



February 2003

**THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division**

GENERAL MEETING

Thursday, 27 February 2003

**Ross Cayley
Geological Survey of Victoria**

**Palaeozoic rocks involved in Lachlan Orogenesis—a new tectonic model for the western
Lachlan Fold Belt margin.**

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)

Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)

General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

.....

**Palaeozoic rocks involved in Lachlan Orogenesis—a new tectonic model for the western
Lachlan Fold Belt margin.**

The Moyston Fault is the terrane boundary between the Delamerian Fold Belt, deformed in the Cambrian Delamerian Orogeny, and the Lachlan Fold Belt, where deformation did not begin until the Late Ordovician. The fault has uplifted polydeformed metamorphic rocks from mid-crustal levels—the Moornambool Metamorphic Complex. This includes a faulted sequence of Cambrian metavolcanics and metasedimentary rocks, which, in places such as Stawell, host gold-quartz mineralisation.

Stawell is host to Victoria's largest current gold mining operation. The narrow belt of Palaeozoic rocks between Stawell, Ararat and Moyston has yielded nearly 5 million ounces of gold, most from the Stawell goldfield itself. 'Stawell-style' gold mineralisation is becoming increasingly attractive to modern explorers, as ongoing mining and local-scale exploration reveals the world-class nature of this deposit. The tectonic model developed for western Victoria has important predictive implications in the search for more hidden 'Stawell-style' gold deposits. Local lithological and

structural controls on the known gold-quartz and base metal mineralisation have been tied to the tectonic model, which involves protracted Late Ordovician – Silurian thrusting of the Lachlan Fold Belt against the Delamerian Fold Belt along the Moyston Fault. The improved understanding gives hope that other, yet-to-be-discovered economic deposits will exist within lower-grade regions of the Moornambool Metamorphic Complex.

New Look at Geological Survey of Victoria

Following the recent Victorian elections, the former Department of Natural Resources and Environment has been split into two, with the Minerals and Energy division and the Geological Survey of Victoria now situated in the new Department of Primary Industry. The new minister is the Hon. Theo Theophanous. The street address (240 Victoria Parade, East Melbourne 3002) and the mail address (P O Box 500, East Melbourne, 3002) remain the same, and until further notice so do the email addresses of GSV employees (firstname.surname@nre.vic.gov.au), and the web address of the minerals and Energy Division of DPI (www.nre.vic.gov.au).

GSA Victoria Web Presence

The Committee has implemented a website, designed by Jodi Miller, with which we hope to share information about our activities, future, present and past. The direct URL for the site is

<http://vic.gsa.org.au>

but for the time being the useful information on the site is limited (by the time the Committee can spend on drafting material). Keep looking, however! One of our immediate plans is to put each Newsletter up as soon as it is ready, so if you think the print newsletter is overdue, then check the website! The Committee is only too pleased to receive material for inclusion on the site, but we do not undertake to publish everything we are given.

Dating — the 2003 Selwyn Symposium

The 2003 Selwyn Symposium aims to lay bare the basis of several popular geochronological techniques. The one-day Symposium, which includes a detailed evaluation of the U/Pb, Ar/Ar, fission track and (U-Th)/He techniques will emphasise not only the fundamentals of each method, but also highlight some case histories and pitfalls in applications. A special session will also be dedicated to looking over the horizon, to ensure that future applications benefit from past failures and successes, and that we as a community work better together in solving outstanding geological problems, and not generating numbers with limited apparent geological significance. This special Symposium is the premier event on our calendar, and we invite you to join us for practical and robust examples, and discussion on the place of geochronology in our work.

The symposium is a full-day affair (morning and afternoon) on Thursday May 29th, 2003. More details will be provided in future newsletters and a registration form will be printed in the March issue of The Australian Geologist and also circulated to Victorian members.

Progress with Geology of Victoria

Very significant progress has now been made with the new Geology of Victoria. The Editor, Bill Birch is determined to have it off the press by the middle of this year. Most of the chapters have passed the final edit stage and many have been processed into near print ready form at Swinburne Institute. It will be the culmination of a monumental effort!

Lost member email addresses

With the start of the New Year we often lose contact with some members who move on to other jobs and locations and do not update their email addresses. If this applies to you or a colleague, please update your email address by contacting Paul Messenger pmessenger@vtown.com.au with the title "Email Newsletter Update".

Snail mail and Email Newsletters

Our list of members who receive the email newsletter is growing, with advantages to the Division and also to the members. We post some newsletters to overseas addresses each month, and it would seem a real advantage for these to go by email. So we urge these recipients and all our members who have an email address to convert by contacting Paul Messenger at pmessenger@vtown.com.au with subject heading "Newsletter Request"

NOMINATION FOR THE SELWYN MEDAL

The Victorian Division of the Geological Society of Australia established the *Selwyn Medal*, in honour of Sir Alfred Selwyn, the eminent Victorian pioneering geologist. The award recognises significant ongoing or former contributions of high calibre to any field of Victorian geology.

Nominations are now being sought for the 2003 presentation of the *Selwyn Medal*.

Candidates should have made a major contribution to new knowledge of the geology of Victoria, or a significant reinterpretation of it based on critical observations, contributed importantly to a major mineral or oil discovery, produced important geological publications or have been successfully involved in the development of the geological profession.

Nominations should include the name of the candidate, biographical data, a citation in 300 words or so of the work and its significance to the geology of Victoria, and the names of at least two geologists who support the nomination.

Please mail nominations and supporting data to:

**Awards Committee
GSA Victorian Division
5 Mossman Drive
EAGLEMONT VIC 3084**

GSA (VICTORIA DIVISION)

Please address all correspondence to the GSA, Victoria Division
GPO Box 2355V, MELBOURNE, VIC 3001

COMMITTEE 2002**OFFICE BEARERS**

	phone
Chair: Fons VandenBerg	9412 5122
Vice Chair: Paul Messenger	9523 5889
Secretary: Peter Pritchard	9439 9582
Treasurer: Lindsay Thomas	8344 6521
Promotions: Vincent Morand	9412 5087

COMMITTEE MEMBERS

phone

Elected Members:

David Gray	
Ross Cayley	9412 5042

SUBCOMMITTEES

AWARDS: Lex Ferguson	9458 4308
EDUCATION: Noel Schleiger	9435 8408
MEMBERSHIP: Leisa Brough	9727 4898
WEBSITE EDITOR: Jodie Miller	

GEOLOGY of VIC: Bill Birch 9270 5049

HERITAGE: Sue White 9328 4154

PUBLICATIONS: Peter Pritchard 9439 9582

NEWSLETTER EDITOR:

Lex Ferguson 9458 4308

GSA Inc – Subscription and correspondence, address changes etc.

Misha Frankel, Business Manager, GSA, 706 Wynyard House, 301 George St., Sydney NSW 2000

Email: misha@gsa.org.au Tel: (02) 9290 2194 Fax: (02) 9290 219

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March 2003

**THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division**

GENERAL MEETING

Thursday, 27 March 2003

**Professor Chris Wilson
University of Melbourne
Chief Scientific Officer for PCMEGA**

**The recent Antarctic Expedition to Prince Charles Mountains,
Antarctica.**

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)
Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)
General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

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**Outcomes from the recent Antarctic Expedition to the Prince Charles
Mountains**

In the last week of February a party of thirty-five expeditioners returned from Antarctica. These personnel were from the highly successful PCMEGA program (Prince Charles Mountains Expedition of Germany and Australia). This is one of the most comprehensive onshore geoscience projects ever undertaken under the auspices of the Australian Antarctic Scientific Program. The work involved several programs. These included Australia's first major airborne geophysical investigations into the subglacial structure of the Antarctic continent, its glacial evolution and the impact of climate change. Another focus was the geological architecture of the bedrock geology and the control that this geology has on shaping the geomorphic evolution of the continent. A comprehensive sampling program was undertaken to establish the age and evolution of the

continent and its relationship to other fragments when they were assembled as part of the supercontinent Gondwana 500 million years ago.

The area of the southern Prince Charles Mountains (SPCMs) is the same size as Victoria. Little Australian geological or geographical work has been undertaken since the last reconnaissance survey of 1974. It is a region of unparalleled rock exposure that provides one of the few windows into the geology of the inner regions of east Antarctica. Prior to this expedition, no detailed mineralogical or structural descriptions of many of these areas had been written, and much of the outcrop had probably not been visited until now. Many of the larger structures are hundred-metre scale folds, often clearly exposed in one-kilometre high cliffs, and kilometre-scale regional folds. Post-dating these structures are abundant igneous leucogranitic dykes and pegmatites that crosscut the dominant metamorphic lithology.

