



aipea

Association Internationale pour l'Étude des Argiles
International Association for the Study of Clays
Internationale Vereinigung zum Studium der Tone
Международная ассоциация по изучению глин

Newsletter N°41

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AFFILIATED SOCIETIES:

Algerian Clay Group
Australian Clay Minerals Group
Belgian Clay Group
(British & Irish) Clay Minerals Group
Clay Science Society of Japan
Croatian Clay Group
Czech National Clay Group
Dutch Clay Group
French Clay Group (GFA)
German-Austrian-Swiss Clay Group
(DTTG)
Greek Committee of Clay Science and
Technology
Hungarian Clay Group
Israel Society of Clay Research

Italian Association for the Study of Clays
(AISA)
Nordic Society for Clay Research
(North American) Clay Minerals Society
Polish Clay Group
Portuguese Clay Group (APA)
Romanian Group for the Study of Clays
and Clay Minerals
Russian Clay Group
Slovak Clay Group
Spanish Clay Society (SEA)
Turkish National Committee of Clay
Sciences
Ukrainian Clay Group

CONTENTS

1. 2009 President's Report.....	1
2. AIPEA Officers and Council.....	4
3. AIPEA Website.....	7
4. 2008 Treasurer's Report.....	8
5. International Union of Geological Sciences Annual Report.....	9
6. 14 th International Clay Conference.....	12
7. National and Regional Clay Groups.....	17
8. 4 th Mid-European Clay Conference, Zakopane, Poland.....	40
9. AluSiV Meeting.....	42
10. In memorium of Hendrik van Olphen.....	46
11. Recent and Upcoming Meetings.....	50
12. Courses and Lectures.....	52
13. AIPEA Membership Application Form.....	54

1. 2009 PRESIDENT'S REPORT

I am pleased to write to you all again this year, at the end of my four-year tenure as President of AIPEA. Clay mineralogy has been experiencing renewed interest worldwide based on an explosion of activity of a variety of fields outside of traditional clay mineralogy. Perusal of many journals in chemistry, physics, and materials science reveals significant interest in the fine grained materials that we all study and use. Benefiting from this increased interest, AIPEA has experienced an eventful four years, culminating in the summer's International Clay Conference. This 14th ICC was organized by the Associazione Italiana per lo Studio delle Argille (AISA), on behalf of the AIPEA, at Castellaneta Marina, Italy. Dr. Saverio Fiore and an outstanding local organizing committee prepared one of the largest clay conferences ever to occur, with over 1000 submitted abstracts. Over 500 clay scientists from around 50 countries were present, with six plenary lectures, 42 keynote lectures, 24 invited presentations, and 408 oral and 548 poster contributions, powerful testament to the vitality of the international clay science community. AIPEA remains the primary coordinator of international activities in clay science through our meeting and our web site. Plans are already well underway for our next ICC in Brazil, and the local organizing committee, represented by Dr. Reiner Neumann, gave a stimulating presentation on their plans at the ICC in June.

At the 14th ICC in Italy, we announced the latest recipients of the AIPEA Fellow, AIPEA Medal, the Bradley Award, the Student Travel Awards, and we evaluated all student presentations for the awards for best oral and poster presentations. The newest AIPEA Fellow is Dr. Gordon Jock Churchman of the University of Adelaide. Dr. Yoshiaki Fukushima, a Senior Fellow at the Toyota Central Research and Development Laboratories, received the AIPEA Medal. The Bradley Award recipient was Dr. Marek Szczerba of the Institute of Geological Sciences, Polish Academy of Sciences, Poland.

Five student travel awards were given at the 14th ICC to: Pauline Andrieux (University of Poitiers), Michael C. Cheshire (Indiana University), Marián Matejdes (Comenius University), Adi Radian (Hebrew University of Jerusalem), and Hongji Yuan (Indiana University).

Competition for best student oral and poster presentations was quite intense as many students gave excellent presentations at the ICC. It is my personal observation that the quality of student presentations improves every year. Student awards for best poster presentation went to Lenka Herzogova of the Institute of Chemical Technology in Prague (Czech Republic). The second student poster award went to Adebukola Adegoye of the University of Alberta (Canada). Awards for best student oral presentation went to Holger Seher of the Institute für Nukleare Entsorgung (Germany). The competition was so stiff that two students tied for second place in the oral competition. Rosa Maria Salgueiro Marques of the Instituto Tecnológico e Nuclear/GeoBioTec (Portugal). Bethany Ehlmann of Brown University (USA). I congratulate all of these students on their achievements and on their outstanding presentations. It was a great pleasure to meet most of the student presenters at the ICC and discuss their research with them.

During the ICC, I also recognized Dr. Saverio Fiore of Consiglio Nazionale delle Ricerche for his important contributions to AIPEA by organizing the ICC and also for preparing our new web site. In addition, I congratulated and thanked Professor Robert A. Schoonheydt of the Katholieke Universiteit Leuven for his many years of service to AIPEA as President and Secretary General (for more than 20 years!).

Since I last wrote to you, AIPEA Council has been active in revising the AIPEA Statutes and Bylaws to bring them up to date and make them reflect more accurately our current activities. In accordance with the Statutes and Bylaws, the suggested revisions were posted on the AIPEA web site in the spring of this year for our members' perusal, and we had the opportunity to vote on these proposed revisions and amendments at the 14 ICC in June. I am happy to report that the proposed changes passed during the General Assembly meeting.

Most of you have probably noticed our entirely new web site, constructed through the efforts of Dr. Saverio Fiore and his assistants. The new web site, <http://www.aipea.org/>, contains information about upcoming meetings and is truly the focal point for the international clay science community. We look forward to adding new features, and if you have ideas for improvements, please do not hesitate to contact Dr. Fiore or the current President. Ideally, we would like to have links to all national clay society web sites on the AIPEA site. Please take the time to email the current President or Dr. Fiore with a link to your own organization's web site so that AIPEA can further improve communications. Ideally, the AIPEA web site should contain a link plus all appropriate contact information for all national clay societies.

It would be ideal if AIPEA could have its own list server to use for communicating with our international members, but the lack of similar lists for our individual national partners, with the exception of the Clay Minerals Society list, has hampered efforts to proceed further. Therefore, I believe that we can accomplish our communication goals through the existing Clay Minerals Society list server. This list is maintained at Purdue University solely for clay science communications. Subscription to the list is completely free and you may remove your name from the list at any time. It is not necessary that you be a member of the Clay Minerals Society to join the list, and I encourage all clay scientists to subscribe.

You may subscribe by going to the following link:

<https://lists.purdue.edu/mailman/listinfo/clayminerals-l>

Instructions for subscribing are under the heading "Subscribing to Clayminerals-l" and you simply enter your email address and an optional name. You are not required to enter a password (but one will be generated for you if you do not).

Our Secretary-General, Dr. Daisy Barbosa Alves, continues her efforts to coordinate communication with all of the national clay society members and individual members of AIPEA, and I thank her for her hard work on behalf of AIPEA. The most important part of these efforts is formulating the annual newsletter, in which we communicate the activities of our member societies. Thus, your contributions are crucial for her to accomplish her goals.

As many of you know, AIPEA is now also an affiliated society of Elements, a new multi-society magazine, and two reports have already been published and are available for all the clay community. Our affiliation with Elements provides a means for AIPEA to communicate with the worldwide mineralogical and geochemical community, thereby increasing awareness of our society and its activities. If you have not already seen copies of this attractive magazine, I encourage you to locate a copy. We also continue as an active affiliated society to the International Union of Geological Sciences (IUGS - <http://iugs.org>) and we share regular correspondence including IUGS E-Bulletins and several official documents. In addition, AIPEA was invited to participate of the Second Ordinary Session of the IUGS Council, which took place in Oslo, Norway, in conjunction with the 33rd International Geological Congress. Dr. Saverio Fiore, an AIPEA Councilor, acted as our representative to the Council meeting. Among the several AIPEA-related projects started by IUGS was the IGCP 545 "Clays and clay minerals in Africa", to be developed during 2007-2011, with the chair Georges-Ivo E. Ekosse (South Africa, IUGS E-Bulletin #24). Our inclusion as an affiliated society within the IUGS continues to be an effective means for AIPEA to integrate into international geological activities.

As the global scientific Society faces increasing diversification of clay science, it is more important that AIPEA members actively participate in the life of our society. At the same time, there appears to be a renaissance in related sciences wherein clay minerals play an important role, in fields such as chemistry, biological sciences, and materials science. Therefore, it is useful to our science to involve new members in AIPEA and thereby boost the activities of our society. We would all benefit from a more integrated, cohesive clay science community at both the national and international level. Ongoing activities are planned to accomplish these goals, and I hope you will contact the new President or me with your ideas for increasing AIPEA's role.

Finally, I hope you will all join me in working with our new President, Dr. Chris Breen of Sheffield Hallam University in the UK to make AIPEA operate smoothly and effectively on behalf of all clay scientists. It has been a distinct pleasure serving as the AIPEA President for the past four years, and I leave you in good hands.

With best wishes,

David Bish
November / 2009

2. AIPEA OFFICERS AND COUNCIL

Elected during the 14th International Clay Conference at Castellaneta Marina (Italy), in June 2009, the new AIPEA officers and Councillors for 2009-2013 are as follows.

AIPEA officers for 2009-2013:

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Committees

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3. AIPEA WEBSITE

The AIPEA website is up and running since 2007 and has become an important means of communication to the international clay community due to its agile dynamics. The site can be found at www.aipea.org as well as at aipea.org. and AIPEA webmaster is Dr. Saverio Fiore (CNR, Italy).

We have received announcements of several technical meetings and also of a course (see section ahead), which were made available to all people interested. The 2007 AIPEA Newsletter was also made available (in two formats). Please remain in contact with us by sending news of interest to Dr. Saverio Fiore and/or Dr. Daisy B. Alves. We intend to provide wide information about all aspects of the clay sciences.

Talking about the AIPEA website, it has the following permanent sections:

- Historical overview
- Statutes and by-laws
- Council
- Membership
- Publications
- Newsletter
- Committees
- Affiliated Societies
- Awards and Medals

Some items are already available for consulting and others are under construction. Part of the AIPEA history has been already recovered but all AIPEA members are encouraged to check the information already made available and provide additional contributions. If errors are noticed, please notify us so that we can make the proper corrections.

There is a sense that it would be interesting also to have old reports linked to the AIPEA Website, such as historical documents, the composition of old committees, lists of scientists who have received prizes, *.pdf files of past newsletters, etc. Most of all, we would be happy to share AIPEA good memories. For this, we count on the cooperation of the entire international community of clay scientists.

4. 2008 TREASURER'S REPORT

Financial Statement: January 1, 2008 to December 31, 2008

OPENING BALANCE **\$65418.69**

REVENUES & RECEIPTS

Membership dues		
Individual	\$ 30.00	
Societies	2431.25	
Term Deposit Interest	543.98	
Savings Account Interest	<u>14.14</u>	
Subtotal		\$ 3019.37

EXPENSES

URL-fee	\$ 25.00	
Service charges (banking fees)	<u>33.95</u>	
Subtotal		(\$ 58.95)
CLOSING BALANCE		\$68379.11

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5. INTERNATIONAL UNION OF GEOLOGICAL SCIENCES ANNUAL REPORT

REPORTING FORM FOR CONSTITUENT BODIES - 2008

1. **TITLE OF CONSTITUENT BODY:**
AIPEA, Association Internationale pour l'Etude des Argiles
2. **FIT WITHIN IUGS SCIENCE POLICY:**
The aim of AIPEA is the worldwide promotion of and cooperation in clay research and technology. The tools to achieve these goals are: 1) international clay conferences; 2) stimulation of excellent young clay scientists through grants and awards; 3) rewarding of active clay scientists with a brilliant career in clay research; 4) stimulation of communication along clay researchers and technologists.
3. **ORGANIZATION:**
AIPEA is supported by dues from national clay societies (not all national societies have sufficient resources and organization to pay dues) and by income from its quadrennial meetings.
4. **EXTENT OF NATIONAL/REGIONAL/GLOBAL SUPPORT FROM SOURCES OTHER THAN IUGS:**
AIPEA is supported by dues from national clay societies (not all national societies have sufficient resources and organization to pay dues) and by income from its quadrennial meetings.
5. **INTERFACE WITH OTHER INTERNATIONAL PROJECTS:**
6. **CHIEF ACCOMPLISHMENTS IN 2008:**
AIPEA's efforts in 2008 were directed towards activities in support of the organization of the 14th International Clay Conference (14ICC), its most important technical event, which takes place every four years. The next edition of this meeting will occur at Castellaneta Marina (Italy) during June 14-20, 2009 (see www.14icc.org).
AIPEA Council has also been devoted to the revision/update of its Statutes and By-Laws and in gathering materials to feed its website (www.aipea.org).
A new number of AIPEA Newsletters were made available and can be consulted at the society website. AIPEA Councilors have been involved in the several processes for selection of candidates of their several traditional prizes: AIPEA medals, AIPEA fellow, Bradley Award and the Student Travel Awards.
7. **CHIEF PROBLEMS ENCOUNTERED IN 2008:**
No significant problems were encountered in 2008.
8. **CHIEF PRODUCTS:**
The chief products of AIPEA in 2008 were the annual Newsletter and updating of its website.
9. **SUMMARY OF EXPENDITURES IN 2008:**
Expenditures for 2008 were very low and directed for upkeep of the AIPEA web site.
10. **WORK PLAN FOR NEXT YEAR:**
Our plan for the coming year is to facilitate formation of new national clay societies, particularly in Asia and South America. All members of the AIPEA Council will be very busy with the many activities related to the 14ICC. Besides the usual technical

works (oral, poster, conferences, etc.), its general program will also include excursions and field trips, an AIPEA school for young scientists, and the distribution of awards and grants..

