geological society of hong kong

NEWSLETTER

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GEOLOGICAL SOCIETY OF HONG KONG

GENERAL COMMITTEE

NOTES FOR THE GUIDANCE OF CONTRIBUTORS TO THE NEWSLETTER

General : Typescripts, enquiries and all correspondence should be addressed to the Secretary, Geological Society of Hong Kong, c/o Dept. of Geography and Geology, University of Hong Kong. The Society does not assume copyright of material published in the Newsletter. Any other previous, current or expected future use of such material by the author must be stated at the time of submission.

Articles of a technical nature, as well as reports of interesting events, reviews and other topical items are welcome. Contributions must be short. 1,200 words is regarded as the normal acceptable length, although exceptions may be made at the discretion of the Society. Figures, tables and half-tone plates must be kept to a minimum and must all be on separate sheets.

Typescripts must be accurate and in their final form. Two complete copies should be sent to the Secretary. Typescripts should be double-spaced, including references, on one side of the paper only with a 2.5 cm margin on each side. A4 paper is preferred. All pages should bear the author's name and be numbered serially.

Send only photocopies of illustrations, retaining the originals until the Society asks for them. Originals should bear the author's name. Diagrams should be in black on tracing material or smooth white paper or board with a line weight and lettering suitable for reduction. A metric scale should be included, and north point (or where relevant, coordinates of latitude and longitude) on all maps.

References : The author is responsible for ensuring that the references are correct and that Journal abbreviations comply with those in the List of Serial Publications held in the Library of the Geological Society of London (Geological Society, 1978).

Offprints : The society does not provide authors with free offprints of items published in the Newsletter, but will obtain quotations on behalf of authors of technical articles who may which to purchase offprints from the printer.

Cover Photograph : Courtesy - Dr. S. R. Hencher
Dyke crosscutting folded columnar jointed volcanics,
High Island Reservoir, Hong Kong.

STRUCTURE OF THE SOUTH CHINA SEA BASIN

D.R. Workman, University of Hong Kong

The central part of the South China Sea basin is on average just over 4 km deep, with a maximum depth of 4.4 km and a fairly smooth floor studded with more than 20 seamounts. The bathymetry (fig. 1) and some seismic refraction and magnetic profiling suggest that this sea floor is oceanic crust (basalt). It is supposed that the seamounts are old volcanoes and the Mohorovicic discontinuity is about 11 km beneath sea level. The northern part of the deep ocean floor has a cover of sediments which thins rapidly southwards from the foot of the continental slope off the South China coast. A down-to-the-north monoclinal flexure in the basin floor at about 18°N effectively bars prograding of sediment further southward.

Magnetic profiling in the northeastern part of the deep basin shows a not-very-well-defined pattern of magnetic reversal strips aligned roughly 080° which, matched with the magnetic reversal time scale for the Cenozoic, are approximately dated as ranging from early Miocene (20 Ma) along the central axis to middle Oligocene (32 Ma) on the northern periphery of the deep basin. It is thus thought that sea-floor spreading occurred during this time interval, possibly with an earlier beginning but ceasing in the early Miocene. Extrapolations to the west are tentative. 正当海底扩张时，一个向南倾斜的俯冲带发生在婆罗洲北缘的也形成海槽。同时，已经停止活动的海沟

[As sea-floor spreading took place, southward subduction occurred at the Palawan trench, along the northern border of Borneo.] Borneo had been rotating anticlockwise to reach its present orientation by about that time. During (?) and after the subduction, the trench was partly filled by a prograding sedimentary pile which locally reaches thicknesses of 9,000 m. It is from these sediments that all the oil currently produced in the South China Sea is obtained, most of it from late Miocene sands.

these area

① The greatest puzzle at present is the nature of the floor of the South China Sea to the northwest and south of the deep basin. These two areas are characterised by a highly irregular, often shallow, submarine topography with numerous coral islands and reefs. The most favoured hypothesis at present is that the sea floor in these particular areas is subsided continental crust. This is supported by the available seismic evidence.

陆壳下沉

A detailed comparison of the stratigraphy of southern China, Taiwan, the South China shelf, Reed Bank, N Palawan, the Calamian Islands and Mindoro has been made by Holloway (1981), making use of published information on surface geology as well as data from petroleum boreholes. This study has shown that the Triassic-Oligocene stratigraphy of all these areas is similar in all the principal aspects. However, the post-Oligocene stratigraphy shows significant differences between areas which are on the north side of the South China Sea and those which lie to the south.

海槽

② A second important discovery, from seismic profiling, is that the Palawan trough (the former subduction trench) does not extend northeastwards beyond a point offshore of central Palawan (Taylor & Hayes, 1981). South China Sea floor was subducted beneath S Palawan but apparently not beneath N Palawan (see fig. 2). It is therefore reasonable to conclude, as both Holloway (op. cit.) and Taylor & Hayes (1981) do, that all the Mesozoic crust now found in the W Philippines was, like the Reed Bank block to the west, part of the South China continental margin until the Oligocene, and that its separation and drift to its present position was the result of the sea-floor spreading that created the South China Sea basin, with spreading rates greatest in the eastern part of the basin.