One of the most interesting features of the SPCMs is the presence of a remarkably widespread and ancient land-surface that marks the summit of much of the range. The enigmatic flat plateau-like surfaces of these mountains piercing the Antarctic ice sheet hints at the region's older history. This is a history that has since been disrupted by faulting and uplift, erosion and glaciation. The spectacular three-dimensional exposure in the SPCMs also enabled an assessment of the recent structural development of fault blocks that now confine the world's largest glacier—the Lambert Glacier. The faults that transect the SPCM's could be linked to the development of the Lambert Rift system, or crustal depression that is over 2 kilometres in depth, that now contains the fast moving (600 to 700 metres a year) Lambert glacier.

Notice of Annual General Meeting

Dear members,

The 2003 AGM will be held Thursday 24 April at 6.15 pm, Fritz Loewe Lecture Theatre, University of Melbourne.

The Chairman will present his Annual Report and the meeting will elect a new Committee for 2003.

The Chairman, Secretary and Treasurer have indicated they will continue on the Committee this year but several Committee Members will be retiring creating some vacancies and providing an excellent opportunity to introduce new skills and new ideas to the Committee. Positions to be filled include Vice Chairman and Promotions Officer.

We strongly urge all Members interested in contributing to the on-going vitality of the new Committee to nominate for the above positions by contacting the Division Secretary as soon as possible. Only if sufficient nominations are received will we have a successful year.

Please support the Victorian Division by attending the AGM on Wednesday 24 April 2003.

Revised Date — the 2003 Selwyn Symposium

As there have been problems in obtaining a venue, the Selwyn Symposium date has been changed to Thursday 5th June, one week later than planned. It will be held at the Fritz Loewe Theatre at Earth Sciences Building, cnr. Elgin and Swanston Streets. Under the title '**What's in a date – the view from both sides of the fence**', the symposium looks at the four methods that geologists most commonly use for rock dating (other than fossils), - the methods, uses and misuses. An important part of the day's proceedings is an open-panel discussion that allows users' concern to be aired and discussed. It's an all-day affair, opening at 9 am and ending with drinks in the tea room at 6 pm.

Division Website

Rapid progress is being made on the Victoria division's website. Many of the web pages are now ready to go public, but we seek help from one or more members for one item, the Victoria's Geology webpage. This page is designed to introduce readers to Victoria's geology with a short and easily understood account of Victoria's geological history. As there is no such thing in existence, as a stop-gap measure we will put the "Geological overview" section from Chapter 1 of the Tasman Fold Belt system in Victoria GSV Special Publication there. This is reasonably brief (8 pages including mineralisation), but stops at the Carboniferous. We welcome contributions from any member to fill the post-Carboniferous gap, or indeed to undertake the entire description, with illustrations.

SAVING THE COUNCIL TRENCH AS PUBLIC LAND

The Council Trench, off Tramway Lane on the slopes of Bald Hill just north of Bacchus Marsh, is the only known Triassic aged outcrop in Victoria. Officially it is known as the Council Trench Formation and it overlies the Permian Bacchus Marsh Formation.

How the Trench got its name and when and by whom it was quarried have been lost in time. It was first mentioned in the scientific literature in 1892 when Frederick McCoy wrote in his 'Report on Palaeontology of the Geological Survey for the year 1891' that a fossil of the plant genus *Schizoneura* had been found at Bacchus Marsh and that its age was Triassic.

Countless geology students and natural historians who have visited Bacchus Marsh to view the internationally significant Bald Hill glaciogene landscape have made the short side-visit to examine the unique Council Trench. Since quarrying ceased, the Trench remained undisturbed for many decades as a small parcel of Crown Land.

In 2000 it became known that the Trench was nominated to be sold by Land Victoria as a private housing site. Immediately negotiations began to prevent the sale and to attempt to maintain the land in public hands. After many months, the sale option was withdrawn. But there was a price to pay. In order to maintain the Council Trench in public hands, a committee had to be set up to manage it.

In February this year, the government approved the nomination of a committee of six people (three who reside in or near Bacchus Marsh and three who are Melbourne based) who have been given the grand title of 'The Bacchus Marsh Council Trench Reserve Committee of Management'. The Committee has already successfully applied for a grant to fence the roadside site boundary. It has plans to clear out the overgrown Trench, to carry out vegetation and soils surveys on the site, and to undertake weed control and education programs. The Committee is confident that under its care the Council Trench will remain as public land for many years to come.

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Email: misha@gsa.org.au Tel: (02) 9290 2194 Fax: (02) 9290 219

Victoria Division Membership

At February 28, 2003, our division had:

179 financial members
124 unfinancial members
7 financial company members
2 unfinancial company members

At the end of November 2002, the Division had financial 377 members. If anyone has inadvertently forgotten to pay your subscription, please do so as soon as possible. In addition, we all need to keep an eye out for any potential new members to remain a viable organisation.

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April 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 24 April 2003

M. W. Wallace

School of Earth Sciences, University of Melbourne

**Late Miocene-Pliocene strandplains of southern Victoria:
A record of Late Neogene eustasy and tectonics**

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)

Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)

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**Late Miocene-Pliocene strandplains of Southern Victoria:
A record of Late Neogene eustasy and tectonics**

Newly acquired digital elevation and magnetic data from across the southern Victorian basins (Otway, Port Phillip, and Gippsland basins) has enabled the recognition of a vast Late Miocene-Pliocene strandplain succession that is a correlative of the Murray Basin strandplain. An inter-related combination of erosional dissection and ferricrete formation has allowed the mapping of strandlines geometries across most of the onshore Otway, Port Phillip and Gippsland basins. Strontium isotope ages from well preserved molluscan assemblages of the strandplain successions indicate the earliest sediments were deposited in the Latest Miocene (5.9-5.5 Ma). Recognition of this vast strandplain system in southern Victoria has implications for mineral sands exploration, and for an understanding of the relative roles of eustasy and tectonics in the southern basins. Elevational differences across the strandplains indicate considerable Plio-Pleistocene uplift has occurred.

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GSAV Chairman's report, 2002–2003

Meetings Held

- | | |
|----------------------------|---|
| March 21 st | Joint meeting GSA and AIG: Greg Corbett, President AIG: Epithermal Gold for Explorationists |
| May 9 th | The Selwyn Lecture (see below) |
| June 27 th | Guy Holdgate, Melbourne University: The Karakorum Mountains, NE Pakistan |
| July 25 th | Catherine V. Spaggiari, School of Geosciences, Monash University: Late Ordovician-Silurian Ophiolite Emplacement in the Western and Central Lachlan Orogen |
| August 29 th | Annette George, Department of Geology & Geophysics, University of Western Australia: Integrated approach to understanding reef evolution: Devonian reefs of the Canning Basin |
| September 26 th | David Taylor, GSV: An integrated model for the Cambrian Delamerian Orogeny |
| October 31 st | Dr John McLeod Miller, University of Melbourne: Gold mineralisation in the western-most region of the Lachlan Fold Belt – a revised geological framework for the western Victorian gold fields. |
| November 28 th | Kilauea at close hand—A video of Kilauea's last ten years of activity, with commentary by volcanologist Ken Hon. This was followed by an enjoyable barbecue on the Earth Sciences building's balcony, organised by Sue White. |
| February 27 th | Ross Cayley, Geological Survey of Victoria: Palaeozoic rocks involved in Lachlan Orogenesis—a new tectonic model for the western Lachlan Fold Belt margin. |

Selwyn 2002

This event was held at the ICE Theatre at the Melbourne Museum in conjunction with the display of maps that commemorated the Geological Survey's 150th anniversary. The Selwyn Lecture was

appropriate to the occasion, given by Tom Darragh, Curator Emeritus, Invertebrate Palaeontology, Museum of Victoria and well-known geological historian. Under the title “**A series of beautiful maps... a credit to the colony**”, Tom described the development of map printing in the early years of the GSV’s history.

Selwyn Medallist for 2002 was Prof. Andrew Gleadow, for his outstanding contribution to the development and utilisation of fission track as a tool for dating thermal histories of rocks.

Monash Science Centre Preparation Laboratory

The Division made a major contribution (\$15 000) to this facility which is a glass-walled room in which preparators are cleaning and preparing a large block of Jurassic rock containing thousands of dinosaur bone fragments. The aim of this laboratory is that preparation can be viewed by those visiting the Science Centre. The room has the GSA logo in it and can be used to publicise the Association’s activities and publications.

