

K E S A T U A N   K A J I B U M I   M A L A Y S I A  
GEOLOGICAL SOCIETY OF MALAYSIA

---

---

N E W S L E T T E R

Number 5

March 1967

---

Contents

Report on London Tin Conference by N.S. Haile	page 1
Society plans for publications	
The Bulletin Series	4
Book on 'The Geology of the Malay Peninsula'	4
A comment on publications	5
Meetings of the Society	
Discussion Meeting, 31 January 1967	6
First Annual General Meeting, 31 Jan. 1967	7
Evening meeting, 31 January 1967 - talk by Professor John Sutton	7
Progress in Mining Exploration: Ore Divining	9
Society Library Started	10

---

## REPORT ON LONDON TIN CONFERENCE

by N.S. Haile,  
President, GSM

The Technical Conference on Tin held by the International Tin Council in London from 14-17 March performed a very useful function in focussing attention on the need for more research into the mineralogy of tin and the geology of tin deposits. The conference was attended by about 180 participants from a number of countries including Malaysia, Bolivia, Thailand, Nigeria, and Czechoslovakia among producers, and the U.K., France, Belgium, Holland, Germany, the U.S.A., and Canada among consuming countries. Malaysia was represented by Enche Mohamed Salleh, Mr. D. Santokh Singh, and Mr. D.J. Batzer, and the writer represented the Geological Society of Malaysia. Other participants with Malaysian connexions were Mr. D. Slater and Mr. Brooks.

The meeting was held in the conference room at the headquarters of the International Tin Council in Haymarket House, Haymarket, where simultaneous translation in English, French, and Spanish was provided.

The papers on the geology of tin served to indicate the rather patchy state of knowledge, and the great potential for research in this field. Dr. K.F.G. Hosking, in an important paper on "The relationship between primary tin deposits and granitic rocks", showed that certain generalizations, such as that biotites in granites in the vicinity of tin lodes contain high tin content, do not hold everywhere. He pointed out, in passing, the puzzling non-existence of fossil placer deposits of tin of Mesozoic or older age. Another major contribution was a paper on "The underground pursuit and development of tin lodes" by Dr. R.H.T. Garnett, who was unfortunately unable to present his paper in person. (The title of the paper irresistably evokes an image of a pack of tin hounds bounding after a retreating lode in the deep recesses of Sungei Lembing!) Some of his conclusions are worth quoting here: ". . . the employment (by a mining company) of a geological department in times of plenty is an investment for the future, but its absence is short-sighted and may result in the premature closure of the mine since the local geological experience will be lacking when it may be desperately needed . . . The mining engineer . . . who is tempted to regard himself as an expert geologist is a greater handicap than a geologist who has no notion of the technicalities of mining. Likewise the mine geologist must remember that the industry will judge him by his ability to find more ore for the mine, not merely by the outside acclaim awarded to his theories of ore genesis."

Two ably presented papers by Mr. D. Santokh Singh were the only contribution to the mineralogy of tin. Some of the minerals described, such as colusite, renierite, canfieldite, cylindrite, nigerite, thoreaulite, and teallite, are not exactly household words, but it seems probable that these and other rare tin minerals may be more widespread than supposed. The data presented will assist in their recognition.

Continental drift reared its head even here, when Dr. P.D. Schuiling demonstrated that the tin belts in South America and West Africa show a striking fit when plotted on Bullards reconstruction of the Atlantic lands, with Africa and South America brought together.

Mining and recovery techniques were also covered by the conference, with useful Malaysian contributions from Dr. W.K. Ng and Mr. D. Batzer. A visit to the Tin Research Institute, which is sponsored by the producing countries to promote the consumption of tin, enabled research in this field to be examined. Whereas tin plate and solder still account for about two-thirds of world consumption, important subsidiary uses have been discovered. These include addition of tin to cast iron to improve wear resistance, tin-nickel plating, use in paints, fungicides, disinfectants, and plastics. Tin unfortunately has a deleterious effect on steel, but research is in progress to find a method of incorporating tin in steel which would give, instead, a beneficial effect.

The proceedings of the conference will be published at £ 6/6 and may be ordered from the Secretary, International Tin Council, 28 Haymarket, London SW 1. Preprints are available at 7/6 each. A complete set will shortly be placed in the Klompé Reading Room in the Department of Geology, University of Malaya, where they will be available to members of the Society.

