

## PERSATUAN GEOLOGI MALAYSIA

# WARTA GEOLOGI

## NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MALAYSIA



GEOLOGICAL  
SOCIETY OF  
MALAYSIA

## KANDUNGAN (Contents)

### CATATAN GEOLOGI (Geological Notes)

- |  |     |
|--|-----|
| Zakaria Hussain: Plumbogumit ditemui berasosiasi dengan emas di<br>Lubuk Mandi, Marang, Terengganu, Malaysia | 273 |
|--|-----|

### PERTEMUAN PERSATUAN (Meetings of the Society)

- |  |     |
|--|-----|
| Alain Boitel: Formation evaluation while drilling: mud pulse telemetry,<br>logging while drilling, geosteering | 275 |
| Seminar on Engineering Geology — Case Histories, Assessment &<br>Report Writing — Report                       | 276 |

### BERITA-BERITA PERSATUAN (News of the Society)

- |   |     |
|---|-----|
| Current Addresses Wanted                              | 279 |
| Pertambahan Baru Perpustakaan (New Library Additions) | 279 |

### BERITA-BERITA LAIN (Other News)

- |  |     |
|--|-----|
| Persidangan Kebangsaan Warisan Geologi Malaysia 2001 | 281 |
| Kalendar (Calendar)                                  | 292 |

Jilid 27  
No. 6

Volume 27  
No. 6

Nov– Dec  
2001

DIKELUARKAN DWIBULANAN  
ISSUED BIMONTHLY

# PERSATUAN GEOLOGI MALAYSIA

## Geological Society of Malaysia

### Majlis (Council) 2001/02

Presiden (President)	:	Abdul Ghani Rafek
Naib Presiden (Vice-President)	:	Mohd. Shafeea Leman
Setiausaha (Secretary)	:	Ahmad Tajuddin Ibrahim
Penolong Setiausaha (Asst. Secretary)	:	Ismail Yusoff
Bendahari (Treasurer)	:	Lee Chai Peng
Pengarang (Editor)	:	Teh Guan Hoe
Presiden Yang Dahulu (Immediate Past President)	:	Ibrahim Komoo

### Ahli-Ahli Majlis (Councillors)

#### 2001-2003

Tan Boon Kong  
Liew Kit Kong  
Abdul Rasid Jaapar  
Wan Fuad Wan Hassan

#### 2001-2002

Abdul Rahim Samsudin  
Azmi Yakzan  
Chow Weng Su  
Vacant

### Jawatankuasa Kecil Pengarang (Editorial Subcommittee)

Teh Guan Hoe (Pengerusi/Chairman)

Fan Ah Kwai

Ng Tham Fatt

J.J. Pereira

### Lembaga Penasihat Pengarang (Editorial Advisory Board)

Aw Peck Chin	Foo Wah Yang	Mazlan Madon	Tan Boon Kong
Azhar Hj. Hussin	C.A. Foss	Ian Metcalfe	Tan Teong Hing
K.R. Chakraborty	N.S. Haile	S. Paramanathan	Teoh Lay Hock
Choo Mun Keong	C.S. Hutchison	Senathi Rajah	H.D. Tjia
Chu Leng Heng	Lee Chai Peng	Shu Yeoh Khoon	Wan Hasiah Abd.
Denis N.K. Tan	Leong Lap Sau	P.H. Stauffer	Yeap Cheng Hock

### About the Society

The Society was founded in 1967 with the aim of promoting the advancement of earth sciences particularly in Malaysia and the Southeast Asian region.

The Society has a membership of about 600 earth scientists interested in Malaysia and other Southeast Asian regions. The membership is worldwide in distribution.

Published by the Geological Society of Malaysia,  
Department of Geology, University of Malaya, 50603 Kuala Lumpur.  
Tel: 603-7957 7036 Fax: 603-7956 3900 E-mail: geologi@po.jaring.my

Printed by Art Printing Works Sdn. Bhd., 29 Jalan Riong, 59100 Kuala Lumpur.

# CATATAN GEOLOGI

## Geological Notes

### Plumbogumit ditemui berasosiasi dengan emas di Lubuk Mandi, Marang, Terengganu, Malaysia

ZAKARIA HUSSAIN

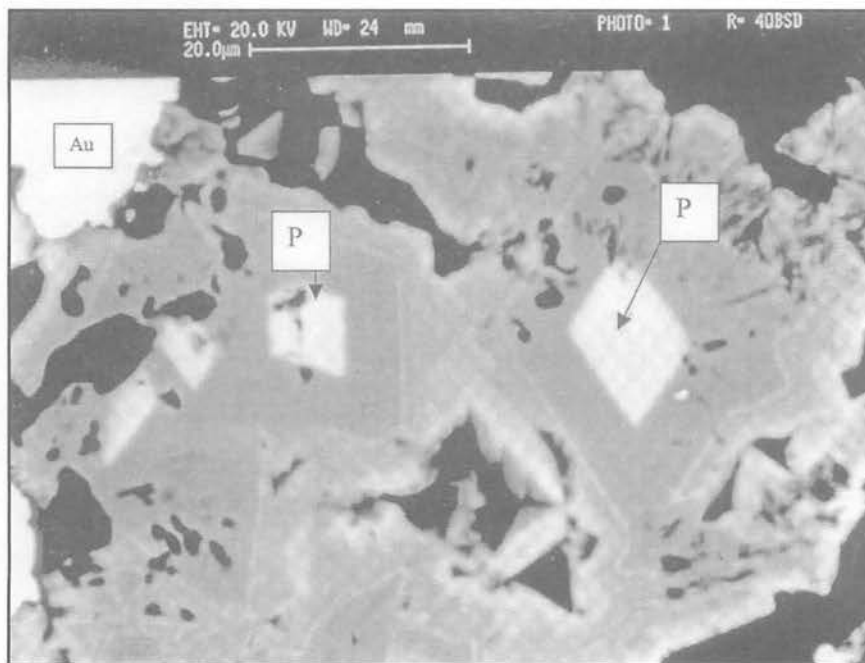
Jabatan Mineral dan Geosains Malaysia

Ipoh, Perak

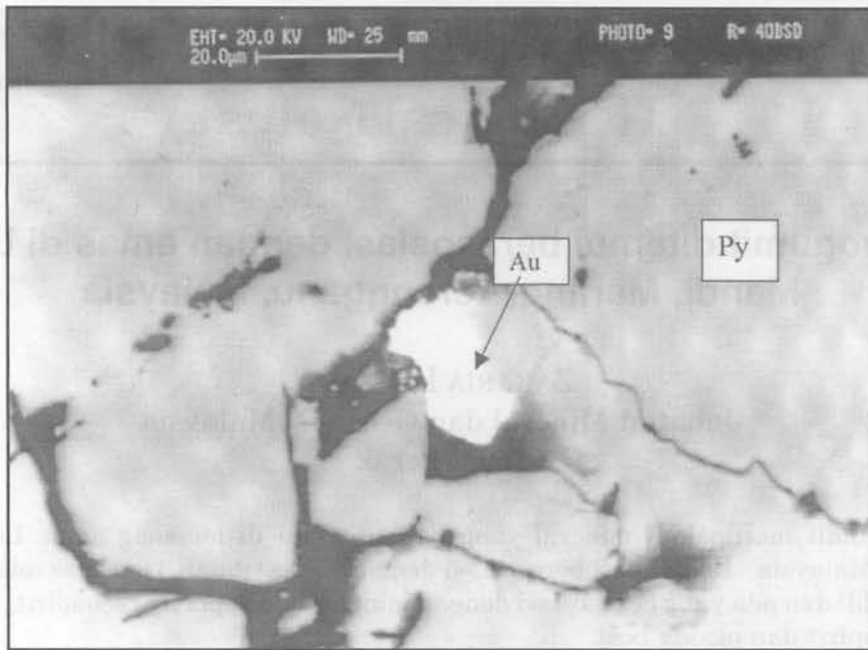
Plumbogumit merupakan mineral yang baru ditemui di lombong emas Lubuk Mandi, Terengganu, Malaysia. Ia didapati berasosiasi dengan emas (Rajah 1). Emas ada yang wujud bebas (free gold) dan ada yang berasosiasi dengan mineral lain seperti arsenopirit, pirit, galena, sfalerit, kalkopirit dan oksida besi.

Penentuan mineral adalah dengan menggunakan alat SEM (scanning electron microscope), XRD (X-Ray Diffraction), selain dari mikroskop bijih. Mineral yang dikesan mengandungi unsur-unsur Pb, Al dan P telah dilakukan mikroanalisis dengan alat SEM dan penentuan dengan alat XRD, mendapati bahawa mineral tersebut adalah Plumbogumit:  $\text{PbAl}_3(\text{PO}_4)_2(\text{OH})_5 \cdot \text{H}_2\text{O}$  atau (lead aluminium phosphate hydroxide hydrate).

Emas ada antaranya bebas mengisi rekahan dan rongga dalam telerang kuarza. Emas juga ada yang berasosiasi dengan mineral lain dengan mengisi rekahan dan ruang dalam mineral seperti arsenopirit, pirit, oksida besi dan galena (Rajah 2).



**Rajah 1.** Fotomikrograf SEM (Scanning electron microscope): Menunjukkan emas (Au) berasosiasi dengan plumbogumit (P). Lokasi: Lombong Emas Lubuk Mandi, Marang, Terengganu.



**Rajah 2.** Fotomikrograf SEM (Scanning electron microscope): Menunjukkan emas (Au) mengisi rekahan dan ruang dalam pirit (Py). Lokasi: Lombong Emas Lubuk Mandi, Marang, Terengganu.

*Manuscript received 28 June 2001*



## PERTEMUAN PERSATUAN Meetings of the Society

### Ceramah Teknik (Technical Talk)

#### **Formation evaluation while drilling: mud pulse telemetry, logging while drilling, geosteering**

ALAIN BOITEL

#### **Laporan (Report)**

Mr. Alain Boitel, Formation Evaluation Manager, Schlumberger, gave the above talk on Thursday 8 November 2001 at the Geology Department, University of Malaya at 5.30 pm.