11. **CRITICAL MILESTONES TO BE ACHIEVED NEXT YEAR:**

See 10.

12. **ANTICIPATED RESULTS/PRODUCTS NEXT YEAR:**

Our primary product for next year will be the 14ICC and the proceedings of its many activities. We will continue with our annual newsletter, coming out in early 2009. We will continue feeding the AIPEA web site with new web content. The compilation of an entirely new list of participating national societies will enable us to update the AIPEA list server to allow rapid communication among all national clay societies.

13. **COMMUNICATION PLANS:**

Newsletter 2008; new website; up-to-date AIPEA list server.

14. **SUMMARY BUDGET FOR NEXT YEAR:**

No IUGS support is requested.

15. **POTENTIAL FUNDING SOURCES OUTSIDE IUGS:**

Funding comes partly from some member societies. Industrial support will be sought in the future.

REVIEW CHIEF ACCOMPLISHMENTS RESULTS OVER THE LAST 5 YEARS:

PERIOD 2004-2008: The past president discussed the possibility of broadening AIPEA Council representation, and a new member from South America was added. Our South American member was named the AIPEA Secretary-General in 2007. The president also proposed that the council form stronger and better collaborations with large and strong existing organization such as the (American) Clay Minerals Society and the Japanese Clay Society. One of the new council members will be a liaison officer with the European Clay Groups Association (ECGA). The past president attempted to increase the proportion of member societies paying dues in an effort to bolster the finances of AIPEA and this effort is continuing. The president and council decided that upcoming newsletters will be sent electronically to individual country representatives, thereby saving large amounts on postage. Last year the newsletter was sent to the several affiliated societies attached to e-mail message and made available on the AIPEA website.

The past president began an effort to get members more actively involved with AIPEA and make them feel that they get value for money. Possible mechanisms include offering registration discounts to more international conferences and not only to the ICC. We are facing a worldwide decline in the number of clay scientists but at the same time there appears to be a renaissance in related sciences where clay minerals play an important role such as in chemistry and in materials science.

16. **SUMMARIZE ANTICIPATED OBJECTIVES AND WORK PLAN FOR THE NEXT 5 YEARS:**

The new AIPEA web site is up and running with an entirely new format at www.aipea.org. It has been constructed to be the main contact with the clay scientists of around the world. It is a dynamic website under the responsibility of Dr. Saverio Fiore, the webmaster. Some parts are still under construction but it already

includes updated information about the new council, links to affiliated and other societies, other links of interest to clay science, list of past award and medal winners, lists of past student awardees, committee reports/glossary of terms from the nomenclature committee, and advertisements for our active awards programs and upcoming meetings.

New national clay societies will be encouraged to join AIPEA. AIPEA successfully petitioned for affiliate status in the mineralogical periodical *Elements*, giving us more international visibility, and this was an important achievement. AIPEA will meet at Italy in 2009 in Italy during the 14th. ICC, at which time the AIPEA Council will have formal meetings and new officers and Councilors will be chosen (see item 6). Proposed mechanisms to a better interaction with the clay community include the inclusion of teaching workshops at our meetings, focusing on teaching graduate students and postdoctoral fellows about the fundamentals of clays science. Such workshops would be aimed not only at clay scientists but also at those in the materials and chemistry fields who work with clay materials. Amendments to the AIPEA bylaws has been proposed and will be voted during AIPEA General Assembly during 14ICC to codify the new student awards program and the new hazardous minerals committee.

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6. 14th INTERNATIONAL CLAY CONFERENCE

On behalf of the Association Internationale pour l'Étude des Argiles (AIPEA), the Associazione Italiana per lo Studio delle Argille (AISA) has organized the 14th International Clay Conference (14ICC) at Castelanetta Marina (Italy) from 14-20th June 2009.

The conference organizing committee led by Dr. Saverio Fiore (Institute Methodologies the Environmental Analysis – Italian National Research Council, Tito Scalo, Italy) put together more than 750 scientists coming from 49 countries. The theme of the Conference was: Micro et Nano: Scientiae Mare Magnum.

The scientific program included 1028 abstracts (including last minute cancellation). They were classified as:

Plenary Lectures	6
Keynote Lectures	42
Invited Lectures	24
Oral Presentations	408
Poster Presentations	548

The abstracts were organized into eight main themes and forty-three sessions, as follows:

Scientific Program

Sessions:

BIO-CLAYS INTERFACE & LIFE'S ORIGIN:

BC1- Clays & Biomolecules: From the Origin of Life to Medical Applications

BC2- Clays - Living Organisms Interactions

CERAMICS & ENGINEERING

CE1- Clays in Archaeology & Cultural Heritage

CE3- Clays in Traditional Ceramic Industry

CE4- Colloids & Rheology

CE5- Desiccation and Fracture in Clay

CE6- Hetero-Modulus Ceramics for Technical Application

CE7- Modified Clays & New Applications

CE8- Processing and Properties of Ceramic Materials

GEOLOGY & GEOCHEMISTRY

GG1- Bentonite: Genesis, Properties, and Uses

GG2- Clay Mineral Association of the Cretaceous - Paleogene and Paleogene-Eocene Boundary Events

GG3- Clay Minerals and Fluid Flow through Faults

GG4- Clay Minerals & Climate Change

GG5-Clays in Geological Processes

HEALTH & ENVIRONMENT

- HE1- Asbestos Monitoring & Analytical Methods
- HE2- Clays and Natural Zeolites in Medical Applications
- HE3- Clays as Friendly Environmental Materials
- HE4- Health Effects of the Reactivity of Airborne Minerals
- HE5- Moisture Transport through Clay
- HE6- Nanoporous Materials as Adsorbents for Hydrogen and Methane Storage
- HE7- Speciation of Trace Elements in Soils and Sediments
- HE8- Stability of Clay Minerals in Geological Radioactive Waste Disposal
- HE9- The Interaction of CO₂ with Clay Minerals
- HE10- Interactions between Clays and Inorganic and Organic Pollutants

MINERALOGY & CRYSTALLOGRAPHY

- MC1- Clay Minerals in Extraterrestrial Environments
- MC2- Clay Synthesis
- MC3- Crystal Chemistry and Structure of Clays
- MC4- Layered Double Hydroxides
- MC5- Serpentine as Hot Clays
- MC6- Simulation and Theory of Clay Minerals and Interfaces
- MC7- Structural Characterization of Lamellar Compounds

NANO & POROUS MATERIALS

- NM1- Functional Hybrid Nanofilms
- NM2- Industrial Applications of Nanoclays
- NM3- Mesoporous Silica as Molecular Sieves
- NM4- Metal Nanoparticles Catalyzed Organic Synthesis
- NM5- Natural Zeolites: From Genesis to Applications
- NM6- Polymer-Clay Nanocomposites: Advantages, Properties, and Uses
- NM7- Polymer-Clay Nanocomposites: Preparation Techniques & Theoretical Formulations
- NM8- Self-Assembly from Clay Particles: From Nano to Macro

SOILS & SEDIMENTS

- SS1- Clays and Soil-Forming Processes: an Evergreen
- SS2- Contributions of Soil Mineralogy to Solve Agricultural, Environmental, Technological and other Practical Problems

MISCELLANEOUS

- UM1- Teaching Clay Science
- UM2- Dynamics of Fluids in Nanoporous Regimes
- UM3- General Topics

Each day, the scientific activities started with an important contribution of plenary interest (Fig. 1). On Sunday, Raffaele Saladino (University of Tuscia, Italy) talked about pre-biotic chemistry in the origin of life. The second plenary lecture was given by Jean-Pierre Bibring (Institut d'Astrophysique Spatiale and OMEGA team, France) who discussed about the detection of hydrated sulphates on Martian surface by OMEGA (Observatoire pour la

Mineralogy, l'Eau, les Glaces et l'Activité). The formation of favorable acceptor-donor complexes between cation and dioxin molecule in the smectite interlayers was discussed by Cliff T. Johnston (Purdue University, USA). The possibility of carbon dioxide capture and sequestration in deep geological formations for reducing greenhouse emissions was the topic of David R. Cole's lecture (Oak Ridge National Laboratory, USA). The fifth lecture –the Bradley Award- entitled “One-dimensional structure of exfoliated polymer-layered silicate nanocomposite: a polivinylypyrrolidone (PVP) case study” was presented by Marek Szczerba (Polish Academy of Sciences, Poland). At the last plenary lecture, Warren D. Huff (University of Cincinnati, USA) presented a survey of the history of development of the studies of mudstones since 1556.



Figure 1: Set of photos of plenary lectures during 14 ICC (photos are courtesy of S. Fiore).

Each participant of the 14ICC received the “Program Book” and two volumes of the “Book of Abstracts” edited by Saverio Fiore, Claudia Belviso & Maria Luigia Giannossi, and published by digilabs s.a.s.

The first edition of the AIPEA School for Young Scientists was coordinated by Javier Cuadros (Natural History Museum, UK) and Francisco Javier Huertas (CSIC – Granada, Spain), and took place before the conference (12-13 June) at the University of Bari. The theme developed was “Interstratified Clay Minerals: Origin, Characterization and Geochemical Significance” and comprised a series of lectures held by 9 experts.

Some different Business Meetings took place during 14ICC, as follows:

- AIPEA Outgoing Council Meeting,
- AIPEA Business Meeting (General Assembly);
- Clay Minerals Editorial Board Meeting;
- AIPEA Incoming Council Meeting;
- AIPEA Nomenclature Committee Meeting;
- The Philosophical Magazine Meeting.

Excursions

Two half-day visits, free of charge for participants and accompanying persons, took place during the 14th ICC. Destinations are “Sassi di Matera”, a truly prehistoric urban agglomerate, and “Trulli di Alberobello”, a little town mainly composed of stone dwellings with conical roofs and built without any mortar. Both places are UNESCO World Heritage sites.

A field excursion to the Aeolian Islands took place before the conference (11-12 June). Besides that several excursions for accompanying guests have been offered.

Awards and Grants

The AIPEA awarded Robert Schooneydt and Saverio Fiore for their contributions to the Society activities. Gordon Jock Churchman (University of Adelaide, Australia) was nominated AIPEA Fellow.

The winner of the BRADLEY AWARD (which is financed by AIPEA and provides assistance to young scientists interested in attending the 14ICC) was:

- Marek Szczerba for: *One dimensional structure of exfoliated polymer-layered silicate nanocomposites: A polyvinylpyrrolidone (PVP) case study* (Institute of Geological Sciences, Polish Academy of Sciences, Krakow, Poland).

The winner of the AIPEA MEDAL (which is awarded to honor active clay scientists in recognition of outstanding contributions to clay science) was:

- Dr. Yoshiaki Fukushima, a Senior Fellow at the Toyota Central Research and Development Laboratories Inc. (Aichi, Japan).

The winners of the STUDENT BEST SPEAKER AND POSTER AWARDS (sponsored by AIPEA, whereby the two best oral and poster presentation during the ICC receive cash awards) were as follows:

- Oral:
-Holger Seher for: *Bentonite colloid stability in granite groundwaters: experiments and modelling* (Institute für Nukleare Entsorgung, Karlsruhe, Germany).

-Rosa Maria Salgueiro Marques for: *A Contribution for the Geochemical Atlas of Santiago Island, Cape Verde-Total Contents of REE and other Trace Elements in the Topsoil Layer* (Instituto Tecnológico e Nuclear/GeoBioTec, Sacavem, Portugal).

-Bethany Ehlmann for: *Evidence for Low-Grade Metamorphism/Diagenesis on Mars from Phyllosilicate Mineral Assemblages* (Department of Geological Sciences, Brown University, Providence, Rhode Island, USA).

