

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

# AIPEA

## NEWSLETTER

MARCH 1970

NO. 4

### REPORT ON INTERNATIONAL CLAY CONFERENCE

Tokyo, September 1969

The 1969 International Clay Conference, under the auspices of AIPEA (Association International Pour l'Etude des Argiles), was held September 5-10 in Tokyo. The Science Council of Japan served as organizer and host. This was the third successful international scientific meeting of AIPEA, the previous ones being in Stockholm in 1963 and Israel in 1966.

Registration for the meeting in Tokyo included 248 scientists representing 23 countries. The importance and common interest in the structure and properties of clay systems was shown by participation of representatives of the various disciplines of geology, chemistry, civil engineering, ceramics, soil science, and water resources.

A total of 82 technical papers were presented and discussed during the five days of technical sessions. These included a range of topics with sections arranged on clay mineral structures, interstratified minerals, clay mineral genesis, adsorption and ion exchange, clay-organic complexes, and industrial applications. The spectrum of individual papers concerned such topics as structures of kaolins and micas, thermal transformations, bonding, dehydration and dehydroxylation, infrared absorption, occurrence of clay minerals, kinetics of alteration and transformation, ion uptake and equilibria, adsorption of polar and ionic compounds, methods of analyses, and stress-strength relationships. The overall quality of papers was good. It was gratifying to note the detail of investigations and the number of contributions to new knowledge.

The success of the conference can be attributed largely to the emphasis on discussion and exchange of ideas. The organization of clay conferences to accomplish this is somewhat unique. The papers presented were printed as Vol. 1 of the Proceedings and distributed to registrants in advance of the meeting. Oral presentations in Tokyo then consisted of a short summary with the bulk of the time allocated to discussion of the topic. Comments were unrestrained and usually fruitful. This organization maximized the interchange of scientific thought. Summaries of comments and oral discussions will be published as Vol. 2 of the Proceedings.

A field trip in and around Tokyo was conducted in the middle of the Conference and provided a beneficial change of pace. It gave the participants the opportunity of seeing some of the scientific points of interest and learning of the geology of the area. Problems of urban development in an area of land subsidence and inspection of volcanic ash deposits made the trip of interest

to geologist, civil engineer, ceramic engineer, and soil scientist alike.

A series of five field trips were arranged for participants following the conference. These included trips to Tohoku and Hokkaido; Nagoya and Kyoto; Nagoya, Kyoto, Okayama, Beppu and Kumamoto; Nagoya, Kyoto, Okayama, Fukuoka and Iki-Island; and Kyushu. Participants chose the field trip which best suited their interest, with emphasis on different kinds of clay deposits, refineries, ceramic industries, volcanic ash deposits, pumice flows, soils, and active volcanic areas. I participated in the tour of Kyushu, and if other trips were as good as this one, they were all excellent. The field trips were particularly beneficial since they provided a perspective of the geology of Japan and the culture of its people.

This note would be incomplete without a comment on the facilities and organization of activities. The facilities of Tokyo Bunka Kaikan (Tokyo Metropolitan Festival Hall) in Ueno Park where the conference was held were excellent. The meetings and all related activities were well organized and efficiently conducted. The Japanese were very gracious hosts.

The International Clay Conference in Tokyo was considerably expanded over previous ones, yet the characteristic high standard was maintained. Participants are now looking forward to the next meeting in Spain in 1972.

