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## NEWS FROM EAST MALAYSIA

### Personalia

Recent departures from the East Malaysian geological scene include Dr. Ashley Cooper, Chief Palaeontologist of Brunei Shell Petroleum Company, who has been transferred from Seria; Dr. Henry Kirk, petrologist and economic geologist of the Geological Survey, who has retired under the scheme of compensation and will join Selection Trust on copper exploration in Iran; Tony Pimm, geologist and acting Inspector of Mines, who has completed his second contract with the Geological Survey and was recently awarded an external Ph.D. at the University of London for his published work on the Serian area and the Bau Goldfield; and Mr. John Newton-Smith who has completed his contract with the Geological Survey and is taking the Diploma course in Mineral Exploration with the award of the annual Rio Tinto bursary at Imperial College.

### Publications

Recent publications by the Geological Survey, Borneo Region, include a 1:500,000 geological map of Sabah and the 1966 Annual Report. The Sabah map is folded and enclosed in a convenient book-type folder, price M\$ 5.00 including postage within Malaysia. The Annual Report contains 109 pages, 20 plates, 17 tables, and 15 figures, and is priced M\$ 6.00 including postage within Malaysia. Both are obtainable on prepayment from the Librarian, Geological Survey, Kuching.

A regular feature of the Geological Survey Annual Report in recent years has been the inclusion of papers by geologists both of the department and of other organizations, notably Brunei Shell Petroleum Company, the British Museum (Natural History), Soriamont Investment Company, and the University of Malaya. The number of papers has increased each year and is now sufficient to justify separate publication. Accordingly those for 1966 are being published as Bulletin 8 (now in the final stages of printing) and the Annual Report returns to a more modest size and contains a general review, sections on the regional geology and mineral resources of Sabah and Sarawak, notes on mining and oil mining regulations, progress reports on the principal projects being undertaken, and several geological notes.

Four other publications are at various stages of printing at the Government Printing Office, Kuching. These are:

- (a) Geological Papers 1966: Bulletin 8
- (b) Bau Mining District, Krokong area: Bulletin 7  
Part II
- (c) Bidu Bidu Hills area: Report 4
- (d) Igneous rocks of Sarawak and Sabah: Bulletin 5  
(2 vols.)

The publication programme for 1968 includes:

- (a) Geological Papers 1967: Bulletin 9
- (b) Bintulu area: Report 5
- (c) Annual Report 1967
- (d) Handbook of rocks and minerals of East Malaysia  
(for students)
- (e) Bibliography and index of geology, East Malaysia  
(to be published either by the Geological Survey,  
or by the Geological Society of Malaysia)
- (f) Geological map of East Malaysia, scale 1:1,000,000,  
3rd Edition.

#### Mamut Copper Prospect

The Sabah State Government awarded exclusive prospecting rights over the Mamut Copper Prospect to Overseas Mineral Resources Development of Tokyo in November.

The Mamut Copper Prospect was discovered in 1965 during a geochemical survey carried out as part of the United Nations Labuk Valley Project and was subsequently investigated by the Geological Survey and Mines Department. Following publication of the results of the investigation, several mining companies and groups of mining companies submitted strong bids for the prospect. In answer to a question in the Sabah Legislative Assembly on 20 December, the Chief Minister stated that the successful consortium was chosen in preference to other bidders for their general mining experience, technical and financial competence, and willingness to associate with local capital.

Kaolinitic clay

An investigation of West Sarawak kaolinitic clay deposits by the Geological Survey and Mines Department, started in May 1967 and continuing, has resulted in the discovery of 25 deposits containing 9.4 million tons. Development of seven previously discovered deposits containing 2.7 million tons is held up by inadequate road communications.

- P.C.

NEW GEOLOGICAL DISPLAYS AT THE MUZIUM NEGARA

The new gallery of the National Museum, Muzium Negara in Kuala Lumpur, is due to be opened on February 8, 1968, by the Prime Minister. This gallery will include four showcases devoted to aspects of the geology of West Malaysia. A striking new relief model, prepared by Enche Moh'd bin Haji Majid of the Geology Department, University of Malaya, will show a simplified version of the geology of the southern Malay Peninsula. The stratigraphy of West Malaysia will be outlined in the main exhibit. Ornamental stones and some economic minerals will also be displayed.

- D.J.G.

