** Alex Cameron, Peter Hacquebard, and Ralph Gray enjoy the lunch stop on Pre-Meeting field trip. **Center:** A geochemical fossil gives TSOPers a toothy grin at the Tyrell Museum of Paleontology, **Lower Center:** Outgoing Council meeting, clockwise from top: Senftle, McLaughlin, Stout, Kuehn, Hower, Kalkreuth, Yordy, Russell, Rimmer, and Cohen, **Bottom:** Peter Hacquebard displays one of his three awards at testimonial dinner in Heritage Park; **Right column, Top:** Secretary/Treasurer heads off to a post-lunch engagement on the Pre-Meeting field trip, **Upper Center:** Incoming President Joe Senftle addresses Annual Business Luncheon, Lower Center: Scott Stout, Rui Lin, MaryAnn Malinconico and Stan Teerman enjoy some cool Canadian air at the Elkana Ranch, **Bottom:** General Meeting Chair Wolfgang Kalkreuth makes a point to the TSOP Council.

Scenes from the 1990 Annual Meeting, Calgary, Alberta, Canada



Rmax AND Rm
W.E. KILBY



From the Editor

Outside Publications

Jim Hower has reported that the proceedings of the **1988 TSOP/AASP joint annual meeting in Houston** will be published as volume 17, no. 1 of Organic Geochemistry, either in December, 1990 or January, 1991. This volume is dedicated to William Spackman, Professor Emeritus of Penn State University and includes several papers by his former students. Processing of manuscripts from the **1989 annual meeting in Urbana** is proceeding promptly, under the steady guidance of editor Dick Harvey. Twelve of the manuscripts have already been sent to the publisher, and the remainder will follow shortly, for a total of 14. Publication date has not yet been set. Owing to the large number of oral papers and poster sessions presented at the **1990 annual meeting in Calgary**, the proceedings will be published in two separate volumes. Papers presented as part of the symposium honoring Peter Hacquebard will be published as a special issue of the International Journal of Coal Geology. As is customary, the remainder of the papers will be published in Organic Geochemistry. Wolfgang Kalkreuth will be serving as editor of the Hacquebard volume, while Judith Potter will edit the Organic Geochemistry volume. The editors have announced that **all manuscripts must be received by December 1.** (And it sounds like they mean "business", too!).

Items for December Newsletter

The next TSOP Newsletter is scheduled for publication in December, 1990. Become a Newsmaker in TSOP by submitting your items for publication by December 7. Any topics of general interest are welcomed, including notes on recent books, upcoming meetings, recent graduate theses, laboratory notes, focus on laboratories, etc. Remember, every issue of the Newsletter affords you the opportunity to become world-famous for 15 minutes; but to gain your fame, you must submit something to be published. Do it today!

Research Committee

The Research Committee Solicits Your Input to Define its Research Directions

At the 1990 TSOP annual meeting in Calgary, with the consent of the Council, President Joe Senftle advised the Research Committee: (1) to specifically define research issues which are of importance and interest to the Society and its members, and (2) to develop strategies which will direct the

research activities of the Committee. I am writing this note to you, all TSOP members, to solicit your input of research topics which you think are important to the Society. This list of topics will serve as the basis for defining the issues and, in turn, research direction(s) of the Committee.

Today, our Society is composed of members from private industries, research institutions, consulting companies and government agencies. Research interests among these vary and include:

1. Kerogen petrography/geochemistry and the applications in petroleum exploration;
2. Coal petrology and the applications in coal preparation, characterization and utilizations;
3. Coal geology;
4. Palynological applications.
5. Development and transfer of new technologies to kerogen/maceral applications

In order to formulate coherent research directions which encompass these diversified research interests, your input and participation are absolutely essential to the success of the Research Committee. Discussions with several TSOP members provided some preliminary suggestions for possible Research Committee involvement. These included maturity evaluation of source rocks in over-pressured zones, fluorescence intensity standards, the utility and standardization of IR microscopy, maturity determinations of very low-rank coals and source rocks, and continuation of round-robin type maceral/kerogen analyses.

Serving as the new Research Committee chairman, I would like to offer my special thanks to Joe Senftle, James Hower, Ken Kuehn, Stan Teerman and other members involved in the past Research Committees and subcommittees for their outstanding research efforts on standardizing kerogen/maceral preparation and analyses.

Please send me your recommendations of research topics before November 30, 1990. (A simple list of topics would be fine). I will try to synthesize your suggestions into a few research directions, and eventually form subcommittees to address specific research programs. The results of this survey, and my recommendations of research strategies and goals, will be presented at the April, 1991 mid-year Council meeting for review and approval. I would very much appreciate if you could also indicate your interests to be involved in research activities to be conducted by the Committee. This is your chance to help define what the TSOP Research Committee should be doing. Please take the time to participate by phoning or mailing your comments and suggestions to the address listed on the form on page 11.

Thanks very much,

Rui Lin

Proceedings of Second Conference on Petroleum Geochemistry and Exploration in the Afro-Asian Region

Professor Fan Pu wishes to inform his fellow TSOP members that the Proceedings of the Second Conference on Petroleum Geochemistry and Exploration in the Afro-Asian Region will be published in the last quarter of 1990 as a special volume of the Journal of Southeast Asian Earth Sciences (Pergamon Press). The meeting, which was organized by Prof. Fan, was held on August 28-31, 1988 in Beijing.

The proceedings volume comprises 60 articles and will span 500 pages, covering topics on analytical methods, kerogen characterization, kinetics of petroleum formation, migration, biomarkers, organic geochemistry of recent sediments, coal geochemistry, geochemical prospecting, stable isotope geochemistry, and much more.

A limited number of volumes will be available for sale directly from the editors. For TSOP members interested in obtaining personal copies of this volume, Professor Fan informs us that it would be advantageous to order it directly from the editors. For more information, please write to:

Dr. Li Jingui
Lanzhou Institute of Geology
Academia Sinica
Lanzhou 730000
Peoples Republic of CHINA



Upcoming Meetings of Interest

13° World Petroleum Congress

October 20-25, 1990
Buenos Aires, Argentina

The 13 th World Petroleum Congress will meet in Buenos Aires, Argentina in October of 1991. The entire meeting will be of general interest to TSOP members, but two scheduled forums under the general heading of "Advances in Exploration Technology" are particularly relevant to organic petrology. Forum Topic 2 focuses on "Source Rock Geology", and will include the following titles, among others: Lacustrine source rocks and related crude oil; Paleogeography, sedimentology, and geochemistry of terrestrial source rocks in Australia; Source rock geology in Mexico; Source rock evaluation using geophysical well logs

in Triassic carbonate reservoirs of Sicily; and Source rocks and oil generation in the Austral basin.

Forum Topic 3, entitled "The Interplay of Petroleum Generation and Migration", includes the following titles: Brazilian and west African oils: generation, migration, accumulation, and correlation; Use of a quantitative basin analysis system in the evaluation of hydrocarbon generation, migration, and accumulation; Computer modelling of interplay between generation and expulsion of petroleum: a new advance in prospect appraisal; Petroleum expulsion from source rocks - insights from geology, geochemistry, and computerized numerical modelling; A new approach to source rock transformation on exposure to differential confining pressure; and Primary oil migration and expulsion as determined by hydrous pyrolysis.

For additional information and complete program, you can write to:

Dr. Marcelo R. Yrigoyen
Comité Argentino
Congresos Mundiales del Petroleo
Moreno 584-9° Piso
1091 Buenos Aires
ARGENTINA

* * *

THE EURAMERICAN COAL PROVINCE: CONTROLS ON TROPICAL PEAT ACCUMULATION IN THE LATE PALEOZOIC

(to be held in conjunction with the Annual Meeting of the Geological Association of Canada)

May 24-27, 1992
Wolfville, Nova Scotia

This symposium will focus on the peat-forming deposystems that developed extensively on the Laurasian continent during the Late Paleozoic. Present-day coal deposits that represent these deposystems include those of the central and eastern U.S., Atlantic Canada, western and eastern Europe, and the USSR. Several recent scientific sessions have considered coal deposits generally and in local areas, but no session has specifically attempted to integrate work on both North American and European basins, as well as their modern analogs. The role of a wide and comprehensive range of potential controls on these ancient peat-forming ecosystems will be considered. We encourage contributions concerning:

- a) regional (continent-wide and inter-continental) paleogeographic and paleoclimatic reconstructions and advances in absolute dating of the area;
- b) tectonic, climatic, and glacioeustatic controls on the deposition of peat and associated sediments, including appraisals of the origin of cyclothems and the periodicity of glacioeustasy associated with the Gondwanan glaciation;
- c) the paleoecology of the coal-forming ecosystems, including studies of macerals, palynomorphs, paleofloral assemblages, and plant-animal interactions that attempt to establish the nature of the peat mires and the mechanisms by which they evolved;
- d) modern peat-bearing, tropical areas that may serve as analogues for the Euramerican coal province, and inherent problems with such analogues.

Papers arising from the symposium will be published in a proceedings volume. A post-conference field trip to classic Late Carboniferous coal basins of Nova Scotia will complement the symposium. Related activities of the GAC Annual Meeting will include a short course on coal petrography and field trips to interglacial peat deposits of Nova Scotia associated with the Younger Dryas/Allerod climatic oscillation and modern estuarine and peat environments of the Bay of Fundy coast.

A call for papers will be forthcoming. To receive future mailings, contact John H. Calder, Nova Scotia Department of Mines and Energy, P.O. Box 1087, Halifax, Nova Scotia, Canada B3J 2X1, Telephone: (902) 424-5364, Fax: (902) 424-0528, or Martin R. Gibling, Department of Geology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5, Telephone: (902) 494-2355.

* * *

29th International Geological Congress

August 24 - September 3, 1992
Kyoto, Japan

The First Circular has now been distributed for the 29th International Geological Congress, to be convened in Kyoto, Japan in 1992. Seven symposia are planned on topics pertaining to fossil fuel resources: 1) Fuel resources in island arcs and continental regions; 2) Hydrocarbon accumulations in volcanic rock reservoirs; 3) Modelling of hydrocarbon generation and accumulation; 4) Organic geochemistry in basin evaluation; 5) Coalification and coal petrology; 6) Coal-

forming environments; 7) Advanced methods of petroleum exploration.

The Second Circular is scheduled for distribution on April 1, 1991 and will be mailed to respondents to the First Circular. For additional information, write to:

Secretary General
IGC-92 Office
P.O. Box 65
Tsukuba, Ibaraki 305, JAPAN
Phone: 81-298-54-3627
Fax: 81-298-54-3629



Recent Publications of Interest

APPLICATIONS OF THERMAL MATURITY STUDIES TO ENERGY EXPLORATION edited by Vito F. Nuccio, Charles E. Barker, published by Rocky Mountain Section, Society of Economic Paleontologists and Mineralogists, Denver, Colorado, USA, 1990, \$17.50 (U.S.)

(Note: The following summary was excerpted from the Preface to this new volume, edited by TSOP members Nuccio and Barker. -Ed.)

In the past two decades, energy exploration geologists have become increasingly aware that thermal maturity studies can provide important insights into the timing of petroleum generation, migration, accumulation and preservation. Equally important are the applications to the understanding of structural deformation, temperature changes from fluid flow, and timing and extent of reservoir diagenesis. The work presented in this volume makes it clear that thermal maturity is being employed in an ever widening array of studies useful to the energy explorationist.

This volume is divided into two sections. The first is a methods section in which papers illustrate how thermal maturity studies are used to solve a geologic problem or to aid in hydrocarbon exploration.

The first paper in this section, by POLLASTRO, is a comprehensive review of illite/smectite geothermometry, and also discusses new applications of clays in basin analysis and hydrocarbon generation. GOODARZI discusses the usefulness of graptolite reflectance as a thermal maturity indicator in vitrinite-lean rocks and in Lower Paleozoic (pre-land plant) rocks. GENTZIS and GOODARZI present an excellent review of the classification of bitumen, and bitumen reflectance as a thermal maturity indicator and as an

alternative to vitrinite reflectance. FERGUSON illustrates, through a series of experiments simulating carbonate diagenesis, that there are well defined and predictable pathways or organic maturation. An excellent discussion of the variation in chemical composition at the initiation of diagenesis and the effects of diagenesis on plant matter (type III organic matter) is given by SUGGATE. An interesting and provocative paper by SCHMOKER and HESTER suggests the decrease in sandstone porosity is a function of time-temperature history (vitrinite reflectance) as opposed to the commonly accepted burial depth parameter. A critical review of thermal history studies, including some of the main difficulties and(or) problems with the methods is given by DEMING, NUNN, JONES and CHAPMAN. HE and LERCHE provide an overview of apatite fission-tracks as a thermal indicator, and outline their distribution inversion method which can determine paleoheat flux variation through time.

In an excellent example of applications, LAUGHLAND, UNDERWOOD and WILEY provide an example of how thermal maturity data can be used in the analysis of complex tectonostratigraphic terranes. WANG, LERCHE, and WALTERS present two case studies that show how the increase in thermal maturity around an igneous body can be used to assess the temperature of the intrusion at emplacement, and the insertion time. HOWER, RIMMER, WILLIAMS and BEARD use coal rank trends to define favorable areas for hydrocarbon generation, and offer explanations (structural and hydrological) as to why some areas are better than others. CARDOTT, METCALF and AHERN use vitrinite reflectance values to assess source rock thermal maturity, and give reasons for variations in the values as well as timing of heating events. VETO, KOVACS, HORVATH and ODOR present a computer model that evaluates volumes of gas generation, and assesses the effect of geological parameters on gas migration in a basin. CRYSDALE and BARKER use several thermal maturity indicators to argue the point that geologic time is not a continuing factor in thermal maturation after maximum temperature is achieved. BARKER and PAWLEWICZ use vitrinite reflectance as a tool to show the peak temperature reached in active geothermal systems, and discuss how sedimentary organic matter is most strongly controlled by peak temperature. NUCCIO determines and compares levels of maturation and timing of petroleum generation of a source rock using direct-measurement and predictive modeling techniques.

This volume can be mail-ordered at the following address:

Publications Sales
Rocky Mountain Section, SEPM
P.O. Box 13947
Denver, CO 80202-947

Please enclose \$17.50 US, plus \$3.00 for shipping charges (domestic). Colorado residents add required sales tax(es). International shipping charges may be higher.

* * *

AMOS AND FOSTER COALS: LOW-ASH AND LOW-SULFUR COALS OF WESTERN KENTUCKY, by David A. Williams, Charles T. Helfrich, James C. Hower, Faith L. Fiene, Alan E. Bland, and David W. Koppelaar, Kentucky Geological Survey Report of Investigations 5, Series XI, Lexington, KY, 1990, 34 pp.

Western Kentucky coal beds are characteristically high in sulfur, typically averaging more than 3 percent sulfur by weight. Low-sulfur coal beds are exceptional in the western Kentucky coalfield and merit special attention for both scientific and economic reasons. The authors of this technical report have blended their diverse talents in a detailed study of two high-quality western Kentucky coal beds, the Amos and Foster, with the aim of increasing understanding of the geologic factors that influenced their deposition. The stated purpose of their study was to characterize the stratigraphy, depositional environments, and coal constituents of the Amos and Foster coal beds and to identify relationships between coal quality and general geology. It is the authors' hope that the knowledge gained will lead to the discovery and development of additional high-quality coal reserves.

The study area is a small area in Butler County, Kentucky where the authors were able to complement an abundance of pre-existing data with their own extensive data on the Amos and Foster coals, and associated rocks. Their data set includes 102 measured sections and 250 drill holes that they used to prepare isopach maps and detailed cross-sections. Chemical, mineralogical, petrographic, and palynological analyses were carried out on 53 coal samples. These data are summarized in the text and several tables that accompany the report.

The authors integrate their Stratigraphic, chemical, palynological, and petrographic data into interpretations of the Amos and Foster depositional environments. The multi-disciplinary approach and close control that characterize this study make it a valuable contribution to the understanding of low-ash, low-sulfur coal beds in adjacent areas of the Illinois Basin and provides a valuable resource for researchers investigating related problems.

-Walter A. Hasenmueller,
Indiana Geological Survey,
Bloomington, IN

Research Note

ANISOTROPY OF COAL REFLECTANCE:
AN EXAMPLE FROM THE NO. 5 SEAM
("BOLLAS") META-ANTHRACITE, PERU

by James C. Hower
University of Kentucky
Center for Applied Energy Research
Lexington, KY 40511

and

Ken W. Fishel
Island Creek Corporation
Lexington, KY 40575

In a Nutshell:

Ellipsoidal balls of unsheared coal (referred to as "Bollas"), embedded in a sheared coal matrix, were collected from the No. 5 seam at the La Victoria Mine within the Alto Chicama anthracite field, Department of La Libertad, Peru. Three dimensional analysis of vitrinite reflectance reveals a strongly biaxial negative, almost uniaxial negative, reflectance indicatrix.

The Alto Chicama field is located along the western slope of the Western Cordillera of the Andes and has been intensely folded and faulted. The No. 5 seam, from which coal balls were extracted, occurs in the Lower Cretaceous (Neocomian) Chimu Formation which is the basal unit of the Goyllarisquizga Group. The Chimu averages 930 meters thick, is composed of 70-80% orthoquartzite, and contains ten persistent seams. The No. 5 seam averages 1.6 meters thick and dips between 70 to 85 degrees. The seam was 2.2 meters thick at the collection site. The reported anthracite quality for this seam is 4.7% moisture, 4.9% ash, 2.3% volatile matter, and 88.1% fixed carbon.

Initial preparation of the coal ball for examination consisted of the cutting of three mutually perpendicular surfaces: the "horizontal plane", parallel to the two larger diameters of the coal ball, and, as determined through petrographic examination, the bedding plane; the "long axis", parallel to the long dimension of the coal ball; and the "short axis", parallel to the short dimension of the coal ball. The maximum and minimum vitrinite reflectances on these sections are:

	Rmax	s.d.	Rmin	s.d.
Horizontal	6.61	0.10	6.27	0.08
Long axis	5.89	0.07	2.60	0.04
Short axis	5.95	0.16	2.81	0.11

The similarity of the measurements on the latter two sections indicated that additional useful information would be gathered from the plane bisecting the two sections at 45o:

	Rmax	s.d.	Rmin	s.d.
bisect plane	6.37	0.10	2.89	0.05

Using particulate pellets an apparent maximum and minimum reflectance on individual particles can be determined. With techniques after Kilby (1988) and Levine and Davis (1989), a maximum reflectance of 6.67%, an intermediate reflectance of 6.06%, and a minimum reflectance of 2.80% were determined (Figure 1). The $R_{max}/R_{int} = 1.1$ and $R_{int}/R_{min} = 2.16$ indicate that the coal is extremely biaxial negative, nearly uniaxial, confirming observations based on the oriented sections.

The coal ball is high in vitrinite, to the virtual exclusion of other macerals, with little mineral matter. There is a lack of distortion of the bedding. The lack of distortion or shearing within the coal balls accounts for their ease of separation from the sheared coal but the fundamental cause of their integrity, unusual for high vitrinite-low ash coals in such a setting, remains elusive.

References

- Kilby, W.E., 1988, Recognition of vitrinite with non-uniaxial negative reflectance characteristics: *Int. Jour. Coal Geology*, v. 9, p. 267-285.
- Levine, J.R., and Davis, A., 1989, Reflectance anisotropy of Upper Carboniferous coals in the Appalachian foreland basin, Pennsylvania, U.S.A.: *Int. Jour. Coal Geology*, v. 13, 341-373.

TSOP Newsletter
September, 1990
Volume 7, No. 3

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



From the Editor

A recurrent theme in this issue of the TSOP Newsletter is that of "standards". As noted by Ron Stanton in his article on p. 6, there is a real and present need to expand and improve upon existing published standards pertaining to preparation and analysis of sedimentary organic matter. Given the importance of this need and the openness and relative informality of the procedures for establishing new standards (as outlined by Ron), TSOP ought to play a role in this process. A tenable position is that it is not only our choice, but our responsibility to see to it that acceptable standards are established in the area(s) where they are most needed. In pursuing this objective, a significant first step, is to define goals and set priorities. This requires the input and involvement of TSOP members. Accordingly, won't you please take a few moments to complete the questionnaire accompanying this Newsletter. Your ideas may be useful in formulating objectives for the TSOP research committee.

The advent of standardized coal sample banks provides a significant benefit to scientists and engineers engaged in coal research. Whereas in the past, researchers might have used any odd samples for their work--which may have been poorly characterized, badly oxidized, and/or non-representative--the sample banks at Argonne and at Penn State (described in this issue) offer quality samples in a variety of sizes and at a nominal cost. TSOP members might give some thought to the potential need for establishing a standardized sample bank for oil shales or petroleum source rocks. Should TSOP try to convince DOE of the importance of expanding its current sample bank program to include other forms of sedimentary organic matter? Is this something TSOP should undertake itself? Please contribute your ideas on the questionnaire.

—Jeffrey R. Levine
TSOP Editor

Deadline for March Newsletter

The next TSOP Newsletter is scheduled for March, 1991. One topic planned for this issue will be the recognition of different "types" of vitrinite in coal and dispersed organic matter. Anyone wishing to contribute something on this topic should contact me as soon as possible. All items for publication should be submitted prior to March 1. Thank you.

--Ed.

Outreach Committee Report

Outreach on Many Fronts

At the Incoming Council meeting in Calgary, President Joe Senftle charged the Outreach Committee, with the consent of Council, to 1) enhance membership, 2) enhance finances, 3) activate contacts with other scientific societies, and 4) keep the Society abreast of technological and scientific trends in other disciplines. I think you will agree that these are ambitious tasks. They seem attainable; however, thanks to the suggestions and assistance of several members. I thank Judith Potter (Institute of Sedimentary and Petroleum Geology, Calgary, Canada) and Martin Reinhardt (Freie Universitat, Berlin, Germany) for accepting invitations to serve on the Outreach Committee. In view of our expanding international membership, the Society should benefit from their active participation. We invite all interested members to communicate any suggestions you may have to the Committee members. Since these suggestions will be summarized and presented to Council at the mid-year meeting, please do so before 1 March 1991.

Although progress has been made in several of the above areas, I am submitting this letter to the Society as a request for additional suggestions and ideas. Already several members have contributed ideas and effort towards each initiative. In this newsletter, Ken Yordy reports the addition of a great number of new members. The Outreach Committee will continue to focus on increasing membership through greater visibility at other professional meetings. Continued membership enhancement is an area of particular importance to the Society, and any and all suggestions will be greatly appreciated.

To enhance the finances of the Society, the Outreach Committee has initiated the Industrial Sustaining Membership drive for 1991. Coal, steel, oil, and consulting companies will be formally invited to become sustaining members of the Society for one calendar year. This membership will be renewable each year. Industrial financial contributions will be directed towards the costs associated with the publication of our Newsletter and our annual meeting. Initial responses seem favorable.

As a start towards activating and maintaining official contacts with other scientific societies, the Outreach Committee thanks Brian Cardott and Jack Crelling. After reading the October 1990 Geotimes, Brian suggested that the Society should establish a permanent mailing address. Such

an address would place TSOP on the Directory of Geoscience Organizations for inquiries from outside the Society. The Outreach Committee will recommend to Council at the mid-year meeting to accept Dr. Crelling's gracious offer to establish our mailing address at Southern Illinois University - Carbondale. The committee also thanks Jim Hower and Sue Rimmer for providing flexibility on the "Call for Papers" deadline for the 1991 meeting. The committee plans to distribute these announcements at various meetings to be held this spring.

It is plain that the mechanisms for growth are many and complex. For even incremental success, the Outreach Committee will need to draw heavily from the Society. Please feel free to contact any of the members with your suggestions.

Thank You,

Charlie Charles R. Landis
ARCO Oil and Gas Company
Dallas, Texas

Mid-Year TSOP Council Meeting

The TSOP Council has tentatively planned to hold its Mid-year Meeting in Dallas on either Saturday, April 6 or Sunday, April 7, 1991. The meeting will coincide with the Annual Meeting of the AAPG. TSOP members having agenda items should contact any council member in advance of the meeting.

*What!
You're not a member of TSOP?*

Call or write today: **Ken Yordy**
ARCO Oil and Gas Company
2300 West Piano Parkway
Piano, TX 75075

Phone 214-754-6250
Fax 214-754-6807

Preliminary Announcement

1991 TSOP ANNUAL MEETING

September 30 - October 1, 1991
Lexington, Kentucky

About the Meeting

For the second time, the TSOP Annual Meeting will be hosted by Sue Rimmer and Jim Hower in Lexington, Kentucky; and once again, the meeting will be held at the attractive Hyatt Regency Hotel in downtown Lexington.

The two-day technical sessions on September 30 and October 1 will be preceded by a one-day workshop on applications of density-gradient centrifugation of macerals. A one-day field trip to the coal fields of eastern Kentucky will follow the technical sessions.

In addition to the scientific programs, the Lexington area offers many interesting diversions and sights. There are plenty of good restaurants, interesting shops, and other attractions within close walking distance of the hotel; and the surrounding countryside boasts some lovely scenery, with world renowned horse farms and miles of famed Kentucky blue grass. Late September is an especially pleasant time, and should offer early autumn colors.

Call for Titles and Abstracts

Meeting conveners request that authors submit titles by April 15, 1991. Abstracts up to 3 pages in length must be submitted by May 31, 1991. Please address all correspondence to:

Dr. James C. Hower
Center for Applied Energy Research
3572 Iron Works Pike
Lexington, KY 40511

Phone: (606) 257-0261
FAX: (606) 257-0220

Don't miss out on the action this year. Make your travel plans to Lexington early!

Meeting Report**GEOLOGICAL SOCIETY OF AMERICA**

October 29 - November 1, 1990
Dallas, Texas

The Coal Geology Division program had fewer presentations than at the meetings in Denver (1988) and St. Louis (1989) but quality papers were still to be found. The symposium, "Practical applications of coal geology" (GSA Abstracts with Program, vol. 22, p. A16-A17), featured papers by Heinz Damberger, John Breyer, and Jerry Weisenfluh and John Ferm on the geologic controls on mineability; F. Goodarzi on geologic aspects of coal quality; T. Wildman on the chemistry of coal seam drainage; S. Pappajohn and T. Mitchell on coal bed methane in the Pacific Northwest; and by F. Beaver and cohorts on underground coal gasification research. The technical session (p. A58-A59) also contained a number of papers which fit the theme of the symposium including D. Nikols on coal quality modeling in Alberta; Mary Jackson and others on resource estimate procedures employed in Texas; M. Palmquist on mine development procedures; and Willem Langenburg and Wolfgang Kalkreuth on the coal bed methane potential in the Cadomin area in Alberta. Also featured were presentations by E. Zhang and Alan Davis on coalification in western Pennsylvania; Debi Willard on coal ball and palynology studies of a Stephanian coal from the Illinois Basin; and Jim Staub on comparisons of aspects of certain southern West Virginia coals with the Snuggedy swamp of South Carolina. The poster session (p. A201-A203) featured presentations by T. Osborne and others and Laubach and others on coal bed methane (studies from Alabama and Colorado, respectively); Judith Gennett, Anne Raymond, and C. Wong on floral communities in some Texas lignites; Nancy Hasenmueller and Jim Hower, Garry Wild, Anne Raymond, and Charles Helfrich on the erosional margins (fluvial and marine, respectively) of Illinois Basin coals; Chen-Lin Chou on coal sulfur; and M. Ghaznavi, Jim Staub, Jack Crelling, and L. Malinconico on the quality of some Pakistani coals.

The division invites anyone interested in coal geology to join GSA and the Coal Geology division, participate in the upcoming national meetings (San Diego in 1991, Cincinnati in 1992), and submit manuscripts to the GSA Bulletin and Geology.

—Jim Hower
Center for Applied Energy Research
Lexington, Kentucky

In appreciation of the Peter Hacquebard Symposium

Dear TSOP Colleagues,

The symposium held in Calgary on September 11, 1990 was for me an unforgettable experience, and as time goes on it truly amazes me that it was held in my honor. Sifter all, I only 'did my job' to the best of my ability, admittedly with much pleasure and interest, and really without much outside direction,

This freedom of endeavor contributed in many ways to the broad scope of projects I successfully worked on during my scientific career. It was, therefore, very satisfying that the fifteen papers presented at the Symposium dealt with the various aspects of coal research I had been engaged with in the past. It truly showed what can be done with that "most remarkable substance", coal.

The joyous atmosphere of the dinner at the Wainwright Hotel in Heritage Park I will long remember. It was fun to see slides of "young Peter" in his pit clothes of days gone by, and to be reminded of his choice between the legal profession (or ministry!) and coal geology.

The Yorkshire Coal Miner's statue and the scroll of the Nova Scotia geologists now have an honored place at my home, and will be a much treasured conversation piece for years to come,

It was wonderful also to have had a joint meeting of the Canadian Coal (Petrology Group and the TSOP organization, and I would like to thank the organizers and the participants for all their efforts to make the meeting such a success.

Peter Hacquebard

Dartmouth, Nova Scotia

Membership Committee Report

Ken Yordy
TSOP Membership Committee
ARCO Oil & Gas Company, Piano, TX

WELCOME TO NEW MEMBERS!**Registrants at 1990 Annual Meeting
Calgary, Alberta, Canada**

Franz J. Altebaeumer PetroCanada Calgary, Alberta	Bill McDougall Geological Survey of Canada Calgary, Alberta	Ilham Demir Ill. State Geological Survey Champaign, IL	Bob Rathbone University of Kentucky Lexington, KY
Andrew Beaton Geological Survey Canada Calgary, Alberta	Richard McFarlane Coal & Hydrocarbon Processing Devon, Alberta	Curtis Evans Curt-Tech Calgary, Alberta	Richard J.H. Richardson Alberta Geological Survey Edmonton, Alberta
Sophie Belin Institut Français du Pétrole Rueil-Malmaison, France	Frederic Monnier Chevron Oil Field Research Calgary, Alberta	Martin Garrie Fowler Geological Survey Canada Calgary, Alberta	Cynthia Reidiger Geological Survey Canada Calgary, Alberta
William Berry CO-AG Consultants Pittsburgh, PA	Robert Naylor N.S. Dept. of Mines & Energy Halifax, Nova Scotia	Ishaq Ghaznavi Southern Illinois University Carbondale, IL	Jennifer M. Robinson Penn State University University Park, PA
Carol Boonstra Geological Survey Canada Calgary, Alberta	Raymond Patafsky Coal Petrographic Association Pittsburgh, PA	Marta Gorza AGIP Milano, Italy	Michael Rollins University South Carolina Columbia, SC
John D. Campbell JAYCON Reconnaissance Edmonton, Alberta	Johannes Paul Dalhousie University Halifax, Nova Scotia	Silvia Gorza University of Milano Milano, Italy	Roland Schegg Geology/Paleontology Geneva, Switzerland
Mike Cholach Luscar Ltd. Edmonton, Alberta	Mike Powell University of Western Ontario London, Ontario	David A. Grieve B.C. Geological Survey Victoria, British Columbia	Donald Skibo Geological Survey Canada Calgary, Alberta
Mike Darnell Texaco Houston, TX	Bernard Pradier Université d'Orléans Orléans, France	Paul R. Gunther Gunther Geochem Consulting Calgary, Alberta	Grant Smith Geological Survey Canada Calgary, Alberta
M. Das Energy Mines & Resources Devon, Alberta	J.G. Prado INCAR Oviedo, Spain	Brian Hart University of Western Ontario London, Ontario	William D. Smith N.S. Dept of Mines & Energy Halifax, Nova Scotia
Mike Dawson Geological Survey Canada Calgary, Alberta	John T. Price CANMET Ottawa, Ontario	Hermann Heppenheimer Lehrstuhl Fur Erdol U. Kohle Aachen, Germany	Lavern Stasiuk University of Regina Regina, Saskatchewan
		David J. Hughes Geological Survey Canada Calgary, Alberta	Monika Steller Bergbau-Forschung GMBH Essen, Germany
		Richard S. Hyde Richard S. Hyde Geological Calgary, Alberta	D.J. Swaine CSIRO North Ryde NSW, Australia
		Ward Kilby B.C. Geological Survey Vancouver, British Columbia	Arthur Sweet Geological Survey Canada Calgary, Alberta

Barbara Kwiecinska Richard Sykes
Univ. of Mining & Metallurgy DSIR Geology & Geophysics
Krakow, Poland Lower Hutt, New Zealand

Marcel Labonte Maria Tomica
Geological Survey Canada Geological Survey Canada
Calgary, Alberta Calgary, Alberta

W. Langenberg John Utting
Alberta Geological Survey Geological Survey Canada
Edmonton, Alberta Calgary, Alberta

D. Jack McDonald Hans Wielens
N.S. Dept. of Mines & Energy UNOCAL Canada
Halifax, Nova Scotia Calgary, Alberta

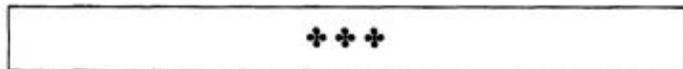
Gregory Mandryk Roger A. Woods
Alberta Research Council Conoco Inc
Edmonton, Alberta Ponca City, OK

David L. Marchioni R. Saxena
Petro-Logic Services Birbal Sahni Institute of
Calgary, Alberta Paleobotany
Lucknow, India

Post Annual Meeting

Erik Tegelaar Gary Drykacz
Arco Oil & Gas Argonne National Labs
Piano, TX Argonne, IL

Robert B. Finkelman
U.S. Geological Survey
Reston, VA



Recent Publications of Interest

COAL GEOLOGY OF THE INTERIOR COAL PROVINCE, WESTERN REGION, edited by R. B. Finkelman, S. A. Friedman; J. R. Hatch, available from Environment and Coal Associates, Reston, VA, 1990, \$32.00)

Prepared for the GSA Coal Geology Division 1990 Field Trip, this book is provides valuable discussions of the

geology, properties, and production history of coal from Arkansas, Iowa, Kansas, Missouri, Nebraska, and Oklahoma. The volume contains summary articles written by experts on the coal geology and production history for each of the six states in the Western Interior Coal Province. There are also articles describing recent research activities on these coals, plus the road log and description of field trip sites.

The book is recommended for anyone with a general interest in coal and/or interest in the geology or economy of the mid-continent.

TABLE OF CONTENTS

Guide and Road Log for Northeast Oklahoma S.A. Friedman

Field Guide for the Kansas Portion of the Coal Geology Field Trip and the Tri-State Mining District L.L.Brady

Geology of the Southern Part of the Southwest

Coal Field, Missouri J.L. Bostic, L. M. Nuelle, D. C. Smith

Northeastern Arkoma Basin, Oklahoma S.A.Friedman

Southern Part, Arkoma Basin, Oklahoma S.A.Friedman

The Arkansas Valley Coal Fields W.L. Prior

Iowa Coal: A Review of Geology, Resources and Production. . . . M.R. Howes

Kansas Coal Resources, Production, and Potential Use in the Near Future. . . . L.L. Brady

Coal Resources of Nebraska R.Burchett

Coal Geology of the Senoora Formation (Pennsylvania) in Northeastern Oklahoma L.A. Hemish

A Brief History of Coal Production in Oklahoma, 1873-1989. . . . J.S.A. Friedman

Overview of Missouri Coal J.L. Bostic

Petrology of Five Principal Commercial Coal Beds of Oklahoma B.J.Cardott

Summary of Analytical Data from Coals of the Western Region of the Interior Coal Province R.B. Finkelman and S.J. Tewalt

Stratigraphic Setting of Late Atokan And Early Desmoinian (Pennsylvanian) Coals of the Missouri Portion of the Joplin 1' X 2' Quadrangle, Southwest Missouri. . . . L.M. Nuelle

Beneficiation and Desulfurization of Missouri Coals M.H. Ertin and J.L. Bostic

The book normally sells for \$32 (1st Class mail), \$30 (4th Class), or \$35 (overseas); however, editor (and new TSOP member) Bob Finkelman informs us that a 10% discount will be offered to TSOP members. (An additional discount applies

to members of the Coal Division of the Geological Society of America.) Proceeds from the sale of the volume will support the Antoinette Lieberman Medlin Scholarship Fund of the GSA Coal Division.

To order, send check or purchase order to:

Environment and Coal Associates
P.O. Box 3168
Reston, VA 22090

* * *

DEPOSITION OF ORGANIC FACIES, edited by Alain Y. Huc, published by the American Association of Petroleum Geologists, Tulsa, OK, Cat. No. 511, 234 pp, softbound, \$60 (US) (\$39 for AAPG members)

The American Association of Petroleum Geologists has announced the release of this new volume, edited by TSOP member Alain Hue, focusing on the sedimentology of organic matter-rich sediments. The book provides valuable data, models, and concepts for geologists involved in petroleum related research and exploration, including the following chapters:

Understanding Organic Facies: A Key to Improved Quantitative Petroleum Evaluation of Sedimentary Basins

A Paleooceanography Approach to the Kimmeridge Clay Formation

Dysoxic Sedimentation in the Cenomanian-Turonian Daliyya Formation, Israel

Organic-Carbon-Rich Sediments and Paleoenvironment: Results from Baffin Bay (ODP-Leg 105) and the Upwelling Area off Northwest Africa (ODP-Leg 108)

Wireline Source-Rock Evaluation in the Paris Basin

Distribution of Organic Matter during the Toarcian in the Mediterranean Tethys and Middle East

Upper Triassic (Rhaetic) Argillaceous Sequences in Northern Italy: Depositional Dynamics and Source Potential

Global and Regional Controls on Potential Source-Rock Deposition and Preservation: The Cenomanian-Turonian Oceanic Anoxic Event (CTOAE) on the European Tethyan Margin (Southeastern France)

Organic Matter and Evaporites in the Paleogene West European Rift: The Bresse and Valence Salt Basins (France)

Distribution of Cenomanian-Turonian Organic Facies in the Western Mediterranean and Along the Adjacent Atlantic Margin

Trends in Organic Geochemistry and Petroleum Exploration in Italy

Geochemical Alteration of Organic Matter in Eutrophic Lake Greifen: Implications for the Determination of Organic Facies and the Origin of Lacustrine Source Rocks

Climate Model Prediction of Paleoproductivity and Potential Source-Rock Distribution

Facies Evolution of Late Cretaceous Black Shales from Southeast Egypt

To order, write to:

AAPG Bookstore
P.O. Box 979
Tulsa, OK 74101



Research Note

WHY STANDARDS?

by Ron Stanton
United States Geological Survey
Reston, Virginia

(Editor's Note: Ron Stanton has been an active member in ASTM for several years, and has vigorously promoted the development and use of standards in coal analysis. The following is an invited article on how standard methods are implemented, and how TSOP might become involved in this process.)

Imagine life without standards: plumbing fixtures and pipe having different thread patterns, electrical plugs of different design, computer peripherals requiring manufacturer-specific connections, or people wearing brown shoes with a blue suit. Organic petrologists are faced with comparable sorts problems if, for example, ash yields of coal are determined at different temperatures in different labs. Standards for test methods, material specifications, and laboratory procedures serve as the basis for avoiding such difficulties and provide an essential common ground from which technology can advance.

Organic petrologists have long recognized the need for standardizing procedures such as sample preparation, reflectance measurement on dispersed organic matter, spectral fluorescence, and even palynological sample preparations. Yet most of these procedures are not formally standardized, although they are commonly labeled as such in the literature.

As a consequence, published data can be ambiguous or of limited value because of uncertainties regarding the analytical procedures employed.

Two organizations—the ISO (International Standards Organization) and ASTM (the American Society for Testing and Materials)—are already active in developing and maintaining standards for procedures used in the analysis of coal and organic-rich rocks. Much additional work needs to be done, however, in furthering this goal; and TSOP can play an active role in this effort.

ISO is an international federation of 87 national bodies, each representing standardization in its own country. The United States member of ISO Technical Committee 27 (Solid Mineral Fuels) is the American National Standards Institute—a subcommittee of ASTM. ISO standards are approved by majority vote of member nations and are usually adopted from standards that already exist in standards organizations of the member nations.

ISO standards used in the microscopic examination of coal are published in five parts under the title "Methods for the Petrographic Analysis of Bituminous Coal and Anthracite" (Ref Nos. 7404/1-5). These standards were first developed through a working group of the International Committee for Coal Petrology (ICCP) and are now maintained through an ISO working group, many members of which belong to ICCP.

ASTM serves the United States and Canada and is a voluntary organization that agrees by consensus on the technical aspects of a procedure that is to be standardized. Membership in the ASTM is open to anyone. Membership fees (\$50/yr) pay for one volume of standards and mailings. ASTM has over 32,000 members, of whom more than 19,000 serve on the 139 main technical committees. The main committees are composed of subcommittees and task groups that develop standards relating to such diverse topics as coal, plastic pipe, textiles, and oil-spill cleanup. Membership in the committees is balanced among producers, users, general interest participants, and consumers. Committee chairmen and the Executive Subcommittee are elected by the committee membership. Subcommittee and task group chairmen are appointed by the Executive Subcommittee.

Because ASTM is a voluntary consensus organization, anyone, member or nonmember, can propose or vote on the development of any standard. New standards are developed by task groups that are formed under ASTM guidelines and that are comprised of individuals interested in developing a particular standard. Such a task group could be formed within the membership of a particular organization, such as The Society for Organic Petrology. Draft standards are balloted at three levels: subcommittee, committee, and society. At any level, a negative ballot can require evaluation of the technical comments contained in the negative ballot.

Commonly reported coal analysis, such as forms of sulfur, calorific value, and ash yield, are also ASTM standards. The classification of coal by rank is yet another type of standard (D388). Procedures that do not produce a test result are categorized as Standard Practices; an example is the collection of channel samples of coal in a mine (D4596). Standards that present a series of options or instructions but do not recommend a specific course of action are termed Standard Guides, such as the Guide for Mechanical Auger Sampling (D4916).

The most common analysis method that we use in organic petrology is the measurement of vitrinite reflectance. For coal, the method for determining "mean maximum reflectance" is standardized as ASTM Standard Test Method D2798 because it yields a definitive test result. For dispersed organic matter (DOM), no specific ASTM standard test method exists, although the term "mean random reflectance" is discussed in D2798. ASTM procedures allow for inclusion of more than one alternative method to measure a particular property. Consequently, while a procedure for determining mean random reflectance of DOM is already included in D2798 it could also be established as a separate standard.

ASTM standards are not infallible; quite the contrary, these standards are under constant review and revision and must be balloted every 3 years for reapproval. Therefore, to obtain the most up-to-date procedure, the latest edition of a standard should be consulted. When errors in procedure are discovered, the balloting procedure enables changes to be made. As with any consensus, these processes can, at times, be slow—to some, almost measured in geologic time. The advantage of standards is that they provide methods to which all scientists and engineers can refer so that differences among analyses or studies are not necessarily attributable to differences in methods.

Coal Sample Banks

**Penn State Coal Sample Bank
and Data Base
and**

**U.S. Department of Energy
Coal Sample Bank**

**Pennsylvania State University
University Park, PA**

The Energy and Fuels Research Center at Penn State has recently released a newly printed second edition of their booklet, "The Penn State Coal Sample Bank and Data Base",

and accompanying Rate Schedule and Request Form. This supersedes the first edition (dated April, 1988) and contains more information in fewer pages. Copies are available upon request.

Among the new items in this second edition are descriptions of the new DECS series samples (stored in foil/polyethylene laminate bags) and an updated list of samples funded by the U.S. Department of Energy. U.S. DOE contractors and grantees can obtain up to 2 lbs each of 15 samples at -20 mesh (and 15 complete data printouts) per year from this list at no charge. Appendix E, listing PSOC and DECS coal samples by state, has been expanded to include a summary of data availability for each sample. Appendix F, cross-referencing sample numbers with states, has been added.

The booklet also includes valuable information on recommended procedures for proper storage and representative subsampling. For additional information, please contact:

Alan Davis, Director
Energy and Fuels Research Center
513 Deike Building
The Pennsylvania State University
University Park, PA 16802
(814) 865-6545

* * *

U.S. Department of Energy Premium Coal Sample Program

Argonne National Laboratory Argonne, Illinois

The purpose of the Argonne Premium Coal Sample Program is to provide the coal science research community with long-term supplies of a small number of premium coal samples that can be used as standards for comparison. The premium samples are as chemically and physically as identical as possible, have well characterized chemical and physical properties, and have been stable since their preparation. The coals were mined, transported, processed, and packaged in environments as free of oxygen as possible while maintaining the natural moisture content in order to assure that the coals are as pristine and stable as possible.

The eight coals in the bank were selected to provide a range of chemical compositions, degrees of coalification, maceral content, mineral content, geographical diversity, and commercial significance. The coals have been characterized by standard chemical and physical analyses. New, sometimes innovative data are obtained from additional investigators as

their work is reported. Symposia and workshops have been held and are periodically planned to facilitate the sharing of research results and to foster basic understanding of the chemistry and physical properties of the coal.

Presently included in the Argonne Premium Coal are the following:

Seam	Rank	wt-% C	State
Beulah-Zap	LIG	72.9	North Dakota
Wyodak Anderson	SUB	75.0	Wyoming
Illinois #6	HVB	77.7	Illinois
Blind Canyon	HVB	80.7	Utah
Lewiston-Stockton	HVB	82.6	West Virginia
Pittsburgh (#8)	HVB	83.2	Pennsylvania
Upper Freeport	MVB	85.5	Pennsylvania
Pocahontas #3	LVB	91.1	Virginia

A Users Handbook is sent to all sample recipients and is available to anyone upon request. The contents include a description of the sample selection, processing and distribution information, analytical data on each coal, a bibliography of research done with these samples, suggestions for opening ampoules, and ordering information. A quarterly Newsletter is also sent to all sample recipients and other requesters, providing general information of interest to all premium coal sample users. Bibliographic information, summaries of recent articles, meetings of interest, and recent research findings are also included. Samples of each of the eight coals are available in 5 gram ampoules of -100 mesh or 10 gram ampoules of -20 mesh material. Secure, long-term supplies result from an initial production of 10,000 five gram ampoules and 5,000 ten gram ampoules. There are, in addition, 450 five gallon sealed glass carboys of each coal. Minimum orders are for 6 ampoules. A charge is made representing the replacement cost of the ampoules (and international shipping charges, if applicable).

For further information, including announcements of interest to users of samples please contact the Manager of the Argonne Premium Coal Sample Program:

Dr. Karl S. Vorres
Chemistry Division
Building 211
Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

Phone: (708)972-7374
FTS: 972-7374
FAX: (708) 972-4470

Questionnaire on the Use of Standards in Organic Petrology

Please answer the following question. Use additional sheets as needed.

Please mail your comments to: Rui Lin
TSOP Research Committee Chairman
Unocal Science & Technology Division
376 S. Valencia Ave., P.O. Box 76
Brea, CA 92621

1) What analytical methods do you routinely use in your lab that might be amenable to standardization?

2) If published standards are already available for analytical procedures used in your lab, do you adhere to them? If not, why not?

3) Are you aware of any particular "problem areas" in organic petrology, where reported results are ambiguous or unreliable owing to the lack of accepted standards?

4) If standard samples of oil shale or petroleum source rock were available through a sample bank, would you make use of them? Please describe your needs in this area.

5) Would you be willing to serve on a TSOP committee to help to establish or revise standards? If so, please indicate an analytical method that particularly interests you.

SECRETARY/TREASURER'S REPORT

Secretary/Treasurer, Renee McLaughlin, filed the following financial report at the 1990 Annual Meeting in Calgary. Efforts are ongoing to assess and prioritize budget commitments for the coming year and implement guidelines for maintaining satisfactory levels in all budget categories.

Financial Statement: 9/10/90

<u>Checking Account:</u>	<u>Income:</u>	<u>Expenses</u>	<u>Balance</u>
Beginning Balance (10/25/89)			\$3,594.59
Membership:			
Dues	3,593.66		
Related Fees		75.00	
Sale of Publications	215.00		
Secretary/Treasurer		61.51	
E d i t o r		1,077.50	
Awards Committee		121.34	
Mid-Year Meeting		839.01	
1989 Urbana Proceedings Fees	1,986.39		
Ending Balance (9/10/90)	5,795.05	2,174.36	7,215.28
<u>Prudential Bache Account:</u>			
Balance as of 7/31/90			6,282.00
<u>Encumbrances for Future Publications:</u>			
Organic Geochemistry (1988 Meeting, Houston)		3,000.00	
Organic Geochemistry (1989 Meeting, Urbana)		2,000.00	
TOTAL CURRENT ASSETS OF THE SOCIETY:			\$8,497.28



Featured in this Issue:

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



From the Editor

The current issue of the TSOP Newsletter is loaded with information of interest to organic petrologists. Featured are three short articles pertaining to recognition of different "types" of vitrinite-one by H.B. Lo, on classification of vitrinites in dispersed organic matter, another by **Ron Stanton** on the benefits of etching in coal petrography, and the third by Jack Crelling on the infamous "Pseudovitrinite". I would like to thank these authors for taking the time to share their thoughts with us on these topics.

As always, I encourage Newsletter contributions from all TSOP members. This makes my job much easier, and increases the likelihood that newsworthy information will find its way into the Newsletter.

The TSOP Council and membership alike have enthusiastically endorsed the present Newsletter format as providing a valuable forum for the exchange of ideas and timely information; but the added quantity of material has added considerably to the cost of publication-both in terms of printing and mailing. Given the limited financial resources of the Society, we simply could not produce a Newsletter in the present format were it not for the success of Charlie Landis in soliciting participants for our new Industrial Sustaining Member program (see p. 3). We are all grateful to Charlie for his efforts.

It is my pleasure to report that the publication of our annual meeting proceedings volumes is progressing rapidly. If everything moves forward on schedule, we could have four proceedings volumes published in 1991! Proceedings of the 1988 Houston meeting were published in *Organic Geochemistry* January. Proceedings of the 1989 Urbana meeting are due imminently (see below), and the two proceedings volumes from the 1990 Calgary meeting are scheduled to be in press by fall. **Dick Harvey** deserves special commendation for his success with the Urbana volume; and we wish **Wolfgang Kalkreuth** and **Judith Potter** continued patience and persistence in their dealings with delinquent authors and recalcitrant reviewers for the Calgary volumes.

-Jeffrey R. Levine, TSOP Editor
University of Alabama
Tuscaloosa, AL

Deadline for June Newsletter

The next TSOP Newsletter is scheduled for publication in June, 1991. Featured in this issue will be an article by Tim Moore and S. Andrew Orrell on use of HyperCard™ software for petrographic data acquisition on the Apple™ Macintosh™ microcomputers. Additional contributions on computer data acquisition in the organic petrology lab are especially welcome. All items for publication should be submitted prior to June 1.

As usual, materials submitted on computer diskette are preferred over printed or faxed materials. DOS diskettes are preferred, but Macintosh format is acceptable. Files formatted in MS Word are preferred, but WordPerfect, Wordstar, or Multimate are acceptable, as are ASCII (non-formatted) text files.

Send contributions to:

Jeffrey R. Levine
Department of Geology
University of Alabama
TUSCALOOSA AL 35487
Phone: (205)348-1587
Fax: (205) 348-7612

Thank you.

Membership Report

New Members

The Society welcomes the following new members:

Carol A.A. Bloomquist Argonne Nat'l Laboratory Building 200, R133B 9700 S. Cass Ave. ARGONNE IL 60439	Thomas A. Galya Island Creek Coal Company P.O. Box 840 135 Federal Street HOLDEN WV 25625
---	---

Lingbu Kong
Department of Geological Engineering
University of North Dakota
819 Northwestern Drive
GRAND FORKS ND 58203

Address Changes

The Energy and Fuels Research Center at Penn State University has relocated to their newly constructed research facility. Telephone and fax numbers remain the same. The new address is:

Energy and Fuels Research Center
205 Research Building E
Pennsylvania State University
UNIVERSITY PARK PA 16802

Richard Winston is on a leave of absence from the Geological Survey of Alabama. Effective immediately, his new address is:

Richard Winston
18 Wilelinor Dr.
EDGEWATER MD 21037
Phone: (301)266-8950

The December 1990 issue of the TSOP Newsletter listed an obsolete address for new Outreach Committee member **Martin Reinhardt**. Martin has informed us that he is now working for a large German (i.e. small international) oil company in Hannover. The new address should be:

Dr. M. Reinhardt
BEB Erdöl & Erdgas
EP-11SG
Reithorst 12
3000 Hannover 51 GERMANY
Phone: (0511)-641-2994
Fax: (0511)-641-2403

Membership Directory

The membership directory is currently being printed and should be mailed out shortly to all active members of TSOP. The delay in printing was due to the large number of address changes sent to Renee McLaughlin along with dues notices.

As in the past, the Membership Directory is being printed and mailed by ARCO.

-Ken Yordy
TSOP Membership Committee
ARCO Oil and Gas Company
Piano, TX

1989 Annual Meeting (Urbana)
Proceedings Volume In Press

Fourteen manuscripts of papers delivered at the 1989 Annual Meeting in Urbana were accepted in early October, 1990, for publication in *Organic Geochemistry*. They are currently scheduled for printing and will appear soon. The authors are to be congratulated for a job well done. Look for these papers when the issue appears:

- Abrajano, T.A., B.D.Holt, and G.R.Dyrkacz.** Stable isotope geochemistry of organic matter alteration in Animikie Basin sediments within the thermal aureole of the Duluth Complex.
- Baranger, R., L.Martinez, J-L.Pittion, and J. Pouleau.** A new calibration procedure for fluorescence measurements of sedimentary organic matter.
- Bostick, N.H., WJ.Betterton, HJ.Gluskoter, and M.NJslam.** Petrography of Permian "Gondwana" coals from boreholes in northwestern Bangladesh, based on semiautomated reflectance scanning.
- Demir, I. and R.D.Harvey.** Variation of organic sulfur in macerals of selected Illinois Basin Coals.
- Glick, D.C. and A.Davis.** Operation and composition of the Penn State coal sample bank and data base.
- Gray, R J.** Some petrographic applications to coal, coke and carbons.
- Harrison, C.H.** Electron microprobe analysis of coal macerals.
- Hower, J.C., R.A.Keogh, and D.N.Taulbee.** Petrology of liquefaction residues: maceral concentrates from a Pond Creek durain, eastern Kentucky.
- Lo, H.B.** How well can artificial coalification simulate the natural maturation trend?
- Pasley, M.A., W.A.Gregory, and G.F.Hart.** Organic matter variations in transgressive and regressive shales.
- Pradier, B., P.Bertrand, L.Martinez, and F.Laggoun-Defarge.** Fluorescence of organic matter and thermal maturity assessment.
- Rollins, M.S., A.C.Cohen, A.M.Bailey, and J.R.Durig.** Organic chemical and petrographic changes induced by early-stage artificial coalification of peats.
- Taulbee, D.N., J.C.Hower, and S.F.Greb.** Examination of micrinite concentrates from the Cannel City Coal Bed of eastern Kentucky: proposed mechanism of formation.
- Triplehorn, D.M., R.W.Stanton, L.F.Ruppert, and S.S.Crowley.** Volcanic ash dispersed in the Wyodak-Anderson Coal Bed, Powder River Basin, Wyoming.

We also heartily thank each of the reviewers, too many to mention here by name. Each of you did a fine job!

-Dick Harvey
Illinois State Geological Survey
Champaign, Illinois

Not a member of TSOP?

Call or write today: Ken Yordy, ARCO Oil and Gas Company, 2300 West Plano Parkway, PLANO TX 75075
USA. Phone: (214) 754-6250 or fax (214) 754-6807.

Outreach Committee Report

I am pleased to announce the participation of six companies in the TSOP Industrial Sustaining Member program: Amoco, ARCO, Conoco, Exxon, Shell, and Unocal. The financial support provided through this program is greatly appreciated and will help to underwrite the cost of publishing our Newsletter, in addition to other Society activities.

We invite the additional participation of other organizations wishing to support TSOP, particularly from the coal and steel industries as well as consulting organizations. For further information, please contact me.

An additional activity of the Outreach Committee is the initiation of a new regular feature in the Newsletter entitled *Scientific and Technical Review*. Commencing with the current issue, this column will introduce recent technological and scientific concepts related to some degree to organic petrology, especially those derived from or relating to other disciplines. Several contributions have already been solicited, on isotope geochemistry, fluorescence spectroscopy, and carbon fibre studies. The current issue features a brief review by Jack Crelling on maceral separation.

TSOP members are welcome to submit to me names of individuals or topics for possible inclusion in this column. And as always, feel free to forward any new ideas to me related to the growth of TSOP.

-Charlie Landis
ARCO Oil and Gas Company
Plano, TX

Laboratory adapted a standard medical technique of density gradient centrifugation to maceral separation. In this technique, the coal/kerogen sample is reduced to micron size in a fluid energy mill and then optionally demineralized with HF and HCl. The sample is then introduced into a vessel filled with an aqueous solution of cesium chloride. The CsCl solution is mixed in precise proportions to create a density gradient from the top of the tube to the bottom, commonly ranging between 1.0 to 1.7 g/ml. The vessel is then centrifuged at high speed, whereupon the particles move to their appropriate density level.

After centrifugation the vessel is fractionated by pumping, then filtered, weighed, and dried. The resulting density profile accurately reflects the maceral composition of the sample. At least some of the density fractions consist solely of single-phase maceral particles, but there is normally a component of mixed phase particles as well, even with grinding to 1 micron size.

At this time hundreds of DGC maceral group and single maceral separations have been made and continue to be made on a routine basis. To date, single maceral separations of varieties of alginite, cutinite, resinite, sporinite, vitrinite, Pseudovitrinite, Semifusinite, and fusinite have been reported.

* * *

Low-Rank Coal Newsletter to Be Published

Members of the Gulf Coast Lignite Consortium are instituting the publication of a newsletter as an additional means of communication and transfer of news and ideas among individuals and industries having an interest in low rank coal. The newsletter is intended to serve as a bridge between the scientific, mining, and utilization sectors.

The new editor is soliciting input and suggestions from anyone having an interest in this area. Please contact:

Hugh H. Downey
Low-Rank Coal Newsletter
Department of Geosciences
Northeast Louisiana University
Monroe, LA 71209
Phone: (318) 342-1884

Scientific and Technical Review

Maceral Separation by Density Gradient Centrifugation

by

John C. Crelling
Department of Geology
Southern Illinois University
Carbondale, Illinois

One of the fundamental problems in organic petrology is the lack of detailed knowledge about the basic composition and structure of coal/kerogen macerals. To accomplish this, the macerals need to be isolated and analyzed by modern chemical methods. Because macerals vary in their chemistry and structure, they also vary in density; and it is this variation that allows them to be separated.

In a major contribution to coal science, [TSOP member] Gary Dyrkacz and his colleagues at the Argonne National

Missive From the GSA Coal Division

Dear Fellow TSOP Members,

During this past year there has been some informal interactions between the Geological Society of America Coal Division and The Society for Organic Petrology, particularly in the form of exchanging announcements in our respective newsletters. We at the Coal Division consider this to be a healthy development that should be encouraged and expanded. We also believe that joint activities would be beneficial to each organization and, especially, to individual members. If properly constructed, these activities would in no way compromise the integrity of either organization; rather they should strengthen and enhance them.

The Coal Division was initiated in 1946 by a group of coal scientists specifically for the improvement and advancement of coal science and research. Every fall the Division sponsors a symposium (See p. 6 of current Newsletter), technical session, and poster session, all of which are convened at the Annual Meeting of the Geological Society of America. Just as the Division is broad-based by design, catering to the many aspects of coal geology, so too are the symposium topics similarly broad-ranging. Recent symposia on "Practical Aspects of Coal Geology" and "Modern and Ancient Analogs of Coal-Forming Environments" are just two examples that demonstrate this. In addition, the Division sponsors a pre- or post-meeting field trip every year. As with the symposium topics, these too are diverse in nature.

The Coal Division would like TSOP members to explore the possibility of joint activities between our two organizations. These activities could include a joint meeting, a co-sponsored field trip or publication, an analytical round-robin, or a jointly sponsored scholarship or service award. Obviously this list is far from exhaustive, and your thoughts on this subject would be greatly appreciated. Consider the unconventional as well as the routine. There are no precedents ... there also are no barriers.

The Division also would like any TSOP member who may wish to learn more about the Coal Division and its activities and mission to please contact me (Cortland Eble) at: Kentucky Geological Survey, 228 MMRB, University of Kentucky, Lexington, KY 40506. Phone: (606) 257-5500; or contact Bob Finkelman, U.S. Geological Survey, Branch of Coal Geology, MS 956, Reston, VA 22092, Phone: (703) 648-6412. Division dues are \$5.00 per year, in addition to the GSA dues, of as little as \$35.00 per year. We especially welcome new student members. For full-time students, we are offering partial reimbursement of dues, GSA meeting registration, and Division luncheons. Thank you,

--Cortland F. Eble, Secretary
Geological Society of America
Coal Division

More on Coal Sample Banks

The December, 1990 issue of the TSOP Newsletter provided information on coal sample bank programs at The Pennsylvania State University and Argonne National Laboratory, but some TSOP members might also like to know about two additional coal sample programs available through the Illinois State Geological Survey (ISGS). The Illinois Basin Coal Sample Program offers 1 or 20 pound (occasionally up to 350 lbs) samples from nine different lots of coal that are stored under nitrogen. Five of the lots represent cleaned coal from preparation plants-four from Illinois mines and one from an Indiana mine. The sixth lot is a run-of-mine coal from the Herrin (#6) Coal in western Illinois. The seventh (smaller) lot represents a partial seam in which the ratio of sulfur isotopes in the pyritic sulfur and organic sulfur are significantly different. Samples of this lot are potentially useful where a researcher wants to trace the fate of the two types of sulfur during processing. The eighth lot is a micronized coal, physically cleaned by a state-of-the-art process for fine coal. The ninth lot is a channel sample collected at the same site as the Illinois coal included in the Argonne National Laboratory Premium Coal Sample Program.

Support for this program comes from the state of Illinois through its Center for Research on Sulfur in Coal and from the state of Indiana through its Geological Survey. Participation by the state of Kentucky is anticipated. Further information is available from Carl W. Kruse, 615 E. Peabody Dr., Champaign, IL 61820

The second coal sample program is the ASTM "Sample Bank". Subcommittee ASTM D5.29 (Major Elements in Ash and Trace Elements in Coal) has collected and processed to date samples from 22 different mines from United States and Canadian coal fields. Samples cover a broad range of rank and compositions. These samples have been crushed to pass a 60 mesh screen and riffled to produce 100 subsamples of 100 grams each. Samples are sealed in polyethylene screw top bottles and stored at the ISGS under a nitrogen atmosphere. These samples are primarily to be used for "round robin" work of the Committee. Further information on this program is available from Roy Prokopuk, EMR, CANMET, 555 Booth St., Ottawa, Ont. K1A0G1 Canada.

-Dick Harvey
Illinois State Geological Survey
Champaign, IL

Upcoming Meetings

1991 Coalbed Methane Symposium

Tuscaloosa, Alabama
May 13-17, 1991

The third biannual Coalbed Methane Symposium will be held on the campus of The University of Alabama in Tuscaloosa on May 13-17 of this year. The meeting is sponsored by the Gas Research Institute in collaboration with The University of Alabama and other agencies.

The meeting will commence on Monday, May 13 with three planned field excursions to coal gas production fields in the Warrior basin plus a one-day short course on "Coalbed Methane Reservoir Engineering". Technical sessions will follow on May 14-15. Two 2-day short courses will be offered on Thursday and Friday, May 16-17 on "Hydraulic Fracturing of Coal Seams" and "Introduction to Coal Petrology with Applications to Coalbed Methane R & D" (taught by TSOP Editor J.R. Levine).

The registration fee for the meeting is \$205 in advance or \$245 on-site, with additional fees for the field trips and short courses. A complete proceedings volume will be distributed to all registrants. For more information or to receive a copy of the 2nd Circular, contact:

College of Continuing Studies
The University of Alabama
TUSCALOOSA AL 35487
Phone: (205)348-3000
Fax: (205) 348-6614

* * *

1991 TSOP Annual Meeting

Lexington, Kentucky
September 30 - October 1, 1991

Just as a reminder to those of you planning to attend this year's annual TSOP meeting in Lexington, please submit titles by April 15th and abstracts by May 30th. Poster presentations and oral presentations are both welcome. All authors will be invited to submit manuscripts for publication in *Organic Geochemistry*. The deadline for manuscripts will be December 6th.

The TSOP meeting will be preceded on September 29th by a one-day workshop on "Principles and Applications of Density-Gradient Centrifugation of Macerals". Following the meeting, on October 2, will be a field excursion in organic petrology, led by Cortland Eble, Steve Greb, and Don

Chesnut of the Kentucky Geological Survey. The trip will examine environments of deposition of thin coals along the southwestern edge of the Eastern Kentucky coal field.

Information regarding registration and lodging will be sent to all members in the next few months. If you have any questions, please contact:

Jim Hower
Center for Applied Energy Research
3572 Iron Works Pike
LEXINGTON KY 40511
Fax: (606)257-0302

* * *

Canadian Coal and Coalbed
Methane Geoscience Forum

Parksville, British Columbia, Canada
February 2-4, 1992

The Coal Subsection of the British Columbia Geological Survey Branch, in conjunction with the Alberta Geological Survey and the Institute of Sedimentary and Petroleum Geology, is organizing a three-day conference focusing on Canadian coal and coal bed natural gas resources. The conference agenda includes a field trip on the afternoon of the 2nd (Sunday), with talks and poster sessions presented on the 3rd and 4th. Papers will be published in a conference proceedings volume.

The meeting will be held at the Bayside Resort Inn in Parkville, located approximately 140 km north of Victoria on Vancouver Island. The beautiful seaside setting and Vancouver Island's mild weather will provide a magnificent backdrop for what should be an interesting and rewarding forum.

Meeting organizers are currently soliciting papers for presentation. For additional information, contact:

John Cunningham
British Columbia Ministry of
Energy, Mines, and Petroleum Resources
Parliament Buildings
Victoria, B.C., CANADA
V8V 1X4

Phone: 604-356-2273
Fax: 604-356-7413

Symposium on
Coalbed Methane Geology, Recovery
Technology and Resources

held in conjunction with the
Annual Meeting of the
Geological Society of America

San Diego, California
October 21-24, 1991

This 1/2-day symposium, held in conjunction with the 1991 GSA Annual Meeting in San Diego, will focus on coal beds as economic reservoirs for natural gas. Included will be papers dealing with resource evaluation, exploration models, recovery technology, and much more.