- Poster:

-Lenka Herzogova for: *Removal of As and Se Oxyanions using Modified Clays: Al^{3+}/Fe^{3+} , Mn^{2+} modification* (Institute of Chemical Technology, Prague, Czech Republic).

-Adebukola Adegoroye for: *A Comprehensive Analysis of Organic Matter Removal from Clay-sized Minerals Extracted from Oil Sands using Low Temperature Ashing and Hydrogen Peroxide* (Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta).

The winner of the GIOVANNI NOVELLI PRIZE (which is sponsored by the Associazione Italiana per lo Studio delle Argille and is intended to favor the research activity of young scientists, under 35, devoted to applied clay sciences) was:

- Hendrik Heinz, University of Akron, USA

The winner of the LUIGI DELL'ANNA AWARD (which is sponsored by the Associazione Italiana per lo Studio delle Argille and it is intended to favor the participation of young Italian scientists to the 14ICC) was:

- Francesco Perri, University of Basilicata, Italy

Beside these, AIPEA awarded the Student Travel Funds to: Pauline Andrieux (University of Poitiers, France), Michael C. Cheshire (Indiana University, USA), Marian Matejdes (Comenius University, Czech Republic), Adi Radian (Hebrew University of Jerusalem, Israel), and Hongji Yuan (Indiana University, USA).

Next International Clay Conference

During the AIPEA Business Meeting, AIPEA Council approved the proposal presented by Reiner Neumann (CETEM) for the Brazilian Clay Group to host the XV International Clay Conference in 2013 at Rio de Janeiro, Brazil.

Website

All information about 14ICC can still be found at the conference website at: <http://www.14icc.org> together with a collection of photos to be shared with all participants and the entire international clay community.

Saverio Fiore
November / 2009

7. NATIONAL AND REGIONAL CLAY GROUPS

This section gathers all the reports send by the AIPEA affiliated societies until August 2009. These contributions allow AIPEA to fill its aim of worldwide promotion of clay research and technology and of international cooperation in clay research and technology. We thank all for their cooperation.

Daisy Barbosa Alves
AIPEA Secretary-General

ALGERIA **ALGERIAN CLAY GROUP**

I am honored to represent the Algerian Clays Group (ACG) created in June 2002, and present to the “Association Internationale pour l’Étude des Argiles” (AIPEA) our activity in 2008 as well as the activities engaged for 2009. I also inform you that the Algerian Clays Group is the first group created in the Maghreb and in Africa.

1- The Algerian group is preparing in November 23-25, 2009 the third edition of the Maghrebian symposium on clays minerals at Boumerdès University (Algeria) (<http://smaiii20098.umbb.dz>) after intense participation to “The Second Maghrebian Clays Symposium in Morocco April 21-22, 2006 and others national meetings.

2- Main activities

2.1 - National activity and Cooperation –

Activities during 2008:

Algerian university and national industries

Scientists projects and students supervision (Engineers, Magister and PhD) on:

- Clay minerals characterization (Geology and deposition conditions)
- Problem during drilling (shale stability)
- Catalysts and adsorbants from clays
- Clays Problems in oil reservoir
- Organoclays preparation and uses
- Clays in Environment.
- Clays in Pharmaceuticals and cosmetics application
- Clays and building projects.

Activities proposed for 2009:

The principal project in 2009 is the preparation of the third Maghrebian Clay symposium in Boumerdès, November 23-25, 2009. Many activities are proposed to continue our scientific activity and research program.

2.2-International activity and Cooperation

a. Industrial:

Project of building two factories for exploiting two bentonite fields (more than 11 Millions Tons of proven reserves) for several uses (Cooperation with BUMIGEME/Canada).

b. Scientific :

Many projects between Algerian university and others scientific research organisation in Algeria and in Europe, such: ANDRU, TASSILI, CNRS,...

3-Algerian Clay Group Members

President:	Mr A. Bengueddache (Oran University)
Vice Presidents:	Mrs H. Chemani (Boumerdès University) Mr B. Touahri (Bental/ENOF Algiers) Mr M. Belkadi (Sonatrach/CRD Boumerdès)
General Secretary:	Mr M. Khodja (Sonatrach/CRD Boumerdès)
General Secretary	Mr A. Bakhti (Mostaganem University)
Assistants:	Mrs F. Kaouah (USTHB University-ISMAL, Algiers)
Tresory:	Mr B. Boualem (USTHB University, Algiers)
Tresory Assistants:	Mr B. Adjabi (Faiencerie Algérienne, Algiers) Mr K. Kherdjidj (Sonatrach/Exploration Boumerdès)

By Mohamed Khodja
April / 2009

BRAZIL

BRAZILIAN CLAY GROUP (under organization)

The community of Brazilian scientists dedicated to the studies of clays and clay minerals conducted several activities during 2008. Two are highlighted among them:

- A general meeting on October 29th, during the 44th. Brazilian Geological Congress in the city of Curitiba (southern Brazil), to disclose the activities of the Association Internationale pour l'Étude des Argiles (AIPEA) and to discuss the organization of the Brazilian Clay Group (GBA). The creation of this scientific group is ripe, as Brazil boasts a significant number of well-established research groups and senior experts on this topic. A preliminary list of e-mails, with about 40 names, was compiled.
- The "French-Brazilian Workshop on Clays and Clay Minerals under low and high temperature environments" took place on December 15th, in the city of Porto Alegre (also southern Brazil), under the coordination of Prof. Dr. André Sampaio Mexias from the Federal University of Rio Grande do Sul (UFRGS). This workshop was followed by a field trip prepared to visit several interesting clay outcrops in the Rio Grande do Sul state in Brazil, and in Uruguay.

In both events, the participants voted for the creation of GBA. Further, the Brazilian Geochemical Society (SBGq) accepted to receive GBA inside its formal organizational

structure, making available its physical structure and computational resources in order to easy GBA main activities. GBA members also decided to run for the organization of the 15th International Clay Conference (15ICC) in Brazil, in 2013. Therefore, a group of scientists was entrusted to prepare such a proposal which shall be discussed in the Ordinary General Assembly of AIPEA in Castellaneta Marina (Italy) during to 14 ICC, in June 2009. If rendering effective, this challenging activity will be a strong aggregating element of the Brazilian clay scientist community.

By Daisy Barbosa Alves
May / 2009

CZECH REPUBLIC CZECH NATIONAL CLAY GROUP

The Czech National Clay Group organized two seminars in a year, as usual. Both of them took place in Prague – in the building of the Institute of Rock Structure and Mechanics of the Academy of Sciences of the Czech Republic.

The spring meeting was held on May 19. The following lectures were delivered:

1. S. Peikerová: The comparative essay of physical, chemical and technological properties of selected Czech bentonites.
2. M. Šťastný: The information on the preparation of the 18th Clay conference in the Czech republic.

The autumn meeting had also two lectures on the program:

1. V. Machovič: Vibration spectroscopy of clay minerals.
2. K. Melka: A scheme for the classification of micaceous minerals.

The Czech Clay Group edited three numbers (38-40) of the bulletin Informátor in Czech language. No.39 functioned as a Book of Abstracts to the 18th Czech Clay Conference.

The Czech National Clay Group arranged in the year 2008 its 18th Clay conference. It was held from September 29th till October 1st in Southern Bohemia, near the historic town Český Krumlov. The post conference field trip (historical buildings including Castle in Český Krumlov, ceramic clays and diatomite deposits in Borovany, moldavite locality at Besednice) was organized the last day of the meeting. The conference was prepared by the Institute of Rock Structure and Mechanics. It is convenient to commemorate that the First Conference on Clay Minerals in Czechoslovakia at that time took place in Prague before 50 years. For this purpose, the special poster with photos from the previous clay conferences was installed. Thirty eight clay scientists participated in the last conference and 16 oral lectures were delivered on the whole. Fourteen contributions were prepared in the poster form. The evaluation and the discussion of two books edited by renowned editorial houses was also on the program of the meeting. It concerned a book of F.Bergaya, B.K.G.Theng, G.Lagaly: Handbook of Clay Science and a book of A.Meunier: Clays. The evaluation was presented by Dr. C.V. Jeans as the invited lecture.

This time, Book of Abstracts was edited before the conference as a separate number of the Czech clay bulletin Informátor. Proceedings volume of the 18th Clay Conference will be published in the journal Acta Geodynamica et Geomaterialia during the first half of 2009. On the occasion of this conference Dr. Christopher Jeans from the Department of Earth Sciences, University of Cambridge, United Kingdom and Dr. Hideo Minato from the Institute of Earth Sciences, University of Tokyo, Japan were awarded the honorary membership of the Czech National Clay Group.

During the conference the plenary meeting of the Czech National Clay Group took place. The new council for the next period was elected: M. Pospíšil (chairman), M. Šťastný (executive vice-chairman), J. Konta, S. Peikerová, K. Melka, M. Holý, P. Hájek. As liaison officer K. Melka is acting.

By Karel Melka
March / 2009

FRANCE FRENCH CLAY GROUP

1-6th Meeting of the French Clay Group (GFA, *Groupe Français des Argiles*)

The 6th Meeting of the GFA was held during the 22nd Meeting of Earth Sciences (RST2008) in Nancy from 21 to 24 April 2008. This RST biennial meeting that brings together at national level around 600 to 800 researchers from various fields of Earth Sciences, was held under the International Year of Planet Earth and the centenary of the Ecole Nationale Supérieure de Géologie.

2-Exhibition on Clay History: past and future in France

The French Clay Group (GFA) and School of Geology (ENSG, Ecole Nationale Supérieure de Géologie) in Nancy have created an exhibition on the clays and their uses over time. The exhibition is organized into three parts. The first one is focused on traditional uses of clay in various fields such as art, medicine, writing, building materials and potteries. The second parts point out the new developments in clay uses in polyphasic products such as plastics, paints, papers and ceramics in which clays are less and less visible. The third part is more open and tries to give hints about future uses of clays such as geochemical barriers and storage of chemical or radioactive wastes, eco-habitats; clay syntheses and applications in high technology. This section also presents the regional aspects of the geology of clays and associated industries as well as instruments based of clay and sculptures in talc.

The exhibition has been presented in Nancy in October 2008, in the framework of the 100 years anniversary of the School of Geology and the International Year of the Earth Planet. Numerous exhibitions are scheduled in different parts of France. It is presented until June at the underground laboratory of Meuse-Haute-Marne of Andra and will be presented at the Palais de la Découverte in Paris in October 2009, at Poitiers in 2001 and in many other cities.

The exhibition was created thanks to the financial support of Andra, Conseil Général de Meurthe et Moselle, Ministry of Education, Imerys for ceramics, Lafarge, and many research laboratories in France.

Additional information at:

Frédéric VILLIERAS
Laboratoire Environnement et Minéralurgie
Ecole Nationale Supérieure de Géologie
15 avenue du Charmois
54500 Vandoeuvre-lès-Nancy, France
frederic.villieras@ensg.inpl-nancy.fr
<http://expo.argiles.free.fr/>
(in French)

3-“Master National Argiles (MNA)“: opening of an innovative formation dedicated to Clay Science and applications in physics, earth sciences, chemistry, environment, and health

The idea to create and propose a formation dedicated to Clay Minerals and their applications emerged from the scientific community involved in the GFA. This high level Master Degree is seen as the best answer to the necessity to educate scientists in the field of clay minerals and their applications in chemical engineering, civil engineering, geomaterials, earth sciences, environment and health.

This Master is multidisciplinary. It answers to a request, coming both from academic and private institutions (engineers and research), to have a strong and original high level knowledge in the field of structures, properties and applications of finely divided materials. An above average B. Sc. (or equivalent degree), including at least three years of studies at a university is required. The B. Sc. disciplines must deal with Physics, Chemistry, Earth Sciences or Biology.

The MNA Master begins with two weeks of basic knowledge update to homogenize the academic standard of the students. During the two years of formation, courses will be given at the University of Poitiers (France) by international level scientists. The formation is linked to a network of more than twenty recognized research laboratories and to numerous private companies.

It includes two periods of professional practice and research (3 months for the first year Master project and 5 months for the Master Thesis) in all partner laboratories. Extra-costs for accommodation linked to these periods will be compensated.

A tentative project of Erasmus Mundus Master in Advanced Clay Science was submitted to the European Commission for a possible opening in 2010. This new Master will open on September the 1st 2009. All information is available on the web site: <http://sfa.univ-poitiers.fr/master-national-argiles>

Sabine Petit, who is in charge of the Master National Argiles, can be contacted by:

Sabine PETIT
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By Jocelyne Brendlé
March / 2009

GERMANY-AUSTRIA-SWITZERLAND GERMAN-AUSTRIAN-SWISS CLAY GROUP

The German Clay Group Association (DTTG) was founded in 1972 in Kiel (Germany) as a federation of geoscientists, chemists, ceramic engineers and others from German-speaking countries (Germany, Austria and Switzerland), working in the field of clays. The DTTG counts currently 106 members.

