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GEOLOGIC NOTES

Peridotite-Gabbro Problems: A Comment

F.H. Fitch
Mackay and Schnellmann, Ltd. (London)

Dr. Thayer's comment, as reported in the July Newsletter, that the Silumpat Gneiss may represent a gabbro that came in at the same time as the peridotite, both in the form of semi-solid rock, and that the gneissic texture might then be a primary igneous feature, is very much in line with my own thinking as expressed in Chapters VIII and X of Memoir 4 of the British Borneo Geoligical Survey, "The Geology and Mineral Resources of the Segama Valley and Darvel Bay Area, North Borneo", 1955. My interpretation has, however, failed until now to find any support from other geologists.

The factors that led me to interpret the banded plagioclase-hornblende rocks of the area as of igneous origin are discussed in the Memoir. The most important of these, in my view, were:

a) the banding appeared to me, both megascopically and microscopically, to be of clastic origin rather than due to parallel growth of crystals, and

b) the gradation from the ultrabasic rocks of Mount Ambun through meladiorite, meladiorite with some leucodiorite, to leucodiorite, along the course of S. Barnang, appeared to me more likely to have originated from a differentiated igneous mass than from metamorphism of a volcanic or sedimentary sequence in which such a regular gradation in composition would not be expected.

This differentiated igneous mass could have been of gabbroic composition, and Dr. Thayer's mention of "epidiorite" produced by alteration of gabbro associated with peridotite in Oregon therefore appears to have special significance in relation to the above.

The "accumulate texture" to which Dr Thayer referred with regard to chromite is also very clearly illustrated by the mode of occurrence of some of the nickel sulphide deposits in Australia.

In many instances, ultrabasic bodies in Western Australia (either sills or flows?) show progressively increasing density towards the bottom, reflected in increasing olivine content. The sulphides are in the denser layers, appearing first as exsolution blebs in the olivine, then progressively downwards as larger and

larger blebs, then taking the place of most of the olivine, and finally as massive sulphides.

This type of occurrence was described at a Symposium run by the Australasian Institute of Mining & Metallurgy in Perth early this year. The papers are to be published in due course and should be of considerable interest to all concerned with the problems of ultrabasic and associated igneous rocks.

Finally, Dr Thayer's rhetorical question "why is it that we find no Alpine-type peridotites in the Precambrian?" may also find an answer in Australia. Certainly some geologists in Western Australia are contending that only the Alpine-type Precambrian peridotites there are prospective for nickel sulphide concentrations. Other geologists remain to be convinced that peridotites of different origins can be distinguished among the generally highly metamorphosed rocks of the area. However, some interesting material should become available when the resultant controversy gets into the literature.

The Genesis of Laterised Parent Material

R.F. Allbrook
University of Malaya.

In his paper, Panton (1956), states that laterite is ubiquitous in Malaya. It has been divided into four groups:- nodular, consisting of rounded or subrounded individual concretions; massive, consisting of a cemented mass of nodules, pisolitic, or a hard compact material with vesicles used, in the past for building in Malacca, vesicular; laterised parent material, consisting of partially weathered rock that has been impregnated or coated with iron; and fragmental, consisting of angular or subangular fragments of massive laterite or laterised parent material. (Leamy and Panton, 1966)

These different types are found in different positions in the soil profile; nodular and massive in the B horizon where accumulation is occurring, laterised parent material in the C horizon, and fragmental laterite in the A horizon.

The genesis of these different types is therefore likely to be different since not only do they show different morphology but they

occur in different positions in the soil profile.

At a road cutting at Salak South New Village, Selangor, there is an exposure down to the fresh rock. The profile description is as follows :

A horizon : 0 - 10 cms., dark greyish brown, sandy clay loam,

B horizon : 10 - 100 cms., yellowish brown, 7.5 YR 6/8 with few fine mottles, red, 10 R 5/8, sandy clay,

C horizon : 100 - 250 cms., red, 2.5 YR 5/4 with few fine mottles, yellow, 2.5Y 7/4, clay.

Running approximately vertically through the profile are several quartz veins. In the C horizon are bands of laterised shale running approximately horizontally.

Below the C horizon occurs the parent rock of this soil which consists of sandstone interbedded with shale. The bands of sandstone are approximately 30cms. thick and the shale about 2-5 cms. thick.

At the foot of the cutting is a small stream. It can readily be observed that the water in this stream is rich in iron when it issues from a swampy area, due to the brown deposit on the bed of the stream. This is where the oxygen content of the water rises on coming into contact with the air thus oxidising the soluble ferrous iron to insoluble ferric iron which is then deposited. Alternatively the iron may have been held in solution by being complexed with organic matter which, on being brought to a higher oxygen level is oxidised, thus precipitating the iron. In either case a rise in the oxygen content (Eh) causes iron to come out of solution.