已经望海槽不向东北延伸，不与
马尼拉海槽相连。指示，南海
中央盆地之海底扩张仅向南北向而已。
因此，西菲是亚洲大陆壳的残余，它由N半与大陆分开。

Fig. 1 BATHYMETRY OF THE SOUTH CHINA SEA

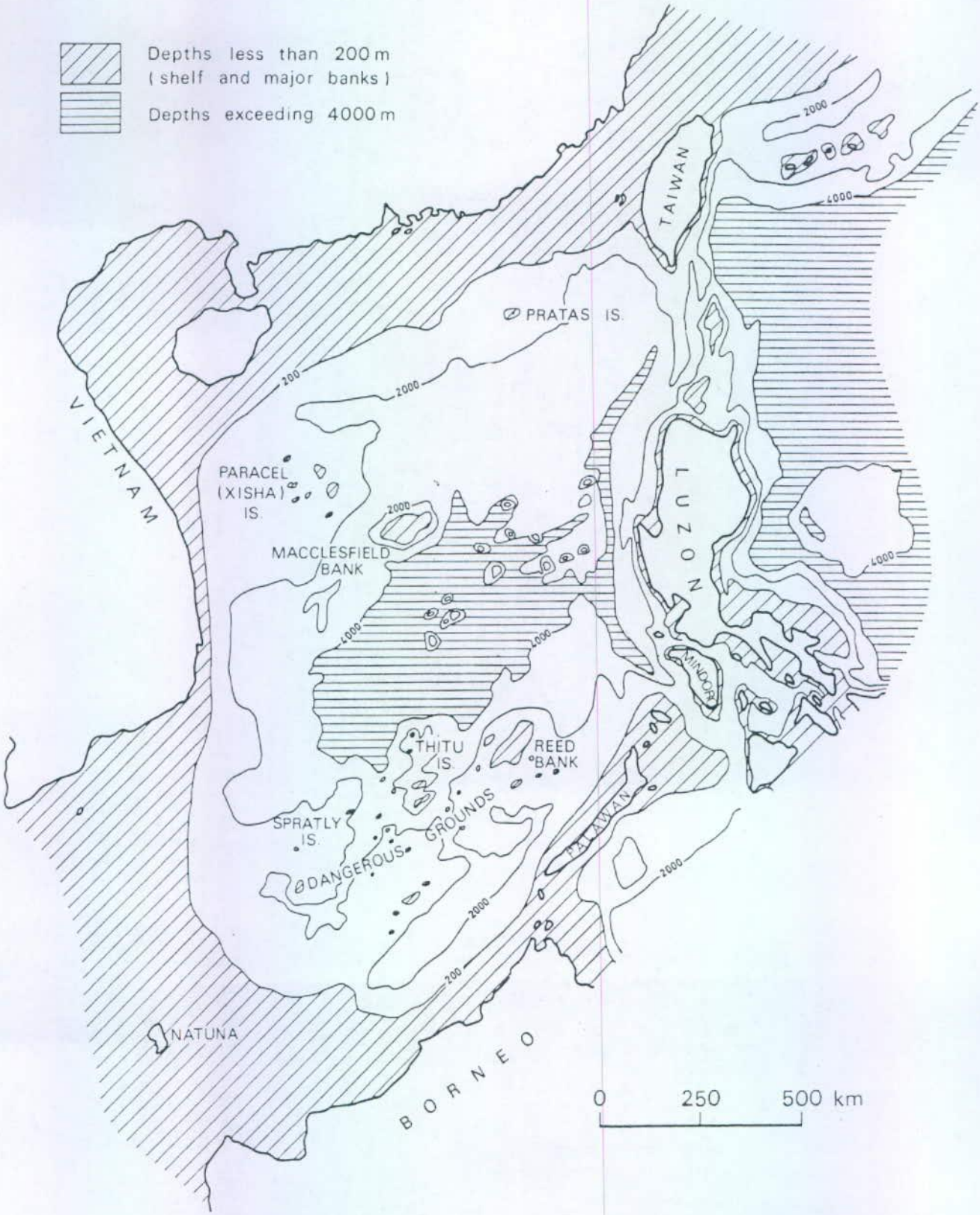
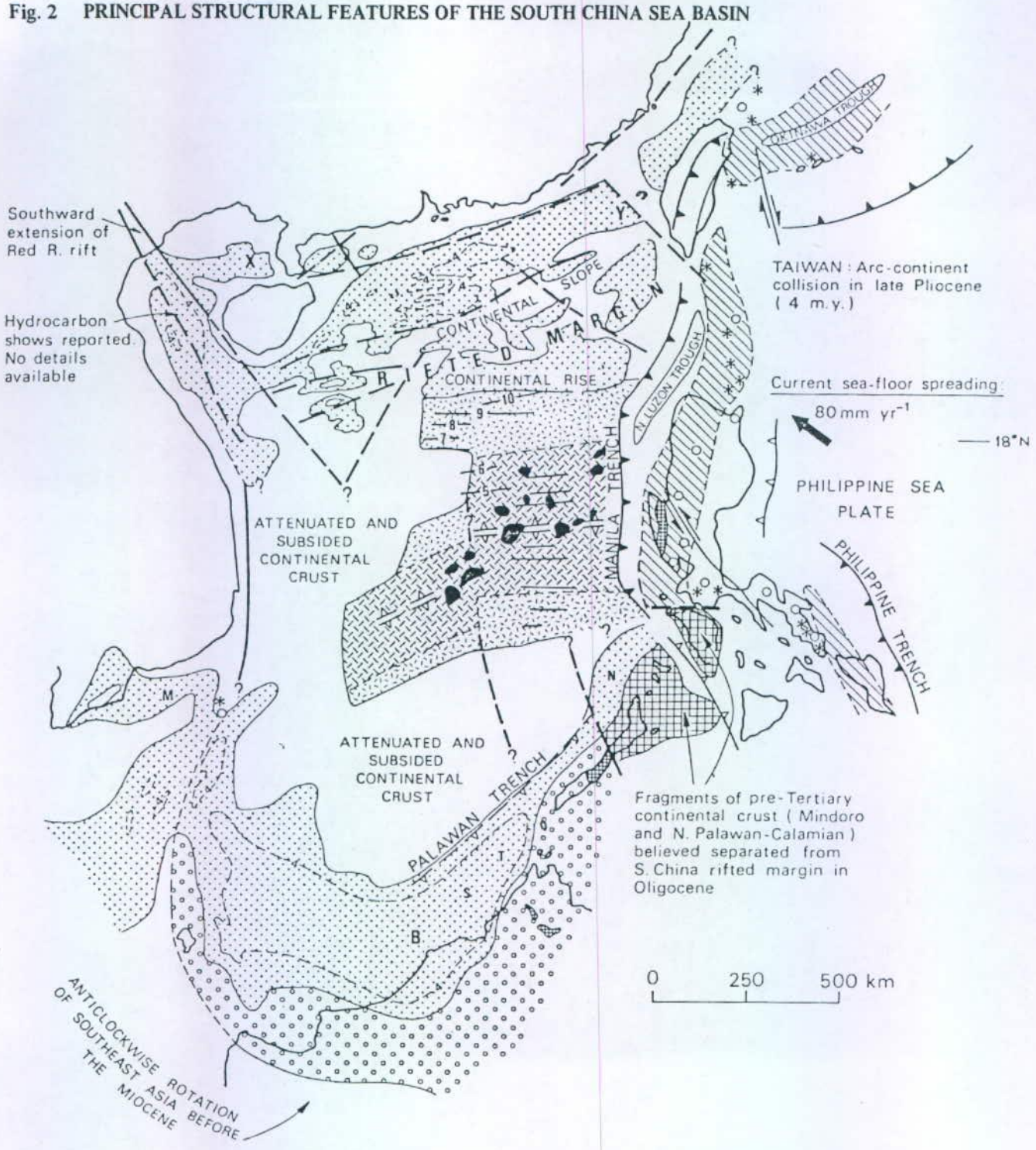


