CMS News

A Publication of The Clay Minerals Society

Volume 10, Number 2 Fall 1998

Cleveland clay meeting rocks

Rock and roll is here to stay! I attended a conference in Cleveland recently at which the president of the society holding the meeting sang and danced for his presidential address! If you missed the annual CMS meeting this past June, you missed a great show by outgoing President Joe Stucki. To the tune of "A Hundred Pounds of Clay," Joe entertained us all as part of the opening ceremonies. (Contact the society office for a video of the event—just kidding, Joe.) For Joe, it was an anniversary as well. His first CMS meeting was held in 1974 in Cleveland... and

continued on page 4

CMS President Joe Stucki (at podium) acknowledges the CMS '98 organizing committee Jim Aronson, Sam Savin, Roger Burtner, and Eric Daniels at the banquet. *High Iron Photos*

Editorship changes hands

Clays & Clay Minerals *Managing Editor Julie Kane and Wayne Hudnall (retiring Editor-in-chief) with Steve Guggenheim (incoming Editor-in-chief) at the CMS meeting in Cleveland. Wayne and Julie had a distinguished tenure running the journal, and the CMS thanks them and looks forward to Steve, and his wife Linda, the new Managing Editor, carrying on the high standards.* *High Iron Photos*

On January 1, 1999, Wayne Hudnall retired as the Editor-in-Chief. The CMS owes Wayne and his Managing Editor, Julie Kane, a huge debt of gratitude for their tireless work keeping up the quality of the journal and getting the production schedule caught up.

We are equally lucky that Steve Guggenheim has agreed to carry on the work, with the help of his wife Linda as Managing Editor. They began work right after the meeting in June in order to make the transition as smooth as possible.

Thank you, all four, for your commitment and hard work.

Art White

The CMS notes with regret the death of W. Arthur White. A memorial will be published in the next issue of the newsletter.

Correction

The fax number of Cliff Johnston, Chair of the 1999 CMS annual meeting, is printed incorrectly in the new directory. It should read 765-496-2926. FYI, his phone is 765-496-1716, and e-mail: clays@purdue.edu. For information about the meeting, please see page 12.

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The newsletter is distributed to all CMS members. Membership rates (1998) are as follows: full membership, including a subscription to *Clays and Clay Minerals*, $60.00/year; student membership, $15.00/year; nonsubscribing membership, $30.00/year. Institutional subscriptions to *Clays and Clay Minerals*: $195.00/year ($210.00 overseas) for the year 1999. Please contact the Society Office for information regarding new membership, and Allen Press (785-843-1221) for questions concerning current membership.

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This newsletter printed on recycled paper.

Clay structure/surface analysis by synchrotron radiation at APS

The Advanced Photon Source (APS) is an advanced synchrotron source now available at Argonne National Laboratory about 15 miles outside of Chicago. The very high-intensity X-ray beam at the APS will allow single-crystal investigation of a clay particle. Depending on the crystalline nature of the individual particle under study, the investigation has the potential for a complete structure determination. If the sample has stacking disorder or other defects, a less thorough analysis may result. The goal of the present initiative is to pursue both very accurate crystal structure determinations and to pursue surface crystallography. Surface crystallography will be directed to both internal and external surfaces and will be augmented by electron microscopy.

We are organizing an interest group at this time. If you are interested in this type of research, even if you may not be an expert in structure-determination or surface methods, we encourage you to join our interest group. There should be many opportunities to link up with experts in allied areas, since many APS users are less knowledgeable about clays than CMS members. If you are interested, please contact S. Guggenheim at (e-mail address) XTAL@UIC.EDU.

To join the CMS listserver: send an e-mail message to: listserv@vm.cc.purdue.edu and write a message as follows: SUB CLYMIN-L John Doe (replace name with your own).

Many thanks to our advertisers in this issue, **Bruker AXS, Inc.**, and **J. S. Technical Services**, for helping make the newsletter possible, and to the **Mineralogical Society of America** for reciprocal advertising.

Donations
Thanks to the following generous people who have recently donated foreign subscriptions, student subscriptions, or travel grant funds: Dick Berry, Janis Boettinger, Reiner Dohrmann, Arthur Greene, Warren Huff, Lindsay Keller, Bob Martin, Jocelyn Miehe-Brendle, Dewey Moore, Dave Pevear, Darrell Schulze, Mitsuyuki Soma, and Michael Velbel.

Newsletter
Many apologies from the Society Office for the delay in this newsletter. Another will be published very soon.

Committees
Anyone who would like to serve on a CMS committee next year, please contact Pat Costanzo at (phone) 716-652-2380, (fax) 716-645-3999, or (e-mail) costanzo @acsu.buffalo.edu.

Thanks...

