

PERSATUAN GEOLOGI MALAYSIA

WARTA GEOLOGI

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MALAYSIA

JIL. 1 No. 4 (Vol. 1 No. 4)

Julai-Ogos 1975

Untuk ahli-ahli sahaja

For members only

C O N T E N T S

	<u>Page</u>
GEOLOGICAL NOTES:	
S.G. Lee: Age relationship between the Kuantan basalt and dolerite dykes - field evidence	76
MEETING OF THE SOCIETY:	
The adjourned AGM	79
NEWS OF THE SOCIETY	
IGCP Circum-Pacific Plutonism Project 5th Meeting	80
Second Regional Conference on the Geology of Southeast Asia	80
Address of Members	82
Membership	82
OTHER NEWS	
Seismological stations in Malaysia	83
International Mineralogical Association	84

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



PERSATUAN GEOLOGI MALAYSIA
(Geological Society of Malaysia)

MAJLIS (COUNCIL) 1975/76

Pegawai-pegawai (Officers)

President (President)	: D. Santokh Singh
Naib-Presiden (Vice-President)	: W.K. Lee
Setiausaha Kehormat (Hon. Secretary)	: S.S. Almashoor
Penolong Setiausaha (Assistant Secretary)	: T.H. Tan
Bendahari (Treasurer)	: G.H. Teh
Pengarang (Editor)	: T.T. Khoo

Ahli-ahli Majlis (Councillors)

A.S. Gan	M. Ayob
N.H. Chong	S.H. Chan
B.K. Tan	S. Paramanathan
H.D. Tjia	L.C. Wong

Tujuan Persatuan Geologi Malaysia adalah untuk memajukan sains bumi, terutamanya di Malaysia dan tempat-tempat berhampiran. Sesiapa yang ingin menjadi ahli Persatuan sila dapat 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.

---ooo00ooo---

G E O L O G I C A L N O T E S

Age relationship between the Kuantan basalt and dolerite dykes - field evidence

S.G. Lee, Jabatan Geologi, Universiti Malaya, Kuala Lumpur

The age relationship between the Kuantan basalt and the dolerite dykes has recently received much attention. Fitch (1952) suggested that the dolerite dykes found in the locality were feeder dykes of the basalt flow that overlies acid plutonic rocks. Later, work by Bignell (1972) disproved Fitch's earlier suggestion. He found one dolerite dyke from Tg. Tembeleng by K-Ar radiometric dating to be at least 111 ± 4 m.y. In addition, recent palaeomagnetic studies by Haile (1974) supported Bignell's result. The basalt had a reverse sense of magnetization with respect to the present day field, corresponding to the Matuyama Reverse Epoch. A remanent magnetism more or less opposite to the basalt was recorded from the dolerite. Abdul Hanif Hussein (1974) analysed samples of dolerite and basalt and found that they are chemically different. He found that the dolerite should be classified into the olivine tholeiite group and basalt into alkalic olivine basalt and basanite. These studies evidently indicate that not all the basic igneous activities are contemporaneous. In this note, field evidence will be provided to show that one such dolerite is probably much older than the basalt.

Recently the author visited the quarry at Bt. Ubi. The rock quarried are mainly adamellite with small amounts of rhyolite and the whole acid rock body is cut by numerous dolerite dykes and veins. However, one such dolerite dyke provided interesting evidence relating to age relationship.

The dolerite dyke (Fig. 1) is about 3 cm thick. It is locally cut by the adamellite and there is no evidence of brecciation at the structure. This feature can be explained in two ways:

- (i) The dolerite might have intruded the solidified adamellite, and the heat of the basic igneous magma could have partially melted the adamellite. The molten acid rock could then intrude into the dolerite producing an effect known as back-veining.

- (ii) The dolerite might have intruded the adamellite when the adamellite was still hot and plastic, and early shears which displaced the dolerite could be annealed by the hot and plastic adamellite. In other words, the dolerite dyke is synplutonic.

In the author's opinion, it is quite unlikely that the 3cm thick dyke will be able to melt the solid acid rock. The author believes that the adamellite intrusion was followed closely by the dolerite while the former was still hot and plastic and that the ages of the dolerite and adamellite are contemporaneous.

Acid intrusions of Cerozoic or younger ages have not been found in the East Coast and therefore it appears that the dolerite dyke here is much older than the unconformable basalt dated to be 1.6 my by Bignell (1972) and evidently cannot be a feeder dyke of the basalt.

Therefore field relationship can be useful in providing clues to solve the problem.

