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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.
An *in-situ* occurrence of tourmaline-corundum rock at Menglembu, Kinta Valley, Perak

T.T. Khoo
17 Orange St.
Eastwood 2122, Australia

**Abstract:** An *in-situ* occurrence of tourmaline-corundum rock was discovered in the Yu Wan Hing Tin Mine, Menglembu. The rock is interlayered with marble-phyllite and striking east-west. The contact of the rock with the marble-phyllite shows evidence of the selective replacement of the phyllite by the tourmaline-corundum rock leaving the unconsumed marble as slivers or fragments within the tourmaline-corundum rock. It is interpreted that the tourmaline-corundum rock is derived from the phyllite and not from other parental rocks like bauxite as suggested in some studies.

**INTRODUCTION**

The tourmaline-corundum rock (Scrivenor, 1910, 1913, 1928, 1931; Scrivenor and Jones, 1919; Willbourn, 1931) occurring in the Kinta Valley, Perak is a lithological oddity usually with ovoid or spherical corundum bodies in a groundmass of dark tourmaline. It is rarely found elsewhere in the world. In the Kinta Valley, pebbles and boulders of the rock are found in the alluvium but exposures of the rock are quite rare and seldom reported. The *opus* on the geology of the Kinta Valley by Ingham and Bradford (1960) listed 18 *in-situ* occurrences in the Geological Survey records. In the review on the Kinta Tinfield by Senathi Rajah (1979) and the section on the tourmaline-corundum rock of Hutchison (1973) no new *in-situ* occurrences have been included other than the earlier mentioned occurrences.

*In-situ* occurrences where the rock is exposed in isolation from the adjacent rocks such as the occurrence at the Khong Heng Mine, Papan, illustrated in Ingham and Bradford (1960) are no better than boulders for the purpose of determining the field relations and assisting in the interpretation of the origin of the rock. According to Scrivenor (1910), Willbourn (1931), Ingham and Bradford (1960) and Senathi Rajah (1979), *in-situ* outcrops of the rock are always associated with schists and indeed the sketches of occurrences of the rock enclosed within schistose pelitic rocks in Scrivenor (1931) and Willbourn (1931) are most instructive in providing important leads for unravelling the nature of the rock. The purpose of this note is to report on the accidental discovery of an *in-situ* occurrence of the tourmaline-corundum rock in the Yu Wan Hing Tin Mine (GR 671830) when I was out collecting carbonate rocks in the Kinta Valley in September 1968 and a month later another visit was made to study the outcrop in greater detail.

**THE OUTCROP**

Yu Wan Hing was a gravel pump mine with a rather thin alluvial cover of less than 10 m over bedrock. At that time the mine was a hive of activity and piles of blasted rocks were stacked on the surface above the mine pit which was at least 150 m E-W and 300 m N-S. Among the piles of rocks were chunks of freshly fragmented tourmaline-corundum rock in addition to marble and boulders of vein quartz and other rock types. The rubble piles were
evidently brought up from the mine pit and
the tourmaline-corundum rock was probably
blasted from outcrops to facilitate mining
activities.

The bedrock in the mine is dominantly a
white marble with dark parallel streaks and
bands of pelitic phyllite. On the eastern side of
the mine pit 3 linear outcrops of the tourmaline-
corundum rock occur probably forming a
continuous band some 36 m in length and
striking E-W with a moderate dip (Fig. 1). Excep
t for the middle outcrop which stands
alone the other two outcrops are enclosed within
the marble-phyllite sequence. The marble-
phyllite sequence also has an E-W strike and
both above and below the band of tourmaline
corundum rocks are thicker, disjointed outcrops
wholly of the dark phyllite exposed with an E-
W strike. The tourmaline-corundum band is
evidently concordant with the marble-phyllite
sequence (Fig. 1).

The tourmaline-corundum band tapers
at both ends and is of variable thickness, 1.3 m
at the thickest portion. The band appears to
be somewhat deformed to become boudins with
the dark phyllitic streaks seen to be deformed
and wrapping the parts which have become
boudins. The tourmaline-corundum band is
directly in contact with the marble unlike in
reported in-situ occurrences where the
tourmaline-corundum rock is encased in pelitic
schist interbedded with marble as shown in
illustrations in Scrivenor (1931) and Willbourn
(1931). Scrivenor (1910) noted that nowhere
can be traced any tourmaline-corundum rock
interbedded with limestone and this observation
is only now, almost a century later, no longer
valid.

The grain size of the tourmaline-corundum
rock shows a coarsening from the edges toward
the middle of the band. Patchily distributed
but not at the contact with the marble are
lenses up to 30 cm in length which are richer
in corundum. At one spot at the contact with
the marble are narrow parallel bands up to 2.5
cm in length which are rich in columnar
corundum crystals whose c-axes are oriented
parallel to each other and to the contact.

Figure 1. In-situ tourmaline-corundum rock in contact with marble-phyllite striking east-west in the Yu Wan
Hing Mine, Menglembu. Picture shows active mining activities in background. TC, tourmaline-corundum rock;
MP, marble-phyllite.
Angular fragments and slivers of the adjacent marble are present in the tourmaline-corundum rock (Fig. 2). The slivers are at a few places oriented parallel to each other and to the contact with the marble (Fig. 3). The origin of the parallel marble slivers in the tourmaline-corundum rock is clear from the contact at the lower part of the outcrop shown in Figure 3. At the lower part of Figure 3 it can be seem that the tourmaline-corundum rock had selectively replaced parallel bands of the phyllite in the marble crossing from one band to an adjacent band via fractures or joints in the marble. In this way the phyllite was consumed leaving the marble as slivers or slabs which are presently arranged parallel to each other and to the contact.

Just before Christmas 1969, during the Discussion Meeting of the Geological Society of Malaysia in Ipoh, another visit was made to the mine with several colleagues. Unfortunately, by then the mine had stopped operating and the mine pit was totally infilled by tailings. On the infilled mine pit was a heap of rocks including the tourmaline-corundum rock standing like a Scottish cairn marking the spot where the enigma was interred.

**DISCUSSION**

From the field evidence I have no doubt that the tourmaline-corundum rock is derived from the phyllite interlayered with the marble. This same interpretation can also be made from the instructive outcrops shown in Scrivenor (1931) where several bodies of the tourmaline-corundum rock occurring are encased in schists and one of the bodies occur along a fault and in Willbourn (1931) the tourmaline-corundum rock is totally encased in the middle of a phyllite band within marble. Suggestions invoking origins from radiolarian or oolitic sediments and also bauxitic parental material (Scrivenor, 1910, 1913, 1931; Scrivenor and Jones, 1919; Hutchison, 1973; Senathi Rajah, 1979) are approaching the problem by placing emphasis on the textures and composition of the tourmaline-corundum rocks. Any plausible model for the origin of the tourmaline-corundum rock must first and foremost be in agreement with the field occurrence and next able to explain the composition and texture of the rock. In agreement with Willbourn (1931) I interpret the rocks to be metamorphic derived from the phyllite. In another communication I shall
propose a model involving open system metamorphism for the origin of the enigmatic rock.

ACKNOWLEDGEMENTS

About 34 years ago the late Ken Hosking convinced me to make this report which I agreed but am now able to fulfil. I am grateful to him for his infectious encouragement and enthusiasm in the search for truth and knowledge. I am thankful to Aw Peck Chin formerly of the Geological Survey of Malaysia for providing copies of references on the tourmaline-corundum rocks including some of considerable rarity. This note was completed with the assistance of staff and facilities of the Department of Geology, University of Malaya.

REFERENCES


Laboratory tests for soils in landfill liners

TAN BOON KONG

Laporan (Report)

Assoc. Prof. Tan Boon Kong, Chairman of GSM Working Group on Engineering Geology/Hydrogeology, gave the above talk on 31st January 2002 at the Geology Department, University of Malaya at 5.30 pm to an audience of 30.

Assoc. Prof. Tan began his talk by illustrating the sanitary landfill method which is widely accepted as the method for the proper disposal of municipal solid wastes. One of the key components of the sanitary landfill method is the engineered clay liner which underlies the waste pile and helps to impede or retard the migration of leachate emanating from the waste pile. The suitability of a proposed candidate clay soil for use in the engineered clay liner must be properly assessed prior to its usage, and this assessment is normally done through a series of laboratory tests conducted on samples of the candidate soil.

He then dealt in detail the types of laboratory tests applied to soils to determine their suitability for use in landfill clay liners. The tests include the classical tests on the physical properties of the soil (classification, compaction, permeability, etc.), the chemical properties of the soil (cation exchange capacity, specific surface area, pore fluids chemistry, etc.), clay mineralogy, and special tests for assessing the adsorption capability of the soil such as the batch equilibrium test (BET) and the leaching column test. Next he discussed details of the test set-ups, and some actual examples of test results were presented.

He concluded by stressing that there is indeed a real need for conducting such laboratory tests in the landfill liners practice in Malaysia which hitherto has NOT done much in this respect.

G.H. Teh

Warta Geologi, Vol. 28, No. 2, Mar–Apr 2002
Advanced geophysical technique for site investigation

Per-Erik Olsson

Laporan (Report)

Technical Talk ini telah diadakan pada 6hb Februari 2002 di Bangunan Geologi, Universiti Kebangsaan Malaysia pada 10.30 am.


