

# **AUSTRALIAN SOCIETY OF**



## **EXPLORATION GEOPHYSICISTS**

Number 21 August 1989

Perth

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#### INTRODUCTION

This is the last PREVIEW before the Melbourne ASEG Conference, which is being run from Sunday 24th until Friday 29th September and is the main bi-annual event of the Society. An update on guest speakers and social events is given in this newsletter.

Some of the state branches are holding trial runs of conference papers whilst others are waiting until after the event for a more polished performance. A very high standard of papers is expected this year and they will be published in the conference volume of EXPLORATION GEOPHYSICS as shortened papers rather than as extended abstracts.

In the state branches this month Dr. James Lowell, the Esso Distinguished Lecturer for 1989, has been a popular guest speaker. In reading the news it is possible to track his movements across the country. The South Australian branch has very kindly produced their calendar of events for the rest of the year which may be of interest to members travelling interstate.

Unfortunately no news was received from the Victorian branch. Does this mean that they are all too busy with the conference preparations?

Several states have been organising wine tastings, in particular, the South Australian branch which has come up with this year's ASEG WINE OFFER. Details are given in this edition so make sure you put your orders in straightaway.

I am grateful to readers for the number of letters which have been sent in lately. They are an indication that PREVIEW is finally becoming a vehicle for improving the communication of ideas between members.

Finally, I would like to draw your attention to the ASEG survey of tertiary institutions, which was initiated by Don Pridmore and completed by Brian Evans. They are both to be commended for their work. The implications of the survey are worrying and should be a major source of concern for all people employed in the geophysical industry today.

The Editor.

### **ASEG BRANCH NEWS**

## A.C.T.

The ACT branch held their August monthly meeting on Thursday 10th August at the R.S.L. Club in Anzac House on Moore Street.

The guest speaker for the meeting was Dr. James D. Lowell, the Esso Distinguished Lecturer for 1989, who gave a talk on "Seismic Expression of Structural Styles in Petroleum Exploration". Following the meeting Dr. Lowell was the guest of the branch for dinner at the restaurant in the building. Dr. Lowell is a very distinguished scientist, editor of "Foreland Basins and Uplift", author of the book "Structural Styles in Petroleum Exploration" and a course instructor with OGCI. He had just presented a short course at ANU and we were fortunate to have him address the branch.

Mike Sexton Acting Secretary.

## N.S.W.

The last meeting of the N.S.W. branch was in August with guest speaker Steve Webster from Austinex International Limited giving an excellent talk on "High Resolution Airbourne Geophysics for Epithermal Gold Exploration". At the next month's branch meeting it is intended that the various aspects of the upcoming annual dinner be discussed. The dinner is planned for early September.

Scott Gagen Secretary.

# QLD.

The June branch meeting heard Joe Williams from QUT talk on 'The Effects of Topography on Magnetic Interpretation'.

At the August branch meeting Lin Hastie from Queensland University gave a preview of his Melbourne Conference talk 'The Application of a Joint MT-CSAMT Survey to Oil Exploration'.

The Branch Committee intends to take time-out from technical discussions to hold a Wine Tasting Evening in September. The aim is to sharpen the palate before the 1989 ASEG wine arrives. This may also be an occasion to farewell some of the Lasmo and Petty-Ray members who are on the move.

Danny Burns President.

A meeting was held on 9th August at the Australian Mineral Foundation where Reg Nelson spoke on "The Geophysical Significance of the 1988 Hydrocarbon Discoveries". Reg is the Chief Geophysicist at S.A.D.M.E. and made this presentation at the APEA Conference. disappointing to see the poor turnout for the presentation given by Dr. John Warren. John is a very good speaker and presented an interesting and not too geological talk on the distribution of evaporites and hydrocarbons. Listed below are coming attractions for your ASEG calendar:-

DATE/TOPIC/SPEAKER 30 August 1989 Joint meeting with PESA/GSA/ASEG VENUE

A.M.F.

"Structural Inversion - Worldwide Examples" - Dr. James D. Lowell.

11 October 198

Speaker to be advised.

A.M.F.

7 November 1989 Melbourne Cup Lunch

Guest speaker - Eric Freeman

Waymouth Tavern

29th November Student's Night

A.M.F.

20th December

Christmas Party

President's Residence 11 Plymouth Ave.