References

- Abdul Hanif Hussein (1975). The geology of the Kuantan area with special reference to the petrology and chemistry of the basalts and dolerites. Unpubl. B.Sc. (Hons) thesis, Univ. Malaya, 68 pp.
- Bignell, J.D. (1972). The geochronology of the Malayan Granites. Unpubl. D.Phil., Univ. Oxford, 334 pp.
- Fitch, F. (1952). The geology and mineral resources of Kuantan, Pahang. Mem. Geol. Survey Dept. Fed. Malaya No. 6, 144 pp.
- Haile, N.S. (1974). Are the Kuantan dolerite dykes and extrusion basalt related to each other or to the Segamat basalt? Palaeomagnetism evidence. (Abstract) Newsletter Geol. Soc. Malaysia No. 52, p. 25-26.

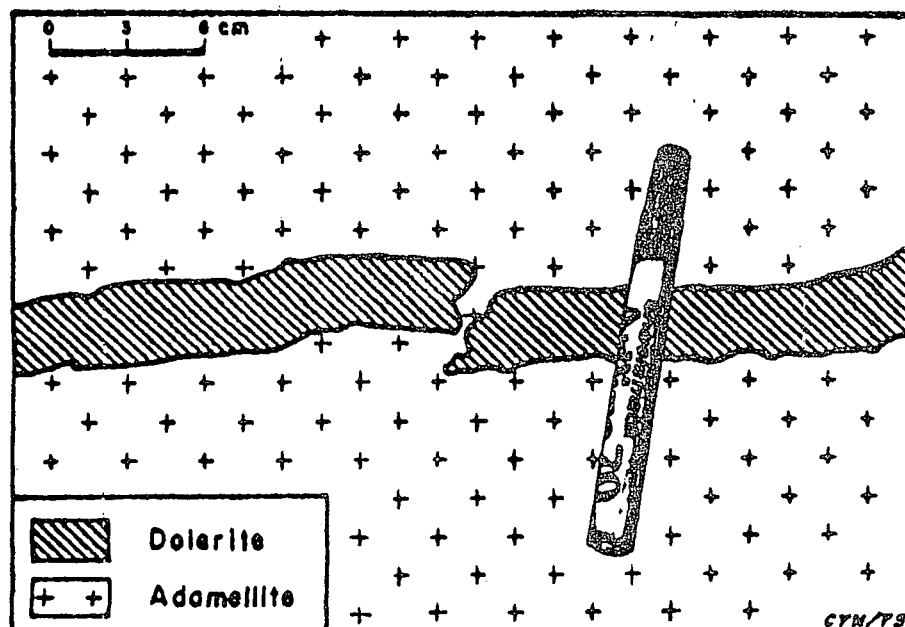


Fig. 1

M E E T I N G O F T H E S O C I E T Y

The Adjourned AGM

The AGM, adjourned on 26 February; was reconvened on 2nd July at 5 p.m. to hear the Treasurer's and Auditor's reports. About 25 members were present. The meeting was chaired by the Assistant Secretary in the absence of the President, Vice-President and Secretary.

The Treasurer read and explained his report to the members and made some recommendations. He suggested the creation of an Assistant Treasurer's post as the duties of the Treasurer have become increasingly heavier, and that the accountant should be replaced by a more competent accountant. He proposed the re-appointment of the present auditor who has been very helpful and competent. The Treasurer apologized for the delay in presenting the annual statement of accounts and for the occurrence of some minor irregularities. The delay appeared to be due to the lack of details in the books and also due to incorrect book-keeping by the accountant which only came to light when the balance sheet was to be prepared. The Treasurer's report was passed after much discussion and queries from members present.

The auditor's report was later passed and accepted.

A resolution was also passed asking the Treasurer in co-operation with the incoming Treasurer to produce a trial balance from 1st January 1975 to 30th June 1975.

The AGM was finally adjourned at 6.40 p.m.

NEWS OF THE SOCIETY

IGCP Circum-Pacific Plutonism Project 5th Meeting

The meetings of the Project to be held from 12-13 November 1975 have attracted considerable response from members of the Society as well as geologists offering to present papers. About 20 papers have so far been offered and it is likely that several more offers will be forthcoming. Participants presenting papers hail from Canada, USA, Malaysia, Thailand, Japan, Korea, USSR and UK. It is possible that participants from other countries of the Circum-Pacific region will respond in the near future.

There is also a good response to participate in the local field excursions to visit mines and granite exposures on 14-15 November. Further details about the excursions will be given in a circular to members.