The symposium conveners are currently contacting potential speakers for the program and are interested in hearing from individuals or organizations doing work in this area. Please contact:

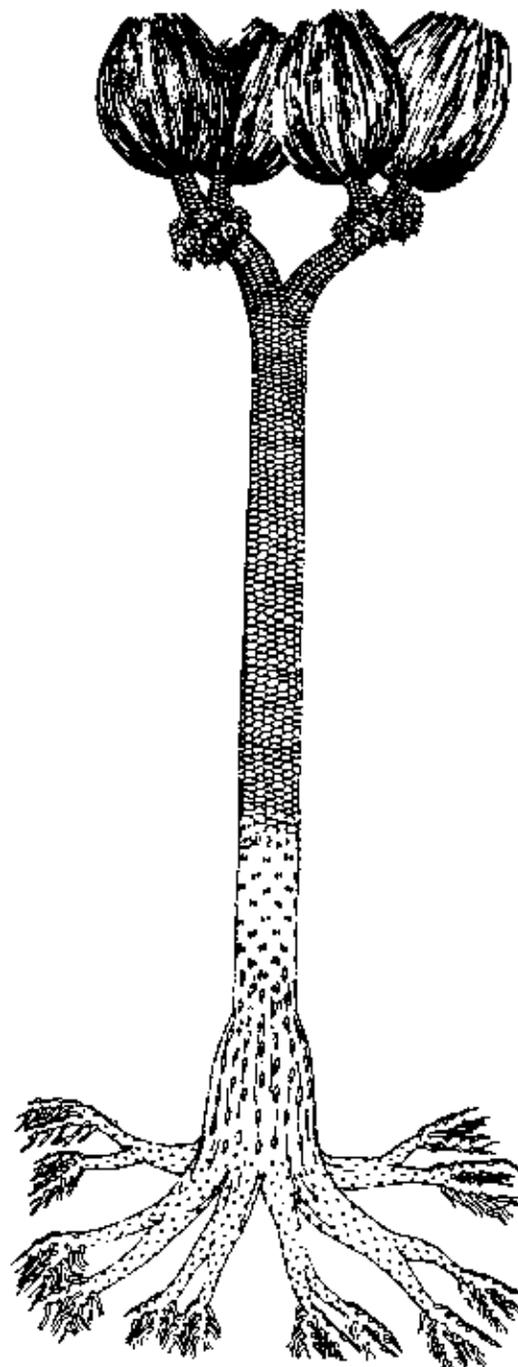
Walt Ayers
Taurus Exploration, Inc.
2101 6th Avenue North
Birmingham, AL 35203-2784

or

Jeffrey R. Levine
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487
Phone:(205)348-1587

Recent Publications

A special issue of the *International Journal of Coal Geology* (1990, v. 16, no. 1-3) has been published recently, containing the extended abstracts and discussions from the 28th International Geological Congress (IGC) Symposium on Peat and Coal. Editors of the volume were TSOP members Paul C. Lyons and Boris Alpern, and Thomas C. Callcott. This issue also includes three new papers on North American, Indian, and Chinese coals, augmenting the 47 papers previously published in volumes 12 and 13 of the IJCG.



Sigillaria.

Laboratory Notes**Coal Balls Discovered in
Warrior Coal Basin, Alabama**

On April 7, 1990, the first known Lower Pennsylvanian coal balls in North America were discovered in the New Castle coal seam in the Drummond Company's Cedrum mine, Walker County, Alabama. The discovery was made by Tim Demko of Auburn University (currently Ph.D. student at University of Kentucky) during a field trip led by Dr. Robert Gastaldo (of Auburn University). Coal balls are calcareous concretions in coal beds which contain anatomically preserved plant fossils. The excellent preservation of such plant fossils in coal balls has made possible detailed paleoenvironmental reconstructions of coal-forming swamps. Whereas Middle Pennsylvanian coals have been studied in detail in this manner, less had been known concerning Lower Pennsylvanian peat swamps.

Collecting these coal balls presented a difficult challenge because there was approximately 1000 pounds of material present—almost all in a single mass. To make matters worse, in two days, the coal-balls would have been lost during mining. Thus, they had to be removed immediately. Fortunately, the mine cooperated by providing a front-end loader to break up the rock into manageable pieces. Even so, the largest piece still weighed about 300 pounds. Eventually, the material was transported back to the Geological Survey of Alabama and subsequently to Tom L. Phillips of the Plant Biology Department of the University of Illinois. Dr. Phillips (who was my advisor for M.S. and Ph.D. degrees) has a very large collection of coal balls and excellent facilities for processing them. I traveled up to Illinois to assist in cutting and preparation of peels, which are acetate thin sections of the plants. The peels quickly revealed that plant fossils were present and reasonably well preserved in these coal balls.

We found an Early Pennsylvanian flora containing *Lyginopteris* —the first permineralized *Lyginopteris* from North America. The flora is dominated by the lycopod tree, *Lepidophloios*. This tree produced a seed-like structure known as *Lepidocarpon*. One of the *Lepidocarpon* specimens contains an immature plant which would have eventually grown into a tree. Dr. Phillips and I now have a manuscript in press at the Geological Survey of Alabama describing this exciting find.

-Richard B. Winston
Geological Survey of Alabama
Tuscaloosa, AL

Epoxy & Silicone Rubber Mixes

Epoxy resins are commonly used in the organic petrology laboratory, especially for mounting and impregnating samples for analysis. Some scientific supply companies offer a limited selection of epoxies, usually at a premium price, but epoxy manufacturers can offer a much wider range of products to suit your particular application, sometimes at a substantially lower cost.

Abatron Inc. offers a diverse line of epoxies. Abocast 50-11 (resin)/Abo-Cure 25-3 (hardener) is a cold-setting, low-shrinkage epoxy that is marketed by Buehler, Inc. as their straw-yellow "Epoxide". For additional information, contact:

Abatron, Inc.
33 Center Drive
GILBERTS IL 60136
Phone: (708)426-2200
Fax: (708)426-5966

Tra-Con, Inc. of Medford, Massachusetts also offers a full line of epoxy resins suitable for many high-tech applications. Tra-Bond 2115 is an outstanding resin that is ideal for impregnation. It has very low viscosity, coupled with a long pot life (> 2 hours), is very stable in a vacuum, and cures to form a remarkably transparent, very hard product. Tra-Con epoxies are also available in small, conveniently pre-measured "Bipax". For additional information, contact:

Tra-Con, Inc.
55 North Street
MEDFORD MA 02155
Phone: (617)391-5550
Fax: (617) 391-7380

The April, 1990 issue of the TSOP Newsletter provided instructions on how to fabricate your own custom-made rubber molds for specimen impregnations. The article stated that an appropriate liquid silicone rubber mixture would be "available from most plastics dealers"; but for those of you who don't happen to have a plastics dealership in your neighborhood, you might consider ordering Dow-Corning Silastic E. Silastic E cures to form a flexible, yet durable, opaque white finish and is available in 1 pound (or larger) kits. For further information, contact:

Dow-Corning Corporation
Box 0994
MIDLAND MI 48686
Phone: (517)496-4000

Types of Vitrinite Macerals I:
THE NECESSITY FOR ETCHING

by

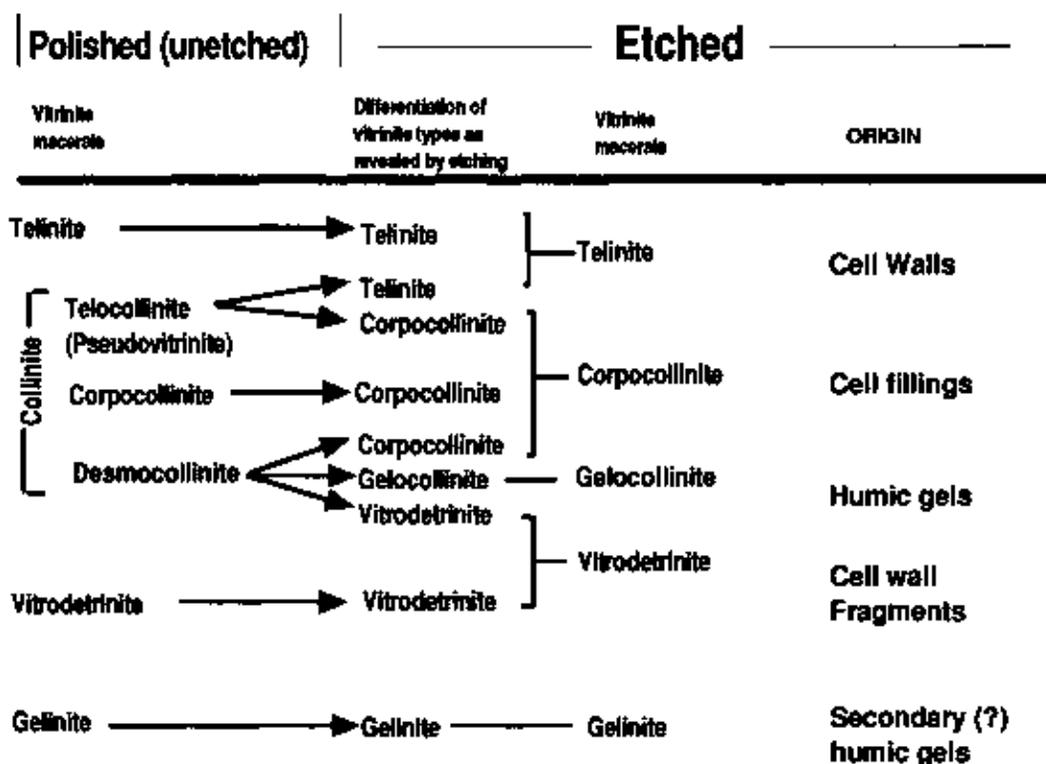
R. W. Stanton, U.S. Geological Survey,
 Reston, VA, USA
 and
 T. A. Moore, University of Canterbury,
 Christchurch, NZ

Background

Current practice in coal petrography usually consists of examining polished surfaces of coal via reflected-light oil-immersion microscopy, and classifying the microconstituents (macerals) based upon their relative reflectances and morphologies. The earliest reflected-light studies, however, used air objectives rather than oil-immersion objectives, commonly aided by etching of polished coal surfaces to enhance the coal's microstructure. Although this method revealed textures that could be used in morphologic

classification, improvements in oil-immersion optics by E. Leitz, M. Berek, and H. Freund (Stach, 1923) provided better resolution of coal structure, based especially on subtle differences in reflectance that were not discernable in air. With the advent of oil-immersion microscopy, attention turned to practical applications of coal petrography, especially in carbonization and coke making; and with further development of the maceral concept and recognition of the relationship between the reflectance and reactivity of macerals, most workers adopted reflected-light oil-immersion microscopy and abandoned altogether the technique of etching for routine analyses.

In spite of its utility, examination of unetched polished sections in oil is subject to a number of limitations. In particular, classification of the vitrinite macerals is usually restricted to just a few broad, heterogeneous categories. For example, the single maceral telocollinite includes a mixture of both cell walls and humic cell fillings (telinite and corpocollinite). Similarly, desmocollinite can comprise a mixture of humic fragments or residue (vitrodetrinite and corpocollinite) plus humic colloidal substances (gelocollinite). In marked contrast, analysis of etched polished surfaces allows recognition of several basic varieties of vitrinite (Fig.



Considering that most U.S. coals contain dominantly vitrinite (mean of 81 percent, mineral-free basis; Gerencher, 1983), it is only appropriate that an attempt should be made to further subdivide this most abundant component of coal. Just as blue-light fluorescence microscopy constitutes an improvement over conventional white-light analysis in the precise differentiation of the (less abundant) liptinite macerals (Davis, 1987), so, too, can etching enable differentiation of vitrinite into its basic types (Hacquebard, 1960).

Figure 1. Comparison of petrographic nomenclature of the vitrinite group in unetched and etched samples.

For these reasons, some coal petrographers have championed the combined study of etched and unetched surfaces (Drath and Jaskólski, 1936; Hacquebard, 1960; Hacquebard and others, 1967). The additional detail provided enables more detailed interpretation of the geologic processes of peat formation as well as better prediction of behavior of coal during utilization (Hacquebard, 1960). Accordingly, in our recent studies, we and our coworkers have used this combined technique to aid in distinguishing the primary components of vitrinite (Warwick and Stanton, 1988; Crowley and others, 1989; Stanton and others, 1989; Moore and others, 1990; Moore, in press; and Pierce and others, in press) and to identify plant tissue types (Moore and Ferm, in press).

Etching Methodology

Etching methods employed in the past have included flame techniques (Turner and Randall, 1923), chemical

solutions (Seyler, 1923; Stach, 1928; 1935; Teichmüller, 1941), and, more recently, plasma ashing (Bostick, 1988; Winston, 1986). The term "etching" (from the German word "essen") is defined as a wearing away of material to reveal microstructure. The process of relief polishing (Stach, 1928) perhaps better fits this definition than do the above-listed processes. The action of chemical solutions more properly is described as lixiviation or leaching because it entails the differential dissolution of coal constituents.

In our work, we routinely analyze coal etched by chemical solutions in maceral analysis just as we analyze coal by using fluorescence microscopy. Parts of each sample are masked with tape to prevent etching, thus providing an unetched surface for reference. Our point-count analysis is a two-step process in which we first count the fluorescing liptinites under reflected blue light in air, followed by point-counting the vitrinite types and inertinite varieties in incident white light.

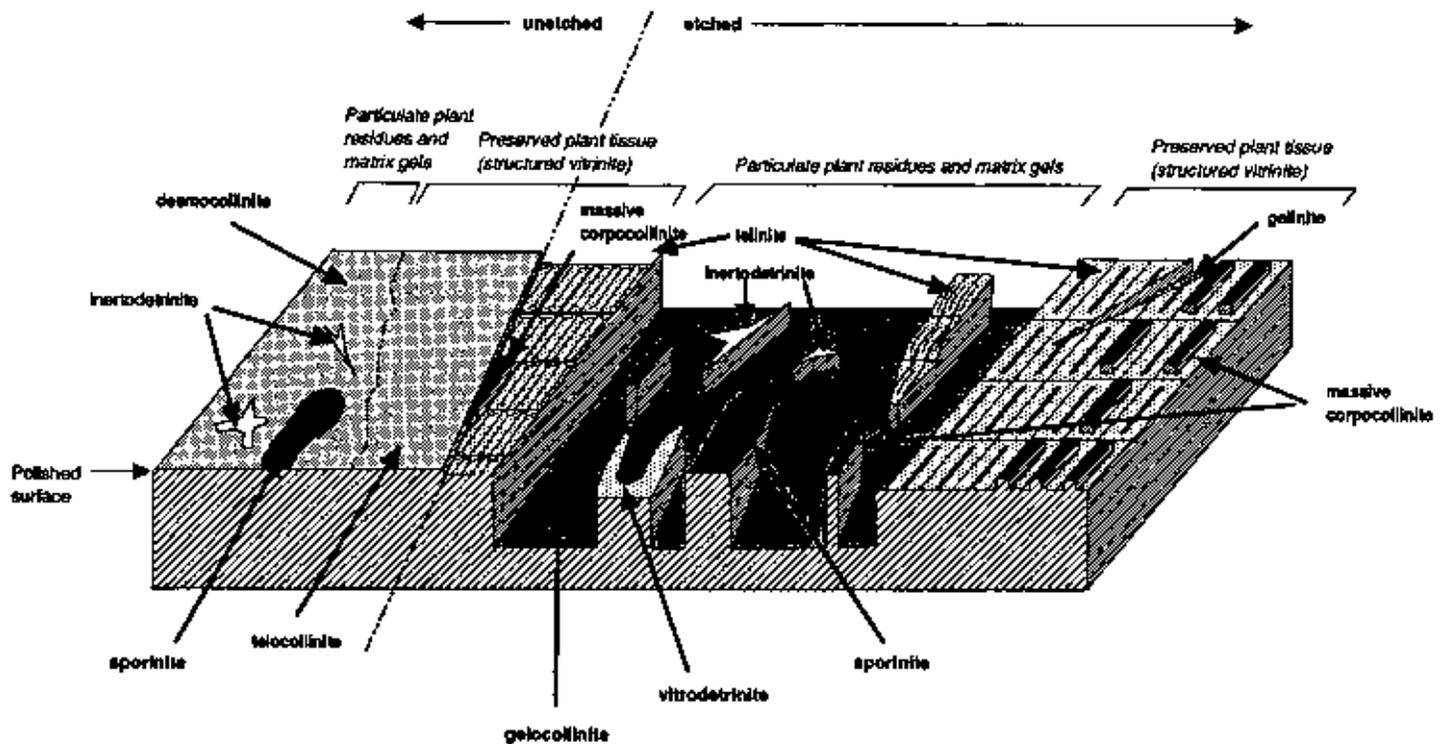


Figure 2. Block diagram showing the variable effect of chemical etching and the relative reliefs of vitrinite types.

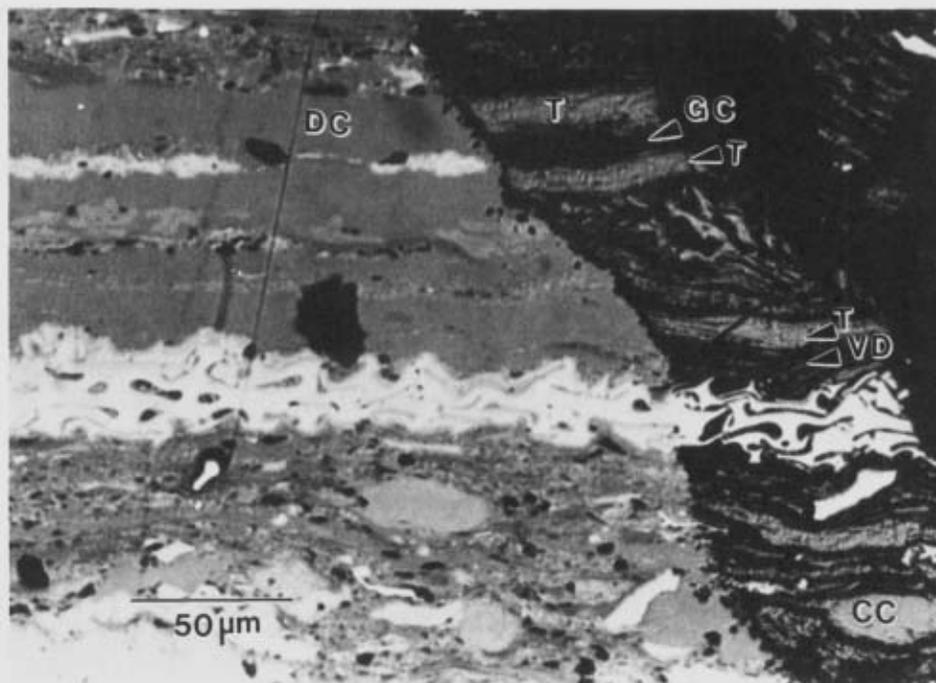


Figure 3. Photomicrograph of unetched and etched desmocollinite (DC). Areas that, as revealed where etched, reveal the basic vitrinite types as a result of differential leaching. GC, gelocollinite; CC, corpocollinite; T, telinite; VD, vitrodetrinite. Sample is taken from Lower Freeport coal bed, PA; mean-maximum $R_o = 0.92\%$.

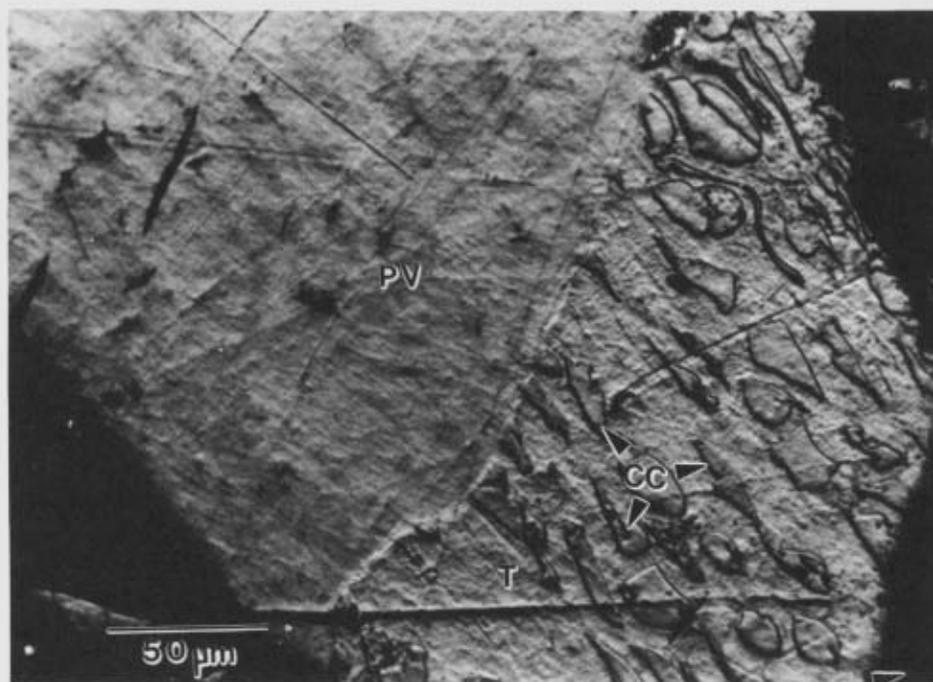


Figure 4. Photomicrograph of Pseudovitrinite? (PV) which, as revealed where etched, is composed dominantly of telinite (T) and corpocollinite (CC).

When using acidified potassium permanganate, only the vitrinites and some Semifusinites (semivitrinites?) are etched; the fluorescent properties of liptinites and vitrinites are not noticeably affected. The uses of chemical solutions rather than other methods allows for better control over the effects of etching, particularly when studying coals of different ranks, each of which requires different amount of time for etching. As stated by Hacquebard (1960), oxidative etching can be applied effectively at all ranks, although the effects of etching are rank-dependent, and are apparently reflective of differences in chemical structure and composition.

With respect to the effects of etching with acidified potassium permanganate (Teichmüller, 1941), the most resistant vitrinite type is primary (?) humic cell fillings (corpocollinite), followed by cell wall components (telinite and vitrodetrinite) (cell wall components), secondary(?) humic gels (gelinite), and primary humic gels comprising the matrix of attrital layers (gelocollinite) (Figs. 2 and 3).

The macerals most susceptible to dissolution etching have the greatest negative relief (Fig. 2).

The most striking effect caused by etching is on desmocollinite. When etched, its heterogeneous composition is revealed. The true colloidal humic gels (gelocollinite) are etched most; their colors are brown to black. The less reactive materials, tissue fragments (vitrodetrinite) and cell fillings (corpocollinite), are easily distinguished within the colloidal humic gel matrix (gelocollinite) (Fig. 3). Etching telocollinite reveals subtle anatomical textures of plant tissues, including the details of cell wall thickening, cell arrangement, and cell filling. Cell filling by corpocollinite, may sometimes account for the high reflectance of some telocollinite (Pseudovitrinite?; Fig. 4), and its abundance can be diagnostic of certain plant types (Winston, 1989).

Conclusions

Realizing that coal is heterogeneous, the ICCP maceral classification system clearly allows for expansion of categories; but by using conventional analysis techniques, most workers can generally count only one or two macerals in the vitrinite group. Petrographic analysis of a vitrinite-dominant coal is, therefore, of limited value unless a more detailed subdivision of compositional entities is recognized. Etching can help to accomplish this objective. Additional optical criteria that enhance standard petrographic analyses must be applied or developed as required.

While the use of etching may entail more work than conventional oil-immersion microscopy, the additional information provided makes it worth the effort in many circumstances. Through etching, the identification and the classification of the basic components of vitrinite is easier, perhaps more objective, and definitely more informative.

References Cited

- Bostick, N.H., 1988, Etching polished coal preparations with a low temperature asher (LTA) to reveal internal structure of vitrinite: *The Society for Organic Petrology Newsletter*, v. 3, no. 4, p. 4-5.
- Crowley, S.S., Stanton, R.W., and Ryer, T.A., 1989, Effects of volcanic ash on the maceral and chemical composition of the C coal bed, Emery coal Field, Utah: *Organic Geochemistry*, v. 14, no. 3, p. 315-331.
- Davis, Alan, 1987, Combined white-/blue-light maceral analysis, *in* Notes from the Petrology Laboratory: *The Society for Organic Petrology Newsletter*, v. 4, no. 2, p. 6-7.
- Drath, A., and Jaskólski, S., 1936, Petrographical investigations of the Otto coal bed, Rodzionków mine, Upper Silesia: XII Annual Meeting of the Polish Geological Society, Krakow, p. 685-770.
- Gerencher, J.J., Jr., 1983, A data base for the analysis of compositional characteristics of coal seams and macerals: a multivariate study of the interrelationships among selected variables of the organic fraction of samples of United States' coals: Coal Research Section, The Pennsylvania State University, U.S. DOE Contract No. DE-AC22-80PC30013, p. 256.
- Hacquebard, P.A., 1960, The value of a quantitative separation of the maceral vitrinite into its constituents telinite and collinite for the petrography of coking coals: *Proceedings of the International Committee for Coal Petrology*, no. 3, p. 131-139.
- Hacquebard, P.A., Birmingham, T.F., and Donaldson, J.R., 1967, Petrography of Canadian coals in relation to environment of deposition: *Symposium on the Science and Technology of Coal*, Canadian Institute of Mining and Metallurgy, March 29-31, 1967, Ottawa, p. 84-97.
- Moore, T.A., in press, The effect of clastic sedimentation on organic facies development within a Tertiary subbituminous coal bed, Powder River Basin, Montana, U.S.A.: *International Journal of Coal Geology*.
- Moore, T.A. and Ferm, J.C., in press, Composition and grain size of an Eocene age coal bed, southeastern Kalimantan, Indonesia: *Journal of Sedimentary Petrology*.
- Moore, T.A., Stanton, R.W., Pocknall, D.T., and Flores, R.M., 1990, Maceral and palynomorph facies from Petrography compared to two Tertiary peat-forming environments in the Powder River Basin, U.S.A.: *International Journal of Coal Geology*, v. 15, p. 293-316.
- Pierce, B.S., Stanton, R.W., and Eble, C., in press, Facies development in the Lower Freeport coal bed, west-central Pennsylvania, U.S.A., accepted by *International Journal of Coal Geology*.
- Seyler, CA., 1923, The microstructure and banded constituents of anthracite: *Fuel and Science and Practice*, v. 2, no. 4, p. 217-220.
- Stach, Ernst, 1923, The importance of microscopy of polished sections with oil immersion for research and industry: *Proceedings of the International Committee for Coal Petrology*, no. 1, p. 11-16.
- _____, 1928, *Kohlenpetrographischer Praktikum: Gebrüder Borntraeger*, 197 p.
- _____, 1935, *Lehrbuch der Kohlenpetrographie: Berlin, Borntraeger*, 293 p.
- Stanton, R.W., Warwick, P.D., and Crowley, S.S., 1989, Low temperature carbonization yields of facies of the Wyodak-Anderson coal bed, Powder River Basin, Wyoming [abs]: *Proceedings of the Society for Organic Petrology Annual Meeting*, v. 6, p. 13-15.
- Teichmüller, M.L., 1941, The fine structures of American coals in polished samples and thin sections: *Reichsamt für das Jahr 1940, Band 61*, p. 20-55.
- Turner, H.G., and Randall, H.R., 1923, A preliminary report on the microscopy of anthracite coal: *Journal of Geology*, v. 31, p. 306.
- Warwick, P.D. and Stanton, R. W., 1988, Petrographic characteristics of the Wyodak-Anderson coal bed (Paleocene), Powder River Basin, Wyoming, U.S.A.: *Organic Geochemistry*, v. 12, no. 4, p. 389-399.
- Winston, R.B., 1986, Characteristic features and compaction of plant tissues traced from permineralized peat to coal in Pennsylvanian coals (Desmoinesian) from the Illinois Basin: *International Journal of Coal Geology*, v. 6, p. 21-41.
- _____, 1989, Identification of plant megafossils in Pennsylvanian-age coal: *Review of Palaeobotany and Palynology*, v. 57, p. 265-276.

Types of Vitrinite Macerals II:

IDENTIFICATION OF INDIGENOUS
VITRINITES FOR IMPROVED
THERMAL MATURITY EVALUATION

by H.B. Lo
Exxon Production Research Company
Houston, Texas

(Note: The following is an excerpt from an article submitted for publication in the 1990 TSOP Annual Meeting Proceedings volume, to be published in *Organic Geochemistry*. —Ed.)

Introduction

The vitrinite reflectance technique of evaluating thermal maturity has been applied to assess the level of organic metamorphism of sediments for a number of years. Although the technique is one of the most quantitative methods available for this purpose, it has many limitations. One particular problem lies in the distinction of different classes of vitrinitic materials in any given rock, all of which have a similar appearance, including: recycled vitrinites, cavings, mud additives, and solid bitumens. These problems are minimal when measuring the reflectance in coal, because coal petrographers can readily identify the indigenous vitrinite based upon morphology. However, recognizing the indigenous vitrinite population dispersed in sediments and distinguishing it from cavings or reworked material requires considerable care and interpretation. The approaches discussed in the following sections should be helpful for the identification of indigenous vitrinites for thermal maturity evaluation.

Characteristics of Fresh and Reworked Vitrinites

Fresh (first-cycle) vitrinites originate mainly from washed-in woody fragments, whereas reworked (second-cycle) material originates from organic particles that have been eroded from older sedimentary strata. Because they have different origins, these vitrinites usually look different under a microscope. Fresh vitrinites are normally elongated in form, are oriented parallel to the bedding planes (Figures 1 and 2), and have lower reflectances than the associated reworked vitrinites (Figure 2). Reworked vitrinites are normally more equidimensional in form and are commonly well rounded.

When a whole-rock sample is ground to -20 mesh and prepared as a polished grain mount, the relative reflectance of vitrinite particles in each rock grain constitutes a major criterion for differentiating fresh from reworked materials. It follows that the polished sections used in the laboratory

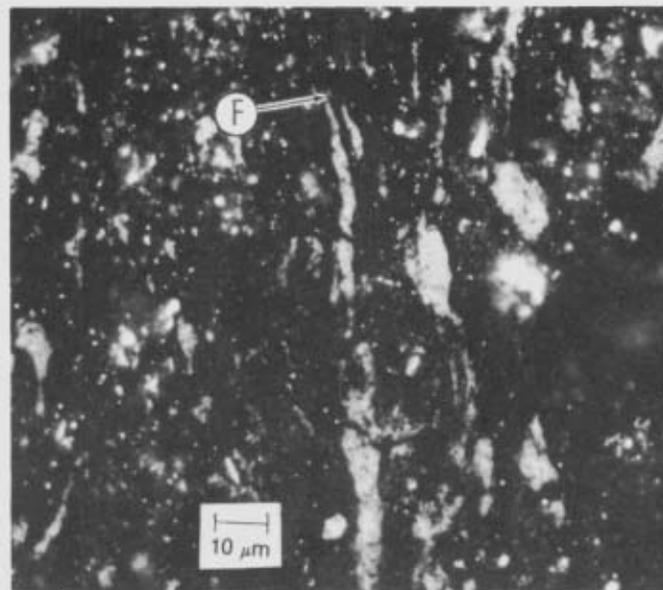


Figure 1. A typical first-cycle vitrinite, left of center, designated as 0.89 F because of its 0.89% reflectance value and being a first-cycle vitrinite. Field of view is inside a rock grain which is surrounded by the epoxy binding medium.

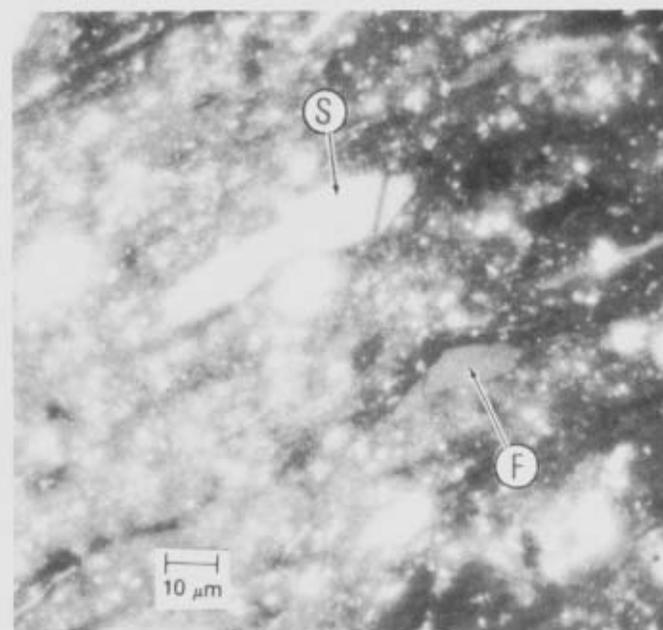


Figure 2. A typical first-cycle vitrinite (lower right) associated with a second-cycle vitrinite (upper left), both contained in a single rock grain. They are denoted as 0.84 F and 1.11S respectively.

should be made from whole rock instead of from kerogen residues whenever such differentiation is necessary. Only on a coarse rock grain can an organic petrographer accurately distinguish between fresh and reworked vitrinites.

NEWSLETTER

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Fivefold Classification for Dispersed Vitrinites

A fivefold classification of dispersed vitrinites, based on the visual characteristics of each particle, can be used to denote each vitrinite particle:

- *First-cycle*, particles demonstrating definite characteristics of being fresh.
- *Second-cycle*, particles demonstrating definite characteristics of being reworked.
- *Low-gray*, gray particles that are likely to be first-cycle vitrinites.
- *High-gray*, gray particles that are likely to be second-cycle vitrinites.

• *Gray*, particles that do not demonstrate any being fresh or reworked.

If a polished section is made from kerogen residue from acid digestion, then two of the parameters described previously - orientation and relative reflectance - are no longer observable, because the vitrinite particles have now been isolated from the rock grains and from each other. Thus for kerogen preparations, we should use only low-gray and high-gray to denote those particles having the obvious characteristics in shape and roundness. The vitrinite classes that one may apply are therefore also dependent on the type of sample used.

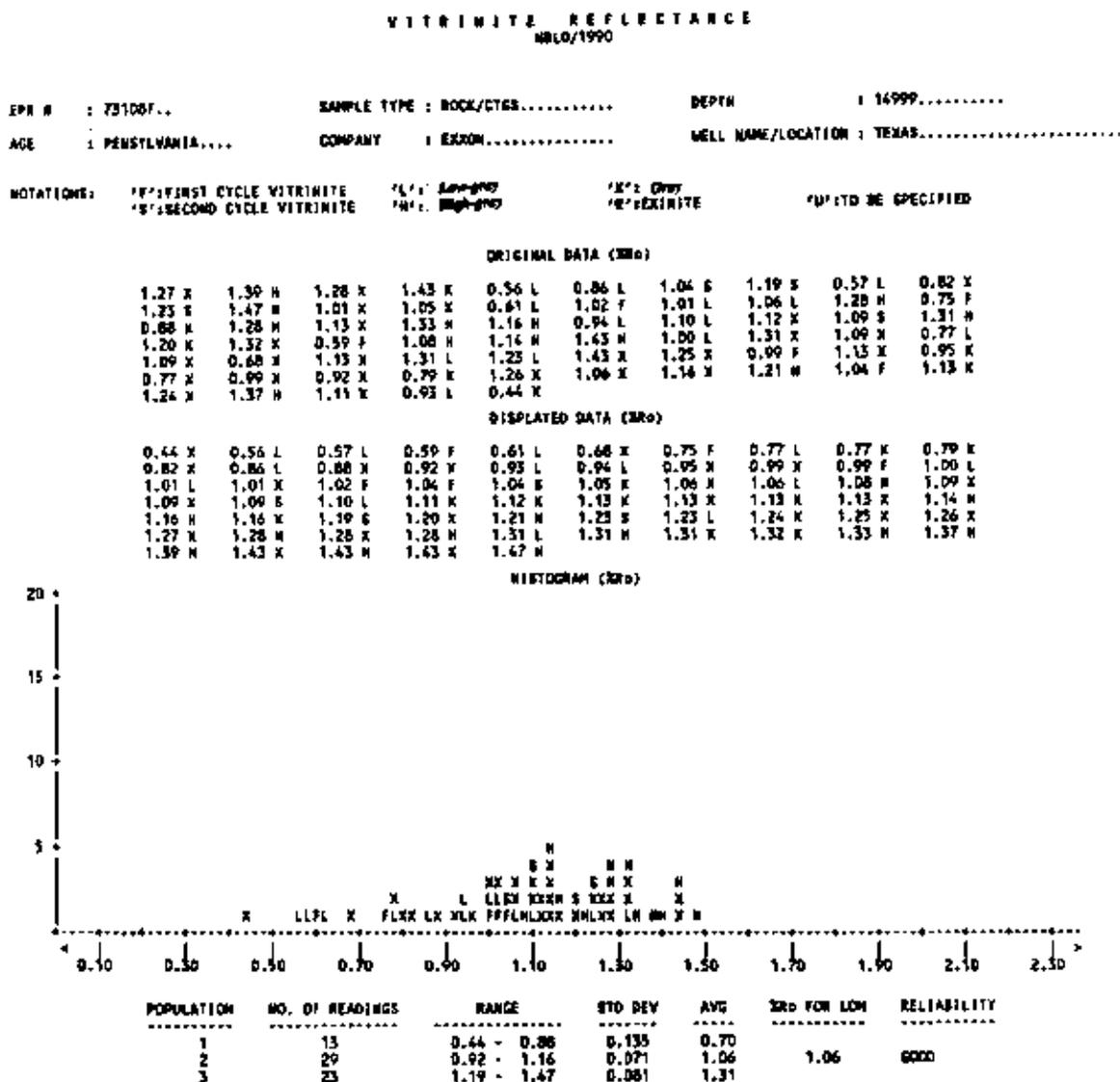


Figure 3. Example of a data output from our vitrinite reflectance data system. Each measurement consists of a reflectance value (%R₀) and a vitrinite class.

Microcomputer System for Vitrinite Reflectance Analysis

Our method of classifying dispersed vitrinites utilizes a microcomputer system interfaced with a microscope. After each reflectance measurement, the particle is assigned to one of five classes. An example of the data output is shown in Figure 3. The histogram generated from the reflectance-value/vitrinite class data (Figure 3) is much more useful than a histogram representing reflectance alone.

Because first-cycle vitrinites derived from cavings normally have lower reflectance values than do those derived from indigenous first-cycle populations, they can be readily differentiated on a histogram. The values in Figure 3 are divided into populations 1, 2 and 3. They are interpreted - based on the distribution of first- and second-cycle material in the histogram - as originating from cavings, indigenous vitrinites, and reworked material, respectively. If no differentiation among classes were shown in the histogram of Figure 3, the correct interpretation of these data could not have been made without additional information or criteria.

Discussion and Conclusions

Based on our experiences with various contract service companies, we suggest that inaccuracies of some reflectance data occur because some organic petrographers do not distinguish between first-cycle (fresh) and second-cycle (reworked) vitrinites. Using the approach described in previous sections, we should be able to minimize the problems of identifying the indigenous vitrinite population caused by the presence of cavings and reworked material in well cuttings samples.

When polished-sections of whole rock samples are used, the problem of distinguishing indigenous vitrinites from solid bitumens and mud additives (especially lignites) can be minimized or eliminated. Solid bitumens can be easily identified within a rock grain in a polished whole-rock section because they usually fill the intergranular spaces. On the other hand, they look very similar or identical to the vitrinites in a polished kerogen- residues section. The lignite particles in mud additives could cause problems in vitrinite reflectance measurements if kerogen residues instead of whole-rocks are used to make polished sections. To deal with the possibility of the coal particles being from mud additives, we may designate them to a special unspecified vitrinite-class. If the mean reflectance of the indigenous population from the vitrinites within rock grains is quite different from that from the isolated coal particles, then the isolated coal (especially lignites) might be from mud additives.

It is recommended that a vitrinite class be assigned to each reflectance measurement. Then a histogram can be constructed (e.g. Fig. 3, showing the reflectance distributions of different vitrinite classes. In this manner a more accurate evaluation of the thermal maturity of sediments can be made.

Types of Vitrinite Macerals III:

PSEUDOVITRINITE

by

John C. Crelling
Department of Geology
Southern Illinois University
Carbondale, Illinois

(Editor's Note: Jack Crelling was among the group of coal petrographers at Bethlehem Steel Research Lab who introduced the term "Pseudovitrinite" in reference to a maceral constituent of coal that, although resembling normal vitrinite, was less reactive during coking. In spite of its deceptive name, Jack argues that there really is such a thing as Pseudovitrinite.

Jack is currently on sabbatical leave for an extended visit with Dr. Harry Marsh at the Northern Carbon Research Lab, University of Newcastle-upon-Tyne. He will return to SIU in the fall of this year.)

While there has been some controversy over the term Pseudovitrinite since it was introduced, the fact remains that most workers who have studied the vitrinite macerals have generally agreed that there are at least two main types. The terms vitrinite A and B were introduced by Brown et al. (1964) based on their studies of Australian coals. Taylor (1966), using transmission electron microscopy observed that vitrinite A appeared to be a mixture of vitrinite A and exinite. The term telecollinite is widely used by European workers in place of vitrinite A and the term desmocollinite is used for vitrinite B. Alpern (1966) divided collinite into homocollinite which is similar to vitrinite A and heterocollinite which is similar to vitrinite B. The term Pseudovitrinite was introduced by Benedict et al. (1968) and further described by Thompson et al. (1974). Kaegi (1985) also discusses the origin and identification of Pseudovitrinite. Although the terms are not strictly synonymous, vitrinite A, telecollinite, and homocollinite are roughly equivalent to the term Pseudovitrinite.

The lack of inclusions and bright appearance in hand specimens suggest that Pseudovitrinite occurs in vitrain layers. This was tested with the Herrin No. 6 coal by point counting a series of petrographic pellets representing both whole seam channel samples and selected hand specimens from which polished block samples were also made, Crelling (1988). When the Pseudovitrinite content was compared to the aggregate thickness of the vitrain layers in the columns and blocks, excellent correlations ($r = 0.98$) were found (Padgett, 1980). In addition, the mean maximum reflectance of hand-picked vitrain was found to be the same as that of the

Pseudovitrinite and higher than that of the vitrinite in the same coal.

Differences in thermal properties between vitrinite and Pseudovitrinite have been detected with photoacoustic microscopy (Johnson et al., 1985). In the photoacoustic process light energy is absorbed by a coal maceral and converted into thermal energy. In photoacoustic microscopy a modulated laser beam is directed into a standard petrographic microscope where it is focused on a maceral which absorbs most of the light. The localized heating of the maceral produces two simultaneous effects which can be detected by two different methods. The first effect occurs when the heated maceral thermally expands and produces a strain wave that propagates through the coal. In the second effect, some of the heat diffuses out of the maceral into the adjacent boundary layer of air, producing a change in the air pressure that gives rise to a sound wave. The sound wave is detected by a microphone that is acoustically coupled to the cell containing the coal sample. Photoacoustic measurements of both types on a variety of coals in the bituminous rank range have shown that vitrinite and Pseudovitrinite have significantly different thermodynamic properties and, therefore, probable differences in chemical composition, chemical structure, porosity, and the intra- and inter- molecular bonding (Johnson et al., 1985).

While petrographic and photoacoustic *in situ* techniques do show differences between vitrinite and Pseudovitrinite these macerals need to be separated from the coal matrix and each other for definitive chemical analysis. Such separation has not been possible until the application of the density gradient centrifugation (DGC) technique, Dyrkacz and Horwitz, 1982, Dyrkacz et al. 1984 a,b,c,d.) This approach uses hand-picked concentrates of vitrain and clarain lithotypes from the same coal. The results of two DGC runs for the Elkhorn No. 3 seam show that the Pseudovitrinite has an higher density and a much narrower density profile than the normal vitrinite. This confirms the petrographic observation that the vitrain is more homogeneous. These results are significant in that they show that vitrinite and Pseudovitrinite can be separated on the basis of their density differences, Crelling (1988).

Preliminary chemical analyses of the vitrinite and Pseudovitrinite macerals given reveals that the Pseudovitrinite has slightly higher fixed carbon and ultimate carbon contents and lower volatile matter and hydrogen contents than the vitrinite in the same coal. Reactivity analyses of lithotypes and macerals carried out using a Thermogravimetric Analyzer, show that the vitrain and Pseudovitrinite are less reactive than the clarain and vitrinite respectively (Crelling et al., 1988, 1990).

The results of such work show that regardless of what one calls them, Pseudovitrinite and vitrinite are two distinct and separable macerals with measurable difference in their mode of occurrence, petrography, reflectance, thermodynamic properties, density, chemical composition and reactivity.

References Cited

- Alpern, B., 1966, Un exemple interessant de houillification dans le bassin Lorrain et ses prolongements. *Adv. Org. Geochem.* 1964, Pergamon Press: Oxford, p. 129-145.
- Benedict, L.G., Thompson, R.R., Shigo III, J.J., and Aikman, R.P., 1968, Pseudovitrinite in Appalachian coking coals: *Fuel*, v. 47, p. 125-143.
- Brown, H.R., Cook, A.C., and Taylor, G.H., 1964, Variations in the properties of vitrinite in isometamorphic coal: *Fuel*, v. 43, p. 111-124.
- Crelling, J.C., 1988, Separation and characterization of coal macerals including Pseudovitrinite: *Ironmaking Proceedings, ISS- AIME*, v. 43, p. 351-356.
- Crelling, J.C., Skorupska, N.M., and Marsh, H., 1988, Reactivity of coal macerals and lithotypes: *Fuel*, v. 67, no. 6, p. 781-785.
- Crelling, J.C., Hippo, E.J., Woerner, B.A., and Gillespie, E.M., 1990, Reactivity of coal macerals: *Ironmaking Proceedings: ISS-AIME*, v. 49, p. 211-217.
- Dyrkacz, G.R. and Horwitz, E.P., 1982, Separation of coal macerals: *Fuel*, v. 61, p. 3-12.
- Dyrkacz, G.R.; Bloomquist, C.A.A.; and Ruscic, Ljiljana, 1984a, Chemical variation in coal macerals separated by density gradient centrifugation: *Fuel*, v. 63, p. 1166-1174.
- Dyrkacz, G.R.; Bloomquist, C.A.A. ; and Ruscic, L., 1984b, High- resolution density variation of coal macerals: *Fuel*, v. 63, p. 1367-1374.
- Dyrkacz, G.R.; Bloomquist, C.A.A.; Ruscic, L.; and Horwitz, E. P., 1984c, Variations in properties of macerals elucidated by density gradient separation: In *Chemistry and Characterization of Coal Macerals*, ed. R. E. Winans and J.C Crelling. American Chemical Society Symposium Series 252, Washington, D.C.: American Chemical Society, p. 65-77.
- Dyrkacz, G.R.; Bloomquist, Carol A. A.; and Soloman, P.R., 1984d, Fourier transform infrared study of high-purity maceral types: *Fuel*, v. 63, p. 536-542.
- Dyrkacz, G.R.; Bloomquist, C.A.A.; Ruscic, L.; and Crelling, J.C., An investigation of the vitrinite maceral group in microlithotypes using density gradient separation methods, *Energy and Fuels*, (in press).
- Johnson, K.W., Crelling, J.C, Biswas, A., Telschow, K.L., Ahmed, T., and Myers, J.M., 1985, Photoacoustic microscopy of coal macerals: *Fuel*, v. 64, p. 1453-1459.
- Kaegi, D.M., 1985, On the identification and origin of Pseudovitrinite: *Int. Jour. Coal Geol.*, v. 4, p. 309-319.
- Padgett, J.T., 1980, The nature and occurrence of Pseudovitrinite in the Herrin No. 6 coal seam of southern Illinois: Unpublished M.S. Thesis, Southern Illinois University.
- Taylor, G. H. 1966, The electron microscopy of vitrinite: in R.F. Gould, ed., *Coal Science: Adv. in Chem. Ser. 55*, Am. Chem. Soc., p. 274-83.
- Thompson, R. R., and Benedict, L. G., 1974, Vitrinite reflectance as an indicator of coal metamorphism for cokemaking: in *Carbonaceous Materials as Indicators of Metamorphism*, ed. R. R. Dutcher, P.A. Hacquebard, J. M. Schopf, and J. A. Simon *Geol. Soc. Am. Spec. Paper 153*, p. 95-108.

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TSOP Newsletter
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THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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Photo Courtesy of Lana Kessinger, Lexington Convention and Visitors Bureau

LEXINGTON '91

The 1991 TSOP meeting will be held on September 30th and October 1st at the Hyatt Regency Hotel in Lexington, Kentucky. The '91 meeting will be one of the most varied to date, with topics ranging from kerogens to coals to coal-derived carbons with study areas ranging from Nova Scotia to Indonesia.

Our invited speaker will be Dr. Harry Marsh, of the Northern Carbon Research Laboratory, University of Newcastle-upon-Tyne. Dr. Marsh is perhaps the world's leading expert on the formation and characterization of cokes and carbons. He will be a visiting scientist at Southern Illinois University in Carbondale at the time of the meeting.

A pre-meeting workshop on density-gradient centrifugation will be held at the Center for Applied Energy Research on September 19, taught by Jack Crelling, Gary Dyrcacz, and Darrell Taulbee.

This year's field trip will examine Lower and lower-Middle Pennsylvanian strata and associated coal beds along

the western margin of the Eastern Kentucky coal field. The trip is being organized by Cortland Eble, Steve Greb, and Don Chesnut of the Kentucky Geological Survey. These rocks provide an exciting opportunity to examine a wide variety of sedimentary environments, including tidal, estuary, sand flat, fluvial, and mass (debris, grain, and stream) flow. Stops at two of the stratigraphically lowest mineable coals in the Eastern Kentucky field will allow for discussion of the composition, quality and origins of these coals. In addition, several thin "channel fill" coal beds will be examined in terms of their palynologic, petrographic, and geochemical characteristics.

The weather in southeastern Kentucky at this time of year is generally quite pleasant, with daytime highs in the 70's to low 80's. We plan on departing from Lexington at 7:00 A.M. on October 2. Weather permitting, a picnic lunch is planned at a local recreation area.



Figure 1. Channel-fill coal in Lee Formation strata along Interstate Route 75 in eastern Kentucky. The coal at this locality is 10-40 cm thick and ranges from 14-54% ash-yield, and 4.5-6.0% sulfur

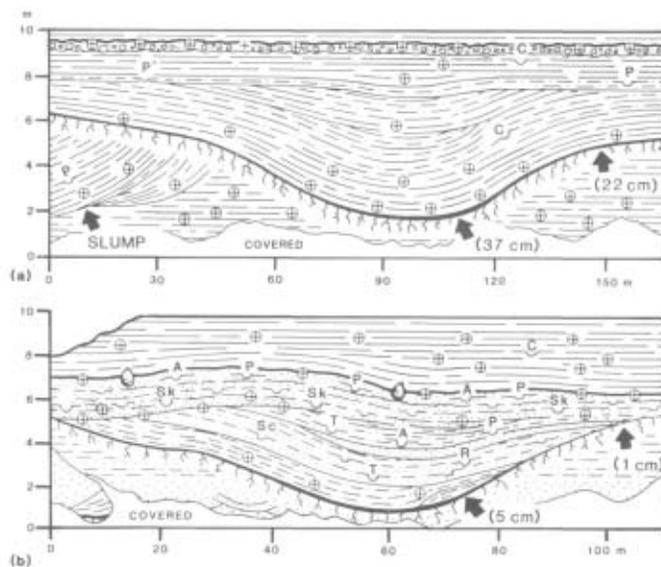


Figure 2. Diagrammatic representation of two Lee Formation channel-fill coals showing coal thickness and surrounding strata variability. The letters represent trace fossil occurrences, the significance of which will be discussed on the trip. The circled (+) signs denote the occurrence of siderite nodules. The top diagram (a) corresponds to the photo (Fig. 1).

The meeting registration is \$90 for members (\$110 for non-members; includes 1992 TSOP membership) and \$60 for students (\$75 for non-members; includes 1992 TSOP membership). Registration fees for the workshop and the field trip will be \$30 each. *Look for more details on the registration forms to be sent out in late June.*

Rooms at the Lexington Hyatt Regency are \$79 (plus 11.25% tax) a night, single or double occupancy. Please make your reservations by calling 800-233-1234 or 606-253-1234. To get the TSOP rate, mention that you are attending the TSOP meeting. Early reservations are advisable as there are other local events on September 28th and the following weekend. Less expensive rooms are available (although it would be helpful to have your own transportation) at other Lexington hotels.

Lexington's Bluegrass Airport is served by Delta, USAir, United, TWA and Northwest airlines. Direct flights from Europe are available to Atlanta, one hour away by air, and to Cincinnati/Northern Kentucky, one hour by car or twenty minutes by air.

We hope to see you in Lexington in September. If you have any questions about the meeting, contact Jim Hower at 606-257-0261 or FAX 606-257-0302.

Deadline for September Newsletter

The next TSOP Newsletter is scheduled for publication in September, 1991. All items for publication should be submitted prior to September 1.

As usual, materials submitted on computer diskette are preferred over printed or faxed materials. DOS diskettes are preferred, but Macintosh format is acceptable. Files formatted in MS Word are preferred, but WordPerfect, Wordstar, or Multimate are acceptable, as are ASCII (non-formatted) text files.

Send contributions to:

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 Fax: (205) 348-7612

Thank you.

From the Editor

I am very pleased to include in the present issue of the Newsletter an "open letter" from our new Research Committee Chair, **Rui Lin**, inviting TSOP members to participate in five ambitious new projects outlined by the Research Committee. Each of these projects is very interesting and worthwhile—both from a fundamental research standpoint and in practical value as well. Moreover, they encompass many facets of organic petrology, from coal to oil shale to petroleum; from optical microscopy to pyrolysis to chromatography. There's something for everyone!

These five projects provide a new opportunity for TSOP members to not only share their knowledge and interests with one another, but to join together in breaking new ground and, hopefully, making some new discoveries. Even TSOP members who do not ordinarily have the opportunity to engage in "research" activities, should be able to devote a small amount of effort to aiding one of the Sub-Committees. In this way, we can truly benefit from one other's knowledge and experience.

Let's have a real positive response to Lin's request for participants. In Union der is strength. E Pluribus Unim. etc., etc...

Over the course of the past two years, I have made open solicitations for Newsletter contributions in a number of areas. I'm very grateful for the contributions I have received, such as the article in the present issue on data acquisition by **Tim Moore** and **Andrew Orrell** and the book review by **Jim Hower**, but the response in many areas has been, let us say, less than overwhelming. For example, we have received no contributions whatsoever for the "Thesis Watch" column (see April, 1990). This feature was intended to publicize recently completed graduate thesis work in organic petrology. Even among today's depleted ranks of graduate students, there must be some thesis work being done in organic petrology.

Other areas in which I have encouraged contributions, but have received little or no response are: new product information, Focus on Labs, book reviews, and meeting notices.

I am also concerned that the Newsletter maintain an appropriate balance among the many aspects of organic petrology represented by our membership, as well as providing adequate representation of events and activities other than in North America. I rely upon my TSOP colleagues in other disciplines and other locales to ensure that these objectives are met.

-Jeffrey R. Levine
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Tuscaloosa, AL

Council Affairs

Mid Year Council Meeting

The TSOP Council held its mid-year meeting on Sunday, April 7, 1991. In attendance were President Joe Senftle, Vice President Dick Harvey, Sec'y/Treasurer Renee McLaughlin, Editor Jeff Levine, Councilors Scott Stout and Ken Kuehn, plus Outreach Committee Chair Charlie Landis and Research Committee Chair Rui Lin. Business conducted at the meeting included (but was not limited to) the following:

Treasurer's Report and Budget. A revised 1991 budget was presented and approved, with increased allocations for the Newsletter and the Research Committee. Procedures were approved for expenditure of funds by the Research Committee. Allocations of less than \$500 can be made upon authorization by the President. Allocations greater than \$500 require approval by Council. An Ad Hoc committee was appointed to make recommendations on how to utilize "surplus" funds accumulated by TSOP over the past several years (see p. 4).

The Secretary/Treasurer will be pursuing the goal of obtaining official recognition by the IRS as a tax-exempt non-profit organization.

Annual Meeting Committee Reports. The **1990** annual meeting in **Calgary** showed a net profit of approximately \$3,200 (US). The Canadian Coal Petrographers' Group will retain the profits from the post-meeting field trip, while the remainder will be turned over to TSOP. The Council noted the fine job done by W. Kalkreuth and J. Potter in organizing the 1990 meeting. Council then approved plans for the **1991** meeting in **Lexington** (described on p. 1-2).

After discussion, Council approved plans that the **1992** annual meeting in **State College** be held on Friday, July 24, following a four-day meeting of the ICCP. A one-day joint TSOP/ICCP field trip to the Pennsylvania Anthracite region will be held on Saturday, July 25. Sunday will be left open as a travel day.

Council formally voted to accept a proposal from Brian Cardott of the Oklahoma Geological Survey to hold the **1993** annual meeting in **Norman, Oklahoma**. The meeting will be co-sponsored by the Survey and by Conoco, Inc. (Carolyn Thompson-Rizer). The meeting will follow the traditional format of two days of technical sessions on Monday and Tuesday, October 11-12, followed by a one-day field trip on Wednesday.

The Council also received an invitation from Ron Stanton of the U.S. Geological Survey to host the 1993 meeting either in northern Virginia or in the Powder River basin, Wyoming. The Oklahoma site was selected, however, both for geographical considerations (closer to the established

"oil patch") and to honor a tentative commitment previously extended to Cardott. Council regrettably acknowledges that Stanton has been attempting for some time to get plans approved for a USGS-hosted meeting, but a combination of circumstances have undermined this effort. In light of this, Council voted in advance to accept a USGS offer to host the 1994 meeting in the Powder River basin area, if such an offer is extended.

Other Committee Reports. Ken Kuehn presented to Council a 17-page **Research Committee** Final Report on Precision and Reproducibility of Maceral Analyses. Copies of the report will be made available to all TSOP members at a nominal charge (\$3-\$5), to cover the cost of printing and mailing. Parts of this report have already been reported in the Newsletter (April, 1990). Additional details will be forthcoming in a future issue. Newly appointed Research Committee Chair, Rui Lin, presented plans for creation of research subcommittees (see p. 5). Reports by the Membership Committee, Election Committee, and TSOP Editor were also presented and approved.



Bureau of Missing Persons

The following persons attended the joint TSOP/AASP Symposium on organic maturation (Houston, 1988), and are due to receive a copy of the recently published proceedings volume (*Organic Geochemistry*, v. 17, no. 2). Unfortunately, we do not have addresses for them, and have been unable to locate them through AASP, AAPG, or GSA.

If you know the whereabouts of any individuals on this list, please send the information to: Renee McLaughlin, TSOP Secretary/Treasurer, Core Laboratories, 1875 Monetary Drive, Carrollton, TX 75006, or Fax: (214) 323-3930:

Bill Alexander	B. Groathouse
Philip Koch	Robert Mueller
Michael Nelson	Linda Peacock
Janet Rush	Willem Schuurmar
Dave Smith	Jack Wooten

Ad Hoc Committee on Expenditure of Surplus Funds

At the Mid-Year Council Meeting in Dallas, President Joe Senftle appointed an Ad Hoc Committee to formulate recommendations for utilizing surplus operating funds accumulated by TSOP over the past several years. Committee appointees include Charlie Landis (Chair), current Council members Dick Harvey, Ken Kuehn, and Jeff Levine, plus past-President and co-founding member Jack Burgess.

TSOP is fortunate to have built up a comfortable level of surplus funds, beyond those required for normal operating expenses. This surplus represents the combined result of increasing membership over the past few years, an increase in membership dues, a series of profitable annual meetings, and the recent support provided through the Industrial Sustaining Member program. As noted in the Secretary/Treasurer's report, surplus funds currently reside in a Prudential-Bache Money Market account, where they are accruing interest.

Three fundamental philosophical questions need to be addressed regarding allocation of surplus funds: 1) How much should be retained in reserve to cover unanticipated financial shortfalls, such as cost over-runs on annual meetings, publication of special volumes and membership directories, or shortfall in anticipated revenues? 2) How should available surplus funds be utilized to best serve the interests and goals of the Society? 3) What procedures should be implemented for future allocation of funds?

The Committee is currently seeking input from all TSOP members regarding these issues. After considering suggestions, the Committee will formulate recommendations to be presented to the general membership at the Annual Business Meeting in Lexington this Fall. Upon approval by the Council, these recommendations will provide guidelines for allocation of funds.

In order to gain as broad a consensus as possible on these questions, the Committee has prepared a questionnaire which accompanies the current issue of the TSOP Newsletter. Give some thought to how you would like to see your Society's (modest) financial resources utilized. Then take a few moments to complete and mail this questionnaire to Charlie Landis, or call 214-754-6753. Your cooperation and ideas are greatly appreciated.

THE RESEARCH COMMITTEE INVITES YOU TO PARTICIPATE IN ITS RESEARCH PROJECTS

Dear TSOP Colleagues,

On the basis of results from two separate surveys of the membership, five research subcommittees have been formed. These include: (1) standardization of kerogen isolation/characterization methods, (2) standardization of reflectance and fluorescence methods, (3) kerogen/maceral chemistry, (4) coal utilization applications, and (5) petroleum exploration applications. Each of these subcommittees addresses a specific research issue recommended by TSOP members during the surveys.

I am uniting this letter to you, all the TSOP members, to encourage each of you to participate in one or more of these research projects. You may choose the research topic(s) for which you will have both the analytical capabilities in your lab and interest. The proposed objectives and analyses to be involved in each research project are listed below. Your input and ideas toward the design of each research project are still welcomed.

finally, I want to thank all the members who responded to the surveys, and contributed ideas toward formulating the above research subcommittees and projects. Please now take this opportunity to become involved in the research activities of TSOP, and contact each respective subcommittee chair immediately.

-Rui Lin

Unocal Science & Technology Division

Brea, CA

Subcommittee I: Standardization of Kerogen Isolation/Characterization Methods

(Project: Round Robin Analyses of Kerogen
Isolation, Classification and Geochemical
Characterization)

The main objectives of this project are to microscopically and geochemically characterize three rock samples containing a mixture of oil-prone and gas-prone kerogens. Specific objectives will include the evaluations of (1) applications of various organic matter classifications, (2) methods of integrating microscopic and geochemical results, (3) applications of different microscopic techniques (whole rock vs. isolated kerogen, etc.), and (4) kerogen preparation techniques. The

results of this study should contribute to identifying effective approaches to characterize dispersed organic matter.

The analyses to be involved in this project will include maceral analyses using a prescribed classification and a classification preferred by each participant, TOC and Rock-Eval pyrolysis, and pyrolysis gas chromatography (Py-GC). For members who do not have access to geochemical instrumentation (e.g., TOC, R-E and Py-GC) are still encouraged to participate. For individuals who are interested in this project, please contact:

Stan C. Teerman
Chevron Oil Field Research Co.
P.O. Box 446
La Habra, CA 90633-0446
Phone: 213-694-9210
213-694-7122

* * *

Subcommittee II: Standardization of Reflectance and Fluorescence Methods

(Project: Round Robin Vitrinite Reflectance and
Spectral Fluorescence Measurements)

The main objective of this collaborative effort is to compare results of maximum and/or mean vitrinite reflectance and spectral fluorescence parameters of three coal samples and one petroleum source rock sample. Attempts will also be made to see if the reflectance and spectral fluorescence parameters can be correlated, and to test the reproducibility from lab to lab. This project should serve as a basis for the continuing effort in improving comparability and reproducibility of vitrinite reflectance and spectral fluorescence analyses, and eventually standardizing both methods.

Three of the four samples will be obtained from the Penn State sample bank, including a lignite, a subbituminous C and a high volatile C coal. The other sample is from the New Albany shale, which is a well-known organic-rich rock. The analyses to be carried out will include random and/or maximum vitrinite reflectance measurements, spectral fluorescence on the liptinite kerogens, and the calculations of various spectral parameters. Prepared pellets of the samples will be supplied. For members who are interested in participating in this project, please contact:

Rui Lin
Unocal Science & Technology Division
376 South Valencia Ave.
P.O. Box 76
Brea, CA 92621
Phone: 714-528-7201 ext. 1355
Fax: 714-528-9986

Subcommittee III: Maceral/Kerogen Chemistry

(Project: Effect of H-Rich Macerals on the Yields of Aliphatic Hydrocarbons)

The main objective of this project is to determine if the variability in the petrographically-recognizable percentage of hydrogen-rich constituents in coal (i.e., liptinites) can account for the variability in the yield of n-aliphatic and/or bicyclic hydrocarbons during pyrolysis and H/C ratios.

The analyses will involve a few solvent-extracted low rank coals and/or kerogens with varying petrographic compositions. Petrographic point counting using combined blue- and white light microscopy, elemental compositions, TOC and quantitative pyrolysis GC will be carried out. Special attention during petrographic analysis will need to be paid to finely dispersed fluorescing materials (liptodetrinite, for example) and to fluorescing vitrinite. Py-GC samples will be supplied with an internal standard already added. Members employing different pyrolysis techniques (e.g., Curie-point, CDS, GHM, MSSV-1, etc.) are encouraged to participate. For members who are interested in this project, please contact:

Scott A. Stout
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376 South Valencia Ave., P.O. Box 76
Brea, CA 92621
Phone: 714-528-7201 ext. 1296
Fax: 714-528-9986

* * *

Subcommittee IV: Coal Utilization Applications

(Project: Microscopy of Liquefaction Residues and Insoluble Residues)

This project will be focused on the microscopy of liquefaction residues and insoluble residues. Microscopic and chemical analyses will be carried out. The later will include NMR, FTIR, etc.. For details about this project, please contact:

James C. Hower
Center for Applied Energy Research
University of Kentucky
3572 Iron Works Pike
Lexington, KY 40511-8433
Phone: 606-257-0261
Fax: 606-257-0220

* * *

Subcommittee V: Petroleum Exploration Applications

(Project: Effect of Overpressured Compartments on Maturation and VR)

The main objectives of this project are to determine the response(s) of vitrinite reflectance to overpressure compartmentalization, and the effect of overpressure on organic maturation. This project will start with a literature search of simulated experiments on the effect of pressure on organic maturation, and the physical and chemical interpretation of vitrinite reflectance. A detailed analytical plan will be formulated after the literature search, which may include laboratory simulation of organic maturation under pressure. For details about this project, please contact:

Suzanne J. Russell
Shell Development Company
Bellaire Research Center
3737 Bellaire Blvd.
Houston, TX 77025
Phone: 713-245-7603
Fax: 713-245-7581



Recent Publications

COAL AND TERRESTRIAL ORGANIC MATTER AS A SOURCE ROCK FOR PETROLEUM (Organic Geochemistry, v. 17, No. 5) edited by P.K. Mukhopadhyay, M.G. Fowler, and W.G. Dow, pub. by Elsevier, Amsterdam.

This volume contains sixteen selected papers presented at the special symposium on "Coal and Terrestrial Organic Matter as a Source Rock for Petroleum" organized by the Division of Geochemistry, American Chemical Society and held at Boston, Massachusetts, USA during April 23-24, 1990 in association with the 199th National Meeting of the American Chemical Society. Twenty-nine papers were presented by speakers from nine countries (Australia, Canada, England, France, Germany, Nigeria, Norway, PR China, and USA) on a wide range of subjects relating to the possibility that crude oil could be generated from coal and shale derived from nonmarine organic matter. Most of the authors have shown excellent relationships between organic petrography and organic geochemistry in evaluating terrestrial organic matter as a source rock for petroleum. All three co-editors of this volume are members of TSOP.

The participants of the ACS Symposium will receive the volume at US \$20.00. For corporate price, please contact P. C. Grooms (AGM), Pergamon Press pic, Bampfylde Street, Exeter EX1 2AH, England or Pergamon Press in USA. For more details of this volume, contact P. K. Mukhopadhyay (Muki), at Tel: (902) 453-0061 or Fax: (902) 453-0061.

* * *

THE FLOWERING OF GONDWANA by Mary E. White, Princeton University Press, Princeton, New Jersey, 256 p., \$49.50

Why is a Laurasian coal petrographer reviewing a treatise on Gondwanan paleobotany—a volume so beautifully done that it could pass as a "coffee-table" book? Quite simply, Mary White has compiled a book which non-specialists can appreciate. The photographs of fossil specimens provide an invaluable supplement to a concise floral history of Australia.

