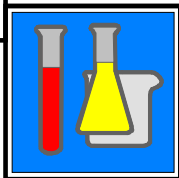




THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

Vol. 21, No. 1

March, 2004

ISSN 0743-3816



Coogee Beach, with the Crowne Plaza meeting venue in the background. Photo by Colin Ward.

2004 Annual Meeting, Sydney, Australia:

Organic Matter Down Under

abstracts should be submitted by April 30



TSOP
The Society for Organic Petrology



TWENTY-FIRST ANNUAL MEETING

Organic Matter Down Under

Sydney, Australia
27 September – 1 October, 2004

Abstracts should
be submitted
by April 30.

Student travel
funding -- see
<http://www.tsop.org/students.htm>

The 21st Annual Meeting of TSOP will be held at the Crowne Plaza Hotel, Coogee Beach, a beach-side conference venue conveniently located with respect to Sydney Airport, the city centre and the University of New South Wales.

Some Conference Themes:

- 7 Non-marine source rocks
- 7 New techniques in organic petrology and geochemistry
- 7 Coal in sustainable development

Provisional Program:

- | | |
|---------------------------|--|
| 7 Sunday, September 26 | – Field Trip: Joadja oil shale (torbanite) deposit |
| 7 Monday, September 27 | – Short course, registration, icebreaker reception |
| 7 Tuesday, September 28 | – Technical sessions, TSOP business lunch |
| 7 Wednesday, September 29 | – Technical sessions, conference dinner |
| 7 Thursday, September 30 | – Technical sessions, field trip departure |
| 7 Friday, October 1 | – Field trip: coal geology of the Hunter Valley |

Additional details may be found on pages 8-10, and <http://www.tsop.org>. Abstracts should be submitted by April 30, 2004, covering the conference themes or other advances in coal geology, organic petrology and geochemistry. Sydney, host to the 2000 Olympics, has many attractions for those who can stay a little longer, and a partners' program is being planned to complement the technical activities.

Plan your travel now!

See article on pages 8 -10.

And mark your calendars for next year:

2005 TSOP Meeting

11-14 September

Louisville, Kentucky

Co-convenors Maria Mastalerz and Jim Hower

The Society for Organic Petrology Newsletter

ISSN 0743-3816

published quarterly

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Writers, Photographers and Associate Editors Needed!

The TSOP Newsletter welcomes contributions from members and non-members alike. Submission methods: Text is preferred in WordPerfect, MS Word, RTF or plain text format. Photos as slides or prints (will be returned after use) or as digital files (300 dpi preferred) without strong compression on CD-ROM or as e-mail attachments (if larger than 5 MB, please e-mail me first). Zip disks are discouraged.

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Society Membership

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

<http://www.tsop.org>

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

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2005 Annual Meeting:	Maria Mastalerz and Jim Hower
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Nominating Committee:	Maria Mastalerz
Outreach Committee:	MaryAnn Malinconico
Publications Committee:	Brian Cardott
Research Committee:	Suzanne Russell

The State of TSOP

President's Column

from Bob Finkelman

In this issue of the TSOP Newsletter you will find the highlights of our mid-year meeting. The mid-year meeting provides the Council with an opportunity to evaluate progress and to make mid-course adjustments. We also discuss new issues that have arisen since the last annual meeting and evaluate new opportunities for our Society. In short, we assess TSOP's state of 'health.' The highlights contain an objective summary of the mid-year meeting. My subjective impression of the State of TSOP is the subject of this column.

In any such evaluation we must first look at TSOP in context with other, similar organizations. There appears to be a malaise cutting across the spectrum of Geoscience organizations; membership is generally down or at best stagnant and funding is tight. The coal-related societies, including TSOP, all seem to be in a similar static state.

With that said, I am not displeased with TSOP's health. Membership and revenues are holding steady and student membership is up a bit. Peter Warwick with help from his friends, compiled a list of attendance and costs for our annual meetings during the past 20 years. We did not detect any negative (or positive) trends during the past 10 or 11 years. Thus the suggestion that we consider holding meetings every other year has been tabled.

I remain impressed with the level of dedication of our Council and committee chairs. Everyone I approached to help with TSOP committee work accepted enthusiastically.

But not all is well in our world. I was surprised that no TSOP member applied for the complimentary subscription to the *International Journal of Coal Geology*. I would like to believe that this indicates that all of our members have access to this valuable journal, but I know this is not true. Moreover, no one has stepped up to make a contribution that will allow us to continue this worthwhile program. Nor has anyone responded to my plea in the last issue of the Newsletter for volunteers to work on our committees and other activities.

Yes, the reticence to step up is a reflection of human nature. And the fact that much of the work of the society is done by a handful of the 'usual suspects' is typical of most societies. But I believe that TSOP is not

a typical society. I would like to believe that we are a cut above the rest. I ask again for members to step forward and work, in some small way, to improve our societal health.

If you would like to help or would like some suggestions on how you can help, contact me at rbf@usgs.gov.

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TSOP Graduate Student Research Grants

TSOP invites applications for one or two graduate student research grants of up to \$1000 each. The purpose of the grants is to foster research in organic petrology (which includes coal petrology, kerogen petrology organic geochemistry and related disciplines) by providing support to graduate students who demonstrate the utility and significance of organic petrology in solving the thesis problem.

The Grant Program supports qualified graduate students from around the world who are actively seeking advanced degrees. Preference is given to full-time students in master's (or equivalent) degree programs but applications are also encouraged from Ph.D. candidates and part-time graduate students. The grant is to be applied to expenses directly related to the student's thesis work such as summer fieldwork, laboratory expenses, etc.

Grant application deadline is **May 1, 2004**. The award will be made in September, 2004. Detailed information and an application form are available on the TSOP web site <http://www.tsop.org/grants.htm> or from

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STUDENTS!

See <http://www.tsop.org/students.htm>

for TSOP travel funding for the Sydney meeting and other supported student activities.

