THE VICTORIAN GEOLOGIST

October 2013

THE GEOLOGICAL SOCIETY OF AUSTRALIA
Victoria Division

# Next General Meeting

**Thursday 31st October at 6:15 p.m.**

## Making the Melbourne Zone Seamless: integrating structure, stratigraphy and geophysics to produce a new geological map of central Victoria

**Vince Morand**
**Department of Agricultural Sciences**
**La Trobe University**

**Fritz Loewe Theatre, School of Earth Sciences, University of Melbourne**
Talks will be preceded by drinks from 5:30pm in the 4th floor tearoom, cost $2.

The Seamless Geology project run by GeoScience Victoria created seamless geological map data at 1:250,000 scale for the whole state of Victoria. This was done using a combination of field work, aerial photo interpretation, and geophysical data, mainly radiometrics and aeromagnetics. Old maps pre-dating the acquisition of airborne geophysical surveys were updated, with boundaries redrawn to match geophysical data and modern topographic contours. The map data is digital, and is backed up by a database providing details of rock type, age and stratigraphic relationships. Most of this is available on the Geovic website, a map application that provides the Seamless Geology data and much more.

This talk will present several examples of new geological interpretation within the Melbourne Zone in central Victoria. Although the emphasis will be on the Palaeozoic rocks, the Mesozoic and Cainozoic cover was also remapped. One of the main intentions was to rationalise the stratigraphic naming of units, and to bring them into line with modern stratigraphic rules. Some new geological units have been erected, and some older ones have... **Continued on page 2**

## Abstract

been subsumed into other units. Some parts of the Melbourne Zone have been mapped in detail by GeoScience Victoria in recent years, but these areas are not contiguous and each has a different stratigraphic sequence for the folded Palaeozoic rocks. During this project we tried to correlate units across the zone, with varying degrees of success. Problems include the generally poor outcrop, the similarity of many of the rock units (mostly deep marine siltstone or sandstone) and the scarcity of useful fossils. One result is that the Humevale Siltstone is more extensive than previously mapped, as it now incorporates the Kilmore Siltstone. The areas of recent detailed mapping have been incorporated into the 1:250,000 map with only minor changes.

It is critical to understand the structure of these folded and faulted rocks in order to work out the stratigraphy. Conversely, knowledge of the stratigraphy is essential for determining the structure of the rocks. For instance, if the stratigraphic sequence on either side of a fold hinge does not match up, then a fault must be present on one limb. Several faults have been mapped on this basis in the Yea-Kinglake area.

One useful marker unit, the Early Devonian Wilson Creek Shale, a distinctive black shale, is widespread throughout the zone. It is reluctant to outcrop though. Luckily, in the area south of the Strathbogie batholith, it can be seen in the magnetic data because it becomes moderately magnetic in contact aureoles, which are common in the area. This has been a key to mapping the central part of the zone, which has not seen any serious GSV mapping for over 30 years.

This is a work in progress, and although some problems have been solved, we have generated others for geologists of the future to deal with.

## Member Survey

Apologies to members receiving hard copies of TVG. The GSAV member survey was not included with last month's newsletter. Please find it enclosed in this month's. Completed surveys can be returned to **GPO Box 2355, Melbourne, 3001**.

The survey can be still completed online at **http://www.surveymonkey.com/s/M7JYTWR** if you haven't had a chance to do so yet. It should take no more than 10-15 minutes of your time and is 100% anonymous.

