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 3 November 1966

Contents

ECAFE MEETING IN BANGKOK

Malaysia was represented at the Sixth Session of the Working Party held in Bangkok from 8th to 13th August 1966 by Jaafar bin Ahmad. The Working Party of Senior Geologists was sponsored by the Committee on Industry and Natural Resources of ECAFE.

Progress of the Geological Survey and related activities of the countries of the ECAFE region was reviewed. In this connection Jaafar bin Ahmad read out two papers:-

1) Some aspects of engineering geology in granite areas in Malaya - by W.D. Procter

2) Progress of Geological Survey and related activities in West Malaysia since the 5th Session - by S.K. Chung and Jaafar bin Ahmad.

The Working Party noted with satisfaction that three regional maps of Asia and the Far East were already published, namely (1) Regional Geological Map, (2) Regional Oil and Natural Gas Map, and (3) Mineral Distribution Map. Draft maps for the Regional Tectonic and Regional Metallogenic Maps were also put on display at the meeting. The Working Party proposed that Regional Hydrogeological and Regional Gravity maps should also be prepared. Countries in the ECAFE region were asked to co-operate by supplying all the relevant data available.

Enche Jaafar also visited the Department of Mineral Resources in Bangkok in his private capacity, and during discussion with some old friends among the officers it was learned that their department usually organizes a Mining Convention every two or three years. According to M.C. Piriyadis Diskul, Chief of Economic and Information Division of the Mineral Resources Department, and Editor of Mineral Resources Gazette, the Convention will probably be held in South Thailand early next year. It is tentatively planned that a study tour would be made to the Kinta Valley and Kuala Lumpur mining areas in West Malaysia. In this regard our Thai colleagues will be looking forward to close co-operation with geologists in this country in order to make the study tour a success.

- J.b.A.

SEDIMENTS OF THE MALACCA STRAIT

The following is the abstract of a Ph. D. thesis (University of Illinois, 1966) entitled "Sediments of the Malacca Strait, Southeast Asia," by George H. Keller. Dr. Keller collected date in 1964 while on board the U.S. Coast and Geodetic Survey Reserach Vessel PIONEER and incorporated earlier data. This abstract is printed here with the kind permission of the author.

The Malacca Strait is a shallow passage between the Malay Peninsula and Sumatra with oceanographic and bottom sediment characteristics closely related to strong currents, debouching rivers, climatic variation, and the close proximity of bordering land masses. The strait assumed its present configuration as a result of the postglacial rise of sea level which drowned the Sunda Shelf. An essentially tidal north-west current flow prevailing in the strait throughout the year is largely responsible for the hydrographic and oceanographic conditions in the region. Surface salinities and temperatures are generally found to be lower than in the surrounding seas. A prominent wedge of cool-temperature, high-salinity bottom water is found to extend from the Andaman Sea into the Strait.

Bottom sediments primarily consist of muddy sands with large areas of mud occurring in the vicinity of river mouths and in the Andaman Sea. Calcium carbonate, primarily composed of mollusk shells and foraminiferal tests, and organic carbon are generally found only in minor amounts in the strait. Higher concentrations of calcium carbonate are confined to local shell deposits and larger percentages of organic matter are found in the vicinity of river mouths and in the fine sediments of the Andaman Sea. The non-calcareous detrital fraction is dominated by quartz with minor amounts of orthoclase and plagioclase feldspars. The heavy mineral suite is complex because of the varied geology of the bordering land areas and consists primarily of leucoxene, ilmenite, staurolite, biotite and amphiboles. Kaolinite and mixed-layer minerals constitute the dominant clay minerals; lesser amounts of illite and montmorillonite are also present. A slight decrease in illite and an increase in mixed-layer minerals with depth was observed in some cores. Volcanic ash of an andesitic origin is found throughout much of the area. Many cores penetrate what appears to be a Late Pleistocene surface consisting of stiff, slightly indurated silty clay. The clay contains much peat, some of which has given a radiocarbon date of 10,000 years B.P.; it appears to represent a former tidal flat or estuarine

deposit. A comparison of the Malacca, Formosa and Korea straits with other strait environments on the east Asiatic shelf shows that sediment distribution in these large straits is largely related to drainage from the adjacent land areas. Sediment distribution in the small straits is mainly controlled by currents.