Mid-Year Meeting Highlights

This brief summary is intended to provide timely information to Newsletter readers and is not a substitute for the minutes.

TSOP's mid-year meeting was held at Reston, Virginia, on February 23, 2004. All Council members participated, either in person or by conference call. All committee chairs submitted reports in advance and several also participated during the meeting.

Budget updates, and disposition of amounts budgeted but not spent, were discussed. \$1500 not spent on holding the mid-year meeting was transferred to support student attendance at the Sydney meeting. It was agreed that \$1000 not spent by the Committee to Promote Coal Science and TSOP would be used to support general attendance and participation at the Sydney meeting.

President Bob Finkelman reported on activities of the Committee to Promote Coal Science and TSOP. The first complimentary subscription to the International Journal of Coal Geology will be provided to Professor Marco Ercegovac of the University of Belgrade, Serbia. TSOP members are asked to make donations to sustain this program. For the 2003 annual meeting, student registrations valued at \$800 were provided at no charge.

To further involve students, a new ad-hoc committee on student activities is being created, with funding for a student activity at the annual meeting.

The Student Research Grant program continues to draw many applicants. Specific efforts will be made to increase the offering to two US\$1000 grants per year on a continuing basis. Members who know of funding sources are requested to contact Bob Finkelman.

A summary of attendance and financial status of TSOP meetings through the years, compiled by Peter Warwick and others, was reviewed. The possibility of decreasing the frequency of TSOP technical meetings, because of low attendance and the effort involved, had once been raised as a possibility. Based on the current data, all agreed that annual meetings should be continued. Joint meetings with other organizations, and field trips addressing subjects of current interest, were noted as ways to increase attendance. Increased sponsorship could be sought to alleviate the risk of financial loss. A standing Meeting Advisory Committee is being organized.

Reports from 2004 and 2005 meeting committees were heard. Many possibilities for future years were discussed. A meeting with a coal-bed methane theme

could be considered for Tuscaloosa, Alabama, or for Denver, Flagstaff, or Albuquerque for proximity to field trip areas. The possibility has been raised of a joint CSCOP-TSOP-ICCP meeting for 2008 or later in the Rocky Mountains of Canada or the northwestern US. For sites outside North America, China or southeast Asia could be considered, particularly if the Sydney meeting demonstrates good attendance. A sponsored symposium at another organization's meeting would be another way to start in Asia.

Lavern Stasiuk reported that the Canadian Society of Petroleum Geologists is planning a 3-day mini-conference on coal-bed methane, to be held in Calgary in March 2005. TSOP (and CSCOP) have been invited to participate (by, for example, organizing a half-day session). In return, our members could register at a reduced rate, and TSOP would share in the returns. There would be no financial risk for TSOP. Council asked Vern to report that TSOP is interested in participating.

The Outreach Committee reports four Industrial Sustainers from the campaign of summer 2003, and is expanding its list of contacts for 2004.

The Nominating Committee has nearly concluded its work on the slate of candidates for the 2004 election.

Past President Maria Mastalerz continues to work on the specific procedure to extend the President's term to two years in the near future.

The Honorary Membership Committee is advertising for nominations via e-mail and in this issue of the Newsletter.

A TSOP Service Award will be re-instituted, with the first set of recipients to be announced during this year.

At the August 2004 International Geological Congress meeting in Florence, Italy, TSOP will participate with a booth to be staffed by Bob Finkelman. Other members able to participate and staff the booth are invited to contact Bob.

AGI Liaison Muki continues to handle the large volume of communications from AGI and organize TSOP's responses and participation in AGI activities.

2004 TSOP Directory

is enclosed with members' copies of this Newsletter.
Please check your entry and report any changes to
Peter Warwick, Membership Committee (see p. 3).

The ICCP Page

From Alan Cook, President of ICCP

I am very pleased to accept an invitation from TSOP to make a formal contribution to its Newsletter. In a number of ways the two organizations are starting to develop a closer association and I trust that this trend will continue. The TSOP President (in 2004 his representative) will make a formal presentation to our meeting in Budapest, and I hope to make an equivalent contribution to the TSOP 2004 meeting in Sydney.

While a high proportion of TSOP members are also members of ICCP, a smaller part of TSOP members attend ICCP meetings. Therefore I will try to explain the work of ICCP. In doing this, I trust that the TSOP members who know this better than I do will forgive the repetition. ICCP developed from recognition within the group of founding members that coal petrology (later organic petrology) needed a standardized nomenclature. Its aims are stated as:

The Association shall be a non-profit making body. Its objects shall be

(a) to secure the continuing international exchange of scientific information relating directly or indirectly to organic petrology and

(b) to develop and publish definitive descriptions and methods in furtherance of object 2(a).

This led to the definition of most of the common terms and the publication of a series of editions of the Glossary. Initially, these were published in English, French and German, and were followed by a series of supplements as additional terms were added. The early editions of the Glossary covered all of the major classification systems, but gradually most work focussed on developments of the Stopes Heerlen System. Starting in 1991, it was recognized that the initial terms required major revisions. The revised vitrinite classification was published in 1994, inertinite in 1996 and liptinite is almost ready for publication. These revisions will be incorporated within an entirely new Glossary.

ICCP works in the main through three commissions, and each commission contains a number of Working Groups. Essentially, ideas are developed through the Working Groups and come up through the Commission meetings. The majority of the activity by the Working

Groups relates to work done during the year and each group presents these results at the annual meeting. Where new proposals are made, these are then submitted to the General Assembly meeting in Plenary Session. The main lines of work can be classified as nomenclature and methods. Commission I deals with more general issues, Commission II with topics specifically related to oil and gas exploration and Commission III with coal utilization (including cokes and chars).

