

PERSATUAN GEOLOGI MALAYSIA

WARTA GEOLOGI

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MALAYSIA

Jil 3, No 3 (Vol. 3, No. 3)

KDN 10501

May-June 1977

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ISSUED BIMONTHLY BY THE
GEOLOGICAL SOCIETY OF MALAYSIA,
c/o Jabatan Geologi, Universiti Malaya, Kuala Lumpur, Malaysia.



Printed by Hallmark Graphic Center 29 Jalan Birch, Kuala Lumpur

PERSATUAN GEOLOGI MALAYSIA
(GEOLOGICAL SOCIETY OF MALAYSIA)

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Tujuan Persatuan Geologi Malaysia adalah untuk memajukan sains bumi, terutamanya di Malaysia dan tempat-tempat berhapiran. Sesiapa yang ingin menjadi ahli Persatuan sila dapatkan borang-borang daripada Setiausaha Kehormat.

The aim of the Geological Society of Malaysia is to promote the advancement of geological sciences particularly in Malaysia and nearby areas. Anyone interested in becoming a member of the Society should obtain the necessary forms from the Hon. Secretary.

Some Bahasa Malaysia (Malay) geographical terms

Bukit (Bt)	- hill	Kuala (K)	- mouth of river
Genting (Gtg)	- pass	Pulau (P)	- island
Gunung (G)	- mountain	Sungai (S)	- river
Jalan (Jln)	- road, street	Tanjung (Tg)	- cape
Kampung (Kg)	- village	Teluk (T)	- bay

G E O L O G Y O N S T A M P S

1. Extinct Animals and Minerals

N.S. Haile, Jabatan Geologi, Universiti Malaya, Kuala Lumpur.

Sir Ernest Rutherford is said to have classified science into three parts: 1) physics; 2) chemistry (which is an inferior and less rigorous kind of physics); and 3) stamp collecting, meaning, presumably, that the other less easily quantified disciplines such as geology and biology hardly merited the term science, and could be contemptuously dismissed as little better than a schoolboy hobby. "Stamp collecting" was thus employed by Rutherford as a disparaging term for the lowest kind of mindless accumulation of facts and artifacts. I also, I must confess, affected a superior attitude to stamp collecting and stamp collectors, until bitten by the bug, while wandering down a side street in Paris in 1967, when I saw in a shop window the striking set of Polish stamp showing prehistoric animals, illustrated in Figure 1.

I thought it might be interesting to make a collection of stamps with geological themes, since there must be (I thought) so few. I bought the Polish stamps and since that time have kept a lookout for geologic stamps. I was surprised to find how many, in fact, there are; I now have nearly 300 and my collection is certainly not exhaustive. The variety of geological stamps is such that it should be possible to base a good introductory geology course on them, although some themes (for instance dinosaurs) are heavily over-represented.

In the hope that Warta Geologi readers may find the stamps of some interest, I have undertaken to illustrate some sets, and write a few notes on them. To prepare the notes I have had to read up on those topics on which I am ignorant, which is most of them. The photographs were taken by Encik Jaafar bin Haji Abdullah.

The first set I bought is one of the best, well and boldly designed, clearly printed, with bold but not gaudy colours, although some of the poses are rather static. The 20 groszy stamp shows Edaphosaurus, one of the sail-fin reptiles or pelycosaurs which lived from Late Carboniferous to Late Permian. The use of the sail has been debated recently. Apparently it became larger in the later types of this group. Is it an ornament? It can hardly be an actual sail? It has been suggested that pelycosaurs, like modern lizards, required to bask in the sun to absorb heat before becoming active, and that the fin was a heat-absorbing organ. Thus an individual with a larger fin would get going earlier in the morning and thus be at a great advantage

compared to its smaller-finned competitors, still thawing out.

Cryptocleidus (30 groszy stamp) is a marine reptile, a plesiosaur, from the Upper Jurassic of Europe and Greenland. It has been suggested, almost certainly erroneously, that a colony of plesiosaurs lingers on in Loch Ness, Scotland, and is responsible for the reported "monster" sightings there.

Brontosaurus ("thunder lizard") - now, alas, renamed Apatosaurus - the most popular dinosaur of all, from the Upper Jurassic of North America, is shown on the 40 groszy stamp.

