

AIPEA

NEWSLETTER

MAY 1973

NO.8

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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DO NOT FORGET:

Any contributions from our members and national groups being of interest to the society are welcome for publication in our NEWS LETTER. Please write to the Secretary General.

INTERNATIONAL GEOLOGICAL CORRELATION PROGRAM(IGCP)

CORRELATION OF KAOLIN GENESIS AND AGE

REPORT BY DR. M.KUZVART, PRAGUE, CSR

Previous activities

The Working Group of the project "Correlation of Kaolin genesis and age", is continuing the work initiated during the 23rd Session of the International Geological Congress by the Symposium in the Genesis of Kaolin Deposits in Prague. During 1969 and 1970 an initiating body of the Working Group was formed from members of the above mentioned Symposium.

The project was accepted and approved by the Coordinating Panel of IGCP in October 1970.

The first meeting of the European members of the working group took place in Czechoslovakia in June 20th - 27th 1971. The program of the meeting included two excursions to Czechoslovak kaolin deposits and a one-day session. The first excursion was directed to Moravian kaolin deposits near Znojmo (parent rock: biotite granite and gneiss) and Lazanky (parent rock: cataclastic biotite granite). The second excursion visited kaolin deposits of Bohemia near Karlovy Vary (parent rock: leucocrate granite) and deposits of Krásný Dvůr near Podborany and Kaznějov near Plzen (parent rock: Carboniferous arkoses or arkosic sandstones). Evidence for kaolinization by weathering in situ was found on all deposits studied.

The one-day session of the working group took place in Prague in Carolinum - the oldest building of Charles University. Prof. Moretti (Italy) and Prof. Martin-Vivaldi (Spain) were the chairmen. A program for the meeting in Madrid was prepared.

Activities during the 1972 International Clay Conference

a) Scientific Sessions

The second meeting of the working group took place during the International Clay Conference in Madrid (25th - 30th June 1972; excursion 1st - 7th July 1972). Professor J.L.Martin-Vivaldi, a member of the working group and secretary general of the conference included within the programme of the conference a symposium on kaolin, a roundtable discussion on the term "kaolin" and on the classification of kaolin deposits, and an open meeting of the Kaolin working group. Two of the field trips were devoted mainly to visits of kaolin deposits.

Thirteen papers were presented in three sessions of the kaolin symposium on the 28th of June under the chairmanship and co-chairmanship of the members of the Kaolin working group, Dr. Kuzvart, Dr. Bondam, Dr. Murray, Dr. Freshney, Prof. Keller and Mr. Bristow. The papers dealt with kaolin deposits and their genesis (Kaolins of Brazil, de Souza-Santos, Kaolins of Czechoslovakia, Kuzvart, Neuzil; Kaolins of Belgium, Thorez, Bourguignon; Kaolins of Poland, Szpila), genesis of flintclay (Fujii) and halloysite (Minato, Utada) in Japan, authigenous origin of kaolinite crystals in Danian limestone (Borst) and in Lias (Auger), diagenesis of macrokaolinite (Lodding), kaolinite in soils (de Coninck, Maucorps, Cammaerts), residual and newly formed micas in kaolin (Konta), expanded kaolinite (Wiewióra) and surface properties of kaolinite (Bundy, Murray, Harrison). Full texts of all those lectures (together with abstracts of 13 additional papers on kaolin which were presented in the sessions of the International Clay Conference) were edited as a preprint volume (Kaolin symposium, Madrid 1972, 192 pages, editor Prof. J.M. Serratosa). It is the fifth volume of papers dedicated specially to kaolins (the first three volumes appeared as part of the Proceedings of the 23rd Session of IGC, Prague 1968 and a fourth volume was a special issue of Acta Universitatis Carolinae, Prague 1968).