Major programs of ring analyses were undertaken from about 1959. In the mid 80s, revisions of coal classification were being undertaken first by the ECE and then by ISO. It was pointed out that vitrinite reflectance and maceral compositions were fundamental to classifying coals. However, proposals to use these variables attracted considerable criticism. This was based on a number of ring analyses that had not produced good agreement. Initial resistance to suggestions that ICCP might develop a system of Accreditation were rapidly overcome, and a program was developed between 1990 and 1995, such that 35 petrologists were granted a form of Accreditation by ICCP at its 1995 meeting. The scheme has subsequently been intensively developed and nearly twice that number is now accredited. The Accreditation Program is now a major activity and has involved the development of methods for testing inter-laboratory analyses.

Details of the Accreditation Program of ICCP can be accessed on the ICCP website at www.ICCOP.org where details of the methods used are given in detail. In summary, to gain accreditation, analysts must provide vitrinite reflectance and maceral group analyses of a suite of six samples, such that the mean unsigned difference between their analyses and the means held within our system is less than 1.5 standard deviations. Analysts are accredited separately for vitrinite reflectance and maceral group analyses. ICCP levies a small charge for provision of the samples and appraisal of the data submitted.

During the development of the Accreditation Program, it was noted that with the inter-laboratory standard deviations for the vitrinite reflectance data being mainly below 0.045%, it was probable that a high proportion of the variation was due to standards. This has led through a series of ring analyses on glass standards to a new program where a YAG garnet

standard is used to calibrate standards. This is leading to a further decrease in inter-laboratory variation and the establishment of a program for comparison of standards with two standards held by ICCP.

ICCP normally holds a meeting once a year and the next meeting (Budapest 12-18 September 2004) is the 56th. The meeting structure might seem a bit complex, but it works! Most meetings now include a day of scientific presentations from individual members on topics of interest that lie outside the activities of the working groups. Compared with TSOP, the ICCP meetings are significantly longer and are centred on group activities.

The ICCP Newsletter includes minutes of the meetings of ICCP and some more general articles of interest. It is available as a printed version in black and white, but the web version is in colour. The Editor has also issued the 2nd Edition of the Glossary in CD form.

ICCP has awarded the Thiessen Medal for some years and in 2003 took steps to introduce a second award, The Organic Petrology Award, for scientists up to 50 years of age. This award does not compete with the Thiessen Medal as it is awarded at an earlier stage of the awardees careers.

ICCP also has a formal role in providing advice to ISO on the development of standards that include organic petrology.

I wish to record the role of Maria Mastalerz in initiating moves towards a closer association between TSOP and ICCP. The two organizations have many common interests but have developed with foci that are different. It is not the intention of ICCP to change TSOP and as can be seen from the pattern of ICCP activities, it undertakes types of activity not normally undertaken by TSOP.

See the web site of the
International Committee for
Coal and Organic Petrology at

<http://www.iccop.org>

Honorary Member Nominations Due by May 1

Every year TSOP members have the opportunity to make nominations for the TSOP Honorary Membership Award. The Honorary Membership Award is the Society's most prestigious award and is limited to a select few. Honorary Member status acknowledges sustained professional excellence in research, service, or education to the Society. The awardees are formally recognized at the annual meeting, presented with a plaque, and granted a lifetime, dues-free membership in the Society.

Honorary Membership awards are given for three categories:

1. Significant research contributions in organic petrology or related disciplines. Contributions must demonstrate a high degree of original research in organic petrology or related disciplines. To qualify within this category, nominees must possess a sustained record of professional publication and achievement. Contributions (publications, state-of-the-art technologies, or other contributions) must demonstrate international impact.
2. Service Contribution to TSOP: Significant contributions to TSOP in a leadership role that have enabled the Society to stimulate interest and promote research in organic petrology. Various contributions are possible in this category. For example, contributions may be related to educational activities, administrative duties, or the development of TSOP as a society. Contributions must demonstrate a high degree of dedication and leadership in overall support of the goals of TSOP.
3. Education Contribution: Significant contributions as a teacher in organic petrology or related disciplines. To qualify in this category, nominees must have demonstrated a high degree of dedication and significant impact as a teacher of organic petrology or related disciplines.

A nominee must be sponsored by a TSOP member, who will supply a letter of nomination and a brief vita detailing how and why the nominee qualifies for the award. Additional letters of support from other TSOP members are encouraged. Nominees will not be asked to supply their own vita.

Selection of the award recipient will be done by committee, whose chair is the current TSOP Vice President. This year's committee consists of Walter Pickel, Hal Gluskoter, Joe Curiale, and Jingle Ruppert (Chair). Please submit nominations by **May 1, 2004** to:

Leslie Ruppert, TSOP Honorary Membership Comm.
U.S. Geological Survey
956 National Center
12201 Sunrise Valley Drive
Reston, VA 20192

Tel: (703) 648-6431 Fax: (703) 648-6419

Email: lruppert@usgs.gov

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Sunset over the Sydney Opera House and the Sydney Harbour Bridge as small boats gather for festivities to welcome the year of the TSOP meeting.
photo by Colin Ward

Come to Sydney for the **2004 Annual Meeting of The Society for Organic Petrology**

by the
2004 Annual Meeting Organising Committee

Abstracts should be
submitted by
April 30

The 21st Annual Meeting of the Society for Organic Petrology will be held in Sydney, Australia, between Sunday, September 26 and Friday, October 1, 2004. This will be the first Annual Meeting of the Society to be held outside North America, and emphasises the role of TSOP as a truly international organisation.

Sydney, host city for the 2000 Olympics, is a major international venue, with spectacular scenery, world-famous buildings and a wide range of activities for visitors to enjoy. Technical sessions and social events for the meeting will be held at the Crowne Plaza Hotel, an integrated accommodation and meeting facility overlooking the Pacific Ocean, located only 15 minutes from both Sydney Airport and the city centre. The hotel is directly opposite one of Sydney's main surfing

FUNDING FOR STUDENT TRAVEL

to the Sydney meeting is available.

APPLY NOW!

Other student activities are planned.