Brachiosaurus (1 zloty 15 groszy) can claim to have been the bulkiest dinosaur, and largest land animal of all, at 18 m long, 12 m high, and weighing 80 tonnes. Remains have been found in the Upper Jurassic of Colorado and Tanzania. It is depicted with its head and top of its neck out of the water. However, some authors doubt whether the creature could have breathed in such a position, because of the great hydrostatic pressure on the lungs. Several modern students of dinosaurs consider brachiosaurs (and their relatives the brontosaurus and Diplodocus, the longest beast of all) to be dwellers in plains and forests, and to have used their long necks to browse on trees, not as a snorkel for breathing in deep water.

The 60 groszy stamp depicts the famous small (1 m long) freshwater reptile, Mesosaurus. This genus is only found in the Late Carboniferous and Early Permian of West Africa and eastern South America, a fact cited in support of the theory of Continental Drift.

Stegosaurus (90 groszy stamp) is one of the armoured dinosaurs. About 1.5 m high, its spine was protected by a double row of large bony plates. However, its flanks appear to be unprotected, and as its spiny tail could, it is said, only move slightly from side to side, due to the type of close jointing of the vertebrae, the plates would appear not to have been very effective, if indeed their function was defensive armour. Does anyone have any other suggestions as to their use?

The remaining stamps show Styracosaurus, a horned dinosaur, Corythosaurus, a duck-billed dinosaur (both from the Upper Cretaceous of North America), the notorious carnivorous dinosaur Tyrannosaurus, and Rhamphorhynchus, a small Jurassic pterosaur, or flying reptile. These, or close relatives, are shown on other sets of stamps which I plan to comment on in a future article.

By way of contrast, Figure 2 shows a set of stamps from the Soviet Union picturing precious stones of the Urals, 1963. They show crystals of topaz (2 kopecs), amethyst (6 k) and emerald (10 k) with a rather non-descript agate (4 k), a shapeless chunk of rhodonite (12 k) and botryoidal malachite (16 k). It seems a pity that more spectacular Uralian gemstones, such as demantoid (gem-quality andradite garnet), labradorite, amazonite, and the extremely rare variety of chrysoberyl, alexandrite, are omitted.



Figure 1. Extinct Animals (Poland, 1965).

- 20 gr Edaphosaurus; 30 gr Cryptocleidus;
 40 gr Brontosaurus; 60 gr Mesosaurus;
 90 gr Stegosaurus; 1 z 15 gr Brachiosaurus;
 1 z 35 gr Styracosaurus; 3 z 40 gr Corythosaurus;
 5 z 60 gr Rhamphorhynchus; 6 z 50 gr Tyrannosaurus.



Figure 2. Precious Stones of the Urals (USSR, 1963).
2 k Topaz; 4 k Agate; 6 k Amethyst;
10 k Emerald; 12 k Rhodonite; 16 k Malachite.

NEWS OF THE SOCIETY

International Symposium on the Geology of Tin Depositsa) Symposium

The symposium to be held on 24 - 25 March 1978 has received very encouraging response. To date 19 papers have been offered (Thailand 2, Indonesia 1, Burma 1, Brazil 4, Spain 1, Nigeria 1, U.K.1, Belgium 1, Australia 2, Hongkong 1, and Malaysia 4). More papers are expected as the first circular and invitations to present papers were sent out not long ago. Several of the geologists who have offered papers have indicated that they would require financial support for them to come and present their papers. It is hoped that we can raise enough funds to support some of these speakers.

A good number of members and non-members have also expressed interest in the symposium. We have received replies from nearby areas as well as from faraway places such as Canada, Lusaka and Llandudno (Wales? where else?).

b) Tin Training Course

The course which will last for 21 days, from 26 March - 15 April, has attracted more applicants than the maximum permissible for the course (ideally 20). We have received applications from developing countries such as Bolivia, Brazil, Nigeria, Thailand, Indonesia and of course, Malaysia. Also applicants from developed countries such as USA and Australia appear to be interested as well.

Funds from AGID and UNESCO will be available to support some of the participants from developing countries. Furthermore, COSTED has agreed to provide a few travelling fellowships to participants from developing countries as well.

The course tentatively will include lectures (5 days) and fieldwork in East Coast, Peninsular Malaysia (7 days), Kuala Lumpur tin field (2 days), Kinta tin field (3 days) and Phuket (4 days). In the field trips it is hoped that the participants will have opportunities to study various types of tin deposits, mining methods and to have practical work on geochemical and geophysical exploration methods. There will also be visits to the Mines Dept. and Geological Survey, Ipoh where lectures and demonstrations may be given.