## Lost Members

It has recently come to the attention of the GSAV that there are many 2012 members that have still not renewed their GSA membership for 2013. If you know any of the following members, the GSAV would appreciate you providing them with a friendly reminder to renew their membership

Miss Farah Ali
Miss Shana Besanko
Damiano Dell'ertole
Mr. Peter Hoiles
Prof. Homer Grand
Mr. Richard Mazurek
Mr. Ken McLean
Mr. Michael Mong
Miss Kathryn Owen
Mr. Timothy Robson
Mr. Dan Uehara
Mr. David Andrews
Ms. Nicole Cox
Dr. Patricia Durance-Sie
Prof. Reid Keays
Mr. Matej Lipar
Miss Anna McAllister
Miss Melanie Middleton
Dr. Valeria Murgulov
Mrs. Fahmida Perveen
Mr. Bruce Simons
Dr. Helen Williams
Mr. Andrew Bales
Paulo De Silva
Dr. Erich Fitzgerald
Miss Katy Kijek
Miss Helen Lynch
Ms. Natasha McGregor
Miss Stephanie Mills
Mr. Avi Olshina
Marilyn Powell
Mr. John Stewart

## The Andy Gleadow Retirement Symposium

A symposium marking the occasion of Professor Andy Gleadow's retirement, will honour his long and distinguished career with outstanding contributions to thermochronology research, and the broader Australian university and geoscience community.

The symposium will consist of a series of invited talks by several of Andy's collaborators, colleagues and former students, and will be combined with the annual national TANG3O (Thermochronology and Noble Gas Geochemistry and Geochronology Organization) meeting, which brings together many researchers involved in Australia's effort in this area. Topics for presentation will mainly, but not exclusively, revolve around the TANG3O theme (but with some room for reminiscing on other topics relevant to Andy's career).

Final programme details will be circulated in early November.

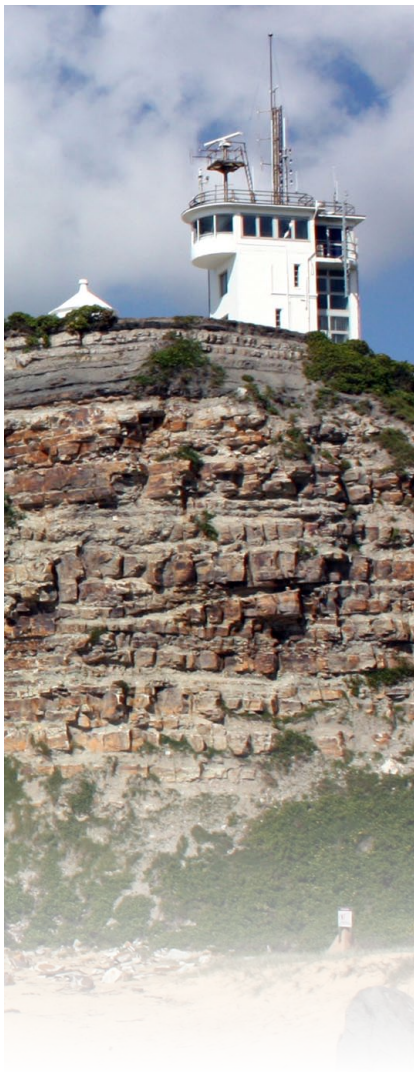
Venue: Fritz Loewe theatre, School of Earth Sciences, University of Melbourne
Date: Monday 25 and half day Tuesday 26, November, 2013
Starting time: 9 am

All welcome – no registration fee

For enquiries contact: Barry Kohn (b.kohn@unimelb.edu.au)

# AESC
## australian earth sciences convention

**Sustainable Australia:**
**7-10 July 2014**

AESC 2014 will be held in Newcastle, a vibrant port city that is characterised by its working harbour, beautiful surf beaches and proximity to many of Australia's most prestigious wineries.

It is the gateway to the Hunter Valley – heart of the Sydney Basin coalfields, centre of power generation for New South Wales, and home of the NSW Institute for Frontier Geoscience, a joint initiative of the University of Newcastle and the NSW Department of Trade and Investment. Combined with the city's focus on energy efficiency via the Federal Government's Smart Grid, Smart City initiative and the CSIRO Energy Centre, Newcastle is an ideal site for our convention – **Sustainable Australia.**

The convention will be based around the themes of energy, basin geology, geodynamics, resources and the environment. Dedicated symposia include the 39th Symposium on the Advances in the Study of the Sydney Basin and Comparisons & Contrasts in Circum-Pacific Orogens.