--M. E. Harward  
Oregon State University  
Corvallis, Oregon USA

NOTE: Volumes I and II of the Conference Proceedings can be obtained from:

Israel Program for Scientific Translations  
Kiryat Moshe POB 7145  
Jerusalem, Israel

#### NEWS FROM AIPEA

On the occasion of the 1969 Clay Conference at Tokyo the General Assembly approved the following decisions among others (see this Newsletter)

##### (1) New Council

The new council for the period of 1969-1972 consists of the following members:

###### President:

Professor Dr. F. V. Chukhrov  
IGEM, Academy of Sciences  
Staromonetny 35  
Moscow Zh 17, Soviet Union

###### Treasurer:

Dr. Joe L. White  
Department of Agronomy  
Purdue University  
Lafayette, Indiana 47907 USA

###### Vice President (and President-elect):

Dr. George F. Walker  
CSIRO  
Melbourne, Australia

###### Editor-in-Chief:

Professor Dr. Lisa Heller  
Department of Geology  
The Hebrew University  
Jerusalem, Israel

###### Secretary General:

Professor Dr. Udo Schwertmann  
Institut für Bodenkunde  
der Technischen Hochschule München  
D-8050 Freising-Weißenstephan  
West Germany

###### Past President:

Dr. Poul Graff-Petersen  
University of Copenhagen  
Copenhagen, Denmark

##### Members:

Professor Dr. G. W. Brindley  
Pennsylvania State University, USA

Professor Dr. T. Sudo  
Tokyo University of Education, Japan

Professor Dr. J. J. Fripiat  
University of Louvain, Belgium

Professor Dr. F. Veniale  
University of Pavia, Italy

Professor Dr. G. Millot  
University of Strasbourg, France

Professor Dr. Juan L. Martín Vivaldi  
University of Madrid, Spain

Professor Dr. E. Nemeč  
Hungarian Geological Society, Hungary

Dr. D. Jose M. Serratos Marquez  
Institute of Edaphology, C.S.I.C.  
Madrid, Spain

##### (2) Newsletter

The Newsletter will be published in the future about twice a year in somewhat different form and distributed only among members.

##### (3) Fund-Raising Committee

A fund-raising committee was established under the chairmanship of Dr. G. F. Walker.

##### (4) Membership Fee

See "Important Note" in this Newsletter.

##### (5) Nomenclature Committee

See special note in this Newsletter.

##### (6) Next Conference

See "Announcement" in this Newsletter.

#### REPORT OF THE AIPEA NOMENCLATURE COMMITTEE

The following committee members were present: G. W. Brindley (USA), F. V. Chukhrov (USSR), Paolo Gallitelli (Italy), G. Pedro (France), T. Sudo (Japan) and G. F. Walker (Australia). Letters of regret were received from R. C. Mackenzie (U.K.) chairman, and J. Konta (Czechoslovakia).

In the absence of Dr. R. C. Mackenzie, who submitted his resignation as chairman, G. W. Brindley was elected chairman and G. Pedro secretary.

The following were invited to assist the discussions: S. W. Bailey (USA), M. E. Harward (USA), J. Méring (France), B. Neumann (U.K.), K. Wada (Japan) and B. B. Zvyagin (USSR).

The minutes of the meeting held June 20 and 23, 1966, in Jerusalem, Israel, as published in the AIPEA Newsletter No. 2, 1968, were accepted.

The following were the main items discussed:

(1) Definition of "phyllosilicate" and the relation of palygorskite and sepiolite to the phyllosilicate group. The following characteristics of phyllosilicates (or layer silicates) were emphasized. (a) The Si or (Si,Al) tetrahedral sheets must be continuous, (b) the layer structure must be clearly evident in the nature of the interlayer bonding, which should be weaker than the bonding within the layers and thus give rise to characteristic properties, such as marked basal cleavage. The second criterion is necessary to rule out such minerals as cristobalite, tridymite, nepheline, which on geometrical grounds, may be described in terms of layers.

The octahedrally coordinated cations linking together the tetrahedral sheets of palygorskite and sepiolite are arranged in such a manner that layer characteristics are not characteristically developed; for example, there is no basal cleavage. Therefore it was considered that a sub-group or sub-groups of pseudo-layer structures should be recognized. One such sub-group will be the palygorskite-sepiolite group. The committee present voted unanimously against "hormite" as a group name.