In his well-illustrated presentation, Mr. Boitel discussed the recent advances in Logging While Drilling Techniques. During drilling, Real Time Data such as formation Resistivity, Porosity, and sonic travel time, are transmitted to the Surface, via mud pulse telemetry. These data are also recorded in memory mode for further analysis. Recent advances in LWD technics also include Nuclear Resonance While Drilling and Seismic While drilling.



GSM

*Report on*

**Seminar on Engineering Geology  
— Case Histories, Assessment & Report Writing**

Careful forethought and consideration of various possible geological conditions at a specific site, or a thorough evaluation of all the implications of apparent inconsistencies in data, is unfortunately lacking in many geological reports prepared by local young geologists.

A half day seminar was organized jointly by the Young Geologists' Working Group of Geological Society of Malaysia and Engineering Geological Technical Committee of Institute of Geology Malaysia on 10 November 2001 with the intention it being a forum for practising geologists to discuss issues related to writing and presentation of geological assessment reports in the Malaysian context. The seminar was useful in terms of providing useful information on how to write geological reports, the contents of reports, things to look for during the investigations or report preparation with some case histories from the presenters' very own experiences.

Some of the topics covered in this seminar and the presenters are as follows:

- Geological assessment for EIA/feasibility study  
Saim Suratman (*Mineral & Geosciences Department, Malaysia*)
- Geological assessment for groundwater  
Mohd Nazan Awang (*Mineral & Geosciences Department, Malaysia*)
- Geological assessment for natural hazard  
Chow Weng Sum (*Mineral & Geosciences Department, Selangor/Kuala Lumpur*)
- Geological assessment for failure investigation  
Tan Boon Kong (*National University of Malaysia*)
- Geological assessment for proposed engineering projects  
Ng Chak Ngoon (*Subsurface Engineering Sdn. Bhd.*)

An interesting discussion session followed the presentations. Some of the questions raised were concerning the relevant authorities' requirements and regulations on EIA and ground water and on how geologists should treat the saprolitic material (Grade III to V material).

The participants were each given a copy of seminar material prepared by the presenters based on their professional experiences and best available practice and technology on the basis of best geological judgement including a copy of '*Guidelines for Preparing Engineering Geological Reports*' and '*Geological Report Writing*' published by Association of Engineering Geologists, USA.

Abd Rasid Jaapar  
Chairman  
Young Geologists' Working Group  
Geological Society of Malaysia



### Seminar on Engineering Geology — Case Histories, Assessment & Report Writing



LIMITED STOCK! GET YOUR COPY NOW!  
Member : RM20.00  
Non-Member : RM100.00  
Student Member : RM20.00

**NEW**

# Geological Evolution of South-East Asia

**CHARLES S. HUTCHISON**



**GEOLOGICAL SOCIETY OF MALAYSIA**

**SPECIAL LOW-PRICED SOFT-COVER EDITION  
LIMITED STOCK! GET YOUR COPY NOW!**

<b>PRICE:</b>	<b>Member</b>	<b>: RM50.00</b>
	<b>Non-Member</b>	<b>: RM100.00</b>
	<b>Student Member</b>	<b>: RM30.00</b>

Cheques, Money Orders, Postal Orders or Bank Drafts must accompany local orders. Please add 80 sen for postage. For foreign orders, please send your purchase order. We will invoice you in your own currency. Orders should be addressed to:

*The Hon. Assistant Secretary*  
**GEOLOGICAL SOCIETY OF MALAYSIA**  
*c/o Dept. of Geology, University of Malaya*  
**50603 Kuala Lumpur, MALAYSIA**



## BERITA-BERITA PERSATUAN

### News of the Society

#### CURRENT ADDRESSES WANTED

The GSM is seeking the address of the following member. Anyone knowing the new address please inform the Society.

1. Low Teng Huat  
Asiagro Resources, 27, Jalan Batai Laut 5,  
Taman Intan, 41300 Klang, Selangor D.E.

GSM

#### PERTAMBAHAN BAHARU PERPUSTAKAAN (New Library Additions)

The Society has received the following publications:

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Oklahoma Geology Notes, vol. 61, nos. 1 &amp; 2, 2001.</li> <li>2. Geosciences Journal, vol. 5, no. 1 &amp; 3, 2001.</li> <li>3. AAPG Bulletin, vol. 85, no. 9 &amp; 10, 2001.</li> <li>4. Geological Bulletin of Turkey, vol. 44, no. 1, 2001.</li> <li>5. AAPG Explorer, Sept &amp; Nov 2001.</li> <li>6. Tin International, Oct &amp; Nov 2001.</li> <li>7. Acta Palaeontologica Sinica, vol. 40, nos. 2 &amp; 3, 2001.</li> <li>8. Palaeontological Abstracts, vol. 16, no. 1, 2001.</li> </ol> | <ol style="list-style-type: none"> <li>9. Acta Micropalaeontologica Sinica, vol. 18, 2 &amp; 3, 2001.</li> <li>10. Geoscience, vol. 15, nos. 1-3, 2001.</li> <li>11. Acta Geoscientia Sinica, vol. 22, nos. 1-4, 2001.</li> <li>12. Journal of Shijiazhuang University of Economics, vol. 24, nos. 1 &amp; 3, 2001.</li> <li>13. National Science Museum, Bulletin vol. 27, nos. 1 &amp; 2, 2001.</li> <li>14. U.S.G.S. Professional Paper 2001: nos. 1636, 729-G, 1629, 1420.</li> <li>15. U.S.G.S. Circular: 2000: nos. 1207.</li> </ol> |
|---|--|

GSM

P  
R  
O  
C  
E  
E  
D  
I  
N  
G  
S

PERSATUAN  
GEOLOGI  
MALAYSIA



GEOLOGICAL  
SOCIETY  
OF MALAYSIA



# ANNUAL GEOLOGICAL CONFERENCE 2001

Pan Pacific Resort, Pangkor Island, Perak Darul Ridzuan  
2 - 3 June 2001



Editors: G.H. Teh, Mohd. Shafeea Leman & T.F. Ng

Collaborators:

Minerals and Geoscience Department Malaysia  
Universiti Kebangsaan Malaysia  
University of Malaya  
Universiti Sains Malaysia  
Institute of Geology Malaysia



Geological Society of Malaysia • Kuala Lumpur

Cheques, Money Orders, Postal Orders or Bank Drafts must accompany local orders. Please add 80 sen for postage. For foreign orders, please send your purchase order. We will invoice you in your own currency. Orders should be addressed to:

**PRICE:**  
**RM50.00**

*The Hon. Assistant Secretary*  
**GEOLOGICAL SOCIETY OF MALAYSIA**  
*c/o Dept. of Geology, University of Malaya*  
**50603 Kuala Lumpur, MALAYSIA**

## BERITA-BERITA LAIN

### Other News

## Persidangan Kebangsaan Warisan Geologi Malaysia 2001

*5–8 November 2001*

Persidangan Kebangsaan Warisan Geologi Malaysia 2001 telah diadakan dengan jayanya di Bangunan Kompleks LADA, Langkawi pada 5–8 November 2001. Persidangan ini terdiri daripada beberapa agenda iaitu pembentangan kertas kerja, Pameran Warisan Tabii & Ekopelancongan, Bengkel Pemetaan Warisan Geologi Malaysia dan Lawatan Geotapak. Pameran telah diadakan selama sebulan bertempat di ruang legar Kompleks LADA dan telah mendapat sambutan yang menggalakkan daripada pengunjung tempatan dan luar negara. Bengkel Pemetaan WGM telah diadakan pada 4 November 2001 dan 11 kertas kerja laporan kemajuan telah dibentangkan. **Persidangan Warisan Geologi Malaysia** pula telah dihadiri oleh seramai 60 orang peserta. 12 orang pelajar telah mendapat tajaan daripada Persatuan Geologi Malaysia dan Kementerian Sains, Teknologi dan Alam Sekitar. Mereka terdiri daripada pelajar siswazah/prasiswazah dari UKM (4), UM (4), USM (3) dan UUM (1). Pembentangan kertas kerja terdiri daripada 4 kertas Syarahan Khas, 9 kertas jemputan dan 30 kertas teknikal. Kertas kerjja terpilih akan diterbitkan di dalam buku Warisan Geologi Malaysia 5. Lawatan Geotapak telah diadakan pada 8 November 2001 yang meliputi tiga rentasan ekopelancongan. 4 pelajar menyertai lawatan ini atas biayaan mereka sendiri.

Tanok

GSM

# Common Rocks of Malaysia

A full colour poster illustrating 28 common rocks of Malaysia. With concise description of the features and characteristics of each rock type including common textures of igneous, sedimentary and metamorphic rocks.