Field Trip to Pulau Redang, Trengganu

About 8 members, sufficient to fill one boat, will be making the trip to Pulau Redang, Trengganu. The date of the trip is tentatively from 22 August to 29 August 1977. Members of the party are from the Geological Survey Malaysia and University of Malaya.

Geotechnical Seminar

This seminar will be held sometime in the later part of October and will comprise the presentation of some papers in the morning followed by a field trip to the Kuala Lumpur - Karak Highway in the afternoon. One paper has been offered so far, and we hope more will be forthcoming. Papers dealing with any aspect of engineering geology are welcomed.

JKR

Bulletin Sales

Package offer: Bulletin nos. 1 - 7 including Field Guide 1 - M\$20.00 (Student members) and M\$30.00 (Full & Associate members).

Membership

The following have been elected to membership:

Student membership

Mohd. Hatta b. Abdul Karim
c/o Dept. of Geology
University of Malaya
Kuala Lumpur

Khairul Anuar b. Hussin
c/o Dept. of Geology
University of Malaya
Kuala Lumpur

Hamadi b. Che Harun
c/o Dept. of Geology
University of Malaya
Kuala Lumpur

Tan It Beng
c/o Dept. of Geology
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University of Malaya
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Lee Kam Hoong
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Kuala Lumpur

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Bangkok 2, Thailand

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 22nd Floor
 79 Robinson Road
 Singapore 1

R.B. Tate
 c/- C.M. Chisholm & Associate
 P.O. Box 1
 Herat, Afghanistan

Address Unknown

R.M. S. Lee, formerly of 90, Jln. Pudu, 2nd. Floor, Kuala Lumpur.

Library

The library of the Geological Society of Malaysia has the following publications housed in the Klompé Reading Room, Dept. of Geology, University of Malaya, Kuala Lumpur:

1. American Museum Novitates
2. American Museum of Natural History, Bulletin
3. Annales Academiae Scientiarum Fennicae, Series A
4. Association of Geoscientists for International Development, News
5. Bureau de Recherches Géologiques et Minières, Section IV
6. Commonwealth Geological Liaison Office, Newsletters and Reports
7. Contributions from the Institute of Geology and Palaeontology, Tohoku University, Japan
8. Geosurvey Newsletter, Indonesia
9. Grondboor & hamer (publications of Teylers Stichting)
10. Institution of Mining and Metallurgy - Bulletin and Transactions
11. International Commission on Stratigraphy - Circulars
12. Journal of Research of the U.S. Geological Survey
13. Journal of the Faculty of Science, University of Tokyo, Japan
14. National Science Museum, Bulletin, Series C (Geology), Japan
15. Oklahoma Geological Survey - Notes, Bulletins
16. Robertson Research International - News
17. Sains Malaysiana (a publication of the National University of Malaysia)
18. Science Reports of the Tohoku University, Sendai, Japan
19. Scripta Geologica (a publication from the Netherlands)
20. Various publications from Russia (in Russian) and China (in Mandarin).
21. Geology and Palaeontology of Southeast Asia edited by T. Kobayashi (no. 4 - current issue)

O T H E R N E W S

Siliceous Deposits of the Pacific Region

To correlate siliceous deposits in the Pacific Basin and neighbouring geosynclinal areas including Malaysia, the IGCP has started Project 115 in 'Siliceous Deposits of the Pacific Region'. The project leader is Dr. James R. Hein with Mr. Denis Tan enlisted

as the Malaysian representative member of the Group. Those members interested in this research are advised to write to:

Denis Tan
 Geological Survey of Malaysia
 P.O. Box 560
 Kuching, Sarawak, Malaysia.

Various palaeontologists in the Group have expressed willingness to identify diatoms, radiolaria, and silicoflagellates for interested researchers.

Petros - A data bank of major-element chemical analyses of igneous rocks

Petros is a major historical data bank of chemical analyses of igneous rocks. Compiled by Eastern Washington State College, the data file is being distributed on magnetic tape by the National Geophysical and Solar-Terrestrial Data Center (NGSDC). The September 1976 updated version of Petros includes 25,001 major-element chemical analyses of igneous rocks collected worldwide. They are divided into 178 groups representing geographic areas or petrologic provinces. Also included are 419 calculations of average rock compositions for selected petrologic provinces.