AESC 2014 offers all geoscientists a unique opportunity for professional development and a chance to hear firsthand the latest developments in geosciences.

## Plan your trip to Newcastle

Call for Abstracts:
**October 2013**

Abstracts Deadline:
**March 2014**

The website is coming soon, in the interim please contact:
**info@gsa.org.au**

**Presentation:** Oral and poster

**Registration:** early 2014

**Workshops and field trips:**
The convention invites proposals for short courses, workshops and field trips.

**Exhibition:**
The convention will host an exhibition. We welcome companies and businesses to participate so they can promote the emerging opportunities in their organisation, state or territory.

**Supporters:**
The organising committee invites companies, institutions and technology providers to support this meeting.

**Expressions of interest:**
info@gsa.org.au

**Convention location:**
Newcastle City Hall

GEOLOGICAL SOCIETY OF AUSTRALIA
Incorporated

Coalfield Geology Council of New South Wales

T + 61 2 9290 2194
F + 61 2 9290 2198

Email: info@gsa.org.au
Convention Website: coming soon

# AESC
## australian earth sciences convention

**Sustainable Australia:**
**7-10 July 2014**

NEWCASTLE, NSW, AUSTRALIA


Earth scientists recognise that the key to sustaining the Australian society, economy and environment into the future lies in an understanding of the make-up, structure and deep-time history of the continent, and its setting in an evolving planet.

## THEMES

**Energy**
Increases in the global demand for energy has been driving advances in the efficiency of coal and conventional hydrocarbon extraction, while also urging the rapid growth of interest in unconventional hydrocarbons. Future energy supplies are likely to include all fossil fuels, nuclear sources, and significant increases in the use of renewable energy and cleaner alternatives. Building on the public debate to be stimulated by the 'Energy 2050' public forum, the Energy theme will encompass Earth Science perspectives on energy sources, exploration and extraction methods, and environmental consequences and solutions.

**Resources**
In an era of increasing demand for mineral resources from the developing Asian economies, and declining rates of discovery of new deposits, new mineral exploration strategies are vital. Discovery will be stimulated by new technologies, new methods of data interpretation and dissemination, refined and novel understandings of mineral systems and ore environments, and the strength of the pre-competitive geological and geophysical data sector, all addressed under the Resources theme.

**Environment**
Earth's environment is a dynamic and responsive system with a long geological record of change and an immediate and future impact on society, particularly in an Australian context. High-resolution records of past climates (including outcome of the International Ocean Drilling Program), assessments of the state and future of our ground- and surface-water resources, predictions of the response of the Australian environment to climate change, and studies specific to the Australian arid and semi-arid zones, will be major elements of the Environment theme.

**Service and Community**
The Earth Sciences have an ongoing role of service by informing, influencing, and supporting Australian society, and a proud history of education and research. The Service and Community theme will address the geoscience response to distributed grid computing and cloud storage, the dissemination of geoscience information in a high-bandwidth environment, the continuing and evolving role of geoscience outreach and education, geohazard studies and their role in protecting the community, the contributions of geotourism and geoheritage, and the historical record and influence of Earth scientists.

**Dynamic Planet**
Today's Earth is the sum of 4.5 billion years of geological processes. The Dynamic planet theme will address: the geodynamic evolution of Australia and other continents from the Hadean to the present; the evolution of the Earth-Moon system and the meteoritic impact record; the expression of the circulation driven by the Earth's heat engine in lithospheric plate tectonics, mantle dynamics and differentiation, and core evolution; the processes that govern deposition and deformation in intracratonic settings; processes of crustal growth and recycling, at convergent margins and in other settings; geophysical and geochemical evidence of the structure and composition of the deep subsurface; and the influence of all of these elements on the formation and distribution of mineral and energy resources.

**Living Earth**
Life has fundamentally influenced the development of the Earth, making it unique with respect to its planetary neighbours. The Living Earth theme will investigate: the evolution of life as witnessed in the fossil record; consider novel methods to supplement traditional palaeontological approaches; investigate the major events in the evolution of life, the hydrosphere and atmosphere; and draw contrasts and comparisons with other planets.