Website

The Division’s website has made great strides, with most of the pages now filled, and the site to go public any day. Web pages with up-to-date information are:

- About the GSAV—a copy of the info given on the GSA website.
- Committee—complete except for missing entries for most past chairpersons.
- Regulations—linked to GSA.
- Membership—under construction, but could be linked with GSA website plus giving name and contact details of Membership Committee Member.
- Careers—page fully operative.
- Publications—under construction. Page should contain images of covers of all our publications with brief description of contents, and link to GSA publication price lists where ordering details are shown
- Heritage—currently shows a link with the Melbourne University heritage page run by Bernie Joyce. A 10-page long text is nearly finished.
- Awards—page fully operative.
- Selwyn—page partly filled, with no information yet on Symposia.
- Outside world—needs links with other organisation.
- GSA Home—link with GSA website.

Geology of Victoria

Great progress has been made in the volume thanks to the unflagging efforts of Bill Birch. Most of the chapters are now either formatted or in the process of being formatted, and the last text chapters are ready to be edited. Quotes for printing have been obtained, and a Business Plan is being readied. Ingrid Campbell and Kerry Hegarty are about to canvass business and other organisations for funding. Current plans are for a book launch in the second half of 2003.



Geological Society of Australia

ABN 93 652 757 443

Victoria Division Treasurer's Desk

GPO Box 2355V MELBOURNE VIC 3001

04 2735 4828 thomas@unimelb.edu.au

Financial Report to Division

April 3, 2003

Annual Report

I attach a trial Profit and Loss statement, and Balance Sheet, for the year ended 31 December 2002.

At the time of writing this has not yet been audited, but I do not expect significant changes in the audit, and if the audit is complete for the annual meeting then I will table the auditors' report. (The audit is required for the Federal Executive, to be completed by May of each year.)

The significant changes, independent of Committee decisions, involved the changes in valuations of a couple of our investments with changing stock market conditions. We have been holding Telstra shares on our books at cost, but I have brought them to book this year at approximately market value, in itself explaining about \$4000 of our fall in assets.

I have managed the portfolio passively through 2002, essentially in anticipation of the need to sell down some assets to meet the upfront costs of the Geology of Victoria printing. I expect to liquidate the poorer-performing investments to meet these charges as they occur.

Asset Composition

It might be useful to note the fact that some of our capital is earmarked for specific purposes.

Canavan Prize	\$ 9,187
Geology of Victoria	\$ 46,814
Book Stocks	\$ 6,771
General Funds	\$ 200,635
Total Assets	\$ 263,407

It can be seen that we will probably need to devote 50% of our funds to getting the Geology of Victoria into print, but these funds will be replaced as sales of the volume take place.

General Budget for 2003

Because of the need to liquidate capital, I expect our dividend earnings to drop during this year. Our operating grant is also likely to fall with reduced membership.

On the other hand, meeting costs will rise because the venue cost has doubled, and our other consistent activity, newsletter distribution, is unlikely to change in cost significantly. There is no AGC in 2003, so student grants are unlikely to be as significant as before.

I therefore expect the Division to operate at a slight surplus in 2003, before taking into account exceptional activities (the Selwyn Symposium and the Geology of Victoria are examples).

Income:

Dividend Income	\$ 7,500
Operating Grant	\$ 4,000
Book Sales	\$ 1,000
Total \$	\$ 12,500

Expenditure:

Audit Fee	\$ 2,000
Sundry Expenses	\$ 1,000
Meeting Costs	\$ 2,000
Newsletter Costs	\$ 5,000
Prizes	\$ 750
Total	\$ 10,750

It is therefore reasonable to consider further, modest expenditure, for example on promotional activities. The Division should also consider reprinting or otherwise renewing the Introducing Victorian Geology book, as this continues to be a steady seller but we have probably only two years' supply left in stock.

Lindsay Thomas
Division Treasurer.

**Geological Society of Australia
Victoria Division
Trial
Profit and Loss statement for the Year Ended 31 December 2002**

		This Year	Last Year
Income			
Trust Distribution	*	\$ 7,928	\$ 9,156
Dividends Received	*	\$ 1,222	\$ 1,521
Interest Received	*	\$ 5,698	\$ 5,732
Operating Grant (was "Capitation Fees")		\$ 4,271	\$ 3,829
Conference – Selwyn Symposium		-	-
Refreshments and Catering		-	-
Donations		\$ 5,000	\$ 20
Profit on Disposal of Investments		-	\$ 5,100
Gross Profit on Trading		\$ 1,554	\$ (1,208)
		<hr/>	<hr/>
Income		\$25,673	\$ 24,150
 Expenditure			
Audit Fees		\$ 2,000	\$ 1,870
Advertising		\$ 77	-
Bank Charges and Government Fees		\$ 149	\$ 104
Catering & Expense – Selwyn Symposium		\$ 365	\$ 517
Database Costs		-	\$ 800
Selwyn Medals		-	\$ 500
Catering & Expenses – Meetings		\$ 706	\$ 1,078
Newsletter Printing		\$ 2,765	\$ 2,490
Newsletter Distribution Costs.		\$ 1,984	\$ 2,781
Geology of Victoria III Publication Costs		\$ 6,638	\$ 4,528
Postage, Printing and Stationery		\$ 604	\$ 160
Student Prizes and Grants		\$ 1,716	\$ 2,531
Sponsorship		\$ 15,000	-
Web Site Charge		\$ 150	-
		<hr/>	<hr/>
Expenditure		\$32,154	\$ 17,359
		<hr/>	<hr/>
Net Surplus		\$ (6,481)	\$ 6,791

* Only those distributions, dividends and interest received in cash are included in 2001.

This statement has not yet been audited.

Geological Society of Australia Victoria Division

Trial Balance Sheet as at 31 December 2002

	This Year	Last Year
Current Assets		
Deposits - JB Were 119032	\$ 34,644	\$ 52,157
Deposits - JB Were 163501 (Geology of Victoria)	\$ 36,814	\$ 34,992
Cash at Bank – NAB *	\$ 9,967	\$ 1,260
Sundry Debtors °	-	\$ 3,003
Trade Debtors °	-	\$ 2,362
Investments **	\$ 175,211	\$ 172,813
Stock on Hand	\$ 6,771	\$ 10,059
Total Assets	\$ 263,407	\$ 276,646

Current Liabilities

Sundry Creditors °	-	-
Total Liabilities	-	-
Net Assets	\$ 263,407	\$ 276,646

No invoices were held, or orders outstanding, at the end of the year.

* includes \$5000 earmarked for Geology of Victoria

** includes \$5000 earmarked for Geology of Victoria, \$9187 earmarked for Canavan Prize.

NB "Last Year" Investment total is apparently in error in audited balance sheet.

Net Assets Brought Forward	\$ 276,646
Surplus	\$ (6,481)
Revaluation of investments	\$ (6,758)
Net Assets at End of Year.	\$ 263,407

This balance sheet is not audited

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NOTE: There will be an AGM of The Geological Society of Australia at Mawson Lecture Theatre, University of Adelaide at 6.30 pm 15th May to present the 2002 Annual Financial accounts.



May 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 29 May 2003

Patricia Vickers-Rich
Monash University

Wildlife of Gondwana

Monash Science Centre, Monash University
(Ring Road North, Clayton Campus – see enclosed map)

Drinks and nibbles at 6.15 pm in JB's restaurant, front entrance of the Monash Science Centre
(\$2 per person)

General Meeting at 7 pm – Monash Science Centre, Clayton

.....
WILDLIFE OF GONDWANA EXHIBITION

A visit to the **Wildlife of Gondwana exhibition** at the Monash Science Centre will be a highlight of the Victoria Division in 2003. It is one of the most impressive displays of dinosaurs and other Phanerozoic vertebrates of the world, with a great variety of reconstructions and casts. The exhibition charts the history of life on the Australian continent from 3.5 billion years ago to the present day. **It will appeal to a broad audience, so members are urged to bring non-members, including children.** The display owes much to the enthusiasm and dedication of Patricia Vickers-Rich, who will introduce the tour, with explanations of the main sections.

The Prep Lab is a great opportunity for our preparators to talk directly to the public, show them how material is prepared for study and discuss many different aspects of science—in particular the earth sciences.