Fig. 2 PRINCIPAL STRUCTURAL FEATURES OF THE SOUTH CHINA SEA BASIN



Areas of sedimentary cover >1 km thick (Oligocene-Holocene in south. max. age unknown in north)
(---4--- thickness 4 km)

PETROLEUM OCCURRENCES

B	Baram Delta (Brunei-Sarawak)	Major
S	Samarang (Sabah)	Minor
T	Tembungo (Sabah)	Minor
N	Nido (Palawan)	Minor
M	Mekong Delta (Vietnam)	Showings
X,Y	Offshore China (no name)	Showings

Cretaceous-Early Tertiary subduction-related melange. Natuna-Kalimantan-Sabah – Palawan

OCEANIC CRUST OF S. CHINA SEA AND SURROUNDS

Miocene

Volcanic seamount

Oligocene

Ultramafic complexes on land (Sabah. Palawan. Luzon)

* Volcano active in historical time (mainly <1000 yr.)

o Prehistoric Holocene- volcano

Zone with some earthquake foci at depths >70 km (elsewhere. focal depths do not exceed 70 km)

Active thrusts. barbs on overthrust flank

Old (inactive) thrusts. barbs on former overthrust flank

Major active intra-plate strike-slip fault

Other major faults

Axis of former sea-floor spreading (S. China Sea)

Magnetic lineations (numbered where correlated with geomagnetic time scale)

3. According to Holloway, spreading at the South China continental margin took place in two separate stages. In the first stage, from somewhere around the end of the Cretaceous to the middle Oligocene, spreading was in the form of crustal attenuation, perhaps mainly by listric normal faulting. Numerous grabens bounded by normal faults and trending WSW-ENE developed along the continental margin. One of the largest of these is the offshore Zhujiangkou (Pearl River mouth) basin, a composite fault-block structure whose sedimentary fill is the main target for S. China offshore petroleum exploration.