This is a fresh exposure and the stream now follows the drain for the new road. Before the drain was dug, however, the water would probably not have reached the surface at this place and would have flowed along a sandstone aquifer. The aquifer is bounded by shale. We have therefore a condition where iron rich water is flowing along the top of a shale band and, to some extent, penetrating it. The argillaceous material retains the iron, which on drying out accompanied by a rise in oxygen content becomes fixed as ferric oxide. This has already occurred in the upper part of the profile where the shale is very hard. The shale is thus very resistant to weathering and is left behind as a "stone line" when the sandstone is completely weathered, as has occurred in the C horizon. We have therefore a process where a

more readily weathered rock, shale, becomes impregnated making it a very resistant material to weathering.

Samples were taken from the exposure and analysed for total iron percentage. The results are shown in the table.

Analysis of samples from an exposure at Salek South, New Village, Selangor.

Sample	% Iron (Fe^{+++})
Soil from B horizon	8.7
Soil from C horizon	3.3
Laterised parent material	18.0
Red shale	1.7
Grey shale	0.8

The analysis of the shale is put in for comparison with the laterised parent material. The increase in iron content of the red shale shows the start of the process of impregnation. It is interesting to note that the red C horizon is lower in iron content than the yellowish brown B horizon. Colour is therefore a poor guide to iron content except where low levels of iron are concerned as in the case of the shale analyses.

In Malaysia most laterised parent material is shale, although laterised sandstone is not uncommon.

The drying out process leading to hardening is probably similar to the hardening process in other types of laterite where it is thought that an increase in crystallinity of the iron oxide either as goethite or haematite is the cause, (Alexander and Cady).

This type of laterite is thus formed on drainage lines and the accumulation of iron is absolute. The stage of development of the profile is irrelevant and hence this type of laterite can occur in any soil group, whether it is lateritic or not.

References

Alexander, L.T., and Cady, John G., 1962

Genesis and Hardening of Laterite in Soils. U.S.D.A., Tech.Bull. 1282

Leamy, M.L., and Panton, W.P., 1966.

Soil Survey Manual for Malayan Conditions. Min. Agr. & Co-op.

Panton, W.P., 1956,

Types of Malayan laterite and factors affecting their distribution, 6th Int. Cong. Soil Sci.

Chloride and Oxychloride of Tin on Old Ingots

K.F.G. Hosking
University of Malaya

This note is written with a view to publicising a published but not widely known possible natural occurrence of stannous chloride and to recording the finding in W. Malaysia of oxychloride of tin. That there are certain links between these two topics will be apparent from what follows.

Stannous Chloride

Collins (1872) records that he was permitted to examine 'a hard and brittle brown coating' up to 1/4 inch thick, which invested an ancient ingot of tin (in Cornwall, the so-called 'Jows' Tin') which had been discovered at Tremethack Moor, Madron, Cornwall. Collins states that having dried a portion of the powdered encrustation at 120°C he boiled it 'for a time' with distilled water. The solution thus obtained yielded ".5 gr of tin and .3 gr of chlorine = .8 gr. of $SnCl_2$."

Further chemical analysis and superficial examination of the encrustation indicated that it was composed essentially of stannic oxide (90.62 percent) and that it resembled the 'native variety of cassiterite called "wood tin". Subsequently Collins (1880, p.30) having examined thin sections of the material, stated that "I find the characteristic radiated-concentric structure with a tendency to assume bathyoidal forms, in fact the most precise agreement in the appearances presented under the microscope to those presented by ordinary wood-tin".

Collins believed that the encrustation was the product of slow oxidation of the ingot which had been lying beneath an organic-rich soil cover. Its chloride content, in the writer's view, is probably due to reaction between chloride ions in the oxygen impoverished ground water and the tin metal.

Tin oxychloride

In the early fifties of this century one of the dredges of the Tronoh Company working in the Kampar area of Perak recovered a considerable number of pieces of the so-called tin-hat money. Each piece was a truncated pyramid, about 1.5 in. in height and having a base of c. 2 in. square (these are approximate figures based solely on memory). The 'top' of each body was decorated

by a moulded pattern. It is understood that when these tin ingots were recovered the dredge was operating in an area from which the local river had been deviated and it was thought that the tin represented the cargo of a vessel which had sunk.

In 1956 the writer was permitted to select for his own purposes, a few of the twenty to thirty ingots which were then preserved in the office of the Tronoh Company's Kampar mill. One he chose because it differed from all the others in having locally on its base a thin golden-yellow encrustation (all the others were slightly dull but virtually free from products of oxidation, a feature probably due to the fact that they were preserved in a reducing environment).

The encrusted ingot was submitted, in c. 1960, to the Mineralogical Department of the British Museum (Natural History) for examination. Investigations there indicated that the encrustation consisted of two phases of tin oxychloride, but lack of sufficient material and illness of the person working on the project prevented the work from reaching a satisfactory conclusion.

