

ASSOCIATION INTERNATIONALE POUR L'ETUDE DES ARGILES
INTERNATIONAL ASSOCIATION FOR THE STUDY OF CLAYS
INTERNATIONALE VEREINIGUNG ZUM STUDIUM DER TONE
МЕЖДУНАРОДНАЯ АССОЦИАЦИЯ ПО ИЗУЧЕНИЮ ГЛИН

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Liaison Officers from various countries link ALPEA with national clay activities around the world. Make sure that your country is represented by a Liaison Officer.

International Clay Conference, 1978

University of Oxford, England



The Sixth International Clay Conference will be held in Gt. Britain from 11 - 14 July 1978. The venue will be the University of Oxford, which offers a wide range of facilities for scientific sessions and social activities; accommodation and meals may be reserved in a number of colleges within easy walking distance of each other. Participants also have a choice of field excursions and accompanying members may enjoy a separate programme of tourist visits.

SCIENTIFIC PROGRAMME

Papers presented at the conference will be arranged under the following seven subject headings:

1. Crystal chemistry and structure
2. Colloidal properties and surface chemistry
3. Geology and sedimentology
4. Genesis and synthesis
5. Applied clay mineralogy
6. Non-crystalline and accessory minerals
7. Methods of kaolin investigation

Section 7 is being organised in collaboration with the IGCP "Genesis of Kaolin" Working Group.

The Principal Chairman in each section will present an introductory review of the topic and participants will have the opportunity of attending a Plenary Lecture on "Clay Mineralogy: whence and whither", to be presented by Dr. R.C. Mackenzie. Up to 150 papers can be accommodated by using three parallel sessions running simultaneously and, in addition, facilities will be available for the display of research results in "poster" sessions. Registrants will be informed of the contents of the programme in advance and on arrival at the conference will receive a copy of the printed book of summaries and other relevant literature.

Conference Proceedings

Papers accepted for publication in full will be printed in a volume of Proceedings, to be issued 6 - 9 months after the conference, by Elsevier Scientific Publishing Company. This will be sent, post free, to all participants and those registering as "non-attending" members. Other members of the AIPEA will be able to purchase the volume at a 30% discount of the sales price.

SOCIAL PROGRAMME

Participants will be invited to an eve-of-conference welcoming reception in Rhodes House and to a civic reception in the Town Hall of Oxford. An evening's concert is planned in the Sheldonian Theatre and, during a half-day break in the scientific sessions, participants will visit Blenheim Palace and gardens. Arrangements are being made for a memorable visit to the Woodstock Abbey estate of the Duke of Bedford where a conference banquet will be held.

ACCOMMODATION

Reservations have been made for accommodation in four of the Oxford colleges, and meals will be served in the respective dining halls. A single charge has been set to cover both full board (from dinner on 9 July to breakfast on 15 July) and attendance at social functions. Members who wish to make their own bookings for hotel accommodation may participate in the social programme at a separate charge.

CONFERENCE FEES

Registration fees are as follows:

Full member	£ 55
Non-attending member	£ 20
Accompanying member	£ 10

The charge for accommodation, all meals, and social events is £ 105. The charge for attendance at social activities only is £ 28.

ACCOMPANYING MEMBERS' PROGRAMME

Accompanying members may attend all the non-scientific activities of the conference and also participate in a separate tourist programme. A walking tour of the Oxford colleges is planned for the afternoon of 10 July, while a choice of three whole-day tours are offered for 11 July. The latter, bookable in advance, will include visits either to Bath and Lacock Abbey, Arundel Castle and Goodwood House, or Stratford-on-Avon and Warwick Castle. A whole-day excursion to London for sightseeing and shopping is planned for 14 July.

FIELD EXCURSIONS

Six field excursions are offered in Gt. Britain and one in Germany and Austria, all of a week's duration. The former include two pre-conference excursions to Southwest England and Scotland, these being repeated as post-conference excursions together with two further itineraries to the English Midlands and London and Southeast England. Cost per person varies from £ 110 to £ 132. Participants will be issued with a printed guide book and other literature and maps. Both scientific and tourist interests will be catered for. The overseas excursion, starting in Mainz on 15 July, will be organised by the IGCP "Genesis of Kaolin" Working Group and cost \$ 550 per person.

REGISTRATION

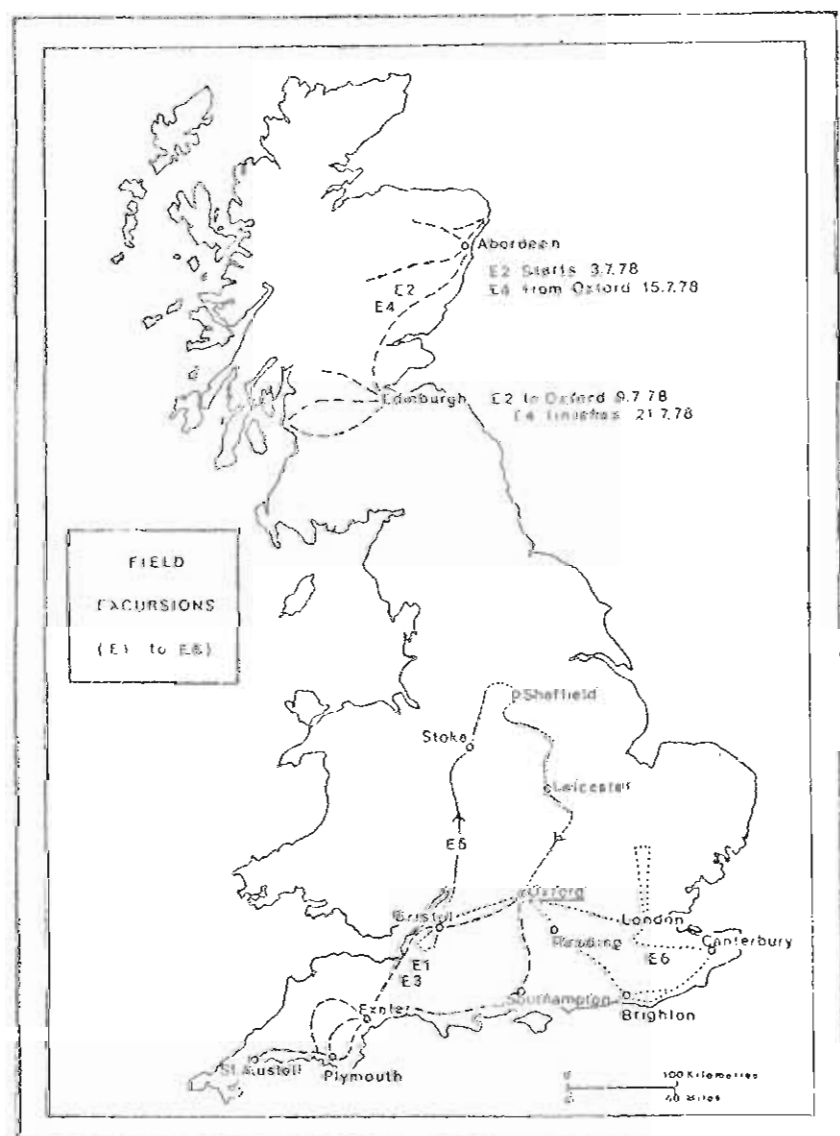
The final Circular, with registration and booking forms, has been sent to members who have indicated their intention of attending. Further copies may be obtained from the following address:

1978 INTERNATIONAL CLAY CONFERENCE
The Organising Committee
c/o The Institute of Geological Sciences
64/78 Gray's Inn Road
London WC1X 8NG
England

To ensure acceptance reservations must be placed by 31 March 1978.