Pengerusi Kumpulan Kerja Geofizik
21.4.2002

Warta Geologi, Vol. 28, No. 2, Mar–Apr 2002
Predrill assessment/prediction of sandstone porosity and permeability in frontier and mature areas

SALMAN BLOCH

Laporan (Report)

Salman Bloch of Texaco Upstream Technology, Houston, TX, USA, gave the above talk on Monday 4th March 2002 at 3.00 pm at the Geology Department, University of Malaya. The speaker is a Distinguished AAPG lecturer. The talk was organised by the Society’s Petroleum Geology Working Group.

Abstrak (Abstract)

Lateral and vertical distribution patterns of porosity and permeability in sandstones are generally controlled by a limited number of geologic variables (lithology, temperature history and effective overburden pressure history). Empirical evidence indicates a high degree of correlation between porosity/permeability and the cumulative effect of these variables. Importantly, the variables (input data) often can be estimated prior to drilling with reasonable confidence.

The choice of the predictive techniques utilized in a given project depends on the availability of empirical data in the area of interest. However, regardless of the amount of data available, the most effective approach involves use of multiple predictive techniques. Comparative analysis of results obtained through the utilization of different approaches is helpful in reducing the amount of uncertainty. Porosity prediction techniques include porosity-depth curves, porosity-vitrinite reflectance algorithms, multiple regression analysis, experimental results, and empirically-based diagenetic “models”. Permeability predictions utilize permeability-porosity regressions, multiple regression analysis, and the relationship between present-day permeability and the initial (depositional) permeability in sandstones not affected by a heavy diagenetic imprint. The presentation includes numerous case studies of predrill reservoir quality prediction in sandstones with a wide range of lithology, diagenetic alteration, burial/temperature history, and age.
The Malam was scheduled for 4 speakers. Unfortunately, only 2 speakers turned up, so additional time was given to the 2 speakers for their presentations (titles as above).

Dr. Tajul gave a comprehensive talk on the engineering geology of the Pos Slim-Cameron Highway currently under construction. In addition to basic geologic settings along the highway alignment, he also touched on slope failures and some remedial works.

Mr. Lau presented various aspects of works related to EIA for proposed engineering projects, and the role of the geologist in EIA. Some interesting case studies were included in his presentation, of particular interest being a highrise project in Penang where the buildings were completed without first taking care of the rock slopes at the perimeter of the project site — so, no CF, and how to remedy the problem?
On behalf of the Organisers, I thank the speakers for taking time to prepare and present their talks. I also personally congratulate them for "documenting" some interesting local case studies on Engineering Geology/Environmental Geology in Malaysia. Syabas!

Tan Boon Kong
Chairman
Working Group on Engineering Geology/Hydrogeology
18th May, 2002

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Annual General Meeting and Annual Dinner 2002 — Report

The Annual General Meeting 2002 was held on Friday 26th April 2002 at 6:00 pm at Meranti Room, Hotel Eastin, Petaling Jaya. It was attended by 28 members.

The President, Abdul Ghani Rafek, chaired the meeting, while Abdul Rahim Samsudin took the minutes since the Secretary and Assistant Secretary were late.

Highlights of the AGM include:

• to avoid overlapping, the Secretary should report on activities while the President should focus on important issues of the Society.
• a letter will be sent to the Head of Geology Department, University of Malaya requesting for better accessibility of members to the Klompe Library.
• the Secretary should include a bar chart showing changes in memberships for the last 3 years in future reports.
• the Editor should bring up-to-date all publications in 6 months' time.
• the Treasurer should check on the interest for the Young Geologist's Award Fund.
• the Society should not put its money in advance with the printer.
• the details of the honorarium paid should be spelt out.
• the elections should be handled by a senior member strictly following the constitution.

The AGM, which generated a lot of interest, was only adjourned at 8.30 pm.

As it was already late, a large number of family members and invited guests had already started with their earlier rounds of the buffet dinner at the Swez Brasserie Coffee House of the Eastin Hotel when members attending the AGM came out to join them.

Winners of the Society’s Photographic Competition 2001 were presented their respective cheques by the President.

G.H. Teh
Annual General Meeting &
Annual Dinner 2002
Minutes of the 35th Annual General Meeting (2000/2001)

Minutes of the 35th Annual General Meeting held at the Eastin Hotel, Petaling Jaya at 6.30 pm on the 27th, April 2001.

Present:

Abdul Ghani Rafek (Chairman)  
Nik Ramli Nik Hassan (Secretary)  
Tan Boon Kong  
Liew Kit Kong  
Lee Chai Peng  
Ng Chak Ngooon  
C.S. Hutchison  
Choo Mun Keong  
Azman Abdul Ghani  
Sia Hock Kiang  
Anyi Ngau  
Arul Mani Shanthi  
Gan Lay Chin

Abdul Rahim Samsudin  
Chow Weng Sum  
Mohd Shafiee Leman  
Abd Hanan Ahmad Nadzri  
Robert Tate  
M Naser Husin  
S. Paramananthan  
Abdul Hadi Abd Rahman  
Ismail Yusoff  
Denis Tan  
Abd Rasid Jaapar  
Ng Ping Ping  
Tajul Anuar Jamaluddin

1. Confirmation of the minutes of the previous AGM (2000)

The minutes of the 34th AGM were passed on the proposal of S. Paramananthan and seconded by Tan Boon Kong without any correction or amendment.

2. Matters Arising

There was no matter arising.

3. President’s Report

The president congratulated Dr. J.J. Pereira, the organising chairperson of the Annual Geological Conference 2000 and her committee for its success. It was the first time a proceeding was produced and distributed at the conference containing 63 papers. He also thanked Mr. Yusof Johari and his committee for the successful organisation of the Annual Petroleum Geology 2000 Conference. He reported the setting of a new working group, the Young Geologist Working Group. He requested for suggestion to arrest the decline in memberships despite the increased number of activities held.

Finally he expressed gratitude to all companies, agencies and individuals for their generous sponsorships, donations and support given.

Several members suggested the following possible reasons for the decline in the memberships of the Society:

i. Contents of publications not interesting/poor/not relevant to many geologists.

ii. Gross delay in publications.

iii. Not getting enough benefit from becoming a member especially those living out of Klang Valley.

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Mr. Denis Tan suggested that the Council set up a task force (or sub-committee) to look into the declining memberships issue and recommend to the Council measures to be taken to improve the situation.

The President's Report was passed on the proposal of Mr. Tan Boon Kong and seconded by Mr. M. Naser Husin.

4. Secretary's Report
The Secretary's Report was presented by Dr. Nik Ramli Nik Hassan on behalf of Dr. Ahmad Tajuddin Ibrahim who was on a fieldwork.

He reported the resignation of three Councillors during the session. Two members were co-opted as Councillors. The Council met almost every month (11 meeting).

He reported a big drop in the total membership of the Society to 409 from the previous year's total of 468.

The Committee on the Promotion of Geoscience to the Public organised public lectures and exhibition at the Sekolah Alam Shah, Kuala Lumpur and Maktab Rendah Science MARA, Taiping. Besides the two major Conferences mentioned in the President's report, the Society organised a total of 2 seminars, 2 forums, one fieldtrip and 16 technical talks during the session. A photographic competition was also held.

The Secretary's Report was passed on the proposal of Mr. Tan Boon Kong and seconded by Mr. Choo Mun Keong.

5. Editor's Report
The Editor was absent and his report was presented by Dr. Nik Ramli Nik Hassan.

He reported the publications were being delayed because of computer hard disc problem. The delay publications should be coming out by end of June 2001.

The meeting decided to give the Editor two months to clear the backlog of the year 2000 editions of the publications, failing which the Editor should defer work on all the delayed pre-2001 publications. He should then concentrate on producing the year 2001 publications and bring the 2001 publications to date.

On the issue of contents of the publications, members prefer them to have better contents regardless of the number of articles (i.e. quality rather than quantity).

The Editor's Report was passed on the proposal of Dr. S. Paramananthan and seconded by Mr. Abd Rasid Jaapar.

6. Treasurer's and Honorary Auditor's Report
The Treasurer reported an increase in the nett current asset from the previous RM573,959.11 to RM630,171.03 with the prepaid printing cost of RM100,000.00 with Art Printing still unused. For the session the Society recorded an excess of income over expenditure of RM53,011.92.

A member requested for detailed financial breakdown pertaining to the activities of Working Groups. The Treasurer replied that such breakdown can be obtained directly from him if required. The Society will only publish/present annual financial reports.

The Treasurer's Report was passed on the proposal of Mr. Sia Hock Kiang and seconded by Dr. Abdul Rahim Samsudin.
7. **Election of Honorary Auditor 2001/2002**

The meeting re-elected Mr. Lee Siew Fatt of S.F. Lee & Co., on the proposal of Dr. Lee Chai Peng and seconded by Dr. S. Paramananthan as the Honorary Auditor for the 2001/2002 session.

8. **Resolutions**

1) **Society’s Building**

The idea of spending money to construct another floor at the top level of the Geology Department, University of Malaya for the Society was not acceptable in the view of the Council as the Society will not have the ownership over the strata. In addition, no response was obtained from the university authority over the idea.