Analyses in Petros include percentages of SiO_2 , Al_2O_3 , Fe_2O_3 , FeO , MgO , CaO , Na_2O , K_2O , H_2O^+ , H_2O^- , TiO_2 , P_2O_5 , MnO , ZrO_2 , CO_2 , SO_3 , Cl , F , S , Cr_2O_3 , NiO , BaO . At least nine of these major oxides were determined for each analysis included in Petros. The data file also includes: a) reference (author, date); b) geographic or petrologic province; c) latitude and d) longitude to the nearest degree; e) rock name; f) geologic age by era, period, or epoch; g) type of igneous rock body in which the sample occurs (flow, pyroclastic, plutonic, altered, etc.); h) author's analysis number; and i) analytical information.

Marine Resource Data Base - Manganese Nodules

In view of the expanded interest in marine mineral resources and the environmental conditions involved in their recovery, the National Geophysical and Solar-Terrestrial Data Center (NGSDC) is

assembling a marine resources environmental data base. Two ongoing programs presently provide the bulk of the data base relating to deep ocean mining - the National Oceanic and Atmospheric Administration's Deep Ocean Mining Environmental Study (DOMES) and the International Decade of Ocean Exploration (IDOE) Manganese Nodule Program funded by the National Science Foundation. The DOMES Project is concerned with the environmental aspects of anticipated marine mining of manganese nodules, while the IDOE program relates to the distribution and chemistry of marine manganese nodules.

For further information, or to request copies of the data, please contact:

National Geophysical and Solar-Terrestrial Data Center
Code D621, NOAA/EDS
Boulder, Colorado 80302, USA.

Ocean Sediment Cores

The National Geophysical and Solar-Terrestrial Data Center (NGSDC) is making available core descriptions for 6859 ocean sediment cores collected worldwide by Columbia University's Lamont-Doherty Geological Observatory.

For further information, please address enquires to:

National Geophysical and Solar-Terrestrial Data Center
NOAA/EDS, Code D621
Boulder, Colorado 80302, USA.

Fifth Southeast Asian Conference on Soil Engineering

July 2 - 4, 1977, Bangkok, Thailand - Fifth Southeast Asian Conference on Soil Engineering, sponsored by the Asian Institute of Technology, Canadian International Development Agency, and Southeast Asian Society of Soil Engineering. Papers submitted are practical or applied in nature and will deal with the following themes: 1) Shallow and deep foundations; 2) Stability of natural slopes; 3) embankments

and excavations; 4) Retaining walls; and 5) Pavements for roads and runways. Guest lecturers will be Chin Fung Kee (Malaysia), I.B. Donald (Australia), N.B. Morgenstern (Canada) and A.D.M. Penman (UK). All enquires to:

Dr. A.S. Balasubramaniam
Secretary 5SEACSE
Asian Institute of Technology
P.O. Box 2754, Bangkok, Thailand.

International Symposium on Soft Clay

July 5 - 6, 1977, Bangkok, Thailand - sponsored by the Asian Institute of Technology, Canadian International Development Agency, International Society for Soil Mechanics and Foundation Engineering, and Southeast Asian Society of Soil Engineering. The central core of the Symposium will comprise twelve state-of-the-art reports delivered by well-known authorities on soft clay. Topics include: 1) Historical Development of Civil Engineering in Soft Clay; 2) Engineering Geology of Soft Clay deposits; 3) Exploration, Sampling and In-situ Testing of Soft Clay; 4) Shear Strength Properties of Soft Clay; 5) Stability of Earth Structures on Soft Clay; 6) Stability of Foundations of Soft Clay; 7) Compressibility and Settlement of Soft Clay; 8) Excavation and Tunnelling in Soft Clay; 9) Methods of Improving the Engineering Properties of Soft Clay; 10) Field Instrumentation for Soft Clay; 11) Seismic Problems of Soft Clay Deposits; 12) Modern Techniques of Analysis of Engineering Problems in Soft Clay. For further information write to:

Dr. R. Peter Brenner
Secretary ISSC
Asian Institute of Technology
P.O. Box 2754, Bangkok, Thailand.