The papers given at the conference were:

- "A survey of recent trends in ore-dressing practice in Malaysian alluvial tin mines" by W.K. Ng, Department of Mines, Malaysia
- "The recovery of tin from mill tailings, with particular reference to Cornish practice" by J.E.F. Marshall, minerals engineer, Camborne
- "Mineral processing of tin ores" by M.P. Jones, Royal School of Mines, London.
- "A gravity concentrator for fine minerals" by R.H. Mozley, University of Bristol

- "Some recent innovations in dredging practice in Malaysia"  
by D.J. Batzer, Anglo-Oriental (Malaya) Sdn. Berhad
- "The underground pursuit and development of tin lodes"  
by R.H.T. Garnett, Patiño Mining Co. of Canada
- "Sea bed prospecting" by J.C.C. Hill, Alluvial Mining  
and Shaft Sinking Co., Ltd.
- "Sonic profiling techniques for off-shore prospecting of  
alluvial deposits" by G.E.G. Sargent, Hunting Geology  
and Geophysics Ltd.
- "Endogenous tin mineralization in the Bohemian massif"  
by Josef Janečka and Miroslav Štemprok, Ustředni  
Ústav Geologický, Prague
- "The relationship between primary tin deposits and  
granitic rocks" by K.F.G. Hosking, Camborne School of  
Metalliferous Mining
- "The geology of lode tin deposits" by C.L. Sainsbury and  
J.C. Hamilton, U.S. Geological Survey
- "The Bolivian tin mining industry: Some geographical  
and economic problems" by D.J. Fox, University of  
Manchester
- "A tin province of the Nigerian type in Southern Amazonia"  
by J.B. Kloosterman, consulting geologist
- "Observations on concentrate grade and recovery relations  
in some mills of Comibol, Bolivia" by P.A. Wright,  
Mining and Metallurgical Research Institute, Bolivia
- "Geotechnic and metallogenesis of the Challapata-Caxata  
zone of Bolivia" by Walter Thormann, with collaboration  
of P. Ljunggren and M. Virreira and the Servicio  
Geologico de Bolivia
- "Geology of the Symétain mines in Maniema, Congo (D.R.)"  
by P. Evrard, University of Liege, and G. Schaar,  
mining engineer and geologist
- "Mining in the Symétain mines in Maniema, Congo (D.R.)"  
by P. Anthoiné, mining engineer and geologist, and C.  
Kharkevitch, mining engineer
- "Tables for the microscopic identification of tin minerals  
in Malaysia" by D. Santokh Singh, Geological Survey,  
Ipoh
- "Some general aspects of tin minerals in Malaysia" by D  
Santokh Singh

"New avenues for tin consumption" by E.S. Hedges, Tin Research Institute

"Work and problems on tin in Thailand" by the Department of Mineral Resources of Thailand

"Work and problems of the Mines and Geological Division of the Ministry of Mines and Power, Republic of Nigeria, relative to higher production of tin" by G.N. Onyemenam, Asst. Chief Inspector of Mines, Nigeria

"The organization and objectives of the Geological Service in Bolivia" by the Servicio Geologico de Bolivia

"Some problems for Mines Departments and Geological Surveys in the exploration for and assessment of tin deposits" by the Secretariat of the International Tin Council

#### SOCIETY PLANS FOR PUBLICATIONS

The Bulletin Series: In order to further geologic knowledge in this region, the Geological Society of Malaysia intends to publish papers of interest in a series of irregular publications, probably to be called 'Bulletins'. The first of these, already in preparation, will contain some of the papers presented at the Discussion Meeting in January. A manuscript of monograph length is in prospect for the second. The generous gifts received by the Society from various companies will support these publications.

Manuscripts are invited for this series of publications. Long manuscripts may appear as separate Bulletins, shorter papers in collections. Any paper relating to geology will be considered, preference being given to those with relevance to Malaysia. Address manuscripts (typed, double-spaced) or correspondence to:

The Editor  
Geological Society of Malaysia  
c/o Department of Geology  
University of Malaya  
Kuala Lumpur, Malaysia

Book on 'The Geology of the Malay Peninsula': An agreement has been formalised between Interscience Publishers, a division of John Wiley & Sons, Ltd., and the Geological Society of Malaysia for the preparation and publication of a book on the geology of West Malaysia and Singapore. The proposed book has been accepted by Professor L.U. de Sitter to be included in the Regional Geology Series, of which he

is general editor. The first book of this series to be published was "Geology of the Himalayas" by Professor Augusto Gansser.

Responsibility for the preparation of the manuscript has been given by the Council of the Society to an editorial board consisting of -

Mr. S.K. Chung, Geological Survey, West Malaysia  
 Dr. D.J. Gobbett, University of Malaya  
 and Dr. C.S. Hutchison, University of Malaya

An outline of the book has already been planned and contributors have been obtained for the respective chapters. It is expected that the final manuscript will be in the hands of the publishers by two years' time.