OPENING OF NEW GEOLOGY BUILDING, UNIVERSITY OF MALAYA

The new Geology Building at the University of Malaya, Kuala Lumpur, was formally opened by the Hon'ble Minister of Education, Enche Khir Johari, on Saturday 6 January 1968. The building is situated at the southwest corner of the Faculty of Science complex, and is becoming recognized as one of the most pleasing and practical buildings on the campus.

The main block consists of a ground floor, with museum, administrative offices, and a lecture hall; a first floor with staff offices, draughting room, small specialist laboratories such as X-ray, staff research, palaeontological research, and optical laboratories; and a second floor where there are three teaching laboratories, each designed for classes of 40, namely sedimentology and geochemistry, palaeontology and mapping, and petrology. The use of external pre-cast concrete columns has enabled the building to be constructed without internal bearing walls or internal columns, so the laboratories are free from any obstruction. The higher floors are wider than the lower, thus providing shade from direct sunlight. The second floor is partly

suspended from the columns, and, externally, the columns give the building a chastely elegant neo-classical look.

A connected south block consists of a large Year I teaching laboratory, over a basement containing garage, rock store, equipment stores, workshop, lapidary workshop and ore polishing and mounting rooms. A single-storey north block houses the Klompé Reading Room, Airphoto Interpretation Laboratory, and a Seminar Room.

In his speech the Minister referred to the foundation of the Department, in Singapore in 1956 under Professor Pichamuthu, and the move to Kuala Lumpur in 1959, when, at first, the Department occupied some huts of the Technical College in Gurney Road. He quoted the opinion of the External Examiner, Professor J. Sutton of Imperial College, that the Department had already achieved standards comparable to those of United Kingdom universities. Eche Khir welcomed the plans of the Department to give more emphasis to applied aspects of geology, particularly to the geology of tin, and referred to the coming appointment of Dr. K. Hosking as Visiting Professor in Applied Geology. He pointed out the great scope for the science of geology in Malaysia, and stated that he looked for great benefits from co-operation between geologists of the University, the Geological Survey, and the oil and mining industries in the years ahead. He concluded by pointing out the opportunities available in Southeast Asia for regional co-operation in such fields as earthquake studies, marine geology and regional geology.

As part of the opening ceremony the Vice-Chancellor of the University received gifts for the Department from H.E. the High Commissioner for Britain, and the representatives of the Australian High Commissioner, the Straits Trading Company, and the Asia Foundation, as shown below:

Donated by the British Government:

Equipment for aerial photograph interpretation, including stereoscopes, stereosketch, parallel guidance mechanisms, radial line plotter

Field equipment including prismatic compasses

Ore-polishing equipment and equipment for quantitative ore microscopy

Ross microreader

Land Rover (Dormobile conversion)

Palaeontological publications

Donated by the Australian Government:

Techtron Atomic Absorption Spectrophotometer

Donated by Asia Foundation:

A selection of 25 important geological books, including The Sea (Hill), The Earth Sciences (Strahler), The Physical Constitution of the Earth (Coulomb & Jobert), The Oceans (Sverdrup, et al.), Geochemistry of Sediments (Degens), and others.

About 40 paperback science books, including reprints of several classic works.

Purchased from Straits Trading Fund:

Philips X-ray diffractometer with electronic panel

- NSH

## MEETING OF THE SOCIETY ON 4 DECEMBER 1967

An ordinary meeting of the GSM was held on the afternoon of 4 December 1967 in the Lecture Room of the new Geology Building, University of Malaya.

The meeting was addressed by Dr. E.G. Purdy, who taught for seven years at Rice University in Houston, Texas, and has more recently been with Esso Exploration, currently being based in Singapore. Dr. Purdy's topic was "Carbonate Diagenesis", and a summary of his talk follows.

Classic papers by Illing and Bathurst in the 1950's, concerning carbonate fabrics in relation to environments of deposition and diagenetic history, led to a great deal of work in these topics by many people. What is sometimes ignored in detailed petrographic studies is the "where" of diagenesis, which is of great importance:

- 1) Subsea diagenesis: takes place near sediment interface
- 2) Subaerial diagenesis: dry or under fresh (meteoric) water
- 3) Subsurface diagenesis: after burial; related to pressure and temperature increases

### Subsea diagenesis:

Fossils or oolites are commonly found replaced by "crypto-crystalline carbonate", a dense random aggregate of crystals 4-5 microns in size, translucent to opaque in ordinary light, and brown under crossed nicols. It occurs in both modern and ancient carbonates. In the Bahamas one can demonstrate sequences in which skeletal fragments gradually change completely to crypt. carb. This can also be shown for oolites. Optical orientation is lost in the change, and crystal size becomes about 4-5 microns. In most cases the final mineral is the same as the original (high-Mg calcite, low-Mg calcite, aragonite). Susceptibility to change does not correlate well with mineralogy, but does correlate with type of organism. This suggests that organic material itself somehow mediates the change. Some crypt. carb. seems to form directly from organic material in algal mats and molluscs (Baffin Bay, Texas).