## Laminated

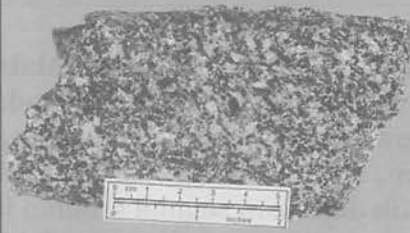
**Size:** 94 cm x 66 cm (42" x 26")

**Price:** Student members RM7.00 (one copy per member, subsequent copies RM10.00 each)  
 Members RM8.00 (one copy per member, subsequent copies RM10.00 each)  
 Non-members RM10.00 per copy

# COMMON ROCKS



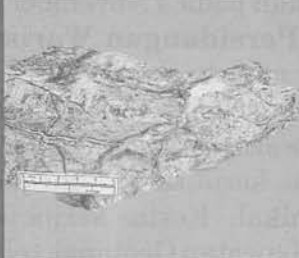
1. Granite (Tampin, Negri Sembilan)



5. Diorite (Kg. Kemahang, Kelantan)



6. Basalt (Segamat, Johor)



7. Serpentinite (Raub, Pahang)



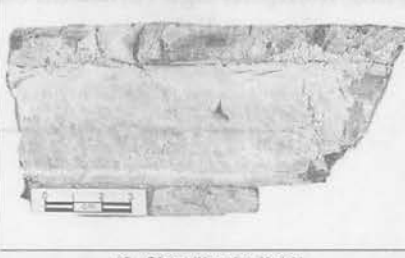
12. Pegmatite (Bukit Mar, Johor)



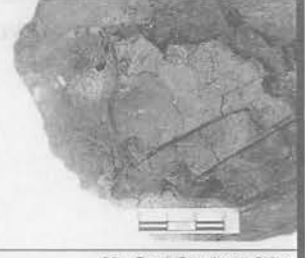
13. Conglomerate (Pulau Redang, Selangor)



8. Mudstone (Kg. Laloh, Kelantan)



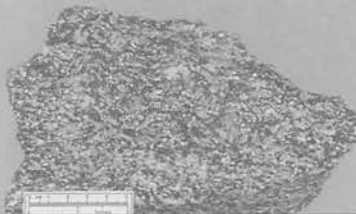
19. Chert (Nanering, Kedah)



20. Coal (Batu Arang, Selangor)



9. Sandstone (Kg. Laloh, Kelantan)



10. Granite (Kg. Laloh, Kelantan)



11. Basalt (Kg. Laloh, Kelantan)

Cheques, Money Orders, Postal Orders or Bank Drafts must accompany local orders. Please add 70 sen for postage. For foreign orders, please send your purchase order. We will invoice you in your own currency. Orders should be addressed to:

## ORDERS

The Hon. Assistant Secretary  
 GEOLOGICAL SOCIETY OF MALAYSIA  
 c/o Dept. of Geology, University of Malaya  
 50603 Kuala Lumpur, MALAYSIA

# Your Ultimate Strategic Partner



LEO EF TEM



Leica Imaging Stations



LEO FE SEM



LEO VP SEM



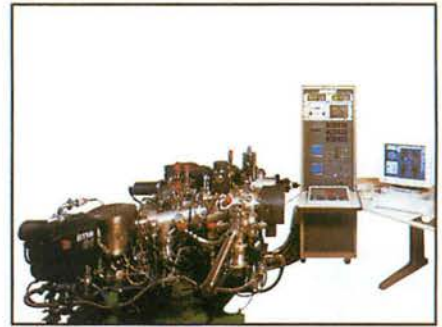
Jenoptik IR Camera



Cameca TOF SIMS



Cameca EPMA



Cameca Magnetic Sector SIMS

- Research Optical Microscopy
- High Frequency Scanning Acoustic Microscopy (SAM)
- Infrared Thermography
- Contactless Shaft Measurement System
- Confocal Laser Scanning Microscopy (CLSM)
- Scanning Electron Microscopy (SEM, VP SEM, FE SEM)
- Energy Filtered Transmission Electron Microscopy (EF TEM)
- X-Ray Microanalysis System (EDX, WDX)
- Focused Ion Beam System (FIB)
- Optical Defect Inspection and Review Stations (DRT)
- Secondary Ion Mass Spectrometry (SIMS)
- Electron Probe Microanalysis (EPMA)
- Vacuum Technology (Pumps, Leak Detectors, Components)
- Cytogenetic and Material Workstations
- Imaging Processing and Analysis (IA)



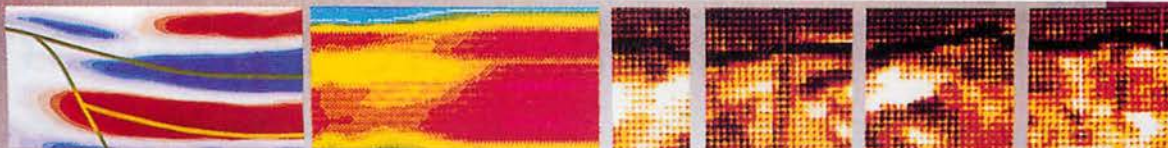
## HI - TECH INSTRUMENTS SDN BHD

(388534-U)

**Head Office** : 9A, Jalan USJ 11/3, 47620 UEP Subang Jaya, Selangor Darul Ehsan, Malaysia.  
Tel : 603-737 0980 Fax : 603-737 0950 Home page: <http://www.htiweb.com>

**Penang Branch** : 29, Lorong Helang Dua, Desa Permai Indah, 11900 Pulau Pinang, Malaysia.  
Tel : 604-659 9152/153 Fax : 604-659 9154

**E-mail** : [sales@htimail.com.my](mailto:sales@htimail.com.my) [service@htimail.com.my](mailto:service@htimail.com.my)



## Schlumberger's New Fullbore Formation MicroImager Doubles Your Coverage With Core-Like Clarity

The FMI\* fullbore electrical imaging tool makes evaluation of complex reservoirs simpler and quicker than ever before. Its 192 microelectrical sensors give you twice the coverage of previous tools and improved spatial resolution, to 0.2 inches.

The fullbore images enable direct structural analysis and characterization of sedimentary bodies even in extremely complex sequences. The fine detail provided by FMI images allows determination of paleocurrents and rock anisotropy, including the recognition of permeability barriers and paths. And determination of net-to-gross ratio in thin bed sand/shale sequences is automatic.

Understanding the internal structure of the rock can confirm hypotheses regarding its geological evolution and can provide valuable clues to geologists and engineers regarding local porosity and permeability changes. This is possible with the enhanced textural analysis from the new high-resolution sensors, as well as detailed evaluation of fracture networks and other secondary porosity.

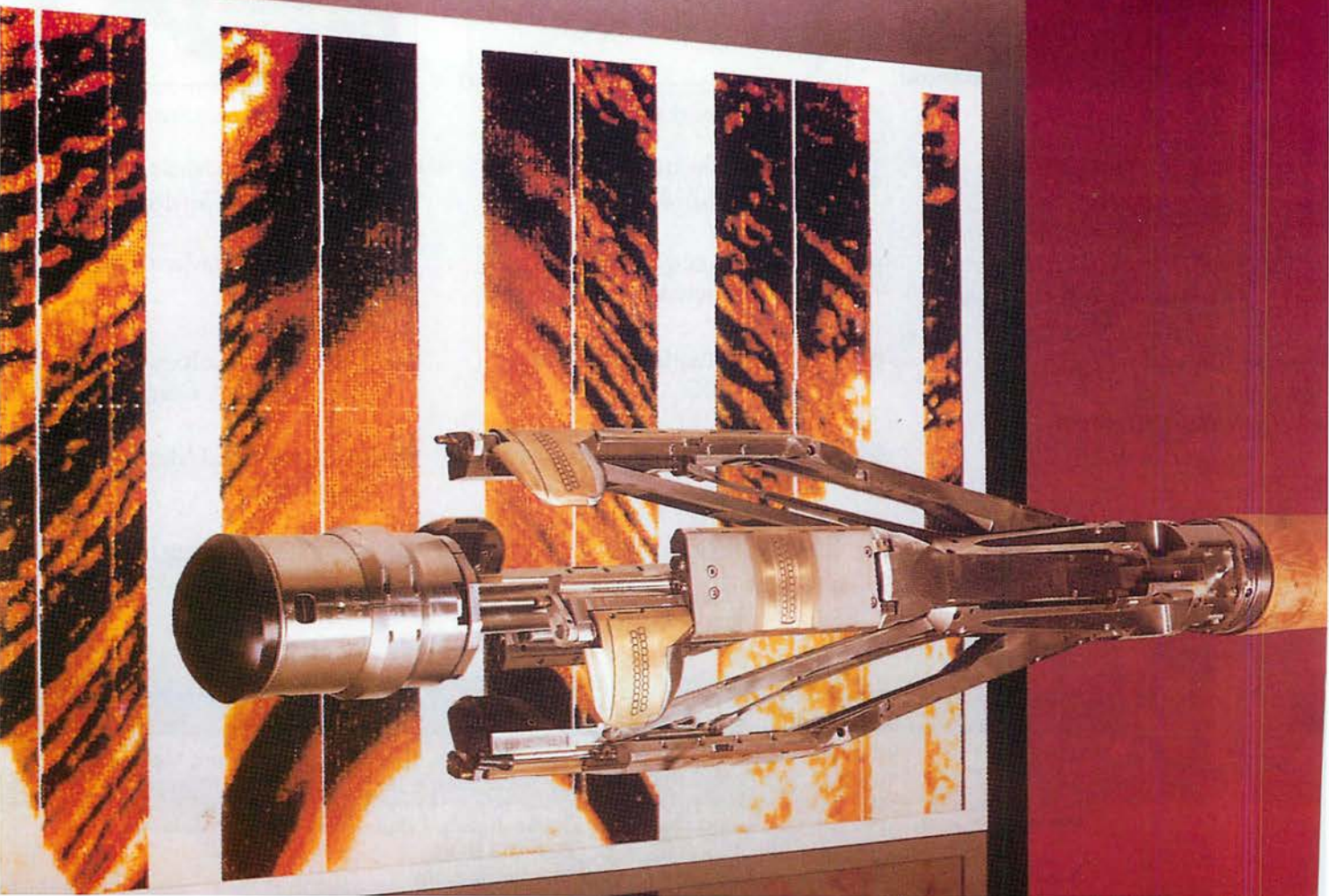
Ask to see an example of the new FMI log. You'll be looking at the clearest, most complete picture of the rock available today.

Schlumberger (Malaysia) Sdn Bhd., 7<sup>th</sup> & 8<sup>th</sup> Floor, Rohas Perkasa  
No. 8, Jalan Perak, 50450 Kuala Lumpur.  
Tel: (03) 2667788. Fax: (03) 2667800.

**Schlumberger**

Value is the difference.