To the following people who contributed to this issue:

Derek Bain
Adrian Beserra
Juavier Cuadros
Dennis Eberl
Karuna Eberl
Colin Farmer
Beth Gardner
Steve Guggenheim
George Guthrie
Joe Fripiat
Bob Hall
Warren Huff
Alain Manceau
Kathy Nagy
Dave Pevear
Rich Pollastro
Don Scafe
Michael Velbel
Joe White

Marilyn and Sturges W. Bailey Award Nominations

The Clay Minerals Society (CMS) is soliciting nominations for the Bailey Award. This highest honor of CMS is awarded solely for scientific eminence in clay mineralogy (in its broadest sense) as evidenced primarily by publication of outstanding original scientific research. Service to clay mineralogy, teaching, and administrative accomplishments are not considered. This award replaces CMS's Distinguished Member Award; hence, previous recipients of the Distinguished Member Award (see below) are ineligible.

Nominations for the Bailey Award consist of a cover letter and supporting letters outlining the candidate's qualifications in light of the criteria above. (Supporting letters may be solicited by the primary nominator.) Nomination material should be sent by 1 February 1999 to the committee chair *(editor's note: since the newsletter will arive after that date, pleae contact George Guthrie with any questions):*

George Guthrie
Geology/Geochemistry, EES-1
Mail Stop D462
Los Alamos Nat'l Laboratory
Los Alamos, NM 87545 USA
gguthrie@lanl.gov

Recommendations by the committee will be evaluated by the CMS Council, and the presentation of the Bailey Award will be made at the annual meeting of the Clay Minerals Society.

Recipients of the Distinguished Member Award

1968 — Ralph E. Grim
1969 — Clarence S. Ross
1970 — Paul F. Kerr
1971 — Walter D. Keller
1972 — George W. Brindley
1975 — William F. Bradley
1975 — Sturges W. Bailey
1975 — Jose J. Fripiat
1977 — Marion L. Jackson
1979 — Toshio Sudo
1980 — Haydn H. Murray
1984 — C. Edmund Marshall
1985 — Charles E. Weaver
1988 — Max M. Mortland
1989 — Robert C. Reynolds, Jr.
1990 — Joe L. White
1990 — John Hower
1991 — Joe B. Dixon
1992 — Philip F. Low
1993 — Thomas J. Pinnavaia
1995 — W. D. Johns
1996 — Victor A. Drits
1997 — Udo Schwertmann
1998 — Brij L. Sawhney

CMS Student Research Grants

Purpose: The research program is designed to provide partial financial support of masters and doctoral research for graduate students of clay science and technology.

Selection: Applications will be judged on a competitive basis. The qualifications of the applicant, the financial need of the research project, and the design of the research project shall be considered. Applicants selected will be nominated by a five-member CMS committee and approved by the CMS Council. Members and nonmembers of the CMS are eligible. Students from all countries are eligible to apply.

Application: Each applicant must complete an application for research grant form (available from the CMS Office) and must obtain confidential evaluations from two faculty members at his or her university. Use the applicant appraisal form provided with the application.

Use of Funds: Individual grants will not exceed $2,500. Grant money may be used only for the costs of travel by the grantee to conduct research, for room and board associated with research-related field work, or for the costs of equipment, supplies, and analyses required to complete the research, with the exception of up to $500 for expenses incurred while presenting a paper at the CMS conference on thesis research. Recipients can apply for grants on subsequent years. Application forms and appraisals (7 copies) must be postmarked by April 1, 1999, and sent to the Society Office.

This information is also available at the CMS web site:
http://shadow.agry.purdue.edu/clay/claymin/research.html

For information on travel grants, please see page 8.

Cleveland, *continued from page 1*

organized by the same chairs as this year's meeting: Sam Savin and Jim Aronson, from the Department of Geological Sciences at Case Western University. We are grateful that they volunteered to repeat their performance in putting on an excellent annual meeting. And, as usual, this year's behind-the-scenes organizer Linda Abel did a superb job doing all those things we never see or think about. Special thanks to Roger Burtner and Eric Daniels for organizing the technical program, and this year, for the first time, accepting abstracts electronically, and then formatting everything uniformly for the printed program, which was printed courtesy of Chevron Petroleum Technology Company. Philip Banks, Enriquetta Barrera, and Christopher Khourey organized the field trips on Sunday to the Giant Glacial Grooves in Kelleys Island, Lake Erie, and on Tuesday to visit the quarry of the Hydraulic Press Brick Company and to see Lake Erie shore erosion processes. Despite the light rain on the latter trip, participants saw all stages of the brick-making process which relied on quarried illitic shale as the main aggregate used in the production of concrete blocks. They also were able to observe impressive shoreline slumping along the shore of Lake Erie related to the instability of clay-rich glacial till.

Society manager Jo Eberl was unable to make it to the meeting for the first time in nine years, but everything ran smoothly nonetheless. Karuna Eberl (Jo and Denny Eberl's daughter) cheerfully substituted at the Society display table and made sure that all necessary documents were distributed ahead of time to officers and council members.