(2) Imogolite: The question whether "imogolite" be accepted as a valid species was considered in the light of the most recent electron microscopic and diffraction data. The committee unanimously approved this name for a hydrous aluminosilicate having the fine thread-like nature shown by several independent studies, and having the diffraction characteristics that now seem well-established. The fact that there remains a difference of opinion regarding the nature of the structure is no reason for delaying the acceptance of the name. Because of the nature of the mineral and its frequent association with allophane, the precise chemical analysis will be difficult to obtain, especially as regards the H<sub>2</sub>O + content.

(3) Sudoite, dombassite: The situation regarding chlorites containing dioctahedral cations has become clearer since the 1966 meeting in Jerusalem and the following is now recommended:

<u>Group name</u>	Chlorite
<u>Sub-groups</u>	Dioctahedral chlorite Di, trioctahedral chlorite Trioctahedral chlorite

A dioctahedral chlorite is dioctahedral in the silicate layer and in the hydroxide layer. The term di, dioctahedral is unnecessary. Dombassite, as studied by Drits and co-workers, is such a mineral. A di, trioctahedral chlorite is dioctahedral in the silicate layer and trioctahedral in the hydroxide layer. Cookeite and sudoite belong to this sub-group. Cookeite contains significant Li<sub>2</sub>O in its chemical composition. A trioctahedral chlorite is trioctahedral in both layers.

(4) Discussions on smectites and vermiculites: These discussions concerned particularly the distinctions between smectites and vermiculites when the exchange capacity or the layer charge density is near the rather uncertain boundary between these groups. The seat of the layer charge and its magnitude are both important in determining physico-chemical properties such as hydration and swelling. It is possible that charge densities may not vary continuously for reasons of structural stability. The layer charge boundary of about 0.6 presently used is good as a first approximation, but may require refinement in the future.

--G. W. Brindley, Chairman

G. Pedro, Secretary

Any comments concerning nomenclature should be sent to Dr. G. Pedro, Laboratoire des Sols, CNRA, 78 Versailles, France.

NOMENCLATURE COMMITTEE  
1969-1972

PROPOSED MEMBERS:

<sup>Dr.</sup> Chairman, G. W. Brindley (USA), 126 Mineral Sciences Building, The Pennsylvania State University, University Park, Pa. 16802

Secretary, G. Pedro (France), Laboratoire des Sols, Centre National de Recherches Agronomiques, Route de Saint Cyr, Versailles

Members: S. W. Bailey (USA), Department of Geology, University of Wisconsin, Madison, Wisconsin 53706

<sup>Dr.</sup> K. Jasmund (Germany), Mineralogisches Institut, Universität Köln, Zulpicher Str. 47, Köln, Germany

J. Konta (Czechoslovakia), Department of Petrology and Mineralogy, Charles University, Albertov 6, Praha 11, Czechoslovakia

B. Neumann (Great Britain), Laporte Industries Ltd., Organic and Pigment Division, Patterson Court, Nutfield Road, Redhill Surrey, England

T. Sudo (Japan), Geological and Mineralogical Institute, Tokyo University of Education, Otsuka, Bunkyo-ku, Tokyo, Japan

<sup>Dr.</sup> F. Veniale (Italy), Istituto di Mineralogia, Università di Pavia, Via Bassi 4, Pavia, Italy

B. Zvyagin (USSR), IGEM AN SSSR, Staromonetny 35, Moscow Zh-17, USSR

1972 INTERNATIONAL CLAY CONFERENCE

The 4th Conference of AIPEA will be celebrated in Madrid, Spain, in 1972, organized by the Spanish Clay Society and sponsored by the National Research Council of Spain, and the University of Madrid. The President of the Organizing Committee in Spain is Professor Dr. Enrique Gutierrez Rios, Director of the Department of Inorganic Chemistry, University of Madrid, and the Secretary, Professor Dr. Juan L. Martin Vivaldi, Director of the Department of Crystallography and Mineralogy, University of Madrid.