Until recently the genesis of the oxychloride was a mystery to the writer. He was not prepared to accept that it had developed subsequent to the sinking of the vessel in which it was a part of the cargo because although the river was tidal, and therefore saline, the ingots must have been rapidly covered by mud, and, therefore, were in a strongly reducing environment. Furthermore, if conditions at the 'bottom' of the river had been such that tin oxychloride could develop there, then it is very difficult to explain why only one of the ingots examined was encrusted by the salt.

The writer believes that he has found the clue to the probable origin of the oxychloride in Doyle's 'Tin Mining in Larut' (1879). Doyle (p.21) when discussing the cost of tin smelting by mine owners in kongsee houses and by storekeepers in the smelting houses in the townships', notes, amongst other things, the cost per smelting operation of 'moulder and salt' and adds the remark 'salt being customarily mixed with the mould earth'. It may well be that the addition of salt to mould earth was a practice of long standing, and if that were so, it seems likely that the tin oxychloride on the Kampar ingot was due to reaction between some salted mould earth which had been accidentally spilled on the ingot just after it had been poured.

References

Collins, J.H., 1872.

Note on a portion of the incrusted surface of a block of "Jews' Tin".
Journ. R. Instn. Cornwall, no. XIII, (2 pages).

Collins, J.H., 1880.

On some Cornish Tin-stones and Tin-capels.
Min. Mag., IV. pp. 1-34

Doyle, P., 1879

Tin Mining in Larut.
E. and F.N. Spon. London.

Paleozoic fossil locality in Negri Sembilan

C.N. Ng
University of Malaya

Recently, during his field work in the area South of Bahau, the writer came across a particularly fossiliferous sequence of shale, sandstone and tuffaceous conglomerate. The fossils are casts and molds of brachiopods, rugose corals, fusulinids and imprints of at least two species of ferns. Some of the fossils have been collected by students and staff of the Universiti Kebangsaan in subsequent trips to the area. Pending confirmation, the fauna is believed to be Upper Palaeozoic, probably Upper Carboniferous to Permian in age.

These beds are exposed beneath the concrete bridge over the Sg. Jelei currently under construction on the side road to Kampong Kepis at the 20½ mile from Tampin off the Tampin-Bahau road. The accompanying map (fig. 1) gives the exact location.

If the age is confirmed, this will be, as far as the author is aware, the first Paleozoic fossil locality to be reported in Negri Sembilan (Triassic fossils were reported by T. Suntharalingam in 1968 – Newslotter No. 14), and one of the southernmost Paleozoic sites in Malaya, the only other published one being the limestone of probable Permian age at Ulu Sedili (see Rajah, 1970, Geol. Soc. Malaysia Bull. 3, p. 131).