The conference is being organised by the Clay Minerals Group of the Mineralogical Society, London, on behalf of the Association Internationale pour l'Etude des Argiles. Members are reminded that it is the only formal meeting of the Association and the programme allows for the transaction of business both at committee meetings and at a General Assembly for the submission of officers' reports and the election of Council members.

-- J. Bain



NEWS OF INTERNATIONAL CLAY ACTIVITIES

WORKING GROUP OF THE INTERNATIONAL GEOLOGICAL CORRELATION PROGRAM "GENESIS AND AGE OF KAOLINS"

1977 Annual Report

The 8th International Kaolin Symposium took place in Madrid (September 7-8, 1977). For the opening session Kužvart prepared a lecture updating all the genetic aspects of kaolin and its interest for mining, giving historical and conceptual information on kaolin and porcelain. The lecture was read by Murray.

Among the new regional contributions the one from Italy (Mattias) represents a great step forward with respect to the facts published in 1968 (Proc. of the 23rd Int. Geol. Congr.), and also the one from the USSR (Petrov and Chukhrov), written for the first time in English, which gives information of great interest on the extent of territories whose deposits and circumstances were unknown (partly due to the language difficulty). In addition, some new countries presented general references of their deposits for the first time: Argentina (Rossi) and Turkey (Seyhan).

An attempt at geological correlation of the kaolin deposits of Europe has begun on a continental scale. In this area, two papers were presented: one on Western European deposits by Esteoule and Esteoule-Choux with information on French, British (Freshney) and Spanish kaolins (Galan), the other on the Central European deposits by Störr, with his own material and that of Köster, Kuzvart, Szpila and Wieden. This is the first time that such reports have been brought together.

Two other papers of a continental nature are those of Murray (North America and Minato (Eastern Asia). The authors presented new information for Canada, Malaysia, Taiwan, Korea and Quemoy. The geological correlation in these continents is practically impossible as there is little similarity between them in age, genesis and geological environment (except in particular cases).

Other reports of a local character include those by Poyato and others, which completes the survey on Spanish kaolins in Andalusia by Dangic on the Bratunac deposit (Yugoslavia) and by Fujii on Japanese hydrothermal kaolins and clays.

On the genetic problem of hydrothermalism and weathering, Bristow presented a long discussion in which he analyzed all the factors which are present in the deposits of SW England, whose hydrothermal genesis was not clear during the 1974 excursion of the Working Group.

In the 4th session (other topics on kaolin) special attention was paid to the discussion on the genesis and synthesis of kaolin (Galan and La Iglesia), in which the latest facts on the synthesis of kaolin in the laboratory and genetic evidence of kaolin in the field were analyzed, attempting to correlate both types of data. Also, a first attempt was made (Galan and others) at correlating the crystallinity factors of kaolinites, particle size, genesis and age.

The geochemistry of kaolin (Köster), the problem of the behaviour of heavy minerals during the weathering of a crystalline mass (Neužil), some technical problems referring to the washing of kaolin (Konta) and the fabrication of electrical porcelain as related to the physical properties of the kaolin used (Aleixandre and others) complete the papers presented in this Symposium.

Finally, as in past conferences, Keller prepared a study (through SEM) of the kaolins found in deposits which were visited during the field trips.

A report on the 8th Symposium was prepared by E. Galan, Chairman of the Organizing Committee, Madrid 35, Avenida Juan Andrés 30.

The excursion on September 8-16, took 40 participants of the Symposium, more than half of them foreigners from 12 countries, to the kaolin deposits at Peñalen, Poveda de la Sierra, Cuenca and Villar del Arzobispo in Spain, to kaolin deposits at Serrenti and Laconi in Sardinia, and to a kaolin deposit at Sasso and kaolin-alunite deposits at Tolfa-Alumiers and Vulsini in Italy. A scientific session on the use of alunite as alumina raw material was held on 15 September in Viterbo.

Activities scheduled for 1978

9th Kaolin Symposium: a one-day session during the Sixth International Clay Conference, Oxford, 10-14 July 1978, with the topic "Methods of kaolin investigation". Excursion of the Working Group "Genesis of Kaolins" starts on July 15, in Mainz and ends July 22, in Vienna, when a half-day session will be devoted to discussions of various scientific aspects of the excursion. (16-19 July, field investigation of kaolin deposits in Federal Republic Germany - Lohrheim, Geisenheim, Tirschenreuth, Hirschau a.o., leader Prof. Köster, Arcisstrasse 21, D-8000 München, West-Germany, 19-22 July, deposits in Austria, Weinzierl, Kriechbaum, Krummussbaum, Mällersbach, leader Prof. Wieden, A-1030 Wien III, Arsenal Obj. 220, Austria. Price 550 US \$ including transport Mainz - Vienna, meals, accomodation).

Publications

Galan, E. (editor) (1977): Proceedings of the 8th International Kaolin Symposium and Meeting on Alunite, Madrid - Rome, September 7-16, 1977. - IGCP Working Group "Genesis of Kaolins".

Galan, E. (editor), Lopez-Aguayo, F.; Sánchez-Jiménez, A. (1977): Guide for the field trip in Spain, September 9-12, 1977 (36 pages). - IGCP Working Group "Genesis of Kaolins".

Esteoule, J.; Esteoule-Choux, J. (1977): Bibliography on French kaolin deposits. 8th Intern. Kaolin Symposium, Madrid - Rome, September 7-16, 1977.

Lombardi, G.; Mattias, P.; Uras, I. (1977): Guidebook for the excursion in Italy, 45 pages. - IGCP Working Group "Genesis of Kaolins".

Suriname applied for membership in the Working Group; 38 countries are now cooperating in the project.

The Group was kindly supported by an UNESCO grant, which was used to cover partly the cost of sojourn of 9 members of the Group's Executive Committee (EC) in Spain and Italy during the 8th International Kaolin Symposium organized by Prof. E. Galan, one of the 14 members of the EC.