Relation to muddiness: The more mud present in the sediment, the less crypt. carb. seems to form in the fossils and oolites, perhaps because muddy sediments are tight and restrict movement of bacteria, who may be the active agents.

From study of recent material, the alteration occurs only at or near the surface (large fossils show altered rim), and takes a few hundred years, perhaps, to go to completion. Hence the "residence time" of a carbonate at or near the sediment interface (i.e., before burial) may determine how much crypt. carb. can form in it. This may be useful in interpreting ancient limestones: a little-altered limestone may represent relatively high rates of sedimentation.

### Subaerial diagenesis:

In a carbonate mass above sea level, there will be fresh (meteoric) water circulating down to and below the water table. While water is actively percolating downward, it will dissolve the rock near the surface. At a certain level, the water becomes saturated in low-Mg calcite, while still able to dissolve aragonite and high-Mg calcite. Hence below this we will get replacement activity, especially aragonite going to low-Mg calcite. During periods when there is little or no rain, water rises in capillaries and evaporates. This results in simple deposition of calcite cement. By alternation of seasons and variability in rainfall in storms, one can get all three effects - solution, replacement, and cementation - at the same site, as one in fact can observe having happened in ancient limestones.

Deep (4,000 ft) cores on Bikini and Enowitak show loose, unlithified carbonate at great depths (bottom of core), and wherever the carbonate is well lithified it can be related to an unconformity with sometimes definite evidence of subaerial exposure (land snails). Apparently cementation has here occurred only when the carbonate was exposed to fresh water and probably dessication as well. This also may be useful in the interpretation of young carbonate deposits, and perhaps of older ones as well.

#### Subsurface diagenesis:

This is still something of a "never-never land"; not too much is understood about the processes involved. Water moving through limestone becomes rapidly saturated (often within 10 ft), so it appears difficult to produce vast changes in thick limestones in this way. The water must come out of a non-calcareous rock (sandstone or shale) to be "potent", and cannot penetrate very deep into the limestone without losing its potency. Clearly, however, the pressures of deep burial can lead to effective lithification. Not all the hard ancient limestones can be imagined to have been uplifted and thus exposed to fresh water or air.

After some discussion, the meeting ended with a vote of thanks to the speaker for his interesting talk. Fourteen members of the Society attended.

- PHS

#### DISCUSSION MEETING AND CONVERSAZIONE, 27 JANUARY

Members are reminded that a Discussion Meeting and Conversazione will be held in conjunction with the Annual General Meeting. The AGM is on the evening of Friday, 26 January, at 8:00 o'clock. The Discussion Meeting will start at 9:30 a.m. the following day, Saturday 27 January.

Two general topics have been selected as focal points of discussion this year, in contrast to the general symposium on Malaysian geology which was held last year (and which is now in press as Bulletin 1 of the Society). The two topics are (1) the Malaysian Stratigraphic Code, and (2) Malaysian granites. Both are important topics, and members are urged to come prepared to contribute to the discussion.

The Stratigraphic Code, though approved by the membership of the Society last year, has come in for some stiff criticism.



Objections to aspects of the Code will be aired in the discussion, and the views of the committee which drafted the Code will be presented. It is important to discuss these differences fully, as the Society hopes eventually to bring stratigraphic practice in Malaysia in line with this Code, as it is finally modified. Members interested are urged to bring their copies of the Code with them, though a few extra copies may be available.

The importance of Malaysian granites, in the geologic history as well as the economy of Malaysia, needs no explanation. The considerable amount of new information concerning them - detailed petrographic analyses, radioactive age-dates, and more precise mapping - make a discussion of these rocks at this time appropriate.