Visitors may also view any of several documentaries that are screened on the night. These include:

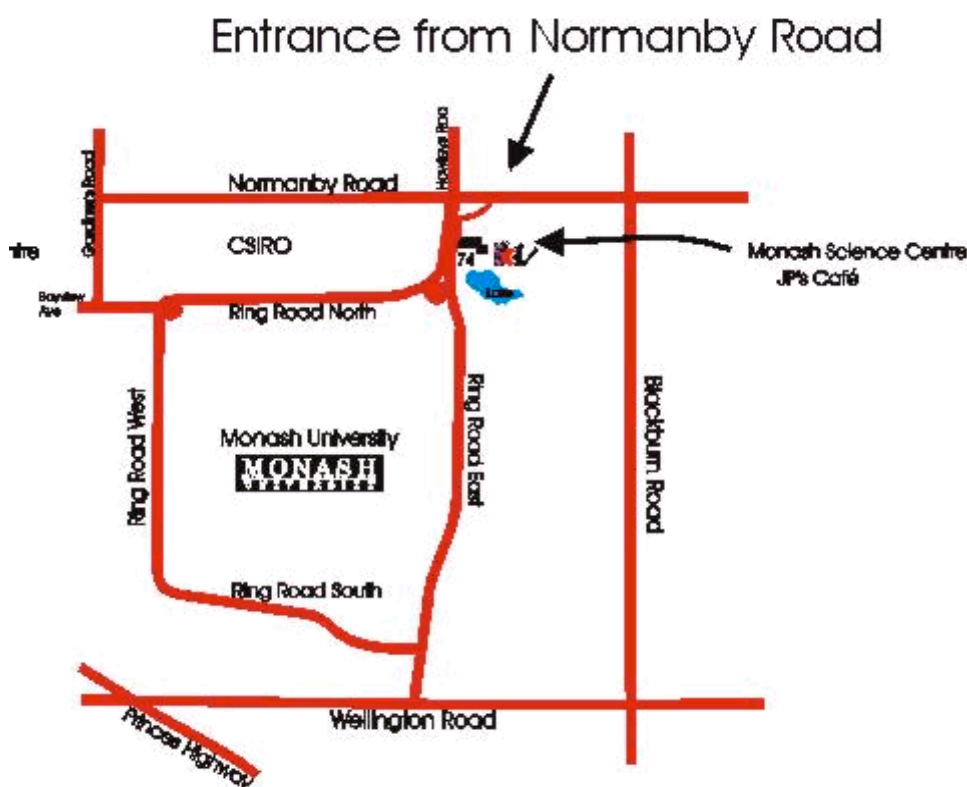
BBC Walking With Dinosaurs. Creatures of the Ice Forest—full episode on the polar dinosaurs from Inverloch and Dinosaur Cove in Victoria.

When Dinosaurs Ruled the Earth. PaleoWorld doco on dinosaurs from the polar regions of Earth—Alaska, Antarctica, New Zealand, Australia.

Plus two other documentaries, one on plate tectonics (National Geographic) and another on the Origin of the Universe (Channel 4, UK). The National Geographic channel will also be running full-time in the Centre.

The **Monash Science Centre** has been in operation since 1992, providing a wide range of programs. Schools are an important target (curriculum development, school presentations, specially tailored programs, mostly primary but upwards of 30% secondary, and publishing). Others include travelling exhibitions (Australia and overseas), family science and field trips. Publishing is another program, for schools, and ecotourism resorts such as Lizard Island and Dunk Island, with commercial groups such as Princeton, Indiana University Press, Allen & Unwin and with publishers in Japan, Russia and Argentina amongst others.

The emphasis of the Centre is to introduce students and the general public to science, by facilitating direct contact with research scientists in many different ways and in research scientists being involved in curriculum development at the State and Federal level. This makes the Centre rather different from many other institutions around Australia, and for that matter around the world, in that practicing scientists and their students are directly involved in almost all the programs it offers.



See Melway 475

The Centre encourages research scientists to become involved in the communities in which they work, for example in the central Urals of Russia and the western part of Chubut Province in Argentina. Researchers working in these areas have provided significant help to the local schools and museums by providing money, books and their interaction with the students. Currently our refugee camp program is placing basic colouring books on scientific, geographic and language

topics into camps (beginning with Afghanistan and Pakistan) where little if any literature or teaching material exists. The Centre is working with a number of NGOs and current refugees living in Australia. Programs vary from year to year but the aim is always the same—to encourage a scientifically literate public, giving them the resources to begin to make their own considered decisions about resources, medical treatment and matters scientific that are necessary to ensure a decent future for the world.

MAGMAS TO MINERALISATION

A one-day Workshop and a two-day Symposium will be held from 22-24th July at Macquarie University in Sydney to address recent research into granites and their associated ore deposits. The Workshop will provide a forum for people wishing to become more familiar with modern ideas on granite petrogenesis developed by Bruce Chappell and Allan White and the work on mineralisation by Phil Blevin. Their presentations will be supplemented by a number of other, sometimes dissenting, speakers.

The Symposium—the Ishihara Symposium in honour of Professor Shunso Ishihara of Japan—will address the themes "Australian Granites through Time" and "Granites and Metallogeneses" and will look at granites and related ore deposits from the Archaean to the Tertiary.

A copy of the program can be viewed at

<http://www.earthsci.unimelb.edu.au/Thomas/Export/GraniteProgram.pdf>

Contacts for further details:

Mel Jones (deremetallica@bigpond.com)

Phil Blevin (petrochem@tpg.com.au)

Bruce Chappell (bruce.chappell@mq.edu.au)

GSAV on the web – <http://vic.gsa.org.au/>

After a great deal of behind the scenes work by committee members, the Victoria Division's new website is on-line. As you will see immediately when you log on, it has a completely different look and much information, although bear with us – some pages are still under construction. Let's clap our virtual hands for Jodie Miller, who has done the lion's share of the work, for maintaining her enthusiasm for the task. Check out the web address, browse around, and let us know how to improve it, what information you would like to see (or not see!). **Send items** or your suggestions to Fons.Vandenberg@nre.vic.gov.au or direct to Jodie at jamiller@geology.uct.ac.za

Federal GSA website

The 2002 Annual Financial Statements of the Geological Society of Australia are now available on the federal website – www.gsa.org.au Another new addition to the site is a shopping cart which gives members and visitors the opportunity of purchasing books online. Direct link is www.shop.gsa.org.au or should be accessed through the Publication section. Any comments on the above are welcomed by the Business Manager Misha Frankel misha@gsa.org.au

June meeting announcement

The speaker at our June meeting will be Chris Reed of the University of Melbourne, and his topic is "The timing and origin of lead-zinc mineralisation in Ireland." Put it in your diary for June 26.

GSA (VICTORIA DIVISION)

Please address all correspondence to the GSA, Victoria Division
GPO Box 2355V, MELBOURNE, VIC 3001

COMMITTEE 2002

OFFICE BEARERS

	phone
Chair: Fons VandenBerg	9412 5122
Vice Chair: Vacant	
Secretary: Peter Pritchard	9439 9582
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Paul Messenger	9523 5889
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Misha Frankel, Business Manager, GSA, 706 Wynyard House, 301 George St., Sydney NSW 2000

Email: misha@gsa.org.au Tel: (02) 9290 2194 Fax: (02) 9290 219

Victoria Division Membership

If anyone has inadvertently forgotten to pay your subscription, please do so as soon as possible. **The Division's newsletter will not be sent to unfinancial members after June 2003.** We all need to keep an eye out for any potential new members to remain a viable organisation.

Print Post No. PP381827/0025
Registered Publication No. VBH 2135

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Melbourne, VIC 3001

PRINT POST APPROVED



June 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 26 June 2003

Chris Reed
University of Melbourne

The timing and origin of lead-zinc mineralisation in Ireland.

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)
Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)
General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

.....
The timing and origin of lead-zinc mineralisation in Ireland.

The Lower Carboniferous carbonate rocks of central and southern Ireland are host to a large number of base-metal deposits. The sulphide mineralisation is concentrated on the hanging walls of normal faults, at the base of the lowest non-argillaceous carbonate (the Waulsortian Limestone). While much of the mineralisation resembles Mississippi Valley-type mineralisation, many of the deposits are classified as Irish-type deposits. This is a problematic classification that requires an additional component of synsedimentary or near-surface mineralisation. This talk evaluates the validity of the Irish-type model by investigating the nature and timing of mineralisation at four localities within the Irish ore-field. Significantly, there is no evidence to support the near-surface component to the mineralisation and instead it is suggested that the Irish mineralisation is entirely epigenetic. The thermal maturation of the Irish ore-field and its implications for ore-stage temperatures is also discussed.