CMS incoming president Dave Bish presents the traditional china plate (supplied by ECCI) to outgoing president Joe Stucki at the CMS '98 banquet. *High Iron Photos*

This year's workshop was organized by Jim Kubicki and William Bleam on Molecular Modeling of Clays and Mineral Surfaces. Fifteen of the 79 registrants were students. A corresponding symposium on Applications of

CMS President Joe Stucki, Murray McBride (the Marion L. & Chrystie M. Jackson Mid-Career Clay Scientist Award winner), and Max Mortland, who introduced McBride. *High Iron Photos*

Dewey Moore and Bob Reynolds Jr., 1998 Pioneer Lecturer, talk to Beth Gardner, past CMS grant awardee, at the student reception at CMS '98. *High Iron Photos*

Molecular Modeling Techniques was held during the meeting and consisted of a mix of sixteen invited and contributed papers plus four posters in the Monday afternoon poster session, almost twenty percent of the total number of papers at the meeting. Molecular modeling appears to be at a stage where applications using even simple interatomic forcefields yield results that can be used in a relative sense. The broad range of problems that were addressed included sorption of contaminants onto clay surfaces, prediction of d-spacings and NMR spectra as a function of contaminant sorption, modeling of the intercalation of organic compounds used in nanocomposite materials, prediction of d-spacings related to clay hydration, methane diffusion in smectites, and the adsorption of oil production chemicals onto clay surfaces.

Etienne Balan and Candice Johns. *Karuna Eberl*

Murray McBride's Jackson Mid-Career Clay Science lecture was entitled "Understanding Metal Bonding by Minerals: Putting Spin on the Science." Whether one interprets this as electron spin (probably preferred by Murray), political spin (is that what Max Mortland meant when he introduced Murray as the spin doctor?) or dance floor spin (yes, Murray was spotted the next day groovin' in the Rock and Roll Hall of Fame), the substance of the lecture was a nice overview of the development of spectroscopic methods for understanding the bonding of ionic metals to mineral surfaces.

Joe Dixon gave a wonderful introduction to this year's

Dewey Moore and Bruce Velde, 1998 Brindley Lecturer. *High Iron Photos*

Distinguished Member Brij Sawhney. Of all the accomplishments in Brij's career, I have to say that the one that caught my eye was illustrated in Joe's introduction by a slide showing Brij talking to Dave Pevear. Joe expressed this accomplishment simply as, "Brij can even

Some of the individual and corporate CMS Sustaining Members at the banquet. Left to Right: Dov Shaked, Andy Thomas, Dave Pevear, Jessica Elzea, Richard Lahann, Richard Brown, Sarkis Ampian, Steve Guggenheim, Bill Moll Jr., Pat Costanzo, Denny Eberl, Ross Giese, Jr. *High Iron Photos*

get Dave Pevear to listen." Speaking from experience, this is a feat requiring much skill, and by itself justifies the honor!

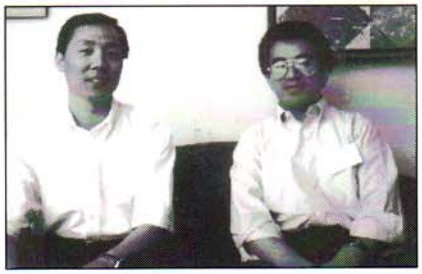
Bruce Velde, this year's George Brindley lecturer, was introduced by Dave Pevear as a "clay petrologist," two words that are not necessarily associated. Bruce's presentation on "Smectite to Illite: A Journey in Time, Temperature, Composition Space" offered a cookbook of recipes for the synthesis of illite in bentonites, shales, and sandstones. Maybe the success of these recipes depends a little on ingredients such as truffles, available only in a French kitchen? Bruce's main point is that illite can be concocted quickly in the laboratory. Even if the recipe changes, he suggested that similar cooking times may occur in nature.

Dave Pevear also introduced Bob Reynolds, who gave the Pioneers in Clay Science lecture. The first half of Bob's title, "What is Illite/ Smectite? New Problems and Old Problems That Will Not Go Away," is still apparently unresolved. Bob commented that there has been no help from the nomenclature committee in defining illite. Maybe we need a CMS definitions committee to help Bob out.

The technical sessions of the meeting included 83 talks and 30 posters. Almost twenty percent of the 204 attendees were students. Specialized symposia were held on Smectitic Soils (convened by Michael Thompson), New Developments in the Geochronology of Clays, Zeolites and Oxides (convened by Mingchou Lee), and Clay Applications in the Petroleum Industry (convened by Andrew Thomas). There were also general sessions on Geologic Studies of Clays, Clay Structure and Chemistry, and Clay Sorption. Perhaps I'm becoming more of a "clay" scientist than I was previously, but I found that the quality of this year's presentations was especially stimulating to my own work. Two talks I thought particularly interesting were one by Dave Bish and Steve Chipera on the association of defect structure of kaolinites with particle size fraction and by Jim Amonette, Ravi Kukkadapu, and Ercan Alp on measurement of Fe redox kinetics using

Case Western Reserve students Christopher Wilson and Million Harlemichael. Karuna Eberl

Dougal McCarty of Texaco discusses clays with Victor Dritz, who is currently working on a project with Dougal at Texaco. Karuna Eberl