Following introduction to the origin of plant life and theories of plate tectonics, White develops the story of Australia's fossil heritage from the Cambrian to the Tertiary. Much of the discussion is centered around major floras, which, by the end of the Carboniferous were developing elements that distinguished them from the Euramerican floras. Considerable discussion is devoted to the Glossopteris flora, the earliest uniquely Gondwanan flora. The dispersion of Glossopterid features following the order's disappearance in the Triassic is the subject of some speculation. Certain

Glossopterid features recur in seemingly unrelated orders: angiosperms, cycads, and southern conifers. Several lines to angiosperm features are noted. The origin of angiosperms, as well as other orders, is controversial but remains a fascinating subject. Other chapters are on the Triassic seed fern *Dicroidium*; Jurassic conifers and cycads; and Cretaceous, Tertiary and Recent angiosperms.

White's book is important in documenting floras that developed in relative, and ultimately, complete isolation from other floras. Could such a compendium be produced for North America? Certainly Cross and Phillips' recent contribution (1990, *International Journal of Coal Geology*, v. 16, p. 1-46), as important as it is, would have been vastly improved by photographs of the quality found in this book. One must go back to the monographs of W.C. Darrah and, before that, the 2nd Pennsylvania Geological Survey works of Leo Lesquereux and of W.M. Fontaine and I.C. White to find the ancestral Appalachian volumes.

-James C. Hower
University of Kentucky
Center for Applied Energy Research

* * *

COAL: FORMATION, OCCURRENCE AND RELATED PROPERTIES, edited by Ph. Bertrand, published by the Société Géologique de France.

The "Coal: formation, occurrence and related properties" conference was held in Orléans, France, from September 12 to 15 1989, on behalf of C.N.R.S., Société Géologique de France and Université d'Orléans.

120 specialists from 18 different nationalities attended this successful meeting. 40 oral communications and keynotes, and 30 posters, sometimes using new and sophisticated methods, were presented in the different sessions, covering a wide range of research themes such as Composition of peat and coal, Sedimentology of coal and coal bearing strata, Coal formation, and Coal properties.

In the field of coal composition and organic precursors, multidisciplinary studies (botanical and petrographic) described the relationships between ancient coals and peats. Coal generating paleoenvironments reconstructions were proposed using sedimentologic, tectonic, and palynologic studies, involving the relative variations of the sea level.

Coal maturation was tackled through several laboratory experiments and natural case histories. The studies on coal properties concerned a wide range of aspects such as carbonization, oil generation, combustion or coking properties, taking into account the mineral and maceral composition of coals.

Content of the volume:

COMPOSITION OF PEAT AND COAL

SCOTT A.C. - An introduction to the applications of paleobotany and palynology to coal geology.

ROCHDI A., LANDAIS P. and BURNEAU A.- Analysis of coal by transmission FTIR microspectroscopy: methodological aspect.

LALLIER-VERGES E., BERTRAND P., GUET J.M., CLINARD C, LIN QU., and WU X.Q.- Ultrafine structures of vitrinites: an electron microscopy study of microlithotypes in humic coals.

MASTALERZ M.- Variation of vitrinite reflectance in a vertical seam section. An example from the intra sudetic basin, SW Poland.

MURCHISON D.G., PEARSON J., and RAYMOND A.C.- Anomalies in vitrinite reflectance gradients.

JONES T.P., SCOTT A.C, and COPE M.- Reflectance measurements and the temperature of formation of modern charcoals and implications for studies of fusain.

ROUZAUD J.N., GUECHCHATI N., KISTER J., and CONARD J.- Structural characterization of coalification: example of Gironville borehole.

LANDAIS P., ZAUGG P., MONIN J.C., KISTER J., and MULLER J.F.- Experimental simulation of the natural coalification of coal maceral concentrates.

PRADO, J.G., GARCIA GONZALEZ A.M., and GOMEZ BORREGO M.A.- Paleo-oxidation and pyrocarbon deposits on inertinite.

GUERRA SOMMER M., MARQUES TOIGO M., and CORREA DA SILVA Z.C.- Original biomass and coal deposition in southern Brazil (Lower Permian. Parana basin).

GENTZIS T. and GOODARZI F.- Petrology, depositional environment, and utilization potential of Devonian cannel coal from Melville Island, Canadian Arctic Islands.

VAN DER FLIER - KELLER E. and GOODARZI F.- Geological controls on major and trace element characteristics Cretaceous coals of Vancouver Island, Canada.

TOMSCHEY O.- Distribution of trace elements in coal and their host phases in a lower Eocene coal seam of Hungary.

BARANGER P. ET DISNAR J.P.- Mechanisme et cinetique de reduction de divers cations metalliques par un lignite.

SEDIMENTOLOGY OF COAL AND COAL BEARING STRATA

McCABE P J.- Tectonic controls on coal accumulation.

CALDER J.H., GIBLING M.R., and MUKHOPADHYAY P.K.- Peat formation in a westphalian B piedmont setting. Cumberland basin. Nova Scotia: implications for the maceral-based interpretation of rheotrophic and raised paleomires.

GASTALDO R.A., DEMKO T.M., and LIU Y.- A mechanism to explain alternation of clastic and peat accumulating swamps in Carboniferous sequences.

LIGOUIS B. and DOUBINGER J.- Petrology, palynology, and depositional environments of the "Grande Couche de Bourran" from the Stephanisn basin of Decazeville, France.

AGUEDA J.A., BAHAMONDE J.R., BARBA F.J., BARBA P., COLMENERO J.R., FERNANDEZ L.P., SALVADOR C.I., and VERA C- Depositional environments in Westphalian coal-bearing successions of the Cantebrian mountains, northwest Spain.

VILLAR H J. and TRIGUIS J.- Depositional environment of Rio Turbio coals. An organic geochemical approach.

STAUB J.R., ESTERLE J.S., and RAYMOND A.L.- Comparative geomorphic analysis of central Appalachian coal beds and Malaysian peat depositions.

WHATELEY M.K.G.- Geostatistical determination of contour accuracy in evaluating coal seam parameters: an example from the Leicester coalfield, England.

GEOLOGY OF COAL AND COALIFICATION

COUREL L. and LIU X.B.- Variations in the geothermal history in coal basins; relationship with basin dynamics.

SACHSENHOFER R.F.- Geological setting and coalification of intermontane basins of the eastern Alps (Tertiary, Austria).

LANGENBERG W. and KALKREUTH W.- Tectonic controls on regional coalification and vitrinite reflectance anisotropy of Lower Cretaceous coals in the Alberta foothills, Canada.

MICHELSEN J.K. and KHAVARI KORASANI G. A regional study on coals from Svalbard: organic facies, maturity, and thermal history.

OH J.H., ROUZAUD J.N., OBERLIN A., DEURBERGUE A. and KWAK Y.H.- Etude structurale de la graphitisation dans les gisements de Moongyeonog, Coreee du Sud.

COAL PROPERTIES

BLANC G., DOLIGEZ B., LAJAT D. AND MASCLE A.- Evaluation of the petroleum potential of Stephanian-Permian series in the Bresse basin, eastern France.

CHATEAUNEUF J.J., FARJANEL G., LAGGOUN-DEFARGE F., PEZERIL G., and BIKWENU G.- Petrological and physico-chemical properties of some African peats in relation to their instability for carbonization.

LAURENT P. and PRADIER B.- Evolution of optical properties in exinite in a non-coking Beringen coal carbonized under hydrogen pressure.

PIS J.J., ALVAREZ R., BARRIOCANAL C, and LAZARO M.- Effect of air oxidation on the pressure exerted by coking coals during carbonization.

Scientific and Technical Review**ENVIRONMENTAL FORENSIC
GEOCHEMISTRY - TRACING
PETROLEUM CONTAMINANTS IN
SOIL AND WATER**

by I.R. Kaplan,
Global Geochemistry Corporation

(The following is the second in a series of articles invited by Outreach Committee Chair Charlie Landis, intended to introduce TSOP members to recent technological and scientific concepts relating to organic petrology, especially those derived from or exported to other disciplines. The present brief article, by TSOP member I.R. Kaplan, discusses how chromatographic and isotopic methods developed for characterization of reservoir materials are being used in environmental science to trace the source of pollutants. --Ed.)

When crude or refined oil products enter soil, groundwater or an aqueous environment (river, lake or ocean) they are biologically or physically degraded. The result of such changes is to alter the molecular composition of the product so that its source is unrecognizable. The petroleum exploration industry has devised numerous methods to characterize source rock bitumens and reservoir hydrocarbons. A modification of these methods has been successfully applied to identify the source of the fugitive hydrocarbons.

The methods use different chemical classes for identification. For mildly-altered products, a detailed statistical comparison is made of the paraffinic or n-alkane distribution between C₁₂ - C₃₅ for heavy products, C₄-C₇ for the gasoline range and C₁-C₅ for the gas range products. For highly-altered products, a search is made for complex organic molecules which have undergone the least alteration. Among such groups are the long-chain polynuclear aromatic hydrocarbons (PAHs) and the polycyclic paraffinic hydrocarbons, frequently referred to as biomarkers. The aromatic products often contain nitrogen or sulfur. The non-aromatic compounds have many isomeric forms which are characteristic of their sources.

Elemental composition, especially sulfur, vanadium and nickel for crude oil and lead or manganese for refined gasoline products can help identify sources. Lead alkyls in leaded gasoline are especially useful in determining residence time of product in groundwater. The isotopic ratios of ¹³C / ¹²C and D/H have been shown to be very useful natural tracers for gasoline, diesel and heavy oil. The ³⁴C / ³²C ratio may also be useful for heavy oils.

The methods employed by Global Geochemistry Corporation may allow three important litigation questions to be answered: (1) identification of the product type which has occurred in the spill; (2) source of the pollutant, and; (3) approximate time frame that the petroleum product has been in the soil or groundwater.

Low-Rank Coal Newsletter Published

Volume 1, Number 1 of the new *Low-Rank Coal Newsletter* was recently published (Spring 1991). This publication is a joint effort of the Gulf Coast Lignite Consortium and the Fort Union Lignite Consortium, in collaboration with the Energy and Environmental Research Center at the University of North Dakota. The Newsletter features a slick design and lots of useful information pertaining to the geology, chemistry, mining, and utilization of low rank coal resources. Although focusing principally on the U.S., future issues of the Newsletter will contain information on world resources and activities as well.

For further information, please contact:

Daniel J. Daly or Hugh H. Doney
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Box 8213, University Station Northeast Louisiana Univ.
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Laboratory Notes**Method****A HYPERCARD STACK FOR POINT COUNTING THE MICROSCOPIC CONSTITUENTS OF COAL AND PEAT**

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Christchurch 1, New Zealand

and

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Carlsbad, N.M. 88220.

Background

Recent petrographic studies on coals and peats (Esterle, 1990; Esterle *et al.*, 1989; Moore, 1990; Moore and Hilbert, submitted) have attempted to collect a wide range of data using different petrographic classifications. One classification uses standard maceral terminology as defined by the ICCP (1971) and Stach *et al.* (1982). The second classification identifies and tabulates discreet plant parts (roots, stems, leaves, etc.) and finer grained paniculate and amorphous matrix (cell wall fragments, cell fillings, spores, etc.). In addition, size measurements are made on all paniculate organic components.

Using traditional point-counting methods means manually tabulating these diverse data separately. A single point count could generate one to several measurements of frequency, size, and other descriptive data. To efficiently collect and tabulate these data simultaneously, a point count program was developed for the Apple® Macintosh® computer using the HyperCard® software environment¹. One of the major requirements considered when developing this program was that it be easily modifiable by other operators. We felt that the most important feature of the program should be its flexibility to customization by different operators to obtain different end results. For descriptive purposes, the features and practical use of this program will be given in the context of the microscopic classification as used by Moore (1990) and Moore and Ferm (in press). In this classification, the organic components in coal and peat are classified on the basis of type and size of plant parts and matrix components.

Computer Operating System. The Apple Macintosh and HyperCard were chosen as the hardware and software platform for several reasons: (1) the ease of use and graphical interface of the Macintosh and (2) the ability within the HyperCard environment to quickly develop a custom application to collectively manage diverse data generated without resorting to traditional programming languages or generic database programs. In addition, there was a need to easily transfer data between different software programs for applications such as statistical analysis, graphing, and database management, among others. Direct transfer of raw data between programs eliminates the errors that inevitably propagate when data has to be retyped into different programs.

HyperCard has been variously described as a software erector set, authoring system, and information manager. HyperCard is not a typical software application such as a word processing or spreadsheet program. HyperCard is a software toolkit that allows non-programmers to build professional-looking *custom* applications. In essence, the HyperCard environment is similar to other programming environments such as Basic, Cobol, or Fortran, except that programming is both text and graphically based. The graphical part of the programming entails simply drawing out what the program should look like on the screen. The execution of the program is controlled by the simple but powerful HyperTalk programming language built into HyperCard.

HyperTalk is easily mastered by the non-programmer with its very English like syntax. With HyperTalk, one can create custom applications with all the typical Macintosh features such as 'buttons,' 'text fields,' 'icons,' etc, without having to worry about the messy details of programming the Macintosh.

Files created by HyperCard applications are known as *stacks*. The Point-Count stack described here is less than 200K in size, requiring at least a Macintosh Plus with 1 megabyte of available memory. The Point-Count stack was developed under HyperCard version 1.2 but is expected to run under HyperCard version 2.0 which should be available by the time of this publication.

Format and Features of the Point-Count Stack. A screen shot of the primary data entry form for the custom application created for the classification of Moore (1990) is shown in Figure 1, with additional annotations, for descriptive purposes. Standard maceral types comprise the rows of the data array (HT = humotelinite, CH = corpohuminite, etc.; Item A, Fig. 1), whereas plant part types are listed in columns 1 through 11 of the data array (STM = stems, RTS = roots, LVS = leaves, etc.; Item B, Fig. 1). The twelfth column is reserved for fine-grained matrix material (Item C, Fig. 1), which is identified at a maceral level and is thus equivalent to maceral terminology. However, not all maceral types may occur in the

¹ Apple, Macintosh, HyperCard and HyperTalk are registered trademarks of Apple Computer, Inc.

matrix. For example, humotelinite (cell tissue) would probably always be identified as some sort of plant part; cutinite, in its own right, may be considered a type of plant part even when it is not attached to leaf material. In the Point-Count stack, column and row abbreviations are easily edited by the user to customize the program for a specific use. For example, an operator may wish to characterize a coal sample, not by plant parts and maceral terminology, but by microlithotype and maceral. In this case, the column headings could be changed to VIT (Vitrinite) and/or CLA (clarite).

The Point-Count stack is very simple to use. While examining an uncrushed block sample under the microscope, each point under the crosshairs is identified for plant part and maceral type and a 'point count' added to the appropriate row and column of the data array. For example, if the crosshairs were to land on leaf material, then a point would be added to the column designated leaf material (LVS). The exact row to which the point count would be added is dependant on the maceral directly under the crosshair. If it were cell wall material (humotelinite or telinite) within the leaf, then the count would be added to the first row (HT) of the third column (LVS) ('hand' on Fig. 1). To add a count to this "cell," the user points the "hand" cursor (see Fig. 1), using the mouse, inside this "cell" and clicks. A single mouse click automatically increments the count for the designated "cell." At the same time, the grand total and the subtotals for the row, column, plant part and huminite fields are automatically incremented.

Conversely, if the crosshairs land within a cell lumen of a root containing green fluorescing resin, then a point would be added to the eleventh row (GRE = green resinite) of the second column (RTS = roots). The count would also increment for the grand total as well as the row, column, plant part, and liptinite subtotals. Counts can be subtracted by holding down the Option key on the keyboard and clicking on a "cell." A count from all pertinent subtotals also would be subtracted.

The size of particular organic components are recorded in a dialog box (not shown in Fig. 1) which appears after a count is added to a "cell." The operator enters the small and/or large dimension (determined optically) of the particle being counted. These data are stored in a separate text field where the program automatically assigns the sample number, plant part type, and maceral component to each grain-size measurement. In the separate text field the data string will have the form: TEST SAMPLE #1, HT, RTS,325,800. The HT and RTS uniquely identify the column and row in which the measurements were made. The numbers in the data string refer to the short and long dimensions of the root, in microns, though any unit of measure can be used. The size dialog box will appear for both plant parts and matrix components. For the petrographic system described in Moore (1990), when a plant part is counted, it is only the plant part that is measured for size, not the maceral component. Discreet maceral

components are measured only when they occur as separate grains comprising the matrix. In a few cases some matrix components may be amorphous in nature (*e.g.* EG = eugelinite and BI = bituminite), and thus size is meaningless. In these cases, the size dialog box can be turned off merely by clicking on the row identifier (EG or BI) and a black dot appears (Item D, Fig. 1) indicating that no size dialog box will appear when clicking in that row for the matrix column. If no size measurements are needed for any component, then all rows can be turned off in this manner; plant part size can be turned off by clicking on the on-off toggle switch in the upper left hand corner (Item E, Fig. 1).

Data for subsequent samples are tallied on individual cards within the stack. At any time it is a simple process to transfer the data (by using the 'Data Transfer' button, Item F, Fig. 1) to other applications to perform additional analyses.

In brief, other features include:

- Subtotals for rows, i.e. huminite = rows 1 through 6; liptinite = rows 7 through 19, etc. These can be redefined to enclose different row sequences (Item F, Fig. 1).
- Isolated "cells" that do not increment any other cells can be used for special functions. For example, they can be used when doing individual white-light and blue-light analysis. In the example shown in Fig. 1, **Blue H+I** is a cell that, when counted, adds only to itself and the grand total and, in this case, is used as a group total for all non-fluorescing macerals (i.e. huminite and inertinite) when counting in blue light. **White Lip.** is used when a separate blue-light analysis will be used; during the white light analysis all liptinites are included in this category which adds only to itself and the grand total (Item G, Fig. 1).
- Special function buttons that allow the operator to access various utilities, review the separate size data, make notes specific to the present sample, or transfer row and/or column totals to database, spreadsheet, or graphical programs of interest to the user (Item H, Fig. 1).
- Arrow buttons which allow the operator to move either backward or forwards through other data cards (which represent other samples) (Item I, Fig. 1).
- Button which toggles back and forth between displaying the row and column totals as either absolute frequency counts (#) or as percent (%) (Item J, Fig. 1).

One other special feature tracks the standard error of row and column totals throughout the point count analysis. This allows the user to decide when further point counts are

unnecessary. This is an important advantage in stratified samples of uncrushed blocks where the inherent variability may be less than in randomized paniculate pellets that require 500 point counts for 5% confidence limits. Moore (1990) showed that on coal blocks from Indonesia, no more than 125 points were needed to characterize a sample.

Although the description given here has been brief, hopefully it has been thorough enough to allow its attributes to be assessed by other coal scientists. The program was designed to allow for easy modification to the specific requirements of other operators. The program with manual is available for the cost of reproduction from S.A. Orrell. If you think you are interested, please contact T.A. Moore or S.A. Orrell for more information.

References Cited

Esterle, J. S., 1990. Trends in petrographic and chemical characteristics of tropical domed peats in Indonesia and Malaysia as analogues for coal formation. Thesis, University of Kentucky, Lexington, 270 pp., unpublished.

Esterle, J. S., Ferm, J. C. and Yiu-Liong, T., 1989. A test for the analogy of tropical domed peat deposits to "dulling up" sequences in coal beds-Preliminary results. *Org. Geochem.*, 14: 333-342.

ICCP, 1971. International handbook of coal petrology-supplement to the second edition, 2nd. Centre National de la Recherche Scientifique. Paris, not paginated pp.

Moore, T. A., 1990. An alternative method for sampling and petrographically characterizing an Eocene coal bed, southeast Kalimantan, Indonesia. Thesis, University of Kentucky, Lexington, 240 pp., unpublished.

Moore, T. A. and Ferm, J. C., in press. Composition and grain-size of an Eocene-age coal bed in southeastern Kalimantan (Borneo), Indonesia. *Jour. Sediment. Petrol.*,

Moore, T. A. and Hilbert, R. E., submitted. Petrographic and anatomical characteristics of plant material from two peat-forming deposits of Holocene and Miocene age, Kalimantan, Indonesia. *Rev. Paleobot. Palyn.*,

Stach, E., Mackowsky, M.-T., Teichmüller, M., Taylor, G. H., Chandra, D. and Teichmüller, M., 1982. *Stach's Textbook of coal petrology*, 3rd. Gebrüder Borntraeger, Berlin. 535 pp.

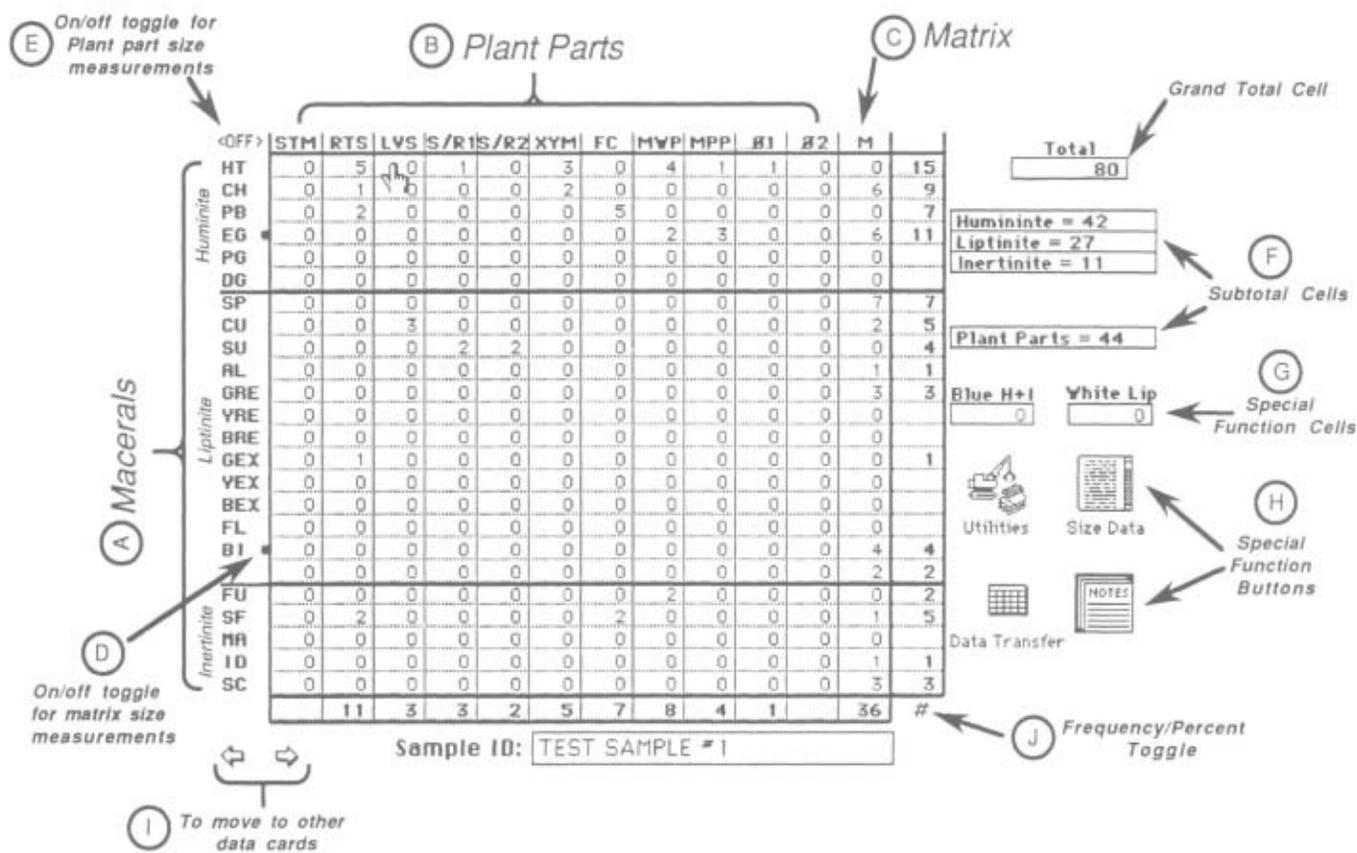


Figure 1. Hyperstack layout for point counting microscopic constituents of coal and peat.

Questionnaire on the Expenditure of Surplus TSOP Funds

1. What amount should TSOP retain in reserve to cover unanticipated financial shortfalls:

- ___ - fixed dollar amount:
 - ___ - None! Let's spend it.
 - ___ - Amount: _____.
- ___ - fixed percentage of annual operating budget:
 - ___ - 300%
 - ___ - 100%
 - ___ - 50%
 - ___ - Other: _____

2. Which of the following activities would you like to see supported by TSOP? Please use the following ratings: 1 - Highest priority, 2 - Secondary priority, N - Should not be supported. Under the Amount column, indicate either a fixed dollar amount or a percentage of surplus funds that you would like to see allocated to a particular activity.

Priority: Activity: Amount:

- ___ - activities of research committee: _____
 - ___ - incidental expenses for Committee-sponsored research _____
 - ___ - support for graduate research _____
 - ___ - support for undergraduate research _____
- ___ - undergraduate/graduate education:
 - ___ - organic petrology-related field trips _____
 - ___ - travel grants to first-author student presenters _____
- ___ - annual meeting expenses:
 - ___ - travel expenses of distinguished speaker _____
 - ___ - non-reimbursed travel expenses for Council members to mid-year meeting _____
- ___ - other activities: _____

3.) Additional comments: _____

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Upcoming Meetings**1991 Meeting
International Committee
for Coal Petrology****Porto Alegre, Brazil
September 15-21, 1991**

The 43rd meeting of the International Committee for Coal Petrology (ICCP) will take place at the Universidade Federal do Rio Grande do Sul in Porto Alegre on September 15-20. On Friday, September 20th there will be a field trip to an open pit mine in the Baixo Jacui District. As part of the ICCP meeting there will be a special Symposium on Gondwana Coals with invited papers on September 21. This ICCP meeting was timed to allow international scientists to travel to the 12th International Congress of Carboniferous and Permian Stratigraphy and Geology (XII ICC-P) being held in Buenos Aires, Argentina on September 22-27.

Persons interested in attending the Porto Alegre meeting of the ICCP should write to Prof. Z. C. Correa da Silva, Institut de Geosciencias-UFRGS, Caixa Postal 15052, 91500 Porto Alegre-RS, BRAZIL.

Information on ICCP membership can be obtained from the General Secretary, Alan Davis, 205 Research Building E, Penn State University, University Park, PA 16802, U.S.A.

**U.S. Geological Survey
8th Annual McKelvey Forum
on Energy Resources****Houston, Texas
February 18-20, 1992**

Two days of technical oral presentations and poster sessions, as well as an evening lecture will focus on current USGS research on energy resources. The third day of the Forum will be entirely devoted to a short course entitled "Recent Advances in Plate Tectonics and Continental Crustal Evolution," to be taught by Warren B. Hamilton. Abstracts will be published in a USGS Circular that will be available at the Forum. The Forum will be held at the Wyndam Greenspoint Hotel in Houston.

For further information, please contact Christine Turner, USGS, Box 25046 MS 939, Federal Center, Denver, Colorado 80225. 303/236-1561.

**Recent Advances in
Organic Petrology and Geochemistry:
A Symposium Honoring
Dr. A.R. Cameron****(held in conjunction with the Geological
Association of Canada/Mineralogical Association
of Canada Annual Meeting)****Wolfville, Nova Scotia, Canada
May 25-27, 1992**

The Canadian Society for Organic Petrology is organizing a symposium focusing on recent advances in organic petrology and geochemistry. The symposium is being held to honor one of our founding members, Dr. Alexander Cameron on his retirement from the Geological Survey of Canada. The symposium is part of the Geological Association of Canada/Mineralogical Association of Canada annual meeting being held at Wolfville, Nova Scotia. The organizers wish to encourage a wide variety of papers on petrology and geochemistry and particular research involving novel analytical methods and interpretative techniques. The proceeding of the symposium will be published and we are currently soliciting papers for presentation.

Also of interest at the Wolfville GAC/MAC meetings a symposium titled "The Euramerican coal province: controls on tropical peat accumulation in the Late Paleozoic" and a field trip to Late Carboniferous coal basins of Nova Scotia follows the meeting (see announcement in Sept. 1990 TSOP Newsletter vol. 7, no. 3, p. 7). A short course "Coal petrology, principles, applications and methods" to be given by W. Kalkreuth, J. Potter, A.R. Cameron and R.M. Bustin will precede the meeting. A wide variety of other symposia, special sessions and field trips will accompany the GAC/MAC meeting.

For additional information contact:

Marc Bustin	F. Goodarzi
Dept. of Geological Sciences	ISPG
Univ. of British Columbia	Geol. Survey of Canada
Vancouver, B.C., CANADA	3303-33rd St. NW
V6T 1Z4	Calgary, Alberta, CANADA
Phone: 604 822 6179	Phone: 403-292-7116
Fax: 604 822 6066	Fax: 403-292-5377

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



NEWSLETTER

Vol. 8, No. 3

September, 1991

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Membership Report

New Members

The Society welcomes the following new members who joined prior to September 3, 1991:

Kenneth R. Wilkes
Dept. of Geol. Sciences
Univ. of British Columbia
6339 Stores Rd.
VANCOUVER BC
CANADA V6T1Z4
(604) 822-2444 (Voice)
(604) 822-6088 (Fax)

Kevin DeVanney
UEC Coal and Coke Lab
USX Corporation
(MS-96)
4000 Tech Center Drive
MONROEVILLE PA 15146
(412) 825-2575 (Voice)
(412) 825-2727 (Fax)

Bruce Torkelson
Amoco Production Co.
P.O. Box 3385
TULSA OK 74102
(918)660-3196

Davis Redding
Amoco Production Co.
P.O. Box 3385
TULSA OK 74102
(918)660-4219
(918) 660-4163 (Fax)

Roy A. James
Beta Products, Inc.
5100 E. La Palma Ave #206
ANAHEIM CA 92807

Yordy Steps Down-Glick Steps Up

After serving TSOP for several years as Membership Committee chair, Ken Yordy has passed his duties on to new appointee Dave Glick. During his term, Ken handled the growing task of maintaining the TSOP membership roster and producing the annual membership directory.

TSOP has benefitted enormously from Ken's contributions, and his efforts are greatly appreciated.

Not a member of TSOP? Join today!

Call or write: David C. Glick, TSOP Membership Secretary, c/o Energy and Fuels Research Center, 205 Research Building E, Penn State University, University Park, PA 16802 U.S.A. Phone: 814-865-6543, Fax: 814-865-3573.

TSOP 1991-92 Council Members

President	Sue M. Rimmer
Vice-President	Brian Cardott
President Elect	Suzanne Russell
Secretary/Treasurer	Renee McLaughlin
Editor	Jeff Levine
Councilor (1990-92)	Ken Kuehn
Councilor (1991-93)	Martin Reinhardt

Ad Hoc Committee Formed On TSOP/CGD Interaction

At the Mid-Year Council Meeting, an ad hoc Committee was formed at the request of TSOP President Joe Senftle and Geological Society of America Coal Geology Division (CGD) Chair Bob Finkelman. The function of the committee is to develop mutually beneficial interactions between the two organizations. As a first step toward this end, the committee wishes to solicit ideas from the membership of each organization on the form which the interaction could take. For example, would a joint meeting, field trip, student award, or publication be a good or bad idea?

As a first step toward interaction, the TSOP and CGD newsletters will be exchange between editors. In this way information of interest to both memberships will be available. However, individual members should feel free to contact both Newsletter Editors directly if they have news of mutual interest. The CGD Secretary/Editor is:

Cortland Eble
228 Mining and Minerals Building
University of Kentucky
Lexington, Kentucky 40506
Tel: (603) 257-5500
Fax: (603) 258-1049

(cont. on following page)

Members of this Ad Hoc Committee include: Brian Cardott, Ken Kuehn, Brenda Pierce, and Scott Stout. Feel free to contact anyone of these members with your ideas or feelings about future TSOP/CGD interaction. As always, your participation is encouraged in your Society.

-Scott Stout
UNOCAL
Brea, CA, USA

• • •

1991-92 TSOP Election Results

The following individuals have been elected to the TSOP Council for the 1991-92 term:

President-Elect	Suzanne Russell
Vice President	Brian Cardott
Councilor	Martin Reinhardt
Editor	Jeff Levine

Thanks go to the Nominating Committee (Art Cohen, Ken Yordy, and Dennis Kaegi), Ballot Committee (Mike Avery, John Calder, Ken Kuehn, and P.K. Mukhopadhyay, Chair), and to all who participated in the electoral process.

4.4.4.

Errata Regarding Coal Publications

In the June issue of the TSOP Newsletter, there were two mistakes regarding the new volume on Coal and Terrestrial Organic Matter as a Source Rock for Petroleum, edited by P.K. Mukhopadhyay, M.G. Fowler, and W.G. Dow. The volume is being issued by Organic Geochemistry, whose publisher is Pergamon Press, Oxford and New York, not Elsevier, Amsterdam. Also, the special volume of Organic Geochemistry will be issued as v. 17, no. 6, and not v. 17, no. 5.

The following additional information pertains to the new proceedings volume on Coal: Formation, Occurrence, and Related Properties, described in the June issue of the Newsletter. This volume is being published as Bulletin t. 162, No.2 of the Société Géologique de France, (320 p.). The price is 320 French Francs.

Persons wishing to order a copy of may write to: Soci&6 G6ologique de France, 77, rue Claude Bernard, 75005 Paris, FRANCE. Please enclose a check or money order for the full value of the invoice, or indicate that you would like to be billed. Eurocheques are not allowed.

Scientific and Technical Review

COMPOUND-SPECIFIC ISOTOPIC ANALYSIS

by J.M. Hayes

Biogeochemical Laboratories, Departments of Geological Sciences and of Chemistry
Geology Building, Indiana University,
Bloomington, Indiana 47405 USA

We might ask two different questions about organic compounds in sediments: (i) what are their structures and abundances? (ii) what were their biological sources? The first can be answered using conventional techniques of chemical analysis and many organic geochemists are now regarded as outstanding experts in that field. Answers to the second question are of great interest because they provide information about the paleoenvironment. Much can be inferred from details of molecular structure, but more can be added when ^{13}C contents of individual organic compounds are precisely known. This has been made possible by the development of a new technique in which the effluent of a gas chromatograph is led through a micro-scale combustion furnace and then to the ion source of an isotope-ratio mass spectrometer.

Where problems with coelution are absent, δ values have uncertainties of only ± 0.3 ‰ for peaks containing as little as 3 ng C. For lacustrine deposits, in which recycling of methane has often been an important process, δ values for individual compounds at a single sedimentary horizon have been observed to range over as much as 10 ‰. These ranges exist because secondary processes - those following the initial photosynthetic production of organic material - often have significant isotope effects. Accordingly, it is often possible to identify individual molecules as being of photosynthetic or heterotrophic origin. References exemplifying such systems are Freeman *et al.*, *Nature* 343, 254-256 (1990) and Hayes *et al.*, *Org. Geochem.* 16,1115-1128 (1990).

Organic petrographers will observe that their geochemical brethren have found yet another way to work on organic matter without looking at it I'm very sensitive to that problem, and count its perpetuation as a significant deficiency in my own work. Accordingly, I appreciate the invitation to write this brief summary, and hope that it will be a contribution to interdisciplinary communication.

Upcoming Meetings

1991 Eastern Oil Shale Symposium

Lexington, Kentucky
November 13-15, 1991

The Eastern Oil Shale Symposium annually provides researchers a forum for the exchange of scientific and technological information on oil shale. The meeting focuses particularly on eastern U.S. resources, but also includes many papers on similar oil shales and tar sands worldwide. As this meeting grows in stature and prestige, it is attracting an increasingly international attendance.

This year's meeting is hosted by the University of Kentucky's Institute for Mining and Minerals Research and the Center for Applied Energy Research laboratory and by the U.S. Department of Energy. Over 70 talks, poster sessions, and presentations are scheduled on subjects including: geology, geochemistry, and resource characterization; reservoir assessment and characterization; organic geochemistry; recovery and beneficiation methods; process technology; and much more.

For additional information, write to:

University of Kentucky
Institute for Mining and Minerals Research
Office for Informational
Services and Technical Liaison
411 Breckinridge Hall
Lexington, KY 40506-0056 U.S.A.

or call Geaunita Caylor at (606) 257-2820 or fax (606) 258-1049.

* * *

**USGS McKelvey Forum
on Energy and Mineral Resources**

Houston, Texas
February 18-20, 1992

This meeting annually provides U.S.G.S. geologists the opportunity to "show their stuff". This year's program features numerous papers of interest to organic petrologists. The keynote speaker is TSOP member (and recent U.S.G.S. employee) Mike Lewan, who will speak on the "Role of Water in Petroleum Formation". Other talks will look at climate change and organic productivity, Norphlet Formation source rocks, regional oil in mature source rocks, experimental diagenesis, and much more.

For more information or to receive a flier, call Christine Turner at U.S.G.S. in Denver, at (303) 236-1561.

**First Announcement And
Call For Papers:**

1992 TSOP Annual Meeting

University Park, Pennsylvania
July 23-24, 1992

The Ninth Annual Meeting of The Society for Organic Petrology (TSOP) will be held on the campus of The Pennsylvania State University, July 23-24, 1992. This year's meeting will be held immediately following the 44th meeting of the International Committee for Coal Petrology (ICCP) which is being held July 19-23, also at Penn State. An ICCP-TSOP joint field trip to the Pennsylvania anthracite district is planned for Saturday, July 25.

The 1992 TSOP meeting format will include a poster session (on the evening of July 23) and 20 min. oral presentations (July 24). The organizers wish to compile a wide variety of posters/papers concerning new research in organic petrology and organic geochemistry. Extended abstracts (2-3 pages including figures) will be accepted anytime before **March 31, 1992** and should be mailed to Scott Stout (see below). Abstracts are welcomed on floppy disks preferably as a MS Word or text/ASCII file. As in previous years, authors will be requested to submit papers for publication in a special issue of *Organic Geochemistry*. Completed manuscripts will be required before September 31, 1992.

Unfortunately, this year's shortened technical program necessitates that not all papers submitted for oral presentation can be accepted. Thus, the organizers encourage flexibility in the form of your presentation (poster *versus* oral presentation). Please indicate if you prefer to present, or are amenable to presenting, a poster.

Look for future announcements and registration information in future newsletters. Questions can be addressed to the meeting's organizers; (1) Scott Stout (Unocal, PO Box 76, Brea, CA; 714-528-7201), (2) Jim Hower (Ctr. Applied Energy Res., Univ. of Kentucky, 3572 Iron Works Pike, Lexington, KY 40511; 606-257-0261), (3) Joe Senftle (Arco Oil and Gas Co., 2300 W. Plano Pkwy., Plano, TX; 214-754-6256) and (4) Alan Davis (Energy and Fuels Research, Penn State Univ., 205 Research Building E, University Park, PA, 16802; 814-865-6544).

Hacquebard Symposium Proceedings to Be Published Soon

During the week of September 9-14, 1990, a joint meeting of The Society for Organic Petrology (TSOP) and the Canadian Coal Petrographers Group (CCPG) was held in Calgary, Alberta, hosted by the University of Calgary and the Geological Survey of Canada. The meeting included technical sessions and two field trips and also included a special session in honour of Dr. Peter A. Hacquebard, a pioneer in coal petrology in Canada.

The program of the Hacquebard symposium was organized to emphasize areas of research in Canada to which Dr. Hacquebard has devoted much of his career. In keeping with this approach, the program consisted of papers and posters that incorporated elements of petrography, geology, palynology, and geochemistry and results were reported of studies on both coal and organic matter in clastic rocks.

A decision was made to publish the proceedings of this symposium as a special volume of the International Journal of Coal Geology. The volume consists of 19 papers, including two volunteered by non-Canadians who wished to participate in the publication.

Because much of the volume is concerned directly or indirectly with Canadian coals, the first paper (Cameron and Smith) is a short introduction to the distribution and compositional characteristics of these coals for those who may not be familiar with this Canadian energy resource. Several papers (Goodarzi and McFarlane; Hagemann and Dehmer; Kilby) deal with new approaches to the analyses of organic matter and involve in varying degrees the blending of petrographic and geochemical techniques. Six papers deal on a regional basis with various patterns of organic petrographic or other compositional characteristics in coals or clastic rocks (Bertrand; Bustin; Ercegovac et al.; Gentzis and Goodarzi; Kalkreuth et al.; Stasiuk et al.). One contribution (Potter et al.) describes, in detail, compositional characteristics of a Saskatchewan lignite bed. Two papers deal with the occurrence of biaxial vitrinites in Canadian coals and its significance in terms of tectonic history (Grieve; Langenberg and Kalkreuth). The subject matter of one paper is oil shales (Smith et al.) while another deals with mineralogy and trace element content in coals of the Sydney Basin, Nova Scotia (Birk and White). Application of petrographic techniques to coke making is discussed in two papers (Gransden et al.; Pearson). Two papers combine various petrographic parameters with palynology to explore environments of deposition (Sweet and Cameron) and regional maturation (Utting and Hamblin).

- R.M. Bustin

Vancouver, Canada

-A.R. Cameron & W. Kalkreuth

Calgary, Canada

As a service to its members, TSOP is placing a one-time bulk order for copies of the Hacquebard Symposium Proceedings volume. According to the publisher, we are being afforded a special price (which presumably is lower than the list price will be).

Members wishing to purchase a copy should complete and return the accompanying order form (See p. 8) prior to November 30, 1991.

Included in the Proceedings volume will be the following articles:

GRANSDEN J.F., JORGENSEN J.G., MANERY N., PRICE J.T., and RAMEY J.J.- Applications of microscopy to coke making.

ERCEGOVAC M., WOLF M., HAGEMANN H.W., and PUTTMANN W., (Paper in German)- Organisch-petrologische und geochemische untersuchungen an den kohlen des Ibar-Backens (Jugoslawien).

HAGEMANN H.W., and DEHMER J.- Spectrophotometric lightness and chromaticity measurements on absorbing peat and brown coal surfaces: Method and evaluation.

GRIEVE D.A.- Biaxial vitrinites in the Elk Valley Coalfield, Southeastern British Columbia, Canada.

KILBY W.E.- Vitrinite Reflectance - beyond R_{Max} and R_M .

LANGENBERG W., and KALKREUTH W.- Reflectance anisotropy and syn-deformational coalification of the Jewel Seam in the Cadomin Area, Alberta, Canada.

HART B.R., POWELL M.A., FYFE W.S., GOODARZI F., and CAMERON A.R.- Mineralogic and elemental assessment of the Paintearth Coal Seam, Battle River Coalfield, Alberta.

BERTRAND R. (Paper in French)- Maturation thermioque des roches meres dans let bassins des basses-terres du Saint-Laurent dert dans Quelques Buttes Temoins au Sud-Est du Bouclier Canadien.

BIRK D., and WHITE J.C.- Rare earth elements in bituminous coals and underclays of the Sydney basin, Nova Scotia: Element sites, distribution, mineralogy.

BUSTIN R.M.- Organic maturation of the Western Canadian Sedimentary Basin.

POTTER J., MCDUGALL, W.J., BEATON A.P., NAMBU DIRI E.M.V., and VIGRASS L.W.- Depositional environments of the Hart Coal Zone, (Paleocene), Willow Bunch Coalfield, southern Saskatchewan, Canada from petrographic, palynological, paleobotanical, mineral and trace element studies.

SMITH W.D., ST. PETER C, MUKHOPADHYAY P.K., NAYLOR R.D., BALL FJX, KALKREUTH W., and MACAULEY G.- Compositional and depositional environment of Eastern Canadian oil shales.

CALDER J., KALKREUTH W., LAMBERSON M., MARCHIONI D., NAYLOR R., and PAUL J.- The relationship between coal petrography and depositional environments - A status report on Canadian research.

STASIUK L.D., OSADETZ K.G., GOODARZI F. and GENTZIS T.- Organic microfacies and basinal tectonic control on source rock accumulation: A microscope approach with examples from an intracratonic and extensional basin.

PEARSON D.E.- Probability analysis of blended coking coals.

GENTZIS T. and GOODARZI F.- Regional thermal maturity and hydrocarbon potential of the sedimentary succession from the Hecla Hydrocarbon Field in Sverdrup Basin, Arctic Canada.

GOODARZI F., and MCFARLANE R.- Chemistry of fresh and weathered resinites - An infrared photoacoustic spectroscopic study.

SWEET A. and CAMERON A.- Relationship between palynofacies, coal petrographic facies and depositional environments.

SAXENA R., NAVALE G.K.G., CHANDRA D., PRASAD Y.V.S., and MOITRA J.- The spontaneous combustion of coal in the Gondwana Basin of the Ranicanj coalfield, India and its relation to stratigraphy.

UTTING J., and HAMBLIN A., Thermal maturity of the Lower Carboniferous Horton Group, Nova Scotia.

CAMERON A. and SMITH G.- Coals of Canada: their properties and characteristics.

* * *

Fluorescence Workshop Lecture Notes Now Available

The long-awaited Lecture Notes for the TSOP-sponsored Workshop on Fluorescence Microscopy are now available for sale to TSOP members. Please use the order form on p. 9 if you wish to request a copy.

The notes were compiled by Jack Crelling, Dave Bensley, Charlie Landis, and Sue Rimmer, based upon a workshop held on November 1-2, 1989 at the Coal Characterization Laboratory at Southern Illinois University.

One of the principal objectives of the workshop was to provide an overview of the design, operation, and use of the various fluorescence microscope systems currently in use. As such, a large amount of material is included on methodology of data acquisition, data processing, and interpretation. The notes also provide a useful review of fluorescence principles and current applications to organic petrology, both in characterizing macerals *in situ* and in density gradient centrifugation concentrates.

The notes are bound in a plastic ring-binder and comprise 122 pages plus references and appendices, including 6 color plates. Also included is a microfiche sheet of color photos of fluorescent macerals, many with accompanying spectra.

Jack Crelling and his co-authors deserve thanks and congratulations for the considerable effort they put forth in making this volume available for the benefit of all TSOP members.

• • •

Briefly Noted

TRACE ELEMENTS IN COAL, by D.J. Swaine, published by Butterworths Pty Ltd, North Ryde, Australia, 296 p., Hardcover, \$255 (AUS).

This book is a concise yet complete account of all aspects of trace elements in coal. After an introduction giving background information and outlining geochemical cycling, there is a chapter on the origin of trace elements in coal, including the formation of peat, geological and geochemical aspects of coal, the constitution of coal and a condensed history of trace elements from the swamp through the several stages of coalification.

Trace element organic associations and mineral matter associations are dealt with in some detail, as are the important matters of sampling and analysis. Tabulated data for the contents of 49 trace elements in world coals together with short paragraphs of related information, constitute a ready reference. There are sections on in-seam variation of elements, radioactivity, seam correlation, and the use of boron contents for assessing marine combustion for power production and deposition of trace elements from the atmosphere. Finally, there are chapters on health aspects and coal as a possible source of trace elements, for example, germanium and gallium.

The book features an extensive list of references, especially from the past decade.

This is an authoritative book, based on the author's wide experience in the chemistry and geochemistry of trace elements, especially focused on coal during the past 30 years. It is surely essential for established researchers and tyros in this exciting and important area of science and technology.

-F. Goodarzi
ISPG
Calgary, CANADA

Scientific Communication**THE AMSTERDAM PALYNOLOGICAL
ORGANIC MATTER CLASSIFICATION**

International Committee For Palynological Organic
Matter Classification

M.A. Lorente, Chairman
I.C.P.O.M.C.
Amsterdam, The Netherlands

All those engaged in palynology, palynofacies and organic facies studies will be well aware of the need for a standardized system for describing and classifying the organic matter observed in palynological preparations. The Open Workshop on Organic Matter Classification (University of Amsterdam, June 27-28, 1991) was convened to address this problem. The workshop participants (72 workers from 20 countries) resolved to publish a standard classification within three years. This will take the form of a color photo atlas with an accompanying text that gives clear practical definitions for all categories and terms used.

Although the Workshop was attended by only a small proportion of the palynological community, a wide diversity of views were presented and discussed. A classification framework was established by voting on a variety of proposals from the floor. The collective view of the participants was that the creation of new jargon should be avoided, and that the classification should be hierarchical (i.e. include different levels of complexity suitable for different applications). The view was taken that the basic classification should be based upon transmitted white light, but incorporate additional resolution for those with routine access to fluorescence (only 60% of the workshop participants) and/or microscopes with incident white light illumination.

A number of working groups were established to look at difficult or contentious areas (e.g. amorphous materials, degrees of preservation, maturation, etc.), and areas of overlap with other disciplines (e.g. organic petrology, geochemistry). The names of the working group convenors are given below. It was proposed that a second Workshop be held in June 1992 in Bergen (Norway), to consider revision of the framework in light of the findings of the working groups. An international committee chaired by M. A. Lorente (Amsterdam) was set up to coordinate the project. Other committee members are listed below.

The framework agreed upon by the Workshop is not a final product, and the Committee does not wish to prejudice its chances by premature publication.

All those who would like to see a copy of the provisional classification, to become actively involved in any of the working groups, or who would be willing to submit photographic material for potential inclusion in the Atlas are

urged to contact the Committee or Working Group Convenors at the earliest opportunity. Everyone can play a part.

The International Committee for Palynological Organic Matter Classification comprises the following members:

M. A. Lorente (Chairman)
Hugo de Vries Laboratory
University of Amsterdam
Kruislaan 318
1098 SM AMSTERDAM
The Netherlands

D. J. Batten
Institute of Earth Sciences
University of Wales
UCW Aberystwyth
ABERYSTWYTH S423 3DB
United Kingdom

J. F. Raynaud
Biostratigraphy
Société Nationale Elf Aquitaine
64018 PAUCedex
France

W. Riegel
Institut und Museum für Geologie und
Paläontologie
Goldschmidtstrasse 3
3400 GOTTINGEN
Germany

R. Tyson
Fossil Fuels and Environmental Geochemistry Institute
University of Newcastle-upon-Tyne
Drummond Building
NEW CASTLE UPON TYNE
NE17R4
United Kingdom

R. van Veen
Norsk Hydro Research Center
P.O. Box 4313
15028 BERGEN
Norway

R. Witmer
UNOCAL
Science & Technology Division
P. O. Box 76
BREA
U.S.A.

List of working groups and convenors:

ENVIRONMENTAL RELATIONS

(Taphonomy, Biological affinity, Modern sediments)

R. A. Spicer, Convener

Department of Earth Sciences

University of Oxford

Parks Road

OXFORD OX1 3PR

United Kingdom

STANDARDS IN PREPARATION METHODS

(including sample processing)

H. Kerp, Convener

Laboratory of Paleobotany and Palynology

University of Utrecht

Heidelberglaan 2

3584 CS UTRECHT

The Netherlands

DEFINITIONS (Photo atlas?)

R. Tyson, Convener

Fossil Fuels and Environmental Geochemistry Institute

University of Newcastle-upon-Tyne

Drummond Building

NEW CASTLE UPON TYNE NE1 7R4

United Kingdom

PRESERVATION SCALE

E. Williams, Convener

UNOCAL Sciences & Technology Division

P. O. Box 76

BREA, CA 92621

U.S.A.

ORGANIC PETROLOGY TERMINOLOGY

J. Marshall, Convener

Department of Geology

University of Southampton

Highfield SOUTHAMPTON S09 5NH

United Kingdom

GEOCHEMISTRY

P. R. Van Bergen, Convener

L. P. P. Foundation

University of Utrecht

Heidelberglaan 2

3584 CS UTRECHT

The Netherlands

THERMALLY ALTERED MATERIALS

R. Witmer, Convener

UNOCAL Science & Technology Division

P.O. Box 76

BREA, CA 92621

U.S.A.

INCIDENT LIGHT (FLUORESCENT AND WHITE LIGHT) LEVEL

(Proposed subgroups: Woody, Structured debris, Opaque, Amorphous)

M. Collinson, Co-convenor

Biosphere Sciences Division

Kings College

Camden Hill Road

LONDON W8 7AH

United Kingdom

P. van Veen, Co-convenor

Norsk Hydro Research Center

P.O. Box 4313

15028 BERGEN

Norway



From The Bulletin of the Atomic Scientists.

Letter to the Editor

[Editor's note: The following is excerpted from a letter from regarding renewal of TSOP membership. Anyone wishing to respond to Dr. Falcon's request for teaching and training aids can write to her at: P.O. Box 41086; Craighall, Johannesburg 2024, South Africa; Phone: (011) 484-3192 783-4231 (Voice) or (011) 883-9611 484-3193 (Fax). P.S. It's nice to hear from y'all]

Dear fellow TSOP Members,

Membership of TSOP has been very interesting and rewarding, and I certainly want it to continue. As you may imagine, we are very isolated geographically here (amongst other things), and we play a difficult and sometimes losing battle to bring information into the region for general uplift and training. One of my personal interests is to keep in touch with all the geological surveys in the rest of the region of South and southern Africa, and keep them posted on general topics of regional interest. In this regard, I am privileged to be associated with a number of centres of development and research in Europe, covering various fields of interest, but much of the information currently available is not necessarily applicable to Africa. We, therefore, need to act as something of a clearinghouse at times e.g. noting the differences in our coals and [associated] technological problems.

At present I am attempting to establish a centre for solid fossil fuel characterization at a Technikon (aspiring technical university) in which all the newly emerging peoples of the region could have access to information, R/D, and training. Money is almost totally lacking, and we do need a great deal of help - both to achieve our practical goals, and to introduce "first world" technology and concepts (environmental and solid fossil fuel-related) into an industry long stagnant through isolation and ignorance (with some notable exceptions, as alluded to above). Towards this end, I would be very interested in discussing any teaching or training aids, at both university and technikon levels that anyone may have to offer.

*Kindest regards,
Dr. Rosemary Falcon*

4.4.4.

TSOP Publications

The publications listed on the following page are presently available through The Society for Organic Petrology. Members are encouraged to order these items for

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NEWSLETTER

Vol. 8, No. 3

September, 1991

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NEWSLETTER

Vol. 8, No. 3

September, 1991

Corrections to Membership Directory

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Houston, TX 77252-2189
Fax: 713-966-6310

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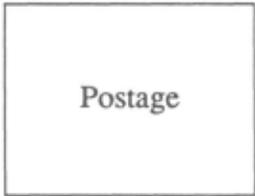
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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



**Editorial**EXPANDING OUR CONCEPT
OF ORGANIC PETROLOGY

One of the marvelous dichotomies of nature has to do with 'diversity' and 'oneness'. Our universe is at the same time far more varied yet far more uniform than is apparent at first glance. Confronted with chaos, scientists struggle to discover how the vast array of things in our world relate to one another. To a large extent this involves classifying, grouping, and systematizing--an enterprise which comes quite naturally to the human mind. We break things up into meaningful groups only to discover that nature doesn't always adhere to our systematics and taxa. Moreover, in some cases we can learn more by lumping things together, while in other cases we learn more by splitting things up. In some cases we notice the differences between things and fail to notice their similarities, while at other times we group things together, only to discover important differences that we failed to notice at first.

Over the past several decades, organic petrology has been moving simultaneously in two different directions--toward diversity and toward oneness. The classification and analysis of sedimentary organic materials has been progressing relentlessly toward greater and greater levels of complexity. The array of analytical methods at our disposal has given us greater powers than ever to resolve the differences between OM types; yet as we gain a broader understanding of the composition and origin of sedimentary OM, we find that many formerly distinct classes of substances are more alike than we first realized. Natural gases are sorbed into coal, coal generates bitumens, bitumens become oil, oil contains asphaltenes, asphaltenes resemble coal and generate gases; and so on.

At the same time formerly distinct disciplines are converging upon one another. Whereas at one time organic petrology may have meant microscopic description and classification, we now find that to satisfactorily investigate the nature of organic sedimentary materials requires an integration of many approaches, including microscopy, chromatography, and spectroscopy, among many others.

The history of how we describe and classify coal provides an excellent example this trend. At the most basic level, any person, even with no scientific training or vocabulary, could intuitively classify coal as a "black rock". The more astute observer, however, might further note (as did Marie Stopes in 1919) that coal is not uniformly black in color, but is comprised of alternating bands ("Ingredients", if

you will), of varying luster and brightness. Equipped with an reflected light microscope, the diligent researcher would further discover (as Marie Stopes reported in 1935) that each uniform band is itself comprised of a mixture of microscopic entities, and that these entities fall into three broad classes: dark-, medium-, and light gray. The proliferation of different "-inites" over the past few decades, provides testimony to the almost limitless possibilities of further classification. What started out in our eyes as a simple black rock is in actuality an incredibly complicated mixture of substances, giving rise to the arcane discipline of coal petrography.

At the other end of the spectrum we have a wonderful analog to the fabled "blind men examining the elephant". The elephant in our case is sedimentary organic matter. Each investigator of has his/her own unique, limited perspective, yet each is examining different aspects of the same 'beast'. On one hand we have the steel company coal petrologist trying to learn what makes a good coking coal and on the other hand the oil company geochemist trying to understand what makes a good source rock; and it turns out that they're both studying the same thing.

Philosophy and rhetoric aside, what do these trends mean to us as organic petrologists and, more important, what do they mean for TSOP?

1) First, we should take the broadest possible view of the term "organic petrology". The AGI Glossary of Geologic Terms, defines "petrology" as "*that branch of geology dealing with the origin, occurrence, structure, and history of rocks. Petrology is broader in scope than petrography, which is concerned with the description and classification of rocks.*"

Thus, (organic) petrology, broadly defined, includes virtually all aspects of the study of (OM-bearing) rocks and should include all possible analytical methods.

2) Second, we should proclaim loudly that *The Society for Organic Petrology* is an organization for all aspects of our science, not just microscopy. Just as microscopy and geochemistry are indispensable elements of conventional petrology, they are indispensable aspects of organic petrology as well. Therefore, TSOP is as much a society for geochemists as it is for microscopists.

As individuals, we may be unwilling or unable to expand our view in this manner, but as a Society it is essential.

3) Thirdly, we must work as individuals to increase our knowledge and understanding of all aspects of organic

(continued on p. 2)

The TSOP Newsletter

Jeffrey R. Levine, Editor

The *TSOP Newsletter* (ISSN 0743-3816) is published quarterly by The Society for Organic Petrology and is distributed to Society members as part of their annual membership dues. Membership in the Society is international and is open to all individuals having an interest in organic petrology. For more information, call or write: David C. Glick, TSOP Membership Chair, Energy and Fuels Research Center, 205 Research Building E, Penn State University, University Park, PA 16802 U.S.A. Phone: 814-865-6543, Fax: 814-865-3573.

The Newsletter welcomes contributions from both TSOP members and non-members alike on timely topics of interest to its members. Items submitted on computer diskette are preferred over printed or faxed materials. DOS diskettes are preferred, but Macintosh format is acceptable. Files formatted in MS Word for DOS are preferred, but Word for Windows, WordPerfect, Wordstar, or Multimate are acceptable, as are ASCII (non-formatted) text files. Send contributions to:

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1991-92 TSOP Council

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President Elect	Suzanne Russell
Secretary/Treasurer	Renee McLaughlin
Editor	Jeff Levine
Councilor (1990-92)	Ken Kuehn
Councilor (1991-93)	Martin Reinhardt

Deadline for March Newsletter

The next TSOP Newsletter is scheduled for publication in March, 1992. All items for publication should be submitted prior to March 1, 1992.

See above for information on submitting materials to the Newsletter for publication.

(continued from p. 1)

petrology, not just our own area. There is always the need for specialization, but the researcher with the biggest "tool kit" will be the one best prepared to ask the right questions and discover new relationships. The organic geochemist who regards optical microscopy as subjective 'hocus pocus' is overlooking one of our most powerful analytical faculties -- the uncanny ability of the human eye/brain to recognize, decipher, and interpret complex visual patterns. By the same token, the petrographer who doesn't know solvent extraction can complement his/her work, is at a considerable disadvantage in understanding (or even recognizing) phenomena such as suppressed reflectance and fluorescence.

4) Fourthly, we must continue to work toward cooperation, communication, and interdisciplinary collaboration in research applications.

Group efforts and interdisciplinary collaboration are a sign of the times in all aspects of science. Just a few years ago, my graduate alma mater (Penn State) offered three separate graduate programs in Geology, Geophysics, and Geochemistry and Mineralogy. Now there is a single Department of Geosciences. The most vital research program at Penn State is the Earth Systems Science center, offering a broadly interdisciplinary approach to complex natural systems.

TSOP was founded not very many years ago to satisfy some specific needs in the research community, relating mostly to optical microscopy; but as our science advances, TSOP's scope and mission has been evolving as well. So let us fully acknowledge these trends and stay on top of them, by recognizing our differences while emphasizing our oneness.

(Note: The views expressed in this column are not necessarily those of TSOP. -Ed.)

* * *

Criteria and Guidelines for TSOP Annual Meeting Site Selection

The TSOP Council utilizes a set of guidelines to establish an orderly and consistent policy for selecting a host city for the TSOP Annual Meeting. Members wishing to submit an invitation to host an annual meeting may obtain a copy of these guidelines from the Secretary-Treasurer of the Society. The guidelines include: (1) criteria considered by the Council in choosing a meeting site, (2) procedures for submitting a host city as a meeting site, (3) progress reporting schedule for local committee, and (4) post-meeting report

Sections (1) and (2) are excerpted here:

The Annual Meeting site is selected by the Council at an Annual or Mid-Year Meeting three years prior to the actual year of the proposed meeting. When the Council chooses a host city it also designates a local Committee Chairman or Co-Chairman.

Once it is decided by a member or group of members to nominate a city for an annual meeting site the application should be mailed to the Secretary-Treasurer at least one month prior to the Annual or Mid-Year Meeting at which the application will be received.

The nominating application should attempt to include:

1. Number of members willing to serve on the local committee.
2. Description of facility, hotel, motel with estimated room rate.
3. Proximity of housing to technical sessions.
4. Field trip proposal, if any.
5. Any anticipated problems or special arrangements because of proximity to transportation.
6. Theme of meeting, symposia, special programs.
7. Estimate of costs including registration fee, institutional assistance for printing, typing, mailing, etc.

Criteria considered by the Council in choosing a meeting site:

1. Accessibility of proposed site to major air routes; another country as some members object to leaving the U.S.
2. Proximity to former and planned host cities, keeping in mind geographic balance from meeting to meeting.
3. Is there an adequate number of enthusiastic members in the vicinity that want to host a meeting. Enthusiasm is exchangeable for numbers.
4. Adequacy of physical facilities university campus or hotel, size of town, entertainment, potential for field trips.
5. Suitability of environment.
6. Financial considerations - cost of housing and facilities, suitable student accommodations, total registration fees, etc.

The local committee should be aware of its obligation to the Council to report progress and plans during the three year cycle from nomination to actual meeting. The Council in turn grants nearly complete autonomy to the local committee in their decisions and meeting planning arrangements with the Council functioning primarily in a financial and advisory capacity.

* * *

Candidates Sought for TSOP Editor Position

Nominees for 1992 TSOP Council positions are currently being sought by the Nominating Committee. TSOP members interested in filling the position of Editor should contact the Committee as soon as possible.

The duties of Editor are described in the Bylaws, and principally involve compilation and publication of the quarterly Newsletter. While preparation of the Newsletter requires a modest investment of time, it can be very rewarding in many respects. The Newsletter is an important element of the TSOP's function. Editing the Newsletter keeps you well attuned to current activities in organic petrology and related disciplines. The Editor stays in frequent communication with fellow council members and researcher around the world. With desktop publishing tools now available, the Newsletter can provide outlet for your creative energy. The Editor attends all Council meetings and is closely involved with TSOP affairs.

Persons desiring additional information are encouraged to contact current Editor, Jeff Levine, or Nominating Committee Chair, Joe Senftle, ARCO Oil and Gas Company, 2300 West Plano Parkway, Plano, TX 75075 USA. Phone: (214) 754-6250 or fax (214) 754-6807.

Bylaws Committee Reactivated

The Bylaws Committee was reactivated at the Incoming Council meeting in Lexington. Serving on the committee are Brian Cardott (Chair), John Castano, and Jack Burgess. Several changes or additions to the Bylaws were proposed to Council this past year, including the following:

- the president of TSOP should be elected for a two-year term and/or include a new position of "past-president" on the Council
- the vice-presidential candidate should be selected by the presidential candidate as a running mate
- revise membership procedures; add category for 'Industrial Sustaining Members'; eliminate the requirement for two sponsors to be eligible for membership
- adopt formalized procedures in Bylaws for selection of annual meeting site

The Bylaws committee invites TSOP members with additional suggestions to contact Brian Cardott. The Committee will review all proposals and recommend any changes or additions to the Bylaws at the Mid-year council meeting in March.

Membership Report

New Members

The Society welcomes the following new members who joined at the annual meeting in Lexington:

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Fax: (606) 257-0302

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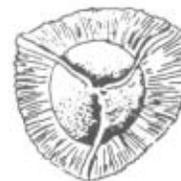
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* * *

TSOP member **Stan Paxton** is on assignment in Norway for nine months. He can be reached at the following address: Stan Paxton, Storhaufvn 21 A, 4014 Stavanger NORWAY; Phone: 011-47-4-529851.



Scenes from the 1991 Annual Meeting, Lexington, Kentucky

Top Left: Nearly 20 enrollees attended a the one-day workshop on density gradient centrifugation presented by Gary Dyrkacz (standing, to left of microscope), Darrell Taulbee, and Jack Crelling. Also in this photo are Art Cohen (seated), Stan Teerman, Brenda Claxton, Ray Pheifer, and Edward Stack; **Upper Right:** Field trip attendees examine a low-sulfur Pennsylvanian coal overlying an irregular erosional surface (Photo courtesy of Tom Demchuk, University of Calgary); **Left center:** Awards Committee Chairman Bob Rathbone presents Grzegorz Nowak, from Wroclaw, Poland, the award for the being the farthest traveled attendee at this year's meeting; **Right Center:** Invited lecturer Dr. Harry Marsh receives a gift from Jack Crelling in appreciation for his talk entitled, "New and Traditional Carbon Materials from Petroleum and Carbon Sources"; **Lower Left:** Bob Rathbone presents the award for "Best Student Paper" to Tom Demchuk of the University of Calgary for his paper co-authored with TSOP member Tim Moore, entitled, "Paleoecological Reconstruction of a Miocene Lignite, Kalimantan, Indonesia"; **Bottom Right:** Incoming President Sue Rimmer addresses the annual Business Luncheon, flanked by outgoing Vice President Dick Harvey, incoming Councilor Martin Reinhardt, Secretary/Treasurer Renee McLaughlin, Councilor Ken Kuehn, and incoming Vice President Brian Cardott.

A TSOPer's Guide to the ICCP

by Alan Davis, President, ICCP

In 1992, the (9th) annual meeting of The Society for Organic Petrology will be held in conjunction with the 44th meeting of the International Committee for Coal and Organic Petrology; so it is an appropriate time to provide TSOP members with a brief introduction to the objectives and activities of the ICCP, especially since only 58 members belong to both organizations.

Formed in 1953, the ICCP now includes members from 35 countries. Originally called the International Committee for Coal Petrology, the ICCP added "and Organic" to its title at the recent meeting in Brazil, but retained its well-known abbreviation.

The prime objective of the ICCP has been to establish uniform terminologies and analytical procedures for the microscopic investigation of coals, petroleum source rocks and oil shales. Typically, ICCP meetings have few if any individual technical papers as would be given at TSOP or GSA meetings, for example. Instead the sessions are composed of the activities of Working Groups made up of interested individuals. During these sessions and under the direction of its convenor, each Working Group discusses the results of any ring analyses and tries to reach a consensus on terminology and methods. An ultimate goal of these efforts is the publication of Information Sheets which can be used to achieve uniformity in the practice of organic petrology. The ICCP has been responsible for formalizing definitions of the maceral terms which are the basis of our science. Several of the original terms (for example, "maceral", "vitrinite" and "fusinite") were included in the 1957 edition of the International Handbook of Coal Petrology. Since then, there has been a Second Edition (1963) and Supplements to the Second Edition (1971 and 1975). In addition to the Stopes-Heerlen classification system the Handbooks cover the microlithotype terms, the U.S. Bureau of Mines (Theissen) classification, the Russian genetic classification, the Spackman terminology, and the terminology used for low-rank coals. Important analytical methods are also described. A third Supplement will shortly be available and will include some new terms which are particularly appropriate to studies of dispersed organic matter, and a terminology for liquefaction residues. An ambitious project has just begun to produce an entirely new Handbook (the Third Edition) in which existing terms would be redefined or redescribed in accordance with the current state of knowledge including organic geochemical information.