Blackwood, 5051

Please note that there is a joint PESA/GSA/ASEG meeting on 30th August featuring Dr. James D. Lowell. Dr. Lowell is the visiting Esso Distinguished Lecturer and will be conducting a workshop at the NCPGG in late August.

The Melbourne Cup Lunch is on again this year at the Waymouth Tavern. Guest speaker will be former Test Cricketer and Port Adelaide Footballer, Ric Freeman. Last year's inaugural lunch was a great success, so keep the 7th November free and make this year's event just as successful.

This year's ASEG wines have been selected following a very professionally run wine tasting, organised by Treasurer, Peter Dunne. The committee gathered at Jim Allender's residence (thanks Jim) and were faced with the arduous task of choosing a suitable red and white from numerous numbered, but unlabelled, wines. In a taste off that went right down to the wire, the wines chosen were the Tolleys 1987 Shiraz Cabernet and a mixed dozen of the Saltrams 1987 Semillon and 1986 Rhine Riesling. Order forms are available in this edition of PREVIEW.

> Mark Flynn Secretary.

A long-serving committee member and current branch Vice President, Graham Jenke, is now based in Kalgoorlie. While Graham will continue to work for the committee, another committee member, Richard Williams of Tesla-10, has been elected. We welcome Richard to the committee.

A wine tasting evening was held on 19th July at the Hunting Horn Restaurant in Applecross. While the number of attendees was disappointing, those who braved the floods to attend were rewarded with some excellent red wine. Future wine tastings will probably not be held in the depths of winter.

A series of 3 meetings will be held in August for the W.A. based speakers at the Melbourne Conference. Each meeting will involve previews of 3 Melbourne papers. The venue is the Raffles Hotel, Riverview Room and meetings will begin at 5pm sharp. The agenda is as follows;-

Date

16th Aug.

"MMR Surveys for location of Palaeodrainage Channels in the Eastern Goldfields, WA." G Street

"The Application of the 3D Seismic Surveying

Technique to Coal Seam Imaging: Case Histories from the Ackaringa and Sydney Basins." A.Lambourne, B.J.Evans, P.Hatherley.

"Land Multi-line Recording Techniques: Selected Case Histories. D.D.Hollis, S.P.Tobin, F.R.O'Sullivan.

23rd Aug.

"A New Approach to Signature Analysis in Seismic Interpretation using an Interactive Workstation." G.A.Paterson.

"Gathering Good Seismic Data in the Otway Basin" A.M.Heath, C.W.Luxton, A.L.Culver.

"A Case History of a cost-effective 3D Seismic Survey over the Perth Basin, Western Australia." S.C.Stewart, B.J.Evans.

30th Aug.

"Dynamic Time Corrections applied to a Sea Floor Canyon Problem in the Gippsland Basin." C.Blyth, N.Fisher, A.M.Heath.

"Data Integration of Exploration Data Sets utilizing Colour Space on the Image Processor." G.Spencer, D.Pridmore, D.Isles.

"Rig 3D - A Revolutionary Technique looking for a Case History." B.J. Evans.

Please support your local members in their preparations for the conference. For those who are unable to attend the conference this is a good opportunity to see some of the contributions.

> Terry Walker Secretary.

# SURVEY OF TERTIARY INSTITUTIONS

#### Introduction

The Australian Society of Exploration Geophysicists was concerned that, as a result of the Dawkins Policy on Higher Education, the small number of student enrolments in the area of geophysics might decrease, resulting in a lowering of standards in the education of geophysics and in basic research.

The main implications of the Dawkins Policy are listed as follows:

- Each student is to be classified as a unit and one full time unit is equivalent to the higher education contribution. Each unit is to be charged \$1800 p.a.
- All departments in the higher education (tertiary) system are accountable and are not allowed to make a loss.
- No course should start with less than 20 units in it.

To effectively voice our concerns to Minister Dawkins, the Federal Executive needed to establish the facts regarding tertiary education in geophysics throughout Australia. Don Pridmore, former ASEG Vice President and chairman of the Student and Academic Liaison Committee, circulated a questionnaire to the academic institutions nationwide to gather this information. The replies were collated by Brian Evans, the present committee chairman, and are shown in the tables over the page.