A book such as this will require selected outstanding photographs to illustrate various aspects of Malayan geology and geomorphology. The Society would be most grateful if anyone possessing appropriate photographs on any aspect of Malayan geology, including economic activity, would send one postcard-size copy of each, with exact description and location together with your name pencilled lightly on the back, to

Dr. C.S. Hutchison  
 Department of Geology  
 University of Malaya  
 Kuala Lumpur, Malaysia

Any photographs used in the book will be properly acknowledged.

For the frontispiece of the book, a good photograph of J.B. Scrivenor, or of an early field party, would be good. We would be grateful to obtain such photographs as well.

- CSH

A comment on publications: In forging ahead with these rather ambitious plans for publications, the Society intends to keep the following passage in mind and to obey its spirit:

" I am only too painfully aware how increasingly difficult it is to keep pace with the ever-rising tide of modern geological literature. The science itself has so widened, and the avenues to publication have so prodigiously multiplied, that one is almost driven in despair to become a specialist, and confine one's reading to that portion of the literature which deals with one's own more particular branch of the science. But this narrowing of the range of our interests and acquirement has a markedly prejudicial effect on the character of our work.

The only consolation we can find is the conviction, borne in upon us by ample and painful experience, that a very large mass of the geological writing of the present time is utterly worthless for any of the higher purposes of the science, and that it may quite safely and profitably, both as regards time and temper, be left unread. If geologists, and especially young geologists, could only be brought to realise that the addition of another paper to the swollen flood of our scientific literature involves a serious responsibility; that no man should publish what is not of real consequence, and that his statements when published should be so clear and condensed as he can make them, what a blessed change would come over the faces of their readers, and how greatly would they conduce to the real advance of the science which they wish to serve."

- Archibald Geikie in Founders of Geology,  
1st Edn., 1897, pp. 287-8

#### MEETINGS OF THE SOCIETY

Discussion Meeting, 31 January 1967: This meeting was a considerable success, with a large attendance, interesting papers and some lively discussions. Sets of abstracts of the papers given are still available, at \$2 (M) each. The papers given were:

- "The stratigraphy of the area west of Kampar" by Suntharalingam Thambypillai
- "The Permian System in Malaya" by D.J. Gobbett
- "The Tembeling Formation - a lithostratigraphic description" by B.N. Koopmans
- "Northwest Borneo Geosyncline in its geotectonic setting" by N.S. Haile
- "The effects of late Tertiary and Quaternary tectonic movements on the geomorphological evolution of Brunei and adjacent parts of Sarawak" by G.E. Wilford
- "Glaciation of Mount Kinabalu, Sabah" by P.H. Stauffer
- "Dating of Malayan rocks by thermoluminescence" by C.S. Hutchison

First Annual General Meeting, 31 January 1967:

Encouraging reports by the Chairman and Secretary-Treasurer of the Pro-Tem Committee of the Society (copies have been sent to all members) were followed by announcement of the election of the first set of officers of the Society, to replace the Pro-Tem Committee. The officers for 1967 will be:

President: N.S. Haile  
 Vice-Pres.: S.K. Chung  
 Secr./Treas.: D.J. Gobbett  
 Editor: P.H. Steuffer  
 Councillors: H.C. Olander  
                   G.E. Wilford  
                   D. Santokh Singh (co-opted)  
                   J.F. Lambert (co-opted)

A group photograph was taken of the members present for this meeting, and a copy is being sent with this newsletter to all those whom we could identify. There were three faces in the photograph we could not identify, and we appeal to those of you who receive this photograph to help us: the three mystery men are 1) far left, back row, 2) and 3) 6th and 7th from left, 2nd row (the two with dark suits and name tags).

Evening meeting, 31 January 1967: The concluding event of this busy day was a talk by Prof. John Sutton of London University (and a member of the GSM). The Secretary provides the following report:

The meeting was held in Science Lecture Theater 1, University of Malaya, at 8.00 pm.

The President introduced Professor J. Sutton, F.R.S., who presented the best wishes of the Council of the Geological Society of London to the Geological Society of Malaysia before speaking to the meeting on "Precambrian Geology".

Professor Sutton referred to the tectonic map of Eurasia, recently printed in the U.S.S.R., which showed the latest period of folding for the different parts of the continental crust. The late Precambrian and younger fold belts have a similar distribution pattern, lying parallel to each other or being superimposed upon each other. However, structures older than about 1000 million years showed a completely different pattern. Metamorphic rocks of the Ukraine, Baltic shield, Greenland, Canada and Utah where metamorphic history ended 1400-1200 million years ago, could be shown to form a continuous structure - a Black Sea to Utah line, unrelated to any later tectonic trend.