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A one-day Workshop and a two-day Symposium will be held from 22-24th July at Macquarie University in Sydney to address recent research into granites and their associated ore deposits. The Workshop will provide a forum for people wishing to become more familiar with modern ideas on granite petrogenesis developed by Bruce Chappell and Allan White and the work on mineralisation by Phil Blevin. Their presentations will be supplemented by a number of other, sometimes dissenting, speakers.

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Bruce Chappell (bruce.chappell@mq.edu.au)

Paul Messenger

Paul has been a member of our divisional committee for some years, and has been Vice-Chair for the past three years until the April AGM. He instituted and ran our email newsletter service until early this year. Now he has decided to return to Queensland with his family to be closer to his area of field work. He has retired from the committee. Thanks Paul for your efforts.

Membership matters

This year we have seen a fall in the number of members of the Division. The committee is considering how to replace these members and also whether to widen activities of the society to reach related groups such as geography teachers, field naturalists and Landcare groups. If you have some thoughts on these matters, and especially if you would like to help in starting a new initiative, please discuss it with Leisa Brough, of our Membership Subcommittee or with our Chairman.

We have had a steadily increasing number of members asking to be transferred to the email version of the newsletter and we hope the trend continues.

To make the switch, email Lindsay Thomas :

thomas@unimelb.edu.au

GSAV on the web – <http://vic.gsa.org.au/>

The Victoria Division's new website is on-line. Jodie Miller has done much of the work from her post in Capetown. Check out the web address, browse around, and let us know how to improve it, what information you would like to see (or not see!). Send items or your suggestions to

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What do red circles on your address mean?

If the address panel on this newsletter has a red circle attached to it, it means that you are now an unfinancial member and this is the last copy of the newsletter that will be posted to you. However, if this is because you have forgotten to pay your membership dues, get in touch with Head Office of the Society (see panel on page 4) and arrange to be reinstated.

Selwyn Medallist for 2003

The Awards Committee has chosen Clive Willman of the Victorian Geological Survey as the Selwyn Medallist for 2003. Clive has done meticulous and detailed work mapping the southern part of the Bendigo goldfield and has been a prime mover behind the development of new ideas on the tectonic evolution of eastern Victoria after participating in several map sheet projects for the Survey.

Please discuss with your colleagues who might be considered for next year's Selwyn Medal, and submit a proposal.

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Email: misha@gsa.org.au Tel: (02) 9290 2194 Fax: (02) 9290 2198

Victoria Division Membership

We have recently admitted two new members. Ms Michelle Grosser became a member in April, and Ms Virginia Gail Toy was approved for Student Membership in May. We welcome them both to our Society.

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July 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 31 July 2003

Professor Grant Garven
Johns Hopkins University

Hydrogeological Modelling of Fluid Flow in Sedimentary Basins.

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)
Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)
General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

.....
Hydrogeological Modelling of Fluid Flow in Sedimentary Basins.

Grant Garven is professor of Groundwater Geology & Hydrology at Johns Hopkins University, Baltimore in the USA. His research spans the fields of traditional geology and theoretical groundwater hydrology and includes the study of deep groundwater flow in sedimentary basins and the role of fluids in geologic and geophysical processes. He is particularly interested in quantifying the role of fluid flow in hydrothermal ore formation, sedimentary diagenesis, coal metamorphism, oil migration, thrust faulting and basin deformation. With Professor Allan Freeze he developed the first hydrologic models for carbonate-hosted lead-zinc ore formation for which he is perhaps best known in Australia. The talk will provide a general overview of hydrogeological modelling of fluid flow in sedimentary basins with examples from Australia, California and Hawaii.

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Phil Blevin (petrochem@tpg.com.au)

Bruce Chappell (bruce.chappell@mq.edu.au)

Membership matters

During June Anna Petts transferred from Student Member to Full Member.

New Student members are:

Fiona Elmer

Katie Bishop

Anthony Reed

Marco Beltrando

Virginia Troy

We have had a steadily increasing number of members asking to be transferred to the email version of the newsletter and we hope the trend continues.

To make the switch, email Lindsay Thomas : thomas@unimelb.edu.au

Selwyn Symposium

Planning is continuing for this year's Selwyn Symposium on dating techniques and it is hoped to have this one day symposium on November 6.

There will be further announcements as plans are firmed up.

This will also be the venue for presenting this year's Selwyn Medal to **Clive Willman**.

Please discuss with your colleagues who might be considered for next year's Selwyn Medal, and submit a proposal to the Awards Committee.

Robert Joseph McLaughlin

Colleagues and friends, and his many past students, will be saddened to hear that Bob McLaughlin suffered a massive stroke and died on Thursday 19th June 2003. A notice appeared in The Age on Monday 23rd June from the family, saying he had been cremated in a private ceremony.

Bob came from New Zealand where he completed a M. Sc. Degree and then went on to do a Ph. D. in the Department of Mineralogy and Petrology at the University of Cambridge, England, where he then served as staff member for five years.

He came to Melbourne in 1959 as Senior Lecturer in Geology and was promoted to Reader in 1967. He established the new Geochemistry course under Professor E. S. Hills, in what is now Old Geology, and later in the adjacent new wing shared with Chemistry. Over many years he served as acting head of department, coordinator of the Honours course, and in many other positions. He will be particularly remembered by his many past research students. He retired in 1987.

In February 2002 Bob McLaughlin was interviewed as part of a project on the history of the department of geology. The interview transcript will be the basis for a web page to be posted on the school web site.

A message of condolence has been sent from his old department to Bob's wife Kath and family. The family address is 41 Lucerne Crescent Alphington 3078 (telephone 03 9497 3296).

Thomas Medal and Canavan Prize

The Awards Subcommittee has chosen **Darin Evans** of La Trobe University Department of Earth Sciences for this year's Thomas Medal. The medal commemorates the former head of the Geological Survey of Victoria and is awarded to the student judged to have produced the best Honours thesis geological map in the preceding year.

This year's Canavan Prize has been awarded to **Darren John Osborne** of the University of Ballarat, who has been selected as the most deserving second year geology student in 2002. This prize is offered in memory of Frank Canavan, a former distinguished economic geologist and enthusiastic worker in the field of geological education.

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August 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 28 August 2003

Colm A Murphy PhD
Bell Geospace Limited, Aberdeen Scotland

Marine and Airborne 3D Full Tensor Gradiometry

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)
Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)
General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

.....
Marine and Airborne 3D Full Tensor Gradiometry
A gravity gradient measuring technology that enhances prospectivity.

3D Full Tensor Gradiometry (FTG), or high precision, high-resolution gravity gradiometry is a multiple accelerometer system that records five independent Tensor components of the gravity field.

Deployed on sea-going vessels and light aircraft, 3D FTG offers geoscientists and key decision-makers a fast and efficient means of evaluating prospectivity on both the regional and localised scale. The technology has a wide and varied application ranging from enhancing seismic imagery of salt, basalt, sills, and shallow hazards to well location and regional geological mapping. Airborne applications include regional geological mapping, and detection / delineation of shallow ore bodies, kimberlites, sand & gravel pits and groundwater and aquifers.

This talk will describe gravity gradiometry and how we measure it and presents examples from where it has been successfully deployed.

(This is a combined GSA–ASEG presentation)

Membership matters

Membership approval in July 2003:

Mr Christopher Reed – Transfer from student to full member.

Dr Ulrich Knittel – Transfer from member to associate member.

One way to encourage young persons to join the Society is for us to set up a mentoring system of GSA members to assist students and new members to break into the workforce. This will encourage mentors and mentored to meet regularly at monthly meetings. It will also encourage student members to transfer to full membership when they finish their studies.

Members able and wishing to act as mentors should respond to Leisa Brough (ln.brough@bigpond.com), Chisholm Institute, 2 New Holland Drive, Cranbourne, 3977, or to the Secretary.

We have had a steadily increasing number of members asking to be transferred to the email version of the newsletter and we hope the trend continues. To make the switch, email Lindsay Thomas : thomas@unimelb.edu.au

Missing persons:

BARTRAM JOHN
JONES BENJAMIN
MORETON DAVID
PAULL BRIAN

TAHAN GEORGE
TIDDY BRYDEN
WEBB FRANCINE

Would anyone who knows where these folks are please contact Lindsay Thomas.

Geology of Victoria

Geology of Victoria off to the printers!