Another recent initiative which the ICCP has set in motion is an accreditation scheme through which laboratories would be certified as being capable of conducting common

petrographic analyses according to ICCP standards of accuracy.

The activities of the ICCP are divided into three Commissions, which together with their constituent Working Groups are as follows:

Commission I (General Coal and Organic Petrology, Chairman: Eva Wolff-Fischer)

Current working groups are:

- Standardization of Maceral and Reflectance Analysis
- Standardization of Fluorescence Analysis
- Laboratory Accreditation Scheme
- Gondwana Coals
- Reactive Inertinite
- Saprovitrinite
- Brown Coal Lithotypes

Commission II (Application of Organic Petrology to Geology, Including the Prospecting for Oil and Gas, Chairman: Joe Senftle)

Current working groups are:

- Round Robin Analysis of Dispersed Organic Matter
- Isolation of Dispersed Organic Matter
- Thermal Indices
- Alginite

Commission III (Application of Coal Petrology to Utilization, Chairman: Claus Diessel)

Current working groups are:

- Combustion
- Automated Analysis
- Coke Textures
- Reactive Inertinite
- Hydrogenation Residues

Reaching common ground is not easy in areas where there is a wide diversity of philosophies and practice. However, the process is necessary if we are to be able to understand and/or duplicate one another's results. If you would like to play a role in this consensus-reaching process, then you should consider joining the ICCP. At one time only one representative per country was accepted into the ICCP as a voting member (hence "committee"). Now any practicing petrologist is welcome as an Associate Member; Full Membership requires 5 years of experience and active involvement in ICCP affairs. The membership fee is \$30 a year or \$60 for three years paid in advance. Please write to

me as Acting Secretary if you would like to receive an application form. If you are interested in obtaining the reprinted 1963 Handbook or any of the Supplements, please write to Prof. D.G. Murchison, Newcastle Research Group in Fossil Fuels and Environmental Geochemistry, The University, Newcastle upon Tyne NE1 7RU, U.K.

Finally, whether you are an ICCP member or not you will be welcome to attend the 1992 meeting which will immediately precede the TSOP meeting at University Park, Pennsylvania in July. All TSOP members already should have received the first circular about this meeting. I hope to see many of you there.

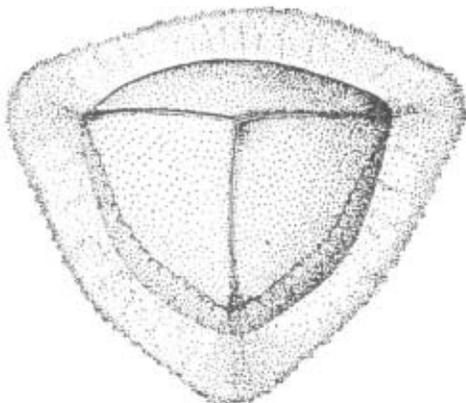
-Alan Davis
Penn State University

* * *

Call for Proposals for 1993 Short Course

The Organizing Committee for the 1993 Annual TSOP meeting in Norman, Oklahoma is inviting any interested TSOP members to submit proposals or suggestions for a short course or workshop to be held in conjunction with the meeting. Interested persons should contact:

Brian Cardott
Oklahoma Geological Survey
100 E. Boyd Street, Rm. N-131
Norman, OK 73019-0628



Second Announcement And Final Call For Papers:

1992 TSOP ANNUAL MEETING

UNIVERSITY PARK, PENNSYLVANIA
JULY 23-24, 1992

The Ninth Annual Meeting of The Society for Organic Petrology (TSOP) will be held on the campus of The Pennsylvania State University, July 23-24, 1992. This year's meeting will be held immediately following the 44th meeting of the International Committee for Coal Petrology (ICCP) which is being held July 19-23, also at Penn State. An ICCP-TSOP joint field trip to the Pennsylvania Anthracite district is planned for Saturday, July 25.

The 1992 TSOP meeting format will include a poster session (on the evening of July 23) and 20 min. oral presentations (July 24). The organizers wish to compile a wide variety of posters/papers concerning new research in organic petrology and organic geochemistry. Extended abstracts (2-3 pages including figures) will be accepted anytime before March 31, 1992 and should be mailed to Scott Stout (see below). Abstracts are welcomed on floppy disks preferably as a MS Word or text/ASCII file. As in previous years, authors will be requested to submit papers for publication in a special issue of *Organic Geochemistry*. Completed manuscripts will be required before September 31, 1992.

This year's shortened technical program necessitates that not all papers submitted for oral presentation can be accepted. Thus, the organizers encourage flexibility in the form of your presentation (poster *versus* oral presentation). Please indicate if you prefer to present, or are amenable to presenting, a poster.

Look for registration information and forms in the next TSOP newsletter.

Questions should be addressed to the meeting's organizers; (1) Scott Stout (Unocal, PO Box 76, Brea, CA; 714-528-7201), (2) Jim Hower (Ctr. Applied Energy Res., Univ. of Kentucky, 3572 Iron Works Pike, Lexington, KY 40511; 606-257-0261), (3) Joe Senftle (Arco Oil and Gas Co., 2300 W. Plano Pkwy., Plano, TX; 214-754-6256) and (4) Alan Davis (Energy and Fuels Research, Penn State Univ., 205 Research Building E, University Park, PA, 16802; 814-865-6544).

-Scott Stout
Unocal
Brea, CA

Scientific Communication**AN UPDATE ON THE SUPPRESSION
OF VITRINITE REFLECTANCE**

by Charles E. Barker

U.S. Geological Survey, Denver, Colorado USA
and theDepartment of Geology and Geophysics
The University of Adelaide, Adelaide, South Australia**INTRODUCTION**

Suppression of vitrinite reflectance describes the systematic decrease in the sample reflectance relative to: (1) the reflectance of a closely associated unsuppressed vitrinite with a similar diagenetic history; or (2) a reasonably comparable but unrelated vitrinite standard or (3) a prediction from a maturation model. Suppression is usually detected as a local reduction of vitrinite reflectance from a fitted line representing the "normal" maturation profile, along or across an outcrop, or down a well. Suppression should be invoked only when the sample reflectance level is less than that of a petrographically similar type of humic sedimentary organic matter (SOM). Comparison of petrographically similar SOM is necessary because it is now widely recognized that different SOM (for example, sulfur-rich DOM, or coal versus DOM) can follow significantly different, but more or less predictable maturation paths (Robert, 1988; Goodarzi et al., 1988; Murchison et al., 1991). Thus, the concept of vitrinite reflectance suppression can be generalized as the is the systematic divergence from these maturation paths attributable to bio- and geo-chemical changes within the SOM not related to differences in pressure-temperature (P-T) history (reviewed by Hodges, 1991) which are now recognized as the expected controlling factors in maturation (reviewed by Teichmuller, 1987; for an example, see Law et al., 1989). At a constant maturation, increasing pressure is observed as an increasing vitrinite bireflectance.

The other significant (but mostly second order) geological controls on vitrinite reflectance include: (1) venue (i.e. coal versus DOM); (2) vitrinite submaceral; (3) host rock lithology (only for DOM); (4) the roof and floor rock lithology bounding a coal seam; (5) weathering; (6) change in organic facies; (7) the path of early diagenesis; (8) as well as provincial variation of vitrinite properties, and changes in plant communities with time. Each of these has been recently reviewed or reconfirmed, and will not be dealt with extensively in the present review (Jones et al., 1984; Price and Barker, 1985; Teichmuller, 1987; Robert, 1988; Goodarzi et al., 1988; Middleton, 1990; Costa Neto, 1991; Domine, 1991; Mastalerz, 1991; Murchison et al., 1991; and Ross et al., 1991).

The present review focuses on new developments in the study of suppression of vitrinite reflectance, namely: (1) the development of quantitative methods of correction to a unsuppressed vitrinite standard; (2) the recognition that the retention of bitumen in the vitrinite, rather than bitumen or oil impregnation (i.e. migration into) into the microporous vitrinite structure probably causes suppression; (3) an emphasis that post-polishing degradation and reduction in reflectance of the exposed vitrinite surface can be accelerated by exposure to ultraviolet (UV) light in air; (4) that microbial alteration of vitrinite can potentially reduce its reflectance (5) that it is not tenable to attribute suppression to a short heating duration preventing maturation equilibrium from being established, because new evidence suggests that vitrinite reacts very quickly to increased temperature and maturation rapidly stabilizes at peak temperature.

**QUANTITATIVE CORRECTION OF VITRINITE
REFLECTANCE SUPPRESSION**

Vitrinite is generally not fluorescent. However, perhydrous varieties of vitrinite are usually fluorescent with a dull red brown to brown (Robert, 1988) to dull orange or green emission (Cook et al., 1985) under UV excitation. Perhydrous vitrinite may also show a larger bireflectance at low maturation (Teichmuller, 1987). It has long been known that the higher the autofluorescence of vitrinite, the greater the suppression of reflectance, with reductions in mean random vitrinite (telocollinite) reflectance (R_v) on the order of 0.2-0.4% R_v observed (Robert, 1988). Primary vitrinite fluorescence is lost by 0.45% R_v but it is soon replaced by a secondary fluorescence that persists to 1.8% R_v (Teichmuller and Durand, 1983). By correlating suppression with a fluorescence parameter, it is possible to correct for the amount of suppression in a given sample.

Primary fluorescence of vitrinite is quickly lost during maturation so it has restricted use as a parameter for correction of suppression. Secondary fluorescence and in particular its alteration with time during illumination under the microscope is more predictable (Davis et al., 1990) and thus more useful as a parameter to correct for suppression. Secondary fluorescence intensity changes by increasing or decreasing (termed positive or negative alteration, respectively) during observation under the microscope, but in either case, approaches a final intensity level. The quantitative correction techniques developed so far use this final fluorescence intensity level as the fluorescence parameter to empirically correct for suppression. Quick (1989) developed this technique using conventional microscope light sources but the method was initially limited by the lack of easily obtainable fluorescence intensity standards. Such standards are now available (Davis et al., 1990; Baranger et al., 1991) alleviating this problem and promising a widely available correction technique. Wilkins et al. (1991) have developed a

sophisticated technique using a laser Raman microprobe to measure both intensity and alteration of vitrinite fluorescence in order to compute a quantitative correction for suppression of vitrinite reflectance.

Correction of R_v for suppression may also be possible using nuclear magnetic resonance (NMR) and coal petrography. Carr and Williamson (1990) discuss a empirical method that could be used to compute a R_v by using NMR to estimate the aromatic fraction in coals (another maturation parameter) and incorporating a correction factor that considers the maceral composition content of the SOM.

POSSIBLE CAUSES FOR SUPPRESSION

Bitumen Retention

Suppression of vitrinite reflectance has been attributed to bitumen impregnation (for instance, Walker et al, 1983). However, Robert (1988) points out that vitrinite in oil-saturated reservoir rocks are commonly not fluorescent so impregnation of bitumen into vitrinite seems unlikely. It now appears that suppression of vitrinite reflectance is caused by the retention of bitumen generated within vitrinite (Lin et al., 1986; Teichmuller, 1987; Littke and Ten Haven, 1989). Bitumenization of vitrinite has been recognized as the characteristic chemical process in the maturation range of oil generation (Teichmuller, 1987). Vitrinite retains bitumen internally until some saturation threshold is exceeded (Hagemann and Pickel, 1991) and at this level bitumen (exsudatinite) would be expulsed. Thus, as retention of bitumen reduces R_v , zones of oil generation would be expected to have a minimal R_v . This relationship fits with the suppression of vitrinite reflectance being widely reported in rocks of lower maturity-and that exsudatinite (a migrated bitumen) associated with vitrinite is commonly observed with suppressed reflectance. Hutton and Henstridge (1985) clearly demonstrate in a study of a contact metamorphosed oil shale that maximum bitumen levels coincide with the lowest vitrinite reflectance.

Post-polishing Changes

Oxidation by exposure to air occurring after sampling and especially after polishing can also have a significant effect. The reflectance of naturally oxidized coals is typically reduced (Bustin et al, 1983) so presumably oxidation in the laboratory would have the same result. Exposure to UV light in air enhances oxidation of polished coal surfaces (Davis et al., 1991). A reduced reflectance can also be caused by preexisting bitumen or oil exuding from polished sections or it being generated by SOM alteration during microscope illumination within the UV band (such as smear films, Teichmuller, 1987; Davis et al., 1990). All of these problems

can be minimized by reading a sample immediately after polishing and reducing UV exposure as much as possible.

Microbial Alteration

The signature of microbial alteration is an anomalously high H/C ratio for a humic SOM at that maturity (Price and Barker, 1985; Jones, 1987; Teichmuller, 1987; Littke and Ten Haven, 1989). Any process that increases the H/C ratio of a vitrinite can potentially cause reflectance to be suppressed. Microbial alteration of vitrinite can be difficult to detect using the optical microscope because of the scale of the activity but can be detected by transmission electron microscopy (Taylor and Liou, 1987a,b). Taylor and Liou suggest that microbial alteration produces lipid bodies within vitrinite accounting for its fluorescence. Many geochemical studies also report that microbial alteration produces changes in the chemical structure indicated by biomarkers and other organic compounds, nuclear magnetic resonance, and carbon isotope shifts in the methane associated with the SOM.

Maturation Equilibrium

The concept of maturation equilibrium (also termed rank equilibrium; Teichmuller, 1987) is based on the supposition that a considerable amount of time is needed for vitrinite to respond to temperature increase and reach the appropriate maturation level. Thus, this theory suggests that after temperature increase, vitrinite reflectance is lower than expected, until maturation equilibrium is restored. This concept of suppression is commonly invoked when lower than expected maturation is sometimes found in rocks that are thought to have been rapidly heated-often reported in rocks found adjacent to igneous intrusions or rapidly buried rocks (Teichmuller, 1987). The perception that rank is too low results from the rule of thumb that the contact metamorphic zone is a simple function of the intrusion dimension (for instance 1 or 2 times an intrusive sheet thickness). However, it has become apparent that the thermal effects of intrusions are complex, and often limited to a much narrower, or in some cases a much wider zone, than expected (Reeckman and Meeberson, 1984; Snyman and Barclay, 1989; Raymond and Murchison, 1991). In the natural cases where peak temperature and heating duration are measured rather than estimated it has been demonstrated that maturation equilibrium is attained very rapidly during moderate to high temperature diagenesis (Robinson et al., 1987; Barker and Goldstein, 1990; Barker, 1991).

DISCUSSION

Pseudosuppression Caused by Faulty Laboratory Procedure

A vitrinite reflectance measurement is ideally based upon recording the proportion of light reflected from a perfectly polished planar surface on a sample grain (unaltered since reaching peak maturation) that is mounted perpendicular to the incident light. Any divergence from these ideals can cause a reduced vitrinite reflectance. Thus, when vitrinite reflectance suppression is suspected, it is prudent to assure that the common sampling and laboratory effects (Dembicki, 1984) that cause errors in vitrinite reflectance measurements have not influenced the reduced reflectance. Polish defects, such as common scratching or surface relief are obvious, and indicate repolishing of the sample mount is required. Poor polish is particularly common in immature coals that can have soft porous vitrinite or in mineral-matter rich coals.

Implications of Suppression to Vitrinite Selection

The recognition that suppression of vitrinite reflectance is widespread requires a change in the way vitrinite is selected for measurement. The possibility of suppressed vitrinite reflectance negates the "low gray" concept of selecting vitrinite for measurement. The lowest gray vitrinite in many rocks is possibly the most suppressed, and thus, the least appropriate first-cycle vitrinite one could select to measure maturation. The low gray group also tends to include weathered grains and vitrinite with porous or soft, poorly polished surface grains that should also be excluded from measurement.

The potential error in measuring the low gray vitrinite can only partly explain the lack of reproducibility of reflectance measurements between laboratories (Dembicki, 1984). The inaccuracy in vitrinite reflectance in some instances may be due to measuring solid bitumen which below 0.9%R_v has a lower reflectance than vitrinite (Jacob, 1989). This is always a potential problem in rocks less than 0.9%R_v that contain DOM with highly gelified, homogenous vitrinite resulting from the bitumenization process described above, which can be similar in appearance to solid bitumen. In rocks above 0.9% R_v, solid bitumen can still be introduced into the rock after peak temperature has been reached. This later bitumen will have a lower maturity (and reflectance), as a consequence of experiencing lower temperatures, that can also be misidentified as the low gray vitrinite.

Requirements For Accurate Reflectance Measurement

The vitrinite identification problem can be partially solved by petrographic study of whole rock mounts (Teichmuller, 1987) rather than preparing SOM concentrates. In SOM rich rocks, a whole rock mount may also present enough vitrinite for an adequate number of measurements. In

SOM lean rocks, both whole rock and concentrate mounts may be necessary to allow proper vitrinite identification and an adequate number of reflectance measurements. The operator probably should measure all SOM grains in the mount and pick the representative vitrinite peak rather than edit selections- at the microscope and not report the complete reflectance population for assessment.

The most reliable estimate of maturation based solely on vitrinite reflectance is obtained from mounted whole-rock samples (Teichmuller, 1987) that contains abundant pieces of well polished vitrinite (telocollinite) in coals not influenced by brackish water and marine depositional environments, and which contain little or no liptinite and(or) perhydrous vitrinite. However, extreme caution should be used when assigning a maturation level based solely on one maturation parameter as all the maturation parameters can be more or less suppressed (Price and Barker, 1985; Tissot et al., 1987; and many others). Other maturation indicators, especially those based on associated minerals should be considered (Frey, 1987; Naeser and McCulloh, 1989; Nuccio and Barker, 1989, 1990; Barker and Goldstein, 1990).

CONCLUSIONS

Proper identification of suppression and its causes is becoming more important as very detailed studies of vitrinite reflectance, such as those using closely spaced borehole samples, become prevalent. These studies in general show local changes in vitrinite reflectance are a reflection of systematic changes in the system not, as previously thought, a result of spurious sampling or measurement. Many of the small divergences of vitrinite reflectance from the maturation profile, such as that indicated by a regression line are significant, but we can only accept them as real after assuring that they are not induced by sampling or measurement errors. Correction of suppression by quantitative correction techniques will aid in this realization.

The economic significance of vitrinite reflectance suppression is as an indication of perhydrous oil-prone source rocks (Walker et al., 1983) and coal (Bertrand, 1989). Certainly, any petrographic assessment of maceral composition to determine oil generation capacity should include the proportion of perhydrous (fluorescent) vitrinite. Finally, because most (all?-Wilkins et al., 1991) marine source rocks will show suppressed vitrinite reflectance, those sedimentary systems previously thought to be marginally mature based solely on vitrinite reflectance data should be reevaluated. Consequently, it also may be necessary to reevaluate the limits of the oil window in marine rocks.

REFERENCES CITED

- Baranger, R., Martinez, L., Pittion, J.-L., and Pouleau, J., 1991, A new calibration procedure for fluorescence measurements of sedimentary organic matter: *Org. Geoch.*, v. 17, p. 467-475.

- Barker, C.E., 1991, Implications for organic maturation studies of evidence for a geologically rapid increase and stabilization of vitrinite reflectance at peak temperature: Cerro Prieto Geothermal System, Mexico: *American Association of Petroleum Geologists Bulletin*, v. 75, no. 12, p. 1852-63.
- Barker, C.E., and Goldstein, R.H., 1990, Fluid-inclusion technique for determining maximum temperature in calcite and its comparison to the vitrinite reflectance geothermometer: *Geology*, v. 18, p. 1003-1006.
- Bertrand, P.R., 1989, Microfacies and petroleum properties of coals as revealed by a study of North Sea Jurassic coals: *International Journal of Coal Geology*, v. 13, p. 575-595.
- Bustin, R.M., Cameron, A.R., Grieve, D.A., and Kalkreuth, W.D., 1983, *Coal Petrology Its Principals, Methods, And Applications*: Geological Assoc. of Canada Short Course Notes, v. 3, 230 p.
- Carr, A.D., and Williamson, J.E., 1990, The relationship between aromaticity, vitrinite reflectance and maceral composition of coals: Implications for the use of vitrinite reflectance as a maturation parameter: *Organic Geochem.*, v. 16, p. 313-323.
- Cook, A.C., Smyth M., and Vos, R.G., 1985, Source potential of upper Triassic fluvio-deltaic systems of the Exmouth Plateau: *APEA Journal*, v. 25, p. 204-215.
- Costa Neto, C., 1991, The effect of pressure on geochemical maturation: theoretical considerations: *Org. Geoch.*, v.17, p.579-584.
- Davis, A., Rathbone, R.F., Lin, R., and Quick, J.C., 1990, Observations concerning the nature of maceral fluorescence alteration with time: *Organic Geochemistry*, v. 16, p. 897-906.
- Dembicki, H., Jr., 1984, An interlaboratory comparison of source rock data: *Geochim. et Cosmochim. Acta*, v. 48, p. 2641-2649.
- Dominé, F., 1991, High pressure pyrolysis of n-hexane, 2,4-dimethylpentane and 1-phenylbutane. Is pressure an important geochemical parameter?: *Organic Geochem.*, v. 17, p. 619-634.
- Frey, M., ed., 1987, *Low Temperature Metamorphism*: Blackie, Glasgow, 351p.
- Goodarzi, F., Gentzis, T., Feinstein, S., and Snowdon, L., 1988, Effect of maceral subtypes and mineral matrix on measured reflectance of subbituminous coals and dispersed organic matter: *Int. Journal of Coal Geology*, V. 10, p. 383-398.
- Hagemann, H.W., and Pickel, W., 1991, Characteristics of Upper Cretaceous coals from Enugu (Nigeria) related to bitumen generation and mobilization: *Org. Geoch.*, v. 17, p. 839-847.
- Hodges, K.V., 1991, Pressure-temperature-time paths: *Annual Review of Earth and Planetary Sciences*, v. 19, p. 207-236.
- Hutton, A.C., and Henstridge, D.A., 1985, Pyrolysis of Tertiary oil shale by a dolerite intrusion, Stuart Deposit, Queensland, Australia: *Fuel*, v. 64, p. 546-552.
- Jacob, H., 1989, Classification, structure, genesis, and practical importance of natural solid oil bitumen ("migrabitumen"): *International Journal of Coal Geology*, v. 11, p. 65-79.
- Jones, J.M., Davis, A., Cook, A.C., Murchison, D.G., and Scott, E., 1984, Provincialism and correlation between some properties of vitrinites: *Int. Journal of Coal Geology*, V. 3, p. 315-331.
- Jones, R.W., 1987, Organic Facies, in Brooks, I., and Welte, D., eds., *Advances in Petroleum Geochemistry*, v. 2, p. 1-90.
- Law, B.E., Nuccio, V.F., and Barker, C.E., 1989, Kinky vitrinite reflectance profiles: evidence of paleopore pressure in lower-permeability gas-bearing sequences in Rocky Mountain foreland basins: *American Association of Petroleum Geologists Bulletin*, v. 73, p. 999-1009.
- Lin, R., Davis, A., Binsley, D.F., and Derbyshire, F.J., 1986, Vitrinite secondary fluorescence: its chemistry and relation to the development of a mobile phase and thermoplasticity in coal: *International Journal of Coal Geology*, v. 6, p. 215-228.
- Litke, R., and ten Haven, H.L., 1989, Palaeoecologic trends and petroleum potential of Upper Carboniferous coal seams of western Germany as revealed by their petrographic and organic geochemical characteristics: *International Journal of Coal Geology*, v. 13, p. 529-574.
- Mastalerz, M., 1991, Variation of vitrinite reflectance in a vertical seam section. An example from the Intrasudetic basin, SW Poland: *Bull. Soc. géol. France.*, v. 162, p. 175-182.
- Middleton, M.F., 1990, Tectonic influence on vitrinite reflectance: *International Journal of Coal Geology*, v. 16, p. 235-237.
- Murchison, D.G., Pearson, J., and Raymond, A.C., 1991, Anomalies in vitrinite reflectance gradients: *Bull. Soc. géol. France*, v. 162, p. 183-191.
- Naeser, N.D., and McCulloh, T., 1989, *Thermal History of Sedimentary Basins*: Springer Verlag, Berlin, 319 p.
- Nuccio, V.F., and Barker, C.E., 1989, Application of thermal maturation studies to energy exploration, in Lorenz, J.C. and Lucas, S.G., eds., *Energy Frontiers in the Rockies: Rocky Mountain Section, AAPG*, p. 111-120.
- Nuccio, V.F., and Barker, C.E., 1990, eds., *Applications of Thermal Maturation Studies to Energy Exploration: SEPM, Rocky Mountain Section, Special Publication 2*,
- Price, L. C, and Barker, C. E., 1985, Suppression of vitrinite reflectance in amorphous rich kerogen—a major unrecognized problem: *Journal of Petroleum Geology*, v. 8, no. 1, p. 59-84.
- Quick, J., 1989, *Proceedings, Third Coal Research Conference*, Wellington, New Zealand, p. 1-12.
- Raymond, A.C., and Murchison, D.G., 1991, The relationship between organic maturation, the widths of thermal aureoles and the thicknesses of sills in the Midland Valley of Scotland and Northern England: *Jour. Geol. Soc, London*, v. 148, p. 215-218.
- Reeckmann, S.A. and Mebberson, A.J., 1984, Igneous intrusions in the North-West Canning basin and their impact on oil exploration, in Purcell, P.G., ed., *The Canning Basin, Western Australia. Proc. GSA/PESA Canning Basin Symp.*, p. 389-399.
- Robert, P., 1988, *Organic metamorphism and geothermal history*: Reidel, Dordrecht, Netherlands. 311 p.
- Robinson, D., Wade, D.N., and Burnett, R., 1987, Correlation between organic and inorganic thermal maturation indices in Palaeozoic basins of Britain, in Brooks, J., and Glennie, K., eds., *Petroleum Geology of North West Europe*, p. 235-244.
- Ross, J.V., Bustin, R.M., and Rouzaud, J.N., 1991, Graphitization of high rank coals—the role of shear strain: experimental considerations: *Organic Geochemistry*, v. 17, p. 585-596.
- Snyman, C.P. and Barclay, J., 1989, The coalification of South African coal: *Int. Jour. Coal Geol.*, v. 13, p. 375-390.
- Taylor, G.H. and Liou, S.Y., 1987a, TEM and coal structure, in Moulijn et al., eds., 1987, *International Conference on Coal Science*. Elsevier, Amsterdam, p. 29-32.
- Taylor, G.H. and Liou, S.Y., 1987b, Biodegradation in coals and other organic-rich rocks: *Fuel*, v. 66, p. 1270-1273.
- Teichmüller, M., and Durand, B., 1983, Fluorescence microscopical rank studies on liptinites and vitrinites in peat and coals, and comparison with results of the Rock-Eval pyrolysis: *International Journal of Coal Geology*, v. 2, p. 197-230.
- Teichmüller, M., 1987, Recent advances in coalification studies and their application to geology in Scott, A.C., ed., *Coal and Coal-bearing Strata: Recent Advances: Geological Society Special Publication 32*, p. 127-169.
- Tissot, B.P., Pelet, R., and Ungerer, Ph., 1987, Thermal history of sedimentary basins, maturation indices, and kinetics of oil and gas generation: *AAPG Bulletin*, v. 71, p. 1445-1466.
- Walker, A.L., McCulloh, T.H., Peterson, N.F., and Stewart, R.J., 1983, Anomalously low reflectance of vitrinite, in comparison with other source rock indices, from the Miocene Modelo Formation in the Los Angeles Basin, California, in Isaacs, C.M., and Garrison, R.E., eds., *Petroleum Generation and occurrence in the Miocene Monterey Formation, California: SEPM, Pacific Section, Los Angeles California*, p. 185-189.
- Wilkins, R.W.T., Russell, N.J., and Ningning, Z., 1991, The suppression of vitrinite reflectance—an important consideration in the determination of thermal maturity of organic matter for petroleum exploration in Australia: *Geological Society of Australia Abstracts no. 30*, p. 61-62.

Scientific and Technical Review**THE MANY FORMS OF CARBON**

by Harry Marsh

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and Energy Processes,
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Carbondale, Illinois

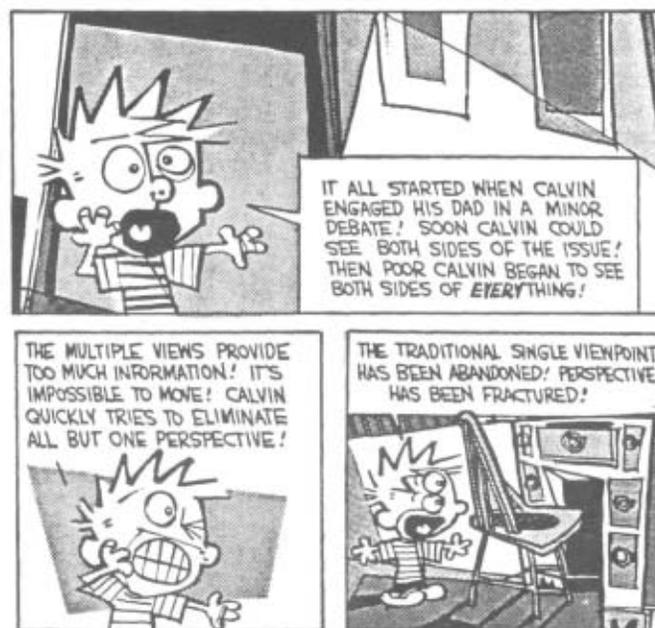
Carbon is a most ubiquitous element and shares its presence with both organic and inorganic chemistry. The carbonates, globally constitute a massive reservoir of fixed carbon. But it is the carbon in the vast carbonaceous reserves of coal, oil, shale and gas which is so vital to man's well-being. As an element, carbon is known in crystallographic form as diamond and graphite. Diamond is a jewel and has been admired for its sparkle for millennia. But it is graphite and graphite-related materials which are work-horses of the elemental form. Natural graphite had a short but communicative role as the sharp end of early pencils but lost this overnight with the advent of synthetic graphite.

Crystalline graphite is a layered (lamellar) structure with carbon atoms connected co-valently within the layers as conjugated six-membered rings systems. The synthetic polycrystalline graphites approximate to the ideal thing; at least they have three-dimensional order. But there exist many other carbon and graphite forms not resembling synthetic graphite at all, but based, structure-wise on the graphite lattice. How is this brought about? Imagine cutting the lamellae into smaller units, say nm size, keeping some quite flat, but crumpling others. When these units are 'joined' together, all flats together (graphitizable carbons) or all crumpled together (non-graphitizable carbons) they generate a family of carbon forms with a wide and (diverse range of properties and applications. For example, surface areas can vary from $<1 \text{ m}^2 \text{ g}^{-1}$ and this is only because of differences in modes of packing of those small pieces of the graphitic lamellae.

The new members of the family are the carbon fibers, with polyacrylonitrile (PAN) taking the lead and pitch-and mesophase-based fibres expanding. The carbon fiber composite, with polymer or carbon or metal, has an exciting existence in aircraft and related applications. Knowledge of the growth of the liquid-crystal mesophase gave a new impetus into the understanding of the carbonization process. This is seen in the better control of industrial delayed coking to provide the needle- and regular-cokes for the synthetic graphite and aluminum industries respectively. The traditional metallurgical coke can now be made from coals

blends which a few years ago would not have been possible. The active, porous carbons have a new lease of life as environmental control requirements and industrial processing require purifications and separations. The porous, absorbing carbon fiber is now in industrial production. Carbon is an excellent catalyst support medium.

Then there are the small volume, but high value forms of carbon. There are the carbon whiskers with an exciting future in composites. The graphitic and diamond-like films, on plastic substrates as an example, are a new development in material technology. The pyrolytic and glassy carbon, with interests as prosthetics have established themselves. The story, from outer-space, of the spherical fullerenes (bucky-balls), again based on the graphitic lamellae, is currently undergoing development. In the last two decades, traditional carbons have been modernized, and new forms are around. The world of carbon materials science is far from being an old-fashioned stagnant technology.



A Modest Proposal**"TSOP HANDBOOK OF ORGANIC PETROLOGY"**

[The following information was edited from a communication from Dr. P.K. Mukhopadhyay -Ed.]

During the past decade, the science of organic petrology (including both coal and dispersed organic matter) has contributed significantly to the understanding of the relationships between macerals and organic facies, generation and primary migration of crude oil/condensate/gas, coal liquefaction residues, and liquid hydrocarbon/methane genesis from coal. At present, three basic textbooks or handbooks are available providing general information in this *area*: *International Handbook of Coal Petrography (1971, 1975)*, *Stack's Textbook of Coal Petrology (1982)*, and *Coal Petrology Its Principles and Applications (Bustin et al., 1985)*. Several other important books dealing mainly with organic petrology are also available, containing compilations of short articles written by various authors. Most other publications on Organic Petrology are scattered in various international journals. Unfortunately there currently is no basic handbook for organic petrology covering: (a) morphology and genesis of dispersed organic matter in sediments (both kerogen and bitumen) according to maturation and their relation to hydrocarbon generation and primary migration, (b) proper identification criteria of various macerals used as maturation parameters (for example: allochthonous and autochthonous vitrinites in sediments other than coal), (c) coal related to liquid hydrocarbon generation and coal-bed methane study, (d) maceral-mineral associations and their environmental implication.

At the annual meeting in Lexington, an informal proposal was made to TSOP Council by Muki (P.K. Mukhopadhyay) regarding the possibility of publishing a *Handbook of Organic Petrology*. The idea of publishing such a reference handbook was first proposed to TSOP in 1985 and has been resurrected periodically since, then. TSOP Council members, including President (Sue Rimmer) and President-Elect (Suzanne Russell), showed interest in the idea, but suggested that a more detailed proposal be formulated. Sue Rimmer recommended that the proposed *Handbook* come under the auspices of the Research Committee. Accordingly, R. Lin and P. K. Mukhopadhyay will discuss the possibility of producing the handbook as a Subcommittee of the Research Committee with Muki as coordinator of the project.

Muki has prepared a preliminary outline for the proposed manual, which will be expanded or changed according to the views and comments received from other TSOP Members. Muki's proposal includes the following elements:

- The proposed handbook will be approximately 250 pages including 70 plates, about half of which will be in color. Each plate will include 4 photomicrographs. Photomicrographs will be 3" X 5", using a horizontal format. Extensive references on organic petrology will also be included. The tentative date of publication is late 1993/early 1994. The format will resemble that used for the *Limestone Depositional Environments (AAPG Memoir 33, Eds P. Scholle et al, 1983)* and *International Handbook of Coal Petrography (ed. ICCP, 1963, 1971)*. However, it should be hardbound in order to protect the plates.
- The first chapter will focus on dispersed organic matter in sediments (both kerogen and bitumen), including commonly used methods for the preparation of whole rock samples and concentrates. Description of macerals (both kerogen and solid bitumen) will follow. A set of photomicrographs will depict macerals in transmitted and reflected light, using both white and blue/UV excitation, on whole rock samples and concentrates. Emphasis will be placed on macerals that are important from the standpoint of hydrocarbon generation or primary migration. The complexities of maceral nomenclature will be avoided by using existing terms and simple morphological classification. If necessary macerals will be depicted at different maturities. The total number of plates for this chapter will be about 40, 25 of which will be in color.
- The next chapter will deal with maturation parameters, including reflectance of vitrinite, zooclasts, VLM, and solid bitumen, Thermal Alteration Index (TAI), and fluorescence of macerals (kerogen and bitumen). This will include description (with photomicrographs) to document how to choose proper grains for maturation studies (example: autochthonous and allochthonous vitrinite in sediments other than coal). This chapter will include 10 plates. 5 in color.
- The next chapter will focus on macerals in coal at various ranks from the standpoint of hydrocarbon generation (including both for liquid hydrocarbons and coal-bed methane). This will include 10 plates, 5 in color, illustrating liquid hydrocarbon generation potential of coal and the relationship between macerals, cleat system, and gas release.
- The next chapter will deal with mineral matter in coal, especially using SEM-EDX or microprobe studies. Similar to Chapter 1, the identification criteria for both macerals and minerals will be discussed in the opposite

facing page. About 10 plates will be included, 1 or 2 in color.

The final chapter will present a brief summary of references where organic petrology has been used in studies related to the organic geochemistry of source rocks and crude oil, liquid hydrocarbon generation from coal, coal-bed methane study, and the environmental implications of the coal minerals.

Many other aspects of organic petrology are not included in this proposed volume to avoid duplication of current or planned publications, such as the Glossary on Petrography of Canadian Coals, to be published at the end of 1993 by the Canadian Society for Coal and Organic Petrology.

A request will be sent to all TSOP members to submit photomicrographs for this handbook. The photomicrographs will be selected by the Committee for the *Handbook of Organic Petrology*. The committee may consist of 8 to 10 TSOP members. Each photomicrograph selected will include a photo credit to acknowledge the contributor.

Since preparation and publication of the proposed volume will entail cooperation and support of all TSOP members, the Research Sub-Committee on the *Handbook of Organic Petrology*, request that each of you critically review this proposal and send your comments and opinions either to Muki (Dr. P. K. Mukhopadhyay, Global Geoenergy Research Ltd., P.O.Box 9469, Station A, Halifax, Nova Scotia, Canada B3K 5S3) or to Dr. Rui Lin (UNOCAL, 376 S. Valencia Avenue, PO Box 76, Brea, CA 92621, USA). **PLEASE RESPOND PRIOR TO FEBRUARY 29, 1992.**

* * *

Errata on TSOP Publications

The order form for TSOP publications which appeared in the September, 1991 issue of the TSOP Newsletter contained a few errors. The Proceedings volume for the 5th Annual Meeting (Houston) was published as v. 17, no. 2 (not no. 3) of *Organic Geochemistry*. In addition, the proceedings volume for the 6th Annual Meeting (Urbana), published as v. 17, no. 4 of *Organic Geochemistry*, is for sale for \$25, but was not listed on the order form. Finally, the price for the TSOP Research Committee report on kerogen isolation from the Woodford shale is \$20, not \$10.

We apologize for any inconvenience.

* * *

Publications of Interest

SOURCE AND MIGRATION PROCESSES AND EVALUATION TECHNIQUES, edited by Robert K. Merrill, AAPG Treatise of Petroleum Geology Handbook, 200+ pages, Catalog #436, \$26

Newly published by AAPG, this book constitutes the first of the Treatise of Petroleum Geology Handbook series, intended to provide a complete guide to understanding and applying geochemical and migration processes to exploration.

The book is presented in three logical sections:

- (1) **Petroleum Generation and Migration**-featuring six papers: source rocks and organic facies, primary migration, source to trap migration, biodegradation and water washing effects on oil, modeling maturation and migration, example from North Sea.
- (2) **Geochemical Methods and Exploration**-featuring ten articles: geochemical exploration methods, geochemical techniques related to organic matter, stable isotopes, pyrolysis techniques, TDC analysis, vitrinite reflectance, wireline log evaluations, near surface geochemical prospecting, soilgas geochemistry in petroleum exploration.
- (3) **Glossary of Terms Applicable to Petroleum Geology**-28 pages of helpful definitions that make understanding geochemistry easier.

For more information or to order, contact: AAPG Bookstore, P.O. Box 979, Tulsa, OK 74101-0979, or call toll-free (800) 364-AAPG.

* * *

GEOLOGY IN COAL RESOURCE UTILIZATION (2 volumes), edited by Douglas C. Peters, published by TechBooks, ca. 700 pp., \$95.00

This 2-volume set is sponsored by the Energy Minerals Division of The American Association of Petroleum Geologists, but was published independently. The book's 37 papers were compiled to provide a comprehensive source of information on how geology and geologic concepts can be applied to the many facets of coal resource location, extraction, and utilization. This book is designed to provide an idea of the application and limitations of coal geology and related fields through general review-type papers as well as more specific case studies. The book is also designed to address the needs of the coal geologist, especially the mine geologist and geological technician, by providing case

histories from which specific techniques can be derived and a broad coverage of all subfields of applied coal geology.

The chapters in the book have been arranged to address the major coal geology subfields of: 1) Exploration and Reserve Definition, 2) Reserve Estimation, 3) Coalbed Methane, 4) Underground Coal Gasification, 5) Mining, 6) Coal Quality Concerns, and 7) Environmental Impacts, with papers distributed on the basis of their primary emphasis. Prefaces are included at the beginning of each chapter; these are intended as a brief lead-in to the subject of the chapter and an acknowledgement of the papers' connections to the subject. In addition, a brief "cross-reference" section has been included in each preface to help the reader find papers of interest in other chapters.

For additional information or to order, contact: TechBooks; 4012 Williamsburg Court; Fairfax, VA 22032; Phone: (800) 767-1518 or Fax: (703) 352-8862.

* * *

THE CHEMISTRY OF COAL MACERAL FLUORESCENCE: WITH SPECIAL REFERENCE TO THE HUMINTE/VITRINITE GROUP, by Rui Lin and Alan Davis, Special Research Report SR-122, The Pennsylvania State University Energy and Fuels Research Center, University Park, PA, 16802, 278 p., \$35.

In the early 1980s several papers were published, principally by researchers in Germany and France, which related fluorescence properties of coal to the evolution of the molecular structure during coalification. In a groundbreaking paper, Radke et al. (1980) correlated changes in the fluorescence spectra of macerals to changes occurring simultaneously in the composition of solvent extractable constituents. Although useful, the evidence from this work was largely circumstantial regarding the nature of the fluorophors and their molecular structure. Lin and Davis have gone directly to the heart of the matter in this study (based on Lin's dissertation research) aimed specifically at identifying the chemical structures and species responsible for primary and secondary fluorescence behavior of coal macerals.

Lin and Davis use as a cornerstone of their approach the two-phase model of coal structure. They trace the evolution of secondary fluorescence during coalification to the development of molecular phase components within the 'oil window'. The earlier loss of primary fluorescence at low rank, and the subsequent red-shift and quenching of fluorescence at high rank are clearly explained in terms of the evolving molecular composition and structure.

A suite of coals from the Penn State coal sample bank was used for the study, representing a rank range from peat through low volatile bituminous. Samples were measured by fluorescence microscopy, Soxhlet extraction in a variety of solvents, HPLC, and other methods as well.

Samples had already been extensively characterized by more standard analytical methods. Tables of data provide a wealth of potentially useful information. Molecular structures responsible for fluorescence are also discussed in some detail.

Although some of Lin and Davis's findings have already been published, this report provides a much more thorough, and very useful description of their work and findings. Also noteworthy are the 11 stunning color plates, which illustrate the fluorescence properties of selected macerals.

Copies of the report may be ordered at the address listed above.

-Jeff Levine
University of Alabama
Tuscaloosa, AL



TSOP Newsletter
December, 1991
Volume 8, No. 4

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Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
Tuscaloosa, AL 35487



THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 9, No. 1

March, 1992

ISSN-0743-3816



Photo Credit: University Photo/Graphics, Penn State University

The limestone statue of the Nittany Lion by Heinz Warneke has become a widely recognized symbol of Penn State University

PENN STATE '92

WELCOME!!

The 9th Annual Meeting of The Society for Organic Petrology will be held on Thursday and Friday, July 23 and 24, on the campus of The Pennsylvania State University. This year's meeting will commence immediately following the conclusion of the 44th meeting of the International Committee for Coal and Organic Petrology (ICCP) which will be held on the Penn State campus from July 19 through 23. The timing of these two meetings will allow many TSOP members their first opportunity to attend an ICCP meeting and *vice versa*. A large international turnout is anticipated for both meetings.

Five days of technical sessions, working sessions, and social functions are planned, concluding with a jointly sponsored field trip to the Pennsylvania Anthracite district. This joint meeting should provide a unique opportunity to make new friends and meet colleagues from around the world.

ICCP MEETING (July 19-23)

The ICCP meeting commences on Sunday, July 19 with registration at Keller Conference Center (5:00-8:00 p.m.) and a reception at University House on campus (7:00-10:00 p.m.). The provisional program calls for plenary sessions to be held on Monday (a.m.) and again on Thursday (p.m.). The three ICCP Commissions will meet throughout the week at the Keller Conference Center (See enclosed map). In addition to the regular sessions, each commission will feature a keynote address, organized in cooperation with TSOP.

Commission 1 (General Coal and Organic Petrology) - Mon. (p.m.); Tues. (a.m./p.m.); Thurs. (a.m.). The keynote address, entitled "The Need for Standardized Quantitative Fluorescence Methods in Petroleum Exploration", will be given by Carolyn Thompson-Rizer on Monday afternoon.

The TSOP Newsletter
Jeffrey R. Levine, Editor

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, call or write: David C. Glick, TSOP Membership Chair, Energy and Fuels Research Center, 205 Research Building E, Penn State University, UNIVERSITY PARK, PA 16802 U.S.A. Phone: 814-865-6543, Fax: 814-865-3573.

The Newsletter welcomes brief contributions both from TSOP members and non-members alike on timely topics pertaining to organic petrology. Items submitted on computer diskette are preferred over printed or faxed materials. DOS diskettes are preferred, but Macintosh format is acceptable. Files formatted in MS Word are preferred, but WordPerfect, Wordstar, or Multimate are acceptable, as are ASCII (non-formatted) text files.

Send Newsletter contributions to:

Jeffrey R. Levine
 Department of Geology
 University of Alabama
 TUSCALOOSA AL 35487
 Phone: (205)348-1587
 Fax: (205) 348-7612

The Society's permanent mailing address is:

The Society for Organic Petrology
 c/o Ron Stanton
 U.S. Geological Survey
 12201 Sunrise Valley Drive
 956 National Center
 RESTON VA USA 22092

1991-92 TSOP Council

President	Sue M. Rimmer
Vice-President	Brian Cardott
President Elect	Suzanne Russell
Secretary/Treasurer	Renee McLaughlin
Editor	Jeff Levine
Councilor (1990-92)	Ken Kuehn
Councilor (1991-93)	Martin Reinhardt

Commission 2 (Application of Coal and Organic Petrology to Geology, including the Prospecting for Oil and Gas) - Tues. (p.m.); Wed. (a.m./p.m.); Thurs. (a.m.). The keynote address, entitled "Relationship of the Molecular Fraction of Coal to Measurements of Porosity and Density-Implications Regarding the Role of Coal as a Petroleum Source Rock and Reservoir", will be given by Jeffrey R. Levine on Tuesday afternoon.

Commission 3 (Application of Coal Petrology to Utilization) - Wed. (a.m./p.m.); Thurs. (a.m.). The keynote address, entitled "The Nature of Inertinite and Its Effect on Hydrogenation, Carbonization and Combustion", will be given by Claus F.K. Diessel on Thursday morning.

A microscope session involving working groups of Commissions 2 and 3 will be held in the Coal Petrology Laboratory of the Energy and Fuels Research Center, Academic Projects Building. In addition, microscope companies have been invited to display their equipment in the Keller Conference Center on Monday and Tuesday.

On Wednesday, July 22 (6:00 p.m.), there will be an outdoor barbecue dinner at Stone Valley, a scenic recreation area owned by the University, situated 10 miles outside State College. Also, two trips to nearby localities of historic and cultural interest have been organized for a limited number of accompanying persons. (See registration form for details.)

All TSOP members are invited to attend and participate in the ICCP meetings, even if they are not members.

TSOP MEETING (July 23-24)

The 1992 TSOP meeting will kick off with Registration, Poster Session, and Reception (July 23, 6-10 p.m.) at the Nittany Lion Inn. Here delegates and registered guests will be able to socialize, while reviewing a wide variety of posters. Drinks and hors d'oeuvres will be available. TSOP technical sessions will be held on Friday at Keller Conference Center and will include 18 oral presentations (20 min. each), intended to address a variety of new research topics in organic petrology and geochemistry.

Deadline for the submission of posters and technical papers is March 31, 1992. If you would like to present a poster and/or oral presentation please mail an extended abstract (3 page maximum including black and white figures) to Scott Stout, UNOCAL, P.O. Box 76, Brea, CA 92621 USA (Phone: 714-528-1296). Because of the shortened program this year, not all papers submitted for oral presentation can be accommodated, so the organizers encourage some flexibility in the form of your presentation. Authors will be notified of the acceptance of posters and oral papers by the end of April. As in previous years, authors of posters and oral presentations will be requested to submit papers for publication of the meeting Proceedings in a special issue of *Organic Geochemistry*. Completed manuscripts will be required before Sept. 30, 1992.

FIELD TRIP (July 25)

A 1-day field excursion to the anthracite fields of eastern Pennsylvania is planned for Saturday, July 25. The Pennsylvania Anthracite region, representing one of the largest accumulations of anthracite coal in the world, is a unique locality in many respects. Here, Carboniferous-age strata have been intensively folded and faulted by Appalachian tectonism and regionally metamorphosed to anthracite rank. In spite of the difficult conditions, the first major coal mining operations in America were in the Pennsylvania anthracite fields, primarily to provide coal as a home heating fuel. The region also gave birth to the labor movement in the U.S., with the activities of the "Molly Maguires" to organize the oppressed mine workers in the late 1800's.

Field trip participants will have the opportunity to observe structural deformation at the world-famous Bear Valley mine and interpret the paleodepositional environments, paleoclimates, fossil plant assemblages, sedimentological features, and tectonic history of the region. Participants will ride a mine train into the Pioneer Tunnel (a demonstration underground mine) to see the breast-and-pillar method used to extract coal from near-vertical beds of anthracite, and can visit the Pennsylvania Anthracite Mining Museum. Another stop will feature an active surface mine.

The excursion will pass through beautiful countryside and charming towns in central Pennsylvania, in addition to the typical anthracite mining communities; thus there will be an opportunity to learn something of the natural and cultural history of the area in addition to the coal geology.

Overseas participants in the field excursion may choose to leave the trip in eastern Pennsylvania instead of returning to State College. Personnel from the U.S. Geological Survey will be returning to Washington at that point and are willing to transport up to twelve visitors to Washington's Dulles International Airport.

UNIVERSITY PARK AND STATE COLLEGE

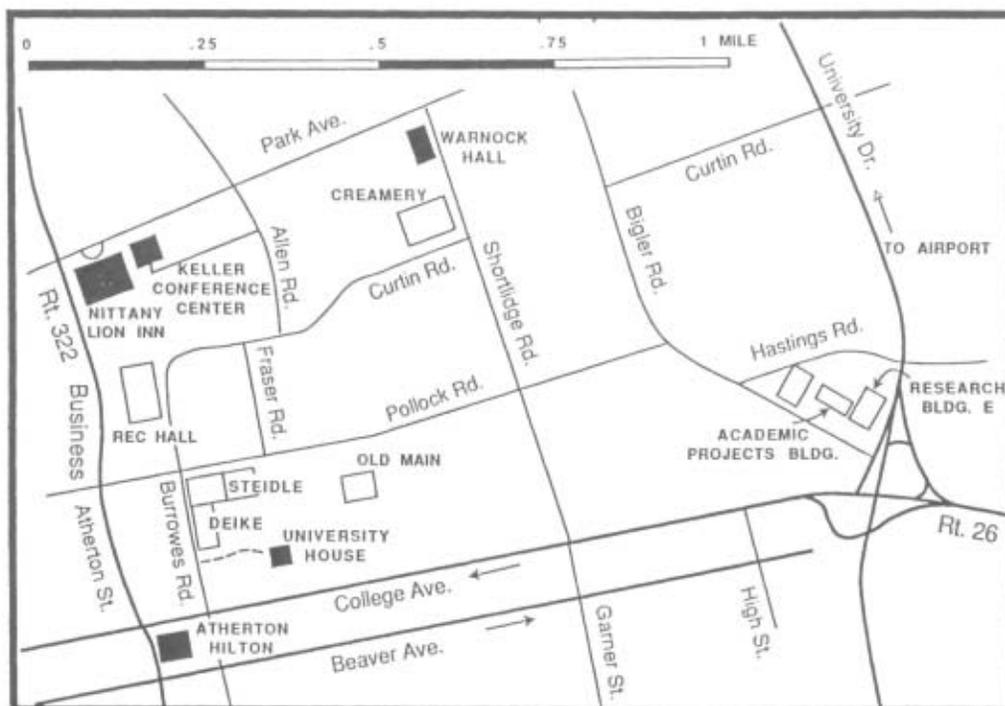
Penn State University (designated as the "University Park" post office) lies within the Borough of State College, near the geographical center of the Commonwealth of Pennsylvania. The University was founded in 1855 as the Farmer's High School which became Pennsylvania State College in 1874 and The Pennsylvania State University in 1953. The University Park campus has an enrollment of about 36,000 students and is located on a land area of nearly 5,000 acres.

University facilities include two golf courses (the perimeters of which are marked by a jogging track); tennis, racquetball and squash courts; indoor ice skating rink; indoor and outdoor swimming pools; and an emergency medical room and dispensary. Except for the tennis courts and jogging track, which are free, the athletic facilities are available to conference participants for a fee.

State College is a town of about 39,000 residents which has expanded around the campus during its growth to one of the nation's largest universities. The State College business community is situated immediately adjacent to the Penn State campus and offers a variety of shopping and dining opportunities.

State College lies in beautiful Nittany Valley, situated within the Appalachian Valley and Ridge province. The surrounding region is rural, consisting of forest and farmland; so in just ten minutes drive from downtown State College, you can be in the country or wilderness. In the forested mountainous areas are found abundant rhododendrons and mountain laurel, clear trout streams, deer, bear, and beaver.

The weather in State College during the summer typically is warm and pleasant. The mean high temperature in July is 22°C so there are many warm afternoons and pleasant evenings; however thunderstorms can occur at any time at this time of the year and cooler evening temperatures may require a light sweater or jacket. The most comfortable daytime dress is usually a short-sleeved shirt or blouse with a light jacket optional. Those participating in the field trip



should wear strong shoes and carry a sweater or light jacket for the visit to the underground mine. Rain gear is suggested.

State College airport (SCE) is served by direct USAir Express flights from Pittsburgh (PIT; 7 flights a day), Philadelphia (PEL; currently 4 flights a day) and Baltimore (BWI; currently 3 flights a day). United Express has 4 flights a day from Dulles International Airport (GAD), Washington and 3 flights from Harrisburg (MDT). Rental cars and limousine and taxi services are available at the State College airport which is located five miles from campus and downtown State College. Members are urged to book their flights early. Greyhound and Trailways bus lines have a terminal in State College. Alternatively, driving times from Pittsburgh, Philadelphia and Baltimore range between 3 and 4 hours.

Overseas delegates of the ICCP/TSOP meeting may be planning to visit other coal or research centers or specific field areas during their visit to the United States. The Branch of Coal Geology of the United States Geological Survey is willing to assist such visitors in planning their travel. Those wishing to take advantage of this offer please contact Ron Stanton, U.S. Geological Survey, 12201 Sunrise Valley Drive, 956 National Center, RESTON VA 22092, U.S.A., for assistance with arrangements in the eastern U.S. Those interested in making similar arrangements for travel in the western U.S. should contact Dr. Neely Bostick, MS-972, Organic Petrology Lab., U.S. Geological Survey, Denver Federal Center, DENVER CO 80225-0046, U.S.A. In your letters to Stanton or Bostick you should indicate the centers or field areas you would like to visit, with dates. If you are willing to offer a lecture or short seminar in the Washington, D.C. or Denver area during your visit, please give a proposed title. Unfortunately it is not possible to offer financial assistance for travel within the United States. However, visitors who terminate their private travel in Washington, D.C. immediately before the ICCP meeting may be able to join U.S. Geological Survey personnel in traveling by car to State College.

ACCOMMODATIONS IN STATE COLLEGE/UNIVERSITY PARK

NITTANY LION INN

Single Occupancy	\$55/day plus 6% tax
Double Occupancy	\$60/day plus 6% tax

This accommodation is the closest to the Keller Conference Center where the meetings will be held. 70 rooms have been reserved. Free parking is available for guests on the hotel grounds. Check out time is 12 noon.

Should the specific type of room(s) requested be unavailable, you will be assigned to appropriate alternative. Reservations are guaranteed **and if not cancelled 48 hours prior to arrival, one night's deposit may be charged.** Group rooms will be released on June 19. Reservations accepted after this date are subject to availability. The Nittany Lion Inn will accept payment guaranteed by: Mastercard, VISA, American Express, and Discover, or by check (cheque) drawn on a U.S. Bank, or money order, or bank draft for U.S. currency. Travelers checks and U.S. currency are also accepted at time of departure.

ATHERTON HILTON

Single Occupancy	\$60/day plus 6% tax
Double Occupancy	\$70/day plus 6% tax

This accommodation is in State College's luxury hotel and is located off campus close to the downtown shopping area (see map). 30 rooms have been reserved. Free parking is available for guests in the hotel garage. Check out time is 12 p.m.

Group rooms will be released on June 21. Reservations accepted after this date are subject to availability. Check in before 3 p.m. cannot be confirmed. Your reservation will be held only until 6 p.m. on the date of arrival unless guaranteed with a major credit card or advance deposit of one night's room charge, plus tax (6%).

The Atherton Hilton will accept payment guarantees by the following: American Express, Mastercard, VISA, Discover, and Diners Club, or by check drawn on a U.S. bank, or by money order or bank draft for U.S. currency. Travelers checks and U.S. currency are also accepted at time of departure.

STUDENT HOUSING

<u>Length of Stay</u>	<u>Single Occupancy</u>	<u>Double Occupancy</u>
Fewer than 3 Nights	\$21.50/day	\$19.50/day
3 Nights or More	\$16.25/day	\$14.25/day

(including breakfast)

Members requesting accommodation in the student residence halls will be housed in Warnock Hall (see map). 70 rooms with shared dormitory-style bathrooms have been reserved. No deposit is required for student housing, but charges must be paid in full at time of on-site registration. Be sure to have a Mastercard or Visa card, money order, travelers checks, U.S. currency, or a personal check or bank draft drawn on a U.S. bank. Reservations by June 19 are recommended in order to secure a room. Check out time is 12 noon.

See you in "Happy Valley" !!



Photo Credit: University Photo/Graphics, Penn State

The Nittany Lion Inn

NEWSLETTER

Vol. 9, No. 1

March, 1992

ICCP/TSOP MEETINGS 1992
ICCP July 19-23
TSOP July 24
JOINT FIELD EXCURSION July 25

CONFERENCE REGISTRATION FORM

Please complete CONFERENCE REGISTRATION FORM.. Return with CONFERENCE fee before JUNE 12,1992 to:

Dr. Alan Davis
Energy & Fuels Research Center
Penn State University
205 Research Building E
University Park, PA 16802 U.S.A.

(Print in ink or type)

SURNAME: FIRST

ADDRESS:

AFFILIATION: (if not given in address),

TELEPHONE: (Work) (Home)

FAX NUMBER:

I wish to register for the following: Cost (U.S. Dollars)

FOR ICCP AND TSOP REGISTRANTS (See other side for explanation of costs.)

ICCP Preregistration by June 12 @\$20.00

ICCP Late (after June 12) Registration @ \$25.00

TSOP Preregistration by June 12 Professionals @ \$85.00

Students @ \$50.00

TSOP Late (after June 12) Registration Professionals @ \$110.00

Students @\$75.00

Field Excursion to Eastern Pennsylvania Anthracite Field (July 25) @ \$10.00 (limit 90 persons)

TSOP 1993 dues (optional) (new members must complete application form at meeting) Professionals @ \$20.00

Students @ \$15.00

Parking on Penn State Campus @\$3.00/day (for those with cars staying in Student Housing) (days)

Please send me a parking permit

FOR ACCOMPANYING PERSONS ONLY

Name(s) of accompanying person(s)

Number of Persons Cost

ICCP Reception (July 19) @ \$15.00

ICCP Barbeque (July 22) @ \$30.00

TSOP Reception (July 23) @ \$10.00 (includes 2 drink vouchers)

TSOP Luncheon (July 24) @ \$15.00

Boalsburg, Boal Mansion & Christopher Columbus Chapel (July 21)

@ \$4.00 (limit 12 persons)

Amish Open Air Market & Quilt Makers (July 22) (no cost) (limit 12 persons)

Field Excursion to Eastern Pennsylvania Anthracite Field (July 25) @ \$30.00

TOTAL AMOUNT ENCLOSED \$

SEE OTHER SIDE

THE SOCIETY FOR ORGANIC PETROLOGY

Vol. 9, No. 1

March, 1992

CONFERENCE REGISTRATION FEES ONLY

DO NOT SEND ACCOMMODATION FEES WITH THIS FORM. PLEASE MAIL SEPARATELY.

INDICATE METHOD OF PAYMENT:

- Enclosed is a cheque, money order, or bank draft (*in U.S. Dollars*), for \$ _____ payable to The Pennsylvania State University.
- Charge my • VISA • MasterCard

Cardholder's name (please print)

Cardholder's signature

Charge Number

Expiration date:
(Month/Year)

RETURN BY JUNE 12 TO:

Dr. Alan Davis
Energy & Fuels Research Center
Penn State University
205 Research Building E
University Park, PA 16802 U.S.A.

I have arranged accommodation with (see separate form)

- Nittany Lion Inn •
- Atherton Hilton •
- Student Housing •

Additional Information Requested from Registrants Arriving by Air

Date of Arrival at University Park Airport: _____

Airline Name: _____

Flight No.: _____

Expected Time of Arrival: _____

Explanation of Registration Fees

ICCP Registration: Includes Reception, Barbeque and Coffee Breaks.

TSOP Registration: Includes Conference Abstracts, Proceedings (following publication in Organic Geochemistry), Reception, Luncheon, Group Photo and Coffee Breaks.

**New ISSN Registration Number for
TSOP Abstracts and Program Volumes**

Meeting Report

TSOP has applied for and received a new ISSN assignment (International Standard Serial Number) for our Abstracts and Program volume which is published yearly for the annual meeting. The new number is ISSN 1060-7250.

**The Canadian Coal And Coalbed
Methane Geoscience Forum**

**PARKSVILLE, B.C., CANADA
FEBRUARY 2-5, 1992**

For cataloging purposes, the official title for the new serial is "Annual Meeting of The Society for Organic Petrology, Abstracts and Program". Appended to the title of each volume will be the number of the particular meeting, (e.g. "Annual Meeting..., Ninth")

The 1992 Canadian Coal and Coalbed Methane Geoscience Forum attracted 125 attendees to the balmy east coast of Vancouver Island in British Columbia, Canada. This forum was jointly sponsored by the B.C. Geological Survey Branch, the Alberta Geological Survey and the Geological Survey of Canada and was organized by the Coal Section of the B.C. Geological Survey Branch. About half of the participants were from government research institutions and half from industry. A considerable number of representatives of U.S. companies were present to tell their Canadian colleagues about their experience in producing natural gas from coal seams.

Owing to inconsistencies in the titles used in the past, the Abstracts and Program volume is being registered as a 'new' serial, even though we will be commencing with Vol. 9 for this year's meeting in State College. Each of the previous volumes has borne the title "Abstracts and Program...", with the exception of Vol. 6 (Urbana) and Vol., 8 (Lexington), which bore the title "Proceedings...". In the future, the term "proceedings" will be reserved exclusively for the compendium of refereed papers published after the meeting (normally in *Organic Geochemistry*).

The talks and poster sessions were preceded by a field trip to the Quinsam coal deposit near Campbell River, led by Candace Kenyon of the B.C. Ministry of Energy, Mines and Petroleum Resources. The rain kept pouring all day and consequently a large part of the day was spent underground in the (comparatively dry) room-and-pillar mine operated by Brinco Coal Corporation. The 35 field trip participants had close-up views of a continuous miner in operation, gob areas of the mine, a fault zone, and petrographic banding in this high quality thermal coal of high volatile bituminous rank.

Annual meeting organizers will be asked to follow a few simple guidelines regarding the layout of the title page. Upon publication of the volume, a copy will be sent to the U.S. Library of Congress for cataloging.

-Jeff Levine, Editor
Tuscaloosa, AL

* * *

Membership Report

Changes of Address

Please note the following address changes for current TSOP members:

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Mobil Erdgas-Erdöl GmbH
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NETHERLANDS
Phone: 31-070-311-2330

Jacob E. Gerhard
817 Hickory Knob Circle
Cedar Hill, Texas 75104-7803

The talks and poster sessions provided a good mix of papers on Coalbed methane, coal industry, and general coal science. In the published proceedings, papers are grouped under these headings. An introduction was given by G. Capobianco, President of the Coal Association of Canada, who stressed the need for better public relations in convincing the public that Canada is using its coal in a responsible, clean, and safe way. Other talks on the first day were on the use of information systems in coal resource mapping, technological aspects of Canadian coals, Coalbed methane potential of certain Canadian areas, and Coalbed methane production related to geology of the Black Warrior and San Juan basins of the U.S.A. Posters (24 in total) on related subjects to the talks complimented the meeting nicely.

On the second day talks were presented on the geology of international and Canadian coal resources, geochemistry of Canadian coals and techniques on Coalbed methane evaluation using logging and open hole cavity completion. A one-day short course on Coalbed methane completed the conference and attracted 42 attendees.

The organizers can be complimented on a very successful meeting, which enabled useful communication between industry and government research institutions.

Additional copies of the proceedings (with 20 complete papers) are available for \$25 (Canadian) from: Ward Kilby; Coal Section, Geological Survey Branch; Ministry of Energy, Mines and Petroleum Resource; 553 Superior Street; Victoria, B.C. V8V 1X4; CANADA.

—Willem Langenberg
Alberta Geological Survey
Edmonton, Alberta, CANADA

Correspondence**From Russia, With Best Wishes**

[Editor's Note: The following letter was posted in Moscow on September 3, 1991 with the intention that it be read to the attendees of the 8th Annual TSOP Meeting in Lexington in October, but was not received until January 6. At the mid-year Council meeting, after some discussion, it was determined that President Sue Rimmer would respond to the letter and that several copies of the TSOP Newsletter would be regularly sent to designated recipients in Russia. TSOP members having any additional response or comments are encouraged to contact a Council member.

Translation of the letterhead is as follows: Minvuz USSR (now CIS); The Moscow Order of Lenin; Order of the October Revolution; Order of Labor and the Red Banner; State University named in honor of M.V. Lomonosov. A suggested mailing address is: CIS, 119899 Moscow, Lenin Hills, Moscow State University, Geology Department, Addressee (Russians set down their addresses in 'reverse' order)]

Минвуз СССР

МОСКОВСКИЙ ОРДЕНА ЛЕНИНА
ОРДЕНА ОКТЯБРЬСКОЙ РЕВОЛЮЦИИ
ОРДЕНА ТРУДОВОГО КРАСНОГО ЗНАМЕНИ
ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
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September 3, 1991

Ladies & Gentlemen!

We, the scientific workers of the Geology and Petrology Coal Laboratory of the Geology Department of Moscow State University, send our heartfelt greetings to the participants of The Society for Organic Petrology 8th Annual Meeting. We regret that we cannot take part in the Meeting of the such well known Society.

Meeting of this sort, at which scientists can meet and collaborate, add a wealth of knowledge to our field. It is always rewarding to be able to share our knowledge and learn of other projects that are taking place in the world.

Our country has a vast experience in the different fields of coal geology, petrology, geochemistry and utilization of coal. Our research work is based on a large amount of material from different parts of the Soviet Union.