Crustal attenuation attained its greatest extent at the western end of what is now the South China Sea basin. As previously noted, actual sea-floor spreading did not begin until the middle Oligocene. This occurred mainly in the central and eastern parts of the basin. The amount of oceanic crust in the western part of the basin and its age are not known with any certainty at the moment.

4 Presently, South China Sea floor is being over-ridden from the east by the northern part of the Philippine island arc, which is being pushed westwards by sea-floor spreading in the Pacific. To the north, in Taiwan, this motion has already resulted in the collision of the arc with the Asian continent. This happened about 4 million years ago. At the existing spreading rate it may be concluded that Luzon will collide with the continental slope off South China, near the Pratas Islands, in another 2 million years or so.

* This article is based on part of a lecture given at a society meeting on June 8th. The maps are newly compiled by the author and drawn by Mr. T.B. Wong.

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EXCURSION TO PORT ISLAND AND DOUBLE ISLAND

J.D. Bennett & C.M. Lee

Despite alternative attractions (such as absence on overseas leave!) many familiar faces and not a few very welcome new ones embarked on the junks at the Chinese University pier for the visit to Port Island and Double Island on Sunday, 14th August, 1983.

The approach to Port Island provided a good view of the general geology and structure of the island, notably the regularly dipping beds of the Port Island Formation resting unconformably on the more featureless tuffs of the Repulse Bay Formation, and the clear indications of faulting. Unfortunately our arrival coincided with the start of several hours of steady rain. Only a relatively few members negotiated the scramble, made somewhat precarious in parts by the conditions and a relatively high tide, to the site of the unconformity, but other members went up and explored the ridge above the landing place.

In murky conditions the junks headed for (and found!) Double Island. There, several people swam and a few diehards walked and waded to examine the thrust contact between the Repulse Bay Formation and the (here) underlying Port Island Formation. The fault is a reverse fault, with a northeast strike, dipping northwest at about 65^{o}. On the northwest side of the fault is a fine welded tuff with a blocky structure, and on the other side are red beds, conglomerate and rudaceous sandstone.

True to form, the weather improved on the return trip up Tolo Harbour to end a day which, though somewhat disappointing from the geological point of view, was nevertheless enjoyable. Our thanks to the Organisers for their efforts.

MEETING WITH GEOSCIENTISTS FROM THE SOUTH CHINA SEA INSTITUTE OF OCEANOLOGY

A delegation consisting of four members from the South China Sea Institute of Oceanology led by Professor Liu Chiao-Shu (劉昭蜀), Hon. Member, stopped over in Hong Kong on 15th September en route to North America. On their way back, they will make a longer stop-over from 16th-18th October. Wyss Yim is making arrangements for an informal meeting to be held at the Hui Oi-chow Science Building, second floor, room 2-22, HKU, at 6 p.m. on Monday 17th October for GSHK members to meet the visitors. This will probably be followed by dinner at the Jumbo Restaurant with costs shared between the participants. Anyone wishing to attend this meeting should contact Mr. P.S. Nau (Tel: 5-4097232) or Wyss Yim (Tel: 5-4097229). Other members in the delegation are Chen Sen Qiang (陳森強), Fan Shi Qing (范時清) and Su Da Quan (蘇達權).

FOR SALE

A limited number of bound copies of the abstracts of the recent meeting on Geology of Surficial Deposits in Hong Kong and satchels bearing the Society's logo can be purchased by contacting Mr. P.S. Nau at Tel. 5-4097232 or Mr. W. Yim at Tel. 5-4097229. The abstracts cost $10 per copy and the satchels $20 per number.

HONORARY MEMBERS

The Society is pleased to record that five distinguished geoscientists, including three in the People's Republic of China, have accepted its invitation to become honorary members, offered in recognition of significant contributions to the aims of the Society as stated in the constitution.

The five honorary members are Prof. Chen Guoda, Prof. Huang Yukun, Dr. Stephen S.F. Hui, Prof. Liu Chiao-shu and Mr. B.P. Ruxton. Replies to a further three invitations are awaited.

In this issue of the Newsletter we give some brief biographical information on Professors Chen, Liu and Huang. Articles about our other honorary members will appear in future issues.

Professor Chen Guoda

Prof. Chen is Director of the Changsha Institute of Geotectonics of the Academia Sinica and Vice-Chancellor, Head of the Geology Department and Vice-Director of Research at the Zhongnan Institute of Mining and Metallurgy, also in Changsha. He has held these posts for 22 and 31 years, respectively.

Prof. Chen began his career with the Geological Surveys of Guangdong-Guangxi and Jiangxi. He joined the Department of Geology of Zhongshan University, Guangzhou in 1942 as a professor and later became head of the Department before moving to Changsha in 1952.

Over the years, Prof. Chen has been a prolific writer. A recently-published bibliography of his work cites 335 items! He has presented copies of over 20 of his publications, including some important contributions to tectonic theory, to the society. Prof. Chen was Editor-in-Chief of the Tectonic Map of China (1 : 4 million) published in 1977.

Prof. Chen is 71.