Details at <http://www.tsop.org/students.htm>

beaches, and is close to restaurants, coastal walks, and bus transport to the city's other tourist attractions. Details of the hotel and its facilities can be found at the hotel's web site:

<http://www.coogeebeach.sydney.crowneplaza.com>.

Technical Program

Technical themes for the meeting include *non-marine source rocks*, *methane in high and low-rank coals*, *new techniques in coal and organic petrology*, and *the role of coal in sustainable development*. Papers on any of these topics, as well as more general papers on organic petrology, coal and petroleum geology, and organic geochemistry, are all very welcome. A special one-day Technical Session, co-

sponsored by the Co-operative Research Centre for Coal in Sustainable Development (CCSD), is being planned for the *sustainable development* theme, covering relevant aspects of coal characterisation, resources, utilisation and environmental management, and papers on this theme from the international community are actively encouraged. The *new techniques* theme is being developed in collaboration with the International Committee for Coal and Organic Petrology (ICCP), and Solid Energy New Zealand is assisting with the *coal bed methane* program.

A guide to authors has been placed on the TSOP web site, providing information on how to submit abstracts of papers for oral or poster presentation at the meeting. Deadline for submission of abstracts is **April 30, 2004**. Authors are also invited to submit full-length papers based on their material, after the meeting, to a special TSOP 2004 issue of the *International Journal of Coal Geology*.



Area to be visited on the Joadja oil shale field trip. The processing plants were located on the floor of the valley, and the mining shelf was approximately two-thirds the way up the slopes on both sides. A. Hutton photo.

Field Trips – Joadja Oil Shale and Newcastle Coal Measures

Two field trips to different parts of the Sydney Basin have been arranged to complement the technical sessions. The first of these, to be held on Sunday, September 26, will visit the oil shale (torbanite) deposit of the Joadja area, in the beautiful Southern Highlands of New South Wales. As well as providing opportunities to examine and sample this unusual, alginite-rich material, under the guidance of well-known oil shale researcher Adrian Hutton, the trip will visit the

historic village, mining and processing sites from which the deposits were worked during the 19th Century. It will also take in some of the spectacular bushland scenery of the Southern Highlands area, and, if time permits, visit a nearby winery to sample some of the other produce of the region.



Great Northern coal seam at Catherine Hill Bay, to be visited on the Newcastle field trip. C. Ward photo.

The second field trip, starting immediately after the technical sessions on Thursday, September 30, will visit the city of Newcastle, 160 km north of Sydney, taking in some more spectacular mountain and coastal scenery along the way. After an overnight stop at a beach-side hotel in Newcastle, with an associated dinner and wine tasting, the trip will visit a number of well-exposed coastal outcrops showing different types of coal-bearing sedimentary successions, including fluvio-deltaic,



Use of electron microprobe and similar techniques will be included in the mineral matter short course. C. Ward photo.

alluvial fan and volcanic-influenced deposits (see photo on page 20, back cover), before returning to Sydney in the late afternoon of Friday, October 1. Led by internationally recognised authority and TSOP Honorary Member Claus Diessel, it is a field trip that should not be missed.

Short Course - Analysis and Significance of Mineral Matter in Coal

Although much of the work of organic petrologists is focussed on the maceral constituents, the mineral matter is an inherent part of even the cleanest coal, and needs to be fully assessed along with the organic matter in modern coal characterisation studies. Mineral matter is the source of many problems in coal mining and use, including stickiness in coal handling, abrasion in coal grinding, and contamination or pollution accompanying different preparation or utilisation processes. It may also be associated with reduction of permeability and inhibition of gas flow in pre-mining gas drainage and in coal-bed methane production.

The short course will be held at the University of New South Wales on Monday, September 27. Mini-bus transport will be provided from the Crowne Plaza to the university, returning in time for registration and the icebreaker welcome reception. Led by Colin Ward and David French, the course will briefly outline the nature and origin of minerals and other inorganic constituents in coal, and provide an introduction to the range of techniques that may be used to complement traditional optical microscopy and chemical analysis in evaluating the abundance and constitution of this mineral matter. It will also provide a forum to discuss experience with using these techniques, and the application of mineral matter analysis to particular aspects of coal evaluation, mining, preparation, marketing, utilisation and environmental management.

Partners Program

Family members accompanying meeting participants are invited to join the special Partners Program, with visits to places of interest in Sydney on the main days of the technical sessions (September 28 and 29). These include a ferry trip on the harbour and a visit to Taronga Park Zoo, with opportunities to get close to kangaroos, koalas and some of Australia's other unique wild life, as well as see a wide range of fauna from other parts of the world, in a well designed and beautiful seaside setting.

The other visit will include a walk through the historic area of the city known as The Rocks, and a visit to the world-famous Sydney Opera House. The trips are suitable for both adults and children, and provide a chance to explore some of Sydney's attractions in a friendly environment outside the conference setting.

Further Information

Additional information in the meeting is available from the TSOP web site at: <http://www.tsop.org/mtgsyd.htm>. This includes the guide to authors for technical papers and posters, information on the short course, field trips and partners' program, as well as registration forms and assistance with accommodation arrangements. It also includes useful information on Sydney for local and international travellers, and web links to other sites of interest in the Sydney region.

Members of the TSOP 2004 Meeting Committee, contact details for whom are given below, can provide more specific assistance on particular aspects if required. We hope to see as many TSOP members as possible in Sydney, and look forward to welcoming you at the meeting.

TSOP 2004 Meeting Committee:

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The Geology, Coal Petrology and Mining History of the Kootznahoo Formation coals, southeast Alaska

by Timothy White, U.S. Geological Survey, and
Gareth D. Mitchell, The Energy Institute,
The Pennsylvania State University

Introduction

An interesting though often overlooked coal occurrence in Alaska is the mostly thin, discontinuous seams in the Kootznahoo Formation on Admiralty Island in the southeast “panhandle” of the state (Figure 1). Though of little more than local and scientific consequence today, the presence of the Kootznahoo coal seams was important during a short episode in the early development of Alaska as a newly acquired territory of the United States.