The EC in Madrid approved at its session on the 8th September the report on the activities of the group's secretary between the Symposia in Tokyo (September 1976) and in Madrid (September 1977). The Secretary was unanimously appointed the editor and organizer of the Group's final report to be prepared in 1979 - 1980. The EC postponed the Symposium in Turkey till after 1979.

The Secretary wishes to all members of the International Kaolin Brotherhood good health, happiness in personal life and success in scientific research throughout the New Year 1978.

-- M. Kužvart, Secretary
Working Group
Institute of Geological Sciences
Charles University, Albertov 6
128 43 Praha 2, CSSR

THIRD MEETING OF THE EUROPEAN CLAY GROUPS

In one of the papers in the Proceedings it is stated that "The large amount of clay minerals in nature and their widespread distribution indicates that their formation must proceed easily at ordinary temperature". This large amount is the main reason for our European clay meetings, which also take place in an unheated state of activity and reactivity.

About 150 clay scientists gathered in early June in Oslo, Norway, for the three day Third Meeting of the European Clay Groups, arranged by the Nordic Society for Clay Research under the leadership of Prof. Ivan Th. Rosenqvist.

The 258 page volume of Proceedings - distributed in advance - ensured prepared and responsive audiences and thorough discussions of the 72 lectures given. Also the many lively corridor discussions were a characteristic feature of the conference.

Nearly all topics in modern clay research were covered at the meeting, mainly within the theme clay-organic complexes, mineral structure and surface activity, and clays in geology and pedology. Also clays in geotechnics and as industrial

minerals were dealt with. All the regular presentations are published as extended abstracts in the proceedings which also contain in full the three outstanding plenary lectures: J.J. Friberg: Molecular organization on clay surfaces and their possible role in biogenesis. A. Weiss: Replication, evolution and differentiation in clay minerals - a model of protolife. I. Th. Rosenqvist: A general theory for quick clay properties.

To those colleagues not attending the meeting, the Proceedings are recommended as the next best thing to having been there. For Swedish kronor 45,- the Proceedings may be obtained from
Nordic Society for Clay Research,
Geological Survey of Sweden,
S-104 05 Stockholm, Sweden.

There were no sceptics about the many scholarly benefits after the two previous meetings and there are certainly none after the third meeting. We are all looking forward to the fourth meeting to be held in the Federal Republic of Germany in 1980.

-- P. Graff-Petersen
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Oster Voldgade 5-7
DK-1350 Copenhagen, Denmark

REPORT ON THE FIELD-TRIP TO LÅGENDAL-MUNEDAL VALLEY ON 5 and 6 JUNE 1977

The Lågendal-Munedal valley is a glacial valley forming an extension of the Oslo-fjord. It has been studied in great detail, including geomorphology, stratigraphy, mineralogy of the different deposits and evolution since the last glaciation.

This study has shown that the clay deposits present in the valley contain both material due to mechanical grinding by the ice movement and material due to pre-glacial weathering. Many of these deposits are "quick clays", i.e. clays with a very low shear strength, which on remoulding pass into a fluid state. They are mostly composed of mica, chlorite, vermiculite and mixed layers of these minerals and do not contain smectite. Na^+ predominates in the saturating complex. This feature, the amount of rare earth elements present and geomorphological evidence show that these "quick clays" are of marine origin. These marine deposits are found up to an altitude of 175 - 180 cm above the present sea level. This feature is due to the isostatic uplift of Scandinavia after the retreat of the ice at the end of the last glaciation.

The leaching of the excess of salts out of the marine Na^+ clay, after the uplift above the sea level, has expanded the double layer around the clay particles, resulting in a strong decrease of the shear strength.

It was demonstrated that addition of NaCl again transforms the fluid clay into a firm clay with much higher shear strength.

All the participants of this field trip greatly appreciated the clear explanations and the friendliness of those in charge of the trip: Per Jørgensen, Elen Roaldset and Håkon G. Ruesslåtten.

-- F. De Coninck
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Belgium

INTERNATIONAL ASSOCIATION OF GEOCHEMISTRY AND COSMOCHEMISTRY

WORKING GROUP ON THE GEOCHEMISTRY OF NATURAL WATERS - SUB-GROUP ON WATER-ROCK INTERACTION

The subgroup was established following a suggestion made by Professor M.G. Valyashko in 1970. It is the aim of the subgroup to enhance interest in the study of water-rock interactions and to promote exchange of ideas and information between researchers in the field all over the world. To this end, ten interest groups were established, covering the following topics:

- 1) Dilute water-rock interaction, low temperature.
- 2) Diagenetic reactions, saline environments, low to moderate temperature.
- 3) Metamorphic environments
- 4) Magmatic environments
- 5) Active geothermal systems

- 6) Experimental water-rock reactions, low to moderate pressures and temperatures.
- 7) Thermodynamic and computer approaches to fluid composition
- 8) Reaction rates and kinetics
- 9) Membrane phenomena in natural systems
- 10) Solution - mineral interactions in soil genesis

The interest groups convene formally every three years at the International Symposia that are organized by the sub-group on water-rock interaction. So far symposia were held in Prague, Czechoslovakia (1973) and Strasbourg, France (1977). The next symposium is scheduled to take place in Edmonton, Canada (1980).

In addition to the interest groups, national contacts were designated in 19 countries. They publicize the activities of the subgroup and serve as a focus for subgroup members and other interested scientists in their respective countries.

Membership of the subgroup is open to all those who are interested in water-rock interaction. No membership fees are charged. Further information is available from the chairman, Dr. Brian Hitchon, Alberta Research Council, 11315-87 Avenue, Edmonton, Alberta, Canada T6G 2C2.

-- B. Hitchon

NEWS OF NATIONAL CLAY GROUPS

CLAY ACTIVITIES IN BRAZIL

Papers on clays and clay minerals presented in scientific and technical meetings (not yet published)

VIIth Brazilian Mining Symposium, Porto Alegre, Rio Grande do Sul, July 31 to August 5, 1977

Niquel project in State of Piauí - Darcy H. Lindenmayer
 Kaolin - Abel P. Ribeiro
 Pegmatitic kaolin from Mozambique - J.M. Correia Neves
 Technologic characterization of Permocarboniferous shale from Jundiá, State of São Paulo - G.F. Fuck
 Supply of raw materials for the Brazilian ceramic industry - P. Giardullo

XIth International Mineral Processing Congress, August 28 to September 9, 1977, São Paulo, Brazil

The purification of kaolins by two-liquid separation process - H.L. Shergold e C.H. Lofthouse
 Studies on the sulphatation of garnierites - M.C. Fuerstenan, M.R. Elmore and P. Ollivier

XXth Meeting of the Brazilian Ceramic Society, April 4 to April 19, 1976, Guarujá, SP