The DTTG holds annual meetings at various places in Germany, Austria, and Switzerland. In 2006 the general meeting of members decided to carry out the 2008-meeting together with the 4th Mid-European Clay Conference (MECC) in Zakopane (Poland). Subsequently, the general meeting of DTTG-members decided in Zakopane to join the group of Mid-European Clay Conference. This decision was appreciated with great pleasure by the representatives of the other clay groups of the MECC. Starting in autumn 2008, the DTTG is now officially a member of the MECC groups.

For the DTTG committee, the following members were elected in Zakopane 2008: Helge Stanjek, RWTH Aachen (president), Reiner Dohrmann, LBEG/BGR Hannover (treasurer), Michael Ploetze, ETH Zurich (secretary), and seven members for the advisory board.

In 2008 the 4th Reynolds Cup took place. The results were presented at the 45th CMS meeting in New Orleans. Members of the DTTG were one of the biggest participating groups and were again very successful: 2002: 1st and 2nd, 2004 and 2006: 3rd and in 2008: 2nd and 3rd.

An international DTTG-Workshop on qualitative and quantitative analysis of clays and clay minerals is organized every two years. The third workshop took place from Feb, 8th to 13, 2009 in Zurich (Switzerland). The next workshop will be in spring 2011. The workshop is focussed on the needs of graduate and PhD students in the field of clay science and is open for all who work in the area of clay research. Topics of the workshop are: Different aspects of XRD of clay minerals including QPA with the Rietveld method, physicochemical properties

of clay minerals and their quantification (CEC, charge, surface, sorption and dissolution), thermal, optical and spectroscopic characterisation as well as geotechnical properties of clays.

In 2007 the Federal Ministry for Education and Research in Germany launched the national research program “Mineral surfaces - from atomic processes to Geotechnics”. Within this program several clay related projects were founded in 2008, e.g., at the RWTH Aachen and the University of Hannover (<http://www.geotechnologien.de/forschung/forsch2.10.html>).

For further updated information: <http://www.dttg.ethz.ch> or contact Michael Ploetze (www_dttg@web.ethz.ch), ETH Zurich.

By Michael Ploetze
February / 2009

HUNGARY HUNGARIAN CLAY GROUP

Papers on clay mineralogy were presented in the period 2005-2008 in the sessions and meetings of the Clay Mineralogy Section and partly of the Mineralogy and Geochemistry Section of Hungarian Geological Society (HGS), held normally in Budapest (other localities and organisations are specially indicated).

1-November 11, 2005 (Debrecen, Hungarian Academy of Sciences and HGS)

Viczián, I.: The significance of clay minerals in environmental geology.

Németh, T.: Layer charge and adsorption of metallic ions in montmorillonites.

2-March 21, 2005

R. Varga, A. – Raucsik, B. – Szakmány, Gy.: Source area and diagenesis of Permo-Carboniferous sandstones in South Transdanubia.

Lorberer, Á., Németh, T.: Genesis of bitter waters in relation with the mineralogical composition of the Kiscell Clay in the southern Buda area (Budapest).

3-April 18, 2005

Kovács-Pálffy, P. – Kónya, P. – Földvári, M. – Püspöki, Z. – Józsa, G. – Prakfalvi, P.: New results in the study of Hungarian bentonites.

Vincze, L.: Red clays developed from a bentonite-containing shallow marine Sarmation sequence at Miskolc.

4-February 13, 2006

Farkas, I., Weiszbürg, T.: Studies on settled dust and airborne dust - approaches and methods.

Fehérvári, M., Viczián, I.: Genesis of healing mud. Chances of their study and the European project „Clay and Health”.

Németh, T. – Kovács Kis, V. – Szalai, Z.: Preliminary mineralogical investigations on a natural ferrihydrite.

5-April 3, 2006

Heide, K. (Jena): Study of weathering effects in minerals by DEGAS.

Sachsenhofer, R. (Leoben): Lower Oligocene organic-rich rocks in the Molasse Basin: paleogeography and source rock potential.

Gucsik, A.: Electron microscopic and micro-cathode luminescence study of the muscovite-illite system.

6-May 8, 2006

Tombác, E.: Heterogeneity of the surface charge of kaolinite in aqueous suspensions.

Papp, I. – Braun, M.: Long term effects of the heavy metal pollution of the Tisza River. A study of the sediments of the Boroszlókert blind channel.

7-September 18-22, 2006. MECC '06, Opatija (Croatia).

Meeting of the Mid-European Clay Groups. 11 Hungarian participants.

8-November 24, 2006 (Debrecen, Hungarian Academy of Sciences and HGS)

Viczián, I.: Mineralogy, mode of formation and age of red clays in SW-Transdanubia.

9-December 11, 2006. Reports on Conferences held during the year

Viczián, I. – Raucsik, B.: 3rd Meeting of the Mid-European Clay Groups (MECC '06, Opatija) and the 4th Mediterranean Clay Conference (MCM, Ankara).

10-January 19–20, 2007. Winter School of Mineral Sciences (Balatonfüred, Hungarian Academy of Sciences and HGS)

Dódon, I.: Recent results in the mineralogy of the serpentine group.

Weiszburg, T., Tóth, E.: Possibilities and limitations of crystal chemical computation in the smectite-mica group.

11-June 11, 2007. Meeting on Red Clays of Hungary (Hungarian Soil Science Society and HGS)

Nemecz, E.: The author's presentation of the book "Ásványok átalakulási folyamatai talajokban (Transformation of minerals in soils). Akadémiai Kiadó, Budapest, 2006" (in Hungarian language).

Fekete, J. – Csibi, M.: Pedological properties of Hungarian red clays.

Vincze, L. – Kozák, M.: Genesis of red clays in the northern Bükk Mts.

Dezső, J. – Raucsik, B. – Viczián, I.: Granulometry and mineralogy of karstic fissure filling in the Villány Mts.

Viczián, I.: Mineralogy of Pliocene – Middle Pleistocene red clays of SE-Transdanubia. Review of the quantitative data.

12-July 5, 2007. PhD Thesis (Eötvös University, Budapest)

Ripsz-Judik, K.: Metamorphic evolution of Palaeozoic and Mesozoic series of Medvednica Mts. (Croatia). Comparison with the metamorphism of North-Hungarian formations of similar age.

13-September 10, 2007. Meeting on Recent Results in Clay Mineralogy of Sedimentary Rocks

Viczián, I.: Genesis of the Beremend Member of the Tengelic Red Clay Formation (Pliocene).

Tóth, Á.: Bauxite and clay studies of the forgotten researcher Tivadar Kormos.

Lovas, Gy. – Dódony, I.: Clay minerals and their transformation in the deep well Hód-1.

Weiszbürg, T., – Tóth, E.: Role of dioctahedral Fe-rich smectites in the glauconite formation.

Rostási, Á.: Clay minerals in the Veszprém Marl Formation (Upper Triassic).

Raucsik, B. – Varga, A.: Climate change or diagenesis? Clay minerals in the Lower and Middle Jurassic of Mecsek Mts.

14-December 3, 2007. Reports on Conferences held during the year

Weiszbürg, T.: EUROCLAY 2007 (Aveiro, 22–27th July).

Szilágyi, V. – Szakmány, Gy.: SEEPAST, South-Eastern European Pottery: Archaeology and Scientific Techniques (Udine, 10–12th September).

T. Bíró, K.: EMAC '07, European Meeting on Ancient Ceramics (Budapest, 24–27th October).

15-January 18–19, 2008. Winter School of Mineral Sciences (Balatonfüred, Hungarian Academy of Sciences and HGS)

Viczián, I.: Application of thermodynamics in sedimentary petrology.

Németh, T.: Analytical TEM of soils and clay minerals.

Fehér, B.: Hungarian occurrences of regularly interstratified layer silicates with special regard to the „alleverdite” of Mád.

Kristály, F.: Transformation of minerals of the Tiszavasvári clay upon heating.

16-June 9, 2008. Meeting on Clays in the Geological History of Hungary

Németh, T. – Máthé, Z. – Sipos, P.: Clay minerals and analcime in the Boda Siltstone Formation. I. Mineralogy, geochemistry and genesis.

Raucsik, B. – Rostási, Á.: Clay minerals of Carnian basin sediments in the Transdanubian Central Range.

Judik, K.: Phyllosilicates as indicators of very low grade metamorphism.

Viczián, I.: Mineralogy of the Tengelic Member of Tengelic Red Clay Formation (Pliocene – Pleistocene)

T. Bíró, K.: Ceramics: the first artificial material.

17-September 22–27, 2008. MECC'08, Zakopane (Poland)

Meeting of the Mid-European Clay Groups.

18-September 30, 2008. (Hungarian Academy of Sciences)

Livi, Kenneth T.J. (Baltimore, USA): Advances in transmission electron microscopy as applied to earth and environmental materials.

19-October 14, 2008

Weiszbürg, T.: Information on MECC'08 and organisation of MECC'10.

20-Meeting on Recent Industrial Application of Clays

Dékány, I.: Application of layer silicates in nanotechnology.
Pukánszky, B.: Layer silicate polymer nanocomposites. Expectations and reality.
Marosi, Gy.: Fire prevention by means of clay minerals.
Dormán, J.: Role of clay minerals in hydrocarbon production.
Kolláth, B.: Kaolinite types in the porcelain manufacture.
Papp, I.: Industrial significance of clays applied in sanitary ware production.
Kristály, F.: Role of clays in manufacturing tri-component tri-axial electrical porcelain products.
Kristály, F.: Clays applied in brick manufacture. Variability of mineral composition and its effect on the quality of the products. Types of products.

21-December 15, 2008. Reports on Conferences held during the year

Raucsik, B.: 4th Mid-European Clay Conference (MECC'08), Zakopane, Poland, 22–27th September.

Forthcoming events

In 2010 the 5th Meeting of Mid-European Clay (MECC'10) is planned to be held in Budapest, 25-28th August, 2010. The Conference is organised jointly with the World Congress of IMA. Information on MECC'10 is available at MECC'10 IMA2010 P R F.

Officials of the Hungarian Clay Group for the period 2006-2009:

Chairman:	Szendrei, Géza	szendrei@min.nhmus.hu
Secretary:	Németh, Tibor	ntibi@geochem.hu
Members of the Council:	Dódony, István	dodony@t-online.hu
	Földvári, Mária	foldvari@mafi.hu
	Kovács Kis, Viktória	kis@mfa.kfki.hu
	Raucsik, Béla	raucsik@almos.vein.hu
	Viczián, István	viczian@mafi.hu

By István Vczián
April / 2009

ITALY

Since 2008 most of efforts have been turned towards the organization of the 14th International Clay Conference, which will be held in Castellaneta Marina (province of Taranto) from 14th to 20th June 2009. Under Saverio Fiore's chairmanship several members of the Italian group are working together in order to set up the scientific and social activities, to update the conference web site (<http://www.14icc.org> now completely renewed), to establish a procedure for registration and booking accommodation in the conference resort or neighbouring villages.

In order to encourage the participation in the ICC, the Italian group of AIPEA has sponsored two prizes: one is entitled to Luigi Dell'Anna and the other to Giovanni Novelli. They will be

assigned to awards, respectively, Italian young scientists and international scientists for their research activity on clay and clay minerals (<http://www.aipea.it/premi.html>).

Last year a short course on the X-ray diffraction of clay minerals, including sample preparation and both qualitative and quantitative analyses, was held in Tito Scalo (Potenza) at the Institute of Methodologies for Environmental Analysis (IMAA-CNR) – Laboratory of Environmental and Medical Geology (LGMA) – and also involved the Università della Basilicata, in Potenza. The course was coordinated by Francesco Cavalcante, Claudia Belviso, Maria Luigia Giannossi and Antonio Lettino. The IMAA-CNR research team investigating clay has a lot of experience in this field and this was appreciated by the participants who could enjoy such a well-organized course. Now the Italian group is managing the AIPEA web site (www.aipea.org).

Fabio Tateo
August / 2009

ISRAEL ISRAEL SOCIETY FOR CLAY RESEARCH

President: Amir Sandler, The Geological Survey of Israel
Secretary: Ahmed Nasser, Volcani Center

The Israel Society for Clay Research held its annual meeting on October 26 – 27, 2008 in Sde Boqer. The first day was devoted to lectures, which were followed by a one day field trip in the Negev area, Southern Israel. Because the year 2008 is designated as the International Planet Earth Year, both the lectures and the localities selected in the field trip emphasized the contribution of clay science to society.

Five invited lectures were presented, four by visitors from France, the fifth by the technical director of the Negev Ceramics Industry.