The 13 papers on kaolin presented at the normal Sessions of the Clay Conference dealt with crystallographic aspects (polytypism: Wolfe-Giese; cohesion forces: Cruz-Cumplido, Jacobs, Fripiat; spin resonance: Angel, Hall; infrared studies: Maksimović, White; mixed layer: Wiewióra; solid state reaction: Garcia-Verduch, Moya), synthesis of kaolinite (Siffert, Wey; La Iglesia, Martin-Vivaldi) alteration in vitro related with genesis of kaolin (Rodrique, Poncelet, Herbillon; Tsuzuki, Mizutani, Hayashi, Shimizu) genesis and Epology of Spanish kaolins (Galán-Huertos, Martin-Vivaldi) and X-ray quantitative determinations of kaolinite (Edil, Krizek; Melka, Konta).

The round tabel discussion on kaolin was introduced by a lecture on the various theories concerning the conditions and age of kaolinization (Kuzvart).

The genetic definition of kaolin as a residual rock was not accepted. After two hours of lively discussion, the following tentative working definition was accepted:

"Kaolin is a rock characterized by a useful content of kaolin minerals".

Discussion on the nomenclature of subjects related to kaolin, such as secondary kaolin, clay, laterite, bauxite, bentonite, silcrete, marshallite, caliche, ortstein, terra rosa, was left for future meetings of the working group. The draft for the classification of kaolin deposits was discussed only briefly. The next major topic for discussion will be the morphology of kaolin bodies. A genetic classification can follow only after the term "kaolin" has been clearly and unequivocally defined.

Anyhow, after a proposal of Martin-Vivaldi and subsequent discussion two genetic types were accepted provisionally:

a) sedimentary kaolins; b) Residual kaolins derived by "endogenic" or "exogenic" alteration of the parent material.

b) Field trips

The members of the WG together with other participants of the Clay Conference took part in excursion No 1 to kaolin deposits in Northwestern Spain (1st - 7th July 1972). Discussion was most vigorous and intense on residual deposits at Burela (hydrothermally altered, or weathered felsite) and at Lage (Hydrothermally kaolinized granite on the crossing of two fracture zones accompanied by a quartz vein with a possible later kaolinization by supergene agents); La Guardia (kaolinised tourmaline granite with preserved original texture, transported a short distance by a solifluction or mudflow). The secondary kaolins were less debatable: Porrino is a deposit of a Miocene clay of high refractoriness, Grado - a thin bed of refractory Ordovician kaolinitic claystone (or weathered tuff?), possessing flint clay properties. Talc deposit mined near Bonar in Sierra Cantabrica, was the only deposit outside the realm of kaolins which was visited by the excursion. The discussions during the visit to the deposits have shown the importance of cooperative efforts and studies between mineralogists, geologists, geophysicists and technologists. Two modern plants for the production of chamotte, one near Oviedo, the other near La Guardia, washing plants near Burela and near Lage as well as a modern ceramic factory near Burela, a modern brick works near Porrino, and a plant for extraction of spodumen from pegmatite near Porrino were also visited.

The leaders of the excursion - Prof. Martin-Vivaldi and Prof. Galán-Huertos - reserved sufficient time for sightseeing of historical monuments in Valladolid, León, Oviedo, Lugo and Santiago de Compostela.

Excursion No 2 was devoted to kaolin deposits of the East of Spain under the leadership of Prof. López Aguayo. All those deposits are of sedimentary origin and belong to the Wealdian or Ultrillas facies (Lower and Middle Cretaceous). The typical deposits in "Utrillas" facies were those located in "Carboneras de Guadazón", Utrillas and Cuenca de Montalban. The visited Wealdian deposits were those located in "Villed" and "Villar del Arzobispo", with a similar genesis as the Utrillas facies deposits. A discussion was held on the "amored mud balls" and their sedimentological meaning.