A "conversazione" is a kind of informal fair. Members are encouraged to bring their wares to put on display (no prizes will be awarded, however). Exhibits may be elaborate, or may consist of one specimen, or map, or photograph, or piece of equipment. Anything of geologic interest is welcome.

- PHS

#### FAREWELL TO D.J. GOBBETT

We regretfully announce the departure from Malaysia of our founder secretary, Dr. Derek J. Gobbett. The Society will continue to be grateful to Derek because of the prominent role he played in its development; he was the secretary of the protem committee which established the Society, and without his unflinching conviction that such a society was needed in Malaysia, it is doubtful if you would be reading this Newsletter today.

Derek has spent six fruitful years in this country, and he will be remembered by his colleagues for the enthusiasm with which he participated in every endeavour.

In the Department of Geology of the University of Malaya, he established an undergraduate course of lectures and laboratory instruction in palaeontology and stratigraphy by which all his successors will be judged. The Department is indeed grateful to him for building an excellent palaeontological collection and for his excellent organization of the Department museum.

His ability to arrange museum displays was recognized outside the University, and he has been for the past year the honorary curator of Geology in the Muzium Negara in Kuala Lumpur, a task into which he put much effort and enthusiasm.

His enthusiasm for field work led him during his six years in Malaysia to several positions in field activities other than geological. He has been a member of the committee for developing Templar Park, a member of the Society for Protection of Batu Caves, a very active member of the Malayan Nature Society, and a regular addict of cross-country running with the Hash House Harriers.

Perhaps Derek's greatest single contribution to the geological community in Malaysia has been his fostering of close co-operation between Malaysian and Japanese palaeontologists and stratigraphers. His efforts in this direction have included field surveys with Japanese geologists in parts of West Malaysia, and a study tour of Japanese Universities.

For the next several years Derek will continue to have strong connexions with the Society in editorial duties and contributions to the book "Geology of the Malay Peninsula" which the Society is sponsoring. He has also contributed an article to Bulletin 1 of the Society and his bibliography of Malaysian Geology (West Malaysia) will appear as Bulletin 2. We hope, thereafter, that he will continue his close ties with the Society and that he will contribute to future Newsletter and Bulletins.

Derek will be leaving Malaysia early in February to take up a post of Senior Assistant in research at the Sedgwick Museum in Cambridge later this year, and, in thanking him for his past services to the Society, we offer him our best wishes in his new appointment.

- CSH

#### PLEASURES OF THE JUNGLE: THE DURIAN

The Durian grows on a large and lofty forest tree, somewhat resembling an elm in its general character, but with a more smooth and scaly bark. The fruit is round or slightly oval, about the size of a large coconut, of a green colour, and covered all over with short stout spines, the bases of which touch each other, and are consequently somewhat hexagonal, while the points are very strong and sharp. ... The pulp is the eatable part, and its consistence and flavour are indescribable. A rich butter-like custard highly flavoured with almonds gives the best general idea of it, but intermingled with it come wafts of flavour that call to mind cream-cheese, onion-sauce, brown sherry, and other incongruities. Then there is a

rich glutinous smoothness in the pulp which nothing else possesses, but which adds to its delicacy. It is neither acid, nor sweet, nor juicy, yet one feels the want of none of these qualities, for it is perfect as it is. It produces no nausea or other bad effect, and the more you eat of it the less you feel inclined to stop.

The Durian is, however, sometimes dangerous. When the fruit begins to ripen it falls daily and almost hourly, and accidents not unfrequently happen to persons walking or working under the trees. When a Durian strikes a man in its fall, it produces a dreadful wound, the strong spines tearing open the flesh, while the blow itself is very heavy; but from this very circumstance death rarely ensues, the copious effusion of blood preventing the inflammation which might otherwise take place.

Poets and moralists, judging from our English trees and fruits, have thought that small fruits always grew on lofty trees, so that their fall should be harmless to man, while the large ones trailed on the ground. Two of the largest and heaviest fruits known, however, the Brazil-nut fruit (*Bertholletia*) and Durian, grow on lofty forest trees, from which they fall as soon as they are ripe, and often wound or kill the native inhabitants. From this we may learn two things: first, not to draw general conclusions from a very partial view of nature; and secondly, that trees and fruits, no less than the varied productions of the animal kingdom, do not appear to be organized with exclusive reference to the use and convenience of man.

- Alfred Russel Wallace, 1869  
in The Malay Archipelago

every word of this manuscript was left to the printer  
because of the... of the... to  
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