Geology

The Kootznahoo Formation includes probable Eocene through Miocene strata confined to a small basin apparently centered in Kootznahoo Inlet on the western side of Admiralty Island (Figure 1). The Kootznahoo Formation was deposited roughly coeval with other coal-bearing strata in the Eocene-Miocene forearc basin of southern coastal Alaska and in many central Alaskan hinterland basins. Many of these other basins contain economically viable coal resources that have been mined during the past century (2002 Keystone Coal Industry Manual).

The Kootznahoo Formation consists mostly of fluvially deposited sandstone and siltstone with lesser amounts of shallow-marine influenced sandstone, and coal. The coals appear to be mainly Oligocene in age, although abundant plant fossils and occasional coaly stringers exist throughout the formation. Coeval strata on southern Admiralty, Kupreanof, Kuiu and Prince of Wales Islands also contain similar lithologies, including coal. In places, well-preserved in-situ stumps may be found buried in sandstone channel deposits or permineralized by volcanic tuffs and basalt flows (Figure 2 and 3).

Name derivation

The derivation of the name Kootznahoo provides some insight into potentially the first geological observations in the region. The name Kootznawoo, or Xootsnoowu in the Tlingit language, means Fortress of the Brown Bear, and is the native name for Admiralty

Island. The name Kootznahoo may be a mispronunciation of the name. Alternatively, the village of Angoon, at the mouth of Kootznahoo Inlet, is known in the native language as Xoodzidaa Kwaan, or Burning Wood Fort. Xoodzi means burnt wood or charred remains (Jacobs, 2000). The village of Angoon is ancient, and given the 2000 to 6000 years ago emergence of the Tlingit culture and language in southeast Alaska (Hope, 2000; Langdon, 2002), the name suggests the early Tlingit people may have recognized the presence of coaly plant fragments in the strata near the village site and the Kootznahoo Inlet region.

Mining history

In 1786 coal was discovered far to the north of Kootznahoo Inlet by an English trader on the Kenai Peninsula, Alaska, and was first mined commercially at that site by the Russian-American Company in 1855 (Merritt, 1986). The company maintained a coal depot near Sitka in southeast Alaska to supply commercial



Figure 1. Coal districts (in dark gray) of southeast Alaska, after Merritt and Hawley, 1986. Most of the information and images presented in this article pertain to the northern locale of the two sites marked by arrows. The permineralized stump shown in Figure 3 is from the southern locale.



Figure 2. In situ, carbonized, rooted stump in the Kootznahoo Formation near the coal mine at Kootznahoo Inlet, Alaska. Peter Haeussler for scale. T. White photo.



Figure 3. In-situ, permineralized stump in the Kootznahoo Formation, Kuiu Island, Alaska. Abney level for scale.

T. White photo.

steam ships (DeArmond, 1997). In 1862, the first coal was mined in southeast Alaska at the Sepphagen Mine in Kootznahoo Inlet (Merritt, 1986).

Shortly after the United States purchased Alaska from Russia, the U.S. Navy and U.S. Revenue Marine Service dispatched ships to survey and secure the new territory. Both determined that only steamships could effectively explore the wind-protected waterways of the region. Therefore a ready supply of cheap fuel was required to power the fleet. However, the Kenai Peninsula mine was closed after the purchase of Alaska, so coal had to be shipped to Sitka from other places like Puget Sound (DeArmond, 1997; BLM, 2003).

One U.S. Navy ship, the *U.S.S. Saginaw*, was sent to investigate the loss of a commercial passenger vessel in 1867. During this cruise, the ship's commander (Mitchell) learned of a coal seam on the northwest side of Kupreanof Island at what subsequently became known as Hamilton Bay. The Hamilton Bay coal consisted of a narrow seam (18 inches) from which the crew extracted at least four tons for use in the ship's boilers. Commander Mitchell believed that the coal provided "every evidence of petroleum in considerable quantity on the island" (DeArmond, 1997).

By 1869, Commander Mitchell understood that by combining southeast Alaska coal with timber, he could greatly reduce the cost of fueling the *U.S.S. Saginaw*. The ship's next search for fuel occurred during the summer in Kootznahoo Inlet where 18 tons were mined. The captain observed that the quality of the coal improved as the sailor and native miners dug in from the outcrop. He also noted that this coal fired the ship's furnaces quicker than the coal obtained at Hamilton Bay. During the following four days, another >21 tons were mined, and a month later at least 60 tons were mined, although in the interim the ship purchased 38 tons of British Columbia coal at Sitka (DeArmond, 1997).

During the winter 1869, the *U.S.S. Saginaw* returned to Kootznahoo Inlet and obtained 51 tons of coal that they supplemented with 22 cords of hemlock. By this time, Commander Mitchell observed that the surface resource had been exhausted at the mine and a shaft would be required to access the remaining coal. Subsequently they found "three veins of coal" and another "large vein of coal...being five feet wide" that they were only able to mine "down two feet and it can only be worked at low water". Mitchell noted that some of the coal was "highly charged with resinous material...clear as amber" and "resembles somewhat the cannel" rendering it unsuitable and dangerous to use on the ship (DeArmond, 1997).

Although Commander Mitchell wrote that the "surrounding country showed coal-croppings in almost every direction" and "is doubtless a vast coal-field" (DeArmond, 1997), a thorough survey of southeast Alaska by the U.S. Navy in the late 1800's failed to identify a reliable coal deposit (BLM, 2003). Not until 1914 did the Navy use Alaska coal when the Eocene Chickaloon coals in the Matanuska Valley were mined. The Kootznahoo Inlet coal continued to be mined during the late 1800s by various individuals and companies and was sold in Sitka and Juneau (DeArmond, 1997).

Residents of Angoon recalled that their school was heated using Kootznahoo coal as recently as the 1950s (Gabriel John, Angoon, personal communication, summer 2003).