Mr. Sia Hock Kiang raised the issue of his difficulty in getting favourable treatment from the Geology Department, University of Malaya in using the library. There was therefore a suggestion that the Society should think of purchasing a shop lot to house the Society as property prices are coming down. The Council have shelved this idea due to the declining memberships and a limit to the Society’s fund.

On the proposal from Mr. Choo Mun Keong and seconded by Robert Tate the meeting agreed not construct the said floor but asked the Council to keep other options open.

2) **Society’s Webpage**

The proposal was presented by Mr. Abdul Rasid Jaapar. The members questioned the ability of the Society to maintain such a site. In view of the commitment required to set up and maintain such a site, on the proposal from Mr. Sia Hock Kiang and seconded by Ms. Gan Lay Chin it was decided to put such plans on hold.

9. **Other Matter**

There was no other matter brought for discussion.


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<th>Position</th>
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<td>President</td>
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<td>Vice-President</td>
<td>Mohd. Shafeea Leman <em>(UKM)</em></td>
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<td>Secretary</td>
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<td>Assistant Secretary</td>
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<td>Treasurer</td>
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<td>Immediate Past President</td>
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The meeting was adjourned at 8.30 pm.
Laporan Presiden Tahun 2001-2002
(President’s Report Year 2001–2002)

Tuan-tuan dan puan-puan,
Assalamualaikum dan salam sejahtera,


Pada tahun lepas, sebanyak tiga seminar, satu forum, satu kuliah umum dengan pameran geosains dan 15 ceramah teknik dapat dianjurkan oleh persatuan. Penyediaan prosiding yang mengandungi kertas kerja penuh bagi seminar-seminar dan forum mencerminkan komitmen kumpulan kerja dan ahli yang terlibat dalam kegiatan-kegiatan ini. Sambutan ahli persatuan bagi kebanyakan kegiatan ini juga sangat memuaskan. Satu peraduan fotografi juga diadakan pada tahun lepas. Persatuan mengucapkan berkenan kasih dan merakamkan penghargaan kepada semua pengerusi kumpulan kerja dan setiausaha persatuan yang telah berkerja keras untuk menjayakan semua kegiatan ini.


Secara keseluruhan, Persatuan Geologi Malaysia berada dalam keadaan yang baik. Beberapa kegiatan yang telah disertai ramai ahli persatuan merupakan petanda baik bagi perkembangan persatuan. Pada kesempatan ini saya bagi pihak persatuan mengucapkan terima kasih dan merakamkan penghargaan kepada semua ahli atas pengelibatan dan sokongan tuan-tuan dan puan-puan dalam menjayakan kegiatan persatuan.

Sekian terima kasih.

Dr. Abdul Ghani Rafek
Presiden
Persatuan Geologi Malaysia
April 2002

Warta Geologi, Vol. 28, No. 2, Mar–Apr 2002
Secretary’s Report

1. **The Council**
   Members of the Council of the Geological Society of Malaysia for the period 28th April 2001 to the 26th April 2002 are as follows:
   - President: Abd. Ghani Rafek (UKM)
   - Vice-President: Mohd Shafeea Leman (UKM)
   - Secretary: Ahmad Tajuddin Ibrahim (UM)
   - Assistant Secretary: Ismail Yusoff (UM)
   - Treasurer: Lee Chai Peng (UM)
   - Editor: Teh Guan Hoe (UM)
   - Councillors (2-years): Tan Boon Kong (UKM), Liew Kit Kong (PETRONAS Carigali), Abd Rasid Jaapar (Soils & Foundations Sdn. Bhd.), Lee Chai Peng (UM)
   - Councillors (1-year): Abdul Rahim Samsudin (UKM), Azmi Yakzan (PRSS), Chow Weng Sum (JMG), Nik Ramli Nik Hassan (Foradex)
   - Immediate Past President: Ibrahim Komoo (UKM)

2. **Council Meetings**
   Council Meetings were held almost monthly throughout the 2001/2002 session. A total of 10 Council Meetings have been held. Attendances of Council Members at these meetings are satisfactory as shown in Appendix 1. Dr. Nik Ramli Nik Hassan was co-opted into the Council to fill up the vacancy for the 1-year councillor.

3. **Memberships**
   The total memberships of the Society as at 31st December 2001 is at 429, showing a very small increase over the previous year’s total of 409. The bulk of this increase (18) is from local memberships.

4. **Society Activities**
   The Annual Geological Conference 2001 was successfully held at the Pan Pacific Resort, Pangkor Island, Perak on the 2-3 June 2001. The Organising Committee was chaired by Dr. Mohd Shafeea Leman and the Conference was officiated by an Exco of the Perak State Government representing the YAB Menteri Besar of Perak. A total of 140 participants attended the Conference where 48 papers were presented. This Conference received a total of RM17,000.00 donations with the main donors being the YAB Menteri Besar of Perak, Malaysia Mining Corporation, Esso Production (M) Inc. and Specific Resources Sdn Bhd.
   
   The Annual Petroleum Geology Conference and Exhibition 2001 was held at the Mutiaera Hotel, Kuala Lumpur on the 19-20 September 2001. It was officiated by Dato' Lim Haw
Kuang, Chairman of Shell Malaysia. Mr. Nordin Ramli chaired the organizing committee. A total of 24 oral papers and 10 poster papers were presented. 13 companies took part in the exhibition. As usual this Conference was well supported by the petroleum and the related service companies.

The Working Group for the Promotion of Geoscience to the Public also organized a public lecture and a small exhibition for the Southern Zone at the Maktab Rendah Sains MARA, Jasin Malacca on the 13 April 2002 for Secondary Schools from Malacca, Negeri Sembilan as well as from the districts of Northwest Johore. About 700 students and teachers from a total of 30 schools attended the occasion. This event was assisted by the students from the Kelab Geologi Universiti Kebangsaan Malaysia and University of Malaya.

The Society with the cooperation of the various Working Groups, organizations and individuals were able to organize a total of 3 seminars, 1 forum, 15 technical talks and a photographic competition.

5. Publications

The Council regret that the scheduled annual Bulletins and the Warta Geologi (Newsletter) have not been coming out on schedule for a number of years now. However the Society published and distributed the Proceeding of the Annual Conference 2001 during this session.

The sales of the publication were better than the previous year. Bulletins 5, 8 and 16 are almost depleted. The Society has already produced the Geology of the Borneo Island by Robert Tate in CD form. A Map of Borneo prepared by Mr. Robert Tate was also published. The field guide for Langkawi Island which is in an illustrative brochure form prepared by Dr. C.P. Lee is already with the printer. A calendar for 2002 containing photographs from the past photographic competitions was also printed and distributed to all members. The remaining stock and sales made during the session is as shown in Appendix 4. The Society still continued to maintain a publication exchange with the various professional bodies and libraries from various parts of the world.

6. Acknowledgements

The Society is indeed very much indebted to the generous sponsorships and cooperation received either in kind or otherwise from the many companies, organizations, professional societies, government departments, universities, institutions and individuals. We would like to record our special appreciation to the Head of the Department of Geology, University of Malaya, Kuala Lumpur where the Society is housed and where most of our activities were held. Our thanks also goes especially to all the academic and general staff of the Department of Geology, University of Malaya and the Geology Programme, Universiti Kebangsaan Malaysia, without their support most of the Society activities would not be possible. To all others involved, the Society would like to record our sincere appreciation and would hope for their continued support to help us continue to promote geoscience.
### Appendix 1

**Attendance of Council Members at Council Meetings**

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### Appendix 2

**Memberships for 2001**

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## Appendix 3
### Society Activities 2001/2002