Guangyao Sheng, a student at Michigan State University, and Laibin Yan, a student at the University of Illinois. Karuna Eberl

Rebecca Sutton, student at UC Berkeley and a 1998 CMS research grant awardee, and Jim Kubicki, the workshop organizer. Karuna Eberl

Brij Sawney, Distinguished Member, and Pat Costanzo, the new Vice President. Karuna Eberl

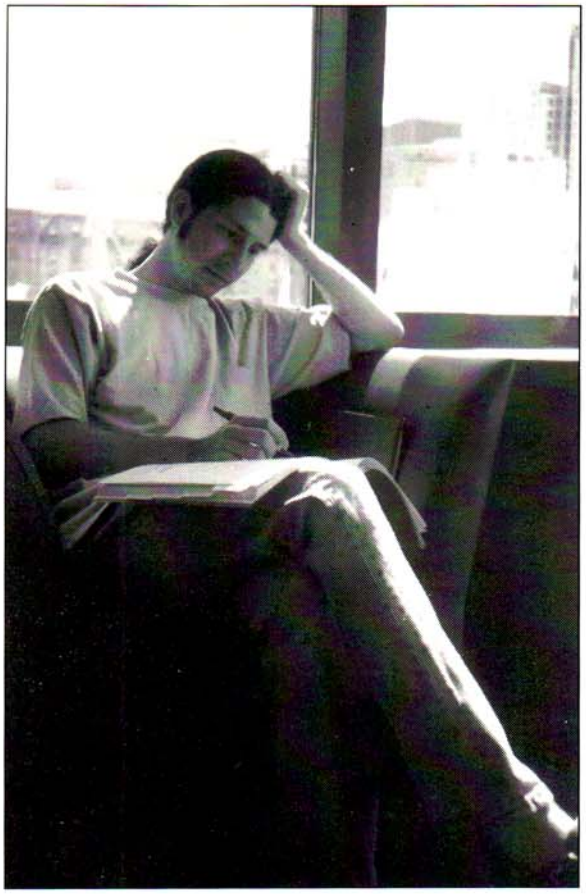
Sara-Eva Martinez-Alonso, past CMS research grant awardee, and Mingchou Lee. High Iron Photos

synchrotron Mossbauer spectroscopy. Bish and Chipera showed that the size fraction that contains the most disordered kaolinite is completely opposite for two clay standards, KGa-1 and API #9. As the authors stated, this suggests the possibility of a genetic relationship for disordered crystals. Amonette and coworkers were able to measure *in situ* the rate of reduction and reoxidation of Fe in a terephthalate-pyroaurite with a 1:3 Mg:Fe ratio. Reduction occurred over a period of about two hours and reoxidation in about one hour. This is an impressive example of the application of synchrotron radiation to a chemical reaction occurring in a solid in response to the oxidizing/reducing capacity of an aqueous fluid.

I found the poster session of particularly high quality this year. Hillary Thompson presented work on the solubility of Co and Al-bearing layered double hydroxide phases. Recent reports show that although such phases form in laboratory sorption experiments on mineral surfaces and may potentially be important in the natural environment, little is known about their stabilities. Susanne Gier and William Johns presented a provocative study using X-ray Photoelectron Spectroscopy to determine surface charge on a variety of phyllosilicates. Quinhui Zhou presented a poster on dissolution of KGa-1b and KGa-2 kaolinites. She and her coworkers showed that dissolution rates were similar for the two clay standards. However, on the basis of some very nice AFM images, they showed that the morphology and surface features of the kaolinites are distinct.

The banquet was held in a building called the Powerhouse (built in the early 1900s to house the electrical generators of the Woodland Avenue Street Railway) on the Cuyahoga River. The Powerhouse is in the Flats area of Cleveland, where the city was founded over 200 years ago. The banquet hall had walls of windows on two sides giving diners spectacular views of the river. Most memorable from the "speeches" at the end of the meal was the great relief on incoming President Dave Bish's face in presenting the traditional gift to outgoing President Joe Stucki, the white china plate. It seems that the original plate reverted into powdered kaolinite on its way to Cleveland. The plate's "sponsor," EEC International, was able to

Lynda Williams, Roxane Fagan, Karen Ziegler, Jennifer McKay (1998 Best Student Paper Runner-up), and Fred Longstaffe. Karuna Eberl



Daniel Young, student at New Mexico State University. Karuna Eberl

hurry the shipping of an intact replacement plate in time for the meeting. The CMS thanks EECI immensely for their efforts.

On a personal note, I enjoyed this year's meeting location because my mother's first job after high school was in the Terminal Tower (just around the corner from the Marriott at Key Center), the beautifully restored old train station and office building (now shopping center) where many of us stopped for lunch. Next year's meeting at Purdue University will also be nostalgic because my father obtained his undergraduate degree in agricultural engineering there. I would not visit either place if it weren't for the CMS meetings. See you next July in West Lafayette.