Dilatometric analysis of some Brazilian industrial clays - E.A.T. Berg
 Characterization of a kaolin clay from São João Del Rei, Minas Gerais for ceramics - R. Francesconi
 Influence of overburden on kaolin clay from Mar de Espanha, Minas Gerais, on the properties of the washed clay - S.R.F. Cardoso, P. Mazzucato e F.B. Angeleri
 Effect of the drying temperature on the rheological properties of the smectite from Campina Grande, Paraíba - L. Prado, A.R. Zandonadi e P. Souza Santos
 Technological study of clays from the State of Pernambuco - A.P.R. Araújo, P.G.C. Siqueira and T.L.V. Nery
 Comparative study of mullites from halloysite - 10A from Capão Bonito, S.P., and the unusual kaolin mineral from Piedade, S.P. - T.W. Campos and Helena L. Souza Santos
 Study of the thermal decomposition of a Brazilian talc - D.C. Gillies and J.A. Varela
 Brazilian bauxitic clays as refractory raw materials - P.R.G. Brandão

XXIst Meeting of the Brazilian Ceramic Society, March 27 to April 1, 1977, Blumenau, Santa Catarina

Determination of CEC of clays by infrared spectroscopy - A.R. Filho and E.A.T. Berg

Mineralogical composition of minus 2 µ microns fraction in some ceramic clays - S.R.F. Cardoso, E.J. Monteiro and F.B. Angeleri
 Comparative ceramic properties between clays from Ribeirão Pires and Jacupiranga, São Paulo - A. Amarante and P.R. Santos
 Properties of antigorite from Castro, Paraná - E.A.T. Berg and V.J. Souza
 Impermeabilization of masonry by smectites - H.C. Ferreira

1st Regional Symposium on Regional Geology of State of São Paulo - Brazilian Geological Society, September 5 - 7, 1977, São Paulo

Technological characterization of permocarboniferous sediments from Jundiá, S.P. for lightweight aggregate - G.F. Fuck
 Note on the occurrence of palygorskite in basalt from the Água Vermelha Dam, Fernandópolis, S.P. - E.P. Goulart e E.B. Frazão
 Quaternary sediments from the Low Tietê River Valley, S.P. - M. Brandt Neto, J.K. Yamamoto and J. Tachibana

Papers on clays and clay minerals published in Brazilian journals or in Proceedings

Geologia e Metalurgia (Escola Politécnica, Universidade de São Paulo; in Portuguese)

Minerology of nickel in Brazil - S. Alvarinho - 37, 75 (1975)
 Chrysotile mining in Brazil - J.P. Milewsky - 36, 45 (1975)
 Oil-shale in Brazil - F.M. Chaves - 39, 13 (1976)
 Bauxite in Trombetas, Pará, Brazil - I. Mousastcoshvilly - 39, 136 (1976)
 Kaolin industrialization in Northeastern Brazil - A.P. Ribeiro, 40, 353 (1976)
 Geology, mining and dressing of nickel ore from Morro do Niquel, Minas Gerais, Brazil - J.C. Griffon - 40, 385 (1976)
 Pyroexpansion of Brazilian vermiculites - A. Stellin Jr. and W.T. Hennies - 40, 433 (1976)

Proceedings of the VIth Congress of ALAFAR (6) (Latin American Society of the Producers of Refractory Materials) - October 17-22, 1976, Salvador, Bahia

Determination of quartz in Brazilian bauxitic clays - C.A.M. Soares - o. 103
 Brazilian refractory bauxites - P.R.G. Brandão - p. 213

Revista Brasileira de Ciência do Solo

Mineralogical evolution of soils from the Formação Bauru, Exaporã, São Paulo - I.F. Lepsch, H.C. Moniz and C.L. Rotta - R. Bras. Ci. Solo 1, 38 (1977)
 Soil from Estrada Nova, Piracicaba County, State of São Paulo I and II - J.L.I. Demattê, A.C. Moniz and J.E. Pessotti - R. Bras. Ci. Solo 1, 43-47 (1977)

Revista Latinoamericana de Microscopia Electrônica (Chile) - Abstracts

Souza Santos, P., Kato, H. and Helena Souza Santos - Brazilian clays containing clay minerals of the palygorskite-sepiolite group: a review - 3 (1), 162 (1976)
 Souza Santos, Helena and Souza Santos, P. - The leaching of Brazilian chrysotile by aqueous acid solutions - 3 (1), 164 (1976)
 Kiyohara, P.K., Souza Santos, P. and Souza Santos, Helena - Study of some properties of Brazilian kaolins for paper coating - 3 (1), 184 (1976)
 Clay occurrences in the State of Sergipe, Brazil (in Portuguese) p. 580 by Marcos Júlio Barbosa Mendonça, CONDESE, Aracajú, Sergipe, Brazil (1976)

Cerâmica (published by the Brazilian Ceramic Society, in Portuguese)

Salomão, J.R. and Souza Santos, P. - Effects of some chemicals on the plasticity of some clays for sanitary ware - 22 (87), 101 (1976)
 Lin, V.W. and Phelps, G.W. - Influence of particle size distribution on rheological properties of clay slips of high solid content - 22 (90), 231 (1976)
 Brandão, P.R.G. - Brazilian bauxitic clays as raw materials for refractories - 23 (91), 13 (1977)
 Rodrigues, S. and Souza Santos, P. - Effect of ammonium carbonate on the drying time of kaolinic clays - 23 (92), 51 (1977)
 Varela, J.A. and Gillies, D.C. - Study of thermal decomposition of talc - 23 (93), 103 (1977)

Revista Brasileira de Tecnologia (in Portuguese)

Preliminary studies on pyroexpansion of Brazilian vermiculites in a pilot kiln - R. Navajas and P. Souza Santos, 7, 415 (1976)

Proceedings of the 27th Meeting of the Brazilian Geological Society, Aracaju, Sergipe, October 1973, (published in 1976, in Portuguese)

Occurrence of talc in Iguape County, State of Sao Paulo - I.G. Carvalho, 1, 95 (1973)

Kaolin from Rio Capim, State of Par  - A.S.J. Krebs and J.L.G. Arantes, 1, 181 (1973)

Clay minerals in the Continental Plateau of the State of Rio Grande do Sul - L.A.P. Gamboa, A.G. Figueiredo Jr., I.R. Martins and M.L. Formoso, 1, 353 (1973)

Proceedings of the 28th Meeting of the Brazilian Geological Society, Porto Alegre, State of Rio Grande do Sul, October 1974, (published in 1976, in Portuguese)

Geology and mineralogy of clay shales of Mariana Pimentel, Guaziba County, State of Rio Grande do Sul - Silva, Z.C.C. and Formoso, M.L.L., 2, 49 (1974)

Clay mineralogy of Fray Bentos Formation in Southwestern Uruguay - Fernando, L.A. and Duza, M. - 5, 3 (1974)

Control factors for nickel concentration in S o Jo o do Piaui, State of Piaui - Santos, J.F. - 5, 25 (1974)

Evolution of feldspars to minerals of the kaolinite group through an amorphous phase - Melfi, A.J. and Cerri, C.C. - 7, 39 (1974)

New Journal on Brazilian Soil Science

A new journal, published by the Brazilian Society for Soil Science, entitled "Revista Brasileira de Ci ncia do Solo", started this year with its first volume; 4 issues will be published per year. All correspondence should be addressed to the Editor: Igo F. Lepsch, Revista Brasileira de Ci ncia do Solo, C.P. 28, 13100 Campinas, S.P., Brazil. The first issue contains a paper on palygorskite in Bauru Sandstone, S o Paulo, Brazil.