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<th>No.</th>
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<th>Event/Speaker/Venue</th>
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<tr>
<td>1.</td>
<td>16 May 2001</td>
<td><strong>Technical Talk 1:</strong> Malam Jurutera II at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>2.</td>
<td>2–3 June 2001</td>
<td><strong>Conference 1:</strong> Annual Geological Conference 2001 at the Pan Pacific Resort, Pulau Pangkor, Perak.</td>
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<tr>
<td>3.</td>
<td>18 June 2001</td>
<td><strong>Technical Talk 2:</strong> Three Gorges Dam, China by Dr. Lee Chai Peng at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
</tr>
<tr>
<td>4.</td>
<td>10 July 2001</td>
<td><strong>Technical Talk 3:</strong> Malam S.I. at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>5.</td>
<td>14 July 2001</td>
<td><strong>Seminar 1:</strong> Kemajuan Terkini Kaedah Geofizik Kejuruteraan at the Bangunan Geologi, Universiti Kebangsaan Malaysia, Bangi sponsored by Winpower.</td>
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<tr>
<td>6.</td>
<td>8 August 2001</td>
<td><strong>Technical Talk 4:</strong> Creation-Evolution Debate: Latest Developments by Dr. Robert Newman, Interdisciplinary Biblical Research Institute, Philadelphia, USA at the Department of Geology, University of Malaya, Kuala Lumpur co-organised with Jabatan Sains &amp; Teknologi UM, Pusat Dialog Peradaban UM and Graduates Christian Fellowship Malaysia.</td>
</tr>
<tr>
<td>7.</td>
<td>15 August 2001</td>
<td><strong>Technical Talk 5:</strong> Comparative Studies of the Lower Cretaceous Woburn Sands Outcrops (UK) and the Modern and Subsurface Field Analogues for Heterolithic Tidal Sandstones Reservoir Characterisation by Mr. Shuji Yoshida, University of Wyoming USA at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>8.</td>
<td>25 August 2001</td>
<td><strong>Technical Talk 6:</strong> Saturday Morning Technical Talks on Young Geologists' Work Experiences at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>9.</td>
<td>14 September 2001</td>
<td><strong>Technical Talk 7:</strong> Diamonds by Mr. Lau Yin Leong, GINN-M Corporation Sdn Bhd at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>11.</td>
<td>24 September 2001</td>
<td><strong>Technical Talk 8:</strong> Petroleum Exploration Highlights in the Sedimentary Basins of Libya by Prof. Omar S. Hammuda, Al-Fateh University, Libya at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>12.</td>
<td>1 October 2001</td>
<td><strong>Technical Talk 9:</strong> Formation Evaluation While Drilling: Mud Pulse Telemetry, Logging While Drilling and Geosteering by Mr. Alain Boitel, Schlumberger WTA (M) Sdn Bhd at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
</tr>
<tr>
<td>No.</td>
<td>Date</td>
<td>Event/Speaker/Venue</td>
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<tr>
<td>13</td>
<td>17 October 2001</td>
<td><strong>Technical Talk 10:</strong> Disastrous Shallow Landslide of Granite and Ignimbrite in Japan by Prof. Masahiro Chigira, Kyoto University, Japan at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>14</td>
<td>23 October 2001</td>
<td><strong>Forum 1:</strong> GSM-IEM Forum: Engineering Geology &amp; Geotechnics of Slopes co-organised with Institution of Engineers Malaysia at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<tr>
<td>15</td>
<td>29 October 2001</td>
<td><strong>Technical Talk 11:</strong> Thinking &quot;Out of the Box&quot;: The Role of the Geologists in Meeting Future Energy Demand by Ms. Robbie Gries, President AAPG at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>16</td>
<td>10 November 2001</td>
<td><strong>Seminar 2:</strong> Seminar On Engineering Geology: Case Histories, assessment &amp; Report Writing co-organised with Institute of Geology Malaysia at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>17</td>
<td>26 January 2002</td>
<td><strong>Seminar 3:</strong> “GSM Postgraduate Seminar” at the Bangunan Geologi, Universiti Kebangsaan Malaysia, Bangi.</td>
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<td>18</td>
<td>31 January 2002</td>
<td><strong>Technical Talk 12:</strong> Laboratory Tests for Soils in Landfill Liners by Mr. B.K. Tan at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>19</td>
<td>6 February 2002</td>
<td><strong>Technical Talk 13:</strong> Advanced Geophysical Technique for Site Investigation by Mr. Per-Erik Olsson, ABEM Sweden at the Bangunan Geologi, Universiti Kebangsaan Malaysia, Bangi.</td>
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<td>20</td>
<td>4 March 2002</td>
<td><strong>Technical Talk 14:</strong> Predrill Assessment/Prediction of Sandstone Porosity and Permeability in Frontier and Mature Areas by Dr. Salman Bloch (Distinguished AAPG Lecturer), Texaco Upstream Technology, Houston USA at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>26 March 2002</td>
<td><strong>Technical Talk 15:</strong> ‘Malam Geologis Muda V’ at the Department of Geology, University of Malaya, Kuala Lumpur.</td>
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<td>30 March 2002</td>
<td><strong>Photographic Competition 2001</strong></td>
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<td>23</td>
<td>13 April 2002</td>
<td><strong>Public Lecture and Exhibition 1:</strong> Lecture and exhibition promoting geoscience to the public for the Southern Zone at the Maktab Rendah Sains Mara, Jasin, Malacca.</td>
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Warta Geologi, Vol. 28, No. 2, Mar–Apr 2002
### Appendix 4
#### Stock of Publications

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* inclusive of free copies to members.
Editor's Report 2001/2002

After experiencing a hard disk crash that required re-input and re-formatting, the voluminous, much-awaited GEOSEA '98 Proceedings is now available. Being 712 pages thick, it is the thickest single bulletin thus far. We now fully handle the graphics for our publications, that includes scanning and retouching. From now onwards a CD version of our publications is available for those interested in electronic publications.

The latest Warta Geologi, Vol. 28 No. 1, Jan-Feb 2002 is also available.

Work now is concentrated on bringing out the rest of the Bulletins and Warta Geologi, which are all formatted and in the final proof stage.

Throughout the year, the Editorial Subcommittee was kept busy bringing out the following:

1) the Annual Geological Conference 2001 Proceedings (held at Pulau Pangkor, 2–3 June 2001)
2) the Petroleum Geology Conference & Exhibition 2001 Programme and Abstracts (held on 19–20 September 2001)
3) "The Geology of Borneo" CD by Robert Tate
4) The ever popular and sought after GSM Calendar 2002
5) The "Geology of Langkawi" brochure by Lee Chai Peng (with the printers)
6) The Geology of Borneo Map by Robert Tate (with the printers)

The GSM Photographic Competition 2001 attracted 29 entries. Photographs from the competition are selected for our calendars.

I am grateful to the strong and dedicated support of members of the Editorial Subcommittee, particularly A.K. Fan and T.F. Ng, who have worked tirelessly through the crash to get the Society's publications back on stream. In addition, the prompt and dedicated contributions of our reviewers of papers are greatly appreciated.

I am also very grateful to the general membership for their foresight in returning the Editor for another term in order to bring the Society’s publications up-to-date as well as preserve the standard of our publications.

G.H. Teh
Editor
Honorary Treasurer's Report 2001

The society's nett current asset has increased from RM630,171.30 to RM694,891.62 in 2001. The drop in income from RM 117,421.76 to RM 73,514.58 is due to the apparent drop in donations for the Petroleum Geology Conference in 2001 of which RM67,666.34 was the donations for PGC 2000 which had come in by Dec. 2000 and RM24,356.26 was the donations for the same PGC that came in after Dec. 2000.

The drop in expenditure for 2001 compared to 2000 is from RM 64,409.92 in 2000 to RM 52,797.85 in 2001 is mainly caused by the closing of the Annual Geological Conference 2000 account of RM14,230.53 while the ongoing Annual Geological Conference 2001 account of RM 14,808.69 has not been closed yet and is reflected under Current Assets in the Balance Sheet.

The prepaid printing RM100,000.00 has been returned to the society last year and RM34,000.00 was paid for printing Ann. Geo. Conf. 2000 Proceedings and RM27,200.00 was paid for printing Ann. Geo. Conf. 2001 Proceedings leaving RM38,800.00 under Printing and stationery: Bulletin under Accumulated Fund in the Balance Sheet.

Our fixed assets have increased from RM44,132.45 to RM55,918.30 with the purchase of a LCD projector and notebook.

The excess of income over expenditure for 2001 is RM20,716.73.

We would like to express our thanks to all our generous donors whose contributions have kept the society going and also to our Hon. Auditor, Mr. Lee Sia Fatt for auditing the society's accounts.

Lee Chai Peng
Hon. Treasurer

Notes on accounts

1. Our fixed deposits totalling RM495,734.99 are in Standard Chartered Bank (RM157,811.23), Public Bank (RM172,062.38) and Mayban Finance (RM165,861.38).

2. The items of fixed assets (purchase price in brackets) of the society are:- LCD Projector and computer (RM17,999.00), Macintosh computer and printer (RM 14,450), two earlier Mackintosh computers (RM15,200 and RM26,089), notebook (RM4,900), printer (RM3,303), scanner (RM5,900), photocopy machine (RM3,300).
Your Ultimate Strategic Partner

- LEO EF TEM
- Leica Imaging Stations
- LEO FE SEM
- LEO VP SEM
- Jenoptik IR Camera
- Cameca TOF SIMS
- Cameca Imaging Stations
- 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)
- Secondary Ion Mass Spectrometry (SIMS)
- Electron Probe Microanalysis (EPMA)
- X-Ray Microanalysis System (EDX, WDX)
- Focused Ion Beam System (FIB)
- Vacuum Technology (Pumps, Leak Detectors, Components)
- Optical Defect Inspection and Review Stations (DRT)
- Cytogenetic and Material Workstations
- Imaging Processing and Analysis (IA)

HI - TECH INSTRUMENTS SDN BHD


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 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, 7th & 8th Floor, Rohas Perkasa No. 8, Jalan Perak, 50450 Kuala Lumpur.
Tel: (03) 2667788. Fax: (03) 2667800.

*SMark 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, 7th & 8th Floor, Rohas Perkasa No. 8, Jalan Perak, 50450 Kuala Lumpur.
Tel: (03) 2667788. Fax: (03) 2667800.

*Mark of Schlumberger— the UBI tool is a MAXIS 500™ tool.
VERITAS IS MAKING A DEEP IMPACT...