\*Mark of Schlumberger—the FMI tool is a MAXIS 500\* tool





## The Schlumberger Ultrasonic Borehole Imager Detects Openhole Problems and Fractures, Even in Oil-Base Muds.

Accurate, high-resolution, acoustic measurements by the UBI\* Ultrasonic Borehole Imager let you examine an openhole for stability problems, deformation and fractures when nonconductive, oil-base muds prevent resistivity measurements. On the same trip, the UBI rotating transducer can check for corrosion and mechanical wear of the internal surface of the casing as the tool is pulled out of the hole.

No other borehole measurement gives you the thin-bed resolution you get with the UBI tool. The images, cross-section plots and pseudo-3D "spiral" plots generated from UBI measurements also reveal keyseats, breakouts, shear sliding and shale alteration to help you avoid the added drilling costs that result from stuck pipe and lost time or equipment. In addition, you get horizontal stress information for mechanical properties evaluations to predict breakouts and perforation stability in unconsolidated sands.

Talk to your Schlumberger representative about detecting openhole problems and fractures acoustically, even in oil-base muds. What UBI images show you could save you time, expense or possibly your well.

Schlumberger (Malaysia) Sdn Bhd., 7<sup>th</sup> & 8<sup>th</sup> Floor, Rohas Perkasa  
No. 8, Jalan Perak, 50450 Kuala Lumpur.  
Tel: (03) 2667788. Fax: (03) 2667800.

**Schlumberger**

Value is the difference.

\*Mark of Schlumberger—the UBI tool is a MAXIS 500\* tool





Website: <http://www.geoservices.com>

# *Geoservices, the Leader in Mud Logging Services in Asia-Pacific*

## *Advanced Logging System - NT*

Pore Pressure  
Engineering

Early Kick  
Detection

Drilling  
Optimisation



Real-Time  
Reservoir Evaluation

Wellsite  
Geological Services

Intranet  
Data Distribution  
& Access

### **Geoeast (M) Sdn Bhd.**

Suite 702A, 7th Floor  
See Hoy Chan Plaza  
Jalan Raja Chulan  
50200 Kuala Lumpur  
MALAYSIA

Telephone : 603-20266641/2/3  
Facsimile : 603-20266640  
e-mail : [Malaysia.kl@geosrv.com](mailto:Malaysia.kl@geosrv.com)



*People, Knowledge & Technology*





GEOLOGICAL  
SOCIETY OF  
MALAYSIA

**PROCEEDINGS**  
**AAPG-GSM**  
**International**  
**Conference 1994**



**Southeast Asian Basins:  
Oil and Gas for the 21st Century**

**August 21-24, 1994**  
**Kuala Lumpur, Malaysia**

Published by:  
Geological Society of Malaysia

Editor: G.H. Teh

*Bulletin* of the  
**GEOLOGICAL SOCIETY OF MALAYSIA**

**July 1995**

**SPECIAL PUBLICATION**

**No. 37**

Cheques, Money Orders, Postal Orders or Bank Drafts must accompany local orders. Please add 80 sen for postage. For foreign orders, please send your purchase order. We will invoice you in your own currency. Orders should be addressed to:

**PRICE:**  
**RM50.00**

The Hon. Assistant Secretary  
**GEOLOGICAL SOCIETY OF MALAYSIA**  
c/o Dept. of Geology, University of Malaya  
50603 Kuala Lumpur, MALAYSIA

**NEW**

# MALAYSIAN STRATIGRAPHIC GUIDE

*Prepared by*

**Malaysian Stratigraphic  
Nomenclature Committee**



**Geological Society of Malaysia**

**December 1997**

**SPECIAL LOW-PRICED SOFT-COVER EDITION  
LIMITED STOCK! GET YOUR COPY NOW!**

<b>PRICE:</b>	<b>Member</b>	<b>: RM5.00</b>
	<b>Non-Member</b>	<b>: RM10.00</b>
	<b>Student Member</b>	<b>: RM2.00</b>

Cheques, Money Orders, Postal Orders or Bank Drafts must accompany local orders. Please add 80 sen for postage. For foreign orders, please send your purchase order. We will invoice you in your own currency. Orders should be addressed to:

*The Hon. Assistant Secretary*  
**GEOLOGICAL SOCIETY OF MALAYSIA**  
*c/o Dept. of Geology, University of Malaya*  
50603 Kuala Lumpur, MALAYSIA

# GEOLOGICAL SOCIETY OF MALAYSIA PUBLICATIONS

- Bulletin 1** (Feb 1968). 79 p. Studies in Malaysian Geology. Edited by P.H. Stauffer. A collection of papers presented at a meeting of the Geological Society on 31st January 1967. **Out of Stock.**
- Bulletin 2** (Dec 1968). 152 p. Bibliography and Index of the Geology of West Malaysia and Singapore by D.J. Gobbett. Price: RM5.00.
- Bulletin 3** (Mar 1970). 146 p. Papers in Geomorphology and Stratigraphy (with Bibliography supplement). Edited by P.H. Stauffer. Price: RM5.00.
- Bulletin 4** (Jun 1971). 100 p. Papers in Petrology, Structure and Economic Geology. Edited by P.H. Stauffer. Price: RM5.00.
- Bulletin 5** (Feb 1973). 70 p. The Search for Tungsten Deposits by K.F.G. Hosking. Price: RM5.00.
- Bulletin 6** (Jul 1973). 334 p. Proceedings, Regional Conference on the Geology of Southeast Asia. A collection of papers, Kuala Lumpur, March, 1972. Edited by B.K. Tan. Price: RM5.00.
- Bulletin 7** (Jun 1974). 138 p. A collection of papers on geology. Edited by B.K. Tan. Price: RM5.00.
- Bulletin 8** (Dec 1977). 158 p. A collection of papers on geology. Edited by T.T. Khoo. Price: RM5.00.
- Bulletin 9** (Nov 1977). 277 p. The relations between granitoids and associated ore deposits of the Circum-Pacific region. IGCP Circum-Pacific Plutonism Project Fifth Meeting. 12-13 November 1975, Kuala Lumpur. Edited by J.A. Roddick & T.T. Khoo. **Out of stock.**
- Bulletin 10** (Dec 1978). 95 p. A collection of papers on the geology of Southeast Asia. Edited by C.H. Yeap. **Out of stock.**
- Bulletin 11** (Dec 1979). 393 p. Geology of Tin Deposits. A collection of papers presented at the International Symposium of 'Geology of Tin Deposits', 23-25 March 1978, Kuala Lumpur. Edited by C.H. Yeap. Price: RM20.00.
- Bulletin 12** (Aug 1980). 86 p. A collection of papers on geology. Edited by G.H. Teh. **Out of stock.**
- Bulletin 13** (Dec 1980). 111 p. A collection of papers on geology of Malaysia and Thailand. Edited by G.H. Teh. Price: RM5.00.
- Bulletin 14** (Dec 1981). 151 p. A collection of papers on geology of Southeast Asia. Edited by G.H. Teh. **Out of stock.**
- Bulletin 15** (Dec 1982). 151 p. A collection of papers on geology. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 16** (Dec 1983). 239 p. A collection of papers on geology. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 17** (Dec 1984). 371 p. A collection of papers on geology. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 18** (Nov 1985). 209 p. Special Issue on Petroleum Geology. Edited by G.H. Teh & S. Paramanathan. Price: RM15.00.
- Bulletins 19** (Apr 1986) & **20** (Aug 1986). GEOSEA V Proceedings Vols. I & II, Fifth Regional Congress on Geology, Mineral and Energy Resources of SE Asia, Kuala Lumpur, 9-13 April 1984. Edited by G.H. Teh & S. Paramanathan. Price for both Bulletins 19 & 20: Members: RM30.00; Non-Members: RM60.00.
- Bulletin 21** (Dec 1987). 271 p. Special Issue on Petroleum Geology Vol. II. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 22** (Dec 1988). 272 p. Special Issue on Petroleum Geology Vol. III. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 23** (Aug 1989). 215 p. A collection of papers on the geology of Malaysia, Thailand and Burma. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 24** (Oct 1989). 199 p. A collection of papers presented at GSM Annual Geological Conference 1987 and 1988. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 25** (Dec 1989). 161 p. Special Issue on Petroleum Geology Vol. IV. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 26** (Apr 1990). 223 p. A collection of papers presented at GSM Annual Geological Conference 1989 and others. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 27** (Nov 1990). 292 p. Special Issue on Petroleum Geology Vol. V. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 28** (Nov 1991). 292 p. Special Issue on Petroleum Geology Vol. VI. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 29** (Jul 1991). 255 p. A collection of papers presented at GSM Annual Geological Conference 1990 and others. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 30** (Apr 1992). 90 p. Annotated bibliography of the geology of the South China Sea and adjacent parts of Borneo by N.S. Haile. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 31** (Jul 1992). 176 p. A collection of papers presented at GSM Annual Geological Conference 1991 and others. Edited by G.H. Teh. Price: RM10.00.
- Bulletin 32** (Nov 1992). 283 p. Special Issue on Petroleum Geology Vol. VII. Edited by G.H. Teh. Price: RM30.00.
- Bulletin 33** (Nov 1993). 419 p. Proceedings Symposium on Tectonic Framework and Energy Resources of the Western Margin of the Pacific Basin. Edited by G.H. Teh. Price: RM40.00.
- Bulletin 34** (Dec 1993). 181 p. Bibliography and Index — Publications of the Geological Society of Malaysia 1967-1993. Compiled by T.F. Ng. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 35** (Jul 1994). 174 p. A collection of papers presented at GSM Annual Geological Conference 1992 & 1993. Edited by G.H. Teh. Price: RM20.00.
- Bulletin 36** (Dec 1994). 186 p. Special issue on Petroleum Geology Vol. VIII. Edited by G.H. Teh. Price: RM50.00.
- Bulletin 37** (Jul 1995). 506 p. Proceedings AAPG-GSM International Conference 1994. Southeast Asian Basins: Oil and Gas for the 21st Century. Edited by G.H. Teh. Price: RM60.00.
- Bulletin 41** (Dec 1997). 165 p. Papers from Petroleum Geology Conference 1996 and others. Edited by G.H. Teh. Price: RM50.00.
- Field Guide 1** (1973). 40 p. A 7-day one thousand mile, geological excursion in Central and South Malaya. By C.S. Hutchison. **Out of stock.**
- Abstracts of papers** (1972). Regional Conference on the Geology of Southeast Asia, Kuala Lumpur, 1972. 64 p. 8 figs, 3 tables, many extended abstracts. Edited by N.S. Haile. Price: RM2.00.
- Proceedings of the Workshop on Stratigraphic Correlation of Thailand and Malaysia Vol. 1.** (1983). 383 p. Technical Papers. Price: Member: RM5.00; Non-member: RM15.00.
- WARTA GEOLOGI** (Newsletter of the Geological Society of Malaysia). Price: RM5.00 per bimonthly issue from July 1966.
- Geological Evolution of Southeast Asia** (1996) (Reprinted Edition) by C.S. Hutchison. 368 p. Price: Member: RM50.00; Non-member: RM100.00; Student: RM30.00.
- Common Rocks of Malaysia (Colour Poster)**. Price: Member: RM8.00; Non-member: RM10.00; Student: RM7.00.
- Malaysian Stratigraphic Guide** (Dec 1997). 30 p. Price: Member: RM5.00; Non-member: RM10.00; Student Member: RM2.00.
- Proceedings Annual Geological Conference 2000**. 435 p. Edited by G.H. Teh, Joy J. Pereira and T.F. Ng. Price: RM60.00.
- PACKAGE DEAL A: General Geology/Malaysian Geology**  
Bulletins 3, 4, 7, 15, 16, 17, 24, 26, 29, 31 (10 books)  
Member: RM60.00 Student Member: RM40.00  
Non-member: RM75.00 Student Non-member: RM50.00
- PACKAGE DEAL B: Bibliography**  
Bulletins 2, 30, 34 (3 books)  
Member: RM20.00 Student Member: RM10.00  
Non-member: RM25.00 Student Non-member: RM15.00
- PACKAGE DEAL C: Southeast Asia**  
Bulletins 6, 13, 19 & 20, 23, 33, Strati. Correl. (7 books)  
Member: RM60.00 Student Member: RM40.00  
Non-member: RM100.00 Student Non-member: RM50.00
- PACKAGE DEAL D: Petroleum Geology**  
Bulletins 18, 21, 22, 25, 27, 28, 32 (7 books)  
Member: RM120.00 Student Member: RM80.00  
Non-member: RM150.00 Student Non-member: RM100.00
- PACKAGE DEAL E: Economic Geology**  
Bulletins 5, 11 (2 books)  
Member: RM15.00 Student Member: 5.00  
Non-member: RM20.00 Student Non-member: 10.00
- PACKAGE DEAL 1: Bulletins 2, 3, 4, 5, 6, 7, 8, 11** (8 books)  
Member: RM30.00 Student Member: RM15.00  
Non-member: RM40.00 Student Non-member: RM25.00
- PACKAGE DEAL 2: Bulletins 13, 15, 16, 17, 18** (5 books)  
Member: RM30.00 Student Member: RM15.00  
Non-member: RM40.00 Student Non-member: RM25.00
- PACKAGE DEAL 3: Bulletins 19, 20, Strati. Correl.** (3 books)  
Member: RM30.00 Student Member: RM20.00  
Non-member: RM60.00 Student Non-member: RM30.00
- PACKAGE DEAL 4: Bulletins 21, 22, 23, 24, 25** (5 books)  
Member: RM40.00 Student Member: RM20.00  
Non-member: RM60.00 Student Non-member: RM30.00
- PACKAGE DEAL 5: Bulletins 26, 27, 28, 29, 30** (5 books)  
Member: RM40.00 Student Member: RM20.00  
Non-member: RM60.00 Student Non-member: RM30.00
- PACKAGE DEAL 6: Bulletins 31, 32, 33, 34, 35** (5 books)  
Member: RM60.00 Student Member: RM30.00  
Non-member: RM100.00 Student Non-member: RM40.00
- All prices quoted are not inclusive of postage. Please write in for details on postage. Allow 8-10 weeks for delivery.
- For orders, please write to the Society and you will be invoiced. Cheques, money orders or bank drafts must accompany all orders.
- Orders should be addressed to:**  
The Hon. Assistant Secretary, Geological Society of Malaysia,  
c/o Dept. of Geology, University of Malaya,  
50603 Kuala Lumpur, MALAYSIA.  
Tel: 603-79577036, Fax: 603-79563900, e-mail: geologi@po.jaring.my