Kathryn L. Nagy
Boulder, Colorado

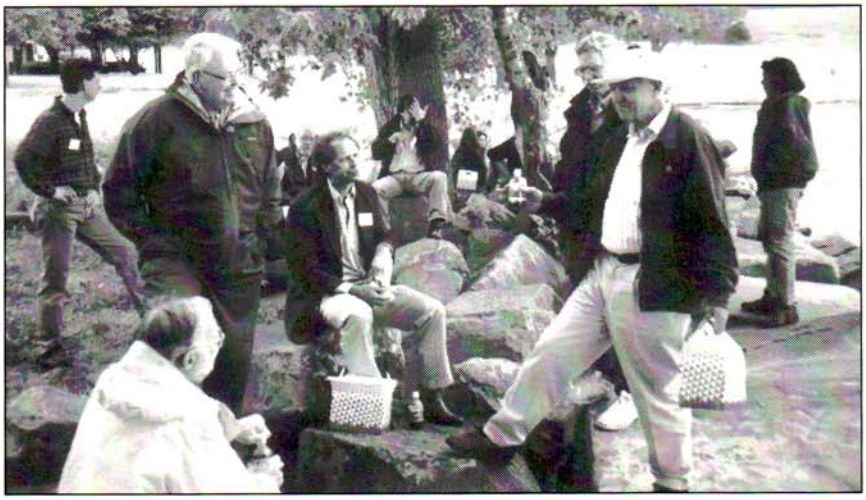
Travel Grants

Student travel grants of up to $500 are available for the meetings. Please contact the CMS office for an application. See page 12 for details of the 1999 meeting. The meeting in 2000 will be held in Chicago at Loyola University. Please contact Alanah Fitch at (phone) 773-508-3119, (fax) 773-508-3086, or afitch@luc.edu for information.

Pat Costanzo and Karuna Eberl chat after the banquet at CMS'98. High Iron Photos

Sam Savin and Blair Jones. Karuna Eberl

Don Scafe of High Iron Photos lets Brij Sawhney take a shot with the camera, as Richard Brown looks on. Karuna Eberl



Lunch at the mid-meeting field trip. (Above) Steve Guggenheim talks with Winnie Mathes, winner of the 1998 Best Student Paper Award. (Right) Blair Jones, Roger Burtner, Doug Ming, Steve Guggenheim, and Bill Moll. Michael Velbel.

Ask the Clay Doctor

(Not a real doctor)

Dear Clay Doctor: Recently I read that the oldest clays on earth are found in Southwest Greenland. That started me wondering, just exactly how do you date old clays?

Wondering in Wyoming

Dear Wondering: Ahem, I think we should keep my personal life out of this.

Dear Clay Doctor: In the Spring 1998 issue of *CMS News*, you stated, "In fact, the historian reports that there is no record of anyone in the Society ever having done it." Speak for yourself! Me, I have two children.....

Sleepless in Saratoga

Dear Sleepless: I did not say that no one in the Society has ever done it; I just said that there was no *record* of anyone having done it. Perhaps the Society needs to keep better records.

Dear Clay Doctor: Is there any way to distinguish common clays in the field without using X-ray diffraction?

Far-afield in Fairfield

Dear Far-afield: Indeed there are some useful techniques for doing just what you ask. In the late 1940's, a little-noticed abstract in the *Journal of Food Science and Lawn Care* reported the characteristic behavior of certain clay minerals when applied to the lightly toasted surface of a sliced bagel. Smectite, it appears, has the consistency of apple butter, while kaolinite resembles cream cheese, and illite is remarkably like peanut butter (smooth variety). Moreover, illite/smectite takes on a crunchy peanut butter character, whereas illite plus chlorite imitates PB & J (peanut butter and jelly). Mixed kaolinite/smectite is virtually indistinguishable from salmon and cream cheese. Further attempts to characterize other clay mixtures apparently ended abruptly as a result of unruly and over-possessive behavior on the part of some laboratory technicians during an extended lunchtime melee. Details of the episode, however, were sketchy. One final note: it is advisable to standardize all food products in the field since, as is well known, their actual character varies as a function of elevation, temperature, atmospheric moisture, and brand name. The CD respectfully declines to endorse specific brands in public but a discreet inquiry may yield the list of those which have proven most dependable.