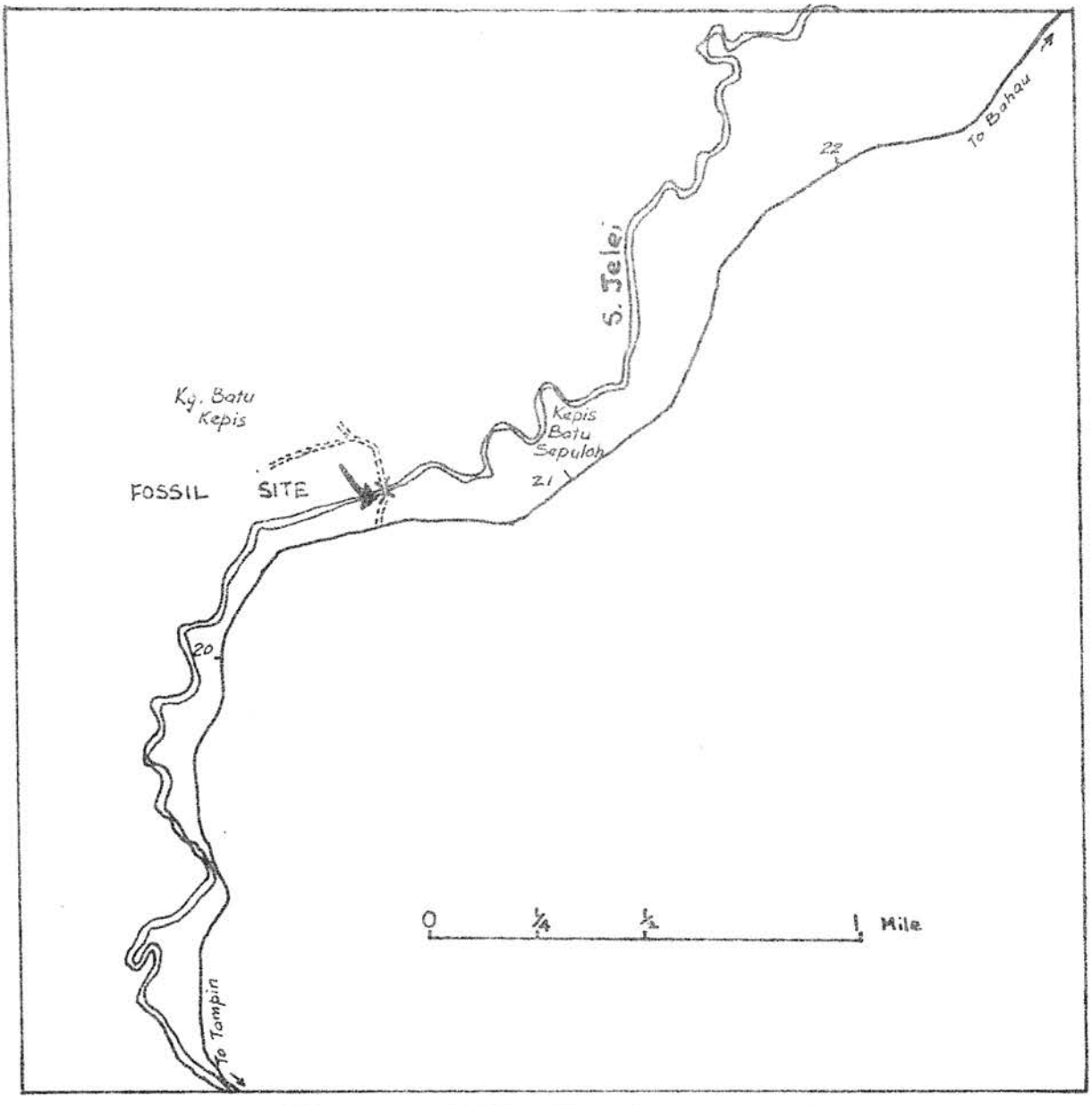

Fig. 1. LOCALITY MAP OF FOSSIL SITE

GEOHISTORICAL NOTES

A Catastrophist View of the Geology of Penang

R.D. Hill
University of Singapore

The early years of the Nineteenth Century saw an intense, even polemical debate amongst geologists and the learned public in general. Despite slowly accumulating evidence to the contrary, the Biblical notion of a creation of the world in six natural days died hard. Diluvialists saw the earth's physiographical features as the result of the Biblical flood. Amongst the diluvialists the most eminent was perhaps the Rev. Dr. William Buckland (1784-1856) who was Reader in Geology at Oxford University and a devout churchman. Buckland, supported by Rev. Adam Sedgwick, the Woodwardian Professor of Geology at Cambridge and Rev. W.D. Conybeare, led the attack upon the uniformitarian notions of Hutton and his apologist, Playfair. The antagonists of the diluvialists were the fluvialists who saw landforms to be the result of long-continued sub-aerial processes. Starting with Hutton and Playfair, later joined by Scrope, Murchison and the towering figure of Lyell, the fluvialists had, by mid-century, carried the day but not after furious debate. Catastrophism lingered on amongst professional geoglogists until the 1870's and 1880's and remains even today amongst fundamentalist Protestant laymen.

One of the earliest accounts of the geology of Penang was that of Robert Tytler (1787-1838). He graduated M.D. from Edinburgh University in 1807, and must have studied under Playfair who was Professor of Natural Philosophy at that time. Tytler was also President of the Natural History Society of Edinburgh and the Edinburgh University Library holds a paper he read before it in 1805.

Tytler served as a military surgeon at the Cape of Good Hope from 1800 and was assistant surgeon to the 81st Foot Regiment in 1802. He resigned his commission in 1803 and was appointed assistant surgeon to the government of Bengal in 1808 being promoted to surgeon in 1823. His Penang visit probably took place just after his appointment as surgeon and during a tour of inspection, Penang at that time being subject to Bengal. Tytler also served in Burma and in Java, presumably under the administration of Stamford Raffles. Tytler died near Gwalior then a native state of India, possibly in the Bundelkhand district.

In the unabridged account, in the form of a letter to the editor of the Pinang Gazette, which follows it is curious to note that Tytler's ideas seem to have been completely uninfluenced by those of his fellow-citizens, Hutton and Playfair, and cling strongly to the diluvialist view.

TO THE EDITOR OF THE PINANG GAZETTE.

"The waters prevailed exceedingly upon the earth; and all the high hills, that were under the whole heaven, were covered."

GENESIS XII, 19.