# ORDER FORM

## GEOLOGICAL SOCIETY OF MALAYSIA PUBLICATION

Date: .....

The Assistant Secretary,  
Geological Society of Malaysia,  
c/o Department of Geology,  
University of Malaya,  
50603 Kuala Lumpur,  
MALAYSIA

Dear Sir,

Please send me the following publications. I enclose US\$/RM\* .....  
in cheque/money order/bank draft.\*

Item	No. of Copies	Price

Sub-Total \_\_\_\_\_  
Total \_\_\_\_\_

Signature: .....

\*Delete where applicable

Please mail to : \_\_\_\_\_  
(Please print) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# GEOLOGICAL SOCIETY OF MALAYSIA PUBLICATIONS

## BULLETIN OF THE GEOLOGICAL SOCIETY OF MALAYSIA

WARTA GEOLOGI — NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MALAYSIA

### ADVERTISING SPACE ORDER FORM

RATES:	WARTA GEOLOGI Format: 20 cm x 28 cm		BULLETIN Format: 20 cm x 28 cm	
	Black & White	Colour	Black & White	Colour
Inside full page per issue	RM300	RM600	RM1,000	RM1,500
Inside half page per issue	RM200	RM500	RM500	RM800
Inside full page for 6 issues	RM1,500	RM3,000	—	—
Inside half page for 6 issues	RM1,000	RM2,500	—	—

Artwork and positive films or slides (for colour or black & white) should be supplied by the advertiser.

Please send the completed form below together with remittance payable to "Geological Society of Malaysia" to

The Editor,  
Geological Society of Malaysia  
c/o Dept. of Geology,  
University of Malaya,  
50603 Kuala Lumpur, Malaysia.

For further information, please ring 603-7957 7036 or fax 603-7956 3900 or e-mail to geologi@po.jaring.my.

The Editor,  
Geological Society of Malaysia  
c/o Dept. of Geology,  
University of Malaya,  
50603 Kuala Lumpur.

We would like to take up advertising space in WARTA GEOLOGI/BULLETIN in the form (please tick as appropriate):

	WARTA GEOLOGI		BULLETIN	
	Black & White	Colour	Black & White	Colour
Inside full page	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>
	six issues <input type="checkbox"/>	six issue <input type="checkbox"/>	issues <input type="checkbox"/>	issues <input type="checkbox"/>
Inside half page	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>	one issue <input type="checkbox"/>
	six issues <input type="checkbox"/>	six issue <input type="checkbox"/>	issues <input type="checkbox"/>	issues <input type="checkbox"/>

Artwork/Positive film/slide\* enclosed  not enclosed

Company .....

Address .....

Enclosed cheque/money order/bank draft\* ..... for RM .....

Person to be contacted ..... Tel: .....

Designation ..... Fax: .....

\* Please delete as appropriate.

Signature .....

## KALENDAR (CALENDAR)

### 2002

#### March 4-8

**33RD LUNAR AND PLANETARY SCIENCE CONFERENCE**, NASA Johnson Space Center, Houston, Texas, USA. (Contact: Cheryl Perry, Conference Administrator, LPI Publications and Program Services Department, 3600 Bay Area Boulevard, Houston TX 77058-1113. Tel: (281) 486-2123; E-mail: perry@lpi.usra.edu)

#### March 10-13

**AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (Annual Meeting), Houston, Texas, USA. (Contact: AAPG Conventions Dept., P.O. Box 979, Tulsa, OK 74101-0979, USA. Tel: +1-918 560 2679; Fax: 1-918 560 2684; E-mail: convene@aapg.org; Website: <http://www.aapg.org/>)

#### March 19-22

**19TH COLLOQUIUM OF AFRICAN GEOLOGY**, El Jadida, Morocco. (Contact: Web site: <http://www.ucd.ac.ma/geologie/cag19.html>)

#### March 20-22

**3RD INTERNATIONAL CONFERENCE ON DAM ENGINEERING**, Singapore. (Contact: Website: <http://perso.club-internet.fr/cfms/manifs-autres.htm>)

#### March 20-23

**OIL AND GAS THAILAND 2002: The 6th International Oil and Gas Exploration, Production and Processing Technology Exhibition and Conference**, Pattaya, Thailand. (Contact: Overseas Exhibition Services Ltd., 11 Manchester Square, London W1M 5AB, Angleterre, UK. Tel: +44 (0) 207 862 200; Fax: +44 (0) 202 862 2078; E-mail: pmckean@montnet.com)

#### March 20-27

**NATIONAL EARTH SCIENCE TEACHERS ASSOCIATION** (Annual Convention and Exhibition), San Diego, California, USA. (Contact: NESTA, 2000 Florida Ave., N.W., Washington, D.C. 20009, USA. Tel: +1 202 462 6910; Fax: +1 202 328 0566; E-mail: fireton@kosmos.agu.org)

#### March 24-27

**ANCIENT AND MODERN COASTAL PLAIN DEPOSITIONAL ENVIRONMENTS**, *Aquifer heterogeneity and environmental implications*, Embassy Suites, Charleston, SC, USA. (Contact: Mary K. Harris, Westinghouse Savannah River Company, Savannah River Technology Center, P.O. Box 616, Aiken, SC 29808, USA. Tel: +1 803-725-4184; E-mail: mary.harris@srs.gov)

#### March 25-29

**INTERNATIONAL GROUNDWATER SYMPOSIUM** — *Bridging the Gap between Measurements and Modelling in Heterogeneous Media*, Berkley, California, U.S.A. (Contact: Dr. Angelos Findikakis, Bechtel, Mail Stop 333/12/C34, P.O. Box 3965, San Francisco, California, U.S.A. Tel: +1 415 768 8550; Fax: +1 415 768 4898; E-mail: anfindik@bechtel.com)