Through the good offices of Dr Saman Buravas, Director of the Department of Mines, Thailand, members of our Society are welcome to participate in field excursions in Chiangmai from 18-23 November. Tin-tungsten mines and granitic areas will be visited. Details of the excursions have been circulated to members.

Members who wish to participate in the meetings and field excursions should write to T.T. Khoo, Jabatan Geologi, Universiti Malaya.

Second Regional Conference on the Geology of Southeast Asia

The Editor represented the Society at the Conference which was held in Jakarta from 4-7 August. On behalf of the Society the President and the Editor presented a paper on the progress of knowledge of the geology and mineral resources of Malaysia from 1972 to mid-1975 at the Conference. The Society was invited to present the paper by the Ikatan Ahli Geologi Indonesia.

Also at the Conference, the Editor met representatives of the Ikatan Ahli Geologi Indonesia and unofficial Thai and Laotian representatives. It was agreed that regional conferences on the geology of Southeast Asia should be held regularly in Southeast Asia and that the organizing chairman of the Jakarta conference Mr G.A.S. Nayoan should try to contact other geological societies in Southeast Asia about hosting the next conference. It was expressed that geological societies in Southeast Asia should have closer cooperation which is in line with the aims of Asean. A proposal to form a sub-commission on the Quaternary of Southeast Asia by Prof. H.D. Tjia was also given the green light. Studies of the Quaternary of Southeast Asia have both scientific and economic values and the formation of the sub-commission could facilitate contact between specialists in the field and also coordinate and advise on research programmes.

The Conference attracted a sizeable number of participants from many parts of the world. However, only a few Malaysians were present and the Indonesian hosts were in fact rather disappointed that this should be so. About 30 odd papers were supposed to be presented. However, some of the papers were not presented because the authors were absent. Most of the papers were presented in parallel sessions. Review papers and papers on plate tectonics and mineral exploration were well attended but papers such as on mineralogy were attended by only a handful of people including the Editor who wisely or unwisely stayed away from papers on plate tectonics if given the choice.

Several short day trips and also a longer trip were organized by the hosts. The Editor went on one of the trips to Pelabuhan Ratu. The apparently well thought itinerary was, however, upset by several unforeseen factors. For example in the group there seems to be a Japanese expert at every outcrop (e.g. on larger foraminifera, Tertiary mollusks and Miocene-Oligocene boundary) and so the group stayed longer than necessary at each outcrop.

On the whole the Conference has succeeded in bringing geologists interested in Southeast Asian geology together for a few days to communicate beneficially with each other, and to become better informed on the geology of Southeast Asia.

TTK

Address of MembersNew address

Brian W. Hester
5934 McIntyre St.
Golden, Co. 80401
U.S.A.

Address wanted

Please inform the Hon. Secretary if you know the addresses of the following members:

1. Jan C.M. de Coo
2. M. Muthuppalaniappan
3. Willis H. Nelson and
4. Takehiro Sakimoto

Membership

The following were elected to the Society:

Full members

Chuah Ai Lin
G.S.I.
101 Boon Keng Road
Singapore 12

Khoo Cheng San
EXXON Production Malaysia Inc.
P.O. Box 857
Kuala Lumpur

Patrick J.C. Ryall
School of Physics
Universiti Sains Malaysia
Pulau Pinang

Wong Nan Chong
P7 Jalan Perkasa Satu
Salak South Garden
Kuala Lumpur

B. Gopinathan
Soil Branch
MARDI
Sungei Besi P.O.
Serdang, Selangor

James Puong-Kien Lau
230N, B-ock 94
Whampoa Drive
Singapore 12

Teoh Lay Hock
Pejabat Penyiasatan Kajibumi
Alor Setar, Kedah

Associate member

David K. Manning
Core Laboratories Int. S.A.
24A Lim Teck Boo Road
Singapore 19

Student members

Gan Lay Chin
4th Residential College
University Malaya
Kuala Lumpur

Lee Swee Guan
5B Hilltop
Batu Tiga Road
Klang, Selangor

Tay Thye Sun
5 Albert Square
London S.W. 8 1BU
England

Yap Lip Sin
18 Jalan 9
Overseas Union Garden
Jalan Klang
Kuala Lumpur

O T H E R N E W S

Seismological stations in Malaysia

Perkhidmatan Kajicuaca Malaysia sedang menubuhkan stesyen-stesyen seismologi di Ipoh, Kuala Lumpur, Kluang dan Kota Kinabalu. Stesyen-stesyen ini dijadualkan bermula gerakannya sebelum penghujung tahun 1975 dan adalah menjadi sebahagian rangkaian stesyen-stesyen kawasan Asia Tenggara yang sedang ditubuh dengan kerjasama UNESCO. Buat permulaan, 21 buah 'high magnification single component stations' akan ditubuhkan.