-- P. de Souza Santos
Universidade de S o Paulo
Escola Polit cnica, Administra o
Edif cio do Dep. de Minas
Cidade Universitaria, Cx. Postal 8.175
Brazil

NATIONAL CLAY MINERAL CONFERENCES OF THE GERMAN DEMOCRATIC REPUBLIC

Traditionally, the clay mineral conferences of the German Democratic Republic are organized by the Department of Geological Sciences of the Ernst-Moritz-Arndt-University of Greifswald every 3 - 5 years. In addition to these national conferences several meetings on special subjects are held each year, organized by various universities, the Academy of Sciences and the Society of Geological Sciences of the GDR (Study Group for Clay Minerals and Phase Analysis).

In the following a short survey is given on the conferences and meetings held in Greifswald:

The IIIrd National Mineral Conference was held in Greifswald from July 16 - 18, 1973, and was attended by about 100 scientists from the Soviet Union, Poland, Czechoslovakia, Hungary and the GDR. Twenty-nine papers were presented. These papers, most of them in German, are contained in the proceedings published in the "Schriftenreihe f r Geologische Wissenschaften" of the Akademie Verlag Berlin, Vol. 5, 1976.

The IVth National Clay Mineral Conference, June 14-17, 1977, was attended by 85 Czechoslovakian, Polish and GDR scientists. The 29 papers presented at this conference will be published in 1978. The conference programme included a one-day field trip to several clay deposits and processing plants: Liassic clays - Keramik works at Grimmen; Eocene clays - floor tiles works at Friedland; Pleistocene varved clays - brick-works at Uckerm nde. The conference abstracts and the field trip guide can be obtained from:

Manfred St rr
Sektion Geologische Wissenschaften
Ernst-Moritz-Arndt-Universit t
Jahnstr. 17a
DDR-22 Greifswald

In the period between these two conferences the following meetings were held:

Electron microscopy of clay minerals, Greifswald 1974 (organized by K.-H. Henning)

Vth Symposium on the Genesis of Kaolins of the IGCP, project No. 2), Dresden 1975 (cf. News Letter No. 13)

Three-layer clay minerals, Greifswald 1976 (organized by K.-F. Landgraf)

Bleaching earths, Greifswald 1977 (organized by D. Schmidt)

Clay deposits in the North of the GDR, Greifswald 1977 (organized by D. Feldhaus)

The Vth National Clay Mineral Conference will be held in the early eighties.

-- M. St rr

CLAY MINERALS GROUP OF THE HUNGARIAN GEOLOGICAL SOCIETY

On September 20 - 24, 1976 a post-graduate course on the theme "Laboratory methods of investigation of clay minerals - Part I" was held at Si fok. Methods of X-ray diffraction, thermal analysis as well as those of colloid chemistry and technological testing of clays were discussed.

Papers presented on the regular sessions of the Clay Minerals Group in Budapest, 1977:

February:

Juh sz, Z.: Report on some new results in the investigation of clay mineral - water systems

March:

Lenkei, M.: Effect of grain size of feldspars on the rheological properties of clay-water systems

Hidasi, J., T th, M., Viczi n, I.: Information on the 7th Czechoslovakian Conference on Clay Mineralogy and Petrology

April:

Berlinger, H.: Investigation of some montmorillonite-amino acid complexes

May:

M ty s, E.: The kaolinitic clay deposit at Bodrogszegi (TokaJ Mts., NE-Hungary)

June:

Csik s, Cs.: Some experience in the X-ray fluorescent analysis of silicates

A seminar on systematic clay mineralogy was started in January. Meetings are held once a month at which chapters of the book Soil Components, Vol. 2, Inorganic Components (Gieseking, J.E. (ed.) Springer Verlag, Berlin, 1975) are discussed.

-- I. Viczi n
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H-1143 Budapest, N pstadion ut 14
Hungary

ISRAELI CLAY SCIENCE SOCIETY

The annual meeting of the Israel Society for Clay Research convened in the Hebrew University Campus at Rehovot on May 1, 1977. In the day-long meeting the following papers were presented:

Y. Perlmutter and A. Banin, Surface area and swelling properties of various Israeli clays.

D. Russo and E. Bresler, An analysis of the hydraulic properties of a Na-Ca montmorillonitic soil

B. Yaron, Reactions of organo-phosphorous compounds on clay surface

M. Paecht-Morowitz, Clay catalyzed polymerization of amino-acid adenylates and its relationship to biochemical reactions

L. Heller-Kalai, Reactions of kaolinite with salts in the solid state

M. Frenkel, Autooxidation of methylolate and methylinolate on kaolinite surfaces

D. Shaked and A. Banin, Ion exchange reactions of transition metal ions on montmorillonite surfaces

R. Edelstein, S. Feigenbaum and I. Scheinberg, Ionic release from potassium containing minerals

A. Singer, Dissolution of palygorskite in dilute acids

The meeting was well attended and enabled the members of the Society to exchange information on their activities.

Officers of the Israel Society for Clay Research for the years 1976-1978 are:

President: Prof. A. Banin, Dept. of Soil and Water Sciences,
Hebrew University, Rehovot

Secretary-treasurer: Dr. U. Mingelgrin, Dept. of Soil Physical Chemistry,
Agricultural Research Organization,
Beit Dagan

Officers: Dr. A. Singer, Dept. of Soil and Water Sciences,
Hebrew University, Rehovot

-- A. Banin

THE CLAY MINERALS SOCIETY, U.S.A.

Clays and Bauxite Mix in Jamaica

A joint conference of the Clay Minerals Society and the International Committee for the Study of Bauxites, Alumina, and Aluminum was held in Kingston, Jamaica, starting August 14, 1977. In addition to the conference, field trips to various points in Jamaica were conducted.

The first field trip converged near the North shore of Jamaica after traveling through historic Spanish Town, Bog Walk, Ewarton, Monongue and Lydford. The facilities of Reynold's Jamaica Bauxite mines were visited. Bauxite was deposited in sinks in the relatively pure and porous limestone mountains. Thus, many mining pits have been and will be formed by bauxite removal. Normally, overburden is two feet or less and is saved as top soil for use when the pit is restored. All bauxite mining companies have been very conscientious in pit restoration and pits in all phases of mining and restoration were visited. In fact, it was felt that we made more pit stops than most race drivers.