- Alain Meunier: The illite problem
- Abderrazek El Albani, Alain Meunier: The unusual estuarine glauconite occurrence in the Lower Cretaceous of northern Aquitaine Basin, SW France.
- Pierre Barré, Paul D. Hallett, Inigo Virto, Claire Chenu: Aggregation in soils: How does clay mineralogy matter? A rheological approach.
- F. Hubert, L. Caner, A. Meunier: Use of clay mineral assemblage variations as tracers of soil with polygenetic origin.
- Reuven Kushman: Production of fine porcelain tiles.

Seven lectures and discussions dealt with various aspects of clay-organic systems and their applications. Other topics were the formation of halloysite in the northern Golan Heights and the effect of soil mineralogy on runoff and soil erosion.

The field trip started with a visit to the area of Avedat, along the ancient spice route, to see the agricultural remains from the time of the Nabateans and to the ruins of a settlement on the nearby mount Horvat Halukim. Professor Hendrik Bruins gave a fascinating resume of the theories proposed to explain how ancient cultures could flourish in this arid environment in a climate not unlike that of the present. The ruins at Horvat Halukim are from the Iron Age, but 14C dating of an anthropogenic soil profile indicates that settlement started as early as 1550 BCE or before. The trip continued to Maktesh Hatira for an overview of its geological history and a visit to the Mesozoic clay occurrences and ended at a site of a Turonian palygorskite paleosol.

By Lisa Heller-Kallai
November / 2008

JAPAN

THE CLAY SCIENCE SOCIETY OF JAPAN

1. Committee

The following officers were elected for the fiscal years 2008 and 2009:

President:	Dr. K. Okada, Tokyo Institute of Technology
Vice presidents:	Dr. K. Kuroda, Waseda University Dr. A. Inoue, Chiba University
Secretary:	Dr. H. Yamada, National Institute Materials Science
Treasurer:	Dr. M. Kawano, Kagoshima University
Principal editors:	Dr. R. Kitagawa, Hiroshima University (Nendo Kagaku) Dr. E. Narita, Iwate University (Clay Science)

2. The 52th annual meeting

The 52th annual meeting of the Clay Science Society of Japan was held at Okinawa Port Hotel (Naha, Okinawa) from 3 to 5, September 2008. It was organized by Dr. Y. Tokashiki of Ryukyu University. A total of 121 papers including 61 poster presentations were presented. The President (2006-2007) of the Clay Science Society of Japan, Dr. T. Sakamoto (Chiba Institute of Science), gave a presidential lecture on "From west to east with clays".

The program also included guest lectures and a symposium entitled "Energy and clays".

The following symposium presentations were held:

- Dr. H. Ishida (Tohoku Univ.): From natural resources culture to biotic culture utilizing nature and sun.
- Dr. T. Mizota (Yamaguchi Univ.): Investigation on the adsorbed water on clays by means of thermal phenomena.
- Dr. K. Inukai (AIST): The role of rotor on the desiccant air condition.
- Dr. R. Nakanishi (AIST): The adsorption/desorption of carbon dioxides on clay minerals under high pressure.

- Dr. Y. Ishikawa (Nagoya Univ.): From nano to macroscopic phenomena: Migration on clays.

3. Awards

The society presented awards to the following members at the occasion of the annual meeting.

- -Clay Science Society of Japan Award was made to Dr. R. Kitagawa, Hiroshima University.
- -Encouraging Young Scientist Award was made to Dr. T. Okada, Shinshu University

4. Publication

Clay Science Society of Japan publishes four issues of Nendo Kagaku (Journal of the Clay Science Society of Japan in Japanese), and two issues of Clay Science every year. In the fiscal year 2008, Vol. 47, No. 1, 2, and 3 for Nendo Kagaku, and Vol. 13, No. 6 for Clay Science were published.

By Makoto Ogawa
December / 2008

POLAND POLISH CLAY GROUP

In 2008 the Polish Clay Group has organized the 4th Mid-European Clay Conference (MECC'08), in Zakopane, Poland. The details of the conference are presented in attached paper by Prof. Jeffrey Wilson (see 8th. topic of this Newsletter).

By Katarzyna Gorniak
February / 2009

SLOVAKIA SLOVAK CLAY GROUP

Council: (1 October 2008-30 September 2011)

President:	Jana Madejová
Vice-president:	Peter Komadel
Secretary:	Iveta Štyriaková Adrián Biroň Ivan Kraus

1-The main international activity of the members in 2008 was presentation of research results on the following international conferences:

1.1- 4th Mid-European Clay Conference MECC08 in Zakopane, Poland, September 2008.

Fifteen members of SCG co-authored 3 lectures and 9 posters, and 11 of them (S. Andrejkovičová, M. Janek, L. Jankovič, I. Janotka, J. Hrachová, P. Komadel, I. Kraus, J. Madejová, H. Pálková, M. Pentrák, I. Stríček) attended the conference.

LECTURES

1. M. Janek, I. Bugár, D. Lorenc, V. Szócs, D. Velič, D. Chorvát: Application of terahertz time-domain spectroscopy for investigation of layered hydrosilicates
2. M. Osacký, V. Šucha, J. Madejová, A. Czimerová, P. Uhlík: Stability of smectite in the presence of metal iron
3. Janotka, L. Krajči, M. Kuliffayová, I. Kraus: Metakaolin sand – a prospective substitute for Portland cement

POSTERS

4. J. Hrachová, P. Billik, P. Komadel, V. Š. Fajnor: The effect of organocations on the mechanomechanical activation of montmorillonite
5. L. Jankovič: Adsorption of an acidic textile dye to organo-bentonite
6. J. Madejová, H. Pálková, M. Pentrák, P. Komadel: Studies of acid-treated clay minerals by near-infrared spectroscopy
7. T. Zacher, M. Janek: Preparation of novel inorganic-organic nanocomposites from “host-guest” intercalates of kaoline and halloysite
8. J. Hrachová, P. Komadel, I. Chodák: Rubber-layer silicate (nano)composites
9. S. Andrejkovičová, I. Janotka, P. Komadel: A blend of sodium Al-rich and Fe-rich bentonites – a potential filler for geosynthetic liners?
10. Stríček, V. Šucha, P. Uhlík: Gamma-irradiation effects on smectite properties
11. M. Pentrák, J. Madejová: Acid dissolution of differently ordered kaolinites
12. L. Smrčok, D. Tunega, J. Valúchová, A. J. Ramirez-Cuesta, A. Ivanov: Inelastic neutron scattering (INS) study of hydrogen bonds in kaolinite-dimethylsulfoxide intercalate
13. H. Pálková, J. Madejová, J. Podobinski, J. Krysiak-Czerwenka, E. M. Serwicka: Acid sites developed on aluminated PCH derived from Laponite
14. M. Strycharczyk, H. Pálková, M. Zimowska, E. M. Serwicka, K. Bahranowski, Z. Olejniczak: Montmorillonite-derived porous clay heterostructures (PCHs): A study of structure evolution
15. J. Valuchová, Š. Kavecký, M. Čaplovičová, Š. Heissler, M. Janek: Synthesis of multiwall carbon nanotubes catalysed by smectite type of clays

1.2- The 8th Conference on Solid State Chemistry - SSC 2008, Bratislava, 6–11 July 2008.

208 participants from 29 countries, 18 invited talks, 73 lectures, 146 posters.

This IUPAC sponsored conference has been focused towards the branches of solid state and materials chemistry. The scientific program of SSC 2008 has comprised seven sessions: Synthesis and characterization of materials; Crystal, electronic and magnetic structure; Electrochemistry and molten salts; Chemistry of glasses; Novel inorganic materials and nanomaterials; Layered compounds, clathrates and intercalates; Deposited films and surface

chemistry. It has been endorsed by the three organizing institutions: Institute of Inorganic Chemistry of Slovak Academy of Sciences, Faculty of Chemical and Food Technology of Slovak University of Technology, and Faculty of Natural Sciences of Comenius University, and by the Slovak Chemical Society, Slovak Clay Group and Slovak Silicate Society. Chairman of the Organizing Committee (Peter Komadel) and one member (Jana Valúchová) are members of the SCG.

Lectures by members of the SCG:

ČEKLOVSKÝ, Alexander, BUJDÁK, Juraj, LANG, Kamil: Thin films of layered silicates with photochemically-active porphyrin cations

RIBEIRO, Fabiana R., KOMADEL, Peter, STUCKI, Joseph W.: Biotic and abiotic reduction of iron in smectite: Comparisons of the effects on clay structure and environmental chemistry

1.3- Aluminium and Silicon in Soils and the Environment Conference – AluSiV, Aberdeen, Scotland, UK, September 2008.

MADEJOVÁ, Jana: Possibilities of near IR spectroscopy in investigation of reduced charge smectites, Keynote Lecture

KOMADEL, Peter: Iron in smectites as seen by infrared spectroscopy.

1.4- ADVANCECLAY - ERASMUS IP, Budapest, July 2008

International workshop devoted mainly to students and young scientists involved in clay minerals research.

MADEJOVÁ, Jana: Infrared spectroscopy: Theory and clay minerals applications – Part I; Infrared spectroscopy: Theory and clay minerals applications – Part II. Keynote Lectures

Three lectures for faculty and students of the Faculty of mining, geology and petroleum engineering, University of Zagreb, Croatia, December 2008, given by P. KOMADEL:

1. Chemistry and properties of clay minerals – smectites
2. Spectroscopic evidence of chemical composition and changes in clay minerals
3. Manipulation of layer charge of smectites

Several members of the SCG have been involved in the activities of the project *Sciential and technological transfer in research and development of natural nanomaterials* (project JPD 3 2004/4-058, project was co-financed by European Social Fund. Principal investigator was S. Šoltés. Project Coordination Board: S. Šoltés, I. Janotka, P. Komadel, I Kraus, J. Madejová). Thematic days, workshops and excursions were organized and e-learning courses were prepared. The main objective of this project of the Faculty of Natural Sciences, Comenius University, in collaboration with Institute of Inorganic Chemistry and Institute of Construction and Architecture, Slovak Academy of Sciences, is support of sciential and technological transfer within and among the employees and students in R&D institutions in Slovakia.

Thematic day **Utilization of natural materials in protection of environment**, Bratislava, 25 February 2008, 45 participants

I. Janotka: Aggressivity of cement-bentonite suspensions

I. Janotka, A. Špaček: Building materials for progressive engineering technologies

A. Špaček, I. Janotka: Standardization of environmental aggressiveness impacting building materials

L. Krajčí: Properties and application of cement-bentonite suspension in environmentally loaded surroundings

J. Frankovská: Determination of geotechnical characteristics of natural materials

P. Turček: Improvement of ground properties

M. Matys: Slip tests of geosynthetic mats

R. Baslík, S. Dvořáková: Protection of environment and constructions with geosynthetics and related materials

Workshop **Technological procedures in processing of natural nanomaterials and their significance in industrial applications** - Turčianske Teplice, 5–7 May 2008, 54 participants

M. Drábik: Macro-Defect-Free materials – a challenge for chemistry and technology

M. Šveda: Effect of granulometry of brick raw material on formation of reductive nucleus in calcined roof cover

M. Doval': Troskopopol as an admixture to concrete and skills with its application in praxis

J. Tabak: Applications of selected raw materials in glass industry

M. T. Palou: Application of sol-gel method for synthesis of highly active nanoparticles in clinker minerals

L. Krajčí: Mortars with low-energetic sulphoaluminate-belitic cement and their properties

O. Koronthályová: Parameters of humidity transfer and accumulation in porous concrete

T. Ďurica: Aspects of durability of cement composites as affected by selection of materials

S. Balkovic: Sulphates and concrete durability

L. Bágel': Exploitation of natural pozzolans in plasters with repair properties

E. Smrčková: Removing non-favourable effects of water soluble chromium by the active blend consisting of natural zeolite and technical iron sulphate

T. Nürnbergerová: Stress - strain diagrams of cement composites containing zeolite

I. Janotka: Zeolite and metakaolin – well-established and prospective natural materials for application in building industry

Excursion to deposits of natural nanomaterials Central Slovakia and Poland (Góra Hruby Riegel), 21 and 22 September 2008, 40 participants total, 15 from SCG.