FUEL RESOURCES IN MALAYA - A REVIEW

Fuel Resources (Coal, Lignite, and Petroleum) In Malaya, compiled by J. Renwick and D.E.H. Rishworth, published by the Director of Geological Survey, Ipoh, May, 1966. 123 p., 7 maps, 2 tables, 3 tabular appendices. Price: M$10.00.

Reviewed by N.S. Haile

This compilation on the fuel resources of Malaya (now officially known as West Malaysia) is a welcome addition to Malaysian geological literature. The volume is neatly duplicated, and bound in loose-leaf hard covers. It is not one of a recognized series of publications such as reports or bulletins. The work comprises three parts: a general review of Malayan stratigraphy and known Tertiary areas; coal and lignite; and petroleum.

The introductory part (Part I) includes a table of the geological succession in Malaya, which provides a useful summary of the geology. It does not, however, mention the Kuala Lumpur Limestone and Dinding Schist defined by Gobbett in 1964 (Fed. Mus. Jour., 9, 67-79), which are among the few formations in this country approximating the requirements of the international stratigraphic Code. That many Malayan units do not conform to the Code is shown by the remark opposite "Devonian to Triassic" in the table: "Several Formations described from different parts of Malaya. The terminology is presently under review in the light of recent palaeontogical discoveries which have rendered the previous terminology largely obsolete." Lithologic units, properly defined, should not be rendered obsolete by paleontogical discoveries.

Part II is a useful compilation of what is known about coal in West Malaysia. It is concluded that no pre-Tertiary coals are known or are likely to be found, that the Quarternary lignites are valueless, and that the only deposits worth a second thought are those in Tertiary basins, namely at

Bukit Arang, Perlis; Enggor, Perak; Kepong, Kluang, and Nigor, Johore; and Batu Arang, Selangor. Of these, all are shown to be too small or worked out, except Bukit Arang, Perlis, where investigations have not been completed, and Batu Arang, Selangor, where coal was worked from 1915 onwards. Underground mining stopped in 1958 and all coal mining has now stopped. The report however was apparently written before mining stopped completely, and it has not been brought up to date, since the date of final cessation of mining is not given.

The compilers' gloomy conclusions about coal appear fully justified by the facts given. Even a glance at the table of analyses showing fixed carbon percentages of 30 to 40 and a calorific value of 6000 to 9000 (presumably B.T.U.; no units given) is enough. In fact for most, if not all, West Malaysian occurrences, the term 'coal' is strictly honorific, and 'lignite' would be more appropriate.

Petroleum is dealt with in part III, and the first chapter concerns the Nature of Petroleum (Its abstract in full: "The latest views and theories on the nature of petroleum, its origin and accumulation are presented in summary form"). This appears somewhat out of place in a work of this nature. The remainder of this section reviews the prospects of oil occurrences and concludes that these are unlikely to be present in Malaya. A curious omission is any mention of the prospects of off-shore oil deposits.

A few minor criticisms - The layout of the report is rather unusual. There is no index or general abstract, but an abstract is placed at the head of each chapter. Some of these (in particular those of chapters 1, 2, 6, 7, 8, 11) could well serve as examples of how not to write an abstract - they contain most of the inadequacies pinpointed by Landes in his recent note ("A scrutiny of the abstract," 1966: Bull. Amer. Assoc. Petroleum Geologists, 50, 1992). The title page does not make it clear that the publication is by the Geological Survey of Malaysia (West Malaysia) or whatever its official title is now; it gives the impression that the headquarters of the Survey is in Ipoh, whereas only the headquarters of the West Malaysian Branch is sited there. These ambiguities could be resolved in future reports by a more carefully designed title page and cover.