#### April 7-10

**AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS** (Annual Meeting), Houston, Texas, USA. (Contact: AAPG Conventions Department, P.O. Box 979, 1444 S. Boulder Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918 560 2679; Fax: +1 918 560 2684; E-mail: dkeim@aapg.org)

#### April 14-16

**THE SOCIETY OF ECONOMIC GEOLOGISTS GLOBAL EXPLORATION 2002, INTEGRATED METHODS FOR DISCOVERY CONFERENCE**, Denver, Colorado, USA. (Contact: S.E.G., 7811 Shaffer Parkwy, Littleton, CO, U.S.A. Tel: +1-720.981.7882x210; Fax: +1.720.981.7874; E-mail: SEG2002@segweb.org; Website: [www.seg2002.org](http://www.seg2002.org))

#### April 15-17

**GEO 2002; THE 5TH MIDDLE EAST GEOSCIENCE CONFERENCE AND EXHIBITION**, Bahrain. (Contact: Overseas Exhibition Services Ltd., 11 Manchester Square, London W1M 5AB, Angleterre, UK. Tel: +44 (0) 207 862 2000; Fax: +44 (0) 202 862 2078; E-mail: pmckean@montnet.com; Website: [www.gulfpetrolink.com](http://www.gulfpetrolink.com))

**April 24-26**

*MIS 2002 (Third International Conference on Management Information Systems Incorporating GIS and Remote Sensing)*, Southampton, U.K. (Contact: Conference Secretariat, MIS 2002. E-mail: [gossutta@wessex.ac.uk](mailto:gossutta@wessex.ac.uk); Tel: 44 (0) 238 029 3223; Fax: 44 (0) 238 029 2853; Website: <http://www.wessex.ac.uk/conferences/2002/mis02/>)

**May 5-10**

*INTERNATIONAL SYMPOSIUM ON THE INTERACTIONS BETWEEN SEDIMENTS AND WATER*, Banff, Alberta, Canada. (Contact: Dr. Ellen Petticrew, University of Northern British Columbia, 3333 University Way, Prince George, BC Canada, V2N 4Z9; Tel: +1 250 960 6645; Fax: +1 250 960 5538; E-mail: [iasws@unbc.ca](mailto:iasws@unbc.ca))

**May 6-8**

*ENVIROSOFT 2002 (Ninth International Conference on Development and Application of Computer Techniques to Environmental Studies)*, Berger, Norway. (Contact: Lucy Southcott, Conference Secretariat, Envirosoft 2002, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, UK. Tel: +44 (0) 238 029 3223; Fax: +44 (0) 238 029 2853; E-mail: [lsouthcott@wessex.ac.uk](mailto:lsouthcott@wessex.ac.uk); Website: <http://www.wessex.ac.uk/conferences/2002/env02/>)

**May 12-14**

*OCCURRENCE AND MECHANISMS OF FLOWS IN NATURAL SLOPES AND EARTH FILLS — IW-FLOW2002*, Naples, Italy. (Contact: Website: <http://www.unina2.it/flows2002>)

**May 20-23**

*INTERNATIONAL CONFERENCE ON INSTABILITY*, Ventnor, Isle of Wight, UK. (Contact: Robin G. McInnes, Centre for the Coastal Environment. Fax: 44 1983 855859; E-mail: [conference@iwright.gov.uk](mailto:conference@iwright.gov.uk))

**May 20-24**

*THE SIXTH INTERNATIONAL SYMPOSIUM ON THE GEOCHEMISTRY OF THE EARTH'S SURFACE (GES-6)*, Honolulu, Hawaii, USA. Sponsors: The School of Ocean & Earth Science & Technology of the University of Hawaii, and The International Association of Geochemistry and Cosmochemistry (IAGC)

**May 26-31**

*12TH INTERNATIONAL SOIL CONSERVATION*, Beijing, China. (Contact: Website: <http://www.geotechnique.org>)

**May 27-30**

*EUROPEAN ASSOCIATION OF GEOSCIENTISTS AND ENGINEERS* (63rd Conference & Technical Exhibition), Florence, Italy. (Contact: Website: <http://www.eage.nl/>)

**May 29-31**

*GREEN PROCESSING 2002, "International Conference on the Sustainable Processing of Minerals"*, Cairns, Australia. (Contact: Miriam Way, AusIMM, P.O. Box 660, Carlton South, Victoria, Australia 3053. Tel: +61 3 96623166; Fax: +61 3 96623662; E-mail: [conference@ausimm.com.au](mailto:conference@ausimm.com.au); Website: [www.ausimm.com](http://www.ausimm.com))

**June 2-5**

*43RD WELL LOGGING SYMPOSIUM*, Oiso, Japan. (Contact: Ms. Shizu Kobayashi, Schlumberger K.K. Tel: 81 42 759-2115; Fax: 81 42 759-4270; E-mail: [kobayssi@fuchinobe.skk.slb.com](mailto:kobayssi@fuchinobe.skk.slb.com))

**June 3-7**

*ZEOLITE 2002*, Aristotle University, Thessaloniki, Greece. (Contact: Website: <http://www.chem.auth.gr/activities/zeo2002/>)

**June 17-20**

*CALIBRATION AND RELIABILITY IN GROUND WATER MODELLING*, Prague, Czech. (Contact: ModelCARE'2002, Opletalova, 22, AZ-110 00 Prague 1, Czech Republic. Tel: 420 2 8400 1444; Fax: 420 2 8400 1448; E-mail: [modelcare2002@guarant.cz](mailto:modelcare2002@guarant.cz); Website: <http://www.guarant.cz/ModelCARE2002>)

**June 18-20**

*RECYCLING AND WASTE TREATMENT IN MINERAL AND METAL PROCESSING*, Lulea, Sweden. (Contact: E-mail: [caisa.samuelsson@km.luth.se](mailto:caisa.samuelsson@km.luth.se))

**June 19-21**

*RISK ANALYSIS 2002 (Third International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation)*, Sintra, Portugal. (Contact: Conference Secretariat, RISK02, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Tel: 44 (0) 238 029 3223; Fax: 44 (0)

238 029 2853; E-mail: [rgreen@wessex.ac.uk](mailto:rgreen@wessex.ac.uk);  
Website: <http://www.wessex.ac.uk/conferences/2002/risk02/>

**June 30 – July 5**

**16TH AUSTRALIAN GEOLOGICAL CONVENTION**, *Geoscience 2002: Expanding Horizons*, Adelaide Convention Centre, Adelaide South Australia. (Contact: the Organising Committee, 16th Australian Geological Convention, c/o The Secretary GSA (SA Division), P.O. Box 295, Kent Town, SA 5071. E-mail: [info@16thagc.gsa.org.au](mailto:info@16thagc.gsa.org.au); Website: [www.16thagc.gsa.org.au](http://www.16thagc.gsa.org.au))

**July 6–10**

**FIRST INTERNATIONAL PALAEOONTOLOGICAL CONGRESS**, Sydney, Australia. (Contact: Jophn A. Talent, MUCPE, Earth and Palaeontological Sciences, Macquarie University, NSW 2109, Australia. Fax: 61 2 9850 6053; E-mail: [IPC2002@mq.edu.au](mailto:IPC2002@mq.edu.au); Website: [www.es.mq.edu.au/mucep](http://www.es.mq.edu.au/mucep))

**July 7–12**

**16TH INTERNATIONAL SEDIMENTOLOGICAL CONGRESS**, Auckland Park, Gauteng, South Africa. (Contact: Bruce Cairncross, Department of Geology, Rand Africans University, P.O. Box 524, Auckland Park, 2006, South Africa. Tel: +27 11 489 23 13; Fax: +27 11 489 23 09; E-mail: [bc@na.rau.ac.za](mailto:bc@na.rau.ac.za); Website: <http://general.rau.ac.za/geology/announcement.htm>)

**July 9–12**

**GEOLOGY OF THE DEVONIAN SYSTEM**, Syktyvkar, Russia. (Contact: Website: <http://sds.uta.edu/ras-update/russian-academy-of-sciences.htm>)

**July 21–25**

**9TH INTERNATIONAL PLATINUM SYMPOSIUM**, Billings, Montana, USA. Sponsored by IGCP 427/SEG/SGA. (Contact: Website: <http://www.platinumsymposium.org/>)

**July 22–26**

**THIRD INTERNATIONAL CONFERENCE ON WATER RESOURCES AND ENVIRONMENT RESEARCH (ICWRER)**, *Water quantity & quality aspects in modeling and management of ecosystems*, Dresden, Germany. (Contact: Conference Secretariat ICWRER 2002, Institute of Hydrology and Meteorology, Dresden University of Technology,

Wuerzburger Str. 46, 01187 Dresden, Germany. Tel: + 49-351-463 3931; Fax: + 49-351-463 7162; E-mail: [icwrer2002@mailbox.tu-dresden.de](mailto:icwrer2002@mailbox.tu-dresden.de); Website: [www.tu-dresden.de/fghhihm/hydrologie.html](http://www.tu-dresden.de/fghhihm/hydrologie.html))

**July 22–26**

**11TH QUADRENNIAL IAGOD SYMPOSIUM AND GEOCONGRESS 2002**, Windhoek, Namibia. (Contact: Website: <http://www.geoconference2002.com/>)

**August 11–15**

**4TH INTERNATIONAL CONGRESS ON ENVIRONMENTAL GEOTECHNICS**, Rio de Janeiro, Brazil. (Contact: Tel: +55 21 290-1730; Fax: +55 21 280-9545; E-mail: [4iceg@pec.coppe.ufrj.br](mailto:4iceg@pec.coppe.ufrj.br); Website: [www.4iceg.ufrj.br](http://www.4iceg.ufrj.br))