Tujuan rancangan ini ialah untuk memperolehi pengetahuan asas mengenai 'seismic activity and potential earthquake risk' di Asia Tenggara dan melatih kakitangan-kakitangan tempatan berkenaan dengan operasi dan menyelenggara stesyen-stesyen seismologi dan cara menganalisa 'seismic data'.

Ketua Pengarah
Pejabat Kajicuaca Malaysia

Translation

The Meteorological Service of Malaysia is now erecting seismological stations in Ipoh, Kuala Lumpur, Kluang and Kota Kinabalu. The stations are scheduled to begin operations before the end of 1975 and will form a part of a network of stations in Southeast Asia which is being erected with the cooperation of UNESCO. Initially 21 high magnification single component stations will be erected.

The aim of the project is to enable the understanding of the origin of seismic activity and potential earthquake risk in Southeast Asia and the training of local staff to be familiar with the operation and maintenance of seismological stations and methods of analysis of seismic data.

Director-General
Meteorological Service Malaysia

International Mineralogical Association

The following are recommendations from the Commission on Ore Microscopy on the use of terms and symbols used to describe the optical properties of opaque minerals

Optical constants defining equation $\chi = nk$ (French system)
where χ (Greek chi) = indice d'extinction; k = coefficient d'absorption and n = indice de refraction.

$k = nk$ (Anglo-German system)

where k = absorption coefficient, κ (Greek kappa) = absorption index, and n = refractive index.

N is reserved for refractive index of the immersion medium. R is the symbol for reflectance at normal incidence. Examples of its use are

R_0^{oil} (546) means the reflectance of the ordinary vibration (of a uniaxial mineral) at a wavelength of 546 nm (nanometers), measured in the standard oil. The standard oil is Cargille oil D/A 58.884 (and no other).

$R^N = 1.5150$ (589) means the reflectance for a cubic crystal at wavelength of 589 nm measured in oil which has a value of $N = 1.5150$ at the standard wavelength of 546 nm.

N is reserved for refractive index of the immersion medium.
 R is the symbol for reflectance at normal incidence. Examples of its use are

R_{oil}^{546} (546) means the reflectance of the ordinary vibration (of a uniaxial mineral) at a wavelength of 546 nm (nanometers), measured in the standard oil. The standard oil is Cargille oil D/A 58.884 (and no other).

$R^N = 1.5150$ (589) means the reflectance for a cubic crystal at wavelength of 589 nm measured in oil which has a value of $N = 1.5150$ at the standard wavelength of 546 nm.

R_o means reflectance parallel to the ordinary vibration of a uniaxial mineral

R_e means reflectance of the extraordinary vibration.

R_1 and R_2 are the minimum and maximum reflectances for biaxial minerals.

R_a , R_b , and R_c are reflectances measured parallel to the crystal axes a , b , c .

The standard mass is 100g for measuring micro-indentation hardness.

$H(V)$ is the symbol for the Vickers indentation micro-hardness.

p = perfect, cc = concave, cv = convex, $cc-cv$ = concave-convex, f = fractured, and sf = slightly fractured. These are the quality of the indentation. For quantitative colour, the following symbols apply:

Y = lightness. This is the light intensity seen by the eye for a given illuminant. The term brightness is not used; it is best applied to self-luminous objects.

λ_d = dominant wavelength (or hue)

P_e = saturation percentage.

The standard illuminant for ore microscopy is called C and this is a white light source of colour temperature $6770^\circ K$. In some cases the A illuminant is used. It is yellow and has an approximate temperature of $3000^\circ K$.

The Commission on Ore Microscopy will soon issue its first determinative tables. It is proposed that some 50 minerals will comprise the first issue, these have been selected so as to form a first list for teaching purposes, and will include the most common opaque minerals. It will be a loose-leaf system or a card

system. The project will be presented to the Commission on Ore Microscopy at the meeting in Australia in August 1976 with production details and costing. If then approved, it is hoped to be published in the autumn of 1976.

Anyone interested in the format of the tables, which will be of great use to research workers and teachers of opaque mineralogy, should write to me and I can send a two-page Xerox copy of an example.

C.S. Hutchison
Chairman
IMA Subgroup

---ooo0ooo---