SIR,

It is remarked that between the appearance of the mountains in Bundlecund, particularly those in the vicinity of Banda and Callinger, and the islands of the Atlantic, as Madeira and Porto Sancto, there is discovered a well defined resemblance. The observation is just, yet on a cursory survey it is perceived that the similarity of mineralogical character is far stronger between that part of Hindooftan, and the island of Pinang, and small mountainous islets in its neighbourhood and the opposite shore of Queda. At the village of Ruffum, a short distance eastward from Callinger, huge blocks of coarse Granite rock are seen piled upon each other, which bear close analogy to the white coloured granite of this island; and Pulo Terkoos, and the Buntings in their external aspect seem as if they were actually repetitions, so identical is the resemblance, of the mountains and rocky accumulations which are found in the plains of Bundlecund, and the rocky islands of Jebangeera and Colgong, that are placed in the stream of the Ganges, near the station of Bhaugleporc. In Bundlecund and in the Ganges, the huge blocks of granite rock, forming entire and separate stones, frequently exhibiting traces of having been originally chrystallized, are piled one upon the other in such a manner as to produce the strongest conviction of some tremendous natural convulsion, having been exerted to cause their appearance in the mode in which they are at present found to exist. Now, it is evident that whatever this convulsion was it is one which must have been equally common and powerful in its operations within the interior of India, at an immense distance from the Ocean, and at Pulo Pinang, close to the shore of the Indian Seas. To the eastward of the Pinang hill we observe the plain terminating in the beach of sand on which stands the town, fronting the narrow strait that divides the island from the continent of Queda, and at the eastern extremity of the range of hills which terminates in the Ganges, we find precisely similar beaches of sand, as at the

fortress of Chunar, the beach of which bears a striking affinity in its principal features to that of Pinang. Throughout the whole course of the Ganges appear also large beds of sand in all particulars closely corresponding with the sea sand upon the coast of these islands, and producing the sandy valley over which the sea flows, and forms the plain extending from the foot of the Pinang mountains to the Queda hills which appear on the opposite shore; exactly in the manner that Callinger is seen separated by a deep valley from the mountain of Callingeeree and the hills in its vicinity. But the whole of the Granite rocks, whether they be examined as they present themselves to our notice in this quarter, or as they are discovered scattered Hindooftan, possess evidently an inclination towards the east, thus affording a presumption that in their position they must have been affected by the diurnal rotation of the Earth, and as no natural cause of which we can entertain an idea, could have placed them in their present situation excepting an immense deluge of water, we are enabled to view in the distribution of those prodigious stones, one of the most powerful natural evidences in support of the Mosaic account of the Universal Deluge that could possibly be desired. The surface of the Indian Continent, at the remote distance of many hundred miles from the borders of the Ocean, and Pinang situated in the Mouth of the opening into the vast eastern seas, equally bear conspicuous testimony to the truth of the circumstances related by the inspired Historian.

The particular formation of granite rock to which I allude, is seen very distinctly at the grand scene of the waterfall, which, so far as I can learn, is the most striking natural curiousity upon this interesting island. At that beautiful, I may add sublime spot, we find the venerable cascade dashing over a wall of solid granite at least twenty feet in height, which supports other huge masses of the same description, and in its turn falls upon blocks of a similar construction. But the appearance of those rocks as they are affected by the descending water, strikingly corroborates the fact of the little effect, which that fluid although flowing with its utmost force, is capable of producing in altering the great outlines of the Globe's surface from the state in which it was left at the moment of the recession of the dilunia waters. For while the stone, where the water dashes in foaming torrents along the edges and sides of its steep and rocky wall, has become polished so as to exhibit traces of mechanical action; the general aspect of the rocks, lying in the bed of the river formed by the decent of the water, remains evidently unchanged from the moment they were deposited in their present situation to the existing time; exhibiting not the smallest sign of having been driven one inch beyond their original

position by the strength of the descending stream. To those who combine the facts displayed by nature with the details afforded by Moses, relative to the general calamity which overwhelmed the Globe, no portion of country can be contemplated with more satisfaction than the eastern face of Pinang, especially after an examination of the Bundlecund hills in Hindoostan. For as has been said, at the remote distance of hundreds of miles from the sea, and close to its coasts we equally discover traces of the action of a flood, and incontestible proofs that the whole of these countries was at one period buried beneath an inundation of waters.

At the point of descent the temperature of the water I found at 8 am. 74 degrees of Fahrenheit, and that of the surrounding atmosphere 76, while in the small open Bungalow the thermometer ascended to 81 degrees, thus affording a difference to temperature at one spot of this island varying about 6 degrees within the limited space of a few yards. This singular phenomenon is of course explicable from the refrigerating effects of the evaporation, which is occasioned by the dashing of the water over the rocks at the place of its descent.

Your Obedient Servant,

R. TYTLER.

Pinang, August 11, 1823.

Notes

The places referred to are mostly in India.

Bundlecund: Bundelkhand, an area mainly of dissected plateau, S. of Kanpur and E. of Gwalior. Tytler probably died in this area.

Banda: a district about 60 miles WNW of Allahabad in Bundelkhand.

Colgong: Kahalgaon, in Bhagalpur district, Bengal, about 245 miles from Calcutta.

Bhaugleporo: Bhagalpur, division, district and town bear this name. Town is on Ganges about 120 miles E of Patna. The islands mentioned by Tytler are referred to in Imp. Gaz. of India, v.8, 26

Chunar: town in Mirzapur district, about 70 miles WSW of Allahabad.