All correspondence related to the 1972 International Clay Conference should be addressed to:

Prof. Dr. Juan L. Martin Vivaldi  
Secretary of the Organizing Committee  
1972 International Clay Conference  
Departamento de Cristalografía y Mineralogía  
Facultad de Ciencias  
Ciudad Universitaria  
Madrid 3, SPAIN

IMPORTANT NOTICE

INDIVIDUAL MEMBERSHIP DUES INCREASED TO 10 SWISS FRANCS (US \$2.30)

At the General Business Meeting of AIPEA in Tokyo on Sept. 10, 1969, a motion was made and approved that the individual membership dues for AIPEA be doubled from 5 Swiss francs (US \$1.15) to 10 Swiss francs (US \$2.30). The new rate becomes effective with the publication of this Newsletter.

PAYMENT OF MEMBERSHIP FEES

The fee for individual membership in AIPEA is a very nominal one. Because of the international nature of the group, conversion of currency from many countries into U.S. dollars presents a very serious problem. Bank charges for conversion of foreign currency into U.S. dollars in the U.S.A. may be as much as 10 to 15% of the individual membership fee. In order for AIPEA to avoid loss of income through payment of bank charges for conversion of membership fee payments into U.S. dollars, members are kindly requested to pay the membership fee in the currency of the country of the Treasurer, U.S. dollars.

a. Individual Membership	\$2.30
b. Institutional Membership	\$5.75
c. Company Membership	\$23.50
d. Sustaining Membership	\$115.00
e. Patron Membership	\$1,150.00 or more

Your cooperation in observing the following suggestions in paying your membership fees will be appreciated:

(1) Pay fee by (a) a check drawn on a New York or Chicago bank, payable in U.S. dollars, or (b) by an international postal money order payable in U.S. dollars.

(2) Pay membership fee for three or five-year periods.

(3) Make check or money order payable to AIPEA and mail to:

Dr. Joe L. White, Treasurer AIPEA  
Dept. of Agronomy  
Purdue University  
Lafayette, Indiana 47907 USA

NEWS FROM NATIONAL CLAY GROUPS

CLAY INVESTIGATIONS IN POLAND

Investigations of clays and clay minerals in Poland are carried on in many institutes and universities in departments of mineralogy, soil science, ceramics and chemistry.

The mineralogical investigations in the Geological Institute in Warszawa and branch offices are concerned mainly with the bentonites of Ordovician, Silurian, Devonian, Carboniferous and Tertiary age, graptolite shales, Tertiary clays, Ordovician and Cretaceous glauconites, and some kaolins. In addition, problems in clay mineral research methodology are being studied.

The investigations carried on in the School of Mining and Metallurgy in Kraków relate to mineralogical problems of kaolins and fire clays of Lower Silesia, bentonites of Carboniferous age, problems of methodology in thermal and X-ray analysis, and questions of clay mineral structure.

Research on clay minerals in soils is being conducted by soil scientists in Warszawa, Kraków, Lublin, Fulawy, Wrocław and in smaller centers. Ceramic clay raw materials are investigated in Warszawa, Kraków, Gliwice, and Wrocław.

The mineralogical and other fundamental data for the work in applied sciences are obtained by means of chemical, thermal, X-ray, and electron microscope analysis as well as by infrared and Mössbauer spectroscopy.

At the present time there is no special society for scientists primarily interested in clay mineralogy. There are active societies in closely related areas such as the Polish Geological Society (since 1919) and the Polish Soil Science Society (since 1936). The Polish Mineralogical Society has been recently organized and it appears that a Clay Minerals Group may be established within this organization.

For further information write to: Dr. Anna Langier-Kuźniarowa  
Geological Institute  
Rakowiecka 4  
Warszawa, Poland

SPANISH CLAY SOCIETY

Members of the Spanish Clay Group (Grupo Español de Minerales de la Arcilla - GEMA) met at the Department of Crystallography and Mineralogy of the University of Madrid on May 13 and 14, 1969.