Professor Liu Chiao-Shu

Prof. Liu has been on the staff of the Ocean Tectonics Department of the South China Sea Institute of Oceanology, Academia Sinica, located in Guangzhou, since 1961. He is at present Assistant to the Director of Research at the Institute and is directing a major programme of research in the South China Sea.

Prof. Liu graduated from the Changchun Institute of Geology in 1953. He was a post-graduate student at the Moscow Institute of Petroleum, graduating from there in 1959. His research interests have included seismic investigations of offshore areas, ocean tectonics including trough-arc-basin systems and the origin of petroleum.

Prof. Liu is 52.

Professor Huang Yukun

Prof. Huang is Acting Head and Vice-Chairman of the Department of Geology of Zhongshan University in Guangzhou. He graduated from Zhongshan University in 1953 and, after post-graduate studies at the Beijing Institute of Geology, returned to Zhongshan as a lecturer in 1956. For many years Prof. Huang has been very active in geological research in South China and has published many papers. His special fields are quaternary geology and neotectonics. He has worked extensively in the Pearl River delta and on studies of major faults in Guangdong. He is currently Vice-Chairman of the Seismological Society of Guangdong.

Prof. Huang is 55.

BOOK REVIEW

Site Investigation Practice

By Michael D. Joyce. E. & F.N. Spon, distributed by Methuen, Inc., 733 Third Avenue, New York, NY 10017. 1982. 369 pages.

This publication covers all the commonly employed site investigation methods. Trial pitting, probing, shell and auger boring, and rotary drilling are described in some detail together with in situ testing and specialist sampling. Chapters are also devoted to site investigation planning, desk studies, sample description, laboratory testing, instrumentation and geophysics. The production of a professional engineering report is not neglected nor is on-site safety. A typical specification and bill of quantities for a ground investigation is included as an appendix. Photographs and line drawings are used wherever possible to give a clear explanation of plant and techniques. **IMM**

Handbook Of Geology In Civil Engineering

By Robert F. Legget and Paul F. Karrow. McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020. 1983. 1,340 pages.

Throughout this comprehensive reference, the authors emphasize efficient and economical methods that rely on techniques of proper site investigation and effective preconstruction planning. They explore the fundamental geological inter-relationships with all civil engineering works. It features information on new techniques and recently developed materials for use in the field as well as the latest information on geological formations. An extensive section examines ways to handle adverse geological conditions in planning and building from tunnels and marine works through canals, roads, railways, and airfields, to the foundations of buildings, power houses, bridges, and dams. In addition, it explains aspects that relate to preliminary studies including the interpretation of geological maps, test boring and drilling, and both natural and manufactured materials for construction use. **IMM**

Glossary of Geology

R.L. Bates and J. Jackson (Eds.), American Geological Institute, One Skyline Place, 5202 Leesburg Pike, Falls Church, Va 22041, U. S. A. 2nd Edition, 749 pages

Geologists are often criticized by non-geologists (as well as by their fellow geologists) for unnecessary use of obscure 'jargon'. We are criticized almost as often for imprecise or incorrect use of geological terms and for not having a sufficiently well-defined terminology in the first place. In self-defence we claim that this is a problem built into any descriptive science, but we do not always do what we ought to minimize it. We should not assume that our readers will be as familiar with specialist or obscure terms as we happen (often momentarily) to be.

There have been geological dictionaries around for a long time but the Glossary of Geology is in a class of its own for breadth of coverage and sheer scholarship. There are 36,000 terms in the Glossary (which should be enough for anyone!) and a bibliography of more than 2,000 references. Everything is fully explained with the utmost clarity, reflecting current common usage and providing guidance remarkedly free from bias. Everyone writing about geology should have access to a copy of this book and should make regular use of it. It's hard for an Englishman to admit, but the Americans have won hands down in providing a basis of standard Geo-English for everyone to follow.

The glossary costs US$60 and can be purchased for a Visa card. **D.R.W.**

FORTHCOMING PROGRAMME

Field Excursion to Chaiwan MTR Depot — **Saturday** 22nd **October**

Substantial site formation works for the depot have included cut slopes upto 80 m high. These cuttings are mainly in rock and expose granite, monzonite and Repulse Bay pyroclastics including some unusually coarse agglomerates. The contacts between these rock types are also exposed. The influence of the rock types and of faulting on the topography is very distinct and a fault zone within the granite can be seen in the cuttings.

The cut slopes also provide, from their tops spectacular views of this busy site involving reclamation, seawall construction, retaining wall, foundation and road construction as well as the building of the depot structure itself.

For safety reasons the group will be limited to 20 people and each must bring his own safety helmet.

A bus will leave the car park of the Murray Building, Garden Road, at 9:30 a.m. and the charge will be HK$10, payable on the day. To book your place please telephone Peter Randall on 5-283031. If the trip is over subscribed it may be possible to re-run it on a subsequent Saturday.

Lecture on the Engineering properties of Relict Joints — **Wednesday 2nd November**

Last November Richard Harris won the Cooling Prize awarded by the British Geotechnical Society, a sub-group of the Institution of Civil Engineers. He has kindly agreed to repeat his award winning lecture for us and to illustrate it with photographs and examples from throughout Hong Kong. The lecture was entitled "Mass or Massive - a technique for jointed soils" and includes the application of rock mechanics principals to the analysis of soils with relict joints.