During the summer of 2003 a U.S. Geological Survey team consisting of Tim White, Peter Haeussler, and Sue Karl studied the Kootznahoo Formation to collect information to better constrain basin history and its potential relationship to the development of the Eocene forearc basin. At this time, the field team visited the historic mines and observed a flooded shaft (Figure 4), relict mining carts (Figure 5 and 6), and a boiler (Figure 7) that appears to have driven a winch for pulling the carts and a coal scoop (Figure 8). A sample of the coal was taken from mine spoil next to the shaft.



Figure 6. Coal cart buried in tidal muds near the coal mine at Kootznahoo Inlet.
T. White photo.



Figure 4. A view looking into the partially collapsed and flooded shaft at the coal mine locale, Kootznahoo Inlet, Alaska. Note the coal cart in upper left. Sue Karl for scale.
T. White photo.



Figure 7. Boiler and winch near the mouth of the Kootznahoo Inlet coal mine.
T. White photo.



Figure 5. Close-up of coal cart visible in Figure 4.
T. White photo.



Figure 8. Bucket for removing coal from the Kootznahoo Inlet coal mine.
T. White photo.

Coal petrology

A petrographic analysis of the coal (Table 1) demonstrates that the sample rank is subbituminous A to high-volatile C bituminous ($VR_o = 0.61$). Although this measurement is slightly lower than the high-volatile B bituminous rank reported in the 2002 Keystone Coal Industry Manual for coals mined in the Angoon district, it probably explains Commander Mitchell's observation that the Kootznahoo coals burned hotter than the Hamilton Bay coal where lignites are reported in the Keystone Manual. Using the Keystone Manual's rank report as a reference, the reflectance value reported here also suggests that the petrographic sample was probably not pervasively oxidized since elevated reflectance values would be expected.

Table 1. Maceral Analyses of Coal Sample KanBay #1

Maceral	Mineral-free	Mineral-containing
Detrovitrinite	58.1	45.7
Telovitrinite	18.1	14.2
Gelovitrinite	18.4	14.4
Total Vitrinite	94.6	74.3
Sporinite	0.3	0.2
Resinite	1.1	0.9
Cutinite	1.3	1.0
Liptodetrinite	0.8	0.6
Suberinite	0.1	0.1
Bituminite	0.0	0.0
Semifusinite	0.5	0.4
Fusinite	0.0	0.0
Macrinite	0.0	0.0
Micrinite	1.0	0.8
Inertodetrinite	0.2	0.2
Funginite	0.1	0.1
Mineral Matter	-	21.4
Mean-maximum Vitrinite R_o		0.61

The relative abundance of detrovitrinite reflects the high mineral-content of the coal and indicates that the precursor mire contained strongly decomposed plant matter which was originally low in lignin and rich in cellulose. The presence of telovitrinite and gelovitrinite in subsidiary quantities indicates that cell walls and humic gels were also preserved (Taylor et al., 1998).

Relatively low values for resinite content (and the liptinite group in general) do not substantiate Commander Mitchell's observations of high resin content. This conclusion is likely a statement of the lack of representativeness for our sample rather than a criticism of Commander Mitchell's observational skills.

Discussion and Conclusions

The petrographic observations are consistent with the gross sedimentary characteristics of the host strata. In general, the Kootznahoo Formation was deposited rapidly in a fluvial environment mostly unsuitable for peat preservation. The preponderance of organic detritus throughout the formation indicates that organic inputs were high, but the accumulation potential was low. At times, however, particularly in the late stages of basin development when the surrounding hinterlands may have been eroded and fluvial gradients were subdued, the laterally discontinuous and generally thin precursor peats were deposited.

Ongoing efforts to better constrain age relations in the Kootznahoo Formation at Angoon and in the greater southeast Alaska region should provide a framework for better understanding the depositional history of the basin. Reflectance studies of dispersed organic matter and coal samples from the Kootznahoo Formation, placed within the developing chronostratigraphy, will aid in understanding the thermal and subsidence history of the basin to compare to similar studies of coeval basins in southern coastal Alaska. Stay tuned.

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British Organic Geochemistry Society - 16th Annual Meeting

from the org geochem e-mail list

The 16th Meeting is being hosted by the School of Chemical Environmental and Mining Engineering, The University of Nottingham. The Meeting will take place on Wednesday and Thursday 14-15 July 2004.

As in previous years, we will have presentations on Wednesday and up to lunch time on Thursday, as numbers dictate. There will be a social event on the Wednesday evening.

We intend to keep the Meeting informal, and hope that most of the presentations will be given by research students. Talks will be approximately 20 minutes long (15 minutes, plus 5 minutes discussion), and posters will be on continuous display throughout the meeting (with time set aside to allow viewing). Depending on the number of oral presentations, we may also include poster talks (very brief, 1 overhead only) and a decision regarding this will be made nearer the time.

In order that we can have an idea of the numbers we can expect, if you are intending to participate in the Meeting, it would be very helpful if you would contact us as soon as possible, and no later than Wednesday 31 March 2004. If you intend to present a talk or a poster, please e-mail (address at the foot of this post) your abstract (1-2 pages in length) to the BOGS04 organising committee as soon as possible, and no later than Wednesday 2 June 2004.

The final deadline for registration etc. will be Wednesday 2nd June 2004.

Registration fees will be £10 for students and £25 for others. Please make cheques payable to the British Organic Geochemical Society and send to the organisers at Nottingham (postal address in signature to this message). We will send you a receipt, should you require one.

We look forward to your company in Nottingham.