Visited factories, deposits and occurrences: calcite deposits Tunežice, Ladce, Budkov, clay and brick factory Wienerberger, Góra Hruby Riegel (Poland) – calcites

4-Defended PhD thesis by the members of the SCG in 2008:

Slávka Andrejkovičová: *Properties of bentonite from Liekovec deposit and its possible environmental applications*, Institute of Inorganic Chemistry, Slovak Academy of Sciences,

and Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, defended 26 March 2008

Jana Hrachová: *Organic modifications of montmorillonites and their applications in polymer (nano)composites*, Institute of Inorganic Chemistry, Slovak Academy of Sciences, and Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, defended 26 March 2008

Martin Pentrák: *Structure modification and properties of clay minerals in acid and alkaline environment*, Institute of Inorganic Chemistry, Slovak Academy of Sciences, and Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, defended 18 September 2008

By Peter Komadel and Jana Madejová
April / 2009

SPAIN

SPANISH CLAY SOCIETY

The XXI Scientific Meeting of the Spanish Clay Society (SEA) was organized together with the XXVIII Meeting of the Spanish Society of Mineralogy (Sociedad Española de Mineralogía, SEM) in Zaragoza from the 16th to 19th September 2008. The meeting was hosted at the Faculty of Sciences of the University of Zaragoza, chaired by Dr. Blanca Bauluz and brought together over 170 scientists from Spain, France, United Kingdom, Germany, Sweden, Hungary, Israel, Switzerland, Hungary, Czech Republic and India. The Opening Ceremony was chaired by the Vice rector of Research of the University of Zaragoza, the Dean of the Faculty of Sciences and the Presidents of the respective Societies. Among the activities were a workshop, a two-day session with oral and poster presentations and a field trip (Figs. 2 and 3).

The workshop was focused on “Instrumental techniques applied to Mineralogy and Geochemistry” with the aim of updating the knowledge of young and also senior researchers. The scope of this workshop included the most common analytical techniques used in geological and material sciences research mainly covering details of analytical practice and representative and new applications. The workshop was conducted by specialists and the lectures given were:

- “Electron Backscatter Diffraction (EBSD) in the SEM: Applications to Microstructures in Minerals and Rocks and Recent Technological Advancements”, Prof. Elisabetta Mariani (University of Liverpool, UK)
- “TEM in Geology. Basics and applications”, Prof. Fernando Nieto (University of Granada, Spain).
- “X-ray Absorption Spectroscopy in Mineralogy and in the Earth and Environmental Sciences”, Dr. Jesús Chaboy (CSIC-Universidad de Zaragoza, Spain)

- “Raman, Conventional Infrared and Synchrotron Infrared Spectroscopy in Mineralogy and Geochemistry: Basics and Applications”, Dr. Biliana Gasharova ANKA Synchrotron Light Source, Karlsruhe, Germany)
- “Alike as Two Water Drops: Distinguishing One source of the Same Substance from Another”, Prof. Clemente Recio (University of Salamanca, Spain)
- “Radiogenic isotopes and their Applications within a Range of Scientific Fields”, Dr. Kjell Billström (Natur Historiska Riskmuseet, Stockholm, Sweden)
- “Analytical Techniques Applied to Fluid Inclusion Studies: Basics and Applications”, Prof. Salvador Morales (University of Granada, Spain).



Figure 2. Prof. Blanca Bauluz (meeting convener), Prof. Eduardo Ruiz Hitzky (SEA president), Prof. Manuel Prieto (SEM president) and Mr. Bernd Wicklein, the winner to the best presentation by a student, during the Meeting Dinner. (Photo courtesy by P. Aranda).



Figure 3. A family picture at the field-trip to the Ojos Negros mining district (Aragon Region). (Photo courtesy by P. Aranda).

Were published in a SEA-SEM edited monograph (I. Subías and B. Bauluz, Eds.), consisting in a volume divided into four topical sections: “Electron Microscopy”, “X-ray Absorption Spectroscopy (XAS)”, “Isotope Geology” and “Fluid Inclusions”.

The General Sessions was composed of a total of 119 communications, including 57 oral communications and 62 posters, distributed on sessions covering the following topics: "Mineral resources and sustainability", "Cultural Heritage", "Replacement, dissolution and recrystallization on low temperature systems", "Water-rock interaction and environmental quality", "Characterization and clay genesis", “Clays and Materials” along with open sessions on Mineralogy, Geochemistry and Petrology. The sessions also included the following

Plenary Lectures:

- "Quantification of the Kinetics of Water-Rock Interactions from the Atomic to the Field Scale", Prof. Jacques Schott, CNR Université Paul Sabatier, Toulouse (France).
- "Clay Minerals as an Ancient Nanotechnology: Past and Future in the Use of Clay-Organic Interactions", Dr. Giora Rytwo, Tel Hai Academic College (Israel)
- "Is Dolomite a Biomineral and the Implications?" Dr. Crisogono Vasconcelos, ETH-Zentrum of the Geologisches Institut (Switzerland).
- "Clay Minerals: a key for Deciphering Fluid/Sediment Interactions in Oceanic Hydrothermal Systems", Dr. Martine Buatier, UFR des Sciences et des Techniques (France).
- "Contexto Actual de la Minería y sus Repercusiones en España", Dr. Jose Pedro Calvo Sorando, Instituto Geológico Minero de España (Spain).

Papers introducing the communications were collected and published in MACLA (the journal of the Spanish Society of Mineralogy), constituting the issue 9 of the 2008 volume (pp 1-264).

The last day of the meeting was devoted to a field trip to the Ojos Negros mining district and the cultural heritage of the region, coordinated by Dr. Isabel Fanlo and Dr. Ignacio Subías, both from the University of Zaragoza.

Among the communications applying for the Award to the best presentation by a Young Researcher, the winner was Mr. Bernd Wicklein from the Materials Science Institute of Madrid (CSIC), for the poster communication "*Organically Modified Clays for Uptake of Mycotoxins*".

In the General Assembly celebrated in Zaragoza (17th September 2008) the Council of the SEA was partially changed, being the current composition:

President:	Prof. Eduardo Ruiz-Hitzky (till 2010)
Past- President:	Prof. Santiago Leguey (till 2010)
Vice-President:	Dr. Mercedes Suárez (till 2012)
Secretary:	Dr. Pilar Aranda (till 2010)
Treasury:	Dr. Emilia García Romero (till 2010)

Elected members:

- Dr. Blanca Bauluz (till 2012)
- Dr. Covadonga Brime (till 2010)
- Dr. Juan Carlos Fernández Calinai (till 2012)
- Dr. Manuel Miguel Jordán Vidal (till 2010)
- Dr. M^a Dolores Ruiz Cruz (till 2010)
- Dr. Claro Ignacio Sainz Díaz (till 2012)
- Dr. Tomás Undabeytia (till 2010)
- Dr. Miguel Angel Vicente Rodríguez (till 2012)

Members of the SEA during their term at the AIPEA Council:

Prof. Celso Gomes (till 2009) - Portugal

Prof. Saverio Fiore (till 2009) - Italy

The General Assembly also proposed to introduce Prof. Juan Cornejo and Dr. Juan Jiménez Millán as new Associated Editor and member of the Editorial Board of Clay Minerals in place to Prof. Vicente Rives and Prof. Magdalena Rodas, respectively.

Other accords taken by the General Assembly refer to the nomination of 6 new Honorary Members: Prof. Ray E. Ferrell (Louisiana State University), Prof. Santiago Leguey (Autonomous University of Madrid), Prof. Shlomo Nir (Hebrew University of Jerusalem), Prof. José Luis Pérez-Rodríguez (Institute of Materials Science of Seville, CSIC), Prof. Thomas J. Pinnavaia (Michigan State University) and Prof. Ariel Singer (Hebrew University of Jerusalem).

Finally, the General Assembly accorded to support the organization of the 2010 Trilateral Meeting on Clays together with the Clay Minerals Society (CMS) and the Clays Science Society of Japan (CSSJ), that will be held the second week of June in Madrid and Seville (Spain). The main activities will consist in a Workshop on Materials and Clay Minerals, a Symposium on Sepiolite that includes a Field Trip to the Tajo Basin Deposits, and a General Meeting covering different topics on Clays and Clay Minerals with a Field Trip to Rio Tinto Mine and Green Corridor. Further information will be launched by the three Societies and through the new SEA web site (<http://www.sea-arcillas.es/>).

It is also worthy to mention that the CMS honored Prof. Emilio Galán (University of Seville) as Honorary Member of the SEA, with the 2008 Pioneer Award.

By Pilar Aranda
March / 2009

**UNITED KINGDOM
CLAY MINERALS GROUP OF THE MINERALOGICAL SOCIETY OF GREAT
BRITAIN AND IRELAND**

1- Officer members:

Chairman:	Dr. Steve Hillier	s.hillier@macaulay.ac.uk
Secretary:	Dr. David Wray	d.wray@gre.ac.uk
Treasurer	Dr. Rob Brown	d.r.brown@hud.ac.uk

Please use the Secretary as the initial point of contact.

The Group offers bursaries to assist with the attendance at conferences and related activities, more details can be obtained from the Secretary or the Group's web site <http://www.minersoc.org/pages/groups/cm/g/cm/g.html>

The group web site also hosts the „Images of Clay“ project developed in collaboration with the Clay Minerals Society (USA), offering access to high quality images of clays that are freely available to all for non-profit purposes

2- Future meetings and events

2009 9th George Brown Lecture

Dr Paul Nadeau of Statoil, Stavanger, Norway, will present the 2009 George Brown Lecture at 2.00 pm on 11th March 2009 at the Macaulay Institute, Aberdeen.

Earth's energy 'Golden Zone': A triumph of mineralogical research

Annual Meeting of the Clay Minerals Group

14-16 December 2009, Newcastle University, UK

FuturoClays: advances in clay science for future geological, environmental and industrial applications

To include the 10th George Brown Lecture, given by Professor Joe Stucki, University of Illinois.

3- Past Meetings

2008 Meeting Report

The principal meeting of the group in 2008 was the AluSiV meeting held, with the British Society of Soil Science, at the Macaulay Institute in Aberdeen, conceived as a tribute to Colin Farmer:

- Aluminium and Silicon in Soils and the Environment (see also 10th topic of this Newsletter for meeting report).

By David S. Wray
February / 2009

UNITED STATES OF AMERICA CLAY MINERALS SOCIETY (NORTH AMERICA)

The Clay Minerals Society's (CMS) 45th Annual Meeting was held in New Orleans, Louisiana, on 5-10 April, 2008 (Fig. 4 and 5). The theme of the meeting was "Clays of Demeter", a reference to Greek earth goddess. The meeting was hosted by Cottey College, Nevada, Missouri, and in cooperation with the Division of Geochemistry of the American Chemical Society. It was organized by Drs. T. Filley and B. S. Ross. Dr. Hailiang Dong, Department of Geology, Miami University, Ohio, received the Jackson Mid-Career Clay Science Award and presented a lecture entitled "Research of the smectite-illite reaction: Past history, current status and future trends". Dr. Emilio Galán, Department of Crystallography, Mineralogy, and Agricultural Chemistry, University of Seville, Spain, gave the Pioneer in Clay Science Lecture, which was entitled "Origin and fate of toxic elements from abandoned mining activities in the Rio Tinto Area (Iberian pyritic belt, Spain)". The Brindley Award Lecture was presented by Dr. Bob J. Gilkes, School of Earth and Geophysical Sciences, University of Western Australia, entitled: "The dregs of weathering: Secrets of kaolin and iron oxides in tropical soils". The Bailey Award, the highest research award given by the

Society, was presented to Dr. Norbert Clauer, French National Research Council, who gave a lecture on “Clay isotope geochemistry: A contribution beyond dating”.

There were a total of 185 papers (including award presentations) and 44 posters. Although the poster session was not differentiated, the oral sessions were divided into the following areas:

- General, 9 papers
- Transformations, 18 papers
- Adsorption: solid/water interface, 6 papers; oxide/water interface, 7 papers; ion pairing, 6 papers; water structures at solid interfaces, 7 papers
- Beyond oxides, 7 papers
- Modeling absorption, 8 papers
- Clay minerals and health, 7 papers
- Archeological clay source materials, chemistry, mineralogy, and physical properties, 10 papers
- Impact of Hurricane Katrina from environmental and petrochemical perspectives, 8 papers
- Coastal and aquatic transformations and input, 16 papers
- Clay minerals and biomolecules, 18 papers
- Trace element speciation in soils and sediment, 22 papers
- Optical and Electrochemical properties of in situ thin films, 7 papers
- Reactions on clay surfaces, 21 papers

There were no field trips.

The latest CMS Workshop volumes are available for purchase (member prices are discounted from the listed price). Order forms and other information may be obtained at <http://cms.clays.org/publications.html>

Recent Workshop volumes are:

- Volume 15, Clay-based Polymer Nano-composites, CMS Workshop Lectures, \$30 (Kathleen A. Carrado and Faiza Bergaya, eds.), 278 pp.
- Volume 14, Methods for Study of Microbe-Mineral Interactions (2006), CMS Workshop Lectures, \$30 (Patricia A. Maurice and Leslie A. Warren, eds.), 166 pp.
- Volume 13, The Application of Vibrational Spectroscopy to Clay Minerals and Layered Double Hydroxides (2005), CMS Workshop Lectures, \$26 (J. T. Kloprogge, ed.), 285 pp.
- Volume 12, Molecular Modeling of Clays and Mineral Surfaces (2003), CMS Workshop Lectures, \$26 (J. D. Kubicki and W. F. Bleam, eds.), 229 pp.
- Volume 11, Teaching Clay Science (2002) CMS Workshop Lectures, \$26.00 Rule and S. Guggenheim, eds.), 223 pp.