The nature, extent and influence of relict joints on Hong Kong slopes and cuttings is still very poorly recorded or understood. If you have any observations or photographs of these factors please bring them along and share them with us after Richard's talk.

The meeting will be held in the Geology Laboratory, Hong Kong Polytechnic at 6:30 p.m.

Field Excursion to South Lantau — **Sunday, 27th November**

David Workman will lead a visit to some fine exposures of tuffs and Fan Lau intrusives. We shall make use of public transport but the trip will involve some walking.

If you would like to come please return the reply slip with a contact telephone number so that we can tell you later the detailed arrangements for transport.

1983 Review — **Wednesday, 14th December**

What has the Geological Society achieved in its first full year of operation and what opportunities lie ahead in '84?

We hope this meeting can be a light-hearted look at the Society and at any of our own interesting projects. We also hope that we can use some of Maurice's excellent technical films.

More details in the next newsletter.

活動節目預告

參觀柴灣地下鐵路車廠工地　　十月二十二日星期六

柴灣車廠的地盤整理工程包括削高至八十米之斜坡。削坡面現出極多之地質有趣現象如多種岩石之接觸及花崗石裏之斷層等。

在削坡頂上更可觀察到各種不同的大型工程的進展。

爲安全理由起見，參觀人數每次只限二十人而每人必須自備安全帽。

接送的車輛將於當天上午 9 時30分在花園道美梨大厦停車場開出。收費每位 $10，到時繳費。請與Peter Randall電話（5-283031）聯絡登記。如果參加人數超額的話，我們會在隨着的星期六再辦一次。

演講——殘餘節理的工程特性　十一月二日星期三

Richard Harris於去年十一月以一篇關於殘餘節理的工程特性的論文而獲得英國土力學會（英國土木工程師學會的一個屬會）的Cooling Prize。Richard Harris準備再爲我們講解一次他的得獎論文，並以香港的實例和圖片說明。講題是"Mass or Massive ——a technique for jointed soils"。內容涉及將岩石力學的原理應用到具有殘餘節理的坭土的分析。

殘餘節理對香港斜坡影響的程度的資料仍然很貧乏。會員們如有任何有關的資料請來參與這個講座及會後的研討會。

演講會將於是日六時三十分在理工學院地質實驗室舉行。

南大嶼山野外考察　十一月廿七日星期日

David Workman將會帶隊去觀察一些凝灰岩和分流侵入岩的好例子。我們將會利用公共交通，但行程內需要步行一段路程。

有興趣參加的請將回條填好寄回（切要：聯絡電話）以便我們遲些時通知關於交通的詳細安排。

1983年回顧　十二月十四日星期三

我們將會在這聚會裏輕鬆地檢討本年第一年的會務和節目的安排，以及討論在1984年的展望。

同時我們希望在會後能夠安排播影一些理工學院的珍貴科技電影。

詳情將在下期通訊刊出。

REPLY SLIP (Field Excursion ot South Lantau)　　**Sunday, 27th November**

I wish to attend and will be accompanied by (　　) adults and (　　) children.

NAME
TEL. NO.　　(Office)　　(Home)

Send this slip to Mrs. A. Pearson, C7 Hillgrove, 18 Cape Drive, Chung Hom Kok, Hong Kong.

新書述評

工地勘探實踐

作者：Michael D. Joyce. E. 和F. N. Spon, 1982, 369頁，

本書包括所有常用的工地勘探方法。詳細介紹了試井、錐探、鑽鑽、螺旋鑽探和迴轉鑽探，還結合介紹了現場試驗和特別探樣方法。有些章節着重說明了工地勘探計劃、室內研究、樣品描述，實驗室試驗，測試設備和物探方法。對專業工程報告的編寫和工地安全也作了足夠的介紹。附錄還包括有典型的岩土勘探說明書和工程清單。還用照片和圖片說明有關的設備和方法。

土木工程地質手册

作者：R. F. Legget和P. F. Karrow, 1983, 1,340頁。

通過豐富的參考資料，依靠適當的工地勘探技術和建築前的計劃，作者着重介紹了有效的和經濟的方法。他們探索了所有土木工程與基本地質工作的內部聯繫。這本書以應用於現場的新技術、新資料爲特色。廣泛探討了工程計劃和建設過程中的不利地質條件的處理，包括從隧道、海洋工程、運河、道路、鐵路、機場、地基基礎、電站、橋樑到堤壩等。另外本書還說明了有關初步研究時各方面的問題，例如地質圖和鑽探資料的解釋，天然和人工建築材料的應用等等。

地質學辭彙

編者：R. L. Bates和J. Jackson美國地質學會出版第二版，749頁。

地質工作者常被行外人（甚且行內人士）批評常不必須地用上一些莫明其妙的術語。我們更常被批評慣常地用一些在開始就不能清楚地詮釋的不明確的地質名詞。我們常自辯這是任何一門描述性學科都不可避免的現象，但我們也沒有盡力地去嘗試化解這矛盾。我們不能假定所有的讀者都熟識那些專門或偏僻的詞語。