The damp bauxite is partially dried to prevent sticking and then transported 6.5 miles to Ocho Rios by conveyor belt where it is then shipped to Corpus Christi.

In other instances, clays and iron are removed from the ore which develops a mess called red mud. Since there is no economic use for this mix, the mud is stored in man made lakes. The largest red mud lake in Jamaica was seen in the Mount Diablo area. The lake now covers 90 acres, is 250 feet deep at the deepest point and getting a little deeper every day.

Dr. Vincent G. Hill was chairman of the conference. Vince did a terrific job of organizing all phases of the conference and is due a vote of appreciation from all attendees.

The conference was officially opened August 16 by Dr. Hill with responses from Dr. John Hower for the CMS and Professor Olga Lahodny-Sarc for ICSOBA. The main address was given by Senator The Honorable Dudley Thompson, Minister for Jamaica. Mr. Thompson called for a closing of the scientific gap between developed and developing countries. "It is not too soon to contemplate a major international institution which would not only monitor developments in science and technology, but would also act as a clearing house for exchange of information; an international registry and purchaser for useful patents; and a financial development agency for research and development as well as for assisting the developing countries to meet the financial cost of acquiring technology on better than commercial terms." He added that developing countries could only survive if their peoples benefit from advances in science and technology.

A total attendance of 324 men and women from 27 countries added an international flavor to the conference with Clay Minerals and ICSOBA sessions being held concurrently. Some of the topics discussed in ICSOBA sessions included alternate sources for aluminum, the origin of the Jamaican bauxite deposits and what to do with the "red mud" before it covers too much of the country. The impression that was left with many clay mineralogists was that bauxite will remain the primary source for aluminum; several reasonable theories on bauxite development have been presented; and red mud is here to stay. Other topics of interest discussed at ICSOBA sessions include the following:

Vincent Hill pointed out that four distinct diagenetic stages were present in the development of bauxite deposits in Jamaica.

1. The Norstrandite stage which occurs in an alkaline and oxidizing environment. Essential minerals here are Norstrandite, gibbsite and hematite.

2. The Gibbsite stage which occurs when the environment changes from alkaline to acid but remains oxidizing. Here, Norstrandite is transformed to gibbsite.

3. The Pisolite-goethite stage which is an acid but reducing environment. Here manganese and iron migrate to form pisolites, hematite is transformed to goethite and gibbsite is recrystallized to a larger particle size. Bleached bauxite is the final product.

4. The lithification stage which involves the lithification of stage 3 bauxite by iron oxides and/or calcite.

The first two stages are classified as syngenetic while the third and fourth are diagenetic.

A method to reduce iron and titanium compounds in bauxite was presented by Haydn Murray. Since high intensity magnetic separation is successfully used to beneficiate kaolins, the procedure has been adapted, (pilot plant stage) for the beneficiation of bauxite. Pulverized ore is passed through a field of 20 kilogauss intensity where a canister is packed with a stainless steel wool. The resulting separation of iron from bauxite is better than for titanium dioxide where a canister retention time of 60 to 120 seconds exists. However, ilmenite and anatase are effectively removed and iron content has been reduced from 3.4 percent to less than one percent.

Some kaolin clays contain other clay minerals that cause slurry viscosities to be relatively high. A.C. Kunkle presented a method where an hydroxy aluminum cation effectively reduced kaolin slurry viscosities. Best results were obtained where the hydroxy aluminum cation was formed in the slurry by the addition of sodium hydroxide to aluminum chloride already dissolved in the mix. A hydroxide to aluminum ratio of 2.25 has proven to be effective. It is believed that the highly positive hydroxy aluminum cation is adsorbed by the negative 2:1 layer silicate impurities (smectite?) which alters the particle size distribution of the system.

Different homionic smectites have been heated at 400°C for various times by Dennis Eberl. Generally, the following changes have been noted:

Lithium smectite - lithium tosudite - cookite (?)
Sodium smectite - smectite - rectorite - paragonite
Potassium smectite - illite/smectite - illite
Magnesium smectite - mg-rectorite - corrensite - chlorite (?)
Calcium smectite - ca-rectorite - margenite (??)
Aluminum smectite - pyrophyllite - illite/smectite

It was determined that reaction rates decreased with pressure increases.

Crystal growth of smectites is rather complex with both internal and external factors to consider. Necip Guven believes that the major external factors are temperature, pressure, degree of disequilibrium, viscosity of the medium and impurities. Smectite aggregates can be classified into four groups:

Lamellar aggregates (Wyoming type)
Irregular aggregates (Cheto type)
Reticulated lamellar aggregates (Santa Rita type)
Globular aggregates (Otay type)

These morphological types seem to be compatible with the following crystal growth mechanisms:

1. Dendritic crystal growth
2. Growth over a colloidal phase
3. Layer-after-layer growth

Of the clays studies, the lamellar aggregate type predominated with a significant amount of the irregular aggregates also being detected.

John Hower believes that all sediments and volcanic rocks contain at least one mineral species that is unstable under conditions of deep burial. Despite their disequilibrium state, mineral assemblages in shales, sandstones, and deeply buried volcanic rocks appear to be fairly good indicators of the maximum temperature to which these rock types have been subjected. Each of the rock types has a distinct assemblage that results both from the original mineralogy and from the permeability of the rock. The distinctive diagenetic - metamorphic assemblage in shales is dominated by clay minerals; burial metamorphic mineral assemblages in volcanic rocks are dominated by zeolites and the clay mineral corrensite. Burial metamorphic mineral assemblages in sandstones are quite variable - probably because sandstones often have a high permeability and the system can be dominated by the (variable) composition of large volumes of aqueous solution that flow through the rock.

Phosphate removal from polluting effluents is a requirement in many areas. B.L. Sawney believes that alumina and kaolinite can irreversibly adsorb phosphates from different types of effluents. Sorption tests conducted with alumina and kaolinite packed columns showed an initial fast reaction followed by much slower adsorption. Some adsorption continued after breakthrough and it is believed that, once adsorption sites on the minerals are satisfied, new sites are slowly developed.

Palygorskite structural changes during dehydration and rehydration have been studied by VanScoyoc, Serna and Ahlrichs. Their work, by use of X-ray diffractograms and IR spectra, indicates that palygorskite starts to lose coordinated water at relatively low temperatures causing the structure of the mineral to fold. Although the mineral is folded when 50% of the coordinated water is lost, an ordered folded state is not reached until 65% of the water is lost. Rehydration from the folded state is rapid. Dehydration of the last half of coordinated water is accompanied by loss of structural hydroxyls. Then, rehydration and rehydroxylation of the mineral can occur under atmospheric conditions in about a month.