The beautiful scenery of Sierra de Guadarrama, Sierra Cantabrica, mountains in Galicia and the Island of Dreams - La Toja, and the fantastic "Ciudad Encantada" Cuenca, as well as the marvellous view of the Valencia coast, mere the vivid facts of the kaolin Symposium. All this together with unsurpassable Spanish hospitality, made the excursion and the whole stay in Spain an unforgettable sequence of impressions, providing new knowledge, and topics for consideration.

c) Buisyness meeting

At the meeting of the kaolin Working Group, on the 30th of June, which was open to all scientists interested in this field of research, a report on following subjects was presented:

- 1) Aim, scientific substance, and proposed time schedule of the Project (no comments),
- 2) List of members of the Working Group (original body of 21 members; 16 new members were accepted),
- 3) Scheme of Laboratory studies to make the results from different countries comparable (the scheme was distributed among the members of the WG; it will be discussed at the future meetings),
- 4) Storage of data on kaolins (every participant of the meeting was given a sample hollerith card; no decision will be accepted until the results of discussion on COGEODATA system will be announced after the 24th Session of IGC),
- 5) Raising of funds for symposia, field conferences and publications of the WG (list of possible sponsors - producers of ceramic machinery and washed kaolin, exporters of china ware and kaolin - was prepared, the question of funds will be considered later. For the time being the activities of WG will be paid from national resources),
- 6) Draft of the statutes of the WG was submitted to the meeting; it was decided to discuss it later. The membership in the WG is open to everybody. Executive Council of the WG with a secretary will be elected every three years,
- 7) Geological Surveys or National Geological Committees of 24 countries that have kaolin deposits but did not participate in the kaolin symposium in Prague 1968 were asked to prepare contributions on kaolin deposits of their respective countries for presentation on a Symposium and for publication in a special volume. Positive answers were obtained from Argentine, Egypt, Portugal, Rhodesia and the USA. The Symposium planned originally in 1973 in France was postponed to 1974 and 1975 (see below: plan of activities of the WG).
- 8) Members of the WG willing to begin exchange of publications can send their papers or lists of papers to other members of the WG with a request for reciprocal return (Prof. Köster was the first to apply this method successfully).
- 9) The following members of the Working Group were elected to the Executive Council of the WG: Dr. Bondam (Denmark), Prof. Esteoule (France), Dr. Freshney (GB), Prof. Köster (FRG), Prof. Kuzvart (CSSR), Prof. Minato (Japan), Dr. Murray (USA), Prof. Neuzil (CSSR), Dr. Patterson (USA), Prof. Petrov (USSR), Prof. Martin-Vivaldi (Spain).

Activities planned for the future

The Executive Council (EC) held a session immediately after the plenary meeting of the Working Group. Dr. Kuzvart was elected secretary of the EC. The amended time schedule of the activities of the WG was approved:

1974: (March) meeting of the WG in West Europe, if possible in Strassbourg, jointly with the regional West-European Clay Conference of AIPEA (organization: Prof. Millot). Excursion to French kaolin deposits (Brittany excepted). No kaolin symposium will be held. Contributions on kaolin can be presented in the sessions of AIPEA, if accepted by the French Organizing Committee. Prof. Esteoule has kindly accepted the proposal of the EC to contact the Organizing Committee and prepare the excursion.

1974: (early September) Kaolin symposium in Great Britain, either in Plymouth or Exeter, with following program:

- 1) Presentation of regional papers on kaolin deposits
- 2) Presentation of papers on genesis, age, mineralogy and technology of kaolin
- 3) round-table discussion on the term "kaolin" and on the classification of kaolin deposits
- 4) meeting of the WG with the discussion on subjects that were not discussed in Madrid
 - a) Scheme of laboratory studies,
 - b) Storage of data on kaolins,
 - c) Raising of funds,
 - d) Approval of the Statutes of the WG.

Excursion: Kaolin deposits in Cornwall and Brittany, possibly also in the Federal Republic of Germany and the German Democratic Republic.

Organizing Committee: Dr. Freshney (secretary), Mr. Bristow, Prof. Esteoule, possibly Prof. Köster, Prof. Störr.

1975: International Clay Conference in Mexico: Meeting of the WG, excursion to kaolin deposits in Mexico; if possible an excursion in the USA (esp. in Georgia), possibly a symposium on kaolin deposits.

1976: 25th Session of the International Geological Congress in Australia: Meeting of the WG, excursion to kaolin deposits in Australia, possibly in Japan (the WG was invited kindly by Prof. Minato), Symposium on mineral deposits related to stratigraphic discontinuities and old surfaces, e.g. residual kaolin deposits (proposal of IFSEG).