一向以來市面上有着不少的地質字典，但「地質學辭彙」則是以包羅廣闊和學術性比較特出的一部。該「辭彙」載有36,000項詞語及一個超過2,000項參考資料的專目提要。所有的詞語都詮釋得簡潔明確及反影出流行的用法。每個和地質寫作有關的人都應該擁有一册而該多參閱該辭彙。對英國人來說這是一個不容易接受的事實，但一部應被廣泛採用的英語地質辭典確是由美國人所編纂的。

該辭彙每册價美金60元，可用VISA信用咭購買。

赤洲及往灣洲野外考察

雖然這是一個往外地旅遊的好季節，但八月十四日星期日那天卻有許多相熟的和不少新的臉孔參加了我們赤洲及往灣洲之行。我們當天在中文大學碼頭乘船出發。

船行接近赤洲時是觀察該小島的地質結構的最佳方位，尤其是那些齊整傾斜的赤洲組岩層不整合地覆蓋在淺水灣組的凝灰岩上及斷層等現象。很不幸地我們的到訪帶起了繼續下來數小時不停的雨。在漲潮和惡劣天氣的影響下，只有少數的會友不辭艱難地也去觀察那不整合的現象，而其他的會友則去視察那對向我們登陸點的山脊。

船繼續進發，在晦暗的環境下我們「找」到了往灣洲。在惡劣的天氣下有數位會友仍然下水游泳，而有少數的死硬派更蹚水去觀察那淺水灣組和（在這兒是）下面赤洲組的逆斷接觸。回程時天氣卻開始好轉。雖然在地質觀察方面是失望的一天，但我們仍應向組織者安排了這個有趣的旅程致謝。

跟南海海洋研究所的地學科學家們會面

以劉昭蜀教授（本會榮譽會員）爲首的南海所四名成員訪美代表團，將於九月十五日經過香港去美。回程中，他們將於十月十六日到十八日在香港有一稍長的停留。嚴維樞先生將主持一個非正式的會議，使香港地質學會會員可與來訪者會面。時間是十月十七日（周一）下午六時正。地點在港大許愛周科學大樓、二樓、222室。會後將去 Jumbo Restaurant 共進晚餐。費用將由與餐者平分。任何人要參加這次會議的，請預先和鈕柏燊先生（5-4097232）或嚴維樞先生（5-4097229）連絡。

代表團其他三名成員是：Chen Sen Qiang(陳森强)，Fan Shi Qing（范時清）和Su Da Quan（蘇達權）。

榮譽會員

正如本會章程註明的宗旨之一，我們將邀請那些具有顯著貢獻的地學科學家成爲本會的榮譽會員。目前，已有五位著名的地質家接受我們的邀請，其中包括三位來自中華人民共和國的。

這五位榮譽會員是：陳國達教授、黃玉崑教授、許士芬博士、劉昭蜀教授和B.P. 列士頓先生。我們還等待另三位獲邀請者的答覆。

在本文我們將簡略介紹陳、劉、黃三位教授的簡歷。以後將陸續介紹其他的榮譽會員。

陳國達教授

陳教授是中國科學院長沙大地構造研究所所長；中南礦冶學院副院長兼地質系主任。他担任前職有22年，而任後職已有31年了。陳教授最早是在兩廣和江西做地質調查工作。1942年進入廣州中山大學地質系任教授，之後任系主任，一直到1952年調去長沙。

長期以來，陳教授是個多產作家。他的一個最新文獻目錄列了335項！他向本會寄來了二十多份他的著作，包括一些對大地構造理論有重大貢獻的作品。陳教授還是1977年出版的一張中國大地構造圖（1：400百萬）的主編。

陳教授現年七十一歲。

劉昭蜀教授

從1961年開始，劉教授一直是中國科學院南海海洋研究所、海洋大地構造室的成員。目前他任研究所所長助理，並領導一項南中國海的龐大研究計劃。

劉教授於1953年畢業於長春地質學院，後來留學於莫斯科石油學院，1959年畢業回國。他主要研究近海地震勘探和海洋大地構造，包括研究海槽——島弧——近海盆地體系以及油氣藏的形成。

他現年五十二歲。

黃玉崑教授

黃教授是廣州中山大學地質系副主任和代理主任。1953年他畢業於中山大學，之後他到北京地質學院當研究生。1956年回中山大學任講師。多年來，黃教授積極從事於華南地區的地質研究並發表了很多文章。他的專長是研究第四紀地質和新構造運動。他深入地研究了珠江三角洲和廣東省的許多大斷裂帶。最近他兼任廣東省地震學會副會長。

黃教授現年五十五歲。

南中國海盆地的構造

——港大，D. R. 維爾閔博士

南中國海盆地的中間地帶最深達 4.4 公里，平均爲超過 4 公里深的海底，在這十分平滑的海底上散佈着二十多個海山。根據測深（圖 1）和一些地震折射及地磁剖面法的結果，認爲海底是由海洋型地殼（玄武岩型）所組成的。也可能是些古火山。莫霍面大約埋藏於海平面以下11公里。深海盆地的北部爲沉積物覆蓋着。這些沉積物由南中國海岸向大陸坡底迅速變薄。於盆地約北緯18°處，由於單斜起伏向北傾斜的沙堤的存在，使這些沉積物不能有效地向南延伸。