... WITH PRE-STACK DEPTH MIGRATION

VERITAS’ NEW MENTOR ALGORITHM FOR VELOCITY MODEL BUILDING

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Fax: +61 7 3858 1888

Singapore
Tel: +65 258 1221
Fax: +65 258 0989

Malaysia
Tel: +60 3 382 1100
Fax: +60 3 382 1122

Jakarta
Tel: +62 21 252 2240
Fax: +62 21 252 2245
Auditors' Report to the Members of Persatuan Geologi Malaysia (Geological Society of Malaysia)

We have audited the financial statements in accordance with approved auditing standards.

In our opinion, the financial statements give a true and fair view of the state of affairs of the Society as at 31st December 2001 and of its income and expenditure and receipts and payments for the year ended on that date.

Signed
S.F. LEE & CO.
(AF: 0670)
Public Accountants
5-3, Udarama Complex
Jalan 1/64A, Off Jalan Ipoh
50350 Kuala Lumpur

Signed
LEE SIEW FATT
(1179/9/00J)
Public Accountant

Kuala Lumpur
Date: 22 April 2002
Dear Members,


**INCOME**

<table>
<thead>
<tr>
<th>Description</th>
<th>2001</th>
<th>2000</th>
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<tbody>
<tr>
<td>Entrance fees</td>
<td>390.00</td>
<td>500.00</td>
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<tr>
<td>Interest on fixed deposits</td>
<td>27,524.77</td>
<td>23,101.35</td>
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<tr>
<td>Subscriptions</td>
<td>15,690.21</td>
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<td>Sales of publications</td>
<td>2,016.57</td>
<td>2,588.62</td>
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<td>24,356.26</td>
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<td>Printing &amp; Stationery</td>
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<td>60.00</td>
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<td>Bank charges</td>
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<td>349.08</td>
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<td>CD</td>
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<tr>
<td>Souvenirs</td>
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<tr>
<td><strong>Total income</strong></td>
<td>73,514.58</td>
<td>117,421.76</td>
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**LESS: EXPENDITURE**

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<td>Audit fee</td>
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<td>Annual dinner</td>
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<td>1,360.40</td>
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<tr>
<td>Annual Conference</td>
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<td>14,230.53</td>
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<td>Postage</td>
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<td>2,120.57</td>
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<tr>
<td>Geoscience Promotion</td>
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<td>3,880.40</td>
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<tr>
<td>Printing and Stationery:</td>
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<td></td>
</tr>
<tr>
<td>— Miscellaneous</td>
<td>8,346.20</td>
<td>12,977.60</td>
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<td>— Warta Geologi</td>
<td>19.80</td>
<td>6,160.00</td>
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<td>Refreshments</td>
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<td>Working groups</td>
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<tr>
<td>Photo competition</td>
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<tr>
<td>Langkawi project</td>
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<tr>
<td>Professional fee</td>
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<tr>
<td>Sundry expenses</td>
<td>2,735.70</td>
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<tr>
<td>Speakers’ account</td>
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<td>Subscription: Professional bodies</td>
<td>200.00</td>
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<td>Souvenirs</td>
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<td>Telephone</td>
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<tr>
<td>Telefax</td>
<td>1,232.15</td>
<td>564.42</td>
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<td>Depreciation on plant and equipment</td>
<td>6,210.00</td>
<td>4,900.11</td>
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<tr>
<td><strong>Total expenditure</strong></td>
<td>52,794.70</td>
<td>64,441.34</td>
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</tbody>
</table>

**SURPLUS/DEFICIT FOR THE YEAR:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20,719.88</td>
<td>52,980.42</td>
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Warta Geologi, Vol. 28, No. 2, Mar–Apr 2002
## Balance Sheet As At 31st December 2001

<table>
<thead>
<tr>
<th></th>
<th>2001 RM</th>
<th>2000 RM</th>
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<tbody>
<tr>
<td><strong>PLANT AND EQUIPMENT</strong></td>
<td>55,889.95</td>
<td>44,100.95</td>
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<tr>
<td><strong>CURRENT ASSETS</strong></td>
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<tr>
<td>Sundry deposit and prepayment</td>
<td>76,970.52</td>
<td>43,509.80</td>
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<tr>
<td>Fixed deposits with licensed banks</td>
<td>495,734.99</td>
<td>495,734.99</td>
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<tr>
<td>Cash and bank balances</td>
<td>66,267.81</td>
<td>46,793.79</td>
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<tr>
<td></td>
<td>638,973.32</td>
<td>586,038.58</td>
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<tr>
<td><strong>NETT CURRENT ASSETS</strong></td>
<td>638,973.32</td>
<td>586,038.58</td>
</tr>
<tr>
<td></td>
<td>694,863.27</td>
<td>630,139.53</td>
</tr>
<tr>
<td><strong>FINANCED BY:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACCUMULATED FUND</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance brought forward</td>
<td>623,796.70</td>
<td>570,816.28</td>
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<tr>
<td>Surplus/Deficit for the year</td>
<td>20,719.88</td>
<td>52,980.42</td>
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<tr>
<td>Balance carried forward</td>
<td>644,516.58</td>
<td>623,796.70</td>
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<td></td>
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<tr>
<td>Young Geoscientist Award</td>
<td>3,142.83</td>
<td>3,142.83</td>
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<td>Printing and stationery: Bulletin</td>
<td>38,800.00</td>
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<tr>
<td>Student loan</td>
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<td>Evaluation Formation Working Group</td>
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<td></td>
<td>694,863.27</td>
<td>630,139.53</td>
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</tbody>
</table>
## Council for 2002/2003

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Abd. Ghani Rafek (UKM)</td>
</tr>
<tr>
<td>Vice-President</td>
<td>Mohd Shafeea Leman (UKM)</td>
</tr>
<tr>
<td>Secretary</td>
<td>Ahmad Tajuddin Ibrahim (UM)</td>
</tr>
<tr>
<td>Assistant Secretary</td>
<td>Ismail Yusoff (UM)</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Lee Chai Peng (UM)</td>
</tr>
<tr>
<td>Editor</td>
<td>Teh Guan Hoe (UM)</td>
</tr>
<tr>
<td>Councillors (2-year)</td>
<td>Abdul Rahim Samsudin (UKM)</td>
</tr>
<tr>
<td></td>
<td>Chow Weng Sum (JMG)</td>
</tr>
<tr>
<td></td>
<td>Nik Ramli Nik Hassan (Foradex)</td>
</tr>
<tr>
<td></td>
<td>Ibrahim Abdullah (UKM)</td>
</tr>
<tr>
<td>Councillors (1-years)</td>
<td>Tan Boon Kong (UKM)</td>
</tr>
<tr>
<td></td>
<td>Liew Kit Kong (PETRONAS Carigali)</td>
</tr>
<tr>
<td></td>
<td>Abd Rasid Jaapar (Consultant)</td>
</tr>
<tr>
<td></td>
<td>Wan Fuad W Hassan (UKM)</td>
</tr>
<tr>
<td>Immediate Past President</td>
<td>Ibrahim Komoo (UKM)</td>
</tr>
</tbody>
</table>
KEAHLIAN (Membership)

The following applications for membership were approved:

Full Members

1. Marinus Corstanse  

2. Zanzuri Zakaria  
   No. 3, BK 4/1B, Bandar Kinrara, 47100 Puchong.

Student Members

1. Tarek Abubaker Othman  
   Jabatan Geologi, Universiti Malaya, 50603 Kuala Lumpur.

2. S. Norizan Yaacub  
   Program Geologi, Fakulti Sains dan Sumber Alam, UKM Bangi.

3. Norhasfiza bt. Zainal  
   Program Geologi, Fakulti Sains dan Sumber Alam, UKM Bangi.

4. Tunku Mohd Nasri Tunku Makmur Nizamuddin  
   Jabatan Geologi, Universiti Malaya, 50603 Kuala Lumpur.

5. Nur Azah binti Zulkifly  
   Jabatan Geologi, Universiti Malaya, 50603 Kuala Lumpur.

PETUKARAN ALAMAT (Change of Address)

The following members have informed the Society of their new addresses:

1. Andrew J.K. Chan  
   Sarawak Shell Berhad, Locked Bag No. 1, 98009 Miri, Sarawak.

2. H.D. Tjia  
   No. 13 Jalan P8 B/3, 62250 Putrajaya.

3. Anyi Ngau  
   Shell Asia-Pacific Evaluation Services, 200, North Diary Ashford, Houston, Texas 77079, United State of America.
The Society has received the following publications:


---

**PHOTOGRAPHIC COMPETITION 2001 RESULTS**

An encouraging total of 29 entries were received (from the initial 12 when the earlier closing date was enforced). The quality of photographs was satisfactory. The 3 judges on 16 April 2002 agreed on the following prize winners:

1st Prize (RM1,000) — Othman Ali Mahmud
2nd Prize (RM500) — Leong Chun Hong
3rd Prize (RM300) — Lee Chai Peng

Consolation Prize (RM100 each):

1. Yong Kock Hui
2. Leong Chun Hong
3. Lee Chai Peng
4. Meor Hakif
5. Goh Seng Hong

G.H. Teh
Organiser
Landslides are frequently responsible for considerable losses of both money and lives, and the severity of the landslide problem worsens with increased urban development and change in land use. A wealth of experience has been accumulated in recent years in understanding, recognition and treatment of landslide hazards but our knowledge is still fragmentary. Particular area requiring attention concerns the selection and design of appropriate, cost-effective remedial measures, which in turn require a clear understanding of the conditions and processes that caused the landslide.