Layer silicates and clays found in the Rabbit Lake uranium deposit, Saskatchewan have been examined by J. Rimsaite. Uraniferous phyllosilicates, micas, chlorite, smectite, serpentine, talc and kaolinite were identified. The most intensive alterations were observed along fractures, faults and breccias and in regolithic and surface alteration zones. The phyllosilicates in the upper part of the weathering zone are bleached, depleted of iron, potassium and uranium and change from green uraniferous and common mica-chlorite intergrowth to bleached Al-Mg chlorites and smectite clays. However, just above the ground-water table, they are brightly colored and rich in iron.

"Zeo-Agriculture" and its implications were presented by Mumpton and Fishman. Research has been extensively conducted in Japan plus additional work in the U.S. concerning the use of zeolites in agriculture and animal feeds. A review of the art reveals that both the ion-exchange and adsorptive properties of natural zeolites are utilized to make more efficient use of feed nitrogen in animal nutrition, to reduce intestinal diseases prevalent in young swine, to control the moisture and ammonia content of animal manure, to regulate the release of nitrogen from chemical and natural fertilizers and to reduce the nitrogen content of feedlot and fish-hatchery runoff waters. The addition of about 10% clinoptilolite to the diets of chickens and pigs has been found to increase feed efficiency by as much as 25%. Swine are also healthier when fed 5% clinoptilolite with their food. In addition, new born pigs are also healthier and the incidence of "scours" is substantially reduced. It makes one wonder, if zeolites are beneficial to animals, how about use in humans.

Finally, there are many people who were responsible for the success of the conference. Government agencies of Jamaica, particularly the Minister of Mines, the Honorable Dudley Thompson, provided many facilities to take care of our needs and to make us comfortable. The buffet and entertainment at Yala Royal was a high point of the conference and it is felt that most of us learned some new moves that night. The many times that the liaison ladies helped each one of us must also be acknowledged and the courtesies shown by Reynolds Jamaica Bauxite on the first field trip were exceptional. To all of these good people and Vince Hill, many thanks.

-- W. F. Hower
Halliburton Services
Duncan, Oklahoma
U.S.A.

NORDIC SOCIETY FOR CLAY RESEARCH

The 1977 annual meeting was held in Stockholm, December 2, with the following program.

Sylvi Haldorsen from Norges Landbrugshøgskole, Ås-NHL, gave a paper on "Clay mineralogy and geochemical studies on sediments from the latest two ice periods and the Interglacial in between". The profile studied is found in the neighborhood of Bergen on the west coast of Norway. It seems to be unique by its complete sequence. The work is in progress and the paper will be published later.

The following papers treated subjects somewhat peripheral to clays, but related to processes in the soil.

Liisa Carlson, University of Helsinki, Dept. of Geol., "Origin, mineralogy and chemistry of manganiferous and ferruginous precipitates found in sand and gravel deposits in Finland". (Koljonen, T., Lahermo, P. and Carlson, L. (1976) Bull. Geol. Soc. Finland 48, 111-135)

Sten Ståhlberg, The National Laboratory for Agricultural Chemistry, S-75007 Uppsala, "Studies on Fixation and release of manganese in agricultural soil" (Ståhlberg et al., I (1974) Acta Agr. Scand. 24, 179-194, II (1976) Acta Agr. Scand. 26, 65-81

Allan Jerbo, Jerbo Geokonsult AB, S-85230 Sundswall, "The corrosion of vertical steel constructions in sediments"

The following officers and council were nominated:

President:	Prof. Lambert Wiklander, Inst. of Soil Sciences, S-75007 Uppsala
General Secretary:	Dr. Sven Snäll, SGU, Fack S-10405 Stockholm
Treasurer:	Mr. Dag Fredriksson, SGU, Fack S-10405 Stockholm
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Finland:	Dr. Raimo Uusinoka, Dept. Geol., University of Helsinki, SF-00170 Helsinki 17 Dr. Liisa Carlson, Dept. Geol., University of Helsinki, SF-00170 Helsinki 17
Iceland:	Cand. real. Hrefna Kristmannsdóttir, Orkustofnun, Reykjavik Cand. real. Jens Tómasson, Orkustofnun, Reykjavik
Norway:	Cand. real. Ellen Roaldset, Geol. Inst., Postboks 1047, Oslo 3 Mr. Håkon Rueslåtten, Geol. Inst. Postboks 1047, Oslo 3
Sweden:	Chief eng. Arne Gustafsson, Höganäs AB, S-26300 Höganäs Dr. Ahmed Shaikh, SGU, S-10405 Stockholm

The third news letter of the Nordic Society for Clay Research has been distributed.

The next meeting is planned to be held in Göteborg. A very severe landslide has just occurred in a small suburb in the region.
Can clay people act to prevent disasters of this kind?

-- Ann Marie Brusewitz
SGU, S-10405 Stockholm
Sweden

NEWS OF MEMBERS

On February 28, 1977, in Paris, the "Académie des Sciences" of France elected doyen Georges MILLOT to the position of geologist in the section "Sciences de l'Univers". Georges MILLOT, who has been Professor at the University Louis Pasteur in Strasbourg since 1954, is well known for his studies on sedimentary clay minerals, tropical weathering, soils and ore deposits of supergene origin, and on the processes of transformation, neof ormation and epigenesis in Geochemistry of the earth's surface. Georges MILLOT has been a member of the "Académie des Sciences, Arts et Lettres" in Belgium since 1975.

-- Hélène Paquet
Institut de Géologie
Université Louis Pasteur
67084 Strasbourg, France



FORTHCOMING MEETINGS

The first Clay Conference in Poland will be held in Bolesławiec, Lower Silesia, 25 - 28 April 1978. Two days of scientific sessions and two days of field trips are planned.

Firm commitments to attend are requested by 30 June 1977, which is also the closing date for submission of summaries. The full papers should be submitted by 30 October 1977. A book of summaries will be issued prior to the conference. The proceedings of the conference will be published within six months of the conference.

Registration fees will be approximately 40 US \$ for guests from western countries, 600,- Zł for all others and will cover attendance at conference sessions and publications.

Registration form and summaries should be sent to:

Prof. Dr. hab. Inz. L. Stoch
Instytut Geologii i Surowców Mineralnych AGH
30-059 Kraków, Al. Mickiewicza 30
Poland

-- A. Wiewióra

Tenth International Congress on Sedimentology, Jerusalem, Israel July 9 - 14, 1978

By decision of the General Assembly of the International Association of Sedimentologists held at the Ninth International Congress on Sedimentology, Nice, July 1975, the Tenth International Congress will be held in Jerusalem, Israel in 1978. This Congress will take place under the auspices of

International Association of Sedimentologists (IAS)
Israel Academy of Sciences and Humanities
Geological Survey of Israel

All correspondence and requests for scientific information should be addressed (by airmail) to:

Dr. G. Gvirtzman
Geological Survey of Israel
30 Malkhei Israel Street
Jerusalem 95501
Israel

Soil Fertility Improvements and Clay Minerals Conference
Prague, CSR, September 18 - 22, 1978

Address: Ing. Vladimír Sirový
Institute for Soil Science
Praha 6 - Ruzyně
Czechoslovakia

1st International Congress on Bentonites, Sassari, October 9 - 13, 1978
(Sardinia-Italy)

The Institute of Mineralogy and Geology of the University of Sassari will be organising the 1st International Congress on Bentonites in October 1978 sponsored by the Association Internationale pour l'Etude des Argiles (AIPEA).