As a matter of fact, the former leader of our scientific school, Professor Alexander K. Matveef, was the author of a great number of books on geology and the theory of metamorphism of the coal fields of the Soviet Union, as well as of The Coalfields Map of the World. He was the teacher of many of our modern leading scientists.

Honorable colleagues! As you know, our country is presently experiencing great economic difficulties. This, of course, reflects on scientific research, especially in academic and higher school research.

-2-

Our laboratories lack equipment of all sorts, not to mention up-to-date equipment. This makes it difficult for our scientists to test their ideas. It is crucial that research takes place because the coal industry is not only important to use today, but our future depends on further exploration of coal as a raw material that will be used in energy generation, metallurgy, and chemistry.

This is why we addressed the participants of The 2nd International Conference on Elemental Analysis of Coal and Its By-Products with a proposal to participate in a fund for development of science research at the Coal Laboratory of the Geological Department of the Moscow State University.

The fund has been created for the following purposes:

1. To enable joint research in different fields of coal science between The Coal Geology and Petrology Laboratory and various University or Institute laboratories in America and Canada.
2. To establish a doctoral or post-graduate student scientific research exchange program between our Laboratory and leading laboratories of America and Canada.
3. To provide research equipment that will allow modern techniques to be used in the field of coal geology research.

We have invited Dr. F. Goodarzi (ISPG, Calgary) to serve as the coordinator of the fund and offer for it to be named: The Fund of Coal Research in Memory of Matveef.

We would like to invite you also to support of our idea to create the Fund.

With best wishes,

Michael V. Golitsyn, Academic of Russia
Drs Alexander Ch. Bogomolov, Natalia V. Pronina,
Dmitry V. Makarov, Andrew M. Golitsyn, and other
collaborators of The Laboratory.

TSOP Research Committee Progress Report

compiled by
Rui Lin, TSOP Research Committee Chair,
Unocal, Brea CA

Since the Lexington meeting about five months ago, three of the five research subcommittees have made substantial progress and one subcommittee is still awaiting for samples. Two of the subcommittees (kerogen isolation/characterization and VR/fluorescence methods) have sent out samples to each participating member for various round robin analyses. Results are being returned to the respective subcommittee chairmen. It is anticipated that the results will be processed and analyzed in the summer (1992). The initial objectives of these two subcommittees will be accomplished late this year. A more detailed discussion on the current status of each subcommittees follows below:

Kerogen Isolation and Characterization (Stan Teerman, Chair)

Four rock samples and a questionnaire were sent to the seven members of the research subcommittee in December, 1991. Objectives for the round robin analysis of the four samples include evaluating: (1) various organic matter classifications and terminology, (2) different microscopic techniques to characterize sedimentary organic matter, and (3) geochemical techniques for evaluating kerogen quality. The purpose of the questionnaire is to better understand the approaches to kerogen characterization, and the interpretation and application of microscopic and geochemical data.

At this time, subcommittee participants are beginning to return results and completed questionnaires. Compilation of results should be finished by mid-to late March. Additional objectives are being defined for the subcommittee. Preliminary results indicate significant differences in Rock-Eval pyrolysis data from various labs. These inconsistent results for evaluating kerogen quality are related to instrumentation and sample preparation techniques.

Standardization of VR/Fluorescence Methods (Rui Lin, Chair)

Four samples (including 3 coals and 2 shale) were sent to 22 participating labs around the world for vitrinite reflectance and spectral fluorescence analyses. So far, 11 labs have returned their results and description of instrumental conditions. A deadline of March 1, 1992 has been set as the last date for returning results from the other labs. I plan to process and compare the results in the Summer, 1992. Statistical analyses will also be performed. In Fall, 1992, a preliminary report will be written and sent to participating members for comments. For the purpose of disseminating results to all the Society members, a final report will be prepared to be submitted to the Council, and an extracted portion of the report may be published in the Newsletter.

It is not yet determined how the second-phase study of this project is to be conducted. Carolyn Thompson-Rizer and Roger Woods have suggested that first-phase study should serve as a basis for a more thorough study which will lead to the recommendation of "better" methods. I plan to contact all

the participating members to discuss the details of the second-phase study late this year.

Liquefaction Residues (Jim Hower, Chair)

Ken Anderson has been assigned to work with this subcommittee. He will supply liquefaction residues from three Argonne premium coals: Pocahontas #3, Lewiston-Stockton, and the Beulah-Zap lignite. Three coals were run for liquefaction at three different particle sizes (1 mm, -20 mesh, and -100 mesh) at 2:1 tetralin:coal ratio for 30 minutes at 400°C. Participants in the project are Glenda Mackay (Australia), Judith Potter (Canada), M. J. Lemos de Sousa (Portugal), and petrographers from the Kentucky Center for Applied Energy Research (U.S.A.). We hope to have samples in hand and distributed shortly.

Effects of Overpressuring on Maturity (Suzanne Russell, Chair, with contributions from Sue Rimmer and Jennifer Thompson).

Jennifer Thompson and Sue Rimmer have been working on a literature search to identify the causes of overpressuring and evaluate its effects on maturity.

Preliminary review of the literature has shown that it is difficult to judge the quality and reliability of much of the published data. Analysis of a new set of samples will commence shortly, from an area believed to be overpressured (tentatively the Anadarko basin).

Preliminary literature review indicates that overpressured zones can be identified from drilling parameters (increase in penetration rate, increasing mud weight), from logs, and to a lesser extent from seismic data.

Overpressuring is caused by a variety of mechanisms which create an increase in pressure that is not balanced by equivalent fluid transfer out of the system. The generation of overpressures implies the development of at least a partial seal. Increased pressures result from: 1) processes which cause decrease in pore volume (diagenesis, compaction), 2) processes which cause increase in temperature (increasing burial depth, hydrothermal heat transfer, igneous intrusives), 3) introduction of excess fluids (mineral dewatering, migration of fluids from higher pressure regimes, and hydrocarbon generation), and 4) processes which increase total confining pressure (loading, thrusting or other tectonic stress).

The timing of overpressure development is important in determining whether maturity will be affected. Some settings which display notable retardation in the increase of vitrinite reflectance with depth are those in which overpressuring developed early, and are typically undercompacted.

Overpressuring that develops later in burial history, for example due to hydrocarbon generation, may tend to increase the maturity gradient due to the decreased thermal conductivity (an insulating effect) of the overpressured zone.

Experimental heating in a closed, pressurized system tends to retard maturity parameters.

Dues due; Do pay

TSOP members are reminded that 1992 dues must be paid, or the current (March) issue of the Newsletter is the last one you will be receiving. Do pay. Do.

Special Volume Planned on Quantitative Approaches to CL/UV Petrology

Luminescence is now gaining legitimacy as an analytical tool in petrology, but it needs a strong quantitative framework. Charly Barker (President, Society of Luminescent Microscopy and Spectroscopy) and Michael Owen (SLMS VP.) propose a volume which will be an example of the current state of the art of CL analysis and be a source of ideas for future study. We propose to bring together papers on quantitative approaches to CL petrology in either: (1) a theme issue of the *Journal of Sedimentary Petrology*; or (2) a SEPM Special Publication, contingent upon SEPM, publication schedules, and finances. We believe that concentrating innovative and provocative papers into a single publication will enhance their impact on the geological community and reduce costs of color illustrations.

The proposed volume, tentatively referred to as *Quantitative Approaches to CL/UV Petrology: Issues and Controversies*, will complement the recent SEPM Short Course Notes edited by Barker & Otto Kopp (SLMS Secretary/Treasurer). We want to move beyond observational descriptions and emphasize the rigorous, analytical and quantitative aspects of CL petrology. We would like to solicit paper titles and topics which will cover specific, quantitative research into some of the controversial issues in luminescent microscopy, including: 1) cement stratigraphy in carbonates, 2) the use of CL to determine paleo-redox potentials, 3) trace element composition of carbonates vs. their luminescence, 4) genetic significance of quartz CL, 5) compositional controls on feldspar CL, 6) CL in mudrocks

This list is not exhaustive and we welcome additional suggestions. Several topics have two (or more) well-established points of view. We would like to use this publication as an opportunity for each "side" to present its case with as much experimental evidence as possible.

Our tentative schedule is as follows:

Fall, 1991: This announcement, collection of paper titles

Winter & Spring, 1992: Presentation of proposal (including authors & titles) to SEPM Publications Committee before AAPG/SEPM Annual Meeting (May 1992)

June, 1992: Submission of papers

Summer & Fall, 1992: Peer review and return to authors

Winter, 1983: camera-ready copy to SEPM

At this time, we would like to solicit paper topics/titles for inclusion in the proposed volume. Please consider volunteering a paper for which you have already completed, but not yet published, results of investigation. Sufficient lead-time remains for new work to be completed, so you may wish to propose a title based on what you expect to find. If you plan to contribute a paper, please include its title, a brief description of the topic, estimated length (if possible), and number of color plates. The more information you can provide, the better. Please direct questions and proposed paper titles to Michael Owen because Charly Barker is in Australia.

Michael R. Owen Phone: (315)378-5975
 Department of Geology Fax: (315)379-5804
 St. Lawrence University BitNet: MROWEN@STLAWU
 Canton, NY 13617

Upcoming Meetings

Symposium on Coalbed Methane Research and Development in Australia

Townsville, Q, Australia
 November 19-21, 1992

Hosted by James Cook University, in conjunction with Mount Isa Mines, Ltd., and supported by the Energy Research and Development Corporation, this symposium will focus on the production of natural gas from coal seams, touted as "Australia's New Energy Source".

A call for papers, displays, and exhibits has been issued for the following topics: 1) basin and regional assessment, 2) geological and geophysical techniques useful in Coalbed methane exploration in Australia, 3) drilling, completion, stimulation, and production operations, 4) stimulation and other field operations research, 5) environmental and safety aspects of Coalbed methane development, 6) laboratory measurements, 7) computer modeling and production, and 8) economics of Coalbed methane development in Australia.

Abstracts of papers to be presented should be no more than 300 words in length, and should be forwarded immediately to:

Basil Beamish, Director
 Coalseam Gas Research Institute
 James Cook University
 Townsville Queensland 4811 AUSTRALIA
 Fax: 077-815167

* * *

Third International Symposium on the Biological Processing of Coal

Clearwater, Florida
 May 4-7, 1992

Due to the importance of securing clean fuels for the future and the potential that biotechnology has for yielding cost-effective alternatives in materials processing, the U.S. Department of Energy and the Electric Power Research Institute are cosponsoring this symposium on the biological processing of coal. This symposium is intended to foster increased activity in this area, identify pertinent new biotechnologies, and promote technology development and implementation.

Two and one half days of talks and poster sessions are planned on topics including biodesulfurization, bio deashing, bioconversion, including biogasification, genetics of desulfurizing bacteria, and removal of SO₂, NO_x, and CO₂ from gas streams.

Registration (\$1754350) is required by April 17, 1992. For more information, call: (800) 441-0875, (800) 441-9927 (outside PA), or (412) 892-4766, or write: Center for Conference Management; Biological Processing Symposium; P.O. Box 18209; Pittsburgh, PA 15236.

TSOP Newsletter
March, 1992
Volume 9, No. 1

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TSOP Newsletter
Jeffrey R. Levine, Editor
Department of Geology
The University of Alabama
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TSOP ELECTION RESULTS

1992-93 Council Positions

Election Committee Chair P.K. "Muki" Mukhopadhyay has reported the results of the election for officers for the 1992-93 terms on TSOP Council. The victorious candidates were:

President Elect	James C. (Jim) Hower
Vice President	Renee L. McLaughlin
Secretary/Treasurer	Kenneth W. (Ken) Kuehn
Councilor	Charles R. (Charlie) Landis
Editor	Neely H. Bostick

The new Council members will begin their terms at the Incoming Council meeting, scheduled for Friday, July 24 at the Annual Meeting at Penn State. They will be joining Martin Reinhardt, who will be continuing in his second year as Councilor and Suzanne Russell, who will be stepping up to the presidency.

Thanks go to the Nominating Committee (J.T. Senftle, Chair), the Ballot Committee (P.K. Mukhopadhyay, Chair), and to all participants (candidates and voters) in the electoral process.

Bylaws Committee Report

Amendments to the Bylaws

President Sue Rimmer reactivated the TSOP Bylaws Committee at the Incoming Council meeting this past fall. The committee (Brian Cardott (Chair), Jack Burgess, and John Castaño) was encharged with reviewing the Bylaws and evaluating the merits of several proposed amendments that had been suggested by TSOP members. Three proposed amendments were recommended by Council for a vote by the membership. A referendum on these three proposals was included with the election ballots. All three amendments were approved by the required two-thirds majority.

Briefly summarized, the amendments remove several ambiguities and restrictions pertaining to membership in TSOP. The amended Bylaws no longer require that the names

of two sponsors be provided on the application form. Honorary Members are to be elected for life.

Based on the Committee's recommendations, the following seven proposed Bylaws changes (in bold face) were rejected by Council for the reasons indicated:

(1) The president shall be elected for a two-year term. Response: The president currently serves one year as president-elect and one year as president. A two-year term for president would result in a three-year commitment, considered to be too long and unnecessary.

(2) An office of past-president shall be added to the Council. Response: The function of the office of president-elect is to allow the incoming president a year become acquainted with the details of the office. This year of overlap already provides sufficient continuity from one president's term to the next.

(3) The candidate for president-elect shall choose a vice-presidential running mate. Response: This procedure would remove the selection of vice-president from the voting membership. Additionally, it would require adding a new office of vice-president-elect to allow terms of office to coincide.

(4) The nominated candidates for president should provide a platform statement with the ballot. Response: This is a procedural matter that should be the responsibility of the Nominating Committee, but need not be stipulated in the Bylaws.

(5) Re-evaluate membership classes and procedures for election to membership. Response: The procedures mandated in the Bylaws for election to membership (i.e. completing an application form; providing the names of two sponsors, etc.) have not been adhered to in practice for several years. This lapse has been primarily related to individuals gaining "automatic" membership when paying the non-member registration fee at the annual meeting. It was resolved, therefore, that in the future non-members will (normally) be required to pay a meeting registration fee equal to the member registration fee plus the amount of the annual TSOP dues. The difference in fees would be applied to the next calendar year dues, subject to the individual formally applying for membership.

A new category for Industrial Sustaining Member was rejected because of its similarity with the Institutional Member category. Instead, the Outreach Committee has now established an Industrial Sustainer Fund. Corporate contributors to the fund will not be recognized as members unless they join as institutional members.

(continued on p. 11)

The TSOP Newsletter

Jeffrey R. Levine, Editor

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, call or write: David C. Glick, TSOP Membership Chair, Energy and Fuels Research Center, 205 Research Building E, Penn State University, University Park, PA 16802 U.S.A. Phone: 814-865-6543, Fax: 814-865-3573.

The Newsletter welcomes brief contributions both from TSOP members and non-members alike on timely topics pertaining to organic petrology. Items submitted on computer diskette are preferred over printed or faxed materials. DOS diskettes are preferred, but Macintosh format is acceptable. Files formatted in Wordstar are preferred, but WordPerfect and Microsoft Word are acceptable, as are ASCII (non-formatted) text files.

Send contributions to:

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1991-92 TSOP Council

President
Vice-President
President Elect
Secretary/Treasurer
Editor
Councilor (1990-92)
Councilor (1991-93)

Sue M. Rimmer
Brian Cardott
Suzanne Russell
Renee McLaughlin
Jeff Levine
Ken Kuehn
Martin Reinhardt

**Bostick to Take Over Newsletter
Publication in September**

Newly-elected TSOP Editor, Neely Bostick, will take over publication of the Newsletter, beginning with the upcoming September issue (v. 9, no. 3).

Please help to make this an easy transition by submitting unsolicited items for publication. Items are welcome both from TSOP members and non-members alike—in particular news about people, meetings, workshops, societies, publications (including reviews), and new equipment. Longer articles that describe preparation or analytical techniques are especially welcome. Short notes that revise or amplify older publications will be included also.

* * *

**Organic Geochemistry Available at Reduced
Rates to TSOP Members**

Members of The Society for Organic Petrology may subscribe to the journal *Organic Geochemistry* at the reduced rate of \$150 per year for 1992. The 1993 rate will be announced when available. For more information, please contact (in North America):

Pergamon Press, Inc.
Maxwell House
Fairview Park
Elmsford NY 10523

or outside of North America:

Pergamon Press pic
Headington Hill Hall
Oxford OX3 0BW
ENGLAND

-Jim Hower
Center for Applied Energy Research
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* * *

**1990 Calgary Meeting
Proceedings in Press**

TSOP has been informed by Pergamon Press that the Collected Papers from the 7th Annual Meeting of The Society for Organic Petrology, held in Calgary on September 9-14, 1990, are now in press as Vol 18 No 3 of *Organic Geochemistry*. The volumes will be distributed to meeting registrants as soon as they are available.

Membership Report**New Members:**

The Society welcomes the following new members who joined between October 1,1991 and June 25,1992:

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Changes and Corrections:

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THE SOCIETY FOR ORGANIC PETROLOGY

Vol. 9, No. 2

June, 1992

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If anyone knows a more recent address for Robert Jaques, please notify David Glick, Membership Chairperson.

Meeting Report

Alex Cameron Dinner

Annual GAC/MAC Meeting

Acadia University
Wolfville, Nova Scotia, Canada
May 25-27, 1992

This year's annual meeting of the Geological Association of Canada featured four coal and organic petrology related events: a three-day pre-meeting short course on "Introduction to Organic Petrology", a symposium on "The Euramerican Coal Province: Controls on Tropical Peat Accumulation in the Late Paleozoic", a special session in honour of Alex Cameron "Organic Petrology and Geochemistry: Recent Advances" and a post-meeting field trip "Carboniferous Coal Basins of Nova Scotia".

Symposium on "Euramerican Coal Province"

The focus of the two-day symposium were peat-forming deposystems that developed extensively on the Laurasian continent during the Late Paleozoic and a comparison with modern peat-forming environments.

Over the two days a total of 26 papers were given. In addition a number of posters were presented. Invited and extended lectures were given by Cohen *et al* on "Coastal plain peat deposits of tropical Americas", by Scott and Jones on "The influence of fire in Carboniferous ecosystems", by DiMichele and Phillips on "Paleobotanical and Paleocological constraints on models of peat accumulation in the Late Carboniferous", by Ziegler and Lottes on "Precipitation patterns, plant productivity, and peat preservation", by Cecil on "Lithologic response to climate processes in Carboniferous strata of the United States".

The oral presentations were followed in the evenings by lively discussions. General consensus amongst the participants was that there is a need for more integrated studies. The papers of the symposium will be published in *Paleogeography, Paleoclimatology, Paleoecology*.

Alex Cameron Special Session

The third day of the meeting was dedicated to a special session on "Organic Petrology - Recent Advances" held in honour of Dr. Alex Cameron to celebrate his work and contributions to the advancement of Coal Petrology in Canada. Seventeen oral presentations and eleven poster presentations were given. The quality of the presentations was exceptional. The proceedings will be published in a special volume of "International Journal of Coal Geology" (editors: F. Goodarzi and R. M. Bustin).

Following the symposium, Alex Cameron and his wife Cathy were guests of honour at a dinner hosted by the Society at the Old Orchard Inn, near Wolfville. Forty people attended including former colleagues Peter Hacquebard (Bedford Institute of Oceanography, Halifax), Russ Dutcher (Southern Illinois University, Carbondale), and Alan Davis (Penn State University). Greetings were sent via the from Duncan Murchison (U.K.), Harry Marsh (U.K./Carbondale) and W. Spackman (Penn State) and many colleagues and well-wishers who could not be present, including the Cameron Clan.

Fari Goodarzi acknowledged Alex's contributions to the Canadian Coal Petrographers Group (CSCOP) over the years: Peter Hacquebard recounted Alex's years with the Geological Survey of Canada, and representatives of Nova Scotia, Alberta, and British Columbia Provincial Governments also paid homage to Alex's work. Once again, we reiterate our profound and sincere best wishes to Alex and Cathy Cameron as they embark on a less regimented lifestyle. (Retirement is hardly the right term) and we thank Alex as a founding member of the Canadian Coal Petrographers, former Secretary and President, for his dedication to the advancement of coal science in Canada and significant contributions to Coal Petrology in Canada, past, present and future.

Good Luck from all of us, Alex!

-Judith Potter
& Wolfgang Kalkreuth
ISPG
Calgary, Canada

ASTM News

by Ron Stanton
U.S. Geological Survey
Reston, VA

ASTM Committee D5 on Coal and Coke held its first meeting of 1992 in May in Pittsburgh, Pa. Current activities that may be of some interest to members of TSOP include:

(1) New Approved Standards-To be published in the ASTM Volume 5.05 (Fall, 1992):

- D 5061 - Test Method for Microscopical Determination of Volume Percent of Textural Components in Metallurgical Coke.
- D 3997 - Practice for Preparing Coke Samples for Microscopical Analysis by Reflected Light.
- D 5192 - Practice for Collection of Coal Samples from Core.

(2) Major Revisions of Standards-To appear in the ASTM Volume 5.05 (Fall, 1992):

D 388 - Classification of Coals by Rank - has been revised in some important ways:

- the scope has been changed to clarify the applicability of the standard;
- the standard now allows the results of the FSI test to be used to evaluate the agglomerating character of coal;
- it now requires the ash yield, when used to calculate the Parr mineral matter value, to be adjusted to the sulfur-free basis;
- the appendix was changed to indicate the use vitrinite reflectance as a guide to rank.

D 2798 - Test Method for the Microscopical Determination of Reflectance of Vitrinite in a Polished Specimen of Coal

- Major revisions to procedures and addition of appendix material.

(3) Task Group Work

- a. Expansion of microscopical definitions of macerals to include those in low rank coals - To participate, contact Dick Harvey (217-244-0836), Illinois State Geological Survey.
- b. Development of test method for the determination of minerals in coal - Contact Bob Finkelman (703-648-

6412) or Frank Dulong (703-648-6416), U.S. Geological Survey.

c. Round robin testing for determination of precision of vitrinite reflectance measurements (maximum and random) using Revised D2798 - Contact Kevin DeVanney, (412-825-2575), U.S.X.

d. Revision of D2799 for Microscopical Determination of Volume Percent of Physical Components of Coal. On the basis of previous round robin testing and differences in practices, revisions will focus on developing a revised standard to more precisely reflect current practice. - Contact Cortland Eble (606-257-5500), Kentucky Geological Survey.

(4) Other Publications:

Manual 11 on the Drilling, Sampling, and Analysis of Coal - 72-page manual covering guidelines for aspects of drilling and sampling coal, including new Standard Practice D5192--"Practice for Collection of Coal Samples from Core," and a glossary of terms relating to drilling, (see following page for details)

The next ASTM Committee D5 Meeting will be held October 4 through 7, 1992, in St. Louis. There is no registration fee, and membership is not required to participate in the meeting or task group activities. In addition to developing petrographic and classification standards, ASTM Committee D5 also develops standards on sampling and chemical analysis of coal. For membership information, details on upcoming meetings, or availability of standards, contact Ron Stanton (703- 648-6462; FAX 648-6684), U.S. Geological Survey, 956 National Center, Reston, VA, 22092.

A New Publication from ASTM

MANUAL ON DRILLING, SAMPLING, AND ANALYSIS OF COAL, compiled by ASTM Subcommittees D05.18 and D05.23, Joint Task Group on Core Sampling, published by ASTM, Philadelphia, PA, 72 p.; soft cover, \$35.00 (ISBN 0-8031-1464-8; PCN: 28-011092-13).

Written for drillers, field geologists, coal sampling laboratories, and coal company engineers and geologists, this new manual from ASTM contains guidelines on state-of-the-art aspects of drilling and sampling coal. These guidelines can be modified as necessary to fit individual needs. For example, they can be used to prepare a customized field manual to standardize exploration activities. The manual also serves as a reference document for those who use the core sampling ASTM standard "Practice for Collection of Coal Samples from Core (D 5192)" includes in the Appendix.

Contents**DRILLING EQUIPMENT**

Types of Drilling Systems: Non-Core Systems (Rotary Drill System; Reverse Circulation Drill System); Coring Systems (Conventional Drill Core System; Wireline Drill-Core System) • Coring Bits • Other Drilling Considerations • Drilling Fluids and Additives • Drilling Fluid Characteristics.

GEOPHYSICAL LOGGING

Overview • Types of Logs: Natural Gamma Log; Bulk Density Log (Gamma-Gamma Density); Resistivity Log; Caliper Log; Laterolog (Focused Resistivity); Neutron-Density Log; Sonic Log; Spontaneous Potential Log (SP); Borehole Deviation (Vertically Log); Dipmeter • Thickness Determination • Calculated Parameters • Safety and Stuck Probe Procedures • Quality Control • Core Handling Procedures • Extracting Core from a Solid-Inner Tube • Extracting Core from a Split-Inner Tube

DESCRIPTION OF COAL AND ROCKS

Drill Cuttings • Drill Core • Additional Qualitative Descriptions

SAMPLING OF COAL CORES

Introduction • Planning • Lithotype and Ash Variations • Purpose of Sampling • Types of Analytical Tests: Chemical; Rheological and Physical; Petrographic • Mining Methods • Minimum Sample Mass • Core Recovery • Sampling Procedures of Coal Core • Field Packaging of Coal Cores

LABORATORY ANALYSIS OF COAL AND ROCK DRILL CORE SAMPLES

Overview • X-Ray Radiography • Macroscopic Analysis • Apparent Density and Specific Gravity • Rock Mechanics • Gas Emission Testing • Sample Processing • Size Reduction • Subsampling • Sieve Analysis • Washability Testing

EVALUATION OF CORE DATA

Data Review • Limitations on the Use of Core Data • Sieve Analysis • Moisture in Coal Cores • Classification of Coal by Rank • Variability of Core Data

CONCLUSIONS**APPENDIX**

Additional Descriptions: Weatherability; Rock Quality Designation (RQD); Fracture Spacing Index; Orientation Index; Roughness Index; Opening Index; Filling Index

For additional information, or to order, contact:

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ASSESSMENT OF COMPOSITIONAL VARIATION IN DUPLICATE SAMPLES OF PELLETIZED COAL

Kenneth W. Kuehn, Western Kentucky University
James C. Hower, University of Kentucky
and Garry D. Wild, University of Kentucky

(Note: This article summarizes some of the findings of the TSOP Research Subcommittee on the Precision and Reproducibility of Maceral Analyses. A complete final report of this investigation may be obtained by contacting the TSOP Secretary.)

Introduction

Our confidence in maceral analysis is based on the assumption that the pellet surfaces and the points encountered in a scan across those surfaces are representative of the entire population. Any pellets and any scans across any surface on those pellets would be expected to provide data that compare within existing ASTM standards. ASTM standards do not preclude large differences between pellets of the same coal, a fact which draws ones attention to the very existence of such differences and the problem of accounting for them. If there is significance to the concept of 'representative sample', if our sampling techniques are adequate, and if our work as analysts is consistent we should expect to observe large differences only as rare events. The work described here has as objective an understanding of the significance of the concept of "representative sample" which is of fundamental importance in coal petrology.

Experimental

A quantity of -20 mesh coal from KCER 91812, a cleaned coal, hvAb rank, from Pike Co., Kentucky, was split into four subsamples. Six pellets were prepared from each of the four splits. The entire quantity of coal was used and each of the 24 pellets contained very nearly equal amounts of coal though no attempt was made to insure this. Each pellet was point-counted on a stepped stage set to 0.4 mm increments.

Whatever appeared under the crosshairs was counted for each of the approximately 3,200 points encountered per pellet. Coal organics were assigned to one of eight maceral types: 1) Vitrinite, 2) Pseudovitrinite, 3) Fusinite, 4) Semifusinite, 5) Micrinite, 6) Macrinite, 7) Exinite, and 8) Resinite. Coal inorganics were assigned to 1) Pyrite and 2) Mineral matter. Binder and "unknown" accounted for all other points. The 24 pellets yielded a total of 36,650 identified coal macerals. This data base was taken to be a population in itself, not a sample of a larger population, and we sought to know to what degree any subsamples (individual analyses) represent that population.

Results

Table 1 displays summary statistics for maceral composition across all 24 pellets in the study. All data are on a percent volume, mineral-matter-free basis:

The mean values in the first row represent our best estimate of the actual maceral composition of this coal because all points from all 24 pellets have been included. In other words the values represent a single maceral analysis containing 36,650 points. The second and third rows show the lowest and highest values obtained for each maceral. The standard deviations in row four indicate the amount of variation encountered across all 24 pellets. If the pellets represent random samples of the parent coal, we would expect their compositional variations to follow a Gaussian distribution. As such, calculation of the 95% confidence limits ($\pm 2*sdev$) for each maceral defines a range of values between which 23 of our 24 pellets should lie. Upon checking the individual pellet means against these confidence limits it was found that only two macerals marginally fail this criterion. The fusinite content of two pellets (#12, #19) is too high as is the Pseudovitrinite content for three of the pellets (#4, #15, #17). All other pellets have maceral distributions as might be expected from random samples of a homogeneous population of the parent coal.

As approximately 1,500 macerals are identified on each pellet, the portion of variation attributable solely to counting statistics is expected to be small, especially for vitrinite which is present in large proportions. The large remainder of the variation is ascribable to vagaries of our subsampling and pellet-making procedures. Thus, it seems that mean values

Table 1. Summary statistics for maceral composition.

	Vit	Pvt	Fus	Sfus	Mic	Mac	Exn	Res
mean%	60.5	2.0	6.2	11.4	7.9	0.1	11.0	1.0
min%	56.8	1.0	4.9	9.8	5.4	0.0	8.6	0.4
max%	65.4	3.3	8.2	13.6	10.6	0.2	14.0	1.9
sdev%	1.8	0.6	0.9	1.2	1.5	0.1	1.2	0.5

obtained for each pellet still can vary widely. Vitrinite content, for example, ranges from a low of 56.8% (#19) to a high of 65.4% (#8). Is this range acceptable? If an analyst had determined these vitrinite contents from samples of two different coals, no doubt great geological significance would have been attached to this apparent difference.

The ASTM standard procedure for maceral analysis (D 2799) specifies that results from two pellets should agree within two percent "mean variation" or else a third pellet must be analyzed and the results from all three averaged. Mean variation is calculated by summing the differences between the volume percents of the individual components and dividing by the total number of components identified (ASTM recognizes only six categories of coal macerals). If such a standard is meant to define significant differences between pellets, it becomes vital to know how little or how much individual analyses drawn from different pellets can vary.

In this study, all the identified macerals and their locations are stored in computer memory. Thus, it is a simple matter to extract random sequences of 500 points from any two pellets and compare the percentage results. For example, the first 500 maceral counts on Pellet 1 constitute a valid analysis as do the first 500 maceral counts on Pellet 16. Data for 1,104 such analyses were extracted from the 24 pellets. Any two of these analyses can be compared to determine how they actually differ. With eight maceral categories identified, there are 608,820 pairwise differences obtainable from the 1,104 selected analyses. Figure 1 (curve A) summarizes the distribution of these absolute differences. The lowest curve drawn is the envelope of a histogram showing the distribution of 30,441 differences. The next higher curve is for twice that many differences, the next higher for three times that many, and finally, the top curve represents all 608,820. One sees in this family of 20 curves a convergence toward a most likely absolute difference of approximately 72 counts (7.2%) with values as high as 100 not unlikely. The ASTM standard, generous by comparison, would recognize an absolute difference of 120 counts (12.0%) or greater per thousand as being significantly different for its six maceral categories.

Next, the data were formed into a continuous sequence from which it was possible to extract 35,650 different samples of 1,000 counts. The first such sample is composed of population members #1 through #1,000. The second sample is composed of population members #2 to #1,001, and so on. Figure 1 (curve B) summarizes the distributions of the 608,820 possible pairwise differences as above. Note the shift to the left and the smoother nature of the curves compared to Figure 1 (curve A). The most likely absolute difference in this graph is 60 counts per 1,000. Vitrinite percentages were determined for each sample. These ranged from 54.0% to 67.9%. Because these data were in fact collected by an analyst at a microscope, each one of the 36,650 results within this range could have been reported. Very few of them would

have exceeded the ASTM limit for reproducibility of 2.0% 'mean variation'.

Is the potential variation within the population, for example the range of 54.0% to 67.9% vitrinite for different 1000 count subsets, reflected in analyses actually performed for different studies? KCER-91812 has been the subject of several independent investigations, each of which requires new sampling of the stock of the sample. Table 2 displays the analyses from the population study discussed here (1), the original analysis at the CAER (2), the analyses of the "-20 mesh" pellet from the 1988-89 TSOP maceral-analysis round robin (3 and 4, data by two CAER petrographers), and the analysis from a 1990 study of the Hardgrove Grindability Index (5). The vitrinite analysis of each count is similar to the others, indicating that our analyses 2 to 5 may indeed be representative of the population.

Conclusions

This study indicates that quite different analyses can be reported from the sample population. Even under the ideal circumstances of controlled sampling employed here, our comparison of 1,104 randomly extracted 500-point analyses from 24 duplicate pellets yielded a most likely absolute difference of 7.2% with a total range of vitrinite content from 56.8% to 65.4%. When the data from individual pellets were combined to form a single population of 35,650 macerals, our randomly extracted 1,000 point analyses showed a most likely absolute difference of 6.0% with a potential range of vitrinite content from 54.0% to 65.4%. Thus, we should remain keenly aware of the problems inherent to our limited sampling of a mixed population in which some members are in short supply, and of potential compositional differences between pellets themselves. Also, further examination of the existing ASTM standard for maceral analysis is suggested as apparent large differences in composition tend not to exceed the established criterion for significance.

Distribution of Absolute Differences Among
1,104 1,000 Count Samples (608,820 Total Differences)

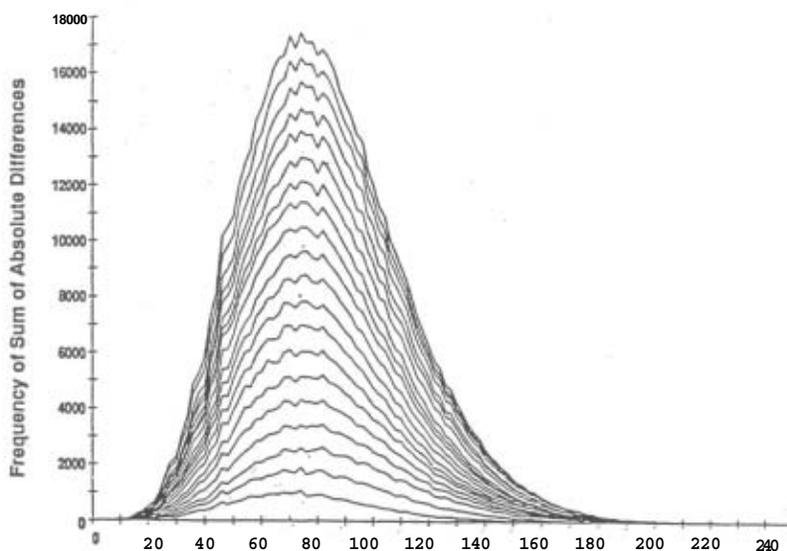


Fig. 1 Curve A Sum of Absolute Differences

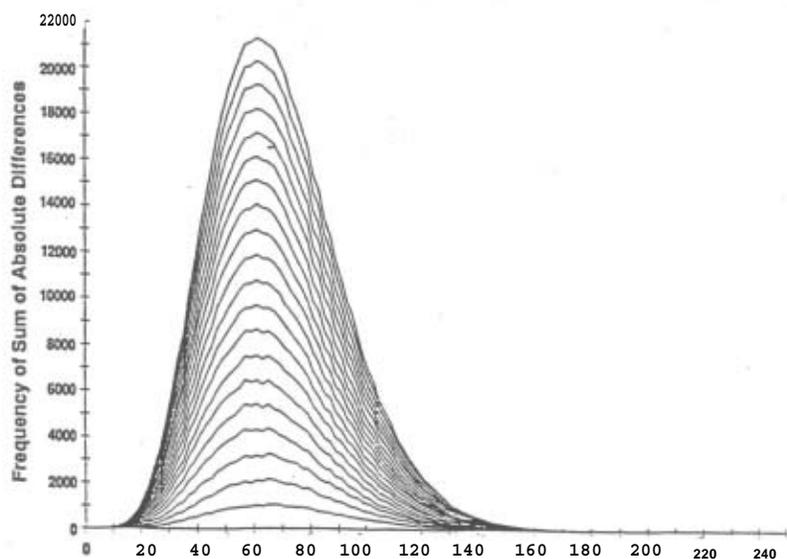


Fig. 1 Curve B Sum of Absolute Differences

Figure 1. Sums of absolute differences.

TABLE 2: CAER Analyses of KCER-91812

	Vits	Fus	Sfus	Mic	Mac	Exn	Res
This Study	62.5	6.2	11.4	7.9	0.1	11.0	1.0
Original Result	65.4	8.6	9.0	6.6	0.3	9.6	1.7
TSOP Oper A	63.9	10.8	8.3	5.5	0.0	11.5	0.0
TSOP Oper B	65.3	8.5	9.8	5.0	0.0	11.4	0.0
1990 HGI Study	63.4	12.6	6.7	3.4	0.0	12.3	1.2

Laboratory Notes

A Method for Mounting Small Coal Grains for Polishing

Wayne Mussared¹ and Charles E. Barker^{1,2}¹Department of Geology, University of Adelaide, Australia²U.S. Geological Survey, Denver, Colorado 80225 U.S.A.

When only a few coal grains are available for petrographic examination it can be a problem to mount and polish these grains such that all of the available grains are on a single level in the resin and exposed for measurement. Having all of the grains at a single level in the resin mount is an advantage because then all of the grains can be measured rather than just those grains that have fortuitously been cut and exposed on the polished surface. Other methods developed to do this procedure have met with difficulties in handling the thin, fragile grain mounts, or problems with stripping off the mold, so some improvement in technique seems indicated. Our method uses double-sided adhesive sheets (like that used for mounting photographs) to temporarily hold the loose coal grains on a single plane for casting into plastic resin. First a piece of double sided adhesive is generously cut larger than the mount dimensions. The paper backing for the lower face is stripped off and the double stick adhesive sheet is then applied to a flat glass surface. Take care not to trap air bubbles underneath it. The paper backing is then tripped the upper side of the adhesive sheet. The grains are then sprinkled and pressed into a small area of the exposed adhesive. A casting mold is then fitted around the grains. A water soluble mold release liquid (used in repairing fiberglass boats and so forth) is brushed on around the outside base of the mold. Then the prepared plastic resin is poured in. After hardening the mold and plastic plug are stripped off the double stick adhesive and separated.

For polished plugs, as could be used for coal petrology, the flat surface with the embedded grains would be lightly ground and polished to expose and prepare the grains for measurement

For thin sectioning, the flat surface with the embedded grains would be lightly ground and polished to expose and flatten the grains and then cemented, with the polished side down, on a glass slide (see Barker and Reynolds, 1984 for detailed technique). After hardening, the top of the plastic plug is planed off and ground down to the desired thickness.

References:

Barker, C. E., and Reynolds, T. J., 1984, Preparing doubly polished sections of temperature sensitive sedimentary rocks: *Journal of Sedimentary Petrology*, v. 54, no. 2 p. 635-636.

New Plastic Material for Mounting Polished Coal Pellets or Slides

The new reusable adhesives developed for temporarily mounting posters on walls (such as Bostik "Blu-Tack" or DAP "Fun Tak") make superior "clay" balls for mounting coal pellets or slides using a press. This reusable adhesive material is inexpensive, does not dry out, and easily removed from the mount. The procedure for using this material is making a coal mount-adhesive-glass side sandwich is similar to the clay ball method. The only difference is that the adhesive may be conditioned by kneading it until supple, and then rolling it into a ball. Place the ball between the glass slide and the coal mount, then press. After use, separate glass slide and coal mount using a rolling movement. Any shreds of adhesive remaining can be removed by dabbing the spot with an adhesive ball. If necessary, any adhesive oils left on a surface can be cleaned up using lighter fuel or dry cleaning fluid.

-Charles E. Barker
U.S. Geological Survey
Denver, Colorado USA
and the University of Adelaide
Adelaide, South Australia

³ the use of trade names is for descriptive purposes only and does not constitute endorsement by the USGS or the University of Adelaide

Bylaws Changes

(continued from p. 1)

(6) Adopt a formal procedure in the Bylaws for approval of annual meeting site proposals. Response: Procedures or guidelines need not be part of the Bylaws. Vice President Brian Cardott is presently compiling a TSOP Procedures Manual which will include annual meeting proposal guidelines.

(7) Distinguish certain issues that can be decided only at an annual or Mid-year Council meeting and not via telephone or mail. Response: This is a procedural question that is better left to the discretion of Council. Separation of officers by great distances requires that some Society business be conducted via telephone or mail.

An "official" copy of the Bylaws including all amendments has been forwarded to Membership Committee Chair Dave Glick for publication in the Membership Directory.

-Brian Cardott
Oklahoma Geological Survey
Norman, OK

TSOP Newsletter
June, 1992
Volume 9, No. 2

Featured in this Issue:

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TSOP Newsletter
Jeffrey R. Levine, Editor
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THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

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Dolomite Spar in Coal (See p. 2)

Macrophoto: Bill Betterton

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, 206 Research Building E, Penn State University, University Park, PA 16802-2321 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) are more convenient than printed materials. Unformatted ASCII files or files formatted in Wordstar are preferred, but WordPerfect and Microsoft Word are usable. Printed text sent by mail or by FAX can be scanned directly into ASCII characters for editing and publication. This is convenient and works well IF the text characters are equally spaced as from a typewriter or simple computer printer. Proportionally spaced characters jammed close together, especially if small, are barely usable.

Send contributions to the Editor:

Neely Bostick, MS-972
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Denver Federal Center
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The 1992-93 TSOP Council

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Vice-President	Renee L. McLaughlin
President Elect	James C. Hower
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1991-93)	Martin Reinhardt
Councilor (1992-94)	Charles R. Landis

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RESTON VA 22092-0001, U.S.A.

* * * *

Cover Photo:**Dolomite Spar in Coal**

Sand that was injected upward into peat, or possibly into lignite, which later became bituminous coal, has formed hard "spar" or "dikes" that challenge the capabilities of the coal miner and his equipment. The cover photo shows a 6cm portion of a polished block of the Hiawatha Seam (Cretaceous) sampled by John Hardie near Huntington, Utah. The hard spar in this coal is dolomite, with minor quartz, ankerite, feldspar and chert. Field studies to determine the extent and orientation of clastic injections are combined with work in organic petrology to help determine the origin, early structure, and subsequent compactional changes in both the coal and the clastic injections. The sample preparation and macrophoto (shown as a negative print in which the spar is dark and the banded coal is light) are by Bill Betterton, U.S. Geological Survey.

Book Notice

Facies models: Response to sea level change, Roger G. Walker and Noel P. James, eds. (1992) Geological Association of Canada, Publications, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X5, Canada. 409 p. Canadian \$30.

General Society Business
Outgoing Council Actions

Highlights of the 1992 Outgoing TSOP Council deliberations and actions, July 23, 1992, Penn State

by
 Renee L. McLaughlin
 and Charles R. Landis

The minutes of the Council meeting are on file with the Secretary-Treasurer.

1. Minutes of the mid-year meeting, 1991, in Cincinnati were approved with several minor corrections.
2. Financial statements for TSOP during R. McLaughlin's term as Secretary-Treasurer (1989-1990, 1990-1991, and 1991-1992) were presented to Council, along with budgets for fiscal 1991 and 1992. Council approved Secretary-Treasurer's report.
3. Investment: Council approved moving the ex-Prudential Bache funds (\$6827.60) to a Vanguard short term Federal portfolio based on interest returns and risk factors.
4. TSOP archives: R. McLaughlin will obtain all pertinent information of the Society in the possession of J. Castaño and S. Rimmer. After compiling the material, R. McLaughlin will send archive material to R. Stanton at the USGS for safe keeping.
5. Brochure about TSOP by Jeff Levine has been printed. Minor alterations will be made before the brochures are actively dispersed and Council decides policy for use, such as at major meetings of other professional societies. Council approved the Editor's report.
6. Election results for 1992 approved as follows:

President-Elect	Suzanne Russell
Vice-President	Renee L McLaughlin
Secretary-Treasurer	Ken Kuehn
Editor	Neely Bostick
Councilor	Charles Landis
7. Research Committee report submitted by R. Lin: The kerogen isolation characterization (S. Teerman) and the VR / fluorescence methods (R. Lin) subcommittees have made substantial progress. The kerogen / maceral chemistry subcommittee which is chaired by S. Stout has been inactive due to Scott's involvement with the 1992 Penn State TSOP meeting. Progress on this subcommittee will resume after the annual meeting. The liquefaction residue subcommittee (J. Hower) has forwarded residues to four participating laboratories for analysis. The fifth subcommittee on effects of overpressuring on maturity (S. Russell) has received funding from Shell Research. S. Rimmer will be assisting J. Thompson on this project. A new research subcommittee on documenting the petrographic constituents of kerogen is being formed with Charles Landis and P. Mukhopadhyay working together. C. Landis hopes to outline the project by Christmas; the actual project will take 18-24 months to complete. Council approved the research committee report.
8. Membership committee (D. Glick, chair): Council approved 38 new members of TSOP. D. Glick modified the membership application. It requires two references, but no longer two sponsors, and is on one page. Current members who are delinquent in paying their 1992 dues will receive only the Table of Contents from the third quarter Newsletter. Membership directory will be published in the near future. Council approved the Membership Committee report.
9. By-law committee reminded council that there are 2 types of members, Member and Institutional member. Students are full members who enjoy lower membership fees.
10. 1992 meeting, Penn State: Council approved update to this year's annual meeting report.

11. 1993 meeting, Oklahoma: B. Cardott, as the 1993 meeting co-Chairperson, has proposed a symposium at this meeting, dedicated to the Research Committee. It would be presented as a two hour forum to discuss technical issues and common concerns of TSOP. Council approved meeting arrangements to date.
12. 1994 meeting, Wyoming: R. Stanton reported that the preliminary proposal submitted for approval is still applicable; however, the cost estimates will have to be assessed in more detail now that plans are more definitive. R. Stanton will reevaluate costs and submit the proposal at the 1993 mid-year meeting, with possible workshop topics to entice attendance at this meeting. Council approved this annual meeting proposal update.
13. 1995 meeting, Houston: Council received offer by J. Castano to hold annual meeting, with significant time dedicated to lab work sessions.

* * *

Incoming Council Actions

Highlights of the Incoming TSOP Council Meeting, July 23, 1992, Penn State, S. Russell presiding.

by
Charles R. Landis and
Suzanne J. Russell

The minutes of the Council meeting are on file with the Secretary-Treasurer.

1. A mid-year meeting site and time was proposed: Dallas, Saturday March 6, 1993. It was estimated that 2-3 Council members would need some financial support to attend.
2. A 1995 Annual Meeting in Houston was proposed by John Castaño. The possibility of 1/2 day microscopy workshop(s) being held in conjunction with the meeting was discussed. A detailed proposal with a cost analysis was requested by Council for the mid-year meeting.

3. The Outreach Committee reported five companies had responded positively to the request for support of TSOP.
4. Awards Committee chairmanship was resigned by Bob Rathbone. A new chair must be appointed. A topic for the new committee to consider will be whether oral student presentations and posters will continue to be judged in the same category. N. Bostick volunteered to draft a letter of commendation to be included in future with the outstanding student paper award.
5. The nominations committee for 1992-1993 is chaired by S. M. Rimmer. Council decided that candidates will be encouraged, but not required, to submit a statement on their goals and directions for TSOP with their autobiographical information.
6. A procedures manual for TSOP compiled by Brian Cardott was submitted to Council for its consideration. Council will submit changes and if appropriate, vote on its adoption at the mid-year meeting. The responsibility for completion of the procedures manual was transferred to Renee McLaughlin.
7. Archives: An ad hoc committee was created by S. Russell with Renee McLaughlin as chair to determine which documents generated by TSOP would be submitted for permanent archiving at the USGS. Target date for creating this document list is the mid-year Council meeting.
8. Three By-laws changes approved by Council will be submitted to the membership for a vote at the annual election. The proposed changes follow:
 - (1) Bylaws Article VI section 1 states, in part: "Terms of office shall begin at the close of the annual meeting. Proposed amendment: "Terms of office shall begin at the close of the annual business meeting."
 - (2) Bylaws Article VII section 1 states, in part: "Competitive elections are

not required for the office of editor." Proposed amendment: "Competitive elections are encouraged but not required for the office of editor."

(3) Bylaws Article VII section 1 states, in part: "The nominating committee will normally meet at the annual meeting." Proposed amendment: delete the above statement from Article VII section 1.

9. Publication sales procedure for the Society was discussed. In the past, volunteers and the secretary-treasurer have both handled this. The secretary-treasurer's duties are already numerous and a logical and logistically reasonable alternative is being sought. Council members were invited to submit proposals for consideration at the mid-year meeting.

10. A budget for the 1992-1993 year was approved.

* * * *

**FIRST ANNOUNCEMENT
AND CALL FOR PAPERS
1993 TSOP ANNUAL MEETING**

OCTOBER 9-13, 1993

NORMAN, OKLAHOMA, U.S.A.

The Tenth Annual Meeting of The Society for Organic Petrology (TSOP) will be held on the campus of the University of Oklahoma in Norman, October 9-13, 1993. Norman was the site of the first meeting of the American Association of Petroleum Geologists (formerly Southwestern Association of Petroleum Geologists) in 1916.

A pre-meeting short course on petroleum geochemistry will be taught by Dr. R. P. Philp on Saturday-Sunday, October 9-10. Technical and poster sessions will be on Monday-Tuesday, October 11-12. Dr. M. D. Lewan is the invited speaker. A theme session will present TSOP Research Committee Progress Reports. A post-meeting field trip to the Arbuckle Mountains on Wednesday, October 13, will visit asphalt deposits and hydrocarbon source-rock exposures, including the Woodford Shale (Upper Devonian-Lower Mississippian) exposure used by Lewan in hydrous pyrolysis experiments.

Please submit a tentative title for your presentation by April 30, 1993, to Brian Cardott (Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628), and indicate your preference for oral or poster presentation. Camera-ready extended abstracts (one to three pages including black and white figures) must be submitted to the same address by June 30, 1993. Contact Cardott for example of abstract format. Authors will be requested to submit papers for publication in a special issue of Organic Geochemistry. Completed manuscripts will be required by December 31, 1993.

1993 MID-YEAR COUNCIL MEETING

The 1993 mid-year Council meeting of TSOP will be held Saturday, March 6, 1993 at the ARCO facilities in Piano, Texas. All members of Council should plan to attend as this is the major business meeting of Council for the year. Committee chairpersons are also encouraged to attend. As always, Council's meetings are open to all TSOP members. Those planning to attend should notify Charlie Landis (214) 754-6753 who is our host for the meeting. Please contact Suzanne Russell (713) 245-7603 with any items of business that should be discussed.

Next Newsletter

The next Newsletter issue is scheduled to be printed already on January 20, 1993, so the deadline is January 12th. Diverse topics on aspects of Organic Petrology are welcomed, for instance: TSOP committee work, meetings scheduled, notes (and especially reviews) on recently published books, information about graduate research in progress or completed, laboratory notes, address and/or job changes, topical reviews, opinions, additions or corrections to publications, etc. Possibly advertisements and research reports could be included — with approval by the Council. Cover photos that will reproduce well in black and white halftone and that tell a story will be selected for some issues.

Several items are on hand or are promised, but you can contribute to TSOP significant by sending even a small item. Start it today!

Meeting Report
1992 TSOP Annual Meeting
Penn State University
U.S.A.

By a remarkable coincidence the Penn State meeting matched the 1990 Meeting in Calgary in number of registrants (109) and in number of countries represented (13). In order of registrant number, the countries represented were USA; Canada, Germany; Australia, Netherlands; New Zealand; China, France; Brazil, Japan, Norway, S. Africa, UK.

The field trip to the anthracite basins of eastern Pennsylvania was attended by 67, the same number as on the Calgary pre-meeting trip.

With the long experience of the Penn State Conference Center and their splendid facilities, it was no surprise that the local hosts working with Alan Davis pulled off an excellent meeting. Especially striking was the strength of the oral and poster technical sessions and excellent *Abstracts and Program* publication. The name of that 120-page volume falls far short, for most presentations are represented by 2-3 pages of text, tables, figures and references. This resulted from the efforts of the authors under the guidance of the Organizing Committee: Scott Stout, James Hower and Alan Davis, with extra financial help from UNOCAL Corporation. As in past years, the Council voted to send this volume to current TSOP members who did not attend the meeting.

In the same vein was the impressive 72-page guidebook for the field trip, *The Anthracite Basins of Eastern Pennsylvania*, written by Jeff Levine, Jane Eggleston, Eric Daniels, Dave Glick and Chris Wnuk. These authors, with help of others, instructed attendees in the physiography, geology, stratigraphy, structure, paleobotany, economic geology, mine history and

operation, anthracite deposition and coalification, and culture of the anthracite region as they toured the Bear Valley Mine, Pioneer Tunnel, Wadesville Surface Mine and Pottsville Formation type section.

Some flavor of the meeting and field trip is captured on the page of photos by Dave Glick in this Newsletter.

* * * *

Publication of Interest

SOURCE ROCKS IN THE SOUTHERN MIDCONTINENT, 1990 SYMPOSIUM, edited by K. S. Johnson and B. J. Cardott, 1992, Oklahoma Geological Survey Circular 93, 352 p., \$12 paperbound.

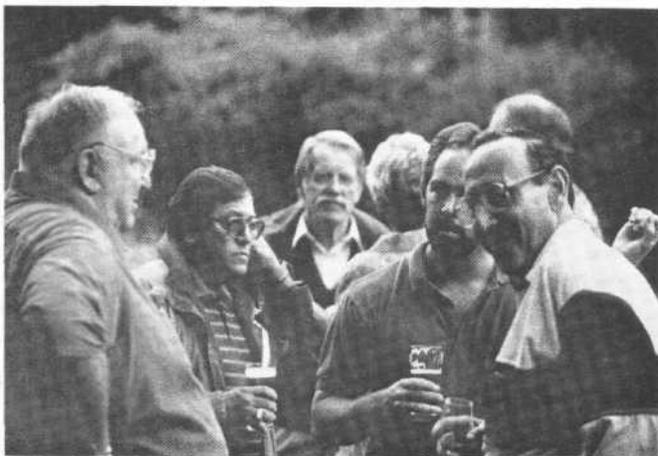
This volume contains the proceedings of a symposium held February 6-7, 1990, in Norman, Oklahoma, and is divided into three parts. Part I includes 18 papers presented orally, part II contains papers by 4 panelists and the panel discussion on the topic "Can carbonates be source rocks for commercial petroleum deposits?" and part III includes 11 abstracts and short reports related to poster presentations.

Research reported at the symposium focused on the organic geochemistry, thermal maturity, and hydrocarbon potential of the major hydrocarbon source rocks in the region, with special emphasis on the Woodford-Chattanooga Shale, on various Pennsylvanian shales, and on carbonate units such as the Arbuckle and Viola Groups. Other research includes characterization of oil types, deep pressure compartments, diagenetic aureoles, solid bitumen, and the hydrodynamics of fluid migration to reservoirs.

For more information or to order, contact: Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628, or call (405) 325-3031.

Annual Meeting Photos by Dave Glick: [1] ICCP Reception in the University House garden. [2] TSOP Business Luncheon. Scott Stout presents a gift to Marlies Teichmueller. [3] TSOP Luncheon and poster session. [4] TSOP poster session and reception. Etuan Zhang, recipient of student award. 5. ICCP/TSOP barbeque dinner, dance and serious business meeting in the forest at Shavers Creek Environmental Center. 6. ICCP/TSOP field Trip: Jeff Levine discusses whaleback structure and other features at Bear Valley anthracite mine. 7. ICCP/TSOP field trip: Alan Davis musters the weary troops, 6:30 am. 8. ICCP/TSOP field trip: Underground tour of the Pioneer Mine, Ashland, Pennsylvania

Scenes from the ICCP / TSOP 1992 Annual Meetings



Next ICCP Meeting

1993: Sept. 26 Oct. 2: International Committee for Coal and Organic Petrology (ICCP). 45th Annual Meeting — Chania/Crete, Greece, at the Technical University of Crete. Sept. 27-28th: Commission 1 (General Coal and Organic Petrology). Sept. 29th: Greek Lignites and other presented papers. Sept. 30th-Oct. 1st: Commissions 2 (Applications in Geology) and 3 (Applications in Coal Utilization). Oct. 2nd: Excursion in lignite mine of S.E. Greece. For further information contact an ICCP member or the organizer Prof. Th. Markopoulos, Technical University of Crete, Dept. of Mineral Res. Eng., 127, El.Venizelou Str., GR-Chania 73133/Crete, Greece.

* * * *

CALL FOR PROPOSALS FOR 1996 TSOP MEETING SITE

The Council is soliciting proposals for the 1996 annual meeting site. It is desirable to select a site three years in advance of the meeting. Proposals submitted by the end of February 1993 can be considered at the 1993 mid-year Council meeting in March. The 1994 meeting will be in Wyoming, and the Council is considering a current proposal of Houston for 1995. The following is a list of guidelines used by the membership in the past for preparing annual meeting proposals. These meeting guidelines were derived from a procedures manual for TSOP, compiled by Brian Cardott.

Proposals should include:

- 1) The proposed meeting site and dates, noting any conflicts with other professional meetings.
- 2) The number and names of members willing to serve on the local committee.
- 3) Theme of meeting (if any), proposed symposia or special programs.
- 4) Short course proposal, if any.
- 5) Field trip proposal, if any.
- 6) Suitability of weather at proposed meeting time.
- 7) Description of facility (hotel, etc.) with estimated room rate.
- 8) Proximity of facility to technical sessions, if not the same place.

9) Accessibility of the proposed site to major air routes.

10) Any anticipated problems or special arrangements required due to inadequate transportation.

11) Expected number of registrants.

12) Capability and commitment by meeting organizers to arrange publication of the meeting proceedings.

13) A meeting schedule and detailed estimate of costs including registration fees, assistance for typing, printing, mailing, etc. (Initial proposals will be considered without this final point.)

Other criteria used by the Council in choosing a meeting site are:

1) Proximity to former and planned host cities, keeping in mind geographic balance in the meeting sites.

2) The level of support available to host the meeting — members in the proximity and other people available.

3) Adequacy of facilities, potential for field trip.

4) Financial considerations: cost of facilities and housing, suitable student accommodations, total registration fees, reasonable expected number of registrants, etc.

5) In the event that more than one proposal for the same future meeting is received, the one submitted first usually takes precedence.

Proposals for the 1996 meeting (a proposal for 1995 has been tentatively approved) should be mailed to Ken Kuehn, Secretary-Treasurer, Dept. of Geography and Geology, Western Kentucky University, Bowling Green KY, 42101, no later than the end of February, 1993. At this time, for the 1996 meeting, it would not be necessary to submit a proposal to Council which contained full financial details. However, by the annual meeting in October, 1993, such a proposal should be ready from those hoping to host the 1996 meeting.

- Suzanne Russell

* * * *

Book Notice

The biomarker guide: interpreting molecular fossils in petroleum and ancient sediments, by Kenneth E. Peters and J. Michael Moldowan (1993). Prentice Hall (New York), 352p. \$56.

Symposium
**Reevaluation of Vitrinite
 Reflectance as a Maturity
 Parameter: Petrologic,
 Kinetic and Geochemical
 Factors**

This symposium at the American Chemical Society, Division of Geochemistry National Meeting in Chicago, August 22-27, 1993 is convened by **P. K. Mukhopadhyay and W. G. Dow.**

The Symposium will highlight proper identification of vitrinite macerals and interpretation of vitrinite reflectance data and its correlation with other microscopic and organic geochemical maturation parameters. Kinetics of gas and liquid hydrocarbon generation from various vitrinite and liptinite macerals and the effect of maturity on kinetic measurements will be discussed. The symposium will also focus on the relationship between vitrinite reflectance and geological phenomena such as overpressuring, thrusting, erosion, varying heating rates, the use of vitrinite reflectance in basin modeling and the relation between vitrinite reflectance and other maturity parameters in the lower Paleozoic and older rocks.

If you wish to send an abstract and present a paper at the symposium, Please contact the following persons before March 1, 1993. Abstract forms will be sent to interested persons before February 15; **LAST DAY FOR SUBMISSION OF ABSTRACT IS MARCH 25, 1993:**

P. K. Mukhopadhyay
 Global Geoenergy Research Ltd.
 P.O.Box 9469, Station A
 Halifax, Nova Scotia
 Canada B3K 5S3
 Tel & Fax: (902) 453-0061

or

Wallace G. Dow
 D.G.S.I.
 8701 New Trails Drive
 The Woodlands TX 77381, U.S.A.
 Tel: (713) 363-2176
 FAX: (713) 292 -3528

**Symposium on Geochemistry
 and Petrography of Kerogen
 Macerals -**

CALL FOR A VOLUNTEER TO
 HELP ORGANIZE AN ACS-TSOP
 SYMPOSIUM

Tom Robl and Adrian Hutton are requesting a volunteer to co-organize with them an American Chemical Society (ACS) symposium on "The Geochemistry and Petrography of Kerogen Macerals" sponsored jointly by the Geochemistry Division of ACS and TSOP. Quoting from a letter to TSOP from Tom Robl: "The purpose of this symposium will be to explore advances in the geochemistry and petrography of maceral types as discrete entities or components of kerogen. The topics could include: the petrographic and geochemical classification of kerogen macerals; the chemistry of individual maceral types and how these can be related to precursor materials, paleo-depositional environments and diagenetic provenance; and the behavior of individual maceral types during maturation and catagenesis." It is intended that the symposium will encourage exploration of topics at the interface of organic petrology and organic geochemistry. The symposium is to be held in the spring of 1994.

This symposium represents an excellent opportunity for international exposure. Help is needed in organizing and advertising the symposium to interested scientists in America and Europe (and elsewhere). This would involve phone calls, issuing flyers and other communication. A publication resulting from the symposium is planned and the co-organizer would help with the collection and editing of the papers. Options for publication include a hard cover volume of the ACS Symposium Series or a special volume of Energy and Fuels, Organic Geochemistry or Fuel. Publication as an ACS Symposium Series volume would present the opportunity to be a coauthor of a comprehensive overview paper (on the geochemistry and petrography of macerals) which is generally required with these volumes.

It is requested that prospective volunteers call Suzanne Russell (713) 245-7603 for further information.

MEMBERSHIP NEWS

1992 Membership Directory and Bylaws

On December 1st, Dave Glick, Chairman of the Membership Committee, mailed a new Directory and Bylaws booklet to current members. The number of names and the geographic distribution is essentially unchanged from last year. As before, some people are included in each directory issue who are no longer current members for the year — in order that the Directory be as useful as possible to contact people. Thus, even though your name appears you may owe dues for 1993 (unless your mailer has a blue stripe) or you may be slightly in arrears. Check your records!

The Newsletter will continue to print in each number additions and corrections to the Directory, or temporary changes, so that members can update their copy. Therefore it is important that you check the accuracy, completeness and format of your address and your communication numbers and let Dave Glick know of any changes and additions. This is particularly important for FAX numbers, and others, for which there is no forwarding service!

New Members

The 1992 Membership Directory includes the following new members who joined between June 26, 1992 and September 30, 1992.

Stephen Bend teaches and performs research in many aspects of coal and organic petrology at the University of Regina.

Sunil Bharati has worked as a geologist and petroleum geochemist in the oil industry. He is now with Geolab Nor in Norway where his interests include organic geochemistry, petrology, and source rock evaluation.

Claus F. Diessel, Professor at Australia's University of Newcastle has done extensive work in coal geology and coal petrology, including fluorescence.

Constantine S. Karytsas rejoins TSOP upon the completion of his Ph.D. at Penn State. He is the Director of Geothermal Energy and application at Greece's Center for Renewable Energy Sources.

Kuili Jin teaches and performs research in coal and organic petrology at the Graduate School of China University of Mining and Technology in Beijing.

Keith A. Kvenvolden works for the U.S. Geological Survey in Menlo Park; his research in organic geochemistry includes hydrocarbons in recent sediments, traces of "life" organic molecules in ancient and lunar rocks, and gas hydrates.

Duncan G. Murchison is well known as a Professor of Organic Geochemistry and Petrology at the University of Newcastle in England. He has long devoted much time and other support to the ICCP, and recently has been working in broad University administration.

Walter Pickel works with coal and organic petrology and geochemistry and their application to environmental problems at the University in Aachen, Germany.

Wang Jies works on organic geochemistry and coal petrology, including the physical and optical properties of macerals, at China University of Technology in Xuzhou.

Professional Changes

Re nee L. McLaughlin has been named Project Director of Geochemical Speculative Studies at Core Laboratories. This new position involves creating and marketing large-scale regional geochemical basin studies internationally. Previously Renee managed the Organic Geochemistry Group.

Timothy A Moore completed 1.5 years post-doctoral research at the University of Canterbury, New Zealand, and moved to head the Coal Section of the Geological Survey of Wyoming. His service and research there includes innovative characterization of the state's vast coal deposits from a resource and geological perspective.

Jane C. Shearer completed her PhD dissertation in June and is Assistant Adjunct Professor at the University of Wyoming, where she heads paleobotanical research focused on ancient mire complexes and teaches plant evolution and peat-forming processes.

* * * *

Dues Paid? See inside back cover.

METHODS OF DUES PAYMENT

1. Check or money order drawn in U.S. dollars on a bank located in the United States. (Foreign check fees of \$5.00 U.S. on Canadian drawn funds and \$20.00 U.S. for all other foreign checks not drawn from a U.S. bank are charged to TSOP.)

Make checks payable to: The Society for Organic Petrology.

2. Direct Transfer of funds: You must notify Treasurer of your name, date, time, location and amount of transfer.

Notify treasurer:

Transfer to:

Dr. Kenneth Kuehn
Department of Geography and Geology
Western Kentucky University
Bowling Green, KY 42101
U. S. A.
Telephone (502) 745-3082

First Interstate Bank of Texas
Town and Country
Houston, TX 77253
U.S.A.
Routing Number: 1130-01064
Account Number: 21-0007-7666
Telephone: (713) 224-9300

3. U.S. Cash: TSOP is not responsible for money lost in transport. However, to date, no incidents of lost cash funds through the mail system have been reported. Receipts are sent for cash payments to let the member know cash was received.

Dues notice and information request

1993 TSOP membership fees due January 1, 1993

Please cut off this lower part of the back cover of the Newsletter with the attached mailing label and include it with your payment or notice of direct payment (see below) to the Secretary-Treasurer.

The individual membership fee for one year is U.S. \$20.00.
You may pay several years in advance at one time.

If you are a student, you may pay a reduced fee of U.S. \$15.00.
If this applies to you please indicate
I am a student at _____

Please check your label: Any information added or changed on the label side of this notice will be forwarded to the Membership Committee chairman for updating addresses and other information.

Is your address changed?

Could the contents or format of your address be improved?

Are your phone number, FAX number, TELEX address, etc. complete and correct in the latest (1992, with blue cover) Membership Directory?

Did you receive your 1992 Directory (Mailed December 1, 1992)?

Please mark changes and additions on or near the mailing label and return this lower portion of the back cover to the Secretary-Treasurer.