#### Results

The following notes were supplied by Brian to help explain the results of the survey;

- \* All information included was supplied by universities.
- \* Where no information was supplied, nil was assumed.
- \* Teaching staff were assumed to be involved in research as well as teaching, but since they are paid from a teaching budget, they were only shown under teaching.
- \* Research staff may teach, but since their income is mainly from research, they were only shown as research staff.
- \* Half staff figures represent staff who are paid half time.
- \* Most degrees are BSc (General) in which the number quoted may only take geophysics as an elective unit, although geophysics may be majored in the third year. N/A indicates that there is no elective in geophysics.
- \* Student number categories were defined as follows: A = 0-3, B = 3-6, C = 6-10 and D = 10-15.

- \* Research income categories were defined as follows: A = \$0-5,000, B = \$5-10,000, C = \$10-30,000, D = \$30-100,000, E = \$100-300,000 and F = \$300,000 +.
- \* Equipment owned is 'O'. If shared with other users is 'S'.
- \* No response was received from the universities of Queensland, Tasmania or New South Wales.

#### Conclusions

An initial glance at the tables shows how small the number of students taking geophysics really is. Adelaide has 100 first year general students, all of whom may elect to take a unit in geophysics, which may be majored in the third year. Curtin appears to have the only 3 year degree in geophysics, with all others being general. Student intake tends to fluctuate with industry demands and may be reduced during a market recession when employment opportunities may not be as attractive. For example, the number of undergraduates at Curtin is reduced this year and should they drop any further, lecturing positions would become unstable and the whole future of the department becomes questionable. Geophysics as a 3 year degree is threatened and many university geophysics courses could be closed. There is little incentive for research in the subject and at present the morale is low in many of the departments.

Another effect of the Dawkins Policy has been to discourage people from part time or extension studies in geophysics purely because of the cost involved to them personally. Usually these are people already working in the industry who want to improve their knowledge and qualifications. In the past they have helped to increase industry and academic interaction, from which research topics and sponsorship are often generated.

After having considered the main implications of this survey, I cannot see how geophysics can survive as an independent course in the higher education system under the new policy. Is it fair that students today should have fewer opportunities than we (those now employed in the industry) once had? It is the responsibility of this society to act and voice its concerns to the ministry.

The Editor.

1998 The State Control of the

in keeping with the Department's decision to Create a more all-inclusive, comprehensive and sycamined course of instruction... from now on 2+2 will also be 123+345 and 343-354 and 1725×8

00

TEACHING	RESEARCH	LOCATION	UND	ERGRADI	JATE	POSTGRADUATE			RESEARCH FUNDS		EQUIPMENT	INVOLVEMENT		
STAFF	STAFF		NO. 0	OF STUL YEAR 2	DENTS 3		PGD	Ms	337770000	7 100	ARC/ AMIRA/ NERDD		0 - OWNED S - SHARED	WITH OTHER INSTITUTIONS
Melbourne 2	Nil	Geology Dept.	N/A	Е	В	А	- [		A	_	Nil	NERDO-E	Gravity Meter \$25K 3-P.P. Mags. \$3K	Nil
Macquarie 34	5	Sch. of Eth. Scienc	N/A	Е	D	A	В	A	С	С	С	D	1-Gravity Meter 4-Mags. 1-Resistivity Set 1-I.P. Set 1-Refraction Set 1-Scintillometer	Nil
Monash 2	1	Earth Sci. Dept.	N/A	N/A	8	2	-	-	4	3	ARC- \$26Kpa MADF- \$45Kpa	BMR- \$10K	Magnetometers \$10K (O) Spectrometers \$5K (O) PC Recorder \$12K (O) MT Recorder \$10K (S) Image Process. \$25K(S) Computing Egpt. Total \$75K (O and S)	Nil
New England Nil	5 (Ground Mag.)	Separate	2		-	-	=	-		-	Nil	\$272K	Vehicle Mag. System \$80K (O) 2-TM3 Mags. \$170K (O) Data Proc. \$75K (O)	Nil
Adelaide 4	Nil	Geology Dept.	100	31	10	8		3	3	3	Nil	D	Gravity Meter (0) \$10K Microvax II (0) + Peripherals \$130K	Share Hons. Lectures with Flinders and SAIT.
ANU Nil	Nil	Geology Dept.	N/A	N/A	5	1	-	-	-	±2	Nil	Nil	Nil	Nil
Curtin 24	51/3	Geology & Geophysics Dept.	21	8	5	6	3		7	1	Nil	AMIRA-E NERDO-F	Gravity Meter (0) 3-P.P. Mags. (0) 3-F.G. Mags. (0) I.P. Set (0) Resistivity Set (0) 2-Refraction Sets (0) 3-DFS IV Seismic (0) 1-96 Ch. Sercel (0) Seismic Crew 1-VAX Centre (0) 1-Landmark Workstn. (0) Total Value Est. \$800,000.	Service Teaching UWA Semester 2 1989. Curtin/UWA Joint Darling Fault Research Group
Plin. rs	Nil	Sch. of Eth Scienc.	N/A	В	A	A	-	-	A	A	Е	Е	Gravity Meter \$10K Mag \$18K F/Array \$80K Seismometers \$50K Sparker \$100K Boat \$60K Palaeomag. Equip. \$25K	Share lectures with Adelaide and SAIT
Sydney 3	Nil	Edgeworth David Building	N/A	18	5	2			5	8	Nil	Private Company Funds - F	\$500K Lab. and Field Equipment	Nil
UNA 1	Nil	Geology Dept.	N/A	40	11	1					Nil	Nil	Refraction Set Scintillometer Seismometer Suscept. Meter S.P. Unit Macintosh	Nil
													24	