The 46th Annual Meeting of The Clay Minerals Society will be held 5-11 June 2009 in Billings, Montana. See the CMS website at: <http://www.clays.org>



Figure 4: New Orleans meeting (Left) Richard Brown, Cliff Johnston, Andrew Thomas, Paul Schroeder (Right). (Photo courtesy of S. Guggenheim).



Figure 5: CMS New Orleans meeting. (Left) Joe Stucki, Derek Bain (Right). (Photo courtesy of S. Guggenheim).

By Stephen Guggenheim
December / 2008

8. 4TH MID-EUROPEAN CLAY CONFERENCE, ZAKOPANE, POLAND

The Mid-European Clay Conference (MECC) is fast becoming, if not already, an essential date in the international calendar of clay mineralogy events. Originally incorporating the Clay Groups from Slovakia, Poland, Hungary and Croatia, the MECC has now extended its membership to the Czech Republic, as well as the Deutsche Ton- und Tonmineralgruppe, which includes Germany, Austria and Switzerland. The latest MECC was held in the Belvedere Hotel in the mountain resort town of Zakopane, in southern Poland, from September 22 to 27th, 2008. The conference fully lived up to the standards of academic excellence set at previous venues in Slovakia, Hungary and Croatia, and attracted a total of 180 participants from 29 different countries (30 if Scotland is counted separately!). It was particularly gratifying to see so many enthusiastic young scientists with a direct interest in the application of clay mineralogy to such a wide variety of different fields. In addition to sessions devoted to topics that are normally on the agenda in clay conferences, such as the structure and synthesis of clays and their occurrence in geological deposits and soils, there were also symposia on more unusual themes such as iron-rich clay materials, layered double hydroxides and clays as nanomaterials, as well as numerous different applications of clay mineralogy in the industrial and environmental spheres. One can only conclude that interest in clay mineralogy in all of its varied aspects continues to be in a healthy and vital state in mid-Europe. Some personal highlights of the conference were the introduction by Professor Leszek Stoch, who traced important developments in clay mineralogy in a historical context, an aspect that is easily overlooked if not forgotten in these days of on-line data bases that often end at 1980, the masterly plenary lecture by Victor Drits synthesizing his outstanding work and that of his colleagues on *trans*-vacant and *cis*-vacant layer silicates over the last 15 to 20 years, and the plenary lecture by Goran Durn on Mediterranean terra rossa soils, which succeeded in providing clear and logical evidence of the origin of these soils and their clay mineral constituents, amply confirming my own prejudices on the matter. There were of course many other outstanding papers and interested persons can still purchase the book of abstracts from Mineralogical Society of Poland, al. Mickiewicza 30, 30-059 Kraków, Poland (free pdf version – www.mecc08.agh.edu.pl).

The organizing committee of MECC'08, led by Dr Katarzyna Górniak, deserves hearty thanks and congratulations for the very considerable work involved in organizing such a successful and enjoyable international conference. All the arrangements worked perfectly, from ice-breaker to final conference dinner, and the choice of the Belvedere Hotel as the conference venue was inspired. It is true that the Zakopane weather left a little to be desired, in that it rained from Monday to Thursday inclusive, but things improved considerably for the three post-conference field trips. The first demonstrated the geology of the Pieniny Klippen Belt and was particularly well-illustrated by the exposures seen from a rafting trip in the gorge of the Dunajec river. On the final day, two separate field trips were run. The first was to demonstrate the diagenetic history of the Podhale flysch basin, as shown by the illitization of bentonitic bands interbedded in the flysch sequence. The excursion was led by Jan Środoń who succeeded in convincing all participants that the clay mineralogists' and not the geologists' view of the geological history of the basin was the correct one. The second field trip consisted of hardy souls willing to brave the elements in the Tatra Mountains to study

various rocks, soils and weathering features, notwithstanding that all were covered in snow. The reader may judge from the photos the relative degrees of comfort and enjoyment experienced by the excursion participants (Fig. 6).



Figure 6: Selected photos from 4th MECC, Zakopane, Poland. (Photos courtesy of K. Gorniak).

Jeffrey Wilson
The Macaulay Institute
February / 2009

9. AluSiV MEETING

Held from the 3rd-5th September 2008 at the Macaulay Institute, the AluSiV meeting was conceived as a tribute to Colin Farmer (1920-2006) who, with the exception of a short period immediately after his retirement in 1983, spent all his working life at the Macaulay Institute in Aberdeen, Scotland. Colin made major contributions to our understanding of the mineralogy and chemistry of aluminium and silicon in soils, as well as pioneering the use of infrared spectroscopy in the identification, characterization and reactivity of the amorphous or poorly crystalline secondary minerals involved (Figs. 7 and 8). Under the title "AluSiV" the Clay Minerals Group of the Mineralogical Society of Great Britain & Ireland and the British Society of Soil Science endeavoured to bring together a conference that would be wide ranging from the nano to the landscape scale; where interactions between chemistry, mineralogy and biology would be the link between these scales; and where the importance of cutting-edge analytical methods would be apparent.

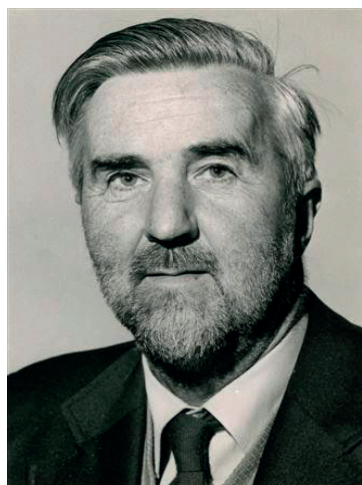


Figure 7: Colin Farmer (Photo courtesy of David S. Wray).



Figure 8: Colin Farmer, Jim Russell, Ian Black and Tony Fraser (kneeling) with a new infrared spectrometer. Circa 1970 (Photo courtesy of David S. Wray).

Jim Russell, who was a close colleague of Colin's over several decades, opened the meeting with a „A tribute to Victor Colin Farmer“ (download a podcast of this from <http://www.minersoc.org/pages/groups/cmg/alusiv-archive.html>). Jim described how the first IR spectrometer was obtained at the Macaulay in 1954 and how quickly Colin mastered the reading of IR spectra.

He went on to describe how a paper with Bruce Mitchell in 1962 was the first lead into Colin's pioneering work on imogolite and the importance of amorphous minerals in soils. The first scientific talk of the conference was the 8th George Brown lecture presented by Roger Parfitt, of Landcare New Zealand on „Allophane and imogolite and their influence on

biogeochemistry". Roger reviewed the formation, structure and properties of allophane and imogolite in soils and then went on to explore the interactions between these minerals from a biogeochemistry perspective in relation to carbon sequestration, the sorption of phosphorous, and the interactions of allophane and imogolite with heavy metals and pathogens in soils. This was followed by a lecture by Jon Petter Gustaffson, the first of four invited lectures. Jon Petter spoke on „Aluminium and silicon solubility in forest soils – discussion of the relevant mechanisms" and discussed the processes that control Al solubility including the role of imogolite-type material and the possible importance of processes such as Al adsorption onto Fe-oxides. It was clear from this talk that there is still ample scope for collaboration between modellers and mineralogists to advance our understanding of natural processes. Three talks on allophane and imogolite came next - starting with Simon Delattre who described a first-principles study of imogolite; Clement Levard then described a synthetic approach to the characterization of both allophane and imogolite; and finally Abidin Zaenal described the results of a study to understand the structure and surface properties of allophane via ab initio calculations. This set of talks served to emphasize the continued and expanding interest in these natural nano-materials. After some coffee the scale of observation increased to that of the landscape and Michael Sommer delivered a very thoughtful lecture on the process he terms lateral podzolization, documenting evidence for lateral transfer of material accompanying the better known vertical transfers associated with podzolization. Transport of clay colloids and their association with heavy metals was the theme of the second talk in this session by Paola Adamo who documented and explained associations between colloids, clays, chromium and copper in soils from southern Italy, which have been polluted by the tanning industry. The final session of the day began with a lecture by Amir Sandler who used a combination of peak decomposition and XRD pattern simulation programs to document increases in the K content of mixed-layer clays in soils from Israel, changes which he related to changes in rainfall and vegetation. Bruno Lanson then described the XRD characterization of artificially prepared hydroxy-interlayered vermiculite, showing how XRD methods can be used to obtain information on the nature of the structural mechanisms involved in the transformation of vermiculite to hydroxy-interlayered vermiculite. This was followed by a talk by Jeff Wilson that described the differences in the forms of halloysite that may be encountered in soils, which he related to differences in weathering intensity and duration. The halloysite theme was continued by Steve Hillier, who outlined an application of full-pattern fitting of XRD patterns to the quantification of halloysite in soils and rocks and the potential of the method to cope with mixtures containing both kaolinite and halloysite. That completed the first day of talks and discussion was adjourned to the wine reception.

Day 2 was the field trip to examine podzolic soils in north-east Scotland and fortunately the weather was glorious sunshine and blue skies. Following a brief coffee stop at the Falls of Feugh, the coach pulled into the first locality at Glen Dye to examine a soil profile developed on glaciofluvial sands and gravels derived from granites and schists. The second locality was further up the hill at Kircram. From this site there are spectacular views of the 30 m high tor on the top of Clachnaben. The tor is known locally as the devil's bite. Legend has it that the devil took a bite out of the hillside one night as he flew back from visiting the more Godless people in the south, but the land proved to be too sour even for his taste and he spat it out. Another version has it that he spat the rock at his wife during a furious argument and thereby burying her under the tor. Modern day geologists will tell you that the tor is a residual feature

probably developed due to mechanical disintegration of the granite during peri-glacial conditions and that the cleft is a meltwater channel. The party stopped for lunch in the Clatterin Brig, and lunch was followed by a brief stop at the Macaulay Institute's research farm at Glensaugh. The final stop of the day at Candy farm in the Mearns was to examine a humus iron podzol developed in deep Old Red Sandstone Drift.

The conference dinner was held that evening at the Patio hotel and although the beer was expensive the organisers had ensured that there was plenty of wine. Jeff Wilson was given a camera to look after and showed that he had clearly missed his calling in life as a photographer as he enthusiastically snapped away at every table. The conference was honoured to have Colin Farmer's family represented by Colin's wife Jane, his son George and his wife Linda. Following the meal, the Clay Minerals Group had a surprise to spring on long-serving member Derek Bain. Derek is the only member of the Group who has held all four offices of Chairman, Secretary, Treasurer, and Principal Editor of Clay Minerals. Derek was presented with a certificate to mark his election to Honorary Life Fellowship of the Mineralogical Society in recognition of his service to the Mineralogical Society and the Clay Minerals Group over many years.

Day 3 was back to the talks and kicked off with a keynote presentation by Sabine Petit on the „Contribution of infrared spectroscopy to studies of clay minerals“ Sabine began by recounting how as a student she had encountered Colin Farmer at the International Clay Conference in 1989, but, having begun to read his book, she held him in so much awe that she was unable to summon up the courage to speak to him. Torstein Seiffarth continued the infrared theme of the morning with a talk about Cu²⁺-and NH₄⁺-exchanged montmorillonites from bentonites. Following a brief coffee break the final keynote speaker, Jana Madejová, spoke about the „Possibilities of near-infrared spectroscopy in the investigation of reduced-charge smectites“. Before delivering her talk Jana also described how she had had the opportunity to talk with Colin when she had first visited the Macaulay Institute 11 years previously and how her copy of his book on infrared spectroscopy is the only book she will never lend to anyone else. The remainder of the morning session was also devoted to talks on infrared spectroscopy. Georgios Chryssikos delivered a very clear lecture on the use of near infrared spectroscopy to derive the composition of palygorskite. Peter Komadel came next, describing his work with Jana Madejová on iron in smectites as seen by infrared spectroscopy.

The final afternoon session was the antipodean session on iron and aluminium oxides. Balwant Singh open the session with a detailed account of how in situ ATR-FTIR had been used to monitor P adsorption on goethite and the results fitted with surface complexation models and understood in terms of density functional theory calculations. Matt Landers went next, describing the evidence for aluminium in goethite and hematite from Australian soils and their effects on the properties of these minerals. The conference was rounded off with a presentation by Bob Gilkes on „Unexpected forms of aluminium in bauxite: a burning issue“. Bob described how various oxides, such as corundum and hercynite normally associated with high temperatures are found in some Australian bauxites and how they probably record a history of bush fires.