Given this understanding it is not surprising that landslides are rapidly becoming the focus of major scientific research, engineering study and practices, and land-use policy throughout the world. Thus, it is a time to look forward and to reflect on the past.

The 3rd International Conference on Landslides, Slope Stability & the Safety of Infrastructures is intending to provoke a reflection of our past, and at the same time initiate visions of the future. Case histories are an important part of the journey on which we have travelled. Our progress into the future will depend partly on research and innovation.

Most of the conference papers provide a good balance between geotechnical, geological and geoenvironmental theoretical and practical aspects of landslide investigation and control. After reviewing the abstracts and manuscripts of more than 100 papers from some 39 countries, a total of 60 papers has been accepted for presentation at the conference and publication in the proceedings volume (which carries an ISBN reference). They have been grouped under the following main themes:

1. Geological investigation of landslides
2. Observational methods and monitoring
3. Shear strength parameters and their measurement
4. Limit equilibrium slope stability analysis
5. Deformation slope stability analysis
6. Back analysis of slope failures
7. Landslide risk and hazard zonation
8. Effects of rainfall and groundwater
9. Effects of seismicity
10. Landslide stabilization and remedial measures
11. Case studies

The aim of the Conference is to provide an opportunity for engineers and scientists working in the field of slope instability and remediation.
to meet and to present new ideas, achievements and experiences. It will serve as a meeting place for the development of closer links among researchers and practitioners.

CONFERENCE SCHEDULE

10 July, Wednesday, 2002

1630 – 1830: Conference early registration, Somerset Maugham Room, Level 6, Hotel New Otani, 177A River Valley Road, Singapore (Tel: Billy Yeo at 6338-3333 and Ms Peggy Teo at 6733-2922).

1830 – 1930: Conference welcome cocktail for speakers, committee and invited guests.

11 July, Thursday, 2002

0800 – 0900: Conference registration at Ballroom Foyer, Level 6, Hotel New Otani, Singapore

0900 – 1730: Conference Opening Session, keynote lectures, special & general sessions (with AM & PM refreshments & lunch)

1900 – 2200: Conference Dinner (registration fee includes dinner invitation)

12 July, Friday 2002

0900 – 1730: Conference continues, with keynote lectures, special & general sessions (with AM & PM refreshments & lunch)

0730: Adjournment of Conference

The conference is privileged to have received the following keynote papers:

Keynote Papers

- A.S. Al-Homoud, American University of Sharjah, UAE
  ◦ Evaluating soil shear strengths from back analysis of cut slope and landslide failures
- H. Brandl, Technical University of Wien, Austria
  ◦ Infrastructure projects in Landslide-prone areas
- R. Chowdhury, University of Wollongong, Australia
  ◦ Title to be advised
- H.A. Faisal, University of Malaya, Malaysia
  ◦ Title to be advised
- K.T. Law, Carleton University, Canada
  ◦ Recompacted loose fill slopes — performance and issues
- Mihail Popescu, Illinois Institute of Technology, USA
  ◦ Landslide causal factors and remediation options

Special Sessions

5 Special Sessions on the following topics would be incorporated into the Conference programme:

- “Shear Strength Parameters” chaired by A. Al-Homoud, UAE
- “Prediction of Time of failure” chaired by A. Federico, Italy
- “Back Analysis of slope failures” chaired by V.R. Schaefer, USA
- “Deformation of slopes” chaired by K. Ugai, Japan
- “Limit Equilibrium” chaired by T. Yamagami, Japan

Technical Papers

The conference had attracted more than 100 abstracts from 30 countries, and a selection of these are as follows:

- S. Akbulut, Turkey
  ◦ Hydraulic conductivity of sand-clay mixtures
  ◦ Improving of shear strength of natural clay liners from clay deposits NE Turkey
- D.D. Akhmedov, Tajikistan
  ◦ The strengthening of slopes prone to landslides made of loess collapsible soil
- A.S. Al-Homoud, United Arab Emirates
  ◦ Probabilistic seismic stability and induced displacement of earth slopes under short term conditions
  ◦ Probabilistic three dimensional slope stability analysis of embankments founded on soft clays
  ◦ Effect of Mineralogical composition on engineering behaviour of weak clayey beds causing foundation failures
  ◦ Correlation between shear strength parameters and simple soil indices of problematic soils causing landslides along major highways in Jordan
  ◦ Effect of plasticity and compaction condition on strength of compacted soil materials
  ◦ Evaluating soil shear strengths from back analysis of cut slope and landslide failures
G. Amatruda, Italy
- Fracture mechanics approach to the numerical simulation of a rock fall

H. Arman, Turkey
- Application of ground improvement methods in Adapazar City after August 17, 1999 Mamara Earthquake in Turkey

O. Arzikulova, Uzbekistan
- Waves in stratified media with curvilinear boundaries caused by seismic processes

A.D. Barley, United Kingdom
- Stabilisation of a deep cut-slope by use of shotcrete, soil-nails and multiple anchors

H. Bendadouche, Algeria
- Confortement by a fill of foot

G. Bhattacharya, India
- Search algorithm for minimum reliability index of earth slopes

S. Bomont, France
- Two sliding zone dealing with siphon drains solution

R. Brown, Australia
- Protection and repair of roads in mountainous terrain

F. Cai, Japan
- Comparisons between limit equilibrium method and finite element method of slope stability analysis

J. Chu, Singapore
- Interpretation of granular slope failure: drained or undrained

C.M. Corcoran, Hong Kong SAR
- The use of automated continuous piezometer data in slope stability analyses in Hong Kong

D. Dey, Bhutan
- An approach model on landslide ecology in correlation to vegetation dynamics and pattern: observations from slide prone areas of eastern Himalayas

J.S. Fang, Taiwan
- Stabilisation and monitoring of a cut slope in weathered sandstone

K. Farooq, Japan
- Mechanism of rain-induced failure in sandy slope based on field stress path

A. Federico, Italy
- The prediction of the time to slope failure — state of the art

X. Feng, China
- A research on the surveying plan to slope-slide and rock-collapse in Three Gorges Reservoir Region of Yangtze River

S. Firat, Turkey
- FOS convergence investigation in using Gauss Quadrature instead of method of slices

T. Fukuzono, Japan
- Deformation and fracture mechanism of a slope by heavy rainfall

K. Gavin, Ireland
- Slope stability failure in glacial till at Oola Bank

M.H. Ghobadi, Iran
- The relationship between durability and lithology in rock slopes instability assessment (case study)

Z. Gunduz, Turkey
- Indexes of compression and recompression of high plasticity clays under isotropic stress

B. Han, China
- Studies on cut slope stability caused by variation of groundwater level

M. Hashemi, Iran
- The engineering geology investigation along the Khadangestan Water Conveyancy Tunnel, Central Iran

Y.A. Hegazy, USA
- Measured versus estimated anchor pull-out resistance in soil & rock

C.W. Hsieh, Taiwan
- The effect of load plate rigidity on the frictional behaviour at sand/geomembrane interfaces

O.G. Ingles, Australia
- The effect of dredging on the stability of riverbank levees