## MELBOURNE CONFERENCE NEWS

'The Russians are coming'

Eminent Russian Geoscientists Erkhov, Surkov, Mandelbaum, Lotyshev and Shamal will be part of the exciting line-up of speakers at the forthcoming ASEG Conference and Exhibition being held in Melbourne from September 24th-29th, 1989.

The Hilton on the Park in East Melbourne has been selected as the Conference Venue. The Hilton's facilities allow for all conference sessions to take place on the same floor as the extensive Trade Exhibition. There will be several interactive interpretation systems and a large number of PC's on display in the exhibition area.

On the technical side, the well-known speaker, Oz Yilmaz from Western Geophysical, will be featured and excellent case histories and technical developments will be presented by a variety of Australasian speakers. Bill French, previously First Vice-President of the SEG, will be coming from the U.S.A. to present a paper.



Ozdogan (Oz) Yilmaz

Guest Speaker Ozdogan (Oz) Yilmaz, author of many papers and also the SEG volume "Investigations in Geophysics No.2 - Seismic Data Processing".

The social events of this conference are in danger of overshadowing the fine technical presentations as Melbourne is turning on a host of options to ensure delegates see the best that this city has to offer. You could see Melbourne by night and dine in splendour on the travelling Tram Car restaurant; visit the Fairy Penguins at Phillip Island; view the magnificent Dandenong Ranges from a vintage steam train or go back through history and get a taste of gold fever at Sovereign Hill, a fully restored goldmining township located in historic Ballarat.

Not only is it Royal Melbourne Show week for the duration of the conference but you will not be able to escape the 'fever' that surrounds Melbourne in the lead-up to The Grand Final. The V.F.L. Grand Final will be held on September 30th at the famous M.C.G., opposite the Hilton on the Park.

Now that we have 'The Ashes' safely back on our shores, the Conference Dinner will feature Max 'Tangles' Walker as guest speaker. A fun time is guaranteed.

The final day on Friday is purely social. A friendly Golfing Tournament with prizes, lunch and a chance to sample one of Melbourne's world standard courses is on offer.

BE THERE!

SEE YOU IN SUNNY MELBOURNE!

## **CURTIN LANDMARK**

Use of the Landmark Interactive Interpretation system at Curtin University is on offer on an hourly fee paying basis for 2D and 3D interpretation.

Companies who already have a Landmark workstation can perform tape transcriptions from SEGY to Landmark format at Curtin.

Jerry Hooper, who was previously senior geophysicist for IIAPCO in Djakarta, is offering his services as a consultant interpreter. For further details call Brian Evans on (09) 351 7092 or Jerry Hooper on (09) 351 7190.

## **LETTERS**

Letter from Brian Spies concerning the proposed monograph series.

"I read with interest in the last issue of PREVIEW the proposal to publish an ASEG monograph series. I feel this is an excellent idea. Book publication is becoming a major source of income for the SEG, and with carefully chosen titles and content could do the same for the ASEG. I also notice that you are calling for nominations or volunteers.

I would be honoured to act as a special editor for the monograph on Transient EM Interpretation if you so desire. I have been an Associate Editor for GEOPHYSICS for the last four years. I-would also be happy to assist with the issue on hydrocarbon exploration if other names are not forthcoming.

For your interest, the SEG has found it very useful to advertise a "Prepublication offer", valid for a limited time, at a reduced sales price. The response to this offer is used to decide on the edition size to be printed. In some cases, a financial decision may even be made not to publish, thus avoiding severe financial losses."