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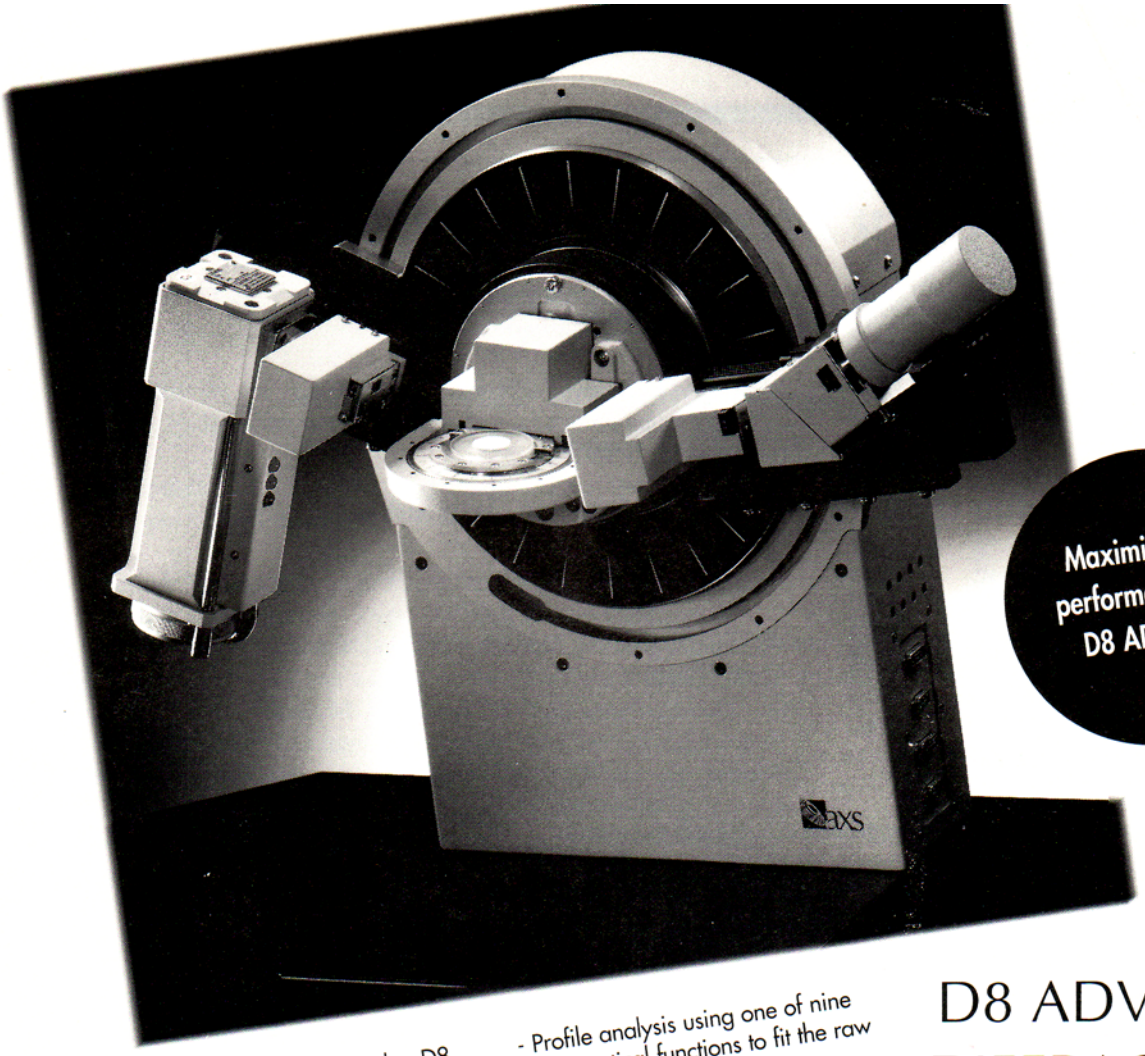

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The Clay Minerals Society 36th Annual Meeting

Molecular Environmental Science of Clay Minerals

June 26-July 1, 1999

Purdue University, West Lafayette, Indiana

Workshop

Techniques of electrochemistry that are applicable to understanding fundamental physical and field properties of clays (Saturday, June 26,1999) organized by Alanah Fitch

Workshop Speakers

A. Yamagishi (Hokkaido University)
James E. Amonette (Pacific Northwest National Laboratory)
Giles Villemure (University of New Brunswick)
E. P. Giannelis (Cornell University)
Janet Osteryoung (Division of Chemistry, NSF, and North Carolina State University)

Symposia

Influence of clay surfaces on biological processes
Molecular organization occurring at clay surfaces
Electrochemistry of clay minerals
Applications of clay minerals in materials science
New methods applied to the processing and characterization of industrial clays
Latest developments in the application of molecular modeling methods to clay minerals

Field Trip

Clay and soil deposits of central Indiana, organized by Haydn H. Murray

Contacts:

Cliff Johnston, General Chair
phone: 765-496-1716
fax: 765-496-2926
clays@purdue.edu

For registration information, contact:
Nona Schaler
phone: 765-494-2756 or 800-359-2968, ext. 92N
fax: 765-494-0567
njschaler@cea.purdue.edu

Web page:
http://shadow.agry.purdue.edu/clay/claymin/cms1999/purdue1999.html

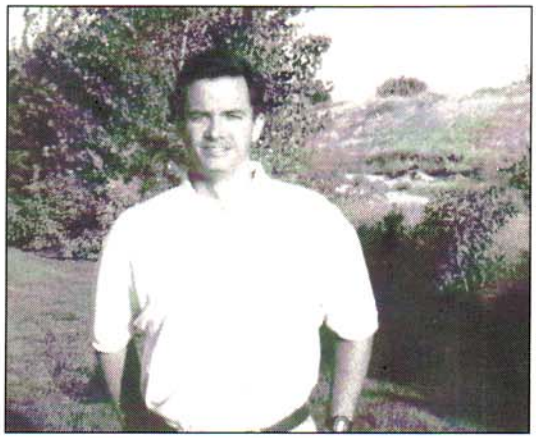
Feats of Clay

James Ferris will direct a new program at Rensselaer, the NASA Specialized Center of Research and Training for the Study of the Origins of Life, funded by a four-million-dollar grant from NASA.