BILL BRADLEY'S sudden death following an automobile accident January 16, 1973, in Gainesville, Florida, saddened clay mineralogists everywhere. Bill and Ruth had gone to Gainesville to attend a symposium in the Physics Department of the University of Florida in that city. Ruth was in the car with him when a truck ran through a red light, crashing into Bill's side of the car. Fortunately, Ruth survived the accident without apparent serious injuries. Bill never regained consciousness and died about three hours later in the hospital. Bill's body was taken to Urbana, Illinois, where he was placed in a mausoleum which happens to be in a cemetery just behind the Geological Survey building where Bill spent so many years.

It is not necessary to recount to any student of clays the outstanding scientific accomplishments of Bill Bradley. He is, perhaps, best known for his contributions to the structure of attapulgite and sepiolite. Other major contributions are in the designation and character of illite, structural

changes that take place when the clay minerals are heated, the clay mineral composition of shales and other types of sediments, etc.

Bill was recognized as an outstanding crystallographer and one whose ideas, concepts and findings carried great weight. He was likely to be right.

I knew Bill for forty years and his passing is a great personal loss to me. I can well remember when he came to work at the Illinois State Geological Survey while he was still a graduate student at the University of Illinois. I was just then getting interested in clay mineralogy and we discussed the possible future of clay mineral investigations. Bill developed an interest in this subject which never wavered. Bill and I worked together for many years after that first meeting. When I moved over to the University of Illinois from the Survey, Bill always attended my seminars and contributed tremendously to the discussions. He liked to work with students and every one of my graduate students found Bill ready and eager to discuss their researches with them. Bill never had any trouble making up his mind and expressing himself, sometime in unusual and forceful English. He was a friendly, gregarious person who enjoyed being with people and people enjoyed being with him. Every one who knew him enjoyed and marvelled at his forceful, startling, unusual, humorous way of expressing himself in "Bradleyisms" which will long remain in our memories.

Bill was born in Quincy, Illinois, on January 29, 1908. He came to the University of Illinois in 1926 as student of geology. He switched over to chemistry as graduate student and did his PhD work under Professor G.L. Clark, one of the pioneers in X-ray diffraction.

Bill and Ruth, the former Ruth Campbell of Nashville, Illinois, were married in 1935. They had two children who survive: William C. Bradley, an electrical engineer, and Mary, now Mrs. Mary Nabors.

In the last years, Bill's health has deteriorated greatly and he lost the great vigor of his earlier life, but never his enthusiasm for clay mineralogy. He was on a strict diet at the time of his death and we now know that his future prognosis was quite short. Unfortunately, Ruth is also in bad health and as I write this, is in the hospital in Austin, Texas, where they lived for the past eleven years while Bill was a Professor at the University of Texas.

Ralph E. Grim

Prof. W.F. Bradley made outstanding contributions to clay science, not only through his many publications, but also through his intense personal interest and participation in national and international meetings on clay mineralogy. He was very active in the functions of C.I.P.E.A. held in connection with geological and crystallographic congresses in the 1950's and served as Secretary-General of C.I.P.E.A. during the 1960 International Geological Congress in Copenhagen. He continued his enthusiastic support of the goals and purposes of C.I.P.E.A. as it grew and evolved into A.I.P.E.A. in 1966. In recognition of his leadership he was chosen to be President of A.I.P.E.A. for the period 1972-1975 during the International Clay Conference in Madrid. He was also serving as President of the Clay Minerals Society for 1972-1973. His death is a tremendous loss for mineralogists everywhere but will be even more keenly felt by those who had the good fortune to share his personal warmth in numerous national and international clay conferences.

Association Internationale Pour l'Etude des Argiles

The Council

IN MEMORIAM JACQUES MERING(1904-1973)

Jacques MERING who had been ill since last year, passed away in the evening of March 29 1973.

It is a great loss for the "Groupe Francais des Argiles", of which he was one of the founders. He became President of the Group from 1956 to 1958 and remained till the end an active and a much listened to member.