Madeira and Porto Sancto (=Porto Santo) are Portuguese possessions off the coast of Morocco.

Tytler's paper is not the earliest concerning the geology of Penang, that of William Jack appearing in Trans. geol. Soc. Lond. (ser. 2) 1, 165-6, in 1822. Tytler's work compares most unfavourably with that of J.R. Logan in the late 1840's and 50's.

Acknowledgement

I am grateful to Mr Charles P. Finlayson, Keeper of Manuscripts, Edinburgh University Library for supplying personal details and a list of the publications of Robert Tytler.

How River Pollution Increased the Size of Perak

K.F.G. Hosking
University of Malaya

Pollution is now one of the major problems with which the scientists of the world have to grapple successfully if mankind is to continue to have a sporting chance of prospering on this planet.

It is often erroneously thought that pollution was of little importance before the post World War II years and so it is interesting to read that as a result of pollution, and in order to prevent further pollution, Perak acquired in 1909, 'a corner of the Siamese-controlled State of Reman, or Rahman'.

The following extract from Vallentine's 'The romance of a Malayan tin field', (p. 10) provides the details:-

Still, it must be admitted that, even in 1909, while the rubber boom was yet in its infancy, the announcement of an agreement with Siam, by which Britain undertook to extend her protection to the neighbouring states of Kedah, Perlis, Kelantan and Trengganu, excited widespread attention. This agreement also provided that the corner of the Siamese-controlled State of Reman, or Rahmen, which lay within the watershed of the Perak River, should be handed over to Perak, the premier and wealthiest

State of the Federation. One of the main reasons for this arrangement being the necessity of bringing all the mining on the headwaters of that river under one control, so as to check the pollution and silting up of the waterway and to protect the cultivation along its banks".

References

Vallentine, E.J.

The romance of a Malayan Tin field.
The Mining Journal, London, 1913.

NEWS FROM THE UNIVERSITI KEBANGSAAN MALAYSIA

The following item has been kindly forwarded to us by Dr. H. D. Tjia of the Department of Geology, Universiti Kebangsaan Malaysia.

Berita daripada Jabatan Kajibumi, Universiti Kebangsaan Malaysia

Sa-buah Jabatan Kajibumi telah di-tubohkan bersama-sama penubohan Universiti Kebangsaan Malaysia di Kuala Lumpur pada awal tahun 1970. Pengajar di Jabatan tersebut adalah Dr. Kardinal Kusnaeny (kajigalian dan sedimentologi), Prof. S. Sartono (stratigrafi dan paleontologi), Dr. H.D. Tjia (kajibangun dan geomorfologi). Kursus2 Kajibumi diranchangkan sebagai suatu pelajaran lengkap, ia-itu pemuntut-pemuntut boleh menchapai gelar Sarjana Muda (3 tahun) dan gelar Sarjana Muda Kujian (lagi satu tahun), dan sa-terusnya untuk gelar-gelar yang lebeh tinggi.

Semua syarahan dan makmal di-berikan dalam Bahasa Malaysia. Disamping syarahan, makmal dan Kajian semula, pengajar2 juga bertugas menyusun pedoman-pedoman makmal, menulis buku-buku teks kedalam Bahasa Malaysia. Sebagai ranchangusaha jangka pendek Jabatan Kajibumi bersama-sama dengan Jawatankuasa Istilah Sains, Universiti Kebangsaan, sedang mengkaji semula istilah-istilah yang sudah ada dan membuat istilah-istilah kajibumi yang baharu untuk syarahan dan makmal.

Within the newly established Malaysian National University, its Department of Geology has three members of staff: Dr. Kardinal Kusnaeny (mineralogy and sedimentology), Prof. S. Sartono (stratigraphy and palaeontology), and Dr. H.D. Tjia (structural geology

and geomorphology). A total of 10 Assistant Lecturers up to Professors will eventually make up the Department. It is hoped to graduate the first geologists with B.Sc.(hons) degrees in early 1974.

All courses and practicals are conducted in Malaysian. Next to teaching and research, the academic staff are completing or preparing original texts and translations of important textbooks into Malaysian for class use. A short term project is underway to re-assess the existing terminology and coin new geological terms which will be published by the University.

UNIVERSITY OF MALAYA TEKTITE COLLECTION

Tektites are hard, compact masses of black glass, commonly one to a few centimeters in size, with rounded to irregular shapes, and usually having a characteristic pitted and sculptured surface. These objects are of great scientific interest because they appear to have fallen onto the earth's surface as the result of a few extremely rare cataclysmic events. Only four swarms of tektites are known, ranging in age from 34 million years to only 700,000 years. Each swarm occurs in a restricted part of the earth, and all the tektites in a particular swarm appear to be related and of identical age.