TSOP Newsletter
November, 1992
Volume 9, No.3

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

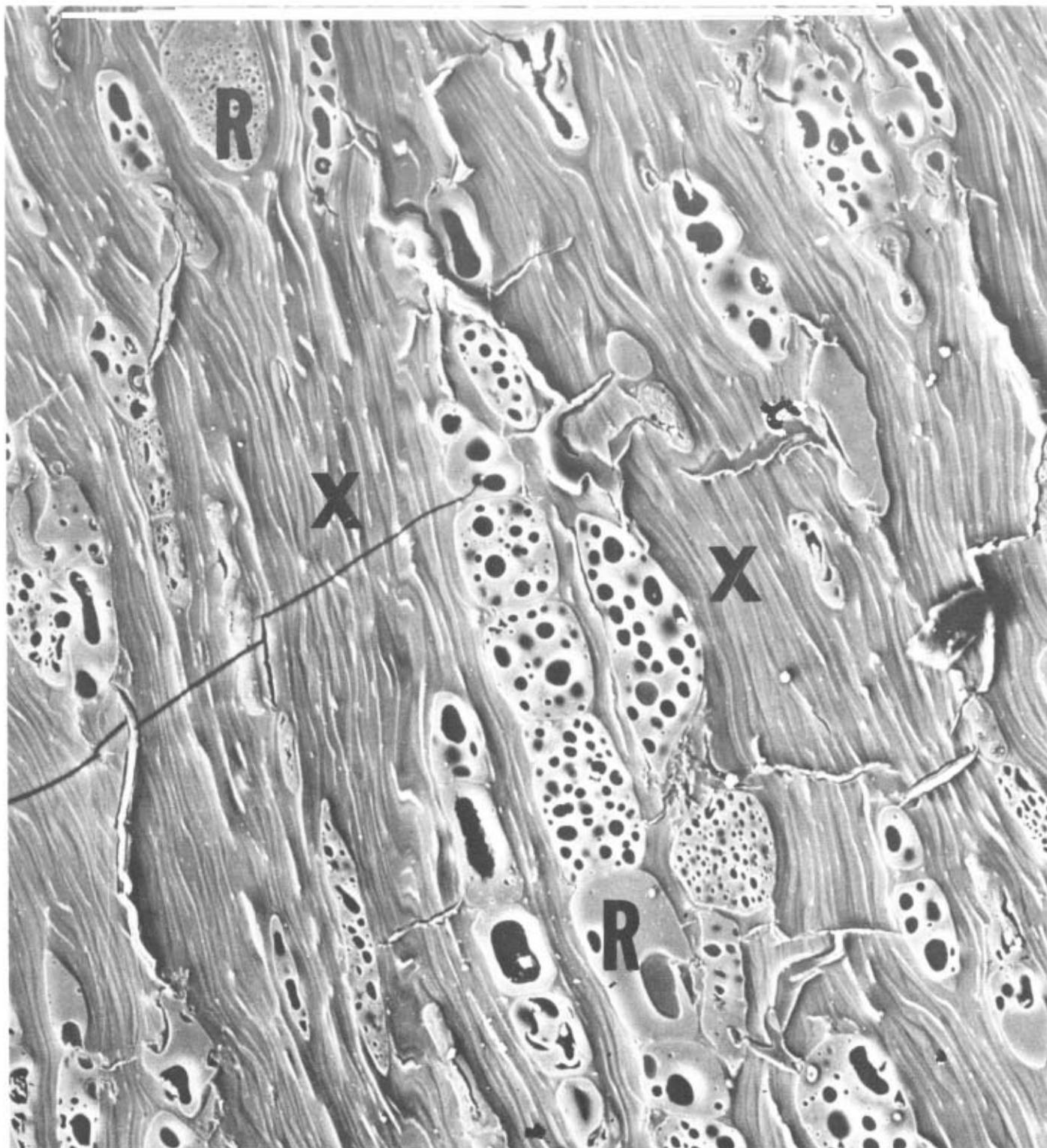


NEWSLETTER

Vol. 9, No. 4

January, 1993

ISSN-0743-3816



Secondary xylem in lignite (See p. 2). SEM Micrograph: K. M. Swanson and T. A. Moore,

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, 206 Research Building E, Penn State University, University Park, PA 16802-2321 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) are more convenient than printed materials. Unformatted ASCII files or files formatted in Wordstar are preferred, but WordPerfect and Microsoft Word are usable. Printed text sent by mail or by FAX can be scanned directly into ASCII characters for editing and publication. This is convenient and works well IF the text characters are **equally spaced** as from a typewriter or simple computer printer. Proportionally spaced characters jammed close together, especially if small, are barely usable.

Send contributions to the Editor:

Neely Bostick, MS-972
 U.S. Geological Survey
 Denver Federal Center
 DENVER CO 80225-0046
 Phone: (303) 236-0581
 Fax: (303) 236-7738

The 1992-93 TSOP Council

President	Suzanne J. Russell
Vice-President	Renee L. McLaughlin
President Elect	James C. Hower
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1991-93)	Martin Reinhardt
Councilor (1992-94)	Charles R. Landis

The Constitution and Bylaws of the Society For Organic Petrology were adopted on March 10, 1984. With revisions through July 24, 1992, they are printed in the 1992 Membership Directory and Bylaws. The address of the Secretary/Treasurer and membership information are given on the inside back cover.

For 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.

* * * *

Cover Photo

Secondary Xylem in Lignite

Scanning electron micrograph of secondary xylem from the Charleston lignite (Eocene), South Island, New Zealand (collectors: J.S. Esterle and T.A. Moore). R = infillings of ray cells, X = xylem tracheids. Micrograph by: KM. Swanson and TA. Moore.

* * * *

**Nominations for
 New Officers Sought**

Sue Rimmer, Chairman of the TSOP Nominating Committee, announced the schedule for the Committee to meet requirements of upcoming elections. The deadline for receipt of nomination suggestions (or for volunteers to let their interest be known) is February 19, 1993. Nominations must be put forward for President Elect, Vice-President, and one Councilor. Please contact a Committee member (Charles Barker, Stan Teerman) or Chairman Sue Rimmer at Phone=(606) 257-4607, FAX=(606) 258-1938.

Calendar

1993: **Jan. 1: TSOP 1993 membership fee due.** TSOPNws=9(3)11.

1993: **Feb. 19: Deadline: Nominations for TSOP elections.** S. Rimmer: TSOPNws=9(4)2.

1993: **March 6: TSOP Council mid-year Meeting** at Dallas, Texas. TSOPNws=9(3)5.

1993: **March 6: Proposals for 1996 Anl. TSOP Mtg.** due to S. Russell. TSOPNws=9(3)8.

1993: **March 25: Abstract deadline for 1993: August: ACS symposium.** TSOPNws=9(3)9.

1993: **April 25-28: ASIM Committee D5 on coal and coke.** Mtg. at Vancouver BC, Canada. Info: (215) 299-5487.

1993: **April 30: Deadline: Titles for '93 TSOP Anl. Mtg.** TSOPNws=9(3)5.

1993: **May 10-13: Low-Rank Fuels, 17th Symposium** at St. Louis, Missouri. + Short course: Coal ash behavior and deposition. Info: M. L. Jones; Deb. J. Haley, Univ. North Dakota, Box 8213, Univ. Sta., Grand Forks ND 58202. Ph: (701)777-3120.

1993: **June 22-25: 10th Intl coal testing conference.** Lexington KY, USA. Info: (606) 325-1970. Abstr. deadline Feb. 10, 1993.

1993: **June 30: Deadline for extended abstracts** (camera ready). 1993: October: TSOP Meeting. TSOPNws=9(3)5.

1993: **Aug. 22-27 (part): Reevaluation of vitrinite reflectance as a maturity parameter: petrologic, kinetic and geochemical factors — symposium.** At Amer. Chem. Soc. Mtg., Chicago. TSOPNws=9(3)9. 1993: March 25 = Abstract deadline.

1993: **Sept. 12-18: Coal Science 7th Intl. Conf.,** at Banff, Alberta, Canada. Info: David Brown (403) 450-5200.

1993: **Sept. 18-21: 40th Canadian Conference on Coal,** Whistler, B.C. Info: Jim Wood; Coal Assn. Canada; (403) 262-1544; FAX: (403) 265-7604.

1993: **Sept. 26 Oct. 2: International Committee for Coal and Organic Petrology (ICCP).** Meeting at Chania/Crete, Greece. Excursion to lignite mine of S.E. Greece. TSOPNws=9(3)8.

1993: **Oct. 9-13: TSOP Annual Meeting** at Norman, Oklahoma. Excursion in Arbuckle Mountains. Short course on petroleum geochemistry. TSOPNws=9(3)5. 1993: June 30 = Abstract deadline.

1993: **Oct. 24-26: ASIM Committee D5 on coal and coke.** Mtg. Birmingham AL, USA. Info: (215) 299-5487.

1994: **May 22-25: ASIM Committee D5 on coal and coke.** Mtg. at Myrtle Beach SC, USA. Info: (215) 299-5487.

1994: **Spring: Geochemistry & Petrography of Kerogen Macerals.** TSOPNws=9(3)9.

1994: **TSOP Anl. Mtg. in Wyoming**

1994: **Oct. 2-5: ASIM Committee D5 on coal and coke.** Mtg. at Denver CO, USA. Info: (215) 299-5487.

1995: **TSOP Anl. Mtg. at Houston**

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by Dr. Harry Marsh

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* * * *

Research Committee Report 93-I:

**INITIAL RESULTS OF VR
ROUND-ROBIN ANALYSIS**
by Rui Lin

[Unocal Corporation, 376 S. Valencia Ave.,
P.O. Box 76, Brea, CA 92621, USA]

Acknowledgment

The Research Committee would like to acknowledge all the participants for contributing to this round-robin analysis. Any comments or suggestions regarding future research needs on vitrinite reflectance are greatly appreciated.

Abstract

Polished pellets of three coal samples and one shale were distributed to 13 participating labs for a round-robin exercise of mean random and mean maximum vitrinite reflectance (VR) analyses. The rank of the samples ranges from lignite to high volatile A bituminous. The same suite of

samples was used also for a round-robin microscope fluorescence analysis, which will be reported in the next issue of the TSOP Newsletter. The between-laboratory standard deviations of the mean VR values range from 0.036 to 0.054. The VR data dispersions between the lowest and the highest values range from 0.12 to 0.16%. Consistency statistic h shows that results from all the labs are within the critical values of h at 0.5% significance level. This suggests that the VR results are reasonably consistent.

Introduction

The TSOP Research Subcommittee on "Standardization of Reflectance and Fluorescence Methods" was established in early 1991 along with four other subcommittees under the auspices of the Research Committee. The main goal of this subcommittee is to standardize procedures and instrument conditions for reflectance and fluorescence microscope measurements. This, in turn, should improve interlaboratory data reproducibility and comparability. This is an effort in parallel with the ICCP working groups on standardization of reflectance and fluorescence measurements.

The 1991/1992 project conducted by this subcommittee involves a round-robin analysis of four samples, including a lignite, two high volatile bituminous coals and an organic-rich shale (a Devonian New Albany shale from Kentucky). The three coal samples were obtained from the Penn State Sample Bank. Some relevant information regarding the three coal samples is listed in Table 1. Each participating laboratory was requested to perform 100 VR readings on the three coal samples for both the mean random and mean maximum VR measurements. Only 30 random VR readings were requested for the New Albany shale sample (1E00660).

On Table 2, note:

individual-lab mean random and mean maximum VR = $\bar{x} = \sum x/n$,

x is single VR data point, n number of data points (100 for the coal samples and 30 for the shale);

average of individual lab means = $m = \sum \bar{x}/p$, p is the number of labs;

individual-lab deviation = $d = \bar{x} - m$;

between-laboratory standard deviation = $S_{\bar{x}} = \sqrt{\sum d^2/(p-1)}$

The main goal of this study is to gather and compare data obtained from different laboratories so that microscope sampling (maceral identification) and instrumental differences, if present, causing incomparability can be identified. The data will serve as a basis for a second-phase study which will attempt to minimize these differences.

Thirteen laboratories from 5 different countries participated in this round-robin exercise. The participants include D. F. Bensley (Southern Illinois University), B. J. Cardott (Oklahoma Geological Survey), Y. Heroux (INRS Georesources, Canada), J. C. Hower (University of Kentucky), Jin Kuili (China University of Mining and Technology), M. Jones (Geolab, UK), R. Lin (Unocal), H. B. Lo (Exxon), P. K. Mukhopadhyay (Global Geoenergy, Canada), K. Ottenjann (Geol Landesamt Nordrhein Westf, Germany), J. C. Quick (Univ. Canterbury, New Zealand), S. J. Russell (Shell), C. L. Thompson-Rizer (Conoco). The results to be discussed in this report are only preliminary. The main purpose is to show interlaboratory comparability and consistency. A between-laboratory consistency statistic, namely the h test, was performed.

Results and Discussion

Eight (labs #1 to #8 in Fig. 1-4) of the 13 labs performed both mean random and mean maximum vitrinite reflectance. Four labs (#9 to #12 in Fig. 1-4) measured only the random reflectance, and 1 lab (#13 in Fig. 1-4) measured only the maximum reflectance, presumably due to the instrumental limitations of these laboratories. Note that, in the figures to be presented below, two different legends are used to represent mean random and mean maximum VR data.

Table 1. Some relevant information regarding the coal samples (data courtesy of Penn State)

Sample ID	1E00657 (PSOC-086)	1E00658 (PSOC-760)	1E00659 (PSOC-122)
Apparent Rank	Lignite	HVB bituminous	HVA bituminous
Age	Paleocene	Pennsylvania	Pennsylvania
% Volatile Matter	46.24	41.08	48.49
% Fixed Carbon	53.76	58.92	51.51
% Carbon	73.21	81.17	84.46
% Hydrogen	4.94	5.83	6.62
% Oxygen	20.90	1.25	1.39
% Sulfur	0.50	2.02	0.80
% Nitrogen	0.83	9.74	6.72
% Vitrinite	67.2	85.0	46.2
% Inertinite	21.1	10.0	20.2
% Liptinite	11.7	5.0	33.6

Table 2. Mean Random and Mean Maximum Vitrinite Reflectance

Laboratory number	1E00657 mean random	1E00658 mean random	1E00659 mean random	1E00660 mean random	1E00657 mean maximum	1E00658 mean maximum	1E00659 mean maximum
1	0.37	0.59	0.79	0.56	0.39	0.62	0.83
2	0.25	0.57	0.78	0.53	0.27	0.60	0.82
3	0.29	0.56	0.76	0.40	0.30	0.56	0.80
4	0.34	0.57	0.75	0.50	0.35	0.60	0.79
5	0.37	0.47	0.84	0.46	0.38	0.49	0.87
6	0.29	0.51	0.68	0.40	0.30	0.58	0.71
7	0.31	0.55	0.78	0.49	0.28	0.54	0.73
8	0.36	0.55	0.77	0.47	0.37	0.58	0.81
9	0.33	0.57	0.68	0.46			
10	0.37	0.6	0.73	0.49			
11	0.34	0.56	0.78	0.42			
12	0.34	0.53	0.74	0.51			
13					0.24	0.58	0.77
average (m)	0.33	0.55	0.76	0.47	0.32	0.57	0.79
std. dev. (S _x)	0.038	0.036	0.046	0.050	0.054	0.039	0.050

Table 3. h** Statistics Testing Between-Laboratory Consistency

Laboratory number	1E00657 mean random	1E00658 mean random	1E00659 mean random	1E00660 mean random	1E00657 mean maximum	1E00658 mean maximum	1E00659 mean maximum
1	1.052632	1.041667	0.724638	1.716667	1.296296	1.225071	0.755556
2	-2.10526	0.486111	0.507246	1.116667	-0.92593	0.712251	0.555556
3	-1.05263	0.208333	0.072464	-1.48333	-0.37037	-0.31339	0.155556
4	0.263158	0.486111	-0.14493	0.516667	0.555556	0.712251	-0.04444
5	1.052632	-2.29167	1.811594	-0.28333	1.111111	-2.10826	1.555556
6	-1.05263	-1.18056	-1.66667	-1.48333	-0.37037	0.19943	-1.64444
7	-0.52632	-0.06944	0.507246	0.316667	-0.74074	-0.82621	-1.24444
8	0.789474	-0.06944	0.289855	-0.08333	0.925926	0.19943	0.355556
9	0	0.486111	-1.66667	-0.28333			
10	1.052632	1.319444	-0.57971	0.316667			
11	0.263158	0.208333	0.507246	-1.08333			
12	0.263158	-0.625	-0.36232	0.716667			
13					-1.48148	0.19943	-0.44444

** where h = d/S_x

Figure 1. Interlab Comparison of Mean Random and Mean Maximum Vitrinite Reflectance of a Lignite Sample (1E00657)

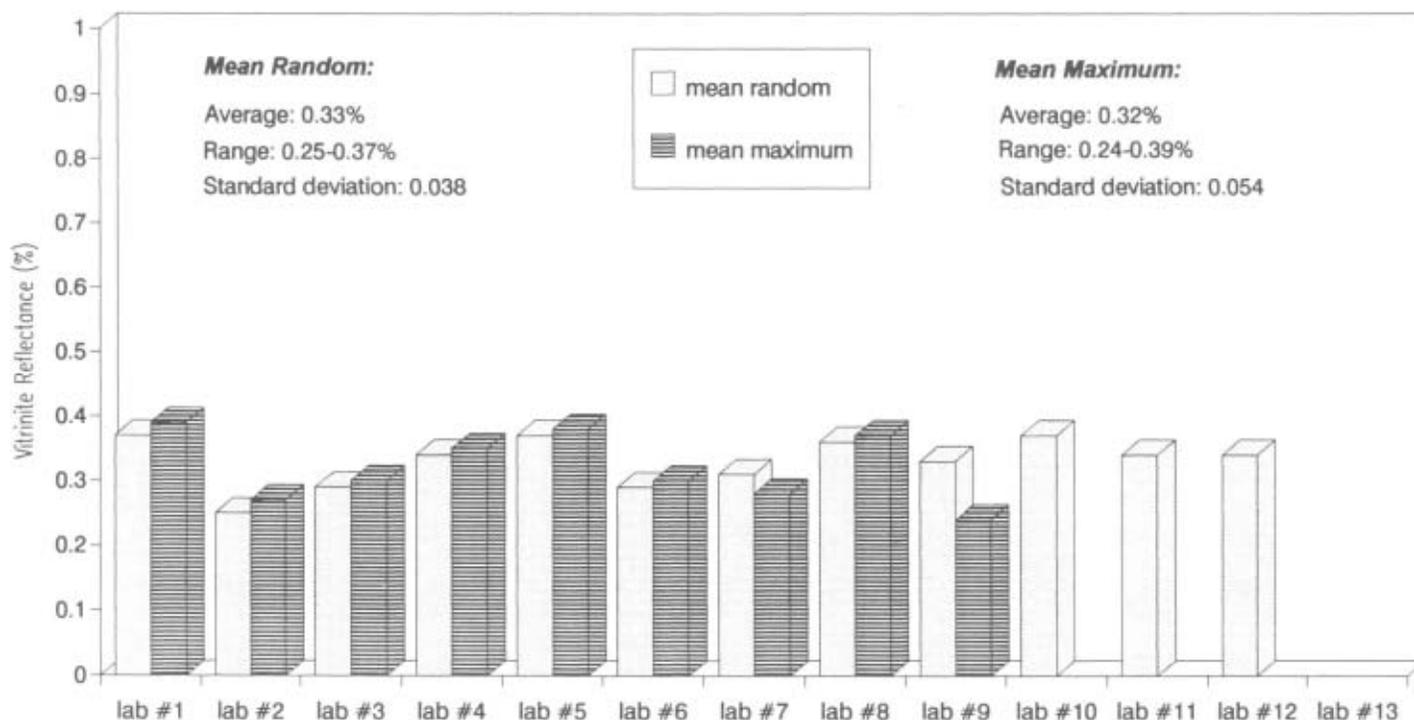


Figure 1 is a diagram showing the inter-laboratory comparison of the mean random and mean maximum VR data measured on the lignite sample (1E00657). The average values for the mean random and mean maximum reflectance are respectively 0.33 and 0.32% (Table 2). The reported mean maximum reflectance of the same sample (from Penn State Coal Database) is 0.31%, which is practically the same as the results obtained from this round-robin analysis. One interesting observation is on the different degrees of data dispersion between mean random and mean maximum VR measurements. The mean random VR has a standard deviation of 0.038, which is significantly lower than that of the corresponding maximum VR (0.054). The range of the mean random VR values (0.25-0.37%) is also narrower compared to that of the maximum VR values which are 0.24-0.39% (Table 2). These suggest that maximum VR measurements are relatively less accurate compared to random VR analyses of samples at this rank level.

Shown in Figure 2 is the interlaboratory comparison of the mean random and mean maximum VR data of the HVB bituminous

coal (1E00658). The average random and maximum VR values are respectively 0.55% and 0.57%; the latter is identical to the reported maximum VR value (also 0.57% by Penn State Coal Database). Statistical analyses show that the standard deviations for the two types of measurements are 0.036 and 0.039. The data dispersions are relatively small, 0.47-0.59% and 0.49-0.62% respectively for the two types of VR measurements (Table 2).

Figure 3 displays the interlaboratory results of mean random and mean maximum VR of the HVA bituminous coal sample (1E00659). This coal has the highest rank of the four samples used in the round-robin analysis. The average mean random and mean maximum VR values are 0.76% and 0.79%, respectively, which are slightly higher than the reported value of 0.75%. The data dispersions are also relatively higher 0.68-0.84% and 0.71-0.87% for the two types of measurements. The standard deviations are respectively 0.046 and 0.050 (Table 2).

Figure 4 is the mean random VR results of the New Albany shale. Lab #13 did not perform the random VR analysis on this sample. The average mean random VR is

Figure 2. Interlab Comparison of Mean Random and Mean Maximum Vitrinite Reflectance of a HVB Bituminous Coal Sample (1E00658)

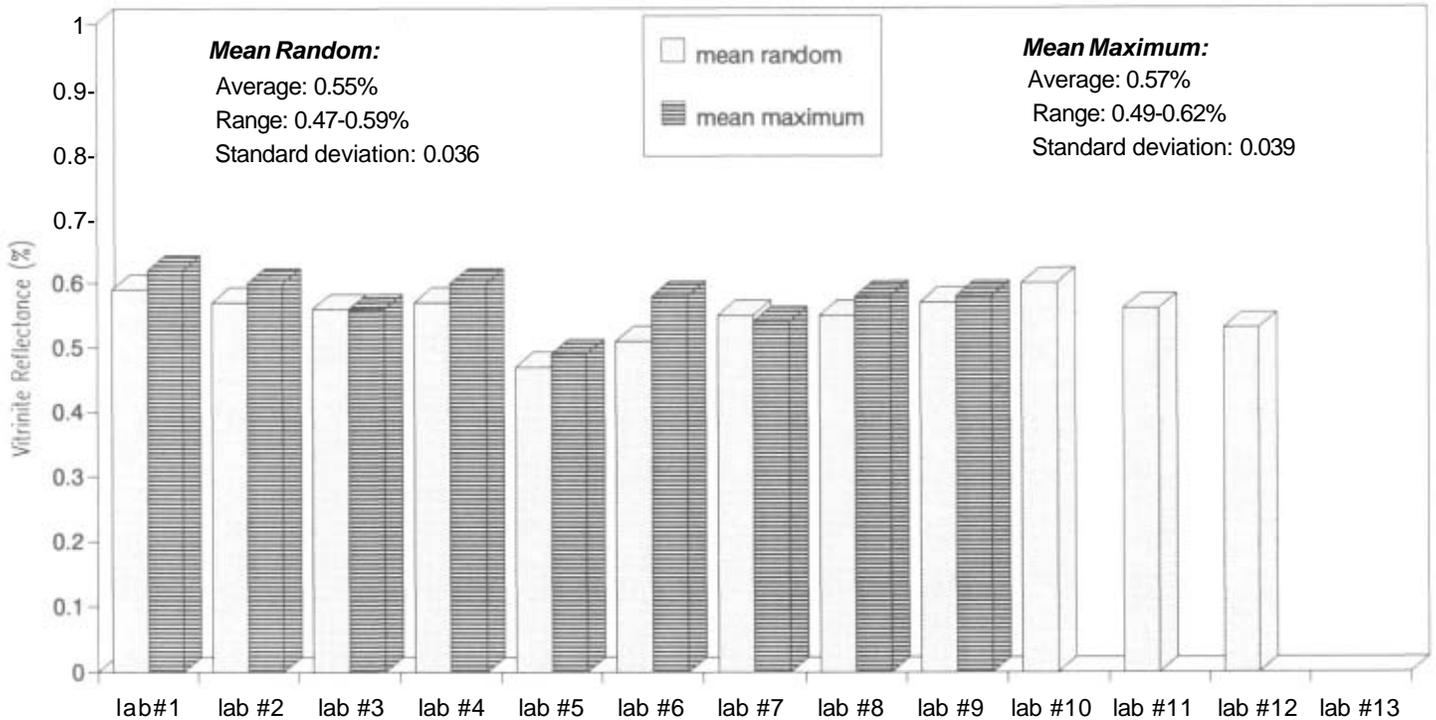


Figure 3. Interlab Comparison of Mean Random and Mean Maximum Vitrinite Reflectance of a HVA Bituminous Coal Sample (1E00659)

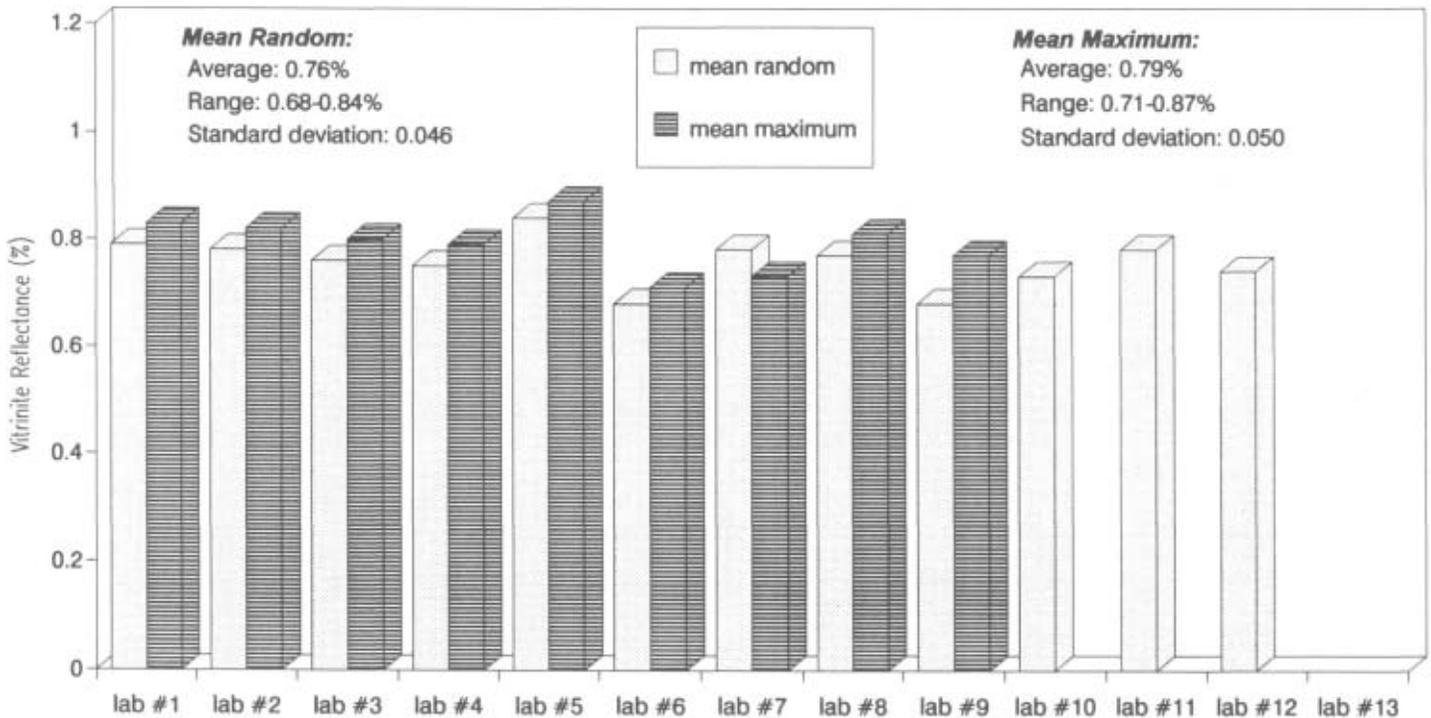
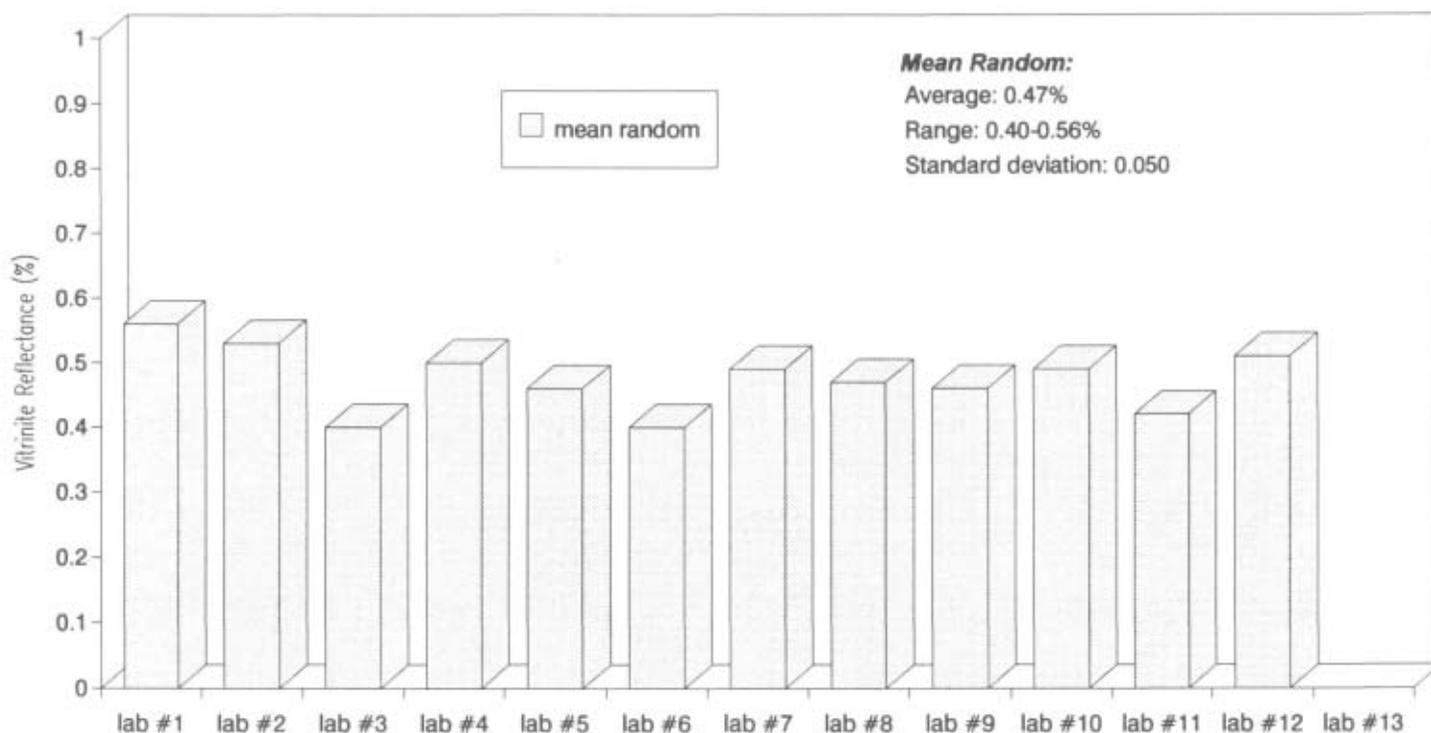


Figure 4. Interlab Comparison of mean Random Vitrinite Reflectance of an Organic-rich Shale (1E00660)



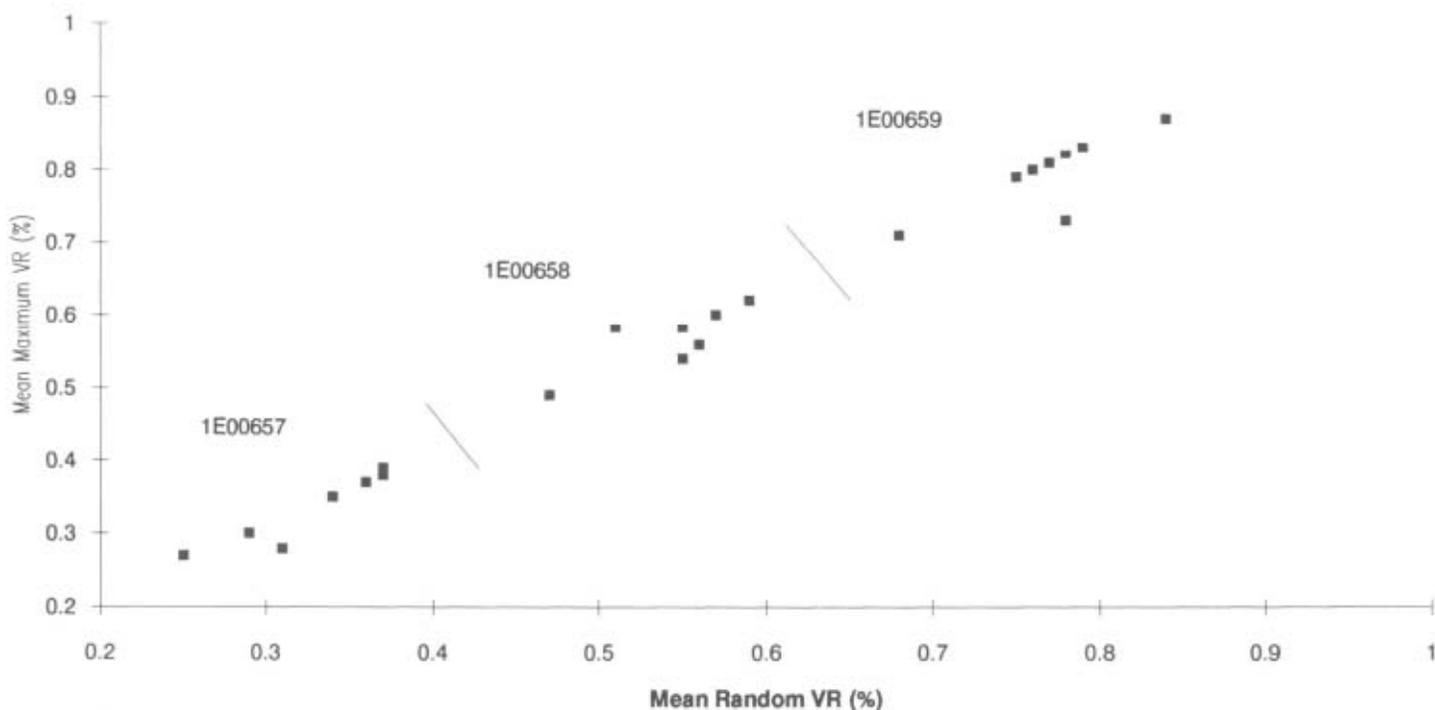
0.47%. The data dispersion is from 0.40 to 0.56% and the standard deviation is 0.050 (Table 2). These results indicate that VR measurement on the shale sample is not as accurate as on the coal sample at comparable level of maturity. This is understandable since the shale sample contains much smaller particles of vitrinite which makes VR measurements difficult.

With the exception of lab #7, the mean maximum VR values of all the other labs are consistently higher than the corresponding mean random VR values (Figures 1-4). A crossplot between the mean random and the mean maximum VR shows that the two measurements are very consistently correlated (Figure 5). In other words, a lab which measured a higher random VR also obtained a higher maximum VR from the same sample. Nevertheless, it is not the same labs who consistently obtained the higher or the lower VR values from one sample to another. It is also observed that the data dispersions of the three coal samples are fairly significant (as high as 0.16% VR). This may be problematic in interpreting the maturity of hydrocarbon generation, especially in marginally mature basins.

A between-laboratory consistency statistic, h , is performed. The statistic test is based on ASTM E691-87 ("Standard practice for conducting an interlaboratory study to determine precision of a test method"). The h values and the between-laboratory standard deviations ($S_{\bar{x}}$) are calculated by using equations provided in the ASTM E691-87. The equations are also shown in Tables 2 and 3.

According to ASTM E691-87, the critical values of h are 2.38 and 2.23 respectively for 12 and 9 participating laboratories in interlaboratory studies. Therefore, if the h values of this round-robin analysis are within $+2.38$ for the mean random VR measurements and $+2.23$ for the mean maximum VR measurements, the results can be considered reasonably consistent. Table 3 lists the h values of the between-laboratory consistency statistic, and shows that all the values are within the ranges mentioned above. In other words, the interlaboratory mean random and mean maximum VR results obtained in this round-robin analysis are statistically consistent.

Figure 5. Crossplot between Mean Random and Mean Maximum Vitrinite Reflectance of the Three Coal Samples



With the exception of labs #1 and #6, all other labs have randomly positive or negative h values, a pattern which is acceptable. Lab #1 has consistently positive h values, whereas 6 out of the 7 measurements by lab #6 have negative h values. Consistent positive or negative h values may indicate consistent bias by the instrument or by the operator who performed the analyses. Lab #5 has the highest amplitude of variation in the h values (-2.29 to 1.81), which suggests a higher within-laboratory deviation. However, the deviations are all within the critical values and do not suggest the need for further investigations of the laboratories. Within-laboratory consistency statistics will be performed in the future.

In summary, results of mean random and mean maximum VR measurements among the TSOP members are statistically consistent. Nevertheless, a data dispersion of 0.12 to 0.16% is technically still too high, considering that the variation can give rise to different geological interpretations (e.g. immature vs. oil generation). It is desirable that the data dispersion be further minimized.

* * * *

Book Notice

New perspectives on Central Appalachian low-sulphur coal supplies, edited by Jeremy Platt, Jeffrey Price, Marshall Miller, and Stanley Suboleski (1992) Published by TechBooks (Cat. #15682), 4012 Williamsburg Court, Fairfax, VA 22032, U.S.A., Phone (800) 767-1518. \$50.00, 239 pages.

According to the publisher, this book combines geological and economic perspectives of Central Appalachian low-sulphur coal supplies and promotes the cross-fertilization of these disciplines. One goal of the book is to bring coal geoscience to a broader audience by promoting an awareness of those geoscientific concepts that apply to business and policy aspects of coal utilization. Another goal is to explain to geoscientists the economic significance of the progress being made in coal resource assessment. In addition, the book explains the interest of electric utilities in the combustion and environmental characteristics of coal.

Standard Methods

NEWS FROM THE ASTM

COMMITTEE ON COAL AND COKE

Provided by Dick Harvey, ISGS, 615 E. Peabody Dr., Champaign, IL 61820; Arthur Hoeft, A. P. Hoeft Co., 8754 Eastman Ave., Denver, CO 80231; and James Luppens, Phillips Coal Co., 2929 N. Central Expressway, Richardson, TX 75080

Over the past three years the ASTM Committee on Coal and Coke has approved a number of changes to the Standard Classification of Coals by Rank (1992 Annual Book of ASTM Standards, vol. 05.05 Gaseous Fuels; Coal and Coke, ASTM, Philadelphia, D388-92, p.192-195.). The following 5 items summarize these changes, and the discussion that follows will help clarify some complexities.

1. The scope of the standard was revised to clarify the types of coals that the standard applies to. The classification is applicable to coals that are composed mainly of vitrinite. Coals rich in inertinite or liptinite or both, may not be properly classified; and in North America, these coals are mostly nonbanded types that contain little vitrain.

2. Key terms that are used in the classification are now more clearly defined: agglomerating, as applied to crushed coal, is the property of softening when the coal is heated to above about 400°C in a nonoxidizing atmosphere, and then appearing as a coherent mass after cooling to room temperature; apparent rank, as opposed to the "standard rank", is the rank designation obtained on samples of a drill core, run-of-mine, or samples that were cleaned in a preparation plant, i.e. not channel samples.

3. The standard now formally permits the results of the Free Swelling Index test (ASTM D720) to be used to determine the agglomerating character of a sample. If the test result is 1 or more, the sample is deemed to be agglomerating, if less than 1 it is nonagglomerating. This property distinguishes the nonagglomerating subbituminous A coals from the lower part of the high volatile C bituminous coal (agglomerating) range; otherwise, these two rank groups have overlapping ranges of gross calorific value.

4. The ash content of the tested sample is now required to be adjusted to the sulfur free basis. This adjustment removes a major source of error in the mineral matter calculation. The Parr mineral matter calculation assumes that all the sulfur is driven off during ashing. For most eastern coals this adjustment is of minor consequence, but due to the occurrence of calcium and other similar cations in many western coals this often leads to significant errors. The sulfur-free ash is calculated from the expression

$$A = A_d \left(1 - \frac{SO_{3,d}}{100}\right) \left(1 - \frac{M}{100}\right), \quad (1)$$

where A = sulfur corrected ash on the inherent moist basis, A_d = % sulfate-containing dry ash, $SO_{3,d}$ = % sulfate in the ash, dry basis, and M = % inherent moisture, which is equivalent to the as-received moisture for a sample that was collected and prepared so as to preserve its full complement of moisture.

5. The new appendix to D388 includes a correlation chart of vitrinite reflectance with volatile matter on the dry, mineral-matter free basis; but the chart is not intended to be used for standard ranking.

In addition to the above revisions, the following provides some further clarification of the equations as they are given in the standard. Because the ash is corrected, the fixed carbon (FC) value must also be corrected:

$$FC_d = 100 - VM_d - SFA_d, \quad (2)$$

where SFA_d is the sulfur free and dry ash, like in equation 1, but expressed on the dry basis (the moisture, M, is equal to zero in this case).

Then the ranking equation for coals with volatile matter 31% or less, on the dry mineral-matter free basis, can be expressed as:

$$FC_{dmmf} = \frac{100 (FC_d - 0.15 S_d)}{100 - (1.08 SFA_d + 0.55 S_d)}, \quad (3)$$

where all of the analysis properties are on the dry basis.

Most of us prefer to express the rank in

terms of the dry volatile matter (VM_d), the actual property that is analytically determined. By combination of equations 2 and 3, one obtains:

$$VM_{d,mmf} = \frac{VM_d + 0.05 SFA_d - 0.4 S_d}{1 - 0.0105 SFA_d - 0.0055 S_d} \quad (4)$$

This equation can most usefully be expressed in terms of the laboratory determined dry values:

$$VM_{d,mmf} = \frac{VM_d + 0.05 A_d \left(1 - \frac{SO_{3,d}}{100}\right) - 0.4 S_d}{1 - 0.0105 SA_d \left(1 - \frac{SO_{3,d}}{100}\right) - 0.0055 S_d} \quad (5)$$

For the lower rank coals, those that have more than 31% $VM_{d,mmf}$, the ranking is based on the gross calorific value expressed on the inherent moist, but mineral-matter free basis ($Btu_{m,mmf}$), the ranking equation can take the form:

$$Btu_{m,mmf} = \frac{100(Btu_{im} - 50 S_{im})}{(100 - (1.05 A_{im} \left(1 - \frac{SO_{3,im}}{100}\right) + 0.55 S_{im})} \quad (6)$$

where Btu_{im} = gross calorific value (Btu/lb, inherent moist basis), S_{im} = % sulfur (inherent moist basis), and A_{im} = % determined ash (inherent moist basis).

With regard to the determined ash and other properties on the inherent moisture basis, it is quite important to collect samples so that they contain all of their inherent moisture and, equally important, that no surface moisture (groundwater, rain or snow, or any other excess water) be visible on broken surfaces of the sample. For the lower rank coals, all of the ranking parameters need to be expressed on the inherent moisture basis. For properly collected and prepared samples, this basis is described as the as-received values on laboratory reports. If, for one reason or another, the as received moisture cannot be considered the inherent moisture, then the results from the equilibrium moisture test (ASTM D1412) can often be used in place of the inherent moisture. In this case, the conversion of ranking properties from the as-received to the equilibrium (inherent) moist basis may use the following expression:

$$P_{im} = P_{ar} \left(\frac{100 - EM}{100 - ARM} \right) \quad (7)$$

where P_{im} = a property expressed on the inherent moisture basis (note - P can represent either ash, sulfur, volatile matter, or gross calorific value), P_{ar} = a property expressed on the as-received basis, EM = the equilibrium (inherent) moisture, and ARM = the as received moisture.

Please contact one of the authors if you have any questions.

Request for Sapropelic Samples

At the Coal Characterization Laboratory of the Department of Geology at SIUC we are currently involved in a long range study of liptinite rich coals, particularly cancell coals and organic-rich oil shales. The overall objective of this study is to gain a better understanding of these rocks by characterizing their petrographic and organic geochemical properties. The specific objectives are: 1) to determine the petrographic properties and chemical composition of both the macerals and the matrix of sapropelic coals; 2) to determine if there is a genetic relationship between the organic matrix and the macerals; 3) to develop a rational classification for sapropelic coals. See the following "Research in Progress" for the reasons for this study.

At this time with the generous help of several colleagues, we have gathered together about 50 samples of cancell and boghead coals and organic-rich oil shales. The initial results of petrographic and chemical analyses are interesting. However, to better delineate and even confirm the initial trends, we need many more samples.

We would greatly appreciate additional help from our colleagues in gathering more samples. If you are willing to provide such samples or can help in obtaining some please contact Jack Crelling at the Department of Geology at SIUC [(618) 453-7361]. We will provide you with any data we gather on your samples and acknowledge your contribution in any publications using the samples.

Research in Progress

PETROGRAPHIC AND ORGANIC GEOCHEMICAL CHARACTERIZATION OF SAPROPELIC COALS

By: *Han Zhiwen*

Sapropelic coal is a genetic term derived from sapropel which refers to the jelly like ooze or sludge composed of plant remains, undergoing diagenesis on the shallow bottoms of lakes and seas. Sapropelic coals are distinguished from humic coals by their uniform and compact fine-grained texture, as well as non-banded appearance. They are further divided into sporinite-rich cannel coal, algae-rich boghead coal (or torbanite) and all grades of mixtures: boghead-cannel coal and cannel-boghead coal, etc. The rich oily nature of sapropelic coals brought them into special industrial prominence both in Europe and North America in the last century and the earlier part of this century. However, with the discovery of large oil fields, one after another in the last five decades, the coal oil and shale oil industries have shrunk and almost vanished today. However, for more than a century the investigation into the properties and origin of sapropelic coals was an active research subject because of the following reasons:

1. Sapropelic coals are uncommon but wide-spread. They occur in most coal fields around the world. Their rich oily nature makes them an excellent feedstock of the distillation and liquefaction industries. It is, therefore, natural that each succeeding petroleum shortage has excited interest in these known sources of synthetic liquid fuel.

2. The organic components of sapropelic coals can be roughly compared with the type I and type II kerogen in source rocks. It has been recognized that the study of sapropelic coals provides useful information on the genesis of petroleum. Due to their high concentration of organic matter, sapropelic coals have inherent advantages in any study of kerogen formation and thermal alteration relative to oil source rocks.

3. Because sapropelic coals almost always are intergrown with humic coals, facies analysis of sapropelic coals can provide useful knowledge for understanding the palaeogeography and vegetation dis-

tribution of peat-forming swamps, as well as the formation and development of coal facies.

4. In the classification of organic deposits, sapropelic coals are classified into the category of coal due to their high volume of organic matter. But their very oil-prone nature also render them as excellent oil shales and special oil source rocks. The study of sapropelic coals can provide key knowledge on the relationships between coals, oil shales and petroleum and provide a better basis for their classification.

OBJECTIVES

While there has been a considerable body of research published on sapropelic coals as described in the review given below, a number of aspects of these coals are still very poorly understood, particularly:

1. The nature of their deposition, accumulation, and preservation.
2. The properties and genesis of the major constituent macerals, especially bituminite and Saprovitrinite.
3. The nature and origin of the cannel coal matrix which can often make up the majority of the coal.
4. The relationships between the matrix and the macerals is virtually unknown.
5. The current classification of sapropelic coals is inadequate. It is purely descriptive, tells nothing about the coal matrix, and has remained unchanged for more than a century.

The overall objective of this study is to gain a better understanding of these areas by characterizing the petrographic and organic geochemical properties of sapropelic coals. The specific objectives are:

1. To determine the petrographic properties and chemical composition of both the macerals and the matrix of sapropelic coals.
2. To determine if there is a genetic relationship between the organic matrix and the macerals.
3. To develop a rational classification for sapropelic coals.

The reason for doing this study at this time is that the current analytical tech-

niques are now advanced to the point that the problems previously encountered in studying cannel coals can reasonably be expected to be overcome. The major problem in past studies was the inability to separate and individually analyze the various components that comprise sapropelic coals. Most work was done on bulk samples. However, the new technique of density gradient centrifugation has demonstrated that good separations of sapropelic coals can be made, and this technique is available at SIUC in the state-of-the-art Maceral Separation Laboratory. Another problem in the study of sapropelic coals has been that they are difficult to analyze in normal white-light microscopy because of the abundance of a fine-grained matrix. The use of fluorescence microscopy is relatively recent and has proven useful in revealing detail in these coals. The two different state-of-the-art fluorescence microscopy systems are available in the Coal Characterization Laboratory and will be used in this study.

* * * *

Book Notice

Geology and utilization of Fort Union lignites, edited by R.B. Finkelman, S.J. Tewalt, and D.J. Daly (1992) Published by Environmental and Coal Associates, Box 3168, Reston VA 22090, U.S.A. 359 p., \$35 USA, \$45 Overseas. NOTE: Profits from sale of this book will be donated to the Americal Coal Foundation to aid in their educational activities. The book is described by the publisher as follows:

"Geology and Utilization of Fort Union Lignites contains comprehensive discussions of the geology, coal quality characteristics, and utilization of the lignites in North and South Dakota, Montana, and Saskatchewan. Other topics include hydrology, environmental and regulatory issues, and lignite production summaries. Conventional and innovative lignite-based technologies are described in detail. This book is a must for anyone interested in coal, lignite utilization or the environment and economy of the Fort Union Lignite Region."

Shortened titles of the papers in the book on the Fort Union lignites are:

Geology and Depositional Environments
Lignites in Montana
Lignites of South Dakota
Chronostratigraphy and Paleocene Strata

Production and Utilization in Saskatchewan
Conversion Technology
Palynological Research
Combustion Systems
Coal Petrology
The Great Plains Coal Gasification Project
Chemical Characteristics and Trends
Underground Coal Gasification
Geochemistry and Mineralogy
Solid By-Product Management
Hydrogeochemistry and Surface Mining
Carbonization and Briquetting of Lignite
Hydrologic Effects of Mining
Mined-Land Reclamation
Geochemistry of Lignite Sodium
The Abandoned Mine Program
History of Mining and Utilization
Mine Reclamation Research

* * * *

Laboratory Note

QUANTITATIVE MACROSCOPIC TEXTURAL ANALYSIS

By

*T.A. Moore, J.C. Shearer
and J.S. Esterle*

Moore: Geological Survey of Wyoming, P.O. Box 300S University Station, Laramie, Wyoming S2071 USA.
Shearer: 557 N. 8th St., Laramie, Wyoming S2070 USA.
Esterle: CSIRO Division of Geomechanics, St. Lucia, Brisbane Australia.

One of the principle characteristics of coal is its banding. Generally the brighter bands in coal are termed vitrain in high-rank or xylite in low-rank coal. Vitrain/xylite bands are the manifestation of plant material preserved since the peat stage. In contrast, the material between the vitrain/xylite bands (termed attrital layers) is composed of finely comminuted plant material as well as spores/pollen, resin, fungal remains and oxidized fragments of plant material. The brightness of the attrital layers is the result of both rank and composition (e.g. inertinite and mineral matter content).

Although banding is an important attribute of coal, few methods exist for making quantitative estimates. Many studies macroscopically refer to coal as "well banded", "thinly banded", "bright", "bright banded", "splint" or alternatively "durain", "clarain" etc. But what all these descriptors have in common is that they can not be quantitatively compared and statistically tested.

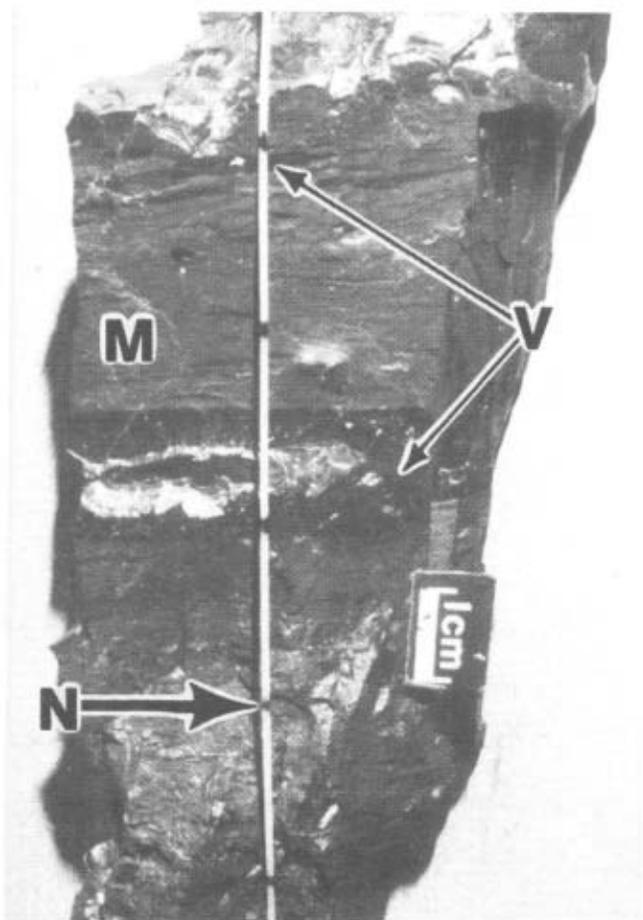


Figure 1: Photograph of a block sample of Cretaceous Morley coal from New Zealand illustrating marked string for macroscopic point counting. V = vitrain/xylite bands, M = fine-grained matrix (attritus), N = point-counting node.

One of the best known macroscopic description systems was developed by Schopf (1960). This method uses a series of cards to estimate thickness and proportion of bands in coal. However, the problem with Schopf's method is that it is only semi-quantitative and numbers derived from this system can not be rigorously statistically tested.

Therefore we have developed a simple point counting method of determining both the thickness and proportion of vitrain/xylite bands in coal (outcrop or core). The data obtained from this analysis is fully quantitative and can be statistically manipulated. The procedure requires only a string and some chewing gum or "sticky tack". First the string is marked off in intervals so that the presence or absence of vitrain/xylite

bands can be counted. The distance between marks on the string is very important and will vary with respect to the maximum size of the vitrain/xylite bands in the coal being counted. For example, if the vitrain/xylite bands tend to be 1 - 2 cm thick, then the intervals between marks on the string should be at least 2 cm. The idea is not to count a particle more than once - as in any modal analysis. Next the string is secured on a coal face or a split-face of a core using "sticky tack" and the marks on the string act as a point count node (Fig. 1). Only those vitrain/xylite bands greater than 1 mm are counted and measured, as below this size recognition and measurement becomes problematic. In addition, the sizes and proportion of particles less than 1 mm can be accurately estimated microscopically on block samples collected for petrographic analysis (Moore, 1990; Esterle et al., 1991). In the analyses we have done, only the proportion and width (that is, the vertical dimension of the particle) are measured but the length of a vitrain/xylite band could also be noted. In order to assure a representative size-frequency distribution only those vitrain/xylite bands counted are measured. The size measures are then converted to $-\log_2$ or ϕ (ϕ) scale which is commonly done by other sedimentologists for grain-size analysis of inorganic sediments (Krumbein, 1936). Log-normality of size distributions for organic components has also been shown to occur by Lorente (1990) and Moore and Ferm (1992).

The advantage of this macroscopic point counting method is that it allows quantitative measures of bands to be compared between coal beds. Intervals within coal beds that appear different (i.e. "facies") can also be quantified and tested to determine if those layers are truly different. Alternatively, different intervals within a single seam can be tested to determine their macroscopic similarity. In this way, data and interpretations can be evaluated in a number of different ways. For example as shown in Fig. 2, a number of traverses can be made across coal types and measures (size or proportion) derived from these point counts can be used in an analysis of variance test. In this type of analysis, the variances of point count traverses within a coal type interval is compared to the variance between the two coal type intervals. Of course, if the variance between the coal types is greater than the variance within

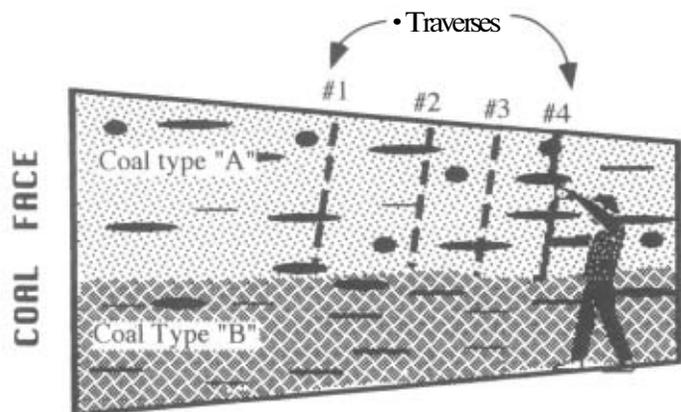


Figure 2: Cartoon depicting traverses of macroscopic point counting of different coal types in a coal face.

coal types then this indicates the two coal layers are different in respect to their macroscopic texture. In addition microscopic composition is in a sense being estimated as vitrain/xylite bands are composed almost exclusively of cell walls and cell fillings (humotelinite and corpohuminite in low-rank and telinite, telocolinite and corpocollinite in high-rank coals). Needless to say this type of testing works best with mine faces and outcrops (as opposed to cores) where lateral variation can be assessed.

In our studies we have quantified macroscopic texture in deposits from peat to bituminous coals ranging in age from the Holocene to the Permian (Fig. 3). Although at times it may be difficult to recognize vitrain/xylite bands in coal, especially at the lower ranks, we have found that in most cases this can be overcome with careful examination and unweathered surfaces. Although we have not yet examined Carboniferous age coal seams, this method should be fully applicable to size characterization of vitrain in those beds. In conclusion we feel that quantitative macroscopic textural analysis will provide new data and thus new insights which may lead to a better understanding of the formation and differences between coal and peat deposits.

References

Demchuk, T. D. and Moore, T. A. (1993) Palynofloral and organic characteristics of a Miocene Bog-Forest, Kalimantan, Indonesia. *Org. Geochem.* in press.

Esterle, J. S., Moore, T. A. and Hower, J. C. (1991) A reflected-light petrographic technique for peats. *Jour. Sediment. Petrol.* 61, 615-616.

SIZE-FREQUENCY HISTOGRAMS OF VITRAIN/XYLITE BANDS

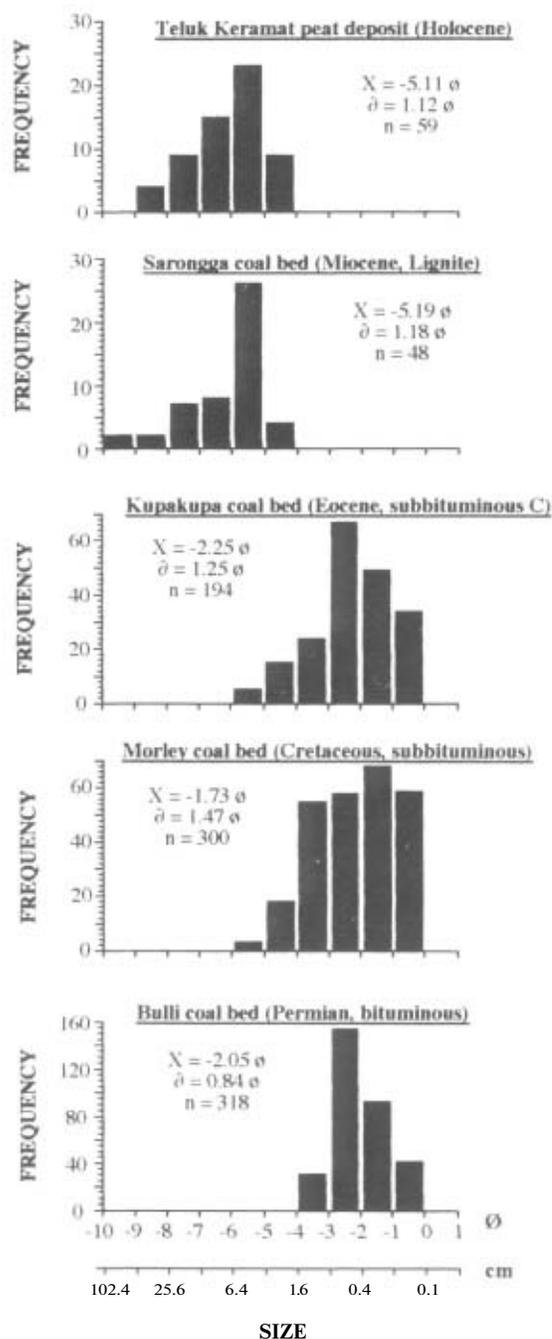


Figure 3: Size-frequency histograms of the width (i.e. the longest dimension of the short axis) of macroscopic plant material (vitrain/xylite bands) from various deposits. \bar{X} = mean in phi (ϕ) units, $\hat{\sigma}$ = standard deviation, n = number of measurements. Data from Esterle et al. (1992), Shearer (1992), Demchuk and Moore (1993), Shearer and Moore (in review) and unpublished data.

Esterle, J. S., Moore, T. A. and Shearer, J. C. (1992) Comparison of macroscopic and microscopic size analyses of organic components in both coal and peat. 26th Newcastle Symposium: Advances in the study of the Sydney Basin, Newcastle, NSW, Australia, April 3-5, 1992, p. 143-149.

Krumbein, W. E. (1936) Application of logarithmic moments to size frequency distributions of sediments. *Jour. Sediment. Petrol.* 6, 35-47.

Lorente, M. A. (1990) Textural characteristics of organic matter in several subenvironments of the Orinoco Upper Delta. *Geologie en Mijnbouw.* 69, 263-278.

Moore, T. A. (1990) An alternative method for sampling and petrographically characterizing an Eocene coal bed, southeast Kalimantan, Indonesia. University of Kentucky, Ph.D. dissertation, Lexington, Ky., 240 pp.

Moore, T. A. and Ferm, J. C. (1992) Composition and grain-size of an Eocene coal bed in southeastern Kalimantan, Indonesia. *Int. J. Coal Geol.* 21, 1-30.

Schopf, J. M. (1960) Field description and sampling of coal beds. U.S. Geological Survey Bull. 1111-B, 25-67.

Shearer, J. C. (1992) Sedimentology, coal chemistry and petrography of the Morley and Beaumont coal measures, Ohai coalfield, New Zealand. University of Canterbury, Ph.D., Christchurch, New Zealand, 325 pp.

Shearer, J. C. and Moore, T. A. (in review) Petrographic analysis of two coal beds from the South Island of New Zealand: Questioning the maceral concept for paleoenvironmental interpretations. *Rev. Palaeobot. Palynol.*

* * * *

CALL FOR PAPERS

1993 TSOP ANNUAL MEETING

The Tenth Annual Meeting of The Society for Organic Petrology (TSOP) will be held on October 9-13, 1993, in Norman, Oklahoma. The first announcement, with description of the petroleum geochemistry short course and the field trip was in the Newsletter V. 9, No. 3.

Remember, submit a tentative title for your presentation by April 30, 1993, to Brian Cardott (Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628), and indicate your preference for oral or poster presentation. Camera-ready extended abstracts (one to three pages including black and white figures) must be submitted to the same address by June 30, 1993. Contact Brian Cardott for example of abstract format.

* * * *

MEMBERSHIP NEWS

Membership Directory and Bylaws

Additions and corrections to the Directory will be published in each Newsletter so that members can update their copy. As much as possible we will list temporary changes also. Therefore it is important that you check the accuracy, completeness and format of your address and your communication numbers and let Dave Glick know of any changes and additions. This is particularly important for FAX numbers, and others for which there is no forwarding service!

NEW MEMBERS

The Society welcomes two new members who joined in November, 1992. Please add information about them to your 1992 Directory:

Dr. Bertrand Ligouis manages the coal petrography laboratory at the Geological Institute of Tübingen. His research interests include the Toarcian oil shales of Germany and Cretaceous coals of Nigeria.

Bertrand Ligouis
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Institut und Museum für Geologie und Paläontologie
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Dr. Jean-Paul Boudou is involved in research on organic geochemistry and coal (single-maceral) chemistry.

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Professional Changes

Jeff Levine left affiliation with the University of Alabama and has undertaken a new effort as full-time consultant, still based in Tuscaloosa. Since he is particularly knowledgeable and experienced in geology and petrology of "coalbed methane" reservoirs, work in that area may be emphasized initially. He expects to undertake work also both domestically and overseas on studies related to basin maturation history and petroleum source rocks. [Address change in list below.]

Alan Davis will be on study leave from Penn State until about July 4, 1993. His address will be:

c/o Dr. Colin Ward
Department of Applied Geology
The University of New South Wales
P.O. Box 1
Kensington, N.S.W. 2033
AUSTRALIA
FAX: 61-2-313-8883

[Editor's note: See the book written by Colin Ward, Alan Davis and others (1984) Coal Geology and Coal Technology: Blackwell Publ., 345pg. (Reviewed in J. Sed. Petrol. 55(5)785)]

Address/Phone Changes:

Please note the following changes and additions to your 1992 Directory:

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John Castaño
Fax: (713) 292-3528

Brenda Claxton
Fax: (713) 556-2404

John A. Clendening
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Alan Davis		may now be
David C. Glick		reached
Gareth D. Mitchell		at:

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 E-mail: dwavrek@esri.esri.scarolina.edu

Gordon Wood
 Phone (713) 556-3380
 Fax: (713) 556-2404

Some entries in the 1992 Directory had incorrect line breaks, and should read:

Mohammad Hossein Alimi
 Global Geochemistry Corp.
 6919 Eton Ave.
 Canoga Park, CA 91303

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

And in the back of the Directory:

On p. 22, Brazil should be in the second column, not the first.

On p. 25, Article VII, first line should read [... not less than three (3) Members, ...]

* * * * *

History of Coal Petrology An Oral History of the Triangle Run Report by Jack Crelling

On 19 May 1992 a research seminar entitled "An Oral History of Applied Coal Petrology and the Triangle Run" was held on the campus of Southern Illinois University at Carbondale. The event was sponsored by the Department of Geology, the Coal Research Center, and the College of Science at SIUC. The purpose of this effort is to record the personal accounts of four of the principal scientists involved in the initial application of coal petrology to the manufacture of metallurgical coke and its subsequent developments. The seminar was held because the history of applied coal petrology is interesting, important, and full of lessons for current research, and because this history is very fragile and often lost before its importance is realized.

The four principal scientists in the seminar are Dr. William F. Berry who has worked as a consulting scientist in coal petrology for over thirty years; Mr. Ralph J. Gray who led coal petrographic research at the U. S. Steel Corporation Laboratories near Pittsburgh, Pennsylvania; Dr. William Spackman who served as a Professor of Geology and leader of the Coal Research Section at The Pennsylvania State University in State College, Pennsylvania; and Dr. Richard R. Thompson who still leads coal petrographic research at the Bethlehem Steel Corporation in Bethlehem, Pennsylvania.