At last, after 5 years work, Chapters 1 to 27 (710 pages to be precise) will go to the printers early in the week of August 12. This has followed a last stage of proof reading which turned up many corrections missed by both the chapter coordinators and, dare I say it, the editor. My thanks go to Fons VandenBerg for organising a team of proofers at the GSV and Petroleum Division, including Clive Willman, Vince Morand, Kylie Wohlt, Bruce Simons, Dave Taylor, David Moore, Andrew Radojkovic, Simon Maher, Petrina Buckley, David Wong, Tom Bernecker, Linda Bibby, Peter O'Shea, Adele Seymon and Fons VandenBerg. At the Museum, Tom Darragh, Rolf Schmidt, Dermot Henry and Stuart Mills also undertook this job. This was all done over a period of about two weeks.

Work is proceeding on the front section of the book (table of contents, sponsors' page, etc.) and the much larger sections at the back, where there are several appendices (authors' details, acknowledgements, data tables too large to fit into the contents section), the references (over 3000) and the index. Combined, the front and back sections will add another 130 pages to the book, but can be put into the printing schedule later. There will be a 2 month turnaround for the entire printing and binding process, so the book should be available by mid-October.

The new volume will be Special Publication No. 23 in the GSA series. The price has been set at \$148.50 (including GST and postage) for GSA members in Australia; \$165 for nonmembers. An order form will appear in the next issue of The Australian Geologist, and more details for Victorian members in the next Divisional newsletter. We hope to have information on the launch as well by then.

Bill Birch

Selwyn Symposium

Planning is continuing for this year's **Selwyn Symposium** on dating techniques and it is planned to have this one-day symposium on **November 6**.

There will be further announcements as program is firmed up.

This will also be the venue for presenting this year's Selwyn Medal to Clive Willman.

Please discuss with your colleagues who might be considered for next year's Selwyn Medal, and submit a proposal to the Awards Committee.

The GSA Specialist Group in Economic Geology and the Monash Ore Deposits Research and Exploration Group present

The 3rd SGEG-MORE Mini-Symposium at Monash University

21 October 2003 1.30pm – 5.30pm

Lecture S14 (opposite Building 28, Geosciences)

Preliminary Program

- 1.30pm: Laurent Ailleres (ACRC, Monash University) – 3D geometry and property modelling applied to mine planning and exploration – the Cannington example
- 2pm: Barry Murphy (University of Melbourne) – Geological 3D modelling of Tasmania
- 2.30pm: Anthony Christensen (Geological Survey of Victoria) TBA
- 3.20pm: Chris Ryan (CSIRO Exploration & Mining) – Synchrotron X-ray microanalysis: The latest addition to the complementary toolkit for geoscience research
- 3.50pm: Reid Keays (Monash University) – Application of the Re-Os isotope system to ore deposits: Successes and Failures
- 4.20pm: Stafford McKnight (University of Ballarat) – TEM: A fresh approach to its application on ultra-fine grained ore minerals and organic matter in the HYC and Century deposits
- 4.50pm: Wine & cheese (provided by GeoViSIO); poster displays

For further information, please contact Frank Bierlein or Kirsten Wohlt,

Email: <mailto:bierlein@mail.eearth.monash.edu.au>

<mailto:kwohlt@mail.eearth.monash.edu.au>

School of Geosciences, Monash University PO Box 28E, Melbourne Victoria 3800

tel: (03) 9905 1643; fax: (03) 9905 4903

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Job Searching?

Two possibilities are (a) research and teaching at Royal Holloway University of London in geochemistry or sedimentology or (b) Senior Lecturer at the University of Papua new Guinea (mineral deposits geology). See GSA Website: www.gsa.org.au

Canavan Prize

This year's Canavan Prize will be presented to **Darren John Osborne** of the University of Ballarat at the August meeting. He has been selected as the most deserving second year geology student in 2002. This prize is offered in memory of Frank Canavan, a former distinguished economic geologist and enthusiastic worker in the field of geological education.

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September 2003

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

GENERAL MEETING

Thursday, 28 September 2003

Warren Peck

Principal Geotechnical Engineer, AMC Consultants Pty Ltd

Melbourne's Deep Leads and the Burnley Tunnel

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)

Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)

General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

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MELBOURNE'S DEEP LEADS AND THE BURNLEY TUNNEL

The existence of a deep lead between Studley Park and Princes Bridge was recognised in the early-1860's. Following the sinking of a bore that yielded a few colours of gold, the Collingwood Mining Company sank a 34m shaft through 19m of basalt, finding black sand and a little gold resting on the Silurian bedrock. The 1959 Geological Map of Melbourne included a reconstruction of the buried drainage pattern, showing Melbourne's CBD to be almost surrounded by these buried water-courses (deep leads). Civil engineering site investigation and construction over the past 40 years have confirmed the predictions of the 1959 map at a number of sites and has permitted predictions to be made as to the course of the Ancestral Maribyrnong River downstream of Maidstone, that are contained in the Geological Hazards chapter of "Geology of Victoria" which is to be released later this year.

Three Melbourne engineering projects, including the Burnley Tunnel, have encountered difficult construction conditions in the vicinity of these deep leads. Other buried water-courses were hazardous for deep lead gold mining in Victoria in the period 1855-1940. The geology, geomechanics and hydrogeology of typical deep lead gold mines are compared and contrasted with those of Melbourne's buried water-courses. The problems for tunnel construction are discussed including potential environmental impacts, such as surface settlement due to construction dewatering. It is concluded that exposure of tunnels to Melbourne's buried water-courses and subjacent strata, should preferably be minimised.

Decline in membership

The membership of the GSA has been in decline for some years now, and the federal and state committees are seeking ways to reverse this decline. Problems recognised by the society that cause the decline include

- we are an aging society
- we have difficulty in attracting younger members, particularly students.
- we do not encourage students to transfer to full membership when they graduate.
- lack of membership renewal.

One way to encourage young persons to join the Society is for us to set up a mentoring system of GSA members to assist students and new members to break into the workforce. This will encourage mentors and mentored to meet regularly at monthly meetings. It will also encourage student members to transfer to full membership when they finish their studies.

Members able and wishing to act as mentors should respond to Leisa Brough (ln.brough@bigpond.com), Chisholm Institute, 2 New Holland Drive, Cranbourne, 3977, or to the Secretary.

Major Upcoming Events

Public Lecture

Eminent geologists Prof **Jim Bowler** and Prof **Mike Sandiford** will address the topic:

“MAKING AUSTRALIA: LANDSCAPE, CLIMATE AND TECTONICS”

in a public lecture series, beginning its 5-city tour here in Melbourne. Friends of all ages interested in the Australian environment will enjoy this evening.

The Victorian presentation by Jim and Mike is scheduled as follows:

COPELAND THEATRE

ECONOMIC & COMMERCE BUILDING — MELBOURNE UNIVERSITY

Tuesday, October 7, at 7 PM

TICKETS:

Adults \$10.00 — Students/Concession/Children \$5.00 — Family \$20.00

TO BOOK TICKETS e-mail: Jennie Hollamby (J.hollamby@latrobe.edu.au) (Phone 9479-1368).

Next pages: Selwyn Symposium — 17th AGC — MiniMORE — La Trobe Seminars

Victoria Division's Selwyn Symposium—6 November 2003

What's in a date—views from both sides of the fence

Many users view a date as just that: the age of a rock. But is this true? When does an age measurement have geological significance? Are the errors in analytical units or geological time? This, and other issues concerning the measurement of age determination will be discussed as part of this year's Selwyn Symposium—the premier event on the Victorian GSA calendar. A range of exciting dating techniques will be outlined, with strong focus on better understanding the basis and applications of each technique, and highlighting their complexities and uncertainties through some case histories. Particular attention will be given to current issues facing the user in applying these techniques to practical problems in research and industry. Emerging technologies for geochronologists will also be discussed. Industry participation is strongly encouraged. If you are concerned about how good your dates are and what complexities might await you in interpreting the data, you should not miss what promises to be a lively symposium.

Techniques to be investigated will be

- U–Pb (Ian Williams—ANU, Peter Kinny—Curtin University); Argon (David Phillips—University of Melbourne; Paulo Vasconcelos—University of Queensland);
- Low-temperature geochronology including fission track and (U–Th)/He thermochronometry (Andrew Gleadow—University of Melbourne; Paul Green—Geotrack International; Peter Crowhurst—CSIRO, Sydney; David Belton and Barry Kohn—both of University of Melb).