Pecora III

Sponsored by the AAPG in cooperation with USGS and NASA, the Pecora Conference has been arranged to commemorate the late Dr. William T. Pecora's contribution to the development of satellite investigations

of Earth resources. This conference provides a forum for the transfer of satellite data from the research and development community to the user community. The petroleum and mining industry will present papers on the successful application of satellite data in exploration for this third Pecora Conference. The three days conference, between October 30th to November 2nd, 1977, will include in its schedule, tours of the EROS Data Center, which archives and distributes world-wide satellite data coverage and aircraft coverage of the United States. For further details contact:

Sherry Liaville
 AAPG
 P.O. Box 979
 Tulsa, Okla. 74101, USA.

Second Circum-Pacific Energy and Mineral Resource Conference

The Circum-Pacific Council for Energy and Mineral Resources Conference will be held July 30 - August 4, 1978 in the Mid-Pacific Conference Center at the Hilton Hawaiian Village, Honolulu. This international conference is sponsored by the American Association of Petroleum Geologists, the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, the Pacific Science Association, the American Mining Congress, and the University of Hawaii, and is supported by about fifty geoscience societies around the world. Approximately 125 invited papers on petroleum, oil shale, tar sands, coal, geothermal energy, nuclear energy, minerals, ores, groundwater, and related general themes will be offered by outstanding international scientists, economists and statesmen. There will be educational exhibits and workshops as well.

For further information write to:

1978 Circum Pacific Conference
 c/o AAPG
 P.O. Box 979
 Tulsa, Okla. 74101, USA.

Offshore Technology Conference

The 1978 Offshore Technology Conference will be held in Houston, Texas on May 8 - 11, 1978. Papers being solicited will cover every work aspect of offshore exploration, research and development, e.g. marine geology and geochemistry, exploration and production geology, marine biology and fisheries, geophysical investigations, engineering foundations and materials, navigation, diving, salvage and repair operations, and oceanography and meteorology. Intending authors should submit abstracts containing 200 - 300 words on standardised OTC Data Reporting Forms by September 1977. These forms may be obtained from the Society or from the Secretary, SEAPEX, P.O. Box 423, Tanglin Post Office, Singapore 10.

International Tin Symposium - Bolivia

Several Bolivian institutions and the Bolivian Ministry of Mining and Metallurgy are organising an International Tin Symposium to be held in La Paz, Bolivia from November 14 - 21, 1977. The subjects to be covered are:

Geology	:	Prospection and exploration
Mining	:	Underground, open pit and alluvial mining methods
Processing	:	Preconcentration, concentration, flotations and pyrometallurgical method of beneficiations
Metallurgy	:	Technical aspects of smelting
Uses of Tin	:	
Marketing	:	Concentrates, ingots, alloys and other tin products.

The official languages will be Spanish and English. Visits to mining districts, metallurgic plants and to points of tourist interest will be organised. Additional information may be requested from:

Simposio Internacional del Estano
 Ministerio de Minería y Metalurgia
 Avenida Ib de Julio No. 1769
 Cajon postal
 La Paz, Bolivia.

Theses from Malayan Universities

Universiti Kebangsaan Malaysia (National University of Malaysia):

1. Abdul Malek Abdul Rani: Geologi Kampong Buloh, Trengganu, Malaysia Barat.
2. Hila Ludin bin Hj. Abu Hazim: Geologi lembah la selatan, Trengganu.
3. Ibrahim bin Abdullah: Geologi kawasan Puruh Karu, Penrissen, Sarawak.
4. Ismail Alias: Geologi Ulu Nerus, Trengganu, Malaysia Barat.
5. Khairuddin bin Kassim: Geologi Kampong Sungai Tong, Trengganu, Malaysia.
6. Low Yew Lim: Geologi kawasan Barat Daya, Pulau Langkawi, Kedah.
7. Md. Shah bin Bachik: Geologi Pasir akar selatan Besut, Trengganu.
8. Md. Zin bin Che Lah: Geologi kawasan Subang Jalan Pedawan, Sarawak Barat, Malaysia.
9. Mohd. Sharif bin Arifin: Kajibumi kawasan Bukit Kesing, Trengganu.
10. Nordin Ramli: Geologi utara-tengah, Pulau Langkawi, Malaysia Barat.
11. Wan Hasan bin H.W. Zakaria: Geologi kawasan Gunung Tebu, Besut, Trengganu.
12. Zaiton Harun: Geologi kawasan Kuala Lumpur, Malaysia Barat.