Reply from the Editor.

The ASEG are honoured to receive such an offer of help with the editing of a geophysical monograph, especially from a person such as yourself with proven editorial experience. Mike Middleton and Eve Howell have already been appointed as editors for the first monograph which is to be entitled "Australian Oil and Gas Case Histories" and will be published in late 1990. However, your letter will be passed on to the Executive Committee whom I am sure will be pleased to give your offer full consideration.

Letter from David Gamble of Cadmap Pty. Ltd.

"In the November 1988 issue of "The Leading Edge" M.H.Loke and C.Y.Lee published some very interesting comparisons of various computer languages running two geophysical type programs. The comparisons demolished some hoary assumptions about the superiority of older languages such as FORTRAN and illustrated the value of a maths coprocessor. The authors very kindly provided me with a copy of their test programs and I have carried out a series of tests using a range of IBM.PC clones, with the following results.

Test program - Fast Fourier Transformation - QBASIC v 4.0

Compaq 386/16	AT Clone	XT Clone			
with 80387		Turbomode	non-turbo		
sec	sec	sec	sec		
0.42	14.2	35.65	76.17		

The timing was done using the computers' internal clock, and it excluded all disk access. It would be interesting and constructive to run the programs on a range of other computers, ie. VAX, SUN, APOLLO, APPLE MAC etc. Anyone interested can contact me at the address below.

Mr. David Gamble
Cad-Map Pty. Ltd.
Suite 204, 104, Mount Street
Heidleberg
VIC 3084.
Tol: (03), 459,7830, Tolov: AA 306

Tel: (03) 459 7830 Telex: AA 30625 (ME 876)

Fax: (03) 459 2160

Reply from the Editor.

It would be interesting to find out the speeds at which some of the computers you mention can run programs. PC Magazine ran benchmark tests on every 80386 microprocessor. In the May 1989 edition (volume 8, No. 10), the editor, Bill Machrone described the power of the 80386 and named the top ten performing brands from tests done on 104 machines.



stop the tape drive with your hand

Letter from David Heath.

After the last issue's article on Mapping, I received a call from Bill Verhoff in the Geophysics Department at Curtin University offering the use of their geographical to grid conversion programme. I also received a reply from Laszlo Kevi, Senior Geophysicist at the W.A. Mines Department, with a copy of an article from Geobyte, (volume 2 no.1) by Norman J.Beris "A Program for Transverse Mercator Projections". I would like to thank both of them and hope this information may be useful to your readers.



# WAVEFORM

## GEOPHYSICAL AND GEOLOGICAL SOFTWARE FOR THE PERSONAL COMPUTER

Geophysical and Geological Software specifically designed for the Personal Computer is now available from WAVEFORM Pty.Ltd., a Perth-based company.

This innovative and modular software for the petroleum and mineral exploration, includes navigation and surveying quality control; seismic survey planning; seismic, VSP and digital signal processing; synthetic seismogram generation; seismic interpretation; geological information processing; and Amplitude - Offset analysis.

An important aspect of the software is its ability to be run on standard personal computers without requiring expensive hardware additions. The software will be demonstrated at the ASEG Exhibition in Melbourne in September.

WAVEFORM is also a COMPAQ Dealer Associate with Powerlink Pty.Ltd. and as such can provide the hardware and software necessary for a wide range of Personal Computer Exploration Workstations.

Services provided by WAVEFORM include installation, training and maintenance of the software plus the development of other applications specifically for the Australian and Asian exploration industry.

WAVEFORM was established by Martin Bawden and Cris Frampton, who between them have 25 years of experience in the petroleum exploration industry.

More information, including in-house demonstrations can be obtained from WAVEFORM on 09-399 7524; fax 09-497 1656; PO Box 90, Armadale, WA 6112.