**August 25–30**

**GONDWANA 11: CORRELATIONS AND CONNECTIONS**, Gateway Antarctica, University of Canterbury, Christchurch, New Zealand. (Contact: Tel: +64-3-364 2136; Fax: +64-3-364 2197; E-mail: [s.hawtin@anta.canterbury.ac.nz](mailto:s.hawtin@anta.canterbury.ac.nz) or [gateway@anta.canterbury.ac.nz](mailto:gateway@anta.canterbury.ac.nz); Website: [www.anta.canterbury.ac.nz](http://www.anta.canterbury.ac.nz))

**September 1–5**

**17TH WORLD PETROLEUM CONGRESS**, Rio de Janeiro, Brazil. (Contact: Brasoc — Brazillian Organizing Committee, Tel: +55 21 2282 2002; Fax: +55 21 2282 2005; E-mail: [brasoc@wpc2002.com](mailto:brasoc@wpc2002.com); Website: [www.wpc2002.com](http://www.wpc2002.com))

**September 1–6**

**MINERALOGY FOR THE NEW MILLENNIUM**, Edinburgh, Scotland. (Contact: E-mail: [info@minersoc.org](mailto:info@minersoc.org); Website: [www.minersoc.org/IMA2002](http://www.minersoc.org/IMA2002))

**September 12–22**

**6TH INTERNATIONAL SYMPOSIUM ON THE JURASSIC SYSTEM**, Palermo, Sicily, Italy. (Contact: Dr. Luca Martire, Fax: 39 011 541755; E-mail: [martire@dst.unito.it](mailto:martire@dst.unito.it))

**September 15–19**

**INTERNATIONAL CONFERENCE ON URANIUM MINING AND HYDROGEOLOGY**, Freiberg, Germany. (Contact: E-mail: [umh@geo.tu-freiberg.de](mailto:umh@geo.tu-freiberg.de); Website: [www.geo.tu-freiberg.de/umh](http://www.geo.tu-freiberg.de/umh))



**September 16–20**

*INTERNATIONAL ASSOCIATION OF ENGINEERING GEOLOGY AND THE ENVIRONMENT (IAEG), "Engineering Geology for Developing Countries"* (9th International Congress), Durban, South Africa. (Contact: South African Institute for Engineering and Environmental Geologists, P.O. Box 2812, Pretoria, 0001, South Africa. E-mail: saieg@hotmail.com; Website: home.geoscience.org.za/saieg/2002.htm)

**September 22–27**

*SOCIETY OF EXPLORATION GEOPHYSICISTS* (72nd Annual Meeting and International Exposition), Las Vegas, Nevada, USA. (Contact: SEG Business Office, Tel: +1-918 497 5500; Fax: +1-918 497 5557; Website: seg.org/)

**September 24–28**

*URANIUM DEPOSITS: FROM THEIR GENESIS OF THEIR ENVIRONMENT IMPACTS*, Prague, Czech. (Contact: Bohdan Kribek, Czech Geological Survey, 152000 Prague 5. Tel: 422 51085 518; Fax: 422 5817 390; E-mail: kribek@cgu.cz)

**October 15–19**

*INTERNATIONAL WORKSHOP ON INTEGRATED WATER RESOURCE MANAGEMENT*. Organised by the US Bureau of Reclamation, Denver, Colorado, U.S.A. (Contact: International Affairs Team, D-1520, US Bureau of Reclamation, P.O. Box 25007, Denver, CO 80225, U.S.A. Tel: +1 303 445 2127; Fax: +1 303 445 6322; E-mail: lprincipe@do.usbr.gov; Website: http://www.usbr.gov/)

**October 21–25**

*INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS, "Groundwater and Human Development"* (32nd International Congress), Mar del Plata, Argentina. (Contact: Dr. Emilia Bocanegra, Centro de Geología de Costas y del Cuaternario, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Mar del Plata, Casilla de Correo 722, 7600 Mar del Plata, Argentina; Tel: +54 223 475 4060; Fax: +54 223 475 3150; E-mail: ebocaneg@mdp.edu.ar)

**October 27–30**

*GEOLOGICAL SOCIETY OF AMERICA* (Annual Meeting), Denver, Colorado, USA. (Contact: Meeting Dept., P.O. Box 9140, Boulder, CO 80301-9140, USA. Tel: 1 303 447 2020; Fax: 1 303 447 1133; E-mail: meetings@geosociety.org; Website: www.geosociety.org/meetings/index.htm)

**November 20–23**

*ROLE OF NATURAL RESOURCES AND ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT IN SOUTH AND SOUTHEAST ASIA*, Dhaka, Bangladesh. (Contact: Ms. Afia Akhtar, Convenor, NESDA & Vice President, AGID, Director, Geological Survey of Bangladesh, 153 Pioneer Road, Segunbagicha, Dhaka 1000, Bangladesh. Tel: 880-2-418545 (O), 9337559, 9350412 (H); E-mail: afia@agni.com or mnhasan@agni.com; or Mr. Nehal Uddin, Member Secretary, NESDA, Deputy Director, Geological Survey of Bangladesh, 153 Pioneer Road, Segunbagicha, Dhaka 1000, Bangladesh. Tel: 880-2-9348318; E-mail: nehalu@bttn.net.bd)

**2003**

*SIXTH INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL GEOCHEMISTRY*, Edinburgh, Scotland. (Contact: John Farmer, Dept. of Chemistry, The University of Edinburgh, Joseph Black Building, Kings Buildings, West Mains Road, Edinburgh EH9 3JJ Scotland. Tel: 0131-650-1000; Fax: 0131-650-4757; E-mail: J.G.farmer@ed.ac.uk)

**March 27–30**

*NATIONAL EARTH SCIENCE TEACHERS ASSOCIATION* (Annual Meeting), Philadelphia, Pennsylvania, USA. (Contact: NESTA, 2000 Florida Ave., N.W., Washington, D.C. 20009, USA. Tel: +1-202 462 6910; Fax: +1-202 328 0566; E-mail: fireton@kosmos.agu.org)

**May**

*INTERNATIONAL SYMPOSIUM ON KARST AND HARD ROCK FORMATIONS*, Esfahan, Iran. (Contact: Dr. A. Afrasiabian, National

Karst Study and Research Center, P.O. Box 15875-3584, Tehran, Iran. Tel: +98 21 7520474; Fax: +98 21 7533186)

#### June 15-17

**7TH ICOBTE — INTERNATIONAL CONFERENCE ON BIOGEOCHEMISTRY OF TRACE ELEMENTS**, Uppsala, Sweden. (Contact: George R. Gobran. Fax: 46 (18) 67 34 30; E-mail: George.Gobran@eom.slu.se or ICOBTE7@slu.se; Website: <http://www.eom.slu.se>)

#### June 16-18

**5TH INTERNATIONAL CONFERENCE ON THE ANALYSIS OF GEOLOGICAL AND ENVIRONMENTAL MATERIALS**, Rovaniemi, Finland. (Contact: Website: <http://www.gsf.fi/geoanalysis2003>)

#### August 18-21

**9TH INTERNATIONAL SYMPOSIUM ON THE ORDOVICIAN SYSTEM, 7TH INTERNATIONAL GRAPTOLITE, AND FIELD MEETING OF THE SUBCOMMISSION ON SILURIAN STRATIGRAPHY**, San Juan City, Argentina. (Contact: ISOS: Guillermo L. Albanesi. E-mail: galbanesi@arnet.com.ar or Matilde S. Beresi. E-mail: mberesi@labocricyt.edu.ar; IGC-SSS field meeting: Gladys Ortega. E-mail: gcortega@arnet.com.ar or Guillermo F. Aceñolaza. E-mail: acecha@unt.edu.ar)

#### September 15-18

**INDUSTRIAL MINERALS AND BUILDING STONES — IMBS 2003**, Istanbul, Turkey. (Contact: Erdogan Yüzer, Maden fakültesi, Ayazaga Kampüsü, 80626 Maslak/Istanbul, Turkey. Tel/Fax: 90 212 285 61 46; E-mail: yuzer@itu.edu.tr)

#### September 22-26

**1ST INTERNATIONAL CONFERENCE — GROUNDWATER IN GEOLOGICAL ENGINEERING**, Ljubljana, Slovenia. (Contact: Slovene Committee of IAH, Andrej Juren, Kebetova 24, SI-1000 Ljubljana, Slovenia. E-mail: andrej.juren@siol.net or Nadja Zalar, E-

mail: nadja.zalar@siol.net; Website: <http://www.iah.org>)

#### September 28 – October 3

**SOCIETY OF EXPLORATION GEOPHYSICISTS** (73rd Annual Meeting and International Exposition), Dallas, Texas, USA. (Contact: SEG Business Office, Tel: +1-918 497 5500; Fax: +1-918 497 5500; Fax: +1-918 497 5557; Website: [seg.org/](http://seg.org/))

#### November 2-5

**GEOLOGICAL SOCIETY OF AMERICA** (Annual Meeting), Seattle, Washington, USA. (Contact: GSA Meetings Dept., P.O. Box 9140, Boulder, CO 80301-9140, USA. Tel: +1 303 447 2020; Fax: +1 303 447 1133; E-mail: [meetings@geosociety.org](mailto:meetings@geosociety.org); Website: <http://www.geosociety.org/meeting/index.htm>)

## 2004

#### March 27 – April 4

**NATIONAL EARTH SCIENCE TEACHERS ASSOCIATION** (Annual Meeting), Atlanta, Georgia, USA. (Contact: NESTA, 2000 Florida Ave., N.W., Washington, D.C. 20009, USA. Tel: +1-202 462 69 10; Fax: +1-202 328 0566; E-mail: [fireton@kosmos.agu.org](mailto:fireton@kosmos.agu.org))

#### August

**32ND INTERNATIONAL GEOLOGICAL CONGRESS**, Florence, Italy. Congress theme: "The Renaissance of Geology: From the Mediterranean area toward a global Geological Renaissance-Geology, Natural Hazards, and Cultural Heritage". (Contact: E-mail: [32igc@32igc.org](mailto:32igc@32igc.org); Website: <http://www.32igc.org/>)

#### October 10-15

**SOCIETY OF EXPLORATION GEOPHYSICISTS** (74th Annual Meeting and International Exposition), Denver, Colorado, USA. (Contact: Debbi Hyer, 8801 S. Yale, Tulsa, OK 74137, USA. Tel: (+1-918) 497 5500; E-mail: [dhayer@seg.org](mailto:dhayer@seg.org); Website: [meeting.seg.org](http://meeting.seg.org))

## General Information

Papers should be as concise as possible. However, there is no fixed limit as to the length and number of illustrations. Normally, the whole paper should not exceed 30 printed pages. The page size will be 204 x 280 mm (8 x 11 inches).