These criticisms of detail do not detract from the fact that the report is a valuable compilation, its conclusions appear to be well supported, and the facts included will be of value to stratigraphers as well as economic geologists.

It is stated in the preface that material for the report

was first assembled several years ago in connection with an investigation into the possibility of reviving the coal mining industry in Malaya. It appears that the report was compiled to discourage expenditure on wide-spread prospecting efforts which would almost certainly have been fruitless. It would be valuable if future reports could deal with minerals for which further prospecting might be justified. In this way prospecting and development of mineral resources would be encouraged.

RADIOGENIC AGLS IN MALAYSIA

It is unfortunately not generally known that a large number of radiogenic age determinations on Malaysian orogenic igneous and metamorphic rocks have been published. These are to be found in the OVERSEAS GEOLOGICAL SURVEYS Annual Report for 1964, published by H.M. Stationery Office in London (price: 7/6-). The Malaysian age determinations are listed on page 37, in an article by Dr. N.J. Snelling entitled "Age Determination Unit." A further set of ages are to be found in the Annual Report for 1965, which has now changed title to INSTITUTE OF GEOLOGICAL SCIENCES Annual Report for 1965, Part II: Overseas Geological Surveys. The ages are again found in an article by Snelling, and are tabulated on pages 55 and 56. More radiogenic ages are in the process of determination and will appear in future annual reports of the Institute of Geological Sciences of 64-78 Grays' Inn Road, London W.C. 1.

- C.S.H.

BORNEO SURVEY ANNUAL REPORT FOR 1965

The acting director of the Geological Survey of Malaysia (Borneo Region), Mr. P. Collenette, indicates that the 1965 annual report is now available in Kuching. Included in it is a progress report of the first joint geological investigation between the University of Malaya and the Borneo Survey. This was a study by Dr. T.J.Dhonau, now of the Institute of Geological Sciences in London, and Dr. C.S. Hutchison of the University of Malaya, of associated high-grade amphibolite gneisses and banded ultrabasic igneous rocks in the Darvel Bay area of Sabah. The metamorphism of the basement gneisses was found to be higher than previously foreseen - to hornblende granulite facies. The results of laboratory studies on these rocks have been incorporated in

Hutchison's Ph.D. thesis, entitled "Tectonic and petrological relations within three rock associations of orogenic zones in Malaysia," which was presented to the University of Malaya on 30 July 1966. Dhonau and Hutchison are currently preparing a paper on the petrology and structure of the Darvel Bay rocks for submission to Beitrage zur Mineralogie und Petrologie.

- C.S.H.

SYMPOSIUM IN MANILA

The "Second Geological Convention and First Symposium on the Geology of the Mineral Resources of the Philippines and Neighbouring Countries" will be held in Manila on January 11 to 14, 1967, under the auspices of the Geological Society of Malaysia are invited to attend. Further information may be obtained from the Geological Society of the Philippines, Bureau of Mines Building, Herran Street, Manila.

- D.J.G.

NEWS FROM THE UNIVERSITY OF MALAYA

Colombo Plan Trainee Returns

Mr. Tan Chin Tong (an associate member of the G.S.M) has recently returned to the Department of Geology, University of Malaya, having worked with the New Zealand Geological Survey from October 1965 to October 1966. His visit was sponsored by the Colombo Plan. During his year in New Zealand, he worked with all sections of the Survey, studying methods and techniques in the laboratory and in the field. He travelled extensively in New Zealand and became acquainted with the geology of the country. Mr. Tan's work in the University is concerned mainly with the Geology Department's museum, and to gain further knowledge in this field he spent two weeks at Canterbury Museum on a special Museum Curator's Course. The value of Mr. Tan's experience in New Zealand cannot be overestimated.