University of Malaya

1. Alexander Unya ak. Ambun: Geology of an area southwest of Lubok Antu, West Sarawak.
2. Chan Nam Kuan: Geology and geophysical surveys of the proposed townsite of Durian Mas, Ulu Paka, Trengganu.
3. Chandramohan, S: Geology and mineralisation of the Ipoh - Jelapang area, Perak.
4. Cheah Tik Wah: The geology, mineralisation and some geochemical studies of the Tronoh area, Perak.
5. Cheong Seng Gee: Geology of the north-western Kuala Lumpur area, Selangor with some aspects of soil science and geohydrology.
6. Gan Lay Chin: Granites of northeastern Penang Island.
7. Goh Teck Chee: Geology of the Genting Sempah area, Selangor with some aspects of surface hydrology and weathering.

8. Lam Sia Keng: The geology of the Sebangki area, West Sarawak, Malaysia.
9. Lee Chai Peng: The geology of Labuan Island, Sabah, E. Malaysia.
10. Lee Swee Guan: Geology of the Genting Sempah area, Selangor-Pahang, with some aspects of geotechnics.
11. Lim Tow Ho: The granite petrology of the Pantai Acheh area, Penang.
12. Lum Koke Cheong: Geology and petrology of the Lanchang area, Pahang, Malaysia.
13. Mohd. Kassim b. Kinchu: Geology and a geochemical follow-up work of the Kedumpai area, West Sarawak.
14. Daniel A.A. Percival: The geology, mineralisation and geochemical studies of the Segari-Pantai Remis area, Dindings, Perak.
15. Tan Say Biow: Geology and geochemical studies of Pulau Aur, Pulau Pemanggil and the southern rim of Pulau Tioman including the adjacent seafloor, Johor-Pahang.
16. Thiruchelvam, K.: Granite geology of the northern region of Penang Island.
17. Yap Lip Sin: Geology of the Tanjong Gelang area, Pahang.
18. Yeap Siow Wan: The geology of the Wakaf Tapai - Kampong Ajil area, Central Trengganu, with emphasis on the evaluation of the ilmenite deposit.
19. Yip Foo Weng: Geology of the Sungei Besi - Serdang area, Selangor, with emphasis on geotechnics.

Review: Proceedings of COSTED Conference*

The "Proceedings of the Regional Meeting on Mineral Resources and Environment in Developing Countries: the Role of Science Education"

* Proceedings of the Regional Meeting on Mineral Resources and Environment in Developing Countries: the Role of Science Education. Edited by M. Mohinder Singh, F.S.G.P. Kalpage, A.V. Baez, Hari Narain & S. Radhakrishna. 153 pp. Price M\$10.00. Available from Dr. Mohinder Singh, Rubber Research Institute of Malaysia, P.O. Box 150, Kuala Lumpur, Malaysia. Meeting organised by Committee on Science and Technology in Developing Countries (COSTED) and Malaysian Scientific Association in association with Committee on the Teaching of Science, Scientific Committee on Problems of the Environment, International Union of Geodesy and Geophysics, Geological Society of Malaysia and University of Malaya.

has recently made its appearance in the form of a bound volume containing all the papers read at the meeting held in Kuala Lumpur from 12 to 15 April 1976.

The wide ranging theme of the meeting is reflected in the great variety of subjects which were dealt with at the meeting. The 17 papers and summary of the country reports include papers on science education, teaching and research programmes, mineral resources, natural resources, water resources, exploration techniques, environment issues, and manpower for the mineral industry. The region considered stretches from India to the Philippines.

Five of the papers are on mineral resources, environment and geoscience education in Malaysia. Dato Mohd. Salleh and D. Santokh Singh in their review of the mineral resources development in Malaysia give a brief account of the various mineral commodities currently being produced and their contribution towards the country's economy. K.F.C. Hosking in his paper on the local effect of mining on the environment of Peninsular Malaysia discusses the development of the mining industry and the resultant effects on the countryside. Land which has supported mining activities is shown to have been put to all sorts of useful purposes. The other three papers by N.S. Haile, N. Muslim and Surendra Singh deal with different aspects of geoscience education in Malaysian universities.

Papers from neighbouring Southeast Asian countries are concerned with Singapore's experience on air pollution resulting from burning of petroleum fuel (H.H. Huang), mineral resources in the Philippines (D.C. Salita and P.K. Gurrero), geoscience teaching programme for a Thai University (P. Nutalaya) and manpower for the mineral industry in Indonesia (S. Sadaryoen and F. Hehuwat).