The user's perspective will be presented by David Huston (Geoscience Australia) who will talk about the use of geochronology to solve problems and constrain models in ore systems. Jon Dugdale (Exploration Manager, eastern Australia, MPI Mines Ltd) will explore the role of geochronology in predictive mineral discovery. Andy Wilde (project leader, pmd*CRC) will talk on geochronology at Mount Isa.

The way forward will include an examination of emerging technologies for geochronologists including microtexture, monazite and microprobe dating by Ron Berry and David Steele (University of Tasmania) and the use of ICP-MS techniques by Jon Woodhead (University of Melbourne).

After an open-panel discussion, there will be a chance to **follow up issues, over drinks**. The symposium will take a full day (9 AM to 6 PM, registration opens at 8.30 AM), and will be held in the **Fritz Loewe Theatre, Earth Sciences building, Melbourne University** (corner Swanston and Elgin Sts, Carlton).

Registration form—Selwyn Symposium, Thursday 6th November 2003

Registration costs are \$50 (\$35 for students), increasing to \$60 (\$45) after 10 October 2003. Payment must be by personal or bank cheque (made payable to GSA Victoria Division, GPO Box 2355V Melbourne VIC 3001).

Contact Fons VandenBerg (Fons.VandenBerg@dpi.vic.gov.au); or phone (03) 9412 5122, for enquiries.

Name: _____ Title: _____

Address: _____

E-Mail: _____

Supervisor's name and university _____

The symposium will coincide with Melbourne Cup week and registrants requiring travel and accommodation are advised to book early to avoid disappointment.
THE VICTORIAN GEOLOGIST - 4 - **September 2003**

The 17th Australian Geological Convention – Hobart, 8th to 13th February 2004.

The GSA Specialist Group in Economic Geology and the Monash Ore Deposits Research and Exploration Group present the 3rd Mini-Symposium at Monash University, 21 October 2003, 1.30-5.30 pm, Lecture room S14 (opposite Building 28, Geosciences).

For further information contact Frank Bierlein or Kirsten Wohlt, tel: (03) 9905 1643
Email: Frank Bierlein (bierlein@mail.earth.monash.edu.au)
Kylie Wohlt (mailto:kwohlt@mail.monash.edu.au)

La Trobe Earth Sciences Seminars 1 pm Tuesday, Room 163, Physical Sciences Bldg 4.

Queries contact Jenny Hollamby (J.hollamby@latrobe.edu.au)

Sept 2: Magnetic Petrophysics – putting subtlety into aeromagnetic interpretation

Sept 16: Phosphate fixation in acid sulphate soils of Coode Island Silt

Sept 23: Rock magnetic properties of deep marine gas hydrate-bearing sediments

Oct 7: XRD Analysis

Oct 14: Partial melting in the aureole of the Bushveld Complex, South Africa

Oct 21: Using trace elements to monitor partial melting processes in metabasites

GSA (VICTORIA DIVISION)

Please address all correspondence to the GSA, Victoria Division
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Misha Frankel, Business Manager, GSA, Suite 706, 301 George St., Sydney NSW 2000

Email: Misha Frankel (misha@gsa.org.au) Tel: (02) 9290 2194 Fax: (02) 9290 2198



October 2003

**THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division**

GENERAL MEETING

Thursday, 30 October 2003

Mark Pownceby
Principal Research Scientist, CSIRO Clayton Laboratories

**From the Beach to your Living Room Wall –
The Titanium Dioxide Story**

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)
Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)
General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

.....
The Titanium Dioxide Story

Economic placer deposits of heavy mineral (HM) sands occur along the coastlines of all major continental land masses and in sedimentary basins formed in inland seas. In Australia, major concentrations occur along the eastern and western coastlines as well as the Murray Basin of south-eastern Australia. High specific gravity minerals are concentrated in HM deposits by intense wind and wave action. Beach sand deposits typically contain 5-20% of heavy minerals whilst the dunal and basin deposits are generally lower grade (2-5%) but often have vast reserves.

The principal heavy minerals are ilmenite (FeTiO_3), rutile (TiO_2), zircon (ZrSiO_4) and monazite (CePO_4). Other associated minerals include anatase, chrome-spinel, garnet, staurolite, tourmaline as well as various Ti-bearing alteration minerals such as leucoxene and pseudorutile. An advantage of HM deposits over other mineral deposits is that individual minerals occur as discrete grains in unconsolidated sand. This makes both mining and concentration easy and relatively inexpensive.

Applications of the natural, unprocessed minerals include abrasives, refractories and glazes. However the real value of HM concentrates lies in their derivative products obtained by downstream processing e.g. zircon to zirconia, and monazite as a source of rare earth elements. The emphasis of this presentation will be on the processing of ilmenite to produce titanium dioxide pigment which makes up by far the largest volume usage of HM concentrates. Processes, problems and current research themes will be discussed.

Mark Pownceby is a Principal Research Scientist at the Clayton Laboratories of CSIRO Minerals. He completed his higher education at Monash University and holds a B.Sc. and Ph.D. in Earth Sciences

(Experimental Geochemistry). Mark's research expertise is in the field of solid state chemistry and mineralogy, experimental phase equilibria, iron ore sintering and ilmenite characterisation and processing. Since joining CSIRO Minerals in 1992 he has worked primarily in the Industrial Minerals Program, being responsible for conducting fundamental research to examine the influence of impurity elements and gangue minerals on ilmenite processing, with brief forays into the fundamental phase chemistry involved in iron ore sintering and in the production of anhydrous magnesium chloride. From 1999-present, a major part of Mark's work has involved the application of optical image analysis procedures in the development of an electron microprobe based characterisation system.

LAUNCH OF *GEOLOGY OF VICTORIA*

All members of the Victoria Division should have received an invitation in the mail to the launch of the long-awaited *Geology of Victoria* on Thursday October 23, between 6 and 8 pm. The book will be launched by the Minister for Energy Industries and Resources, Theo Theophanous. If you intend coming, please RSVP by October 17 to either Peter Pritchard or Peter Forwood (see details below). The launch will be a catered function and we need to know the numbers attending.

The function is to be held at Melbourne Museum, immediately to the north of the Royal Exhibition Building in Carlton. Entry is via the main glass doors facing the plaza between the Museum and the REB. To assist entry to the Museum, please bring your invitation.

As noted on the invitation, the book will be available for purchase, by cash or cheque only, at the launch. You will be able to save postage on the price for members advertised in the latest TAG (\$148.50). The nominal price for Victorian members will be \$137.50 (pick-up or collect basis) but the Committee is looking at a discount of up to 10% at the launch only. This will be announced on the night.

Some members might have noticed that the book's cover has not appeared yet in any advertising. Rest assured there is a spectacular cover image, but we want to keep it under wraps until the launch. Each book will be supplied in a cardboard mailer box for protection during postage, so nothing will be revealed until the Minister opens the mailer box at the launch.

We hope the launch of *Geology of Victoria* will be an auspicious and memorable event and look forward to seeing you there.

RSVP details (by October 17) to:

Peter Pritchard
Phone: 03 9817 5692

Fax: 03 9439 2516

E-mail: PW_Pritchard@bigpond.com

or Peter Forwood
Phone: 03 9439 9582

Fax: 9817 3464

E-mail: gforwood@melbpc.org.au

Membership Matters

Dr Allison Dugdale has become a member.

Peter Legge has transferred to Retired Member.

Major Upcoming Events

The 17th Australian Geological Convention – Hobart, 8th to 13th February 2004.

Three postgraduate students from the Division who present either a paper or a poster may be sponsored by the division and their registration fee will be waived. Interested students should contact the Secretary of the Division.

Up to date information on GSA activities and events is available on the GSA website

www.gsa.org.au

Victoria Division's Selwyn Symposium—6 November 2003

What's in a date—views from both sides of the fence

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Name: _____ Title: _____

Address: _____

E-Mail: _____

Supervisor's name and university _____

The symposium will coincide with Melbourne Cup week and registrants requiring travel and accommodation are advised to book early to avoid disappointment.

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For further information contact Frank Bierlein or Kirsten Wohlt, tel: (03) 9905 1643

Email: mailto:bierlein@mail.monash.edu.au

mailto:kwohlt@mail.monash.edu.au

La Trobe Earth Sciences Seminars 1 pm Tuesday, Room 163, Physical Sciences Bldg 4.

Queries contact J.hollamby@latrobe.edu.au

Oct 14: Partial melting in the aureole of the Bushveld Complex, South Africa

Oct 21: Using trace elements to monitor partial melting processes in metabasites

Lost an umbrella?