At this meeting a representative of every Spanish center working on clay minerals gave a short communication about their lines of research. Furthermore the General Assembly of the GEMA reached the following decisions:

1. The Spanish Clay Group (GEMA) organized in 1959 with Dr. Alexandre as President and Dr. Martin Vivaldi as Secretary will become an independent Society (Sociedad Española de Arcillas -SEA).
2. The statutes and by-laws were approved.
3. The following members of the new Council were elected:

President: Prof. Dr. J. L. Martin Vivaldi  
Vice-President: Prof. Dr. J. M. Serratosa Marquez  
Secretary: Prof. Dr. J. Bermudez Polonio  
Treasurer: Prof. Dr. R. Campos Ginart

Members: Prof. Dr. F. Arredondo  
Prof. Dr. J. M. Fernandez Navarro  
Prof. Dr. Justo Alpanez  
Prof. Dr. F. Mingarro Martin

A booklet containing a short history of the Group, the statutes and by-laws, members of the Council, members of the Society, as well as a summary of the communications presented at the last meeting is in press.

Further information about the "Sociedad Española de Arcillas" can be obtained from:

Prof. Dr. Martin Vivaldi  
Presidente de SEA  
Departamento de Cristalografía y Mineralogía  
Facultad de Ciencias  
Ciudad Universitaria  
Madrid, SPAIN

GROUPE FRANCAIS DES ARGILES

The council members of the Groupe Francais des Argiles for the period June 1969 to May 31, 1972 are as follows:

President: George Millot, Strasbourg  
Vice President: George Pedro, Versailles  
German Sabtier  
Secretaries: Michel Robert, Versailles  
Hélène Paquet, Strasbourg

The Bulletin du Groupe Francais des Argiles is available at a cost of 30 French francs per year. Subscriptions and correspondence should be sent to:

M. Michel Robert, Secretary  
Groupe Francais des Argiles  
C.N.R.A., Route de St.Cyr  
78 Versailles, France

The spring meeting of the Groupe Francais des Argiles will be held in Paris on Thursday, April 23, 1970. This meeting has no fixed theme. Further information concerning the meeting may be obtained by writing to:

Hélène Paquet  
Institut de Géologie  
1, Rue Blessig  
67 Strasbourg, France

SPANISH-BELGIAN MEETING ON CLAY MINERALS

A joint meeting of the Spanish and Belgian Clay Groups will be held in Madrid, Spain, June 1-3, 1970. The following sections are being organized:

- (1) Clay-water system
- (2) Organic complexes of silicates
- (3) General

Participants wishing to present a paper are kindly requested to submit an abstract before April 1, 1970. All correspondence related to the meeting should be addressed to:

Dr. J. M. Serratosa  
Instituto de Edafología y Biología Vegetal del C.S.I.C.  
Serrano, 115 dpdo.  
Madrid 6, Spain

NORTH AMERICAN CLAY MINERALS CONFERENCE

The 19th Clay Minerals Conference and the 7th Meeting of the Clay Minerals Society will be held in Miami, Florida at the Deauville Hotel from October 13 to 17, 1970. The program will be as follows:

October 13, Tuesday	Clay alteration and weathering in the phosphate area, Tampa, Florida.
October 14, Wednesday	Technical papers
October 15, Thursday	Technical papers - morning; afternoon field trip to Everglades Natl. Park
October 16, Friday	Technical papers
October 17, Saturday	Field trip to University of Miami Oceanographic Institute and coral reefs off Florida coast.

Reports on technical or applied fields of clay mineralogy are invited. Please send titles, abstracts, and requests for further information to:

Dr. Willis E. Moody  
Ceramic Engineering  
Georgia Institute of Technology  
Atlanta, Georgia 30332