BOGS04@Nottingham.ac.uk

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Call for papers:**World of Coal Ash****11-15 April 2005**

from Jim Hower

The inaugural World of Coal Ash <www.worldofcoalash.org> is the world's premier conference concerning the science, applications and sustainability of coal ash utilization. The conference will be held in Lexington, Kentucky, USA, on April 11-15, 2005. It is planned to encompass all aspects of coal combustion products/byproducts as well as gasification products. In addition, there will be a full-day session on regulatory issues related to the use of coal ash in mining activities sponsored by the U.S. Department of Interior's Office of Surface Mining's (OSM). There will be an additional series of sessions devoted to FGD material, synthetic gypsum, and the management and many uses of this product.

Coal ash utilization represents an important and growing industry in the United States and around the world. Coal combustion products (CCPs) include fly ash, flue gas desulfurization materials, boiler slag and other materials that are finding increased application in the construction, road paving, and building trades. Today, this use represents a multi-billion dollar industry in the U.S., including markets for lightweight aggregate, high-strength pozzolans, wallboard, polymeric filler, cinder blocks, tile, and variety of other construction products. The re-use of these materials also contributes to improved environmental quality and sustainable development. The World of Coal Ash is intended to provide a forum to meet and discuss the science and applications for coal ash, and to transfer knowledge and ideas that will benefit their innovative utilization, handling, storage and disposal.

The World of Coal Ash will be the major ash conference in 2005. It incorporates the annual/biennial meetings/workshops of the following groups:

- * University of Kentucky Center for Applied Energy Research's 2005 International Ash Utilization Symposium
- * American Coal Ash Association's 16th International Symposium on Management and Use of Coal Combustion Products (CCPs)

- * U. S. Department of Energy National Energy Technology Laboratory
- * U. S. Office of Surface Mining

Applications for unsolicited oral and poster presentations for the 2005 World of Coal Ash are now being accepted. The abstract deadline is September 1, 2004. Application instructions are at <http://www.worldofcoalash.org/presenters/callforapers.html>

Approximately 90 oral presentations, divided among 2 ½ to 3 days of four concurrent sessions, and 20 poster presentations, with a dedicated poster session, are anticipated. The technical sessions, both oral and poster, will be held on April 12, 13, and 14.

Suggested topics include, but are not limited to:

- Mercury and other emission control impacts on CCP quality
- Gasification products
- Research and emerging technologies
- Project-specific case studies
- Hydrology and leaching
- Manufactured aggregates
- CCP storage and management
- Fillers and ceramics
- FGD and synthetic gypsum
- International perspectives
- Environmental implications of ammoniated fly ash
- Sustainable construction
- Regulatory issues
- Mining use of CCPs
- Concrete, cement, and grouts
- Clean coal technology
- Beneficiation and processing
- Soil amendments and agricultural uses
- Carbon for re-burn and adsorbents
- CCPs in construction applications
- Barriers to CCP use

To publish a paper in the World of Coal Ash Proceedings Volume, an oral or poster presentation **must be made**. If a presentation (oral or poster) is not made, the paper **will not appear** in the Proceedings Volume.

All presentations, provided they are made, are expected to be represented by a paper in the Proceedings

Volume. Papers may be supplemented by Power Point slides.

The Proceedings Volume will be in CD-ROM format only. It will be available in **July 2005**, following the World of Coal Ash.

It is anticipated that the Elsevier Science journal *Fuel* will devote an issue to selected manuscripts from the 2005 World of Coal Ash. *Fuel* is an international academic refereed journal published by Elsevier Science in the United Kingdom. Submission of a manuscript for *Fuel* is optional. The manuscript submitted for inclusion in *Fuel* **MUST BE DIFFERENT** from the manuscript submitted for the Proceedings Volume.

The Barton A. Thomas Memorial Award is presented to the person whose presentation (oral or poster) is chose by a panel of judges to be the most outstanding of the World of Coal Ash.

The language of the World of Coal Ash is English. If a translator on the podium is requested by the presenter, an attempt will be made to provide this service. All associated costs will be the responsibility of the presenter. Advance notice of at least one month is required.

To apply, see Application Directions <http://www.worldofcoalash.org/presenters/callforpapers.html>
If you have questions, please contact

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Call for Papers: Hazards in Coal Mining Volume

from Jim Hower,
Editor-in-Chief
International Journal of Coal Geology
<http://www.elsevier.com/locate/issn/01665162>

As we all know, coal mining has been and continues to be a dangerous occupation. In the US, federal and state authorities work with the philosophy that one death in a mine is too many. Of course, this goal has not been met in the US or elsewhere where mining of coal takes place.

With this in mind, I am calling for papers for a special issue of *International Journal of Coal Geology* dedicated to **"Geologic hazards in coal mining: Prediction and prevention."** Many topics, such as, but not limited to roof, rib, and floor control; mine gases; and flooding from old mine works would easily fit in the scope of the call for papers.

Papers should be submitted by **31 May 2004** if at all possible. As always, please follow the guide for authors at

<http://authors.elsevier.com/GuideForAuthors.html?PubID=503337> in preparing a manuscript. Manuscripts should be submitted directly to me. If possible, please let me know if you are interested in contributing a paper so that I can make better plans for the volume.