#### MEMBERSHIP

#### **New Members**

We welcome new members who have joined the Society in the past months:

Member	Category	State/Country
Earth Resource Mapping	Corporate	
Lennert Malmqvist	Active	SWEDEN
Paul McDonald	Associate	VIC
Sharyn Thompson	Associate	VIC
Binzhong Zhou	Student	SA
Kevron Geophysics	Corporate	
Martin Bawden	Active	WA
Crispin Frampton	Active	WA
Adrien Young	Active	WA
Harold Stead	Active	NSW
Kayleen Robinson	Associate	QLD

We do not have the correct addresses for a few members, does anyone know the whereabouts of;-

Mr Barry Taylor - last known address: 5/25 Cash Street Rostrevor SA 5073

Mr Phillip Irwin - last known address: ACIRL Ltd PO Box 474 Dee Why NSW 2099

Mr Lim Hock Beng Santos Limited 101 Grenfell St Adelaide SA 5000

The following members were unfinancial as of 28 August 1989. If their dues have not been received by October 15th then they will no longer be considered members:

ASHBY, Bill BAILEY, Jeffrey BARLOW, Mr BARTHOLOMAEUS, Michael BAYFORD, Stewart BOARDMAN, Malcolm BONIWELL John BOWMAN, Tony BRAILEY, Mark BROWN, Henry BROWN, Trevor BUSITTIL, Stephen BUSUTTIL, Walter BUTLER, Gary BUTTERWORTH, Charles CAMPBELL, Christopher CAPON, David CARTER, Paul CHILDS, Andrew CLARK, Capt. CLAUSON, Shane COOK, Rodney COOK, Vern COOPER, Richard CROOKS, Derek

CUCUZZA, Joe CUNNEEN, Pat D'ADDARIO, Gianni DALY, John DE GRACE. Adele DE LASTIC, RObert DE PLEDGE, David DENNIS, Stewart DEY, Abhijit DURRANT, James ESDALE, Don FARRAR, Leigh FERNANDEZ-ALONZO, Florencio FERRIS, Jon FOWLER, Rod FRITH, Noel FROST, Dennis GARRITY, John GRAINDORGE, Jean GRASSO, Carmine GREEN, Ron GUNTHER, Mark GUY, John HANNINGTON, Michael HAREN, Dick HARROP, Peter HATCHER, George HAYES, Mr HERON, Douglas HINES, Geoff HOLMAN, Bill HOSKINS, David HOWELL, Gordon HOYLE, lan IRWIN, Phillip JIRACEK, George JOBIN-BEVANS, Bill JOHNSTON, Chris JOHNSTONE, Errol JONES, David KING, Geoffrey KNOWLES, Douglas LAMONTAGNE, Yves LARNER, Ken LEDLIE, lan LI, Mr LIMG, Nick MACAULAY, ANdrew MARKS, Alan McDONALD, Bruce McELHINNY, Michael McRAE, Jim MEE, Patrick MOORCROFT, Ted MORA, Peter MUELLER, Robert MUIRHEAD, Kenneth MULLEN David MUMME, Mr MURRAY, Richard NELSON, Reg NORRIS, Desmond NUTT. Les OLDHAM, Andrew PARKER, Gavin PATON, lan PAUL, Robert PEARCY, Andrew PERKINS, Bill PIMBLE, Terence POLLICE, Dino POYNTON, Charles RAYNES, Craig RINGIS, John ROEMER, Dan ROWAN, lan

RUSSELL, Jim SCARANO, Susanna

SCHNEIDER, Martin SHOPE, Steven SIMAMORA, Wellinton SMITH, Graeme SMITH, Peter SMITH, Philip SPEEDIE, Peter STANHOPE, Dorothy STANLEY, Dolores STEINER, Mario STEPHENSON, Peter STEWART, Peter STEWART, Simon STOKOE, Gryffyd SULDA, Wence TEAKLE, Raymond TERRILL, John THOMAS, John THOMAS, Lindsay THOMPSON, Dale TIMMINS, Robert UPTON, Douglas WARK, Robyn WHEATLEY, Adam WILLIAMS, Joe WILMOT, John WILSON, Trevor WOODS, Mr WRIGHT, Jeff

#### Dues are:

 Active/Associate
 \$ 45.00

 Overseas
 \$ 65.00

 Student
 \$ 15.00

 Corporate
 \$275.00

#### Changes to State Branches

BP Minerals Development Limited has changed its company name to Rio Tinto Minerals Development Limited and they have requested that any correspondence be addressed to the Company under its new name.

The Queensland state branch secretary, Robert Singh, has moved to Victoria. His address is now:

c/o Tensor Pacific 283, Normanby Road Port Melbourne Victoria.

In W.A., Marcus Fils has changed address to:

Newmont Australia Ltd. 179, Great Eastern Highway Belmont W.A. 6104.

Moving from South Australia overseas is Deepak Raj Punt. His new address is:

Department of Physics Patan Multiple Campus Patan-Dhoka, Lalitpur NEPAL.