It is also a great loss for the "Association Internationale pour l'Etude des Argiles"(AIPEA). J.MERING had participated in the founding of the first clay organization, which was called "Comité international pour l'étude des argiles (CIPEA)" and had attended its various conferences in London(1948), Amsterdam(1950), Paris(1954) and Copenhagen(1960). At the Tokyo Congress(1969), he was elected co-chairman of the Section I "Clay minerals Structures" and as such had presented a remarkable final report during the closing session. He was in addition consulted by the president G.W. BRINDLEY during the meeting of the International Committee of nomenclature. At the last Madrid conference(1972), he was chosen chairman of the Section I: "Crystal chemistry of clay minerals"; but because of his illness, he was not able to attend and to preside over the session.

J.MERING had also participated in various clay meetings organized by different national groups: Clay minerals group (London U.K.), Groupe belge des argiles (Louvain-Bruxelles) U.S. Clays Group (15th Conference, Pittsburg 1967, USA) Spanisch clay group (Madrid, 1970).

J.MERING had done numerous researches on the structure and the physicochemical behaviour of phyllosilicates characterized by different phenomena of order or disorder: stacking, turbostratic structure, localization of isomorphous substitution He was the specialist on minerals having imperfect crystalline organization. In this ability, he had created and directed an important research center at Orléans called "Centre de Recherches sur les solides à organisation cristalline imparfaite - C.N.R.S.", where he had received the visit of many foreign colleagues.

J.MERING left behind a particularly original scientific legacy, which in the sphere of clay minerals study, will appear in years to come as a guiding light for all research workers on phyllosilicates.

G. PEDRO
Président du Groupe Français
des Argiles

COORDINATION OF WESTERN EUROPEAN CLAY SOCIETIES

During the 1972 International Clay Conference an informal meeting was held between 12 representatives of National Clay Groups of Western Europe. They agreed on establishing a committee to promote a better coordination of clay activities among the Western European Groups. Main areas of activities are joint meetings and the establishment of an European Clay Journal at the expense of the existing National Journals.

A committee was set up with Prof. Millot as Chairman, Dr. Rouxhet as secretary, one member from each of the existing clay societies and one co-op additional member (Dr. Müller-Vonmoos, Switzerland) to represent countries who at present have no national group (Austria, Luxemburg, Portugal, Switzerland, The Netherlands).

The meeting should be held each three years approximately half way between International Clay Conferences. The next would be held in Strasbourg in March 1974 (see below). For further inquiries write to

Dr. P. Rouxhet 42 Decroylaan
B 3030 HEVERLEE
Belgien

COMING EVENTS

SECOND MEETING OF THE EUROPEAN CLAY GROUP STRASBOURG (FRANCE)

13-15 MARCH 1974

A first circular was distributed among clay scientists of Western Europe to announce a joint meeting of all clay scientists of Western Europe in which preliminary registration was asked for. A second circular will be edited on September 1st 1973 requiring definite registration and giving the deadline of abstract of the communication as December 1st 1973. Only 40 communications will be accepted. For further details please write to

Dr. H. Paquet
Institute des Sciences de la Terre
1 rue Blessig
67084 Strasbourg Cedex
France

CLAY MINERALS MEETING (USA AND CANADA) 1973

The Tenth meeting of the Clay Minerals Society and the 22nd Clay Minerals Conference will be held at the Banff Springs Hotel, Banff, Alberta, Canada, October 7-11, 1973. Meeting Chairman is Dr. J.E. Gillot, Department of Civil Engineering, The University of Calgary, Calgary 44, Alberta, Canada.

Program arrangements for the meeting are:

October 8	Symposium on Microstructure of Clays
October 9	Field trip to points of geological interest in the Canadian Rockies
October 10	General Sessions
October 11	A.M. - General Sessions P.M. - Laboratory Tours

Papers for the symposium and general sessions are invited. Deadlines for titles and abstracts are May 1, 1973, and June 1, 1973, respectively. They should be sent to Dr. E. Penner, Division of Building Research, National Research Council of Canada, Ottawa, Canada K1A 0K 6.