Colin Harvey has taken a position with the New Zealand operation of Parsons Brinckerhoff, a worldwide engineering consultancy.

Jeff Post has been named a Member-at-Large of the Board of Directors of the International Centre for Diffraction Data.

Prakash Malla has been promoted to the Manager of the Paper Research & Applications Dept. at Thiele Kaolin Company.



Since winning the Best Student Paper Award at the annual meeting, Kevin Rosso received his Ph.D. from Virginia Tech and has taken on a research scientist job at PNNL.

Photo courtesy Kevin Rosso

Congratulations to these winners at the Cleveland meeting! Best Student Paper: **Kevin M. Rosso** for "Investigating molecular-scale surface dynamics and reactivity: combining UHV STM/STS and theoretical calculations;" Best Student Paper Runner-up: **Jennifer L. McKay** and **Fred Longstaff**, "Tracking stream-floods through stable isotope variations of clay minerals in the Alberta oil-sands;" Best Student Poster: **Winnie Mathes**, "Sorption of zinc, lead and cadmium by Al- and Zr-pillared montmorillonites and uncalcined precursors;" and Best Student Poster Runner-up: **Youjun Deng** and **Joe B. Dixon,** "Adsorption of polyacrylamides onto smectite, illite and kaolinite."

CMS student research grants were awarded to: **Rebecca K. R. Ambers,** U. of Oregon, student of **Rebecca Dorsey** for "Clay mineral signatures of land use in a reservoir-watershed system, Dorena Lake, Western Oregon;" **Catherine Rose Becker,** Alfred U., student of **William Carty** for "The effect of clay quality on microstructure evolution in commercial white ware bodies;" **Janet Bertog,** U. of Cincinnati, student of **Warren Huff,** for "High-resolution stratigraphic correlation of the late Cretaceous Pierre shale using bentonite beds;" **Mark Stephen Connors,** SUNY-Buffalo, student of **Paul Kostyniak** and **Ross Giese,** for "Antimicrobial activity of modified clay minerals on HEPA filtration media;" **Tara M. Curtin,** U. of Arizona, student of **Judith Parrish,** for "Linking time-equivalent lacustrine deposits and paleosols for paleoclimatic reconstruction in the Ischigualassto Basin, NW Argentina;" **Maria Dubikova-Serekova,** Comenius University, student of **Vladimir Sucha,** for "Impact of anthropogenic acidity on soil;" **Johan Forsman,** Louisiana State U., student of **Ray Ferrell,** for "Using Fourier-transform infrared spectroscopy for the detailed characterization of the octahedral ion populations in natural clay-rich soils and sediments;" **Rebecca Sutton,** U. of California-Berkeley, student of **Gary Sposito,** for "Monte Carlo and molecular dynamics simulations of Cs^+ in hydrated montmorillonite: adsorption and diffusion properties;" **Raphael Wuest,** U. of British Colombia, student of **Marc Bustin** and **Les Lavkulich,** for "Sedimentology of the Tasik Bera (West Malaysia) peat deposit: Holocene organic and inorganic rich sediment evolution of an intermontane rheotrophic mire system in the tropics."

Youjun Deng, Best Student Poster Runner-up at the 1998 annual meeting.

Photo courtesy Youjun Deng

Travel grants for the 1998 meeting were awarded to: **Alba Yadira Corral-Avitia** of New Mexico State University, student of **Antonio S. Lara,** and **Jason Shiflet** and **Nathan Melear,** both students of **Paul Schroeder** at the University of Georgia.

New Council members elected on the 1998 ballot are **Stephen Boyd, Steve Chipera, Alain Manceau,** and **Bob Pruett.** The new Vice President Elect is **Darrell Schulze.**

Richard Eggleton will be the 1999 Brindley Lecturer, and **Stephen Boyd** the Jackson Lecturer.

Archives

Unknown Conference Attendees Identified

Thanks to the many people who contacted the Society office to identify attendees from Bob Hall's photograph of the 1972 Madrid clay conference, especially Derek Bain, Javier Cuadros, Colin Farmer, Joe Fripiat, Alain Manceau, and Joe White.

Back Row (left to right): George Brown, Alan Weir, Bob Hall, Reg Taylor. Front Row (left to right): Mr. Eberhart, Jean Chaussidon, George Pedro, Raymond Wey, Bernard Siffert, Adrien Herbillon, P. Rouxhet, J. Fripiat. The man in the white shirt, second row, above Herbillon, might be George Brindley.