Thank you,
Jim

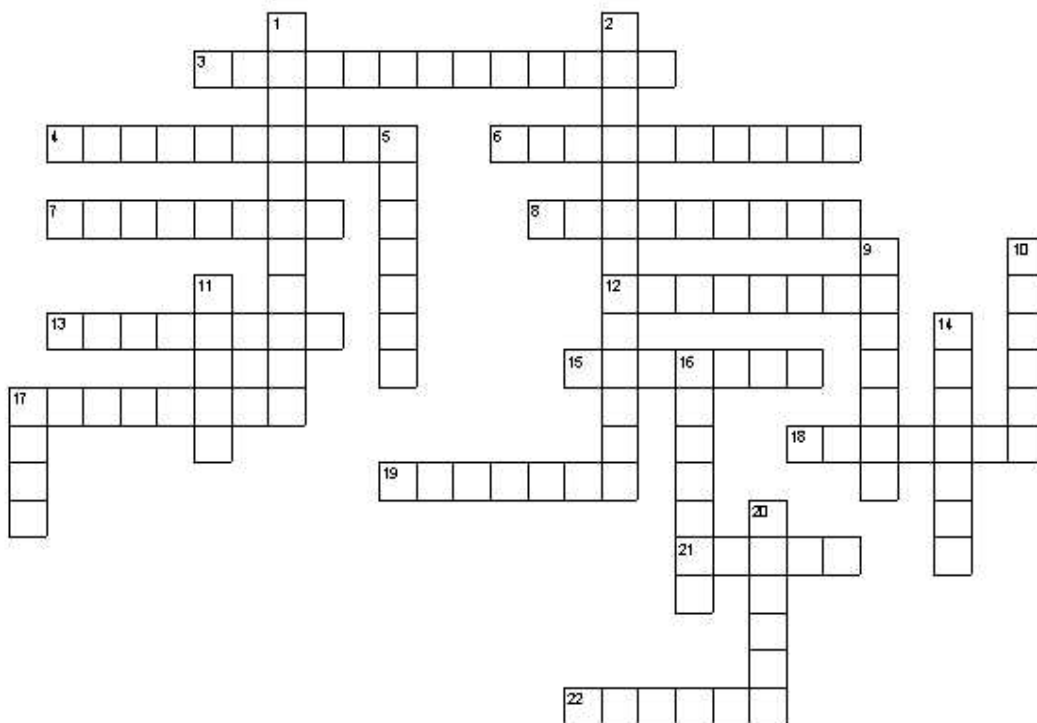
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Coal (and a little oil) in the Arts

a crossword puzzle from an anonymous contributor



The first correct solution received before June 10 by the Editor (p. 3) wins a TSOP coffee mug.

Down

1. Orson Welles movie beaten for 1941 Best Picture Oscar by Welsh coal mining film "How green was my valley" (2 words)
2. 1969 movie, starring Sean Connery, about labor wars in Pennsylvania Anthracite Fields
5. "Billy ____": 2000 movie set in coalfields of northern England
9. John Sayles' 1987 movie of 1920 massacre in Mingo County, West Virginia
10. Lee ____, singer of 1966 hit "Working in a coal mine"
11. 1956 movie set in Texas oil field, James Dean's last movie
14. "____ Sky": 1999 movie based on book "Rocket Boys," set in coalfields of West Virginia
16. '70's minor pop hit about cannibalism in coal mine
17. Loretta ____, Kentucky-born singer known as the "Coal Miner's Daughter"
20. Merle ____, writer of "Dark as a dungeon"

Across

- | | |
|---|--|
| <ol style="list-style-type: none"> 3. Kris ____, writer of "Me & Bobby McGee" with line "From the coalmines of Kentucky . . ." 4. Pseudonym for anthracite coal town Pottsville in O'Hara's "Appointment in Samarra" 6. Kentucky county John Prine longs to return to in song "Paradise" 7. Pseudonym for oil in theme to TV's "Beverly Hillbillies" (2 words) 8. Louis ____, American jazz great, performer of "Coal cart blues" 12. Author of "Storming Heaven," novel of mine wars in southern West Virginia 13. Emile Zola's 1885 novel of class struggle in French coal mining region | <ol style="list-style-type: none"> 15. ____ tons of Number 9 coal, song popularized by Tennessee Ernie Ford 17. D.H. ____, early-20th century writer of "Women in Love", novel set in coal town 18. In John Prine's song "Paradise," "Mr. ____'s coal train has hauled it away" 19. British novelist, coal references in "Bleak House" 21. Victorian novelist, included coal references in novels, including "The Mayor of Casterbridge" 22. "Coal ____": painting by Vincent van Gogh |
|---|--|

Calendar of Events

2004

April 5 - 7, 2004: SEGH, Sussex, UK, Environmental Geochemistry and its impacts on health.

<http://www.sussex.ac.uk/conferences/segh/>.

April 18 - 21, 2004: AAPG, Dallas, Texas, including Poster Session: Oceanic Anoxic events and Source Rock Formation.

June 5 - 11, 2004: Goldschmidt Conference, Copenhagen, Denmark, including: Macromolecular Organic Matter; Discerning Biological and Non-biological Origins; Petroleum Geochemistry and Migration. www.goldschmidt2004.dk

August 20 - 28, 2004: 32nd International Geological Congress, Florence, Italy, including G-04.05 Organic Geochemistry. <http://www.32igc.org/home.htm>.

Sept. 12 - 18, 2004: 56th Annual Meeting of ICCP, Budapest, Hungary. [NOTE these corrected dates.] Including a one-day symposium on "Environmental management implications of organic facies studies." <http://www.mafi.hu/ICCP/index.html>

Sept. 13 - 17, 2004: 21st International Pittsburgh Coal Conference, Osaka, Japan. <http://www.engrng.pitt.edu/~pccwww/>

Sept. 27 - Oct. 1, 2004: 21st Annual TSOP Meeting, TSOP: **Organic Matter Down Under**, Sydney, Australia. See page 2, 10 and 11 and <http://www.tsop.org/mtgsyd.htm>

Oct. 12 - 14, 2004: AAAPG-2004, 6th Internat. Conf. on Petroleum Geochemistry and Exploration in the Afro-Asian Region, Beijing, China.

2005

April 11 - 15, 2005: World of Coal Ash, Lexington, KY, USA.

Sept. 11 - 14, 2005: 22nd Annual TSOP Meeting, Louisville, Kentucky, USA.

Sept. 18 - 23: 57th Annual Meeting of ICCP, Patras, Greece. Followed by a three-day excursion.

<http://www.iccop.org/57AnnualMeeting.htm>

Photo Gallery

C. Ward photo



Upright tree stump surrounded by iron staining in tuff overlying coal seam at Swansea Heads, to be visited on Newcastle field trip of the

TSOP 2004 Annual Meeting in Sydney

see article on pages 8 - 10 and

www.tsop.org/mtgsyd.htm