Malaysia lies within the area of occurrence (known as a "strewn-field") of the youngest and largest swarm of tektites known in the world. This strewn-field extends over all of Southeast Asia, the Indonesian and Philippine archipelagos, and Australia. Detailed studies have been made of the morphology and composition of Australites (tektites found in Australia), Javanites, Indochinites, and Philippinites, all of which are abundant. In the center of the strewn-field is a virtual gap occupied by the South China Sea and West Malaysia, which has provided only few tektites for the world's collections.

Tektites are, however, found in parts of West Malaysia and are not as rare as their sparsity in world collections would suggest. Because of their mid-Quaternary age (700,000 years), these tektites generally are recovered from washing of alluvial deposits in opencast mines. The latest report of Malaysian tektites, with illustrations, appeared in this Newsletter, No. 22 (January 1970). It should be possible to obtain enough Malayan

tektites to allow of detailed studies which would help fill the geographic gap in knowledge of this strewn-field.

With this objective in mind, the Department of Geology, University of Malaya has started a special collection of Malaysian tektites. Beginning with a modest eleven specimens obtained from Pahang earlier this year, it is hoped to build up a large and representative collection which would be available for study. Donations of authentic Malaysian tektites, preferably with exact location of discovery, would be much appreciated.

- PHS -

24TH INTERNATIONAL GEOLOGICAL CONGRESS

The following notice has been issued by the Secretariat of the 24th I.G.C., to be held in Canada in 1972. We pass it on for the information of GSM members.

The SECOND CIRCULAR of the 24th International Geological Congress is now being prepared. Over 6900 geologists have mailed their application forms from the FIRST CIRCULAR. If you have not....., you will NOT receive the SECOND CIRCULAR as the IGC computer does not have your name in its Memory. Send your completed questionnaire NOW to the Secretary General, 24th IGC, 601 Booth Street, Ottawa, Canada.

NEWS OF THE SOCIETY

Professor Kobayashi elected Honorary Member

Earlier this year the Council of the Geological Society of Malaysia agreed to offer Professor T. Kobayashi, Professor Emeritus at the Geological Institute of the University of Tokyo, Honorary Membership in the Society. As the letter to Professor Kobayashi was inadvertantly sent by surface mail, it has taken some time to obtain his acceptance.

Professor Kobayashi is not only a long-standing friend and

member of the Society, but is also one of the most distinguished scientists of the region. His keen interest in the geology and palaeontology of Southeast Asia has led to a number of research trips by Japanese workers and many publications, often jointly with geologists in Malaysia. Professor Kobayashi's contributions to the understanding of the geology of Southeast Asia have been truly outstanding.

The Society now has two Honorary Members, the other being Professor John Katili of the Institute of Technology at Bandung, Indonesia.

Administrative difficulties in the Society

The Council of the Society wishes to apologize to members for any inconveniences experienced as a result of recent administrative problems and changes in the Society. Some of these difficulties are the inevitable consequence of the rapid growth of the Society and some were occasioned by the process of transferring the Society's finances to a firm of accountants. Council has asked Dr. B.K. Tan, the Assistant Secretary, to serve as Acting Secretary/Treasurer for the time being, in place of Dr. K.J. Pocock who has offered his resignation. There is some doubt about the completeness of the Society's secretarial and financial records, particularly for the year 1970. Members whose letters have not been answered, or who feel their membership records may be incomplete or in error, are urged to write to the Acting Secretary/Treasurer, Dr. B.K. Tan. Again, the Council regrets any inconvenience.

Brief communications and demonstrations at Society meetings

The Council has decided to institute a new feature at meetings of the Society. Before the main speaker of the meeting, a short time (not more than 15 minutes) will be allowed for brief communications and demonstrations of scientific interest from members present. These may be very informal and no prior arrangement need be made. Suitable items could include brief mentions of new discoveries, showing of interesting rock or mineral specimens, display of new geologic maps, or pointing out of new publications of interest to GSM members. Rocks, maps, and other

demonstration items could be available for members' examination before and after the formal program of the meeting.

Council hopes that members will avail themselves of the opportunity hereby presented to share with other members the more interesting little items from their professional life.

Membership and subscription

Because of the interest of a number of commercial firms in the Society, the Council wishes to clarify the matter of membership. Only individuals are eligible to become members of the GSM, and membership is not transferable from one individual to another. The Society has no class of 'corporate membership'. An organization which wishes to receive the Society's publications may take out a non-member subscription for M$ 20.- per year, or one of its employees may apply for membership. If that employee is then transferred and the company wishes his replacement to continue the membership, a new individual application must be submitted.

New Members

Since the last Newsletter the following have been elected to membership in the Society (all are Full Members).