Meeting Calendar

February 28, March 1, 1999, Houston, Texas, USA: First AGI Academic-Corporate Associates Conference: Unifying the Geosciences through Improved Corporate and Academic Communications. Contact: Christopher Keane, American Geological Institute, 4220 King St., Alexandria, VA 22302-1502; phone: 703-379-2480; fax: 703-379-7563.

March 1-3, 1999, Denver Colorado, USA: Society for Mining, Metallurgy, and Exploration, Inc., Annual Meeting. Contact: Meeting Department, 800-763-3132 or 303-973-9550, fax: 303-979-3461, P.O. Box 625002, Littleton, CO 80162-5002. E-mail: meetings@smenet.org

March 14-18, 1999, Oakland, California, USA: 12th Annual Symposium on the Application of Geophysics to Environmental and Engineering Problems. Contact: SAGEEP, 7632 E. Costilla Ave., Englewood, CO 80112 USA; fax: 303-843-6232; lcramer@compuserve.com

March 25-26, 1999, Dublin, Ireland: Mineralogical Society of Great Britain and Ireland, Clay Minerals Group. Contact: David Doff, Geology Department, Trinity College, Dublin 2, Ireland, 3531-608-1419, fax: 3531-671-1199, ddoff@tcd.ie http://www.tcd.ie/Geology/cmg.html

May 26-28, 1999, Sudbury, Ontario, Canada: Geological Association of Canada-Mineralogical Association of Canada. Contact: GAC-MAC Sudbury 1999, Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada P3E 2C6. Tel: 705-673-6572; gacmac99@nickel.laurentian.ca WWW: http://www.laurentian.ca/www/geology/gacmac99.htm

June 26-July 1, West Lafayette, Indiana, USA: 36th Clay Minerals Society Annual Meeting. Contact: Cliff Johnston: tel: 765-496-1716; fax: 765-496-2926; clays@purdue.edu

August 15-20, 1999, Reykjavik, Iceland: GES-5, Fifth International Symposium on Geochemistry of the Earth's Surface. Contact: Dr. S.R. Gislason, Secretary-General, GES-5, Science Institute, University of Iceland, Dunhagi 3, 107 Reykjavik, Iceland. sigrg@raunvis.hi.is

September 4-10, 1999, Krakow, Poland: Euroclay 1999. Contact Jan Srodon, Institute of Geological Sciences, PAN, Senacka 1, 31-002 Krakow, Poland. Fax: 48-12-221609, ndsrodon@cyf-kr.edu.pl

October 24-28, 1999, Denver, Colorado, USA: Geological Society of America Annual Meeting. Contact: GSA, phone: 303-447-2020.

April, 2000, Rondebosch, South Africa: SEG-5, 5th International Symposium on Environmental Geochemistry. Contact: M. Fey, Department of Geological Sciences, University of Cape Town, Rondebosch 7701, South Africa. Fax: 27-21-650-3783.

August 6-17, 2000, Rio de Janeiro, Brazil: 31st International Geological Congress. Contact: Secretariat Bureau, Av. Pasteur, 404—Casa Brazil 2000—Urca, Rio de Janeiro—RJ—Brazil, 55-21-295-5847; fax: 55-21-295-8094; 31igc@31igc.org www.31igc.org

July, 2001, Universidad Nacional del Sur, Bahia Blanca, Argentina: 12th Annual International Clay Conference. Organizing Committee: Chair Dr. Eduardo Dominguez, Secretary General Dr. Fernanda Cravero: phone: 54-91-25196, ext.335/277; fax: 54-91-556756; ghcraver@criba.edu.ar

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Electron-Optical Methods in Clay Science, CMS Workshop Lectures, Volume 2, Mackinnon & Mumpton, editors, **$21.00**
Thermal Analysis in Clay Science, CMS Workshop Lectures, Volume 3, Bish, Mumpton, & Stucki, editors, **$13.00**
Clay-Water Interface and its Rheological Implications, CMS Workshop Lectures, Volume 4, Güven & Pollastro, editors, **$18.00**
Computer Applications to X-ray Diffraction Analysis of Clay Minerals, CMS Wksp. Lect., Volume 5, Reynolds & Walker, eds, **$18.00**
Layer Charge Characteristics of 2:1 Silicate Clay Minerals, CMS Workshop Lectures, Volume 6, Mermut, editor, **$15.00**
Scanning Probe Microscopy of Clay Minerals, CMS Workshop Lectures, Volume 7, Nagy & Blum, editors, **$21.00**
Organic Pollutants in the Environment, CMS Workshop Lectures, Volume 8, Sawhney, editor, **$18.00**

Kaolin Genesis and Utilization, CMS Special Publication No. 1, Murray, Bundy, & Harvey, editors, (cloth), **$25.00**
Proceedings of the International Clay Conference 1985, Schultz, van Olphen, Mumpton, editors, (cloth) **$20.00** (formerly $64.00)
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