The three locations mentioned above form the points of a triangle that became the route for anyone wanting to learn about the practical applications of coal petrology. For over twenty-five years, from the late 1950's to the mid 1980's hundreds of people - students, professors, technicians, industrial scientists and engineers, and industrial managers, from North America and overseas traveled the "triangle run" and were always welcomed and encouraged.

A unique aspect of this development of coal petrology is that it was an excellent example of fruitful collaboration between industry and universities. This collaboration occurred before the development of the lunar space program which is regarded as a milestone in such collaboration. Another important aspect is the fact that all of the participants were exceptionally enthusiastic about their work and freely shared their accomplishments, at industrial forums, scientific meetings, and most significantly laboratory visits.

The presentations of all four speakers and the discussion of the researchers in attendance were recorded on both audio and video tape and are now transcribed into manuscript form. The manuscript is now being edited and will eventually be published. Anyone needing more information should contact Jack Crelling at SIUC.

* * * * *

The Vitrin Ite

I never saw a Vitrin Ite,
 I never hope to see one;
 But I can tell you anyhow,
 I'd rather see than be one*

Call for a Volunteer to
Help Organize a Symposium
**Geochemistry and Petrogra-
phy of Kerogen Macerals**

Tom Robl and Adrian Hutton are requesting a volunteer to co-organize with them an American Chemical Society (ACS) symposium to be held in the spring of 1994. The details were published in the NEWSLETTER Vol. 9, No. 3.

This symposium represents an excellent opportunity for international exposure. Help is needed in organizing and advertising the symposium to interested scientists worldwide. This would involve phone calls, issuing flyers and other communications. A publication resulting from the symposium is planned and the co-organizer would help with the collection and editing of the papers. It is requested that prospective volunteers call Suzanne Russell (713) 245-7603 for further information.

Next Newsletter

The next Newsletter issue is scheduled to be printed on March 22, 1993, so the **deadline is March 15th**. Diverse topics on aspects of Organic Petrology are welcomed, for instance: TSOP committee work, meetings scheduled, notes (and especially reviews) on recently published books, information about graduate research in progress or completed, laboratory notes, address and/or job changes, topical reviews, opinions, additions or corrections to publications, etc. Possibly advertisements and research reports could be included — with approval by the Council. Cover photos that will reproduce well in black and white halftone and that tell a story will be selected for some issues.

* * * *

Apology to Gelett Burgess

Ah, yes, I wrote the "Vitrin Ite" -
I'm sorry, now, I wrote it!
But I can tell you, anyhow,
I'll kill you if you quote it.

Dues notice and information request

1993 TSOP membership fees due January 1, 1993

Please cut off this lower part of the back cover of the Newsletter with the attached mailing label and include it with your payment or notice of direct payment (see below) to the Secretary-Treasurer:

Dr. Kenneth Kuehn
Department of Geography and Geology
Western Kentucky University
Bowling Green, KY 42101 U. S. A.
Telephone (502) 745-3082

The individual membership fee for one year is U.S. \$20.00.
You may pay several years in advance at one time.
More details on methods of payment are in Newsletter Vol. 4, No. 3.

If you are a student, you may pay a reduced fee of U.S. \$15.00.

If this applies to you please indicate: I am a student at _____

Please check your label: Any information added or changed on the label side of this notice will be forwarded to the Membership Committee chairman for updating addresses and other information.

Is your address changed?

Could the contents or format of your address be improved?

Are your phone number, FAX number, TELEX address, etc. complete and correct in the latest (1992, with blue cover) Membership Directory?

Did you receive your 1992 Directory (Mailed December 1, 1992)?

Please mark changes and additions on or near the mailing **label** and return this lower **portion of the back** cover to **the Secretary-Treasurer**.

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TSOP Newsletter
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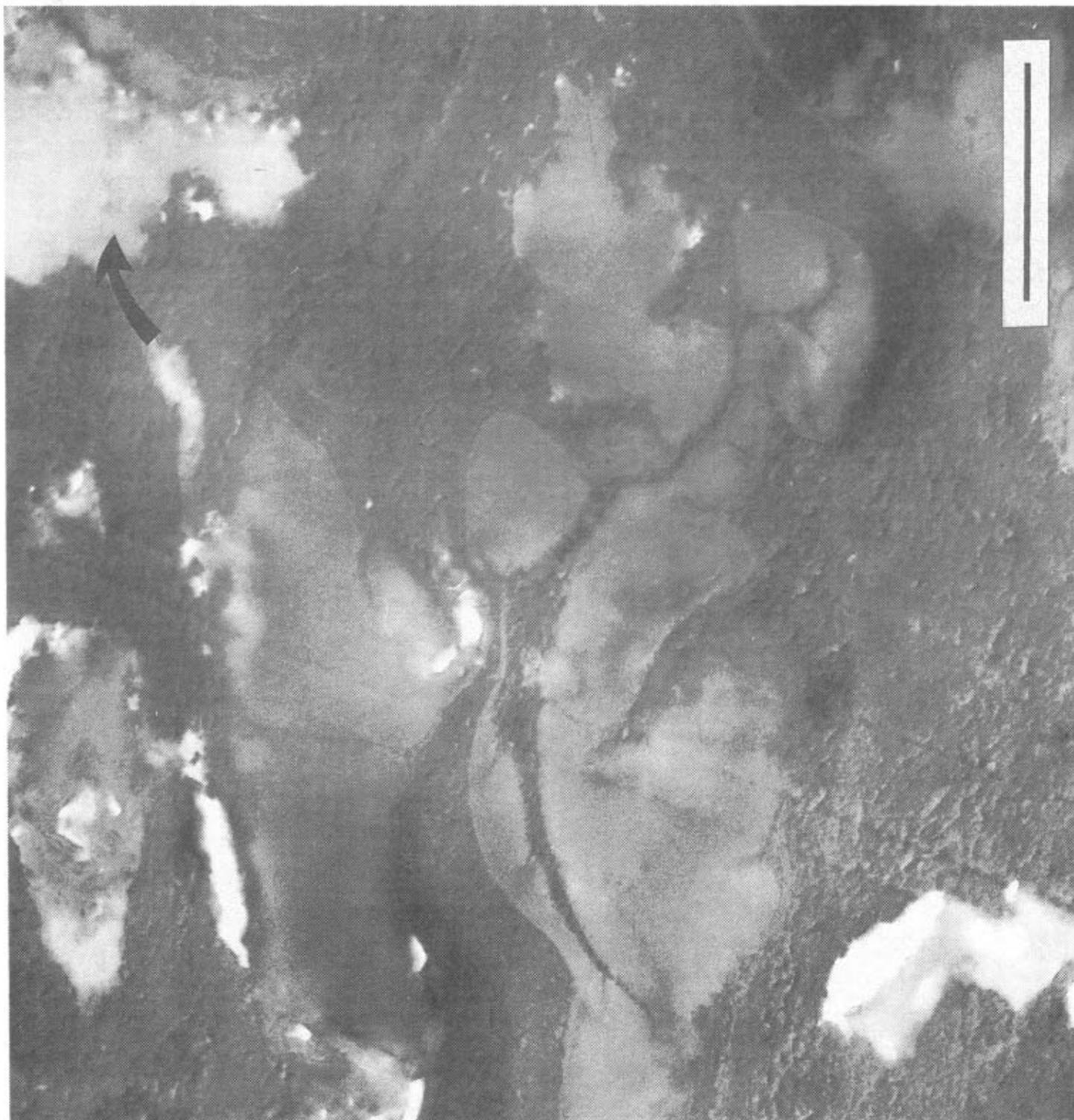
THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 10, No. 1

April, 1993

ISSN-0743-3816



Fluorinite nodules in huminite groundmass (See p. 2). TEM Micrograph: Geoff Taylor

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) are more convenient than printed materials. Unformatted ASCII files or files formatted in Wordstar are preferred, but WordPerfect and Microsoft Word are usable. Printed text sent by mail or by FAX can be scanned directly for publication 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:

Neely Bostick, MS-972
U.S. Geological Survey
Denver Federal Center
DENVER CO 80225-0046
Phone: (303) 236-0581
Fax: (303) 236-7738

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 1992-93 TSOP Council

President	Suzanne J. Russell
Vice-President	Renee L. McLaughlin
President Elect	James C. Hower
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1991-93)	Martin Reinhardt
Councilor (1992-94)	Charles R. Landis

The Constitution and Bylaws of the Society For Organic Petrology were adopted on March 10, 1984, With revisions through July 24, 1992, they are printed in the 1992 Membership Directory and Bylaws.

* * * *

Cover Photo

TEM Image of Fluorinite

The Newsletter cover photo shows nodular fluorinite of two different translucencies (pale bodies in the photo) in huminite groundmass in Miocene brown coal from Upper Lausitz, eastern Germany. The arrow points to a wax-like fluorinite. The scale bar length is one micrometer. TEM photomicrograph by permission of Geoff Taylor.

Transmission electron microscopy was used to study fluorinite and associated macerals in sections of coal cut to about 50nm thickness with an ultramicrotome. Some of the results are described by G. Taylor and M. Teichmuller in their 1993 paper, "Observations on fluorinite and fluorescent vitrinite with the transmission electron microscope" in *The International Journal of Coal Geology* 22(1)61-82.

Besides irregular nodules such as these on the cover, distinct fluorinite lamellae are common, including multi-lamellar packets. The fluorinite is frequently associated with cutinite, and it appears to be lipid-rich material derived from leafy matter of vascular plants. Fluorinite has generated hydrocarbons subsequent to early coalification, in some cases with the formation of sub-micrinite. Hydrocarbons generated from fluorinite may represent one, but not the only, source for the hydrocarbons which have been injected into fluorescent vitrinite.

Calendar

Note: In response to suggestions by several members, the scope of the calendar has been enlarged. **The Editor would appreciate further feedback from members about the desired scope of the calendar.**

1993

April 30: Deadline: Titles for TSOP '93 Ann. Mtg. TSOPNws=9(3)5.

June 6-11: Carbon Technologies Short Course E. Heintz and H. Marsh, Buffalo, N.Y. TSOPNws=9(4)3-4.

June 17-18: Frankophone Organic Petrographers, 9th Mtg., Pau, France. Fax: 33-59835551 or 59834566.

June 30: Deadline for extended abstracts (camera ready) for October TSOP Meeting. TSOPNws=9(3)5.

Aug. 8-12: Society for Sedimentary Geology (SEPM), Theme meeting, University Park, PA.

Aug. 15-19: Canadian Society of Petroleum Geologists, Ann. Mtg., Calgary, Alberta, Canada.

Aug. 22-27 (part): Reevaluation of vitrinite reflectance as a maturity parameter: petrologic, kinetic and geochemical factors — symposium. At Amer. Chem. Soc. Mtg., Chicago. TSOPNws=9(3)9. 1993: March 25 = Abstract deadline.

Sept. 12-15: Rocky Mountain Section, AAPG, Ann. Sect. Mtg., Salt Lake City, UT.

Sept. 12-18: Coal Science 7th Intl. Conf., at Banff, Alberta, Canada. Info: David Brown (403) 450-5200.

Sept. 15-17: European Coal Conference, Leicester, U.K. Phone (0533) 533922, Fax: (0533) 523918.

Sept. 18-21: 40th Canadian Conference on Coal, Whistler, B.C. Info: Jim Wood; Coal Assn. Canada; (403) 262-1544; FAX: (403) 265-7604.

Sept. 19-21: Eastern Section, AAPG, Ann. Sect. Mtg., Williamsburg, VA. Info: Art Cohen, Fax=(803) 777-6610. [See separate

note on the Symposium on sulfur in peat and coal: TSOPNws 10(1).

Sept. 20-24: 10th Ann. Intl. Pittsburgh Coal Conf., Pittsburgh, PA. Phone (412) 624-7440, Fax (412) 624-1480.

Sept. 20-24: International Meeting on Organic Geochemistry, Stavanger, Norway. Phone: (47) 4 807398; Fax: (47) 4 806423.

Sept. 26-Oct.2: International Committee for Coal and Organic Petrology (ICCP). Meeting at Chania/Crete, Greece. Excursion to lignite mine of S.E. Greece. TSOPNws=9(3)8.

Oct. 9-13: TSOP Annual Meeting at Norman, Oklahoma. Excursion in Arbuckle Mountains. Short course on petroleum geochemistry. TSOPNws=9(3)5. 1993: June 30 = Abstract deadline.

Oct. 17-20: American Association of Petroleum Geologists, Intl. Mtg., The Hague, Netherlands.

Oct. 20-22: Gulf Coast Assn. Geol. Soc., Gulf Coast Section, AAPG / SEPM, Mtg., Shreveport, La. (318) 429-2713.

Oct. 24-26: ASTM Committee D5 on coal and coke. Mtg. Birmingham AL, USA. Info: (215) 299-5487.

Oct. 25-28: Geological Society of America, Ann. Mtg., Boston, Mass. [See separate note on the Symposium on coalification: TSOPNws 10(1).

Nov. 1: Abstract deadline for ACS symposium March 13-18, 1994.

Nov. 9-13: Mineral resources of Russia, Mtg., St. Petersburg. Phone: (011-7-812)355-7952 or 218-9224 [in U.S. (505) 291-9812. [See separate note on activities of the meeting related to coal and petroleum, TSOPNws 10(1).

1994

March 13-18: Geochemistry & Petrography of Kerogen Macerals. Symposium at ACS Mtg., San Diego, CA. Abstract deadline Nov.1, 1993 (on ACS form). TSOPNws=9(3)9, 9(4)19, 10(1).

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 22-25: 10th International coal testing conference. Lexington KY, USA. Info: (606) 325-1970. Abstr. deadline Jan. 4, 1993.

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

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

Fall: TSOP Ann. Mtg., Jackson Hole, Wyoming.

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

1995

Early October?: TSOP, Ann. Mtg., Houston, Texas.

* * * *

International Meeting MINERAL RESOURCES OF RUSSIA

Professor Andrei Golitsyn at the University of Moscow called attention to the International Exhibition and Symposium scheduled on November 9-13, 1993 in Saint-Petersburg because the meeting will include sessions on coal and petroleum. He will give a lecture on correlation of coal measures with occurrence of oil and gas. Professor I. V. Yeryomin will lead a discussion of a draft international classification of coal. Other sessions on information sources and investment opportunities in Russia are planned.

According to Professor Golitsyn, it is still possible for TSOP, the ICCP or other groups to propose a session at the meeting, and many specialists in coal geology and petrology will be there. For further information contact the Organizing Committee at Phone= 7-812: 218-9224; Fax= 7-812: 213-5926. E-mail=vsg@sovamsu. sovusa.com. In the USA further informal information may be obtained by telephone at (505) 291-9812.

Summary of Actions Mid-year Council Meeting

March 6—Plano, Texas

Suzanne J. Russell, presiding.

Ken W. Kuehn, Secretary-Treasurer;

1. Approved minutes from outgoing Council meeting, July 23, 1992, and the amended minutes from incoming council meeting, July 24, 1992. See summaries in Newsletter 9(3).

2. Approved signature authority of President, President-Elect, and Secretary-Treasurer on Vanguard fixed income securities fund, to be updated annually.

3. Approved signature authority of present and past Secretary-Treasurer on checking account, to be updated as needed.

4. Approved \$500 support of American Chemical Society kerogen/organic geochemistry symposium, Spring, 1994. TSOP is joint sponsor.

5. Accepted report of Secretary-Treasurer showing a balance of \$4,430.67. Assets were \$19,680.87 as of February 28, 1993, and budgeted encumbrances are \$15,250.00.

6. Approved annual publication of the Membership Directory and change to a new print format.

7. Approved 10 applications for TSOP membership: S. Bend, S. Bharati, C. Diesel, K. Jin, D. Murchison, W. Jie, W. Pickel, J.-P. Boudou, B. Ligouis, J. Curiale.

8. Wording change in Article III, section 4 of By-Laws will be added as an item to the upcoming ballot.

9. Slate of nominees for 1993 elections will be as reported by Nominations Committee: President Elect: Renee McLaughlin and Art Cohen. Vice-President: P. Mukhopadhyay and Ilham Demir. Councilor: Cole Robison and Ray Pheifer. Editor: N. Bostick.

10. Accepted the "Procedures Manual" distributed by R. McLaughlin. Council to review, revise and update as needed.

11. Set rate structure for 1993 Annual Meeting, October 9-13, Norman, Oklahoma.

12. Accepted site change of 1994 Annual Meeting from Casper to Jackson Hole, Wyoming.

13. Thanked ARCO EPT-PRC for use of facilities for the mid-year meeting.

Some detailed reports submitted for consideration, which resulted in specific decisions listed above were:

- a. Membership Committee: Dave Glick, Chairman.
- b. Research Committee: Rui Lin, Chairman.
- c. Outreach Committee: Bob Rathbone, MaryAnn Malinconico, Martin Reinhardt.
- d. Nominations Committee: Sue Rimmer, Chairman.
- e. 1993 Annual Meeting Committee: Brian Cardott, Carolyn Thompson-Rizer, Roger Woods.
- f. 1994 Annual Meeting Committee: Ron Stanton, Tim Moore, Jane Shearer, et al.
- g. 1995 Annual Meeting Committee: John Castaño, Wally Dow, H.B. Lo, Suzanne Russell.
- h. 1995 Symposium and Field Trip at GSA Southeast Meeting: Jim Hower.

The minutes of the Council meeting and committee reports are on file with the Secretary-Treasurer.

* * * * *

Initial Results of VR Round-Robin Analysis

The report by Rui Lin appeared in TSOPNws 9(4)4-9.

DISCUSSION by *Monika Wolf*.

First, my congratulation to the very good result of your VR round-robin analysis.

Having in mind that low rank coals show inhomogeneities within the vitrinite even when only telocollinite is selected for the measurements, the comparability of the results of the different labs is remarkable.

Within the section " Results and Discussion" I miss one consequence which results from the data presented: The time-consuming determination of R_{max} is superfluous in low rank coal. The R_{max} values mirror in this case optical irregularities of the equipment but not structural differences of the vitrinite. An international agreement to measure reflectance at random orientation (R_{rand}) in place of R_{max} in coals with R_{rand} less than 1% would save time and money.

RESPONSE by *Rui Lin*.

I would like to express my gratitude to Professor Monika Wolf for her complimentary comments regarding the "VR round-robin analysis". I personally would agree that maximum VR measurement on low-rank coals (i.e., lignite and subbituminous coals) is unnecessary, and may introduce additional errors as suggested by the data presented in the report (relatively higher standard deviations than the corresponding random analyses).

With respect to the suggestion that an international agreement be reached to perform R_{rand} to replace R_{max} for coals $<1\%R_{rand}$, I think that further discussions are needed. While this will not create much problem for the petroleum industry, which has already been using R_{rand} , it may be more difficult for other industries which have been using R_{max} to switch. I would welcome additional comments and suggestions on this matter.

COMMENT by Editor: The question whether to use random or maximum reflectance, including the technical decisions about types and arrangements of illuminators and polarizers, needs to be resolved at several levels: 1. The scientific or technical level involving equipment and individual measurements, 2. The practical and industrial level involving consistency and applicability of methods usable in different laboratories worldwide, 3. The applicability of particular methods to solve specific tasks.

Further discussion from representatives of national and international standardization organizations, as well as from individuals, would be welcome for the TSOP Newsletter.

Research Committee Report 93-2
**DISPERSED ORGANIC MATTER
 CHARACTERIZATION**

by *Stan C. Teerman*

Chevron Petroleum Technology Co.,
 Box 446, La Habra, CA 90633-0446, USA

INTRODUCTION AND BACKGROUND

At the 1987 TSOP annual meeting, a research subcommittee was formed to review problems related to the integration of organic petrographic data with other geologic and geochemical data. An initial study was completed describing the influence of kerogen isolation methods on petrographic and bulk geochemical results (Senffle, 1989).

The purpose of this subcommittee is to continue to meet these goals and complement ICCP objectives for the standardization of kerogen characterization methods. Primary objectives include: (1) evaluation of the applications of different organic matter (microscopic) classifications and terminology, and (2) integration of microscopic and geochemical results. Secondary objectives include: (1) applications of different microscopic techniques (whole rock vs. isolated kerogen, etc.), and (2) kerogen isolation and preparation techniques.

Subcommittee objectives are being met by completing: (1) questionnaires, (2) round robin studies including both microscopic and geochemical analyses, and (3) special projects by interested parties. Although round robin analyses are being completed, the main objective is not to compare results of different labs. Instead, exercises are completed to evaluate applications of various organic matter classifications and terminology.

There are nine subcommittee members representing industrial, government and academic groups. Participants are a mix of European and North American organic petrologists and geochemists. Individuals or laboratory groups that are committed to completing microscopic and geochemical analyses in the given time are welcome to join for future activities. The identity of participants is being kept confidential to ensure objectivity and encourage participation by industry and commercial labs.

Maceral Results - Prescribed Classification

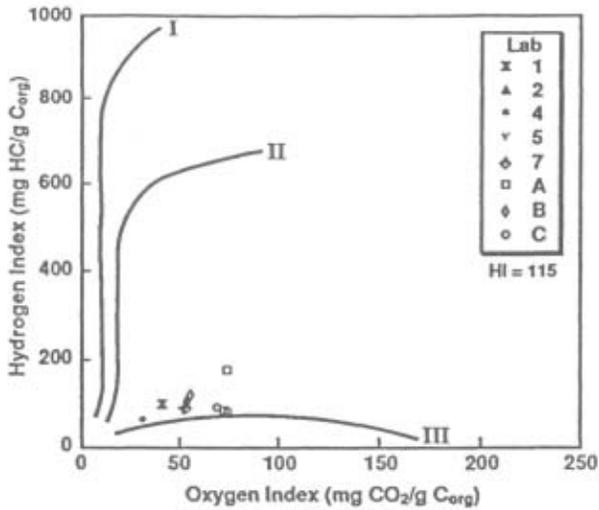
Sample No.	Lab #	Maceral Percent				
		Amorphous	Structured Liptinite	Vitrinite	Inertinite	Other
Wilcox	1	35	5	60	<1	
	2	35	15	30	20	
	3	75	15	10	trace	
	4	10	10	80	Mnr	
Monterey	1	90	<5	5	1	
	2	90	5	2	3	
	3	92	5	3	trace	
	4	100	Mnr	Mnr	tr	
Ohio	1	65	10	15	15	
	2	90	0	2	8	
	3	77	10	8	5	
	4	70	20	Mnr	10	
Mesa Verde	1	65	5	20	10	
	2	35	30	10	25	
	3	70.8	4.2	10.2	14.2	
	4	95	Mnr	5	Mnr	

SAMPLES AND PROCEDURES

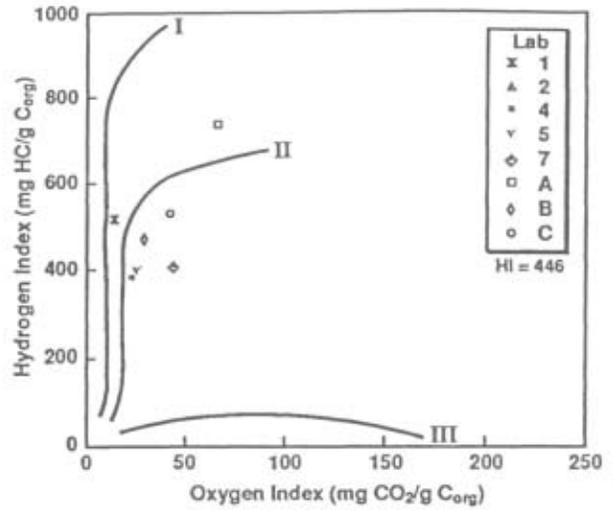
Round robin samples consist of various mixtures of thermally immature oil-prone and gas-prone organic matter that represent different depositional conditions, geologic age, and organic content. These samples were selected to determine how different classifications work with sample variation. Sample name, location and geologic information are as follows:

1. Wilcox Formation, Texas, Mine Sample, Shale, Eocene
2. Monterey Formation, California, Outcrop, Shale, Miocene
3. Ohio Shale (Cleveland Member), Kentucky, Outcrop, Shale, Devonian/Mississippian
4. Mesa Verde Group, Utah, Mine Sample, Coal, Cretaceous

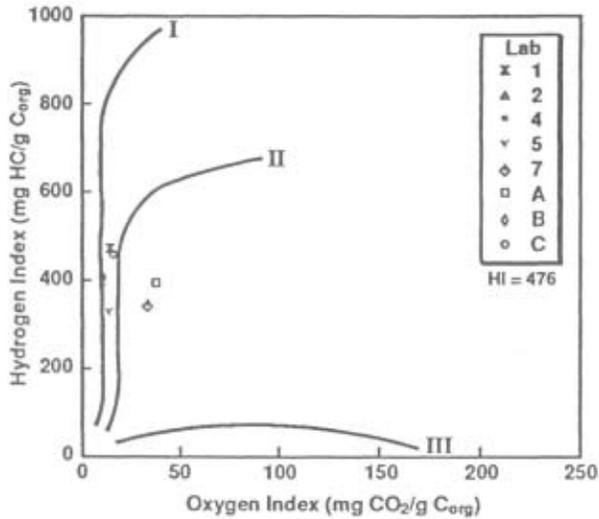
Each participant has completed a maceral or visual kerogen analysis using both prescribed and individual organic matter classifications. These two approaches are being used to help compare microscopic results and evaluate applications of various classifications. Most participants also completed Total Organic Carbon (TOC) and Rock-Eval pyrolysis to help geochemically evaluate the samples. A questionnaire was completed by each participant to better understand the approaches to kerogen characterization, and the interpretation and application of microscopic data.



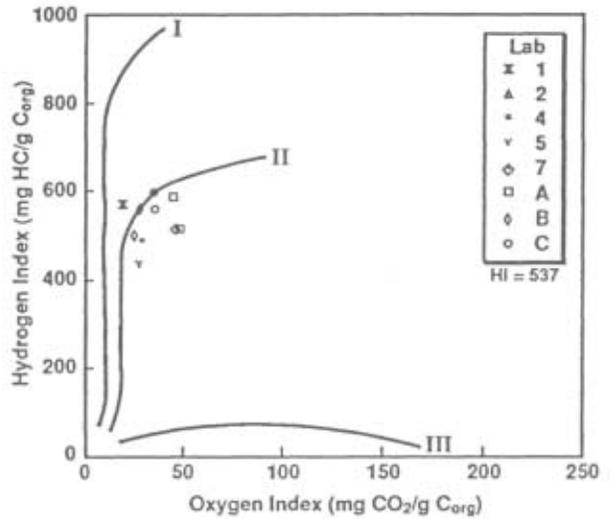
TSOP Sample 1. Wilcox Formation, Texas (Whole Rock)



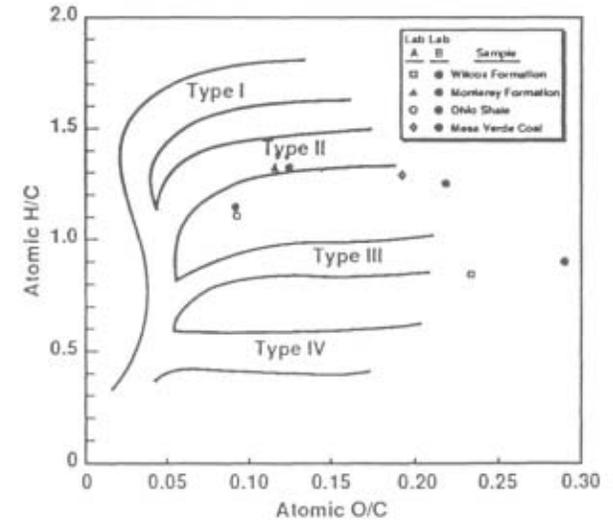
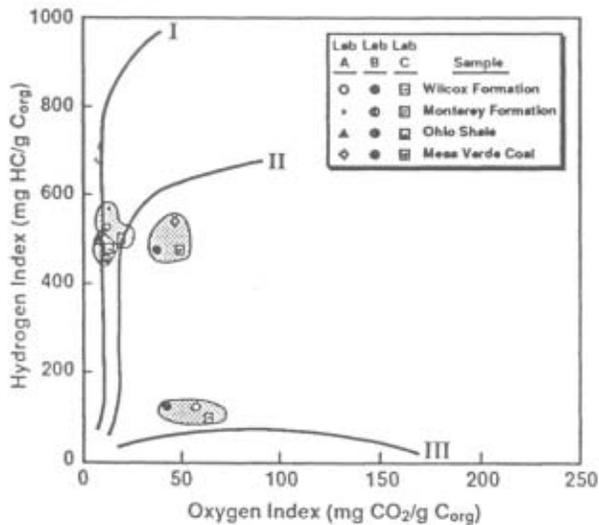
TSOP Sample 2. Monterey Formation, California (Whole Rock)



TSOP Sample 3. Ohio Shale, Kentucky (Whole Rock)



TSOP Sample 4. Mesa Verde Coal, Utah



Photomicrographs illustrating specific organic components from the four samples have been distributed to determine the following: (1) nomenclature used by each participant to define specific organic component(s) and (2) how a specific component fits into their classification.

RESULTS AND DISCUSSION

Maceral results for the prescribed classification are listed in the table. Good microscopic agreement exists for samples containing predominantly oil-prone amorphous material (Monterey). Differences in maceral composition are reported for samples containing a mixture of amorphous and other components, or a mixture of amorphous and degraded vitrinite (Wilcox). The bituminite-amorphous terminology also contributes to a discrepancy in maceral results (Mesa Verde). Comparison of results from individual classifications is very difficult due to the wide variety of nomenclature that is used. These results will be reported and described at a later time.

As shown in the plate of figures, there is generally good agreement for Rock Eval (whole rock) results for the four individual samples. Differences are due to variation in TOC, S2 and S3 values. In addition to results from participants, several contractor labs were also included (A-C). Results from Rock Eval of isolated kerogen and atomic H/C also show good agreement for contractor labs. Kerogen isolation for these analyses were completed at a single locality. These results suggest agreement in the geochemical characterization of these samples. A summary of questionnaire results indicate:

1. The main objective of microscopic evaluation of sedimentary organic matter is to define: (1) thermal maturity and (2) kerogen quality / hydrocarbon generative potential. Geologic information is secondary. Geochemists and geologists are the main users of microscopic data.

2. Many labs use both geochemical and microscopic techniques to evaluate kerogen quality. Geochemical results are often used more extensively, and used to select samples for microscopic analyses. Most labs compare or integrate microscopic and geochemical results in some manner.

3. Most labs use a variety of sample preparations and light modes but with different priorities. Results are often combined, depending on the specific sample. Microscopic results are usually reported on a 1-5% basis and incorporated in a computerized data base. Maceral groups are often subdivided for many applications. Most labs formally or informally subdivide "amorphous organic matter" using different microscopic properties.

Preliminary results from the photomicrograph exercise indicate that different terminology is being used to describe the same component. However, differences in terminology can still be compared and understood. For example, amorphous and bituminite are used to describe the same component.

FUTURE DIRECTION AND OBJECTIVES

Future direction of this subcommittee includes: (1) additional photomicrographs of round robin and other samples, (2) standardization of microscopic techniques, (3) address "amorphous problem" and nomenclature, and (4) integration of microscopic and geochemical results. Suggestions for future work are appreciated. Appreciation is expressed to all subcommittee participants for their contributions, and to Dennis Logan (Phillips) for providing some of the round robin samples.

REFERENCES

Senftle, J. (1989) Influence of kerogen isolation methods on petrographic and bulk chemical composition of a Woodford shale sample, TSOP Research Subcommittee Report (10/31/89).

* * * *

Mixed Breed

Pseudo-this and
Pseudo-that;
Who's to know
Where it's at?

Semi-this and
Semi-that;
A pseudo-semi
Alley cat.

Standard Methods NEWS FROM THE ASTM

At a recent meeting of the ASTM Committee on Coal and Coke in Vancouver, BC, April 25-28, two items of revision to the Standard Definitions of Terms Related To Megascopic Description of Coal and Coal Seams and Microscopic Description and Analysis of Coal (D 2796-88) were balloted. "Item 3" mainly covered changes in the style for definitions and for discussions of terms. In addition to style changes, a section which included mention of xylinoid, vitrinoid, and anthrinoid was deleted because the terms are no longer used for technological purposes. Also discussion of Pseudovitrinite was moved from the deleted section to the section on vitrinite in "Item 4". "Item 3" was approved without comment or negative vote.

The second item, "Item 4" revisions of D 2796-88 is still being debated because of the mention of Pseudovitrinite and other less controversial topics. Definitions (and discussions) of the group macerals and of "maceral" are being revised to provide more useful language to aid petrographers identify these constituents in reflected light. Additional revisions are planned. It is not too late for TSOP members to join the task group that is working on the revisions. Anyone interested should contact Dick Harvey (217 244-0836 or Ron Stanton (703) 648-6462.

In Subcommittee 28 (Petrographic Analysis) a recent ISO ballot for revision of ISO Standard 7404, parts 1,3,5, received negative vote. Coal petrographers who did not participate in the deliberation are urged to contact Chairman Kevin DeVanney at USX Corp., Monroeville PA for further information. [Phone=(412) 825-2575, Fax=(412) 825-2727.]

* *

In other news from ASTM, former TSOP Vice-President and charter member **Dick Harvey** of the Illinois State Geological Survey, was the recipient of the **R. A. Glenn award** at the Vancouver meeting of the ASTM Committee on Coal and Coke. This award was established in 1973 to recognize members of the Committee for outstanding service. **Congratulations, Dick!**

Symposium in September MODELS ON THE ORIGIN OF SULFUR IN COAL AND PEAT

The AAPG Eastern Section meeting will be in Williamsburg, Virginia on September 19-21, 1993. One of the highlights of the meeting will be the Energy Minerals Division session to be co-chaired by Paul C. Lyons (USGS, Reston) and Arthur D. Cohen (University of South Carolina). This session will focus on new models on the origin of sulfur in peats and coals. It will include results of research on the origin of sulfur in peat/carbonate depositional settings, computer-based sulfur modeling, sulfur isotopic models for both peat and coal, and the origin of sulfur in both low- and high-sulfur bituminous coals of the Appalachian Basin and the Carboniferous Basins of Maritime Canada. For further information contact Paul Lyons (703) 648-6449 or Art Cohen (803) 777-4502.

* * * *

ACS Symposium, March 1994 GEOCHEMISTRY & PETROGRAPHY OF KEROGEN / MACERALS

TSOP is sponsoring a joint symposium with the Geochemistry Division of the American Chemical Society during the ACS National Meeting March 13-18, 1994. Topics are: 1. Petrographic and geochemical classification of kerogen and macerals, 2. Chemistry of kerogen / maceral types, 3. Precursor materials, 4. Paleodepositional environments and diagenesis, 5. Changes during maturation and catagenesis, 6. New techniques and applications, 7. Case histories. See TSOPNws 9(3)9, 9(4)19. The deadline is November 1, 1993. For further information contact the organizers, TSOP members: Adrian Hutton, Sunil Bharati or Thomas Robl.

* * * *

Hadrian's Call

Spore light, spore bright,
First spore I've seen tonight:
Wish I may, wish I might,
Rather find some alginite.

Thoughts of the role of
teaching vs. research
**Activities as visiting
professor in the U.S.**

by
Harry Marsh,

Mechanical Engineering and Energy Processes Dept., Southern Illinois University

I left the United Kingdom, September 1991, carrying four levels of experience to be of value to me in my new position of Distinguished Visiting Professor at Southern Illinois University. First, I had experienced the trauma of a university administration adjusting to a diminished budget, and (hopefully) emerging leaner and keener. Second, I was totally convinced that a university educator has to be both a teacher and a researcher, never just one or the other. I had seen, at first hand, the limitations of each alone. Third, I needed no convincing of the important influences students have in formulating the mental processes of teaching and research. Fourth, as well as going into the market place to sell their expertise, universities must have "private time" for intellectual advancement, in all subject areas. Thus, I entered into the debate of universities in the 1990s.

In the U.S. my days are interesting and busy. At Southern Illinois University at Carbondale I lecture to graduate students on the Global Energy Debate, Energy and the Environment, Clean Coal Utilization and Coal/Carbon Chemistry. I completed two chapters for books, on Adsorption Chemistry and Pitch Pyrolysis Chemistry. With encouragement of SIUC I accepted an invitation from The American Carbon Society to be their 1992 George D. Graffin Lecturer, to give in North America, so far, nine lectures describing the role in society of the carbon/graphite industries.

I was also able to participate in an exciting new initiative of promoting cooperative programs between U.S. and Czechoslovakian researchers and teachers, by visiting Prague and Ostrava via a Conference on Coal, Energy and the Environment.

Further, I see the need for introductory industrial teaching and so I am promoting one-week short courses for "students" new to a particular field. My first short course will be in Buffalo, New York, June 6-11, 1993 and will be an "Introduction to Carbon Technologies". My second short course will be in Carbondale, Illinois, September 26 to October 1st, 1993, and will discuss "Pitch as a Material". I am planning to publish handbooks from these short courses.

* * * *

**FINAL CALL
FOR PAPERS**



1993 TSOP ANNUAL MEETING

The Tenth Annual Meeting of The Society for Organic Petrology (TSOP) will be held on the campus of the University of Oklahoma in Norman on October 9-13, 1993. Notice of the petroleum geochemistry short course and the field trip was in the Newsletter V.9, No.3. The program for oral presentations is essentially complete, but some room for poster presentations remains. Those interested in making a presentation are requested to submit immediately a tentative title to Brian Cardott (Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628). Camera-ready extended abstracts (one to three pages including black and white figures) must be submitted to Brian by June 30, 1993. Contact him for an example of abstract format.

For guidelines and eligibility for the Outstanding Student Paper Award (certificate and \$100), contact Brian or refer to the TSOP Newsletter V.5, No. 3.

Look for detailed information and registration form in the TSOP Newsletter in early July.

* * * *

Oil Play

Source rock hot,
Source rock cold;
Source rock in the pot,
Nine million years old.

Symposium in October

COALIFICATION: PARAMETERS AND INTERPRETATION OF MATURATION HISTORIES

The GSA Annual Meeting, Boston, Massachusetts, October 25-28, 1993, will include a symposium chaired by Alan Davis (Penn State) and Paul Lyons (USGS). The symposium will focus on the use of both organic and inorganic parameters to decipher the organic maturation and coalification histories in various coal basins of North America.

Time-temperature modeling will be a fundamental component of some of the papers. Various thermal indicators such as geochemistry, conodont color index, graptolite reflectance, vitrinite reflectance, optical fabric, metamorphic minerals, presence and condition of liptinite group macerals, and other parameters will be used to evaluate the coalification, tectonic and thermal history of complex coal basins. These include the Anthracite region of eastern Pennsylvania and the Narragansett Basin of Massachusetts and Rhode Island, which contains both low-sulfur anthracite and meta-anthracite. These papers have applications to coal quality and utilization and to the generation of oil and gas deposits.

For further information contact Paul Lyons (703) 648-6449 or Alan Davis (814) 865-6544.

* * * *

Coals of the USSR territory Outline in honor of Aleksandr Kirillovich Matveyev

The TSOP Newsletter, Vol. 9, No.1, contained a letter from some members of the Laboratory of Coal Geology and Petrology in the Geology Department of the University of Moscow. The letter describes the purposes of a fund for joint research on Russian and North American coals. Professor Matveyev, for whom the fund is named, is known for his broad syntheses about coals of the USSR and, especially, coals of the world.

The twelve-volume "Geology of Coal and Oil Shale of the USSR" is a comprehensive single source of information on geology and quality of coals, but perhaps the simplest source for occurrence and quantity of coals is Matveyev's 1960 book "Geology of Coal Deposits of the USSR". An outline of the book is presented here.

- Section 1: General information
- I. Stratigraphic distribution
 - II. Geologic principles of distribution
 - III. Geology of coal reserves
 - IV. Statistical fundamentals of reserves
 - V. Comparison with the world picture
- Section 2: Geology of basins and deposits
- A. Paleozoic basins and deposits.
 - I. Silurian coal occurrences
 - II. Devonian deposits
 - III. Carboniferous basins and deposits
 1. Donets Basin
 2. North-Caucasus deposits
 3. L'vov-Volyn Basin
 4. Moscow Basin
 5. West Ural Basin
 6. East slope of the Urals
 7. Karaganda Basin
 8. Samarsk Deposit
 9. Ekibastuz deposit
 - IV. Permian basins and deposits
 10. Pechora Basin
 11. Kuznetsk Basin
 12. Gorlov Basin
 13. Minusknk Basin
 14. Kenderlyk deposit
 15. Kaynaminsk deposit
 16. Tungusk Basin
 17. Taymyr Basin
 - B. Mesozoic basins and deposits.
 - V. Lower Mesozoic basins and deposits
 18. Serov region
 19. Bulanash-Yelkin region
 20. Chelyabinsk Basin
 21. Ural-Caspian Basin
 - VI. Lower and Middle Jurassic
 22. Beshuy deposit
 23. North-Caucasus deposits
 24. Pre-Caucasus deposits
 25. Pre-Caspian deposits
 26. Central Asian deposits
 27. Orsk brown coal region
 28. Turgay Basin
 29. Maykuben Basin
 30. Kansk-Achinsk Basin
 31. Irkutsk Basin
 32. Ulukhensk Basin
 33. Aldan (S. Yaktytsk) Basin
 - VII. Upper Jurassic and Cretaceous
 34. Pre-Baykal deposits
 35. Buryeya Basin
 36. Suyfy Basin
 37. Suchan Basin
 38. Lena Basin
 39. The Far Northeast
 - C. Cenozoic basins and deposits,
 - VIII. Paleogene basins and deposits
 40. Dnepr' Basin
 41. Pre-Caucasus basins
 42. Middle Amur region
 43. Uglovoye Basin
 44. Maykhe region
 45. Ugol'naya Bay
 46. Kamchatka Peninsula
 - IX. Neogene basins and deposits
 47. Moldavia
 48. South Ural brown coal region
 49. Tiksi brown coal region
 50. Khabarov region
 51. Bikin deposits
 52. Suputinka deposits
 53. Sakhalin Island

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



GLICK
7/26/93
THE SOCIETY FOR ORGANIC PETROLOGY

NEWSLETTER

Vol. 10, No. 2

July, 1993

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University of Oklahoma Photo Services

Energy Center of the University of Oklahoma.

TSOP'93 -- Oklahoma

WELCOME!

The 10th Annual Meeting of The Society for Organic Petrology will be held in Norman, Oklahoma on October 9-13, 1993. Norman is the home of the University of Oklahoma (Sooners) and the Oklahoma Geological Survey. The University of Oklahoma is regarded as having the world's first school of petroleum geology, established in 1900. Norman was the site of the first annual meeting of the American Association of Petroleum Geologists (formerly Southwestern Association of Petroleum Geologists) in 1916.

Short Course

A two-day, pre-meeting short course on "Petroleum geochemistry for exploration geologists and geochemists" will be held on Saturday-Sunday, October 9-10 in the Energy Center on the University of Oklahoma campus. The course will be taught by Dr. R. P. Philp, professor of petroleum geochemistry at the University of Oklahoma. He has authored or co-authored approximately 160 articles and books on petroleum geochemistry, including the 1985 book Fossil fuel biomarkers.

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 (preferably DOS, but Macintosh possible) are more convenient than printed materials. Unformatted ASCII files or files formatted in Wordstar are preferred, but WordPerfect and Microsoft Word are usable. Printed text sent by mail or by FAX can be scanned directly for publication 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:

Neely Bostick, MS-972
 U.S. Geological Survey
 Denver Federal Center
 DENVER CO 80225-0046
 Phone: (303) 236-0581
 Fax: (303) 236-7738

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 1992-93 TSOP Council

President	Suzanne J. Russell
Vice-President	Renee L. McLaughlin
President Elect	James C. Hower
Secretary/Treasurer	Ken W. Kuehn
Editor	Neely H. Bostick
Councilor (1991-93)	Martin Reinhardt
Councilor (1992-94)	Charles R. Landis

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.

* * * *

1993 TSOP Annual Meeting

Continued from pg. 1
applications and spectra. The course will review basic concepts of organic and petroleum geochemistry and applications to petroleum exploration and reservoir problems. The various aspects of organic and analytical chemistry necessary for completion of this course will be included. The registration fee (\$50 pre-registration before September 3; \$60 late registration before October 8) will include a short course manual.

Meeting

Technical and poster sessions will be held in the Oklahoma Center for Continuing Education Forum Building on the University of Oklahoma campus on Monday-Tuesday, October 11-12.

Topics for the technical session are varied, covering coal (peat to bituminous; cannel to banded; gas; beneficiation); kerogen (petrology, chemistry and kinetics); petroleum geochemistry and migration; reservoir geochemistry; palynology; paleobotany; paleoclimate; and solid hydrocarbons.

A theme session will present TSOP Research Committee Reports. Our invited speaker is **Dr. M. D. Lewan** of the USGS. His topic will be **"Identifying and understanding suppressed vitrinite through hydrous pyrolysis experimentation."**

Four microscope companies (Jena, Leica, Nikon, Zeiss) will exhibit during the meeting. Drinks and hors d'oeuvres will



Photo by Brian Cardott

View looking north from field trip stop one in the Arbuckle Mountains

be available at the reception/poster session on Monday evening. The registration fee (see Registration Form and choose from pre-registration before September 3 and late/on-site registration after September 3; TSOP member and non-member; professional and student) includes the reception, two luncheons, coffee breaks, abstracts and program volume, proceedings in Organic Geochemistry, and group photo.

Field Trip

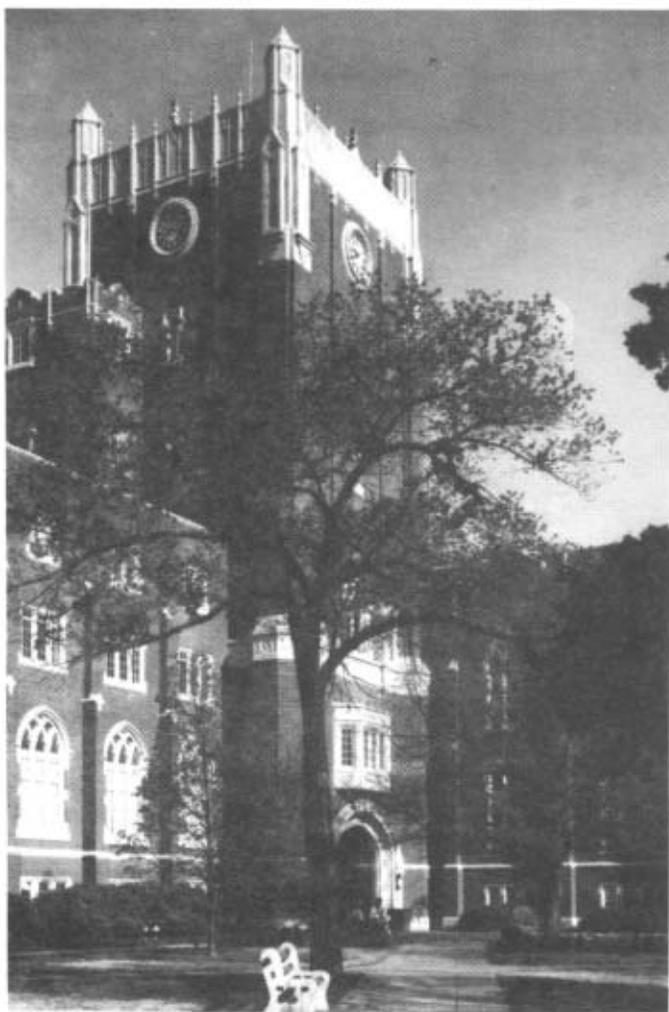
A one-day, post-meeting field trip to the Arbuckle Mountains in southern Oklahoma will be held on Wednesday, October 13. The Arbuckle Mountains, located approximately 1 hour south of Norman, make up an area of low to moderate hills containing 15,000 feet of well exposed folded and faulted carbonates and elastics of Paleozoic age. Hydrocarbon source rocks (including the famous Woodford Shale: 1989 TSOP Research Committee Report; sample site of early hydrous pyrolysis experiments) and exhumed reservoirs have been extensively studied for correlation to similar units in producing fields in adjacent deep basins. The trip will include stops at hydrocarbon source rock exposures, abandoned asphalt pits, fossil collecting sites, and scenic overlooks. The registration fee (\$30 pre-

registration before September 3; \$35 late/on-site registration) will include lunch and field trip guidebook written for organic petrologists. Registration is limited to 47.

Please return the Registration Form as soon as possible. Register for the short course, technical meeting, and field trip on the same form. Payment can be made, in U.S. funds, by check, MasterCard, Visa, or company purchase order.

LODGING

The conference hotel is the Sooner Hotel and Suites, located on campus adjacent to the conference center where the technical and poster sessions will be held. The hotel provides rooms for one or two guests, and suites accommodating two to four guests. Suites include a living room, dining area, kitchen, two bedrooms (queen-sized beds), and one private bathroom. Hotel rooms have two twin-sized beds and private bathroom. Both suites and rooms have television, telephone with message light, wake-up call service, free parking, recreational passes (available at the front desk) for the University of Oklahoma's physical fitness center and swimming pool, and continental breakfast (in the Sooner Hotel).



University Photo Services
Oklahoma Memorial Union

Sooner Hotel Rates (No additional tax or gratuity): Single (\$32), Double (\$40). Suite: Double (\$60), 3 persons (\$66), 4 persons (\$72).

A block of rooms and suites is reserved for the TSOP meeting **until September 3**. Reservations made after this date are subject to availability. In the event of no-vacancy after the **September 3 deadline**, the Sooner Hotel will assist placement in suitable housing in nearby hotels (at higher rates; 3 to 4 miles from conference center).

Please make your housing reservations by calling (405) 325-1011 or writing to:

The University of Oklahoma
CE PS Reservation
1704 Asp Avenue
Norman, OK 73037-0001

Transportation

Will Rogers World Airport, Oklahoma City, is located about 20 miles north of Norman, and is served by American, Continental, Delta, Northwest, Southwest, TWA, and United airlines. Rental cars or taxi-limousine service (about \$30 for one to four persons) are available at the airport. Those making an early reservation (by September 3) at the Sooner Hotel will receive a coupon from Airport Express for Conference Travelers to OU's OCCE (one-way fare varies with number in vehicle, from \$18 each for single aboard to \$8 each with five or more aboard).

Weather

Mid-October in Norman is part of mid-Autumn (pre-peak of leaf color change), with daytime temperature highs in the 70's. Almost anything except snow is possible.

Further Information

Questions can be addressed to the meeting's organizers:

- (1) **Brian Cardott** (Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628, 405-325-3031, Fax 405-325-7069).
- (2) **Carolyn Thompson-Rizer** (Conoco, Inc., P.O. Box 1267, Ponca City, OK 74603, 405-767-5138, Fax 405-767-5227).
- (3) **Roger Woods** (Conoco, Inc., P.O. Box 1267, Ponca City, OK 74603, 405-767-3402).

MEMBERSHIP NEWS

Membership Directory and Bylaws

In July, 1993, Dave Glick, Chairman of the Membership Committee, will mail a new Directory and Bylaws booklet to current members. Additions and corrections to the latest Directory will be made in the Directory computer file so that all TSOP mailings will use the latest information.

**So please inform Dave Glick
of any changes or additions!**

As much as possible we will list permanent and temporary changes in each Newsletter issue so members can update the Directory. Therefore it is important that you check the accuracy, completeness and

format of your address and your communication numbers and let Dave Glick know of any changes and additions. This is particularly important for FAX numbers, and others for which there is no forwarding service!

Membership Expiration Dates on Mailing Labels

With this Newsletter and the Directory we are instituting the inclusion of membership expiration dates at the end of the top line of each mailing label. All TSOP memberships are by the calendar year, but some members pay several years in advance, so expiration dates vary. If your records disagree with the date shown, please notify David Glick, TSOP Membership Committee.

New Members

The Society welcomes the following colleagues who applied for membership in the first half of 1993. Please see the 1993 Membership Directory for full addresses and telephone numbers, except Dr. Wang.

Dr. Fei Yu Wang
Laboratory of Applied Chemistry
Division of Chemical Engineering
University of Petroleum
20 College Road, P.O. Box 902
Beijing 100083,
PEOPLES REPUBLIC OF CHINA

Dr. Fei Yu Wang moved from the National Laboratory of Organic Geochemistry at Academia Sinica in Guangzhou to the University of Petroleum in Beijing early this year. Dr. Wang works mainly in kerogen petrology, but also in coal and organic geochemistry, doing petrology and paleotemperature assessment of source rock using fluorescence and laser microscopy. Please add this entry to your new Directory.

Dr. George D. Cody recently completed his Ph.D. at Penn State; his thesis was entitled "The Macromolecular Geochemistry of Bituminous Vitrain." He now holds a post-doctoral appointment in the Chemistry Division of Argonne National Laboratory where he works with NMR and X-ray imaging of coal and polymers.

Dr. Joseph A. Curiale works at Unocal in Brea, California; his experience includes over 11 years in industrial organic and petroleum geochemistry. He is currently an Editor-in-Chief of Organic Geochemistry.

Mohammad Jamaal Hoesni is in charge of the organic petrology unit (geochemistry section) of the PETRONAS Petroleum Research Institute in Kuala Lumpur, Malaysia. In addition to coal and organic petrology and organic geochemistry, his work includes basin modeling.

Evan P. Meek received his B. Sc. (Hons.) in geology from the University of Canterbury in 1992. His interests include coal and kerogen petrology and basin analysis.

Tim E. Ruble brings a background in chemistry and geology to his current geochemical investigation of native bitumens. He is a student in the School of Geology and Geophysics at the University of Oklahoma.

Dr. Ronald W. T. Wilkins works in CSIRO's Division of Petroleum Resource Technologies. He reports that his work has included six years spent developing new organic petrological techniques.

**Please send information on
any professional changes!**

Outreach Committee

HAVE YOU SEEN? HELP!

*"We seek him here, we seek him there,
Those Frenchies seek him everywhere.
Is he in heaven?— Is he in hell?
That demmed, elusive Pimpernel."*

With apologies to the Baroness Orzcy, we are not seeking dashing Scarlet heroes (at this time), but "sightings" of announcements for the 1993 TSOP Annual Meeting. The Outreach Committee is trying to raise the profile of TSOP by sending announcements to a large number of regional, national, and international societies and journals, and several state and provincial surveys. To get a handle on this effort we need reports of "sightings" of notices for 1993 Oklahoma meeting (besides those in *Geotimes*, *EOS*, *GSA Today*, *AAPG Bulletin*, *Geoscientist*, or *Marine and Petroleum Geology*). If you have a new "sighting" please report it by FAX or postcard to:

MaryAnn Malinconico
Department of Geology
Lafayette College
Easton, PA 18042
Fax:(215)250-5193

REFLECTIONS ON THE USE OF R_{\max} vs. R_{mean} FOR HIGH VOLATILE BITUMINOUS COALS

by *James C. Hower,*
Robert F. Rathbone, and
Garry D. Wild

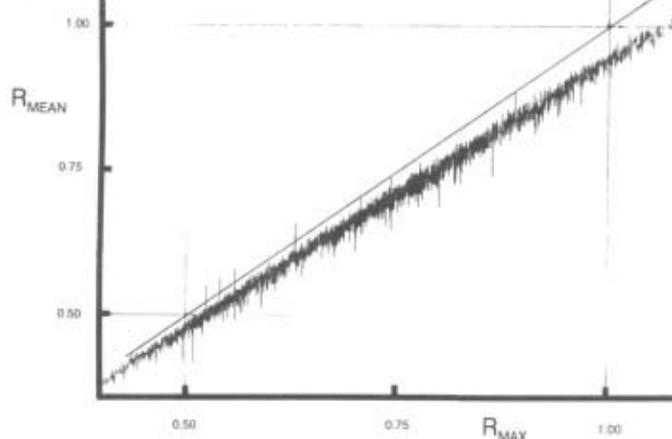
University of Kentucky, Center for Applied Energy
Research, Lexington, KY 40511, U.S.A.

In the last TSOP newsletter (v. 10, no. 1) Monica Wolf questioned the use of vitrinite maximum reflectance for high volatile coals, contending that maximum and mean (a.k.a. random) reflectances were not sufficiently different to warrant the use of the maximum reflectance. Arguments concerning the preferred measurement for rank determination aside, we wish to present three cases which support the argument that high volatile bituminous coals have significant bireflectances and maximum reflectance cannot be dismissed as indistinguishable from mean reflectance nor as an artifact of the optics.

The Argonne Premium coals are an extensively studied set of lignite through low volatile bituminous coals. A recent communication (Argonne Premium Coal Sample Program Users Newsletter, v. 5, no. 2) showed reflectance: maximum by our laboratory and mean by Lorraine Eglinton (Woods Hole Oceanographic Institute). As seen on the enclosed table, the values begin to diverge for the hvCb rank coals, with the R_{\max} values being consistently higher.

COAL	R_{\max}	R_{mean}
Beulah-Zap	0.25	0.28
Wyodak	0.32	0.31
Illinois #6	0.46	0.46
Blind Canyon	0.57	0.50
Pittsburgh	0.81	0.72
Lewiston-Stockton	0.89	0.77
Upper Freeport	1.16	0.99
Pocahontas #3	1.68	1.42

Limited studies of blocks of hvAb coal from western Pennsylvania demonstrate that reflectance may be used as a tectonic fabric element in relatively low rank coals (Hower, 1978 dissertation, at Penn State). A sample of Lower Freeport coal from Jefferson Co., PA, on the west flank of the Chestnut Ridge anticline, had 0.92% R_{\max} and 0.86% R_{mean} . Reflectances from mutually perpendicular surfaces indicated that three primary reflectances could be determined (0.94, 0.88, 0.75), making the coal biaxial.



Finally, our experience with the coals of Kentucky, which span the high volatile range, has provided us with an extensive data base of maximum and mean reflectances. The accompanying figure shows the maximum vs. mean reflectances for over 3900 coal samples. From this we can observe that coals are clearly anisotropic throughout the high volatile rank range.

Editor's note: Jim Hower elaborated, by phone, on the procedures used in collecting data for the figure. As I understand it, the round sensing spot of the photometer is positioned at a selected position on each vitrinite grain selected on a polished pellet of crushed coal. The stage is always at the same rotation position. A reflectance measurement is recorded at this random orientation of the grain and another at 90 degrees rotation; these are averaged (R_{mean} on the figure). Then the stage is rotated, still at the same spot, and the maximum reflectance is recorded (R_{\max} on the figure). The stage is centered before measurement by adjusting the centering screws of the objective. Each point used to plot the figure is an average of about 50 such measurements for each sample.

Calendar

Note: In response to suggestions by several members, the scope of the calendar has been enlarged. **The Editor would appreciate further feedback from members about the desired scope of the calendar.**

1993

Aug. 8-12: Society for Sedimentary Geology (SEPM), Theme meeting, University Park, PA.

Aug. 15-19: Canadian Society of Petroleum Geologists, Ann. Mtg., Calgary, Alberta, Canada.

Aug. 22-27 (part): Reevaluation of vitrinite reflectance as a maturity parameter: petrologic, kinetic and geochemical factors — symposium. At Amer. Chem. Soc. Mtg., Chicago. TSOPNws=9(3)9. 1993: March 25 = Abstract deadline.

Sept. 3: Deadline: Pre-Registration rate for TSOP '93 Ann. Mtg.

Sept. 3: Deadline: Lodging guaranteed space at Sooner Hotel for '93 Ann. Mtg.

Sept. 12-15: Rocky Mountain Section, AAPG, Ann. Sect. Mtg., Salt Lake City, UT.

Sept. 12-18: Coal Science 7th Intl. Conf., at Banff, Alberta, Canada. Info: David Brown (403) 450-5200.

Sept. 15-17: European Coal Conference, Leicester, U.K. Phone (0533) 533922, Fax: (0533) 523918.

Sept. 18-21: 40th Canadian Conference on Coal, Whistler, B.C. Info: Jim Wood; Coal Assn. Canada; (403) 262-1544; FAX: (403) 265-7604,

Sept. 19-21: Eastern Section, AAPG, Ann. Sect. Mtg., Williamsburg, VA. Info: Art Cohen, Fax=(803) 777-6610. [See separate note on the Symposium on sulfur in peat and coal: TSOPNws 10(1).

Sept. 20-24: 10th Ann. Intl. Pittsburgh Coal Conf., Pittsburgh, PA. Phone (412) 624-7440, Fax (412) 624-1480.

Sept. 20-24: International Meeting on Organic Geochemistry, Stavanger, Norway. Phone: (47) 4 807398; Fax: (47) 4 806423.

Sept. 26-Oct.2: International Committee for Coal and Organic Petrology (ICCP), Meeting at Chania/Crete, Greece. Excursion to lignite mine of S.E. Greece. TSOPNws=9(3)8.

Oct. 9-13: TSOP Annual Meeting at Norman, Oklahoma. Excursion in Arbuckle Mountains. Short course on petroleum geochemistry. TSOPNws=9(3)5. 1993: June 30 = Abstract deadline.

Oct. 17-20: American Association of Petroleum Geologists, Intl. Mtg., The Hague, Netherlands.

Oct. 20-22: Gulf Coast Assn. Geol. Soc., Gulf Coast Section, AAPG / SEPM, Mtg., Shreveport, La. (318) 429-2713.

Oct. 24-26: ASTM Committee D5 on coal and coke. Mtg. Birmingham AL, USA. Info: (215) 299-5487.

Oct. 25-28: Geological Society of America, Ann. Mtg., Boston, Mass. [See separate note on the Symposium on coalification: TSOPNws 10(1).

Nov. 1: Abstract deadline for ACS symposium March 13-18, 1994.

Nov. 9-13: Mineral resources of Russia, Mtg., St. Petersburg. Phone: (011-7-812)355-7952 or 218-9224 [in U.S. (595) 291-9812. [See separate note on activities of the meeting related to coal and petroleum, TSOPNws 10(1).

1994

March 13-18: Geochemistry & Petrography of Kerogen Macerals. Symposium at ACS Mtg., San Diego, CA. Abstract deadline Nov.1, 1993 (on ACS form). TSOPNws=9(3)9, 9(4)19, 10(1).

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 22-25: 10th International coal testing conference. Lexington KY, USA. Info: (606) 325-1970. Abstr. deadline Jan. 4, 1993.

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

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

Fall: TSOP Ann. Mtg., Jackson Hole, Wyoming.

Oct. 2-5: ASTM Committee D5 on coal and coke. Mtg. at Denver, CO, USA. Info: ,2X5,299-5487.

1995

Early October?: TSOP, Ann. Mtg., Houston, Texas.

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



NEWSLETTER

Vol. 10, No. 3

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Scenes from the 10th TSOP Meeting, Norman, Oklahoma. (A) John Castaño and Barbara Mösle (Germany) discuss Cretaceous black shales. (B) Anonymous late registrants. (C) HB Lo and Muki Mukhopadhyay (Canada). (D) James Chaplin shows domal stromatolites and explains 3m shallowing-upward sequences in the Lower Ordovician Arbuckle Group. (E) Membership Chairman, Dave Glick. (F) Secretary/Treasurer Ken Kuehn. (G) Invited Speaker, Mike Lewan. (H) HB Lo and Brian Cardott in their duet on weathering profiles in shale and coal. [K] Councilor Martin Reinhardt (Germany) and Carolyn Thompson-Rizer. (J) Co-host and Projectionist, Roger Woods. [I] "Furthest-traveled" Ronald Wilkins (Australia). (L) Jane Newman (New Zealand) and Cindy Li (U. Oklahoma).

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) are more convenient than printed materials. Unformatted ASCII files or files formatted in WordPerfect, Microsoft Word 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:

Neely Bostick, MS-972
U.S. Geological Survey
Denver Federal Center
DENVER CO 80225-0046
Phone: (303) 236-0581
Fax: (303) 236-7738

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.

1993 Election Results

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.

* * * *

PRESIDENT'S LETTER

HAPPY BIRTHDAY TSOP

by Jim Hower

A birthday which we do not wish to let pass unnoticed is the tenth anniversary of the founding of TSOP. In November, 1983, many of us received a letter from Pieter van Gijzel outlining the results of a survey conducted by the "Organizing Committee for Organic Petrology", a Houston-based group of petroleum and service company petrographers. The objective of the survey was to determine the interest in formalizing an organization of organic petrologists which existed relatively informally as North American Coal Petrographers. The survey results were quite positive and as a result we now exist. Of greater interest to me in looking back on that letter is the list of objectives of the organization:

1. To stimulate interest and promote research in organic petrology among members and between scientific disciplines;
2. To provide a forum, educational opportunities and information in organic petrology;
3. To work for acceptable classifications of all types of organic matter including kerogen, coal, and oil shale;
4. To promote state of the art computer, optical, chemical and mechanical technologies in organic petrology; and,
5. To enhance professional and scientific interaction among all earth scientists.

Through ten years and ten annual meetings I feel that TSOP has grown to meet many of the objectives the organizers envisioned. We are obviously stronger in some areas than in others but overall I believe that the organization provides some balance among the stated objectives and in particular has raised the stature of the discipline among the non-practitioners, the scientists and engineers who may have need for petrographic interactions in their research. In the next three newsletter issues I will discuss some of my interpretations of our successes and shortcomings from my perspective. As president I am interested in hearing from members. Has TSOP been successful in promoting the discipline over the past decade? How can we improve to meet the challenges of our second decade? My address and FAX number are listed below. I look forward to hearing from all of you.

*** * * *

TSOP Council Actions

OUTGOING 1992-93

by **Ken Kuehn, Secretary/Treasurer**

Meeting October 10, 1993 - Norman, Oklahoma. Complete minutes are available by request from the Secretary.

Council Members Present: President - Suzanne Russell, President Elect - Jim Hower, Vice President - Renee Symanski, Secretary/Treasurer - Ken Kuehn, Editor - Neely Bostick, Councilors - Charles Landis and Martin Reinhardt.

1. Council approved (with amendment) the Minutes of the 1993 Mid-year Meeting held on March 6 in Plano, TX.

2. K. Kuehn reported on TSOP finances as of September 30, 1993. Checking account balance - \$10,904.18; Vanguard account balance - \$8,489.16. Total assets of the Society - \$19,393.34 against encumbrances of \$10,250.00

3. R. Symanski announced that the U.S. Internal Revenue Service has notified TSOP in writing that the Society is exempt from Federal income tax under section 501 (a) of the Internal Revenue Code. TSOP must notify the IRS of any changes to the Society's sources of support, purpose, character, or method of operation. Otherwise, no further action need be taken by TSOP.

4. R. Symanski announced the members of the 1993-94 Honorary Membership Commit-

tee which include P. Mukhopadhyay (Chair), Jack Burgess, Alex Cameron, and Brian Cardott.

5. S. Russell reported for Dave Bensley, Chair of the Ballot Committee, the results of the 1993 elections:

R. Symanski - President Elect
P. Mukhopadhyay - Vice President
C. Robison - Councilor
N. Bostick - Editor

The four proposed changes to TSOP By-laws also were passed.

6. D. Glick, Chair of the Membership Committee, reported a total of 216 members in good standing for 1993. He maintains a membership packet including application, cover letter, and by-laws which is available on request. Also, the TSOP brochure is available to anyone wishing to carry a few to professional meetings and distribute them.

7. B. Rathbone, Chair of the Outreach Committee, reported that TSOP has received contributions from three industrial sustainers in 1993 including, CONOCO, EXXON, and AMOCO. The Committee has contacted ten coal companies concerning sustainership with no luck. The TSOP logo and an ad will appear in this year's SEPM Membership Directory.