Masli Arman
McMahon & Partners (SE Asia)
9-11 Jalan Gereja
Kuala Lumpur

Mr. Chork Chin Yoon
Geological Survey of Malaysia
P.O.Box 1015
Ipoh, Perak

Mr. David A.C. Clark
c/o Gaffney Cline & Assoc.
89/95 Anson Road
Singapore 2

Mr. Louis V. Hull
Continental Oil Co. of Indonesia
3rd Floor, Gainurn Building
241 River Valley Road
Singapore 9

Mr. Ray T. Johnson
Esso Exploration Inc.
P.O.Box 2824
Singapore

Mr. John Kingston
Mobil Malaysia Exploration Co.
P.O.Box 2225
Kuala Lumpur

Mr. George R. Reddy
Esso Exploration Inc.
P.O.Box 2824
Singapore

Mr. Edward J. Schwing
c/o Continental Oil Co.
241 River Valley Road
Singapore 9

Mr. Earl B. Stanford
170 Grange Road
Singapore 10

Mr. Anthony J. Stuart
c/o Geology Department
The University
Manchester. 13,
England

Dr. Eugenio Vacirca
c/o AGIP Indonesia Branch
P.O.Box 339
Djakarta, Indonesia

CHANGE OF ADDRESS

Mr. A.W. Allen
Department of Agriculture
Brunei Town
Brunei

Mr. Mohammed Ayob
c/o Dept. of Geology
State Univ. of N.Y.
Binghampton, New York 13901
U.S.A.

Mr. I.L. Burnett
c/o Data Analysis
Orchid Inn
214 Duncarn Road
Singapore

Dr. C.K. Burton
c/o P.T. Kennecott Indonesia
8-8 Jalan Mutiara
Singapore 10

Mr. M.K. Choo
Associated Mines (M) Sdn Bhd
P.O.Box 2125
Kuala Lumpur

Dr. Ian Douglas
University of Hull
East Yorkshire
England

Mr. T.G. Garson
170 Grange Road
Singapore 10

Mr. S. Gopalapillai
No. 79 Jalan Abdul Manap
off Maxwell Road
Ipoh, Perak

Dr. John C. Hazzard
Hazzard, Morris & Assoc.
Suite 515 Petroleum Building
714 W. Olympic Boulevard
Los Angeles, Calif. 90015
U.S.A.

Mr. W.F. Hooper
Gulf Oil Company (S. Asia)
P. O. Box 641
Singapore

Mr. Ray T. Johnson
Esso Exploration Inc.
P.O. Box 2824
Singapore

Mr. Khoo Chong San
Esso Exploration Malaysia Inc.
P.O. Box 601
Kuala Lumpur

Mr. Khoo Tong Tiong
The Jane Herdman Lab. of Geology
University of Liverpool
P.O.Box 147
Liverpool L69 3Bx
England

Mr. M.L. Lee
86 Hobbs Avenue
Como, W.A.
Australia 6152

Mr. T.K. Leong
Geophysical Services Ltd.
101 Boon Keng Road
Singapore 12

Mr. Francois van Leempoel
A.I.A. Building
Room 403, Jalan Ampang
Kuala Lumpur

Mr. J.H. Leow
McPhar (Asia) Pty Ltd
51 Kallang Place
Singapore 2

Mr. S. MacDonald
Australian Ores & Minerals Pty Ltd
6th Floor, 58 Margaret Street
Sydney, N.S.W.
Australia 2000

Mr. G.T. Muir
c/o National Westminster Bank Ltd
Meneage Street
Helston, Cornwall
England

Mr. Samuel T. Pees
889 Porter Street
Meadville, Pa. 16335
U.S.A.

Dr. R.P.B. Pitt
c/o UNOCAL
302 Orchard Road
Singapore 9

Mr. Mathew Raja
c/o 340 Prai Road
Bukit Mertajam
Province Wellesley

Mr. G.E.G. Sargeant
Prof. Applied Geology
University of Queensland
Brisbane, Australia

Mr. Jogindor Singh
Hong Kong/Killinghall Tin
Puchong, Selangor

Mrs. M.E. Stauffer
35A Lorong Jambatan
Kuala Lumpur

Mr. M.J. Sweet
40-G Goldhill Towers
Goldhill Avenue
Singapore 11

Mr. Yeap Chong Hock
Associated Mines
P.O. Box 2125
Kuala Lumpur

Mr. E.B. Yeap
c/o Department of Geology
University of Malaya
Kuala Lumpur

Mr. Yee Kok Cheong
c/o The Lab.,
Eastern Smelting Co. Ltd
P.O. Box 280
Dato Kramat Road
Penang

Addresses Unknown

The Secretary/Treasurer has been unable to contact the following members, whose present addresses are unknown. He would be grateful on any information on how to reach these people.

Mr. S. Paramanathan
Mr. M.C. Estoque
Mr. R.M.S. Lee
Mr. G.A. Hodgson (a recently joined member)
Sir P.A. Skipwith

Resignations

The following have resigned from the Society

Mrs. S. Balasingam
No. 4 Jalan 49E
Petaling Jaya, Selangor

Mr. H.H. Hall (transferred)
Esso Exploration Inc.
170 Grange Road
Singapore 10

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