## SYMPOSIA

39th Symposium on the Advances in the Study of the Sydney Basin

Comparisons & Contrasts in Circum-Pacific Orogens

GEOLOGICAL SOCIETY OF AUSTRALIA Incorporated

Coalfield Geology Council of New South Wales

T + 61 2 9290 2194
F + 61 2 9290 2198

Email: info@gsa.org.au
Convention Website: coming soon

**Student Funding Opportunities**

# Geological Society of Australia (Victoria Division) Student Research Scholarships

The GSAV are pleased to offer up to $10,000 per year in scholarships available to honours and postgraduate students for assistance with travel costs associated with conferences and field work.

The scholarship is valued at up to $500 for travel within Australia and $700 for travel outside of Australia. The number of and value of the scholarships awarded each year is made at the discretion of the GSA(Vic) committee.

Funding will not be granted retrospectively and applicants are asked to submit forms no later than 6 weeks prior to their trip to give the committee time to consider the application.

Students that receive this scholarship are required to submit a report for publication in the newsletter, "The Victorian Geologist", following their trip. A presentation may also be requested by the committee, which will consist of a short, 10-15 minute presentation prior to the monthly seminar.

Applications forms can be scanned and emailed to: secretary@vic.gsa.org.au

or mailed to:

Geology Research Scholarships Victoria
Geological Society of Australia (Victoria Division)
GPO Box 2355
Melbourne VIC 3001

More information including eligibility criteria can be found on the form and by contacting Barbara Wagstaff (wagstaff@unimelb.edu.au)

## Something interesting to share? Want to see your name in print?

Don't be bashful, contribute to the GSA(V) monthly newsletter!

If there are any events, happenings, news, or views that would be of interest to the membership, please send your details and information to Matt Bliss at mbliss@student.unimelb.edu.au

**We'd be glad to hear from you**

## FORTHCOMING SEMINARS AND EVENTS

to be presented at

GSA (Victoria Division) meetings

Note: unless otherwise indicated, all 2013 talks will be held in the Fritz Loewe Theatre, Earth Sciences Building, University of Melbourne.

| | |
|---|---|
| November 28th | Liz Rogers<br>*Diving Exploration and Cave Geology on the Nullabor* |

Please welcome our newest members

James Cameron
Peter Colley
Ti Jung Chang
Shannon Herley
Liam Oakwood

Visit the GSAV on www.vic.gsa.org.au or the GSA on www.gsa.org.au
• Renewing your GSA membership is easy - it can now be done online. •

**CONSIDER CONTRIBUTING TO TAG!**

It is member contributions which make TAG a member magazine – please keep the contributions coming and assist with informing all of the membership (not just your Division) about your activities.

Please send your news to: tag@gsa.org.au

## GSA (VICTORIA DIVISION) COMMITTEE

Please address all correspondence to the GSA Victoria Division
GPO Box 2355, Melbourne, VIC, 3001
Internet address: www.vic.gsa.org.au

| OFFICE BEARERS | | |
|---|---|---|
| Chair: | David Cantrill | 9252 2301 (BH) |
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| Secretary: | Adele Seymon | 0403 269 462 |
| Treasurer: | Barbara Wagstaff | 8344 6537 (BH) |

| COMMITTEE | |
|---|---|
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| Susan White | 9328 4154 |
| Matthew Bliss | 8344 9980 (BH) |
| Syed Amir Mahmud | 9902 4206 (BH) |
| Estephany Marillo | 8344 9980 |

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| Newsletter: | Matthew Bliss | 8344 9980 |
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| OTHER CONTACTS | | |
|---|---|---|
| Geology of Victoria: | Bill Birch | 9270 5049 (BH) |

Newsletter deadline:
First Friday of the month except Dec & Jan
mbliss@student.unimelb.edu.au

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

If undelivered return to:
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GPO Box 2355
Melbourne VIC 3001

PRINT POST APPROVED