The final decision regarding the size of the illustrations, sections of the text to be in small type and other matters relating to printing rests with the Editor.

The final decision of any paper submitted for publication rests with the Editor who is aided by a Special Editorial Advisory Board. The Editor may send any paper submitted for review by one or more reviewers. Authors can also include other reviewers' comments of their papers. Scripts of papers found to be unsuitable for publication may not be returned to the authors but reasons for the rejection will be given. The authors of papers found to be unsuitable for publication may appeal only to the Editor for reconsideration if they do not agree with the reasons for rejection. The Editor will consider the appeal together with the Special Editorial Advisory Board.

Unless with the consent of the Editor, papers which have been published before should not be submitted for consideration.

Authors must agree not to publish elsewhere a paper submitted and accepted.

Authors alone are responsible for the facts and opinions given in their papers and for the correctness of references etc.

One set of proofs will be sent to the author (if time permits), to be checked for printer's errors. In the case of two or more authors, please indicate to whom the proofs should be sent.

Twenty-five reprints of each article published are supplied free-of-charge. Additional reprints can be ordered on a reprint order form, which is included with the proofs.

**Correspondence:** All papers should be submitted to

The Editor (Dr. Teh Guan Hoe)  
Geological Society of Malaysia  
c/o Geology Department  
University of Malaya  
50603 Kuala Lumpur  
MALAYSIA

Tel: (603) 7957 7036 Fax: (603) 7956 3900

## Script Requirements

**Scripts** must be written in Bahasa Malaysia (Malay) or English.

**Two copies** of the text and illustrations must be submitted. The scripts must be typewritten double-spaced on paper not exceeding 210 x 297 mm (or 8.27 x 11.69 inches, A4 size). One side of the page must only be typed on.

**Figure captions** must be typed on a separate sheet of paper. The captions must not be drafted on the figures. The figure number should be marked in pencil on the margin or reverse side.

**Original maps and illustrations** or as glossy prints should ideally be submitted with sufficiently bold and large lettering to permit reduction to 18 x 25 cm: fold-outs and large maps will be considered only under special circumstances.

**Photographs** should be of good quality, sharp and with contrast. For each photograph, submit two glossy prints, at least 8 x 12.5 cm and preferably larger. Use of metric system of measurements (SI) is strongly urged wherever possible.

**An abstract** in English which is concise and informative is required for each paper.

**References** cited in the text should be listed at the end of the paper and arranged in alphabetical order and typed double-spaced. The name of the book or journal must be in *italics*. The references should be quoted in the following manner:

HAMILTON, W., 1979. Tectonics of the Indonesian region. *U.S. Geological Survey Professional Paper 1078*, 345p.

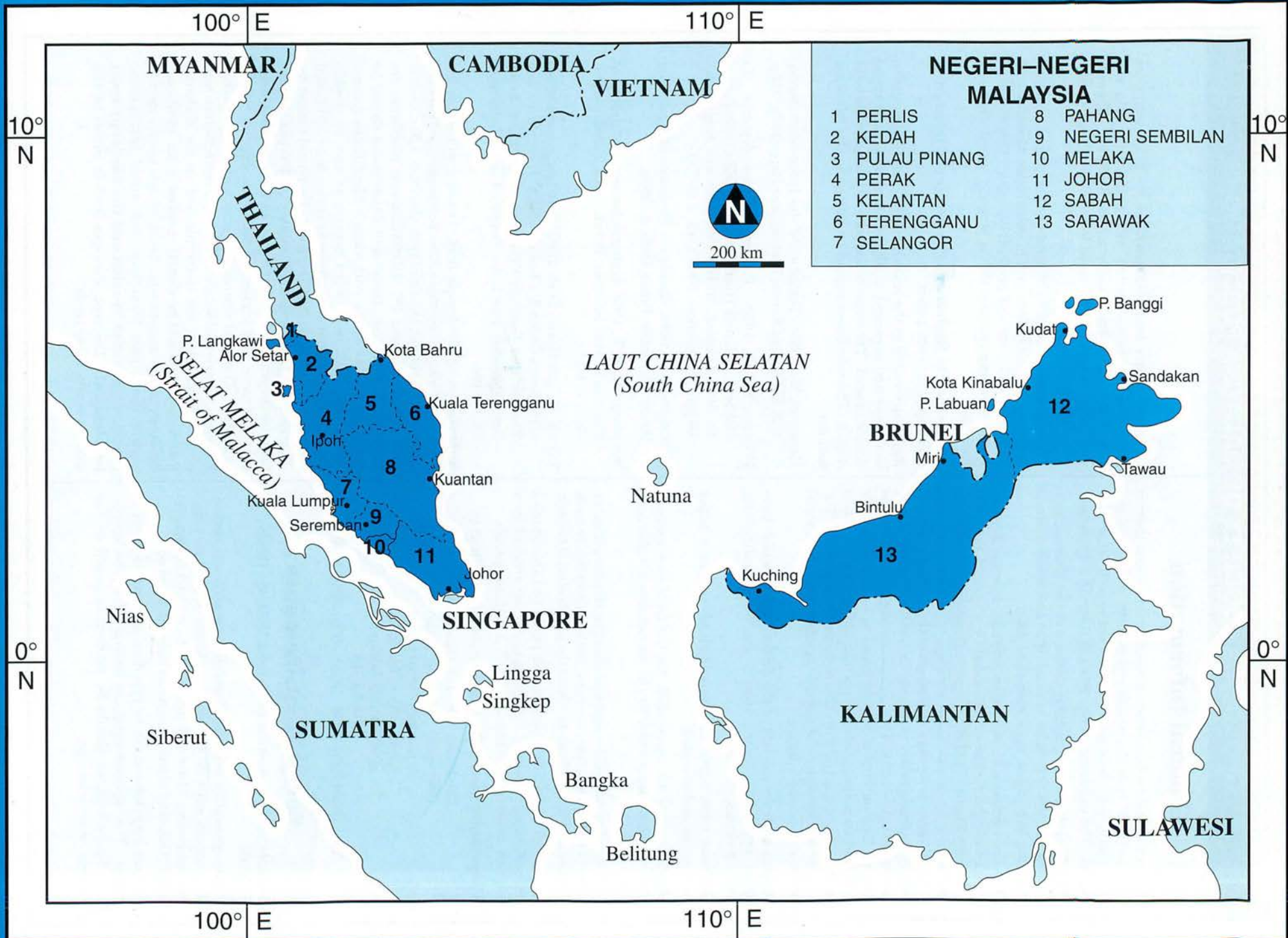
HOSKING, K.F.G., 1973. Primary mineral deposits. In Gobbett, D.J. and Hutchison, C.S. (Eds.), *Geology of the Malay Peninsula (West Malaysia and Singapore)*. Wiley-Interscience. New York, 335-390.

HUTCHISON, C.S., 1989. *Geological Evolution of South-east Asia*. Clarendon Press, Oxford. 368p.

SUNTHARALINGAM, T., 1968. Upper Paleozoic stratigraphy of the area west of Kampar, Perak. *Geol. Soc. Malaysia Bull. 1*, 1-15.

TAYLOR, B., AND HAYES, D.E., 1980. The tectonic evolution of the South China Sea basin. In: D.E. Hayes (Ed.), *The Tectonic and Geologic Evolution of Southeast Asian Sea and Islands, Part 2. Am. Geophy. Union Monograph 23*, 89-104.

**Submission of electronic text.** In order to publish the paper as quickly as possible after acceptance, authors are requested to submit the final text also on a 3.5" diskette. Both Macintosh and PC (DOS/Windows) platforms are supported. Main text, tables and illustrations should be stored in separate files with clearly identifiable names. Text made with most word processors can be readily processed but authors are advised to provide an additional copy of the text file in ASCII format. Preferred format for illustration is Encapsulated PostScript (EPS) but authors may submit graphic files in their native form. It is essential that the name and version of softwares used is clearly indicated. The final manuscript may contain parts (e.g. formulae, complex tables) or last-minute corrections which are not included in the electronic text on the diskette; however, this should be clearly marked in an additional hardcopy of the manuscript. Authors are encouraged to ensure that apart from any such small last-minute corrections, **the disk version and the hardcopy must be identical**. Discrepancies can lead to proofs of the wrong version being made.



NEGERI-NEGERI MALAYSIA	
1 PERLIS	8 PAHANG
2 KEDAH	9 NEGERI SEMBILAN
3 PULAU PINANG	10 MELAKA
4 PERAK	11 JOHOR
5 KELANTAN	12 SABAH
6 TERENGGANU	13 SARAWAK
7 SELANGOR	

100° E

110° E

10° N

10° N



200 km

THAILAND

CAMBODIA

VIETNAM

SELAT MELAKA  
(Strait of Malacca)

LAUT CHINA SELATAN  
(South China Sea)

BRUNEI

KALIMANTAN

SULAWESI

Nias

SINGAPORE

Natuna

Lingga  
Singkep

Siberut

SUMATRA

Bangka

Belitung

Kuching

Bintulu

Miri

P. Labuan

Kota Kinabalu

Kudat

P. Banggi

Sandakan

Tawau

Kota Bahru

Kuala Terengganu

Kuantan

Kuala Lumpur

Seremban

Alor Setar

P. Langkawi

0° N

0° N

100° E

110° E