The Scrivenor Club

When, a few years ago, students interested in geology organized a club at the University of Malaya as a branch of the Science Society, it had no special name and was just known as "geology club". D.J. Gobbett of the Geology Department,

recalling the student clubs in Britain which honour such pioneer geologists as Murchison and Sedgwick, thought it would be appropriate if the club were named after J.B. Scrivenor, the outstanding figure in Malayan geology from 1903, when he arrived in the country as the first resident geologist, through several decades. The students adopted this suggestion, and the club has since been the Scrivenor Club.

At a meeting of the club on 30 September, 1966, D.J. Gobbett presented the club with a large framed picture of J.B. Scrivenor, reproduced from an old photograph found in the informal archives of the Geological Survey in Ipoh. Dr. Gobbett also gave a short talk on the remarkable carcer of this pioneer figure.

At the same meeting of the Scrivenor Club, the principal speaker was Mr. D. Santokh Singh, Assistant Director of the Geological Survey of West Malaysia. He spoke on "The work of the Geological Survey," a subject of much interest to students soon to graduate from the geology department. First he outlined the structure of the Survey, pointing out that beneath the Director and Deputy Director there are two Assistant Directors, one in charge of the Geochemistry section, the other in charge of Economic and Field Geology. The geochemistry work is centered in Ipoh, where well-equipped laboratories are sited, but includes frequent field trips to collect samples and check field relations. The other section (called Field Geology) includes both the divisional offices in various parts of the country and some specialized posts concerned with aspects of field geology but located in Ipoh or Kuala Lumpur. The divisional offices, normally manned by one geologist each, serve both as a base for areal mapping and as a public service, especially for the mining industry. The geologist based at a divisional office normally spends two weeks of each month in field traverses, the other two weeks in the office, working up his notes and samples and handling inquiries from the public. After two or three years, he is expected to write up a memoir-type report on the geology of the area he has been mapping.

In his frank talk and the lively discussion that followed, Mr. Santokh Singh described the difficulties the Survey has had in getting its finished manuscripts published by the government. Some dozen or more memoirs have piled up in past years, and only now is there some hope of these gradually being published.

For various reasons, the Survey is now badly understaffed, some 14 professional positions being vacant. Until permanent

staff can be recruited for these vacancies, it is planned to make use of 5 or 6 Canadian geologists under the Colombo Plan. Two of these have now already arrived, one a photogeologist (see Newsletter # 2) and the other an editor to help speed manuscripts toward publication.

Mr. Santokh Singh stated that the organization and work pattern of the Survey were inherited from olden days (the Survey is over 60 years old), and that there was some feeling that it should be modernized. He suggested a pattern of party-mapping similar to that used in Australia would be more successful.

At another recent meeting of the Scrivenor Club, in October, a talk was given by Mr. James Gault, a research student in soil science at the Faculty of Agriculture of the University of Malaya. The subject was "The Geology and geomorphology of northeastern Scotland," and it was illustrated with color slides of this rocky glaciated region with its celebrated brisk climate.

Geology is an outdoor science

In the advertisement announcing the staff vacancies in the Geology Department at the University of Malaya, applicants are warned that they "will be expected to teach in a wide field." It is not explained whether this means that the new Geology Building will not be completed in time, or if it is simply to make it clear that 'armchair geologists' are not wanted. It is only fair to state, however, that the Department does provide umbrellas on exceptionally rainy days.

- P.H.S.

MEETINGS OF THE SOCIETY

Talk by Lalanne de Haut on 5th October

At the last meeting of the Society, held on 5th October 1966, Dr. Lalanne de Haut spoke on the "Sedimentology of the Recent in northwest Borneo and its application to subsurface work in oil geology."