INTERNATIONAL SEMINAR ON CLAY MINERALOGY AND CERAMIC
PROCESSES AND PRODUCTS

An international seminar on this topic will be held at Milan, Italy on 12-14 September 1973. A first circular was distributed announcing details of this seminar. Topics are:

- I. The mineralogy of clays, physical structures and chemical compositions.
- II. Clay-water interactions and the textures of pre-fired clay bodies as related to methods of preparation.
- III. Thermal reactions of clay minerals and of mixtures of clay materials.
- IV. Properties of products in relation to I, II and III.

A number of distinguished guest speakers will present interesting lectures. Among those are Dr. Brindley, Dr. Grim, Dr. Konta and others.

The Seminar is organized by the Italian Group of AIPEA in cooperation with the Assiceram (Associazione Italiana della Ceramica), and under the auspices of the United States-Italy Cooperation Science Program (National Science Foundation and Consiglio Nazionale delle Ricerche).

For the second circular and further details write to the Organization Committee:

International Seminar Clay Mineralogy and Ceramic Processes and Products c/o Assiceram - Museo Nazionale della Scienza e della Technica, Via S. Vittore, 19-20123 Milan, Italy.

THERMAL RECOVERY OF OIL: A one-week intensive course on "Thermal Recovery of Oil" will be offered at the Pennsylvania State University, University Park, Pennsylvania, from Monday, June 18 to Friday, June 22, 1973. The course will cover the practical and planning aspects of steam injection and in-situ combustion as soil recovery methods, emphasizing the design criteria. Special attention will be given to wet combustion. Practical aspects of thermal recovery operations will be discussed. Experiments will be included to illustrate some of the basic concepts involved. The course will be taught by Dr. S.M. Farouq, Ali, who has authored numerous papers and a book in this area.

NUMERICAL RESERVOIR SIMULATION: A one-week intensive course on "Numerical Simulation" will be offered at The Pennsylvania State University, University Park, Pennsylvania, from Monday, July 23 to Friday, July 27, 1973. The course will deal with the practical aspects of reservoir simulation, emphasizing the proven simulation techniques. The participants will receive operational simulation programs and will be given an opportunity to test these. The course will be taught by Dr. S.M. Farouq Ali, who has authored numerous papers and a monograph on the subject. For further details of both courses please write to:

Dr. S.M. Farouq, Ali,
11 N.I. Building
University Park
Pennsylvania

BOOK REVIEWS

The electron-optical investigation of clays, edited by J.A. Gard, Mineralogical Society, London 1971. Monograph 3, 333 pp., 244 Figures, 22 tables, Price £12.50

This book is another volume of the series on methods of investigations on clay minerals, published by the Mineralogical Society. A number of well-known specialists from different countries have contributed valuable up-to-date results from their respective view points.

Before special topics are dealt with, general aspects of electronoptical investigations are discussed in the three initial chapters, occupying about one third of the volume (by J.A. GARD and by J.J. COMER). They include such important topics as sample preparation and the evaluation of electron diffraction patterns. The mineral groups presented in the special section were selected depending upon their structural particularities and their mineralogical importance as possible constituents of certain clays and soils. It is to be highly praised that one chapter each is devoted to allophane-imogolites (by W.J. McHARDY), to silica minerals and diatoms (by J. CARTWRIGHT), to Fe-, Al-, and Mg-oxides (by R.C. MACKENZIE, D.A. FOLLETT and R. MELDRAU), featuring excellent micrographs to demonstrate the similarities and differences in their morphology, and finally to important non-clay minerals occurring in soils (by T. SUDO and by H. TAKAHASHI).

The chapter on kaolin minerals (by T.F. BATES) is quite complete and informative. In the chapter on serpentine minerals (by E.J.W. WHITFACER and J. ZUSSMANN) structural aspects are prominent, while in the chapter on smectites (by J. MÉRING and by A. OBERLIN) attention is focussed on the relations between primary and free particles, on the different methods of preparation and on the results of selected area diffraction.