The aim of this Congress is to unite all the specialists in the particular and interesting field of clay minerals.

The First Circular is a preliminary enquiry to check if such an initiative is of interest to you. In the case of numerous and internationally representative adhesions, as is sincerely wished for by the organizers, a Second, more detailed Circular will be sent out.

NEW BOOKS

Abstracts on Seminar on Amorphous Clays

A seminar dealing with amorphous and poorly crystalline clays was held at Oregon State University in August of 1976. This was the second seminar under the auspices of the U.S.-Japan Cooperative Science Program. It was sponsored by the National Science Foundation and the Japan Society for the Promotion of Science. M.E. Harward and Koji Wada were coordinators for the seminar. A limited number of extended abstracts are available. Single Copies may be obtained by writing to:

Department of Soil Science
Oregon State University
Corvallis, Oregon 97331, USA

"Summary volume" of the third Meeting of the European Clay Groups, Oslo, Norway, June 2 - 5, 1977

A number (about 300) of the "Summary volume" - Proc. of the third European Clay Conference (ed. I. Th. Rosenqvist) - are still available. A "Summary volume" can be bought for Skr 50 (including postage) from:

Sven Snäll
Secretary of the Nordic Society for Clay Research
c/o Geological Survey of Sweden
Fack
S-104 05 Stockholm, Sweden

Publicaciones Geológicas del ICAITI

- No. I Trabajos Técnicos presentados en la Primera Reunión de Geólogos de América Central (Technical Papers, First Conference of Central American Geologists) 1966 70 p., 15 fig. US \$ 9.50
- No. II Trabajos Técnicos Presentados en la Segunda Reunión de Geólogos de América Central (Technical Papers, Second Conference of Central American Geologists) 88 p., 36 fig. US \$ 11.50
- No. III Estudios Metalogenéticos de América Central y Mapa Metalogenético a color, 1:2.000.000 (Metalogenic Studies of Central American and Metalogenic Map in color, 1:2.000.000), 76 p., 1 fig. US \$ 26.50
- No. IV Informe y Trabajos Técnicos Presentados en la Tercera Reunión de Geólogos de América Central (Proceedings and Technical papers, Third Conference of Central American Geologists) 187 p., 83 fig. US \$ 22.50
- No. V Informe y Trabajos Técnicos, Presentados en la Cuarta Reunión de Geólogos de América Central (Proceedings and Technical Papers, Fourth Conference of Central American Geologists) 265 p., 92 fig. US \$ 33.00

Nota: Trabajos en español e inglés con resumen en ambos idiomas
Papers in Spanish and English with abstracts in both languages

Serie completa (Complete series): US \$ 95.00

Orders should be addressed to:

Instituto Centroamericano de Investigación y Tecnología Industrial (ICAITI)
Apartado Postal 1552 - Guatemala Ciudad,
Guatemala, C.A.

Schriftenreihe für Geologische Wissenschaften, Heft 5, 291 p.; Tonminerale - Genese, Lagerstätten, industrielle Bedeutung und Nutzung. (ed.) R. Lauterbach, Akademie-Verlag, DDR-108 Berlin

LIAISON OFFICERS

Worldwide cooperation between National Clay Groups, Scientists, and our International Association (AIPEA) is only possible through the activity of our LIAISON OFFICERS in the various countries. During the past years more and more National Clay Groups have been established and liaison officers have reported to AIPEA on their group activities. The following is a list of liaison officers presently cooperating with AIPEA.

Australia	Mr. R.M. Taylor	C.S.I.R.O., Division of Soils, Private Bag No. 2, Glen Osmond, S.A. 5064
Austria	Dr. H. Schiller	Horzingerstr. 40, 4020 Linz
Belgium	Prof. Dr. J.B. Uytterhoeven	Centrum voor Oppervlaktescheikunde en Colloïdalescheikunde, De Croylaan 42, 3030 Heverlee
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Canada	Dr. J.E. Brydon	Environment Canada, Ottawa, Ontario K1A 0H3
CSSR	Prof. Dr. J. Kosta	Katedra Petrografie na Přírodovědecké Fakultě, University Karlov, Praha 2, Albertov 6
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Israel	Prof. A. Banin	Dept. of Soil Science, The Hebrew University, POB 12, Rehovot
Italy	Prof. Dr. F. Veniale	Università di Pavia, Istituto di Mineralogia e Petrografia, Via A. Bassi, 4, Pavia 27100
Japan	Dr. T. Sudo	Geological and Mineralogical Institute, Faculty of Science, Tokyo University of Education Otsuka, Bunkyo-ku, Tokyo
Netherlands	Dr. Ir. A. Breeuwsma	Netherlands Soil Survey Institute, Stichting voor Bodemkartering, P.O. Box 98, 11 Marijkeweg, Wageningen
Poland	Dr. Anna Langier- Kuźniarowa	Geological Institute, Warszawa, Rakowiecka 4
Rumania	Dr. S. Radan	Institutul Geologic, SOS., Kiseleff 55, Bucharest
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South Africa	Dr. J. le Roux	Dept. of Soil Science, University of Natal, P.O. Box 375, Pietermaritzburg

Spain	Dr. J.M. Serratosa	Instituto de Edafología y Biología Vegetal, C.S.I.C., Serrano, 115 dpdo, Madrid (6)
Switzerland	Dr. M. Müller-Vonmoos	Eidgenössische Technische Hochschule Zürich, Institut für Kristallographie und Petrographie, 8006 Zürich, Sonneggstr. 5
United Kingdom	Mr. J.A. Bain	Institute of Geological Sciences, 64-78 Gray's Inn Road, London WC1X8NG
U.S.A.	Dr. W.F. Hower	Halliburton Services, Research Center, Duncan, Oklahoma 73533
USSR	Prof. F.V. Chukhrov	IGEM Academy of Sciences, Staromonetny 35, Moscow Zh 17

Members in countries which are not yet on this list are invited to elect a person who could act as their country's liaison officer to AIPEA. One of their main tasks is to supply the Secretary General with news on clay activities in their country. This cooperation has been developing more and more during the years, and we believe that the International Association for the Study of Clays has profited considerably. At this moment it is a great pleasure for the present Secretary General to thank all the current liaison officers for their lively cooperation aimed at a good mutual understanding among the clay scientists throughout the world.

AIPEA Council 1975 - 1978

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