8. Status reports for TSOP Annual Meetings were given by B. Cardott (1993, Norman, OK) and J. Castaño (1995, Houston, TX).

9. C. Landis reported for the ad hoc committee on Annual Meeting finances. Meeting structure, costs and financing were discussed. A written report of findings will be presented to Council at the 1994 Mid-year Meeting.

10. J. Hower stated that the Executive Committee of AAPG will soon meet and decide whether to accept TSOP as an affiliated society. This relation would give TSOP an ongoing presence and access to AAPG activities as well as a voting delegate to their House of Delegates.

INCOMING 1993-94

by **Ken Kuehn, Secretary/Treasurer**

Meeting October 12, 1993 - Norman, Oklahoma. Complete minutes are available by 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.

1. Council approved the proposed budget for calendar year 1994. The total anticipated operating expenses are \$12,550.

2. N. Bostick, Editor, welcomed any summaries of professional meetings to be submitted to him by the membership for inclusion in the Newsletter.

3. J. Hower established liaison assignments for the Councilors. C. Landis will serve ex-officio on the Research Committee, and C. Robison will serve ex-officio on the Outreach Committee. He also instructed C. Thompson-Rizer, Chair of the Research Committee, to chart committee activities for the year.

4. Status reports for upcoming Annual Meetings were received from B. Cardott (1993, Norman, OK) and B. Pierce (1994, Jackson Hole, WY). The 1995 meeting will be held in Houston, TX and only tentative plans exist at this time for 1996 and 1997.

5. J. Hower led discussion on the status of the joint symposium between ACS and TSOP. The symposium entitled, The Geochemistry and Petrography of Kerogen Macerals will be held as part of the American Chemical Society 1994 Annual Meeting held March 13-18 in San Diego, CA. A publication will result from this symposium. TSOP has pledged \$500 to support these efforts.

6. J. Hower also discussed TSOP involvement with a joint symposium at the 1995 Southeastern Geological Society of America meeting. This meeting will be held in Knoxville, TN and include a coal-related field trip. A field trip guidebook is planned and the symposium papers may be published as a special volume of the International Journal of Coal Geology.

7. Council discussed ideas concerning the feasibility of an annual meeting being held in Europe. A possible symposium at a meeting of the European Association of Organic Geochemists annual meeting was mentioned also.

8. Council discussed TSOP relations with our colleagues in the Canadian Society of Organic Petrologists. Developing closer working relations and the possibility of cooperative activities were discussed.

9. The 1994 TSOP Mid-year Meeting will be held on Saturday, February 26, 1994 at Fort Mitchell, KY.

NEWS FROM OKLAHOMA
WISH YOU WERE HERE!
by *Jim Hower*, President

Why do we go to a society's annual meeting? To present research coming to fruition? To sit back and learn of the research of fellow members? To socialize with the TSOP'ers we see too infrequently? To participate in field trips or short courses? If you are like me the reason is a function of all of the above. Annual meetings have been the locus of the success of TSOP. They serve as the driving force behind our annual "collected papers" issue of *Organic Geochemistry*, the most visible aspect of our contribution to the profession. Prior to that, though, the TSOP meeting format provides the researcher with a focused peer group ready to ask the right questions to help the author overcome the difficulties of getting key points across to the audience. TSOP meetings also promote collaborative research that would not have happened under other circumstances. The research committee presentations at this year's meeting serve as an excellent example of the latter point. My project, for example, provided me with the opportunity to collaborate with researchers, none of whom I have met in person.

The immediate future of TSOP meetings promises to be exciting. Our annual meetings in Jackson Hole, Wyoming (1994), and Houston (1995) offer different opportunities for field trips and short courses. The local committees are already working hard to insure successful and enjoyable meetings. Planning for the TSOP - American Chemical Society Geochemistry Division kerogen symposium at the San Diego ACS meeting (March 1994) is well underway. Tom Robl, Adrian Hutton, and Sunil Bharti are to be congratulated for organizing a joint venture with ACS.

Looking ahead to 1995, Cortland Eble and I are organizing a joint TSOP - Geological Society of America Coal Geology Division symposium at the April, 1995, GSA Southeastern Section meeting in Knoxville, Tennessee. The topic will be on the "Geology and petrology of Appalachian coals" and papers from the symposium will be published in *International Journal of Coal Geology*. A two-day field trip to the coal fields of eastern Kentucky and West Virginia is also planned with the collaboration of Mitch Blake and Bill Grady in

West Virginia and Brenda Pierce, Drew Andrews, John Ferm, among others, in Kentucky. With four meetings in the next two years there is something for everyone. I hope to see many TSOP members at some (or all) of these meetings.

TENTH ANNUAL TSOP MEETING

by Carolyn Thompson-Rizer

TSOP-10 was held in Norman, Oklahoma October 9-13, 1993. It was hosted by the Oklahoma Geological Survey and Conoco Inc. Brian Cardott (OGS) did an outstanding job of organizing every detail for a smooth event. The meeting facilities and accommodations on the campus of the University of Oklahoma were convenient and very comfortable. In all forty four people attended the two day technical sessions which included twenty eight oral and fifteen poster presentations. Michael Lewan (USGS) was the invited speaker and gave the opening talk on suppressed vitrinite reflectance and how hydrous pyrolysis may help us to identify and understand it. Five abstracts were submitted from the Ukraine and Russia but unfortunately none of those authors were able to attend the meeting.

The TSOP Research Committee formally reviewed the progress of the four sub-committees during the oral presentations: vitrinite reflectance round robin results, effects of overpressure on maturity, inter-laboratory comparison of liquefaction residues, and dispersed organic matter classification.

The award (\$100) for the best presentation by a student was given to Andrew Bishop (currently at the University of Oklahoma) for his talk on "The effect of a minor igneous intrusion on the petroleum potential of a Jurassic shale, Isle of Skye, Scotland." Ron Wilkins of CSIRO in North Ryde, Australia won the longest distance travelled to the meeting award (a book on Oklahoma history).

Twelve attended the two day pre-meeting short course on petroleum geochemistry, taught by Professor Paul Philp of the University of Oklahoma. Twenty one scientists participated in the one day field trip to the nearby Arbuckle Mountains to see and sample outcrops of the Lower Carboniferous Woodford Shale and Ordovician carbonates, with several oil seeps and tar quarries — perhaps the best exposures of these rocks in the world.

Financial Business 1994 MEMBERSHIP DUES

It's again time for annual dues. This year Council has made some changes we hope will facilitate the process. First, your dues status is now printed on the upper right corner of your Newsletter mailing label. If the phrase "EXP. 12/93" appears, then you are paid through December 1993 and need to pay dues for 1994. If you have paid in advance, the appropriate expiration date should appear.

Next, you should have received a 1994 Dues Notice as a separate color sheet inside this Newsletter. We ask that you complete the form and return it along with your dues to the address indicated. The deadline for receipt of dues is January 1, 1994 to best ensure continued receipt of the Newsletter and other benefits of TSOP Membership.

Finally, this year **we are able to accept Canadian funds** for the first time. Payments may now be made either in U.S. or Canadian currencies! The appropriate rates and methods of payment are detailed on the Dues Notice. You are encouraged to pay your dues several years in advance if it is more convenient. One note to U.S. residents—the Internal Revenue Service has advised us that your dues are not deductible against personal income tax.

If you have questions, or need assistance, please contact the Secretary/Treasurer:

Dr. Kenneth Kuehn
Department of Geology - EST 304
Western Kentucky University
Bowling Green, KY 42101-3576
USA
PHONE: (502) 745-3082
FAX: (502) 745-6471

TAX-EXEMPT STATUS

by Renee L. Symanski

The society has officially obtained a tax exempt status from the IRS under section 501(a) of the Internal Revenue Code. In order to maintain the tax exempt status, there are guidelines that TSOP must follow. Council has been presented with the fine details of the IRS regulations. I would like to inform the membership of several of the IRS guidelines. The first

item is that members of TSOP may not deduct contributions (ie., TSOP dues) on their individual personal income tax return, even as a business expense. (The expense/tax records of a business are a different matter.) Secondly, until the gross assets of TSOP on a yearly basis exceed \$25,000 on a normal basis, we are not required to file Form 990, which is the Income Tax Return for Organizations Exempt from Income Tax. If any member has questions concerning TSOP's tax exempt status, please feel free to call me at (214) 323-3909.

* * * *

Committee Business

HONORARY MEMBERSHIP

by *Renee. L. Symanski*

The Honorary Membership Committee has been recognized since the conception of TSOP, but it has not previously been implemented. The purpose of the Committee is to present to council the name(s) of individuals who have distinguished themselves in a scientific area of significance to TSOP members. An individual who is voted by Council as an Honorary Member receives a free lifetime membership to TSOP, has full voting rights, and is considered to be a member in good standing. Honorary membership in the Society is unusual and should be restricted to a select few. Any member of TSOP can submit a name of an individual to the chair of this committee, who by convention is the TSOP Vice-President. During the 1993-94 year, Prasanta Mukhopadhyay is the chairman. Please contact him if you wish to suggest a person for consideration for honorary membership.

MEMBERSHIP NEWS

by *Dave Glick, Chairman*

In July, 1993, a new Directory and Bylaws booklet was mailed to current members. As much as possible we will list permanent and temporary changes in each Newsletter issue so members can update the Directory. Therefore it is important that you check the accuracy, completeness and format of your address and your communication numbers and **let Dave Glick know of any changes and additions.** This is particularly important for FAX numbers, and others for which there is no forwarding service!

Membership Expiration Dates on Mailing Labels

Membership expiration dates now appear at the end of the top line of each mailing label. All TSOP memberships are by the calendar year, but some members pay several years in advance, so expiration dates vary. If your records disagree with the date shown, please notify David Glick, TSOP Membership Chairman.

New Members

The Society welcomes the following persons who applied for membership since July, 1993. Please add these entries to your 1993 Membership Directory.

Andrew N. Bishop

School of Geology & Geophysics

University of Oklahoma

810 Sarkeys Energy Center

100 E. Boyd St.; Norman, OK 73019

Tel: (405) 325-4453; Fax: (405) 325-3140

Email: abishop@geohub.gcn.uoknor.edu

Andrew Bishop completed a Ph.D. at Newcastle University in 1992. His interests include biomarkers, reservoir geochemistry, carbon preservation, and application of in-situ analysis in organic geochemistry.

Katherine E. Brown

2742 Kennedy St.; Columbia, SC 29205

Tel: (803) 777-3353

Katherine Brown is studying peat petrography and the relationship of petrography to sulfur (pyrite) content in peats for a Master of Science in geology at the University of South Carolina.

Anne F. Evens

26 Embleton Terrace; Long Framlington

Northumberland NE65 8JJ; ENGLAND

Tel: 066 570 289

Anne Evens is working towards a Ph.D. at the University of Newcastle-upon-Tyne in the area of vitrinite reflectance.

Galina Jernovaja

Tchkalov St. 55b; Kiev; 252054 UKRAINE

Tel: 044 216 31 67; Fax: 044 216 93 34

Galina Jernovaja holds a doctorate from Moscow University. Her areas of interest include coal petrology, thermal metamorphism of coal, and optical studies of vitrinite.

Akio Hirai

Teikoku Oil Co., Ltd.

Technical Research Center

23-30, Kitakarasuyama 9 Chome

Setagaya; Tokyo 157; JAPAN

Tel: (81-3) 3326-9441; Fax: (81-3) 3300-5129

Akio Hirai has been a geochemist with Teikoku Oil Co. since 1975 and a manager of organic geochemistry since 1987. He is Editor-in-Chief of the Journal of the Japanese Association for Petroleum Technology.

Dawn M. Kosloski

Department of Geology
University of Regina
Regina, Sask, S4S 0A2; CANADA
Tel: (306) 585-4987; Fax: (306) 585-5205

Dawn Kosloski is a Master of Science candidate studying the effects of oxidation on low rank coals. Her other areas of interest include basin analysis.

Michelle N. Lamberson

University of British Columbia
Department of Geological Sciences
6339 Stores Rd.
Vancouver, BC V6T 1Z4; CANADA
Tel: (604) 822-3706; Fax: (604) 822-6088
Email: michelle@geology.ubc.ca

Michelle Lamberson rejoins TSOP; she recently completed a Ph.D. for which she investigated the factors controlling compositional variation in the inertinite-rich Cretaceous Gates coals of British Columbia, including vegetation, paleoclimate, fires, and coal-bed methane. Her current post-doc project with the University of Arizona involves reconstructing Cretaceous high-latitude communities utilizing petrographic methods.

Michael D. Lewan

ms-977, US Geological Survey
Denver Federal Center
Denver, CO 80225-0046
Tel: (303) 236-9391; Fax: (303) 236-3202

Michael Lewan is an organic geochemist who has worked for Amoco and Shell prior to joining the USGS and rejoining TSOP. Recently he is well known for his research on oil source rocks, coal and oil shale using hydrous pyrolysis.

Barbara Mösle

Lehrstuhl für Geologie Geochemie und Lagerstätten des Erdöls und der Kohle
RWTH Aachen; Lochnerstr. 4-20
52064 Aachen; GERMANY
Tel: 49-241-805757

Barbara Mösle is working with applications of organic geochemistry and kerogen petrology to source rocks and determination of maturity in various sediments.

Steven J. Schatzel

US Bureau of Mines Research Center
P.O. Box 18070; Cochran Mill Rd.
Pittsburgh, PA 15236
Tel: (412) 892-6521; Fax: (412) 892-6891

Steven Schatzel completed an MS degree in geology in 1990 at the University of Pittsburgh, studying the organic composition of the Green River oil shale. His work now concerns the generation of methane and its emission into underground mines.

Patrick D. Vogler

3554 Creekwood Dr., No. 8
Lexington, KY 40502
Tel: (502) 564-8334

Dan Vogler is working on an MS degree in coal geology at the University of Kentucky. His past experience includes work as a coal geologist and mineral assessor in Kentucky.

Professional Changes

After a 3-year project at BEB and Mobil Oil, **Martin Reinhardt** now works as an independent consultant. He is experienced in typing dispersed organic matter and coal and measuring maturity (VR, Fluorescence) through the range of diagenesis-metamorphism. He also reconstructs local or basinwide paleogeothermal histories; his familiarity with other methods (e.g. clay mineralogy, IRS) is a big advantage. He works in Germany as well as overseas mainly for industry, but also within research programs.

Dr. Martin Reinhardt

International Geological Consultant
Martinstr. 4; 30659 Hannover; GERMANY
Tel. 0511 640377

Jack D. Burgess

Humble Geochemical Services
P.O. Box 789; Humble, TX 77347
Tel: (713) 540-6050; Fax: (713) 540-2864

Ganjavar Khavari Khorasani

Amoco Production Research
5402 E. 41st St.; Tulsa. OK 74135
Tel: (918) 266-0332

Renee L. McLaughlin was married recently and is now **Renee L. Symanski**

Mark Pasley

Amoco Production Company
501 WestLake Park Blvd.
P.O. Box 3092; Houston, TX 77253
Tel: (713) 558-5135; Fax: (713) 556-2139
Email: mapasley@hou.amoco.com

Address/Phone Changes:

The 1993 Membership Directory contained many new addresses and corrections to the 1992 edition. Since its publication, the following changes have been received:

Jeff Quick

Email: Jquick@esri.esri.sc Carolina.edu

Robert Rathbone

Email: rathbone@caer.uky.edu

Sue M. Rimmer

Email: srimmer@ukcc.uky.edu

Dennis Sparks

P.O- Box 312; St. Helena, CA 94574

Ronald W. T. Wilkins: correct agency is CSIRO Division of Petroleum Resources

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FIRST ANNOUNCEMENT AND CALL
FOR PAPERS

1994 TSOP ANNUAL MEETING

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

The Eleventh Annual Meeting of The Society for Organic Petrology (TSOP) will be held in the town of Jackson, Wyoming September 25-30, 1994. That's right! — in the Snow King Resort, at the base of the Tetons, just a short drive from Yellowstone National Park.

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.

Please submit a tentative title for your presentation by April 30, 1994, to Ron Stanton at the address below. Indicate your preference for oral or poster presentation. A final extended abstract, with figures, for publication in volume 11 of the TSOP Abstracts and Programs is due by June 30, 1994. Authors will be invited to submit papers for possible publication in a special issue of Organic Geochemistry.

For further information, contact:

Ron Stanton, ms-956
U.S. Geological Survey
Reston, VA 22092
(703) 648-6462, Fax: (703) 648-6419
e-mail: rstanton@ncrds.usgs.er.gov

TSOP Mugs for Sale
LOUISVILLE STONEWARE MUG

Help support TSOP activities and have an elegant genuine Louisville stoneware container as a gift or for your coffee, tea, chocolate, bullion, etc. Only US-\$10.00 plus shipping. Contact Jim Hower for shipping method and costs and to place your orders: CAER, 3572 Iron Works Pike, Lexington, KY 40511 (Phone (606) 257-0261; Fax (606) 257-0302.

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GSA Coal Symposium, Oct. 1994
ORIGIN OF COMPOSITIONAL
CHARACTER IN TERTIARY
COALS: PALEOECOLOGY,
PALEOBOTANY AND PALYNOLOGY

A theme for the 1994 Coal Symposium at the Geological Society of America in Seattle, Washington has been chosen. Co-conveners **Thomas D. Demchuk, Tim A. Moore** and **Jane C. Shearer** want to focus the symposium on the controls of compositional aspects of Tertiary age (and younger) coals. Specifically, the meeting, titled "*Origin of Compositional Characteristics in Tertiary Coal: Paleogeology, Palaeobotany and Palynology*", will examine coal from a botanical perspective rather than from the more standard maceral approach. By doing this the organizers hope to gain a better understanding of what actually controls the often wide ranging character of different Tertiary coal beds. The meeting will emphasize using pollen as well as identification of plant material in the coal itself to help reconstruct palaeoecology and further the understanding of degradational processes active in ancient mire systems.

The Keynote Speaker will be **Peter D. Moore** from Kings College, London, and he will speak on aspects of modern mire environments in relation to understanding variations seen in Tertiary coal beds. Other speakers come from around the world and include **Joan S. Esterle** (CSIRO, Brisbane, Australia), **Farley Fleming** (USGS, Denver, USA), **Dave McIntyre** (ISPG, Calgary, Canada), **Doug Nichols** (USGS, Denver, USA), **W. Riegel** (Georg-

August-Universität, Göttingen, Germany), W. Schneider (Hoyerswerda, Germany), **Richard Sykes** (IGNS, Wellington, New Zealand), and **Gary Upchurch** (SW Texas University, San Marcos, Texas, USA). Papers from these talks, along with other invited papers, will be published as a special volume of the International Journal of Coal Geology.

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SEPM Short Course, June 1994

PRACTICAL ASPECTS OF LUMINESCENCE MICROSCOPY

The SEPM is presenting a short course on luminescence microscopy at the AAPG/SEPM annual meeting, Denver, Colorado, on June 11, 1994, 8 am to 5 pm, for the short course and 7-9 pm for evening microscopy session. The cost of the course is \$225 for professionals and students. The short course will include a evening "hands on" microscopy session (students should bring their favorite thin section). Lectures will be presented by Charles Barker, Dave Houseknecht, Jay Gregg, and Paul Wright.

The morning session will be devoted to practical aspects of luminescence microscopy; photography, discussion of physical principles, spectroscopy and basic geological applications. The afternoon session will focus on state of the art applications, case histories, and innovative multidisciplinary studies. These topics lead to discussion on the state of the art: spectroscopy, image analysis, new types of stages, and projected uses of luminescence microscopy. Following the afternoon session will be a discussion period that will allow the participants to review the course and allow follow-up discussions by the lecturers.

The short course notes are comprehensive including chapters from eighteen experts, including C.E. Barker, S.D. Burley, R.C. Burruss, E.A. Burton, M.C. Dalziel, Debra K. Higley, D.W. Houseknecht, A.C. Hutton, H.G. Machel, R.A. Mason, A.N. Mariano, D.J. Marshall, R.K. McLimans, W.J. Meyer, A. Mucci, M.R. Owen, R.J. Reeder, and G. Walker.

For further information contact organizer:
Charles E. Barker, ms-971
U.S. Geological Survey
Denver Federal Center
Denver CO 80225-0046
Phone: (303) 236-5797. Fax: (303) 236-8822

ACS Meeting, August 21-26, 1994 Washington DC

SYMPOSIUM ON AMBER, RESINITE AND FOSSIL RESINS

Areas of interest to be discussed may include: Geochemical analysis, petrology, chemotaxonomic and paleobotanical studies, molecular paleontology (including fossil DNA studies), applications in art and archaeology, processing and utilization and other aspects of chemistry associated with ambers and fossil resins.

Please send abstracts on American Chemical Society abstract forms by April 1, 1994 to the symposium organizers:

Prof J. C. Crelling; Department of Geology
Southern Illinois University, Carbondale
Carbondale, IL 62901-4324, USA.
Phone (618) 453 7361, FAX (618) 453 7393

Dr Ken B. Anderson, Amoco Oil Company
Mail Station H-9, PO Box 3011
Naperville, IL 60566-7011, USA
Phone (708) 420-3734, FAX (708) 420-3698

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American Chemical Society

Vitrinite Reflectance Symposium

Report by *Muki Mukhopadhyay*

The Geochemistry Section of the ACS sponsored a symposium organized by P. K. Mukhopadhyay and W. G. Dow *Reevaluation of vitrinite reflectance as a maturity parameter: petrologic, kinetics and geochemical factors* in Chicago on August 23-24, 1993. It consisted of four sessions: 1) Vitrinite reflectance — petrographic characteristics, 2) Use of pyrolysis and kinetics related to vitrinite reflectance, 3) Heat flow, basin modeling and vitrinite reflectance, 4) Other maturity parameters and vitrinite reflectance beyond 2% Ro. The sessions were well attended, with usually over 100 people, during presentation of 26 papers. The titles are given within the **RECENT REPORTS** column of this issue. Publication of many of the papers within the ACS Symposium Series is scheduled next year.

For further information contact P. K. Mukhopadhyay (902) 453-0061 or W. G. Dow (713) 363-2176.

Ned B's Exchange Non-fluorescing mount medium

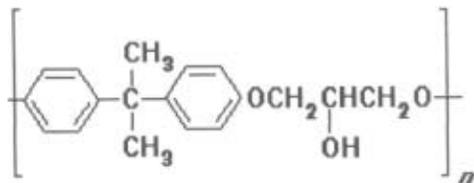
Dear Ned:

Why does my epoxy resin fluoresce, and do you know of a non-fluorescing mounting medium for making polished blocks? The epoxy we use seems to fluoresce, even without any organic material within it, and often fluoresces even stronger around some of the bound particles of shale!

yours fluorescingly.

Kero Gens

For many Organic Petrologists the search for a non-fluorescing mounting medium (a.k.a. "binder") is like the quest for the "Holy Grail"! The reason why so many epoxy resins fluoresce is due to their polymeric nature, which consists of an epoxy prepolymer such as:



This is converted into a three dimensional network by a series of "cross-links". The presence of double bonds within the structure is largely responsible for the fluorescence.

Regarding a "non-fluorescing" binder (or more appropriately low-fluorescing binder) we use "araldite", which still fluoresces but not as strongly as some we have tried. Some labs, like Jack Crelling's at SIU, have tried methods that don't use epoxy binders at all.

Lastly, if the binder you use is strongly exothermic, the heat generated during curing may mobilize some of the hydrocarbons within the sample, causing a "halo" of enhanced fluorescence around the particles. Go for a low-temperature or so-called *cold-setting* binder!

If any of our readership have a solution please share it!

Ned B's Exchange is new to the TSOP Newsletter. This feature has been created by Stephen Bend for the purpose of exchanging hints and tips, ideas and experiences of a technical nature, and also to provide help for those little scientific and technical problems. Ned B. will endeavor to answer and publish all correspondence received, and anonymity will be maintained if requested.

Ned B. acknowledges that the TSOP is a Society rich in knowledge and encourages comments and/or solutions from the general readership.

Please forward correspondence to "Ned B's Exchange" c/o Steve Bend, Geology / ERU; University; Regina, Sask. S4S 0A2; Canada, or to the Editor.

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The Pittsburgh Coal Conference COAL CHARACTERIZATION AND ITS SIGNIFICANCE FOR UTILIZATION

Report by Brenda Pierce

The Branch of Coal Geology, U.S. Geological Survey, was one of the hosts of the 10th Annual Pittsburgh Coal Conference (September 21-23, 1993) and organized a series of technical sessions entitled, "Coal Characterization and its Significance for Utilization." The oral and poster sessions featured a wide variety of research from the USGS (energy branches), state agencies, academia, and industry. This interaction was initiated for technical outreach purposes with the same goals as the USGS McKelvey Energy Forum, specifically, to present coal geology and research to a coal-oriented (industry) audience.

The program consisted of a wide ranging set of presentations including: the role of coal petrography to utilization; coal quality and reserve evaluation; coal resource evaluation; hazardous trace element occurrence, characterization, and removal; Coalbed gas studies; coal combustion by-product analysis; paleoenvironmental controls upon the formation and quality of coal; chemical and elemental characterization of coal fields within the U.S.; coal blending; new analytical techniques for char-

acterization including NMR, QEM-SEM, XAFS spectroscopy, and x-ray analyses; and techniques to predict devolatilization and gasification behavior of coal.

There will be a special volume of *The Journal of Coal Quality* from the presentations made at these sessions.

At next year's Pittsburgh Coal Conference the USGS Branch of Coal Geology will host an oral session entitled "Coal Resource Characterization" and a poster session entitled "Applied Coal Geology". These sessions are not limited to USGS researchers and we would welcome any interest.

If you have any questions concerning the special volume from this year's meeting or interest in next year's meeting, please contact Brenda Pierce, USGS, at (703) 648-6421 or fax (703) 648-6419. If you have any questions concerning the Pittsburgh Coal Conference, please contact the Program Co-chairmen, James T. Cobb or Alan W. Scaroni, Kentucky Geological Survey, at phone (412) 624-7440 or fax (412) 624-1480.

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The GSA Coal Symposium Boston, Oct. 1993

COALIFICATION: METAMORPHIC PARAMETERS AND MATURATION HISTORIES

Report by *Jim Hower*

Alan Davis and Paul Lyons convened the symposium, gathering together a number of researchers on coal metamorphism with a particular emphasis on the northern Appalachians,

Anita Harris first introduced the Conodont Alteration Index (CAI) at the GSA meeting 19 years ago. CAI is now correlated to other organic metamorphism parameters over a wide temperature range. At this meeting she discussed the production of thermal maturity maps for Alaska and southern Nevada. The latter area had largely unknown maturity patterns owing to restricted access to the Nevada Test Site, Nellis Air Force Range, and the Desert National Wildlife Range. Willem Langenberg (with Wolfgang Kalkreuth and

Margot McMechan) discussed the complexity of thermal maturity patterns in the Rocky Mountain foothills, Alberta. Ward Kilby won the division's best-paper award for his presentation of computer-based measurement of the coal reflectance indicating surface (RIS). Several examples were provided, including that of a near-isotropic RIS from a high volatile bituminous coal from the Ikeshima Colliery, Japan, the result of shallow burial at a high geothermal gradient. Jim Hower (with Sharon Lewis and Reza Bayan) tied together a number of studies across the central Appalachians from the Mississippian coals in the Valley Fields (Virginia) to the Pocahontas Basin (Virginia and West Virginia) to eastern Kentucky. One finding from the third author's research concerns the inadequacy of illite crystallinity parameters to resolve metamorphic trends at the medium volatile bituminous through semianthracite rank ranges. Jeff Levine discussed molecular-scale heterogeneity in coal, placing the coal-metamorphic series in the sequence: peatification (peat), dehydration (sub-bit), bituminization (hvb), de-bituminization (mvb & lvb), pre-graphitization (semianthracite & anthracite), and graphitization. The "loosely-bound" molecular fraction can suppress vitrinite reflectance.

Eric Daniels (with Stephen Altaner) reviewed findings in the Pennsylvania Anthracite Fields on the nature and origins of clay minerals. NH_4 -illite forms from the metamorphism of kaolinite with the NH_4 derived from organic matter. NH_4 -illite yields K/Ar ages of 253 ± 10 Ma and broader Rb/Sr ages of 260 ± 40 Ma. Bob Finkelman (with Charles Oman and Frank Dulong) examined the geochemistry of several meta-anthracite samples from the Narragansett Basin. They found that most elements (Si, K, Ba, Ca, Cs, F, Li, Mn, Rb, Sr, and Zr being exceptions) were depleted in the meta-anthracites relative to a suite of Pennsylvania anthracites. More intriguing is the finding that the organic matrix is virtually free of mineral matter. Minerals occur in the fractures and as the binding material in the coal breccia. In a related paper, Paul Lyons found organic sulfur to be surprisingly low in the meta-anthracites and speculated that sulfur-containing molecules could have been driven off in the devolatilization associated with metamorphism. Daniel Murray reviewed the petrography and metamorphic grade of the Narragansett Basin coals.

MaryAnn Malinconico (with David Roy) used a variety of techniques, including graptolite reflectance, to define metamorphic patterns in northern Maine. The metamorphism may be Alleghanian or Acadian with an Alleghanian overprint. Rudolf Bertrand (with John Dykstra) studied metamorphism in the external Quebec Appalachians and the St. Lawrence Lowlands using chitinozoans, graptolites, scolecodonts, bitumen, and native coke. They dated metamorphism as syn-Taconic in the Appalachians and post-Taconic, possibly Devonian, in the St. Lawrence Lowlands.

Although Heinz Damberger was not part of the symposium, his paper in the technical session (page A-140) deserves mention. Based on the fact that no single coalification scale is linear or applicable throughout the rank range, he proposed translating rank parameters into equivalent burial depths. The mappable unit is more linear than the "organic" units.

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Calendar

Note: In response to suggestions by several members, the scope of the calendar has been enlarged. **The Editor would appreciate further feedback from members about the desired scope of the calendar.**

1993

Nov. 1: Abstract deadline for ACS symposium March 13-18, 1994.

1994

March 13-18: Geochemistry & Petrography of Kerogen Macerals. Symposium at ACS Mtg., San Diego, CA. Abstract deadline Nov. 1, 1993 (on ACS form). **TSOPNws=9(3)9, 9(4)19, 10(1).**

April 24-27: Near-surface expressions of hydrocarbon migration. AAPG Conf.: Vancouver, B.C. Info: (918) 584-2555.

April 25-29: Petroleum source rocks: Formation, diagenesis and expulsion. Calgary, Alberta, Canada. Info: Hans Wielens, Unocan Canada, Box 2120, Calgary, Alberta, Canada T2P 2M4. Phone: (403) 268-0370, Fax: (403) 268-0101.

April 27-29: AAPG Pacific Section. Ventura, California. Info: D. Lockman (805)499-8150.

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

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. Abstracts due Nov.1, 1993.

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. Abstr. deadline Jan. 4, 1993.

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

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

Sept. 25-30: TSOP Ann. Mtg., Jackson Hole, Wyoming. Info: (703) 648-6462 or 648-6421.

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

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

1995

Early October?: TSOP, Ann. Mtg., Houston, Texas.

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Pre-Publication Book Offer

(Notice from the publisher)

COAL AND COAL-BEARING STRATA AS OIL-PRONE SOURCE ROCKS? Edited by Andrew C. Scott & Andrew J. Fleet (Publication date: February 1994)

The role of coal and coal-bearing strata in the formation of oil has long been debated. Increasing evidence is being provided, mainly from geotechnical data, that coal and coal-bearing strata, at least of some ages, in some places,

may give rise to significant quantities of oil. Many research areas have an impact on the debate, including geochemistry, palaeobotany, petroleum and coal geology.

Key topics addressed include: 1) Where do terrigenous sourced oils exist and what are the limits of our knowledge of them? 2) Geochemical characterization and interpretation of terrigenous oils. 3) Evolution of plants and implications for oil generation. 4) Oil generation and expulsion from coals and coal-bearing strata. These key topics are covered in major review chapters, with significant new data. In addition, case studies highlight specific areas of study.

Prepaid orders for "Coal and Coal-bearing Strata as Oil-prone Source Rocks?" are available at 2000 plus 2.00 overseas postage per copy UNIL NOVEMBER 30, 1993. If you would like to take advantage of this offer, please send a check or credit card information (Visa / Access / Mastercard / American Express / Diners Club) with an order to:

Geological Society Publishing House, Unit 7
Brassmill Enterprise Centre, Brassmill
Lane, Bath BA1 3JN, UK. Tel: (0225)
445046. Fax: (0225) 442836.



Recent Reports

WHAT? WHERE? WHY? HOW?

The Editor intends that this column be used to report titles of recent work not yet published, or work presented as a

company report, academic dissertation, or abstract, or published in a rather obscure source. This is not a bibliographic service so most entries are not citations but are just titles, with added content words in a few cases. xxxcartoon-below-intro? The intention is to provide answers to questions of what? where? why? — not Who? Each entry is identified by a 20-character "ID-word", which usually contains the name of the first author or editor and the year of presentation or publication. In many cases the title is followed by "*" and reference to numbered sources of information at the end of the *Recent Reports* column in this issue.

Andrews_____WM_93QVo
Quality variation in the Taylor Coal bed,
Johnson and Martin Counties, Kentucky. *2

Arne_____DC_93AFo
Apatite fission track thermochronology
integrated with vitrinite reflectance. *1

Bailey_____AM_93EDo
Early diagenesis in a modern siliciclastic-
peat sequence. *2

Barker_____CE_93CVo
Calibration of a vitrinite reflectance
geothermometer using peak temperature
data from fluid inclusions. *1

Bensley_____DF_93CBo
Compositional based variability in vitrinite
reflectance. *1

Bertrand_____R_930Mo
Organic metamorphism and burial histories
in the St. Lawrence lowlands and in the
external domain of the Quebec Appalachians. *2

Bertrand_____R_93SZo
Standardization of zooclast and telalginate
reflectance to vitrinite in Paleozoic
sequences of the Quebec Appalachians. *1

Cohen_____AD_9_3_SCo
Sulfur contents of peats at the confluence
of carbonate and peat-forming depositional
systems, southeastern Florida. *3

Daniels_____EJ_9_3CMo
Clay mineral alteration during coalification
of coal from Pennsylvania. *2

DeVanney_____KF_93NSo
The need for standardization of vitrinite
reflectance measurements. *1

Castano_____JR_93RVo
The role of vitrinite reflectance as a
maturity parameter in deciphering the
thermal history in sedimentary basins. *1

Chyi_____L_93DOo
The distribution and origin of sulfur in
the Harlem coal, Ohio. *2

Damberger_____HH_93ALo
Adoption of a "linear" coalification scale

- improves interpretability of regional coalification maps. *2
 Eble_____CF_93PPo
 A palynologic, petrographic and geochemical comparison of the Manchester coal bed (central Appalachian Basin, USA) and the No.3 Coal Bed (Cumberland Basin, Nova Scotia). *2
 Finkelman___RB_93CMo
 Chemistry and mineralogy of some anthracitic coal samples from the Narragansett Basin, Rhode Island and Massachusetts. *2
 Fogel_____ML_93APo
 Alterations of plant nitrogen during decomposition. *2
 Furukawa___Y_93DRo
 Diagenetic and replacement reactions forming pyrite. *2
 Gentzis_____T_93WRO
 Why is reflectance "suppressed" in some Cretaceous coals from Alberta? *1
 Gize_____AM_9_30Ao
 Organic alteration in ore genesis. *2
 Goodarzi_____F_93MDo
 Marine-derived organic matter and bitumen as indicators of thermal maturity of lower Paleozoic rocks. *1
 Grauch_____RI_93EMo
 Electron microprobe analysis of organic matter in ore deposits. *2
 Harris_____AG_93CCo
 Conodont color alteration potpourri -- heating from low to high and wet to dry. *2
 Hatcher_____PG_93CWo
 Coalification of wood to form vitrinite: chemical and physical processes. *2
 Hatcher_____PG_93CVo
 The Chemistry of Vitrinite Reflectance and its changes with rank. *1
 Heroux_____Y_930Mo
 Organic matter and clay anomalies associated with base-metal sulfides deposits: three case histories. *2
 Hill_____RJ_931Po
 The influence of pressure on the pyrolysis of coal. *1
 Houseknecht_DW_93RRo
 Rotational reflectance. *1
 Kilby_____WE_93AVo
 Angular vitrinite reflectance measurements -- a key to coalification histories through additional information. *2
 Hower_____JC_93CAo
 Central Appalachian coal metamorphism. *2
 Hower_____JC_93HSo
 High-sulfur coals in the Eastern Kentucky Coal Field. *3
 Hower_____JC_93PJo
 Petrology of Jurassic (Kimmeridgian) coals, Atlantic continental shelf, New Jersey. *3
 Jarvie_____DM_93CTo
 Comparison of transformation rates and products generated at equivalent thermal exposure for a variety of end member kerogen types. *1
 Khorasani___GK_93VRo
 Vitrinite reflectance: The controlling geological and geochemical factor and its relationship with the "oil window maturity". *1
 Kong_____L_03PIo
 Petrography and inorganic geochemistry of the Rosebud Coal Seam at the Absaloka, Big Sky, and Rosebud mines, Powder River Basin, Montana. *2
 Koopmans___MP_93FDo
 Formation and destruction of sedimentary organically-bound sulphur: implications for paleoenvironmental reconstruction. *2
 Kruege_____MA_93FPo
 Flash-pyrolysis-gas chromatography/mass spectrometry of lower Kittanning vitrinites: changes in the distributions of polyaromatic hydrocarbons as a function of coal rank. *1
 LaggounDefarF_93EVo
 Evolution of vitrinite ultrafine structures during artificial thermal maturation. *1
 Langenberg_W_93MHo
 Maturation history of the Rocky Mountain Front Ranges, foothills and plains, west-central Alberta, Canada. *2
 Laughland___MM_93TEo
 A theoretical evaluation of kinetic models and empirical calibrations of vitrinite reflectance. *1
 Law_____B_93GIO
 Geological implications of nonlinear vitrinite reflectance well profiles. *1
 Leventhal___JS_93UQo
 Unanswered questions about organic matter and ore deposits and new directions for research. *2
 Levine_____JR_93IMo
 Influence of the molecular fraction of coal on rank-related coal properties. *2
 Lyons_____PC_93CMo
 Coal metamorphism and the origin of low-sulfur coal. *2
 Malinconico_ML_93TMO
 Tectono-metamorphic history of northern Maine based on graptolite reflectance and other low grade metamorphic indicators. *2
 Meeks_____LK_93VCo
 Vitrain (cryptotelinite) from the Mississippian Fayetteville "Shale, northwestern Arkansas. *2
 MukhopadhyayPK_93CMo
 Calibration of maturity using BasinMod and measured reflectance from Scotian Basin source rocks (Canada). *1

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MukhopadhyayPK_93HV0
History of Vitrinite Reflectance. *1

MukhopadhyayPK_93VVo
Variation in vitrinite macerals and their complexity in determining the accuracy of huminite / vitrinite reflectance. *1

Murray DP_93MOo
The metamorphism of organic material in the Narragansett Basin. *2

Neuzil SG_93TCO
Temporal change in apparent influx of inorganic constituents to domed peat, Indonesia: peat stage of coalification. *2

Nikols D_93HHp
Humalite: a humic acid enriched lithology from the coalfields of central Alberta. *2

Quick JC_93IRO
Isorank variation of vitrinite reflectance and fluorescence intensity. *1

Sackett WN_93PCo
The pyrolysis-carbon isotope method: an alternative to vitrinite reflectance as a maturity parameter. *1

Spiker EC_93SIO
Sulfur isotopic evidence for controls on sulfur incorporation in peat and coal. *3

Stasiuk LD_93CAo
Corphuminite-like algal akinete cells: petrology and thermal maturity parameter. *1

Stracher GB_93TCp
Thermodynamically calculated P-T curve for the condensation of crystalline sulfur from coal gas: Eastern Pennsylvania. 2

SuarezRuiz I_93PGo
Petrographic and geochemical anomalies detected in the Spanish Jurassic Jet, *1

Tremain CM_93CCp
Coal and Coalbed methane studies - a symbiotic relationship. *2

Turner CE_93NOo
Nature and origin of organic matter in sandstone uranium deposits, Grants uranium region, New Mexico - key to mineralization. *2

Veld H_93MCo
Molecular characterization of vitrinite maturation as revealed by flash pyrolysis. *1

ViaravamurthyA_93GIO
Geochemical incorporation of sulfur into organic matter: importance of hydrogen sulfide oxidation products. *2

Wei H_93PFO
Paleoheat flux reconstruction from thermal indicators. *1

Wilkin RT_93FPO
Formation process of framboidal pyrite. *2

Zodrow EI_93CSO
Confirming a statistically derived coal-sulfur model: Sydney Coalfield, Nova Scotia (Upper Carboniferous, Canada). *3

Barker CE_93C3o
Comparison of Predictions from a Vitrinite Reflectance Geothermometer and a Kinetic Model of Vitrinite Reflectance Evolution: Examples from the Late Cretaceous Mesaverde Formation, Wind River Basin, Wyoming. *4

Bishop AN_93E3o
The Effect of a Minor Igneous Intrusion on the Petroleum Potential of a Jurassic shale, Isle of Skye, Scotland. *4

Bostick NH_93Mlo
Microscopic and Macroscopic Analysis of Coal/Spar Contact Textures and Structures to Determine the Origin and Distribution of Rock Spar Bodies in Cretaceous Coals of Western Colorado and Central Utah. *4

Burgess JD_93M4o
Morphological and Chemical Variations within the Alga *Gloeocapsomorpha prisca*: Evidence for Separate Species. *4

Crowley SS_93R8o
The Relation of Macerals and Palynomorphs to Volcanic Ash Partings in a Western Interior Coal Bed. *4

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Pyrolysis-Gas Chromatography and Scanning Electron Microscopy of Artificially Matured Samples of *Pseudoplexaura porosa*. *4

Graham UM_93P4o
Pyrolysis Processing Characteristics of Kentucky Cannel Coals. *4

Guseva AN_93H5z
Hydrocarbon and Water Fluids in JUK-10 Stratum Pool of Krasnoleninsky Vault Talinsk Oil Field in Western Siberia. *4

Han Z_9305o
Observations on the Petrology of Sapropelic Coals. *4

SOURCES OF INFORMATION

- *1-10(3) Symposium on reevaluation of vitrinite reflectance as a maturity parameter: Amer. Chemical Society, Chicago, August 22-23, 1993. Info: P.K. Mukhopadhyay (902) 453-0061; W. G. Dow (713) 292-3528.
- *2-10(3) Geol. Soc. Amer., Anl. Mtg., Boston, Oct.'93: Oral and poster papers, various sessions.
- *3-10(3) Amer. Assoc. of Petrol. Geol., 1993 Eastern Sect. Mtg., Sept., 1993, Williamsburg, Virginia.
- *4-10(3) 10th Annual TSOP Mtg., Norman, OR: Abstr. and Progr. v.10.



NEWSLETTER

Vol. 10, No. 4

January, 1994

ISSN-0743-3816

Mid-year council meeting

The mid-year meeting of the TSOP council will be held at 8:30 a.m. on February 26, 1994, at the Drawbridge Inn, Ft. Mitchell, Kentucky. The Drawbridge Inn is five miles south of Cincinnati at the Buttermilk Pike exit of I-75/71 and has free transportation from the Cincinnati/Northern Kentucky Airport. Council meetings are open to all members. If you wish to attend the mid-year meeting please contact Jim Hower for more information.

Correction

On the cover of the last issue two photos were switched. "I" shows Ronald Wilkins, while "K" shows Martin Reinhardt and Carolyn Thompson-Rizer. Sorry!

1994 MEMBERSHIP DUES

It's time for annual dues!

This year your dues status is printed on the upper right corner of your Newsletter mailing label. If the phrase "EXP. 12/93" appears, then you are paid through December 1993 and need to pay dues for 1994 if you have not done so already (some payments were not posted when the labels were printed). If you have paid in advance, the appropriate expiration date should appear.

Next, you should have received a 1994 Dues Notice as a separate color sheet inside the previous Newsletter. We ask that you complete the form and return it along with your U.S.\$20.00 dues. If you can not find it, just be sure you send your name and address and communication numbers with your payment. **we are now able to accept Canadian funds (\$30.00 Canadian).** Please send payment to the Secretary/Treasurer:

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

CALL FOR PAPERS

1994 TSOP ANNUAL MEETING

September 25-30, 1994

Jackson, Wyoming, U.S.A..

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.

Please submit a tentative title for your presentation by April 30, 1994. Full particulars of the meeting are on a flier enclosed in this Newsletter, and more detail was given in volume 10, No.3.

* * * *

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, 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) are more convenient than printed materials. Unformatted ASCII files or files formatted in WordPerfect, Microsoft Word 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:

Neely Bostick, MS-972
U.S. Geological Survey
Denver Federal Center
DENVER CO 80225-0046
Phone: (303) 236-0581
Fax: (303) 236-7738

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.

PRESIDENT'S LETTER
Journal of Coal Petrology?
by Jim Hower

Nearly three years ago I had a long conversation with an editor for a US publishing firm. The publisher is not among the active players in geology publishing but is always on the lookout for new ventures. I explained TSOP and ICCP to her, noting that the organizations had no publication to call their own. I also noted that some other groups with overlapping interests, notably the GSA Coal Geology Division and the AAPG Energy Minerals Division, were infrequently represented by papers in their respective societies journals. She explained that as few as 500 subscribers would be sufficient to support the start of a journal. Once started, a journal published by that firm takes on a life of its own, generally only getting killed off by the editorial board, not the publisher. Well, three years later she is no longer with the publisher and there is not an "*International Journal of Coal Petrology*", even though more than one reviewer has told me that my papers would be appropriate for that "fantasy" journal.

We do, however, have a good working relationship with *Organic Geochemistry*. Contributions falling within the scope of our annual meetings are broader than the scope of the journal, yet they do not claim veto power over papers in the package submitted by the various annual meeting editors. At least two journals which the TSOP council surveyed several years ago would only have been interested in papers fitting the scope of their journal. We have a broad range of interests among our members, from coal to kerogen and coke to paleobotany and many other directions. Council wisely decided to stay with an option that would not exclude any sector of our membership. *Organic Geochemistry* may not be the journal to which you would normally papers or the journal you would turn to for papers in your specialty, but for one issue a year it serves as our journal.

But what about our own journal? Interesting concept, but several drawbacks come to mind. First, TSOP and ICCP probably do not have 500 members and, even if they did, adding the cost of a

journal to the \$20 TSOP annual dues would surely result in attrition. Second, few libraries can afford to add another journal on top of cost increases for existing journals. Third, do we have any volunteers to edit such a venture? On the plus side, we would gain a more permanent, albeit potentially obscure (or "itty-bitty", as a governor of Kentucky once classified such scholarly journals), consolidated voice for our contributions. Are we adequately served by the present variety of journals? And, is the TSOP membership well served by its quarterly newsletter and *Abstracts and Program*, both supplied for the \$20 dues, and the *Organic Geochemistry* "Collected Papers" issue, part of the registration fee at the annual meeting and available at cost to anyone else?

* * * * *

Symposium, November, 1994
**COAL AND ORGANIC PETROLOGY
 — INTERNATIONAL SYMPOSIUM
 IN FUKUOKA, JAPAN**

The Society of Applied Coal Petrology of Japan and Kyushu University are hosting an international meeting, with English as the official language, on November 16-18, 1994 at the University in Fukuoka.

Topics of the meeting include: 1) Characterization of macerals and kerogens by microscopic / chemical methods, 2) Coal as a source material for petroleum and natural gas, 3) Physical, chemical and biological coal cleaning, 4) Gasification, liquefaction and coking, 5) Combustion processes and environmental studies, 6) Transport and storage, 7) Organic petrology for sedimentological and geohistorical studies, 8) Development of coals in the west Pacific and Asia.

The program includes, in addition, a workshop on microscopic observation of kerogen and coal macerals and an excursion to a coal field and electric power station in northern Kyushu.

For further information or an official circular send a note to Dr. Kiyofumi Okada; Coal Mining Research Center; 14-1, Minami Sakaecho; Kasukabe 344, Japan or contact Professor Atsuo Aihara at the Kyushu Department of Earth and Planetary Science by phone=92-641-1101 or Fax=92-632-2736.

Calendar 1994

Feb. 15: Coal Scholarship. Deadline for receipt of applications. TSOPNws **10(4)**

Feb. 26: TSOP Mid-year Council Mtg. at Ft. Mitchell, KY. Info: Jim Hower.

March 13-18: Geochemistry & Petrography of Kerogen Macerals. Symposium at ACS Mtg., San Diego, CA. TSOPNws=9(3)9, 9(4)19, 10(1). Program titles in **10(4)**.

March 29-30: Midcontinent Simpson & Viola Groups Workshop, Norman Oklahoma at the University. Includes Geochemistry of oils and source rocks. Info: Kenneth Johnson, Oklahoma Geological Survey, phone=(405) 325-3031, Fax=(405) 325-7069

April 24-27: Near-surface expressions of hydrocarbon migration. AAPG Conf.: Vancouver, B.C. Info: (918) 584-2555.

April 25-29: Petroleum source rocks: Formation, diagenesis and expulsion. Calgary, Alberta, Canada. Info: Hans Wielens, Unocan Canada, Box 2120, Calgary, Alberta, Canada T2P 2M4. Phone: (403) 268-0370, Fax: (403) 268-0101.

April 27-29: AAPG Pacific Section. Ventura, California. Info: D. Lockman (805)499-8150.

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

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

May 22-25: ASIM 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: MD. 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. Abstr. deadline Jan. 4, 1993.

June 30: Abstracts due for TSOP Annl. 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. Titles due April 30, abstracts by June 30.

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

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

Oct. 2-5: ASIM 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.

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

1995

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

Early October?: TSOP, Ann. Mtg., Houston, Texas.

1996

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

* * * *

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. Therefore it is important that you let Dave Glick know of any changes and additions. This is particularly important for FAX numbers, and others for which there is no forwarding service!

New Members

The Society welcomes the following persons who applied for membership since October, 1993. Please add these entries to your 1993 Membership Directory.

Flora K. Mpanju

Tanzania Petroleum Development Corporation

P.O. Box 5233

Dar-Es-Salaam

Tanzania

ph. 051-29662

fax: 051-29663/20775

Flora Mpanju earned a M.Sc. from the University of Newcastle Upon Tyne working in organic geochemistry and petrology. She has been working on coals and sediments from Tanzania for the last seven years.

Christopher A. Toles

2206 Coburn Blvd., #22

Lexington, KY 40502-1341

ph. 606 257-1989

Christopher Toles is a student at the University of Kentucky, currently working on activated carbons from coal. His M.S. thesis in geology at the University of Missouri at Columbia was an organic geochemical study across the Ozark dome, and he has also worked for Peabody Coal in Missouri.

Address/Phone Changes

The 1993 Membership Directory contained many new addresses and corrections to the 1992 edition. Since its publication, the following changes have been received:

William M. Andrews, Jr.

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Box 90229

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NEWSLETTER

Vol. 10, No. 4

January, 1994

Joseph A. Curiale

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Monika Wolf

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* * * *

MEDLIN COAL SCHOLARSHIP 1994-1995 academic year

The Coal Geology Division of the Geological Society of America is pleased to announce the Antoinette Lierman Medlin Scholarship

in Coal Geology for the 1994-1995 academic year. The Scholarship 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. 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 1994-95 Scholarship Award. In addition, the recipient of the Scholarship may be provided with a stipend to present results of the research at the 1995 GSA Annual Meeting. For the academic year 1994-95, the Coal Division is also offering a Field Study Award of \$500.

Proposals for the 1994-95 Scholarship and the 1994-95 Field Study Award will be evaluated by a panel of coal geoscientists. 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 5 copies of the following:

1. A covering letter indicating which Award(s) is(are) sought.
2. A concise statement of objectives and methods, and a statement of how the Scholarship funds will be used to enhance their project. The 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.

The material should be sent to the Committee Chairman (Phone: (703)648-6449):

Dr. Paul C. Lyons, ms-956
U.S. Geological Survey
Reston, VA 22092

to arrive no later than February 15, 1994. Applicants will be notified of the Scholarship Committee's decision by April 1, 1994.

Focus on Labs:
Coal and Organic Petrology
Laboratory
The Pennsylvania State
University

The Coal and Organic Petrology Laboratories have evolved from the well-known Coal Research Section which began operation at Penn State in 1957. Under Dr. Alan Davis, Director, the Laboratory conducts research on coal petrology and geology, characterization, and utilization, as well as into other organic materials. The light microscope facilities include capability for studies in reflected and transmitted-light and fluorescence modes, and quantitative reflectance and spectral fluorescence photometry. Complete sample preparation facilities for coal and dispersed organic matter and analytical equipment for many aspects of coal characterization are an integral part of the facility. Other instruments for chemical analysis are available in affiliated departments.

Recent research topics include many aspects of coal characterization, utilization, and geology. See the titles of these related to coal petrography included (source *8) in the *Recent Reports* column of this Newsletter. In addition to undergraduate and graduate courses, Laboratory personnel have taught intensive short courses in the theory and practice of organic petrology.

An important aspect of current research is fluorescence microscopy. The relationship of vitrinite fluorescence intensity to rank and depositional environment has been studied. The chemical basis of the fluorescence alteration phenomenon is under continued investigation. A combination of the techniques of fluorescence and reflectance have been related to the thermoplastic properties of coals, and to study the two-phase structure of coal. The same techniques have been applied in an investigation of the different chemistries of industrial asphalts and coal liquefaction products.

The application of microscopic techniques in solving coal utilization problems has a long history at Penn State. Coke

strength prediction methods based on petrography and reflectance, photomicrographic motion pictures of macerals' behavior in the hot stage, and computerized microscope photometry of coal and coal pyrite with the Rapid Scan system were important early contributions. More recently, examination of liquefaction residues and coal/catalyst systems has revealed information crucial to understanding liquefaction processes.

The depositional and geological histories of Pennsylvania coals have been studied through reflectance, petrographic and palynological analysis. Data from these studies have also resulted in an interpretation of climatic changes during the Upper Carboniferous of Pennsylvania. The Lower Kittanning coal seam in western Pennsylvania and adjacent states has been the focus of extensive studies of vertical and lateral variability in a single coal seam. Optical fabrics have been studied as a means of interpreting burial, stress, and thermal histories of coal basins. Recent research efforts have included geologic and petrographic aspects of basin analysis in Pennsylvania and Nevada, as well as investigation of coal-bed methane.

Maintenance of the Penn State Coal Sample Bank and Data Base has been an ongoing activity since 1967. Over 1450 samples have been collected, representing all coal provinces of the U.S. Data from each coal sample constitute the Penn State Coal Data Base. Detailed printouts for individual samples, or tables for groups of samples, are available to coal researchers; over 1100 samples are available as well. In a new five-year program funded by the U.S. Department of Energy, 30 samples will be collected and will be subjected to a standardized liquefaction test in addition to the usual petrographic, chemical and physical characterization. Continuing research evaluates the best methods and containers for protecting coal samples from deterioration during long-term storage. Commencing this year, samples will be stored in a new refrigerated locker facility.

Recent investigations incorporating mathematical techniques include modeling of coal micropores in conjunction with microscopic observation and the techniques of polymer science for studying the macromolecular structure of coal.

Recent Reports

WHAT? WHERE? WHY? HOW?

The Editor intends that this column be used to report titles of recent work not yet published, or work presented as a company report, academic dissertation, or abstract, or published in a rather obscure source. This is not a bibliographic service so most entries are not citations but are just titles, with added content words in a few cases. The intention is to provide answers to questions of *what? where? why?* — not *Who?* Each entry is identified by a 20-character "ID-word", which usually contains the name of the first author or editor and the year of presentation or publication. In many cases the title is followed by "*" and reference to numbered sources of information at the end of the *Recent Reports* column in this issue.

In this issue of *Recent Reports* Titles from the scheduled program of the **TSOP-ACS symposium in San Diego, March 13-15, 1994 are shown in ALL CAPS**, and all authors are listed. See the separate Newsletter article on the symposium.

Agus_____A_93PCp
Petrographic, chemical and technological characterization of Sulcis coal (Sardinia, Italy). *7 + P. Carbini

Agus_____M_93CSp
Coal structure characterization and analysis by digital texture processing. *7 + G. Bonifazi, P. Massacci

Alpern_____B_93D9
Detection and evaluation of hydrocarbons in source rocks by fluorescence microscopy. *6

Ambles_____A_94CRo
CHEMICAL REACTIONS APPLIED TO KEROGEN STRUCTURE DETERMINATION. *5 + A. Kribii, N. Baudet, J. C. Jacquesy

Araujo_____CV_93CTo
The contribution of transmitted light and UV-light microscopy associated with vitrinite reflectance and pyrolysis (Tmax) to a better approach for the assessment of the maturation of dispersed organic matter. *7

Barker_____CE_93E3
An empirical determination of the minimum number of measurements needed to estimate the mean random vitrinite reflectance of disseminated organic matter. *6

Barker_____CE_93M4p
A minimal response to contact metamorphism by the Devonian Buchan Group limestones, Buchan Trough, Victoria, Australia --

— evidence from impsonite reflectance, isotopic composition and fluid inclusions. *4

Bend_____SL_93G7p
The geochemistry of lignite: New approaches to old problems. *4

Bend_____SL_94FMo
FLUORESCENCE MICROPHOTOMETRY AND COAL OXIDATION. *5 + Dawn M. Kosloski

Bharati_____S_94UGo
THE UNUSUAL GEOCHEMISTRY OF URANIUM AND ORGANIC RICH KOLM LENSES, SWEDEN. *5 + Bjorn Buchardt, Merethe Olsen

Bishop_____AN_94PAo
THE POTENTIAL FOR AMORPHOUS KEROGEN FORMATION VIA ADSORPTION OF ORGANIC MATERIAL AT MINERAL SURFACES. *5 + R. Paul Philp

Burragato_____F_93PMp
Ptolemais and megalopolis brown coals [Greece]: composition and properties. *7 + V. Sakorafa

Cabrera_____L_93PRO
Preliminary results on organic petrology and geochemistry of lignites from the As Pontes Basin (NW Spain). *7 + H.W. Hagemann, W. Pickel, A. Saez

Catalina_____JC_93NTo
New trends in the automatic petrographic analysis of coal. *7 + D. Alarcon, J.G. Prado

CazzulokleigM_93PFp
Peat-forming environments of the Permian Gondwanic South Brazilian coals. *7 + M. Marques-Toigo, Z.C. Correa da Silva

Christanis_____K_93PPo
Peat and peatlands in Greece. *7

Cody_____GD_9_2MG
The Macromolecular Geochemistry of Bituminous Vitrain. *8 Ph.D.

Cole_____GA_94CBo
COMPARISON BETWEEN GRAPTOLITE-CHITINOZOAN REFLECTANCE AND GEOCHEMICAL MATURITY INDICATORS IN THE SILURIAN QUSAIBA SHALE, SAUDI ARABIA. *5

Cole_____GA_940Go
THE ORGANIC GEOCHEMISTRY OF THE SILURIAN PETROLEUM SYSTEM OF SAUDI ARABIA. *5 + Henry I. Halpern, Mahdi A. Abu-Ali, William J. Carrigan, Saleh H. Al-Sharidi

CorreadasivaZC_930Ep
Oxidation effects on macerals of the Candiota Coal, Rio Grande do Sul state, southern Brazil, stocked in piles. *7 + J. Pereira Neto

Crelling_____JC_94POo
PETROLOGY AND ORGANIC GEOCHEMISTRY OF SEMIFUSINITE AND FUSINITE FROM FUSAIN LITHOTYPES. *5 + Jan W. de Leeuw, Pim van Bergen, Michael A. Kruge

Crosdale_____PJ_93C7
Coal maceral ratios as indicators of

environment of deposition: do they work for ombrogenous mires? An example from the Miocene of New Zealand. *6

Crowley SS 93F3

Factors affecting the geochemistry of a thick, subbituminous coal bed in the Powder River Basin: volcanic, detrital, and peat-forming processes. *6

Damiani R 93NMo

A new method to forecast mechanical properties of coke by coal petrographic-analysis. *7 + A. Barsotti, M. Ferraro

David P 93A7

Application of colour image analysis in coal petrology. *6

David P 930Co

Optical characterization of coal by means of colour image analysis. *7 + W. Fermont

Faraj BSM93M3

Micrinite in Southern Hemisphere subbituminous and bituminous coals: redefined as fine grained kaolinite. *6

Golitsyn AM 94NGo

NATURAL GRAPHITIZATION OF ORGANIC MATTER. *5

Goodarzi F 94ATo

ABNORMAL THERMAL EVENTS AND THEIR INFLUENCE ON THE NATURE AND BURIAL HISTORY OF KEROGEN. *5

Han Z 93F7

Fluorescence intensity and alteration of coal macerals and their relation to coalification. *6

Han Z 94Pfo

PETROGRAPHIC AND FLASH PYROLYSIS-GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS) CHARACTERIZATION OF SIX GEOGRAPHICALLY UNRELATED **BOTRYOCOCCUS-TYPE** ALGINITES. *5 + John C. Crelling, Michael A. Kruge

Hower JC 93A9

Appalachian anthracites. *6

Hower JC 93Ilo

Inter-Laboratory Comparisons of Petrography of Liquefaction Residues from Three Argonne Premium Coals. TSOP Research Committee Reports. *4

Hutton AC 94Cpo

THE CHEMICAL AND PETROGRAPHIC CLASSIFICATION OF KEROGEN MACERALS. +Sunil Bharati, Thomas L. Robl. *5

Hutton AC 94LTo

LIPTINITE IN TERTIARY INDONESIAN COALS. *5

Inan S 93TM

The Thermal Maturity and Petroleum Potential of the Mississippian Chainman Formation: Implications for Burial and Thermal Histories of East-Central Nevada. *8 Ph.D.

Jernovaia G 93P0z

Petrographic Characteristics of Metamorphosed Coals of the South Donbass

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CHANGES TO EXTRACTABLE COMPONENTS OF A VICTORIAN BROWN COAL DURING HYDROUS PYROLYSIS. *5 + Maowen Li

JoselglesiasM 94FSo

FTIR STUDY OF PURE VITRINS AND ASSOCIATED COALS. *5 + A. Jimenez, F. Laggoun-Defarge, I. Suarez-Ruiz

Karytsas CS 92VP

Variation in the

Petrological, Mineralogical, and Palynological Characteristics of some Upper Pennsylvanian Coals from the Northern Appalachian Basin. *8 Ph.D.

Karytsas C 93Vro

Vitrinite reflectance geothermometry on Greek geothermal fields. *7 + Th. Markopoulos

Khorasani GK 93N3o

New Developments in Micro-fluorescence Spectroscopy of Petroleum Source Rocks. *4

Kirjukhina TK 93G7z

Geochemical Types of Oils in the Timano-Pechorsky Basin. *4

Kneller WA 93T0p

Thermomechanical properties (TMA) of the Ohio Shale from the Bellefontaine outlier, Bristol Ridge, Logan County, Ohio. *4

Kong L 93P1

Petrographic analysis of the Rosebud seam at the Absaloka, Big Sky, and Rosebud mines, Powder River Basin, Montana. *6

Koukouzas K 93RQo

Reserves, quality, research and perspectives of Greek coals. *7 + T. Kotis, A.E. Foscolos

Kuehn KW 93E5o

Efficacy of Oil Agglomeration for Beneficiation of Ultrafine and Micronized Coals. *4

Kuili J 93A7

Application of laser-induced fluorescence of coal extracts for determining rank. *6

LallierVerese 94Pio

PRODUCTIVITY-INDUCED SULFUR ENRICHMENT OF ORGANIC-RICH SEDIMENTS. *5 + P. Bertrand, N. Tribovillard, J. Hayes, M. Boussafir, D. A. Zaback, J. Connan

Lamberson MN 93A3p

Albian-Cenomanian (Nanushuk Group) wetland environments of the North Slope of Alaska region. *4

Landais P 94CCo

CHEMICAL CHARACTERIZATION OF MACERALS BY TRANSMISSION AND REFLEXION MICRO-FTIR. *5 + Bernard Pradier, Olivier Ruau

Landis CR 93A9o

Assessing the Use of Solid Hydrocarbons in Petroleum Exploration. *4

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 *5 + Reinhard Sachsenhofer
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- Lo HB 93D0o
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 Comparative Petrography and physical
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- Panaiteacu C 93RBo
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 Coal petrography and organic geochemistry
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- Pearson D 93NMO
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- Pickel W 94CKo

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Pierce____BS_93C8o
Comparison of the Petrography, Palynology and Paleobotany of the Little Fire Creek Coal Bed, Southwestern Virginia. *4

Pierce____BS_93P0p
Petrographic and palynologic characteristics across the Cretaceous-Tertiary boundary in the Sugarite coal bed, New Mexico. 4

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The use of composite and mosaic imaging of polished surfaces to enhance petrographic analysis of coal by image analysis. *6

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Book Review: "Petrografia carbunilor, cocsurilor si produselor carbonice" (Petrography of coal, coke and carbon products), by Cornelia Panaitescu, 1991, 323 pg., 260 fig, 70 tabl. Editura Enciclopedica, Bucurest. Description and review in ICCP News, No.8, November, 1993, p.14-15.

Puettmann____W_94P0o
POSSIBLE ORIGIN OF 4-METHYL STEROIDS IN MESSEL OIL SHALE. *5 + Kurth Goth

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VARIATION OF MICROSCOPICAL AND GEOCHEMICAL COMPOSITIONS IN A SEQUENCE OF HUMIC COALS, CANNEL COALS AND OIL SHALES. *5 + Yuzhuang Z. Sun, Wolfgang Kalkreuth

RatanasthienB__93EDp
Environment of deposition of Tertiary Thai coal: coal petrographic implication. *7

Rathbone____RF_90ED
The Effects of
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Rathbone____R_93M4o
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Rimmer____SM_93E0o
Effects of Overpressuring on Organic Maturation and Vitrinite Reflectance. TSOP Research Committee Reports. *4

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Rock-Eval pyrolysis and vitrinite reflectance trends in the Cleveland Shale Member of the Ohio Shale, eastern Kentucky. *6

Rozkosny____I_930Mo
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THE COMPLEXITY OF MACERAL TRANSFORMATIONS IN CARBONATE ROCKS AS REVEALED DURING NORMAL BURIAL, STYLITIZATION AND HYDROTHERMAL ALTERATION. *5

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INFLUENCE OF THE RESINITE ON VITRINITE PROPERTIES. *5 + A. Jimenez, M. J. Iglesias, F. Laggoun-Defarge, J. G. Prado

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*5 + Paul Brooks, Martin Fowler, Ken Pratt

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APPLICATION OF THE CONCEPT OF MACERALS TO
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White TS 89SD
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Should Fluorescence Alteration Replace
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Zhang E 93C1
Chemical composition of pseudo-phlobaphi-
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SOURCES OF INFORMATION

*4-10(4) 10th Annual TSOP Mtg., Norman,
OK: Abstr. and Progr. v.10. [Part of the
program was listed already in TSOPNws
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*5-10(4) Final program, joint TSOP-ACS
Geochemistry Division conference, "The
Geochemistry and Petrography of
Kerogen/Macerals", San Diego, California,
March 13-15, 1994.

*6-10(4) 9th Annual TSOP Mtg, Penn State.
Selected papers published in Organic
Geochemistry 20(6).

*7-10(4). ICCP News, No. 8, November,
1993. [long] Abstracts of papers present-
ed at the 45th Annual ICCP Meeting, Cha-
nia, Greece.

*8-10(4). Coal Petrographic Theses com-
pleted at Penn State since 1989. Pennsyl-
vania State University.

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