He talked mainly about the Baram Delta and adjacent interdeltaic stretches of coastline in Sarawak and Brunei. Recent sediments were sampled off-shore by a grab and on-shore from river sections and with a hand augur and other drilling equipment down to about 80 feet. These samples were analyzed by sieving and (for silt and clay) pipette

analyses. The heavy mineral, carbonate and water content were studied, and samples were sent to The Hague for geochemical analysis.

The sediments were often disturbed and their pH and Eh changed soon after deposition, but the granulometry is a stable character and this was used to classify the sediments. Maps of the Baram Delta and adjacent areas were presented showing i) distribution of the clay, silt, and sand grades based on median diameters, ii) distribution of well-sorted and poorly-sorted sediments, which agreed with that of the coarser and finer grades respectively. The average grain size and sorting were shown to be related to water depth in both deltaic and non-deltaic areas.

Fossils in the sediments identified marine and continental deposits. The clay minerals present also gave an indication of the environment of deposition. In estuarine sediments of the Baram Delta and of Brunei Bay, illite is characteristic. Off-shore the illite is replaced by chlorite and mixed-layer minerals. Sediment samples were subjected to spectrochemical tests for boron, which increases with increasing salinity and is a good paleosalinity indicator.

The thickness of the sediments was ascertained from echo-sounding data, from oil wells, and from augur bores. Shell beds were dated by the radiocarbon method. Old shorelines now below sea level are shown by terrace cut in the pre-Recent platform. The Recent sediments of the Baram Delta have reached 120 meters in thickness within the last 5400 years, deposited on a subsiding pre-Recent base. The most recent sediments of the delta are mangrove clay covered by a surface layer of peat.

A layer of well-sorted sand at the top of the pre-Recent was interpreted as a sheet formed by spreading out of beach sands during the major rise in sea level at the end of Pleistocene.

The meeting was attended by about 35 members of the Society and members of the Scrivenor Club.

Membership list

At meetings of the Pro-Tem Committee of the GSM on 5th October and on 18th November, a number of people were elected to membership in the Society. These new members are listed on the next page.

Boucot, A.J.	Olander, H.C.	Supajanya, T.
Bush, W.E.	Omar, Mohd. b. (S)	Tan, C.T. (A)
Chan, Seng-Hon	Pakianathan, S.	Tan, L.K.
Dhillon, D.S.	Panchatcharasivam, S (S)	Toh, S.C. (S)
Gauld, J.H. (S)	Procter, W.D.	Toriyama, R.
Gray, T. (A)	Purdy, E.G.	Wee, H.T.
Grenning, P.J.	Quah, P.H. (S)	Wegmann, R.E.
Kee, T.M. (S)	Sithprasasno, D.	Wilford, G.E.
Jones, C.R.	Smith, C.W.E.H.	Wong, C.F.
Lee, C.M.	Soo, S.P.	Yeap, C.H. (S)
Leong, P.C.	Stewart, R.D.	Yong, S.K.
Nossin, J.J.	Suntharalingam, T.(S)	Hassan, W. (A)

(A = Associate Member; S = Student Member; others Full)

- D.J.G.

Lively competition for Society Emblem

Eleven entries have already been received in the competition for an official emblem for the GSM, some coming from overseas. However, many of these are of low quality (some can hardly be taken seriously), and the field is still wide open for someone with a little artistic imagination and a properly dignified attitude.

- P.H.S.

MINING GEOLOGIST VISITS MALAYSIA

Dr. A.E. Waters, consulting geologist of Angelo American Corporation (South Africa) Limited, passed through Kuala Lumpur on a flying visit (13th to 15th October) from Australia and Tasmania to Thailand en route to the United Kingdom. Dr. Waters was afforded the opportunity to visit properties attached to Associated Mines (M) Limited, and the Serdang Prospect of Kedah, controlled by Kelian Langasuka Berhad, a company financed, in the main, by Charter Consolidated Limited.

Regrettably, Dr. Waters could not find the time to give a talk to the Society on his particular forte, diamonds.

- J.F.L.