M. Jao, USA
- Effect of slope on strip footing behaviour

S. Jaritngam, Thailand
- Neural networks: a tool for the slope stability analysis
• W.D. Jiang, China
  ◦ Remediation and monitoring in the number 2 tailing dam of Dexing copper mine, China
• J.C. Jiang, Japan
  ◦ Back analysis of strength parameters from slope failure along a weak layer
  ◦ Search for critical slip surface based on three-dimensional Spencer method
• I. Jworchan, Australia
  ◦ Triaxial Testing of residual soil
• D.P. Katak, Zimbabwe
  ◦ Artificial neural network in the analysis of slope stability
• M. Khandelwal, India
  ◦ A numerical approach to prediction of stability of a compound slope
  ◦ A computational approach to analyse stability of natural compound slope of Uttarkashi Region, India
• H. Kimura, Japan
  ◦ A new displacement-based design method for a new remedy of rope nets and rock bolts to stabilise natural slopes
• S.A.S. Kulathilaka, Sri Lanka
  ◦ Development of analytical and physical models to study the effectiveness of soil nailing technique for the stabilisation of slopes in Sri Lanka
  ◦ Dependance of the probabilistic evaluation of slopes stability on the deterministic model
• S.R. Lee, South Korea
  ◦ Estimation of unsaturated shear strength by a hyperbolic formulation
• S. Lenart, Slovenia
  ◦ Seismic analysis of the Stoze Landslide
• H.D. Liu, China
  ◦ New method for forecasting occurrence of slope failure
• T.H. Low, Malaysia
  ◦ Slope movement related distresses in housing project
• J.N. Mandal, India
  ◦ Safer approach to limit state design of reinforced slopes considering uniform distribution
• S. Mohammadi, Iran
  ◦ Adaptive shear band slope stability analysis
• H. Nagatani, Japan
  ◦ Centrifuge static inclination model test on seismic stability of embankment slopes
• E. Nama, United Kingdom
  ◦ Climate impact on slope failure on Mount Cameroon, Cameroon — cause or trigger
  ◦ Causes of landslides on the slopes of Mount Cameroon, Cameroon, West Africa
• T. Nishimura, Japan
  ◦ Attempt on cone penetration test for an unsaturated silty soil in laboratory
• H. Omar, Malaysia
  ◦ Geological factors contributing to slope failure — Pos Selim Highway case study
• R.P. Orense, Japan
  ◦ Laboratory experiments on model sandy slopes subjected to rainwater infiltration
• T. Papaliangas, Greece
  ◦ Analysis and stabilisation measures of a cut slope in schist
• S. Qazi, Bhutan
  ◦ Study of natural disaster due to landslide in Bhutan Himalaya and impact on biodiversity and ecoconomy
• E.S. Rao, India
  ◦ Landslide control with special reference to Himalayan Region
• S. Roostaei, Iran
  ◦ Analysis of the role of gully erosion in slope instability of the northern slopes of Arasbaran mountains — Iran
• Y.F. Ruan, China
  ◦ The application of gray system in the prediction of landslide and deformation
• P.D. Sabale, India
  ◦ Landsliding in Ane-Malshej Ghat section in Deccan Trap Basalt of Maharashtra, India
• S. Saha, India
  ◦ Numerical simulation of stability analysis of slopes
  ◦ A research on slope unstability in Seyedlar, Iran
• C. Scavia, Italy
  ◦ Prediction of a rock avalanche run-out through numerical modelling
• V. Schaefer, USA
  ◦ Back analysis of slopes in Pierre Shale
• A Shirley, Australia
  ◦ Building in areas of landslips, subsidence and rockfall
• M.T. Simbuwa, Zambia
  ◦ Investigation into an approaching face in till
• T.N. Singh, India
  ◦ Landslide hazard and risk assessment using
Pre-Conference Workshop on
‘Landslide Causes to Landslide Remediation’

10 July, 2002 (Wednesday)

WORKSHOP SCHEDULE

0800 – 0900: Registration for Workshop, Hotel New Otani, 177A River Valley Road, Singapore
(Tel: Mr. Billy Yeo at 6338-3333 or Ms Peggy Teo at 6733-2922)

0900 – 0905: Welcome Remarks
0905 – 1010: Lecture 1
1010 – 1040: Refreshment
1040 – 1145: Lecture 2
1145 – 1230: Guest Lecture
1230 – 1400: Lunch
1400 – 1510: Lecture 3
1510 – 1630: Discussion — Q & A
(Participants are invited to send (to the Secretariat) questions or problems even before the Workshop so that Prof. Popescu may have some time to develop better answers to the questions)

1630: Closing Remarks
Afternoon refreshments
Adjournment

The topics of the lectures would cover:
• Preparatory and triggering causal factors
• Relationship between causation and remediation in coping with landslides
• Remedial measures: modification of geometry, drainage, retaining structures and internal reinforcement

FEES

• Registration fee (conference only) S$720.00
• Registration fee (workshop only) S$375.00
• Registration fees S$1,000.00 (conference & workshop)
• Conference dinner (guest) S$60.00
• Conference reception (guest) S$50.00

The full conference fee includes an invitation to conference dinner. All fees should be made payable to CI-PREMIER PTE LTD.
Over the recent years, there have been a number of major changes in the Asian oil & gas industry that has changed the landscape of the sector. As a result, companies are increasingly adopting a market-driven approach to ensure investment risks, market risks, and contract risks are managed and mitigated. Risk management has become part of corporate top development strategies.

Whatever your company size, factors such as price volatility, political uncertainty, competitive business situation, and regulatory environment will influence your decision-making. How will an effective risk assessment management strategy impact on your projects and business activities in the region? In increasingly uncertain times, implementing effective risk management strategy and portfolio optimization techniques will help you make the right investment and expansion decision.

The conference will provide you with the opportunity to uncover how to:

- Manage Corporate risk for oil & gas enterprises
- Develop a framework to assess and manage risk based on risk management standards
- Understand contract risks for JV investment for oil and gas projects
- Integrate risk management into corporate development strategy
- Use knowledge management to reduce corporate risk
- Manage prices risk for oil & gas
- Use real options and its application into oil and gas sector

DRAFT PROGRAMME

- Applying the risk management standard to develop a framework to assess and manage risks
- Spreading the risk and increasing the reward through a portfolio approach
- Integrated risk management: from concept to a strategic management process
- Identifying key risks: what your company needs to analyze and manage?
- Understanding and managing exploration and development risk
- Understanding real options and their role within decision making
- Managing risk in oil & gas sectors
- Raising capital and structuring your projects
- Managing offshore oil & gas projects risk — the role of a sound insurance programme
- Enterprise-wide risk management
- Methods of allocating risk
- Contract risk management for oil & gas industry
- Information technologies for support of enterprise risk management
- How to integrate risk management into your operational plan
- Building risk management architecture: from concept for reality
- Using knowledge management to manage risk
- Overview of Asian oil & gas market

POST CONFERENCE WORKSHOP
ON 29 AUGUST 2002

A. Decision & risk analysis
B. Using information system to support risk management

FEES

- Two day conference only
  Discount Price $1,179
  Normal Price $1,279

- Two day conference + one workshop
  Discount Price $1,579
  Normal Price $1,679

- Two day conference + two workshops
  Discount Price $1,979
  Normal price $2,079

- Each Workshop
  Normal price $449

FOR ENQUIRIES:

IQPC Worldwide Pte. Ltd.
Conf Code: IA514 (quoting AA)
Please return to:
Tel: (65) 6325 6330 or Fax: (65) 6224 2515 or e-mail: enquire@iqpc.com.sg
The Fifth International Symposium on Andean Geodynamics — ISAG 02 will be held in Toulouse, France, on September 16 to 18, 2002. It is convened by the Institut de Recherche pour le Développement - IRD (Paris, France) and the Paul Sabatier University of Toulouse.

Objectives: Following the earlier ISAG-meetings held in Grenoble, Oxford, St. Malo and Göttingen, the 5th ISAG will provide a new opportunity for geoscientists from all fields to present and discuss recent results on the Andes from Venezuela to Southern Chile. Contributions are sought from earth scientists interested in processes related to Andean genesis and geodynamics and their economic and social implications. We specially encourage contributions addressing (1) the chronological constraints and sedimentary, climatic and environmental record of Andean uplift, and (2) interactions between deformations, relief creation, climate, sedimentation and lithospheric processes.

Abstracts: All abstracts must be in English.

Registration fees: Euros 140 ($US150, £95), until March 1st 2002; Euros 190 ($US190, £120) after this date. Student: Euros 70 ($US75, £45).

Informations for contributors: The 5th ISAG will be joined with the 3rd Meeting on Stratigraphy and Paleontology of South America. Informations regarding the 3 days pre-symposium and one day post-symposium field trips will be provided in the 2nd circular.

Correspondence and enquiries:

ISAG, IRD, LMTG, 38 Rue des 36 Ponts, 31000 Toulouse, France.
Patrice Baby, Gérard Hérail, Alain Lavenu
E-mail: ISAG@cict.fr
Modelling Reality, the Reality of Modelling: Tectonics and Exploration Geophysics versus Analogue and Numerical Models

to be held in San Donato Milanese (Milano, Italy) from 2 to 4 October, 2002.

WHY SAN DONATO MILANESE?
San Donato Milanese is the headquarters of Eni-AGIP. By choosing its premises, we underline the value of a strong connection between Industry and Academy. San Donato Milanese is very close and well connected to Milano.

THE MEETING
REALMOD strives for the strongest possible integration between realities (REAL) and models (MOD). To achieve this goal we have identified geological settings and topics of strong interest both for Academia and Industry. These areas, although not exclusive can be ideal platforms for REAL and MOD to meet.

- Passive continental margins
  - Imaging and understanding processes in the (soft) sedimentary cover such as diapirism and gravitational tectonics. e.g. Gulf of Mexico, Niger delta, W-Africa, Nile delta, Brasil
  - The thermal and mechanical evolution of rifted margins: Volcanic margins, transitions. Atlantic-type and back-arc passive margins. e.g. Norway/Greenland, W-Africa, Iberia, Mediterranean

- From fold-and-thrust belts to forelands
  - Construction and destruction of orogenic wedges. Climate tectonics interactions, fluids in thrust belts.
e.g. Alps, Apennines, Zagros Mts., Pakistan, Andes

- Foredeep basins: how well do they follow model predictions?
  e.g. Adriatic foredeeps, Arabian platform foreland

- Fracturing and faulting of rocks
  - Detecting and modelling Fracture networks in the field and in the subsurface
  
  On these topics we encourage the participation of geoscientists from all disciplines. Oral and poster contributions are welcome which integrate REAL and MOD components helping to improve imaging and understanding mentioned settings/processes. A number of invited speakers will summarize last developments in the field and help identifying weak points and bottlenecks. Poster session will be the ideal place to continue discussions. REAL and MOD will directly confront each other during a round table entitled: How good are the models?