在深海盆地東北部，地磁剖面結果反映出不十分典型的約向N80°E延伸的地磁反向剖面曲線，此曲線與新生代的地磁反向曲線相符合，其地質年代可能由盆地中軸地帶的早中新世（二十百萬年）向盆地北部邊緣地帶的中漸新世（三十二百萬年）變動。因此，認爲海底擴張於這段時期內發生或可能在早期已開始並終止於早中新世。關於盆地西部一帶僅僅是向外推論而已。

大約在那段時期內，婆羅洲（BORNEO）曾發生過逆時針旋轉以致達到現在的部位，這與海底沿着北婆羅洲北部邊緣地帶的巴拉灣（PALAWAN）深海槽向南俯冲有關。在俯冲期間（？）或以後，深海槽部分地爲延伸的沉積物所堆積和充填。其充填厚度有的達9000公尺。最近南中國海探出的石油大部分是產生於晚中新世砂層沉積物內。

現在最大的疑題是位於深海盆地西北部和南部地區的南中國海底構造特徵。這兩地區是由極不規則的，往往由淺的海底地形所組成，並散佈着許多珊瑚礁和造礁島嶼。由地震活動現象分析，這地區目前可能是與大陸型地殼下沉有關。

何羅維（HOLLOWAY，1981）應用已出版的地表地質資料和石油鑽井資料對中國南部，台灣，南中國大陸架，黎特邦（REED BANK），巴拉灣北部，加拉密安羣島（CALAMIAN）和敏托羅（MINDORO）作了詳細的地層對比。這個研究結果指出，在這些地區由三疊紀到漸新世的地層，其基本性質是相似的。而在漸新世以後的地質時期、南中國海北部和南中國海南部的地層之間存在着顯著差別。

由地震剖面法測得另一重要發現是巴拉灣海槽（前俯冲深海槽）僅延伸到中巴拉灣近岸的某一處而不進一步向東北地帶延伸，（泰萊TAYLOR和希斯HAYES，1981）。如圖 2 所示，南中國海底在南巴拉灣以下俯冲而事實並不在北巴拉灣以下俯冲。因此，正如何羅維和泰萊、希斯（1981）所引証，我們有理由得出結論，所發現的位於菲律賓西部地帶，由中生代到漸新世的所有地殼如黎特邦地塊向西及南中國大陸邊緣部分，其分離和漂移到現在的部位是由於海底擴張形成南中國海盆地的結果。而擴張速度大於盆地東部一帶。

根據何羅維的資料，南中國大陸邊緣所發生的海底擴張可分爲兩個階段。在第一階段，大約於白堊紀末到中漸新世，某些地帶是以地殼衰減形式擴張，可能主要是以綫形正斷層破裂形式出現。由正斷層所形成的許多地壘沿着大陸邊緣向西南西——東南東方向發展。其中最大的是由復合斷塊構造構成的離岸珠江口盆地，其沉積物是南中國海近海油田的勘探目標。

南中國海盆地西部末端是現在地殼衰減最遠的延伸範圍。正如上述，眞正海底擴張是始於中漸新世以後，而且主要發生於盆地中部及盆地東部。對於盆地西部的海洋地殼的情況及其地質年代，至今尚未確定。

目前，南中國海底，在其東部地帶由於太平洋海底擴張而向西被推移的北菲律賓島弧所掩覆。在台灣，盆地北部一帶，上述運動在四百萬年以前，已經造成島弧與亞洲大陸的碰撞。以目前的擴張速度而言，於另一個二百萬年或以後，呂宋島（LUZON）將與中國大陸坡近巴拉達斯（PRATAS）島嶼一帶互相碰撞。

本文是依據 6 月 8 日的地質學會會議講演的部分內容寫的。

圖件是作者新近搜集的，並由T. B. WONG先生繪出。

附圖請參閱英文版原文。

主要參閱文獻（見原文所列）。

香港地質學會
常務委員會

投稿本會通訊簡則

概　則：請將所有稿件，查詢及通訊寄香港地質學會秘書收（煩香港大學地理地質系轉）。本會並不負責刊登在本通訊內文章之版權。如寄來的文章或資料有在過去曾引用過，或現時及將來可能會引用到的話，作者請於來稿時特別註明。

我們歡迎一些專門性的稿件，有趣事項的報導，書評或專題討論等。來稿以簡爲主。雖然有些時候本會可作出例外，但普通稿件請以一千二百字爲限。請盡量減少插圖及附表等，而所有圖表請另外分頁。

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援　引：來稿者須負責確定所有援引的準確性，而公報之簡寫須以現藏於倫敦地質學會圖書館內倫敦地質學會1978年出版之定期出版物目錄爲準。

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香港地質學會

通　訊

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