Most of the other papers deal with different aspects of the theme of the meeting from a regional or international view points. The meeting also devoted a fair proportion of its time to discussions and workshop sessions. The conclusions and recommendation adopted after these deliberations are included in the Proceedings. A number of priority actions are proposed for implementation by UNESCO, COSTED and other relevant authorities.

The editors must be congratulated for bringing out the Proceedings in a relatively short time following the meeting. However the publication suffers from an almost total absence of illustrations. Five pages of diagrams, which provide the only illustrations in the proceedings, are stabled on to one of the pages. Several papers especially that of Hosking's, which was presented at the meeting with numerous colour slides, would be greatly improved with the aid of some photographic plates. The date of the publication and the name of the publisher is not indicated in the Proceedings.

Calender

Under this column the Society will note coming events on meetings, courses and symposia of interest to members. Date in parantheses gives the issue of Newsletter containing more information pertaining to the event.

Geological Society of Malaysia1977

- Aug 11 - 12 : National Mining Symposium, Ministry of Primary Industries, Malaysia.
- Aug 22 - 29 : Geological field trip to Pulau Redang, Trengganu. T.T. Khoo, c/o Dept. of Geology, University of Malaya, Kuala Lumpur 22-11, (Mar-Apr 1977).
- Oct : Geotechnical Seminar with field trip. J.K. Raj, c/o Dept. of Geology, University of Malaya, Kuala Lumpur, 22-11, (Mar-Apr 1977).
- Dec : Ipoh Discussion Meeting on some aspects of petroleum geology in Malaysia and the neighbouring region.

1978

- Mar 24 - Apr 15: Geology of Tin Deposits: An International Symposium and Training Course. Secretary, Organising Committee, Symposium/Training Course on Tin Deposits, c/o Dept. of Geology, University of Malaya, Kuala Lumpur 22-11, Malaysia, (Jan-Feb 1977).

Other Events1977

- Aug 3 - 5 : Utilization of mineral resources in developing countries, conference followed by visits to mining operations, Lusaka, Zambia. Prof. A.G. Shakespeare, School of Mines, University of Zambia, P.O. Box 2379, Lusaka, Zambia.

1978

- May 6 - 12 : Eleventh Commonwealth Mining and Metallurgical Congress in Hongkong. Secretary, The Institution of Mining and Metallurgy, 44 Portland Place, London W1N 4BR, England, (Mar-Apr 1977).

- May 8 - 11 : Offshore Technology Conference, Houston, USA.
6200 N. Central Expressway, Dallas, Texas 75206, USA.
- Jun 23 - 28 : International Symposium on World Oil and Gas Occurrence, sponsored by Canadian Society of Petroleum Geologists: Facts and Principles of World Oil and Gas Occurrence. Calgary, Alberta. Information: J. Browning, General Chairman, International Symposium '78, c/o 612 Lougheed Building, Calgary, Alberta T2P 1M7, Canada.
- Jul 2 - 4 : Fifth Southeast Asian Conference on Soil Engineering, Bangkok, Thailand. Dr. A.S. Balasubramaniam, Secretary, SSEACSE, Asian Institute of Technology, P.O. Box 2754, Bangkok, Thailand, (May-Jun 1977).
- Jul 5 - 6 : International Symposium on Soft Clay, Bangkok, Thailand. Dr. R. Peter Brenner, Secretary ISSC, Asian Institute of Technology, P.O. Box 2754, Bangkok, Thailand, (May-Jun 1977).
- Jul 18 - 22 : 3rd Inter-Congress of the Pacific Science Association in Appropriate Technology, Bali, Indonesia. Miss Sjamsiah Achmad, Indonesian Institute of Sciences, Tenka Cik Ditiro 43, P.O. Box 250, Jakarta, Indonesia.
- Jul 30 - Aug 4: Second Circum-Pacific Energy and Mineral Resources Conference, Honolulu, Hawaii, c/o AAPG, P.O. Box 979, Tulsa, Oklahoma 74101, USA, (May-Jun 1977).
- Nov : South-east Asia Geological Conference. Geological Society of Thailand, Dept. of Mineral Resources, Rama VI Road, Bangkok, Thailand.