Bernie Joyce found an umbrella in the lecture theatre after the September meeting. He can be contacted at ebj@unimelb.edu.au or Mobile 0427 330 117

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November 2003

**THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division**

GENERAL MEETING

Thursday, 27 November 2003

Special Mars Night and Barbecue

Nick Hoffman (University of Melbourne & 3D-GEO): Mars? Close Enough to Touch?

And

Marion Anderson (Monash University): HERE ROVER! SIT! STAY! DO SCIENCE!

Earth Sciences, University of Melbourne (Corner of Swanston & Elgin Street)

Drinks and nibbles at 5.30 pm in the Tea Room, 4th Floor (\$2 per person)

General Meeting at 6.15 pm – Fritz Loewe Lecture Theatre

The meeting is to be followed by the year end barbecue organised by the GeoViSIO students who will bring special skills and flair to the event.

.....

MARS - CLOSE ENOUGH TO TOUCH?

Last month Mars reached a historic alignment with Earth, coming closer than ever before in the last 60,000 years. As a consequence, a fleet of spacecraft are bridging the gap to return new data about previously unexplored parts of the Red Planet. We will be landing in new places and taking new measurements, all in the hope of finding evidence of former liquid water activity. But how likely is it that liquid water is or was active on Mars, and how far can we trust our Earth-trained instincts and geological skills on a planet where "water" passes direct from solid to vapour, carbon dioxide-based flows occur in the springtime and "unstable" minerals persist for 3 billion years. Planetary scientist Nick Hoffman of the University of Melbourne and Macquarie's Australian Centre for Astrobiology will take us on a tour of the surface of Mars, looking for signs of water, or evidence that we're failing to understand the planet. When the next batch of rovers land at the end of this year, you'll know what to really look out for!

Nick Hoffman gained degrees at Edinburgh and Cambridge Universities before embarking on a career in the oil industry, which led him to migrate to Australia and spend 8 years with BHP, traveling across Asia in search of Oil, Gas, and good food. For the last 4 years he has worked part-time as a University researcher, exploring the deepwater margins of Australia's continental shelves, and applying skills of image analysis and deepwater processes to the unlikely environment of the planet Mars. He is also a founding partner of the 3D-GEO consulting group which supplies specialist structural geology and seismic analysis skills to the International oil industry.

HERE ROVER! SIT! STAY! DO SCIENCE!

In January 2004 two mobile geologists will be rolling around on the surface of Mars. Launched in June and July 2003, "Opportunity" and "Spirit" represent the most advanced geosamplers ever sent to another planet. Capable of doing more than the average postgraduate student, (and with a significantly lower beer budget,) these two Mars Exploration Rovers (MERs) will be hammering, grinding, and sniffing for clues to the past history of the red planet. In each day of operation they are capable of covering more ground than "Sojourner", their predecessor, covered in its whole lifetime. They also cost a little bit more as well. Consequently it is essential that they land at sites that will provide not only the best exposure to the answers to questions about Mars' past but also are places that will capture the public imagination, and (potentially more importantly) that are safe landing sites! The final MER landing sites (Gusev Crater, and Meridiani Planum) were selected primarily for their geologic interest out of literally hundreds of potential sites by an international group of geoscientists. The site selection process took over two years, and involved tens of thousands of photographs, terabytes of data, and the occasional field trip. This talk will take you behind the scenes in the site selection process, and show you the pros and cons associated with making vital decisions solely based on remote sensing data along with the importance of using terrestrial ground analogues.

Marion Anderson is the Director of First Year Studies at the School of Geosciences at Monash University, and was the only Australian representative on the MER 2003 site selection team. When she's not opening the eyes of first year students to the wonders of the world around them, she's poring over images of Mars, Venus and the Earth, looking for clues to unscramble the geologic past of the three planets. Prior to returning to Geology ten years ago, she spent ten years as a predictive maintenance consultant on heavy mining machinery and jet turbines, working with and training staff at most of Australia's mining companies, and is therefore intimately familiar with the problems of fine red dust in complex machinery.

Geology of Victoria: How to obtain a copy.

Now that Geology of Victoria has been launched, copies are available for purchase either through the Victoria Division or through the Business Office in Sydney. How this is done depends on where you are and how you want to pay. Please select from the following options.

1. Cash sales (cash or cheque only) can only be through the Victoria Division. Books will be available at GSA monthly meetings or you can arrange to collect a book at other times by contacting Bill Birch (9270 5049). Books will be stored at the Geosciences section of Museum Victoria and can be picked up from the Royal Exhibition Building basement by arrangement with Bill. Using this method, the prices are as follows:

Members: \$125

Non-members: \$145

Postage and handling \$10 extra if the book is to be mailed out.

Cash receipts will be issued (note these prices are GST free).

2. Institutional, credit-card and GST-inclusive sales can only be processed by the GSA's Business Office in Sydney. You can order the book using the form printed in The Australian Geologist or if you want to save postage and handling you can collect the book at a monthly meeting or through Bill Birch as shown above. You will then be invoiced from Sydney office. Using this method, the prices are as follows:

Members: \$148.50

Non-members: \$170.50

Postage and handling of \$11 included; tax invoice/receipt will be supplied.

Note that the postage and handling charge in both methods is for Australia only. Overseas postage is extra.

3. We are exploring options of having the book available in several retail outlets. The cost of the book through these outlets is likely to be close to \$200.

Economic Geology Conference at Orange

The Monash Ore Deposits Research Group, in collaboration with the Australian Geological Society's Specialist Group in Economic Geology, is organising a conference in Orange, NSW, on July 6 - 8, 2004. The theme of the meeting, which will comprise one day of (invited) presentations, a conference dinner at a nearby winery, and two days of field trips to Cu-Au deposits and exciting, new discoveries in the region (Lake Cowal, Cadia, Wyoming, Cargo, and possibly Peak Hill), will be 'Tectonics to Minerals Discovery - Deconstructing the Lachlan Orogen'.

The Organising Committee is assembling a well-rounded mix of 14 thirty-minute presentations by representatives from industry, universities and government organisations on the first day of the meeting, with all talks grouped into three sessions, namely Metallogenesis, Tectonics, and Deposit Studies. Confirmed speakers include Bill Collins (University of Newcastle), Ian Chalmers (Alkane Exploration), David Cooke (CODES), Jon Dugdale (MPI Stawell Gold Mines), Martin Hughes (Consultant & University of Ballarat), Russell Korsch (Geoscience Australia), Steve Olsen (Ballarat Goldfields), Stuart Smith (GeoDiscovery), John Walshe (CSIRO), and Clive Willman (Geological Survey of Victoria). We also plan to have a (student) poster session during the lunch break and/or after the last talk during which other attendees will have an opportunity to advertise/present their work. The meeting will be held back-to-back with a Monash University SEG Student Chapter field trip and as such, we are hoping to have a strong post-graduate student presence at the meeting.

The meeting will be accompanied by a proceedings volume with extended abstracts and a field guide, and we are also aiming at publishing a special issue of *Mineralium Deposita* in 2005 (subject to obtaining a sufficient number of high-quality submissions from contributors by the end of June 2004).

A first circular of the conference can be found at

<http://www.earth.monash.edu.au/lib/MORE-Conference-2004.pdf>

Check this site frequently for updates. For further information and to register your interest, please contact

Frank Bierlein or Andy Wilde
School of Geosciences
Monash University VIC 3800
tel: (03) 9905 4879 fax: (03) 9905 4903

bierlein@mail.earth.monash.edu.au
wilde@mail.earth.monash.edu.au

Major Upcoming Events

The 17th **Australian Geological Convention** – Hobart, 8th to 13th February 2004.

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Email: misha@gsa.org.au Tel: (02) 9290 2194 Fax: (02) 9290 2198

Nominations are now being sought for the 2004 presentation of the Selwyn Medal so please discuss with colleagues who you think might be a worthy candidate and put pen to paper in the near future.

Candidates should have made a major contribution to new knowledge of the geology of Victoria, or an important reinterpretation of it based on critical observations, contributed significantly to a major initiative in exploration or engineering geology, produced important geological publications or has been successfully involved in the development of the geological profession.

Nominations should include the name of the candidate, biographical data, a citation in 300 words or so of the work and its significance to the geology of Victoria, and names of at least two geologists who support the nomination.

**Please mail nominations to: Awards Committee, GSA Victoria Division
5 Mossman Drive, EAGLEMONT VIC 3084**

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