As to the micas and related minerals (by E. SUIITO and H. TAKAHASHI) the electron-optical features due to lattice defects are demonstrated in an impressive way through micrographs of muscovite and phlogopite crystals. These observation may be helpful, as the authors point out, in the interpretation of similar results obtained on the less well-defined illite minerals. In the chapter on palygorskites and sepiolites (by J.J. Martin VIVALDI and R.H.S. ROBERTSON) the correlation between crystal structure and morphology is worked out, which will be quite important for the detection of such minerals in soils and sediments. The chloritic clay minerals were chosen (by T. SUDO and H. TAKAHASHI) to discuss in great detail the wide field of interstratified mineral structures. Each chapter ends with an exhaustive list of recent references.

With no exception the micrographs shown in this book are of excellent breed and excellent quality. The pleasure of looking at them is overshadowed by the fact that not too often, in practical daily work, one will be able to obtain such brilliant micrographs and diffraction patterns. A few things, such as the defect nature of micas, might be more of an scholarly interest rather than of practical help. Micrographs of illites are entirely missing. It is also to be hoped that, in a future edition, scanning electron micrographs will be included which, under certain circumstances, are superior to those taken from replicas.

The author index and the exhaustive mineral index at the end of the book are very valuable. The subject index, on the other hand, could have been somewhat more detailed.

By these few critical remarks the outstanding quality of this volume is not be impaired. As a whole, this monograph provides an excellent and authoritative source of information on all aspects of electron microscopy of clays, thus filling up a gap of long standing in this field of world-wide interest.

Last but not least the effects of the publishing house are to be praised: the high-class quality of the printing and - most important for such a book - the brilliancy of the micrographs.

This monograph will surely find wide and numerous applications.

Karl Jasmund, Cologne, GFR

Perrin, R.M.S.: The clay mineralogy of British sediments. London: Mineralogical Society (Clay Minerals Group) 1971; V + 247 Pp. Price £ 3.00 (\$ 7.50 U.S.)

The author has collected available clay-mineralogical analyses mainly by inquiries with laboratories known to be active in this field. Another part is from the literature (130 references). The samples studied are arranged and tabulated according to their geologic age and geographic location. The columns of the tables are characterised by the headings: Stratigraphy, lithology, locality, grid reference, sample (= size fraction), analytical methods, clay minerals, non-clay minerals, remarks, laboratory, date (= year), sample preparation, references. The data are conveyed chiefly by a well explained code. Most of the abbreviations begin to appear self-explanatory with some experience.

Due to the predominance of tables, the book is similar to a catalogue. There are about 20 pages of introductory text, and the tables for the individual geologic systems are preceded by verbal summaries. In the part "conclusions" (pp.203-214)

the variability and types of occurrence are summarised for the main groups of clay minerals: mica, kaolinite, smectite, chlorite, vermiculite. In addition, the most obvious directions of further research are pointed out on the basis of the gaps and inaccuracies inherent in the data available so far.

The importance of Perrin's compilation is not restricted to the British Isles, since many of the stratigraphic units continue with similar lithologies into continental Europe, inviting to comparative studies. Moreover, the present publication may be regarded as a model of what could be done in other countries.

F. Lippmann, Tübingen, GFR

AIPEA PUBLICATIONS

1972 INTERNATIONAL CLAY CONFERENCE PROCEEDINGS

As notified by Dr. J.M.Serratos, Madrid, the editor in chief of the final edition of the 1972 Clay Conference Proceedings it will be produced by The Israel Program for Scientific Translations and distributed by them among registered members of the conference. Additional copies at a price of US \$ 45 for the two volumes will be available from

Israel Program for Scientific Translations
Kingat Moshe P.O.B. 7145 Jerusalem, Israel

BACK NUMBERS OF AIPEA NEWS LETTERS

A few copies of earlier issues of our NEWS LETTER are still available free of charge for those members who joined AIPEA later and want to learn about earlier activities of the society. Please write to the Secretary General.

LATEST NEWS: 1975 INTERNATIONAL CLAY CONFERENCE

As notified by Dr. R.A. Rowland the next INTERNATIONAL CLAY CONFERENCE in Mexico City will take place between July 16 (evening registration) and July 23, 1975 with field trips before and after the Conference. It is planned to mail the first circular about June 30.