  Registration fees will be kept as low as possible to make participation of a large number of specialists possible. Special attention will be given to students who will profit from favourable fees.

In conjunction with REALMOD we will organize two field trips to observe and discuss reality and modelling of (1) Mesozoic continental rifting in the Southern Alps, and (2) Tertiary to Quaternary contraction in the Apennine.

To ensure the widest possible dissemination of results all participants will be invited to present extended abstracts of their contributions, which, following a standard review process, will be published in a special issue of an international journal.

For further information, do not hesitate to contact

G. Bertotti
Dept. of Tectonics/Structural Geology
Vrije Universiteit Amsterdam
De Boelelaan 1085
1081HV Amsterdam (NL)
bert@geo.vu.nl

E. Costa
Dip. di Scienze della Terra
Parco Area delle Scienze, 157/A
43100 Parma (IT)
costae@ipruniv.cce.unipr.it
http://www.eageseg.org/realmod
or by e-mail to: eageseg@ogs.trieste.it
<table>
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<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
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<tr>
<td>May 5-10</td>
<td>INTERNATIONAL SYMPOSIUM ON THE INTERACTIONS BETWEEN SEDIMENTS AND WATER</td>
<td>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: <a href="mailto:iasws@unbc.ca">iasws@unbc.ca</a>)</td>
</tr>
<tr>
<td>May 5-8</td>
<td>ENVIROSOFT 2002 (Ninth International Conference on Development and Application of Computer Techniques to Environmental Studies)</td>
<td>Berger, Norway. (Contact: Lucy Southcott, Conference Secretariat, Envirosift 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: <a href="mailto:lsouthcott@wessex.ac.uk">lsouthcott@wessex.ac.uk</a>; Website: <a href="http://www.wessex.ac.uk/conferences/2002/env02/">http://www.wessex.ac.uk/conferences/2002/env02/</a>)</td>
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<tr>
<td>May 12-14</td>
<td>OCCURRENCE AND MECHANISMS OF FLOWS IN NATURAL SLOPES AND EARTHFILLS — IW-FLOW2002</td>
<td>Naples, Italy. (Contact: Website: <a href="http://www.unina2.it/flows2002">http://www.unina2.it/flows2002</a>)</td>
</tr>
<tr>
<td>May 20-23</td>
<td>INTERNATIONAL CONFERENCE ON INSTABILITY</td>
<td>Ventnor, Isle of Wight, UK. (Contact: Robin G. Mcinnes, Centre for the Coastal Environment. Fax: 44 1983 855859; Email: <a href="mailto:conference@iwight.gov.uk">conference@iwight.gov.uk</a>)</td>
</tr>
<tr>
<td>May 20-24</td>
<td>THE SIXTH INTERNATIONAL SYMPOSIUM ON THE GEOCHEMISTRY OF THE EARTH'S SURFACE (GES-6)</td>
<td>Honolulu, Hawaii, USA. Sponsors: The School of Ocean &amp; Earth Science &amp; Technology of the University of Hawaii, and The International Association of Geochemistry and Cosmochemistry (IAGC)</td>
</tr>
<tr>
<td>May 26-31</td>
<td>12TH INTERNATIONAL SOIL CONSERVATION</td>
<td>Beijing, China. (Contact: Website: <a href="http://www.geotechnique.org">http://www.geotechnique.org</a>)</td>
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<tr>
<td>May 27-30</td>
<td>EUROPEAN ASSOCIATION OF GEOSCIENTISTS AND ENGINEERS (63rd Conference &amp; Technical Exhibition)</td>
<td>Florence, Italy. (Contact: Website: <a href="http://www.eage.nl/">http://www.eage.nl/</a>)</td>
</tr>
<tr>
<td>May 29-31</td>
<td>GREEN PROCESSING 2002, &quot;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 96623862; E-mail: <a href="mailto:conference@ausimm.com.au">conference@ausimm.com.au</a>; Website: <a href="http://www.ausimm.com">www.ausimm.com</a>)</td>
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<tr>
<td>June 2-5</td>
<td>43RD WELL LOGGING SYMPOSIUM</td>
<td>Oiso, Japan. (Contact: Ms. Shizu Kobayashi, Schlumberger K.K. Tel: 81 42 759-2115; Fax: 81 42 759-4270; E-mail: <a href="mailto:kobayssi@fuchinobe.skk.slb.com">kobayssi@fuchinobe.skk.slb.com</a>)</td>
</tr>
<tr>
<td>June 3-7</td>
<td>ZEOLITE 2002, Aristotle University, Thessaloniki, Greece. (Contact: Website: <a href="http://www.chem.auth.gr/activities/zeo2002/">http://www.chem.auth.gr/activities/zeo2002/</a>)</td>
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<tr>
<td>June 17-20</td>
<td>CALIBRATION AND RELIABILITY IN GROUND WATER MODELLING</td>
<td>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: <a href="mailto:modelcare2002@guarant.cz">modelcare2002@guarant.cz</a>; Website: <a href="http://www.guarant.cz/ModelCARE2002">http://www.guarant.cz/ModelCARE2002</a>)</td>
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<tr>
<td>June 18-20</td>
<td>RECYCLING AND WASTE TREATMENT IN MINERALLANDMETALPROCESSING</td>
<td>Lulea, Sweden. (Contact: E-mail: <a href="mailto:caisa.samuelsson@km.luth.se">caisa.samuelsson@km.luth.se</a>)</td>
</tr>
<tr>
<td>June 19-21</td>
<td>RISK ANALYSIS 2002</td>
<td>(Third International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation), Sintra,</td>
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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; 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; Website: www.16thagc.gsa.org.au)

July 6-10
FIRST INTERNATIONAL PALAEONTOLOGICAL CONGRESS, Sydney, Australia. (Contact: Jophn A. Talent, MUCEP, Earth and Palaeontological Sciences, Macquarie University, NSW 2109, Australia. Fax: 61 2 9850 6053; E-mail: IPC2002@mq.ed.au; Website: 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; 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.tudresden.de; Website: www.tu-dresden.de/fghhihm/hydrologie.html)

July 22-26

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; Website: 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 or gateway@anta.canterbury.ac.nz; Website: www.anta.canterbury.ac.nz)

September 1-5
17TH WORLD PETROLEUM CONGRESS, Rio de Janeiro, Brazil. (Contact: Brasoc — Brazilian Organizing Committee, Tel: +55 21 2282 2002; Fax: +55 21 2282 2005; E-mail: brasoc@wpc2002.com; Website: www.wpc2002.com)

September 1-6
MINERALOGY FOR THE NEW MILLENNIUM, Edinburgh, Scotland. (Contact: E-mail: info@minersoc.org; Website: 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)
September 15–19
INTERNATIONAL CONFERENCE ON URANIUM MINING AND HYDROGEOLOGY, Freiberg, Germany. (Contact: E-mail: umh@geo.tu-freiberg.de; Website: 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 TO THEIR ENVIRONMENT IMPACTS, Prague, Czech. (Contact: Bohdan Kribeck, Czech Geological Survey, 152000 Prague 5. Tel: 422 51085 618; Fax: 422 5817 390; E-mail: kribeck@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: lprincep@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: eboceag@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, NESA & 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, NESA, Deputy Director, Geological Survey of Bangladesh, 153 Pioneer Road, Segunbagicha, Dhaka 1000, Bangladesh. Tel: 880-2-9348318; E-mail: nehalu@bttb.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 EHP 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/geoaalysis2003)

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 Yuzer, 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 5557; Website: 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; 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)

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; 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: dhyer@seg.org; Website: meeting.seg.org)
<table>
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<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Publisher</th>
<th>Format</th>
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<tr>
<td>A SHORT COURSE IN GEOTECHNICAL SITE INVESTIGATION</td>
<td>Noel Simons et al.</td>
<td>Thomas Telford</td>
<td>hardback</td>
<td>GBP45.00</td>
<td>0727729489</td>
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<tr>
<td>ANALYSIS OF SEDIMENTARY SUCCESSIONS — A field manual</td>
<td>Ajit Bhattachryya and Chandan Chakraborty</td>
<td>A.A. Balkema</td>
<td>24 cm, 420pp.</td>
<td>EUR70.00/GBP70.00</td>
<td>90 5809 209 7 (HC), 90 5809 227 5 (PB)</td>
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<tr>
<td>ANNUAL REVIEW OF EARTH AND PLANETARY SCIENCES, Volume 29</td>
<td></td>
<td>Annual Reviews</td>
<td>hardback</td>
<td>616pp.</td>
<td>0-8243-2029-8, ISBN 0084-6597</td>
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<tr>
<td>APPLIED WETLANDS SCIENCE AND TECHNOLOGY (2nd ed.)</td>
<td>Donald M. Kent</td>
<td>Lewis Publisher</td>
<td>US79.95, ISBN 156670359X</td>
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<tr>
<td>BACKFILL AND CONTACT GROUTING OF TUNNELS AND SHAFTS</td>
<td>Raymond W. Henn</td>
<td>Thomas Telford</td>
<td>hardback</td>
<td>GBP35.00</td>
<td>0727729837</td>
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<tr>
<td>BRACHIOPODS: PAST AND PRESENT (Systematics Association Special Volume No. 63)</td>
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