AluSiV was a relatively small conference, conceived as a tribute to Colin Farmer. Over the course of the three days discussion was lively, both in the lectures and in the field. We have no doubt that this was the kind of intimate and engaging conference that Colin would have thoroughly enjoyed. Many thanks to all the delegates who took part, and for financial support from the Macaulay Institute, the British Society of Soil Science, and Bruker AXS.

(A more complete photographic and audio record of this report is available from the Mineralogical Society website: <http://www.minersoc.org/pages/groups/cmng/alusiv-archive.html>).

By David S. Wray
February / 2009

10. IN MEMORIUM OF HENDRIK VAN OLPHEN

Dr. Hendrik van Olphen died on April 15, 2009 at the age of 96 in Greensboro, Vermont, USA. He is considered as one of the founding fathers of colloid clay science¹. In a series of contributions (van Olphen 1950a, 1954, 1956, 1957a, 1959, 1962, 1964, 1968a, 1977; van Olphen & Waxman 1958), he evaluated the properties of colloidal clay mineral dispersions on the basis of modern aspects and theories in colloid science, in particular the theory on the stability of hydrophobic colloids (DLVO theory, Verwey & Overbeek 1948). This concept is still accepted, considering Stern-layer adsorption of the counterions. We are now aware that in certain cases (multivalent ions, high charge density) ion-ion correlation forces can be of influence (Kjellander 1996). They contribute to the development of attractive forces between clay mineral layers and particles in the presence of calcium ions which induce the well known phenomenon of face/face aggregation (Lagaly 2006).

As a special service, van Olphen (1977) reported the calculation of repulsive and attractive forces according to the DLVO theory for the case of charge constancy during salt addition. When salt is added to a colloidal dispersion, two cases have to be distinguished: (i) the surface potential remains constant and the charge density increases or (ii) the charge density remains constant and the surface potential decreases. In most systems, the behavior of colloidal dispersions corresponds more or less the constant potential case and the surface charge is regulated. Charge regulation is an important aspect in modern colloid science (Lyklema & Duval, 2005). It is evident that the interaction between the faces of clay mineral particles corresponds to the case of charge constancy. Calculation of repulsive forces between such surfaces was evaluated by H. van Olphen (1977). He proposed a procedure which provides easy calculation of the face/face interaction between clay mineral layers and particles. However, charge regulation occurs at the edges, i. e. the charge density at the edges not only depends on the pH value of the clay mineral dispersion but can also be influenced by the adsorption of counterions as in the case of cationic surfactants on rutil (Böhmer & Koopal 1992). For instance, an excess of alkylammonium ions can be adsorbed on the edges of clay mineral particles (Lagaly 2006). In addition, the spill-over effect of the electrical field from the faces to the edges has to be considered in calculations of the edge/face interaction (Chou Chang & Sposito 1994, 1996).

Due to his employment in industry, H. van Olphen rendered outstanding services to research into technical processes where clay science and colloid science meet. He evaluated the influence of the degree of particle aggregation and aggregation modes on sedimentation, filtration, film formation, permeability, and rheology (van Olphen 1950b; 1951, 1963a, 1977). Drilling fluids represent very complex colloidal systems. They contain stabilizing and destabilizing agents to control the efficacy of drilling. Their formulation requires profound know-how. H. van Olphen (1977) explained the complex interactions between the colloidal clay mineral particles and the additives. Polymers are essential stabilizing additives. To explain the mechanism of stabilization by polymers, H. van Olphen used the terms “protective agent” and “entropic stabilization”. The theory of steric stabilization was not fully developed in the days of van Olphen’s publications. In most cases stabilization by polymers is caused by

the osmotic term, only at very short distances the entropic term may play a role (Napper 1983).

Several studies of H. van Olphen were related to fundamental reactions of clay minerals (Deeds & van Olphen 1961, 1963; van Olphen 1965, 1966a, 1969) and to clay mineral-organic interactions (van Olphen & Deeds 1962; Deeds et al. 1966; van Olphen 1968b) and their influence on the application of clay mineral dispersions (van Olphen 1963b, 1967). In his paper on CEC determination (van Olphen 1957b), he described the stabilization of oil/water-emulsions by cetyl trimethylammonium exchanged clay mineral particles. Stabilization of emulsions by colloidal particles (Pickering emulsions) was scarcely studied in van Olphen's time but attracts now increasing interest.

H. van Olphen was very modest in saying in the Preface of his book (van Olphen 1977) that the purpose of the book is to "familiarize those engaged in some phase of clay technology, in sedimentary geology, or in soil science, with modern views of colloid science and its application to clay systems". Rather, the fundamentals he described in many publications and in his book are of importance for all clay scientists. Publications of H. van Olphen, in particular his book belong to the stocks of references often cited, at least by scientists who attach great importance to fair and adequate referencing.

Sometimes, scientists have the privilege of studying systems of more beautiful appearance than drilling fluids. H. van Olphen solved the secret of Maya blue, an adsorption complex of natural indigo on palygorskite (attapulgitite) (van Olphen 1966b; Reinen et al. 2004).

By G. Lagaly and K. Beneke
July / 2009

¹ Another father of colloid clay science is Ulrich Hofmann (1903 - 1986). He detected the swelling of layered compounds, described the mode of particle aggregation in clay mineral dispersions and explained the colloid-chemical processes in ceramics production (Beneke & Lagaly 2002).

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11. RECENT AND UPCOMING MEETINGS

2009

7^{ème} COLLOQUE DU GROUPE FRANÇAIS DES ARGILES

April 2009, Toulouse, France

Organized by: Groupe Français des Argiles

Information:

Internet: <http://www.gfa.asso.fr>

46th ANNUAL MEETING OF THE CLAY MINERALS SOCIETY -CMS

June 6-11th, 2009, Billings, Montana, USA

Organized by: The Clay Minerals Society

Contact: Richard Brown

E-mail: rbrown@uyoben.com

Internet: www.clays.org

14th INTERNATIONAL CLAY CONFERENCE

June 14-20th, 2009 Castellaneta Marina, Italy

Organized by: Associazione Italiana per lo Studio delle Argille (AISA) and Association Internationale pour l'Etude des Argiles (AIPEA)

Information:

14ICC - IMAA – CNR

C. Santa Loia 85050

Tito Scalo (PZ), – Italy

Telephone: +39.0971.427294.

Facsimile: +39.0971.427295

E-mail: secretariat@14icc.org

Internet: <http://www.14icc.org>

CLAYS, CLAY MINERALS AND LAYERED MATERIALS 2009

September 21-25th, Zvenigorod, Moscow, Russia

Organized by: Russian Academy of Science and other institutions

Contact: Dr. Viktoriya Krupskaya

Phone: 0007-499-230-8296

E-mail: info@acmlm2009.ru

Internet: www.cmlm2009.ru

CLAY MINERALS GROUP (UK) ANNUAL MEETING

Theme: Advances in clay science for future geological, environmental and industrial applications

December 14-16th, Newcastle University, UK
Contact:
E-mail: David Wray - d.wray@gre.ac.uk
Claire Fialips – C.I.M.Fialips@ncl.ac.uk
Maggie White – Maggie.White@ncl.ac.uk
Internet: <http://www.minersoc.org/pages/groups/cmng/cmng.html>

2010

TRILATERAL MEETING OF CLAY MINERALS

June 6-11th, Sevilla, Spain
Organized by: Spanish Clay Society (SEA), Clay Society of Japan (CSSJ) and Clay Minerals Society (USA)
Contact: Dr. Pilar Aranda – General Secretary
E-mail: 2010TMC@sea-arcillas.es
Internet: www.sea-arcillas.es/2010TMC

MECC'10 (CONFERENCE OF MID-EUROPEAN CLAY GROUPS)

August 25-28th, Budapest, Hungary
Organized by: Eötvös L. University, Hungarian Geological Society and Clay Groups of Croatia, Czech Republic, German-Austria-Switzerland, Poland, Slovakia, and Hungary.
Contact: Dr. Tamás G. Weiszbürg
E-mail: mecc2010@mecc2010.org
szendrei@min.nhmus.hu
zsike@abyss.elte.hu
Internet: <http://www.mecc2010.org>

2011

EUROCLAY 2011 (ECGA)

June 26th - July 1st, Antalya, Turkey
Organized by: Turkish National Committee on Clay Science
Contact: Prof. Dr. Asuman Günel Türkmenođlu
Department of Geological Engineering,
Middle East Technical University, Ankara,
Turkey,
E-mail: asumant@metu.edu.tr
Internet: www.euroclay2011.org

12. COURSES AND LECTURES

9th GEORGE BROWN LECTURE (2009)

March 11th at Macaulay Institute, Aberdeen (UK)

Earth's energy 'Golden Zone': A triumph of mineralogical research

By: Dr Paul Nadeau (Statoil, Stavanger, Norway).

RESEARCH COURSE IN “CLAYS: MINERALOGY, GEOCHEMISTRY AND GEOTECHNICAL PROPERTIES”

May 11-15th 2009

Department of Earth Sciences, University of Gothenburg, Sweden in cooperation with the “Quick” project (financed by the Swedish Rescue Agency)

Announcement sent by Rodney Stevens and kept at AIPEA web site, as follows:

This course will give in-depth understanding of many properties that make clay deposits and clay minerals important in nature and society. Emphasis will be given to geotechnical characteristics, which need to be increasingly well specified in connection environmental change and stability risks in both rural and built environments. Glaciomarine deposits are most prone to “quick clay” development, with low remoulded strength, and the problems in southwestern Sweden and western Canada will be illustrated, in part, with an excursion on Friday afternoon, 15 May. Laboratory analyses of selected samples will also be carried out to illustrate both methodology and the relationships between composition, texture and the site-related effects.

The main target group for this course is PhD students within geology, physical geography and environmental science who are interested in the ground conditions and processes. However, if space permits, upper-level graduates can also follow the course as part of the Environmental Geology course (April-May) at the Department of Earth Sciences or as a separate course. Professionals are welcome to apply, and the course fee for non-student is 500 SEK per day.

Principal lecturer: Prof. Kenneth Torrance (Carlton University, Canada), internationally recognized as a leading researcher in clay science for over 40 years. Additional lectures, laboratory exercises and excursion: Prof. Rodney Stevens.

A mini-symposium on “Applied Clay Science” will be organised on Friday, 15 May, to provide participants and other researchers the opportunity to present their work, hopefully demonstrating the breadth and importance of the clay research. This meeting will include an afternoon excursion to several local sites of former “quick clay” landslides and other geotechnical and environmental issues related to the clay deposits.

Optional field and laboratory course and special projects

During the period 18-29 May the participants are offered the chance to apply the theoretical background of this course toward actual site problems. Both field and laboratory activities will be aimed at gaining practical experience. The choice of sites will depend upon the on-

going constructional and other investigations near Gothenburg and the specific interests of the participants. It is also possible to make an in-depth literature study that can be presented separately or combined with the field and laboratory activities.

Participation in main course (May 11-15th), including background literature readings, provides 2 ECTS. The optional field and laboratory course and literature study will be individually planned, and may typically range from 2-6 additional ECTS. Some financial support for travel and accommodations is available for Nordic students through the Nordic Mineralogical Network (write to Dr. Tonci Balic-Zunic: Tonci@geo.ku.dk).

For further information and course registration, please contact Rodney Stevens, +46-31-7862807; email stevens@gvc.gu.se. Deadline for registration is April 1, 2009, but acceptance of qualified applicants is on a first-come basis.

The tentative outline of lectures by Ken Torrance:

1. Introduction
2. Fundamentals of mineral structure
3. Silicate structures
4. Phyllosilicate structures
5. Phyllosilicate minerals in soil
6. Specific clay minerals
7. Oxide minerals
8. Soil minerals – origins and weatherability
9. Surface charge, cation exchange capacity, zero point of charge
10. Double layer theory and implications
11. Clay mineral identification – XRD
12. Bringing it all together – development of sensitivity – geotechnical applications – barriers – etc.

13. AIPEA MEMBERSHIP APPLICATION FORM

Family Name (Please print or type): _____

Given Name: _____

Title: _____

Mailing Address: _____

Amount of dues enclosed: \$ _____ for _____ years

Type of membership: _____

If you are an individual member of an affiliated Society, give the name of the Society:

Date: _____

Signature: _____

CHANGE OF ADDRESS NOTICE

Name: _____

New Address: _____

Date Effective: _____

Please mail dues as an international money order to the AIPEA Treasurer
Dr. Jeanne B. Percival (jperciva@nrca.gc.ca)
c/o Geological Survey of Canada
601 Booth Street
Ottawa, Ontario, CANADA K1A0E8

Fees: \$30.00 USD/4 years individual; \$15.00 USD/4 years student or retiree; \$100 USD/4 years corporate sponsor. **Note:** Sponsoring Societies pay dues on behalf of their members. To send electronically, please contact Treasurer by email.