~~Older rocks of the Superior Province, metamorphosed~~ 2800-2250 million years ago and older areas still (3000-3600 m.y.) of the Kola Peninsula now formed relatively small scattered outcrops because this very old crust had been very largely re-worked during the late Precambrian. The oldest crust (about 4600 m.y.) had been completely lost by this re-working. Professor Sutton postulated major changes in the tectonic pattern of the crust at approximately 1000 m.y., 2000 m.y., and 3000 m.y. ago, the latest of which gave rise to the pattern still in effect today. There is some evidence that each tectonic cycle had an early pattern of a large number of small mobile belts and evolved later a pattern of a few very large belts.

Later Precambrian metamorphic history was well shown in the Moinian, Torridonian, and Dalradian rocks of Scotland and two periods of older metamorphism were represented in the Lewisian gneiss. However, in S.W. Greenland the history of the Precambrian was more complete and the structure of the Precambrian rocks was superbly displayed as evidenced by Prof. Sutton's colour transparencies.

In Greenland, despite repeated metamorphism and highly complex fold structures on centimetre and kilometre scales, primary structures such as cross-bedding and pillow lavas could still be recognized in rocks older than 2300 m.y. Also in Greenland the re-working of older crust could be demonstrated. Unmetamorphosed cover overlying an older crystalline basement, older than 2000 m.y. could be traced laterally and be seen to gradually become metamorphosed, this metamorphism also re-activating the crystalline basement and giving it a younger, Ketelidian (1400-1700 m.y.), metamorphic age. Thus the Ketelidian was manufactured out of old basement and younger cover. Basic dykes cutting the unaffected basement were deformed and made apparently conformable with the foliation of the gneiss of the re-activated basement.

In the early Precambrian it was probable that all areas of the crust were mobile. The first indication of the development of forelands and mobile belts, about 2000 m.y. ago, was the existence of iron formations around the periphery of the Superior Province of the Canadian Shield which is enveloped by younger Precambrian fold belts. The number of stable areas has increased during geologic time and the major part of the crust is stable today.

Discussion: Mr. H.C. Olander asked the speaker about the nature of the contact between higher and lower grade metamorphics. Prof. Sutton replied that there was a transition zone at large scales, although locally and at small

scales the boundary may be sharp.

In reply to a question from Mr. C.S. Hutchison regarding the enrichment in iron of the jaspers formed about 2000 m.y. ago, Prof. Sutton said that the origin of these was not known.

Prof. Sutton went on to say that the major changes in tectonic pattern were presumably controlled by the behaviour of the mantle. Swarms of basic dykes at about 2000 m.y., 1000 m.y. (Gardar volcanics in Greenland) and the Tertiary volcanics could all be related to the fracturing of stable areas accompanying continental drift.

Mr. P. Collette proposed a vote of thanks to the speaker and the meeting ended at 9.20 pm.

#### PROGRESS IN MINING EXPLORATION: ORE DIVINING

The following is an extract from the Commonwealth Geological Liaison Office Newsletter for January 1967, reporting a Tass broadcast of 6 December 1966.

A group of Soviet scientists have decided to verify by modern methods a mysterious phenomenon which has been known for 2000 years but has never been explained. This is the ability of many people to discover deposits of various useful minerals, even including gold, deep below the ground by means of a "divining rod".

Experiments have established that this modern "magic wand" - a U-shaped metal frame with curved ends - indicates deposits at depths of up to 80 m. The frame starts to twist in the diviner's hands when the treasure is beneath his feet; even thick beds of clay and sand over the lead, zinc, and gold are no obstacle. It has been ascertained by experiments that 20 per cent of men and 40 per cent of women possess the ability to find deposits with the help of a divining rod. About 200 people took part in the experiments.

The head of one of the experimental groups, the geologist Nikolay Sochevanov, thinks that this phenomenon is of a magneto-hydrodynamic nature. Certain external physical fields get into the biological currents of the human organism. In this process the blood possibly acts as an electrolyte. Sochevanov says that we now have to find out which is the "receiver" of the signals obtained and to explain the nature of the physical electromagnetic fields which produce this mysterious phenomenon.

Some details have already been determined. During the experiments, for instance, the person taking part in the experiment was put in a car with a closed metal body so as to screen him from the Earth's electrostatic field and from ionization. This, however, did not prevent the divining rod from revolving when the car passed over a deposit of valuable minerals.

#### SOCIETY LIBRARY STARTED

A guest of the Geological Society of Malaysia during the meetings on 31 January 1967 was Dr. John Katili of the National Institute of Geology and Mining, Bandung, Indonesia. In addition to establishing friendly contacts with geologists in Malaysia, Dr. Katili donated a selection of Indonesian geologic publications to the Society. These books and papers, which include an Indonesian-English geologic dictionary, thus form the beginning of the Society's Library.

An agreement has been reached with the Department of Geology, University of Malaya, under which the Society's Library will be housed in the Klompé Reading Room of the department. In exchange, members of the Society will have access to the collections of the Reading Room.

Other donations and contributions to the Library will of course be very welcome.