



# The Queensland Geologist

Bi-monthly Newsletter of the Queensland Division of the Geological Society of Australia Inc.  
Volume 105 No. 2 – April / May 2005

## IMPORTANT DATES:

### Wednesday 20 April – GSAQ Combined Annual General Meeting & AK Denmead Lecture

Speaker: Dr Vic Wall, Taylor Wall & Associates  
Topic: The makings of giant thermal aureole (pluton-related) gold deposits  
Where: The Theodore Club, Level 1, 333 Adelaide Street, Brisbane  
Time: 5:30 for 6pm; finger food and cash bar  
Cost: \$6 Members, \$8 Non-members, \$2 Students, Cash bar

Vic Wall, Principal of Taylor Wall & Associates, is an internationally known geoscience consultant with over 30 years of industry and research experience. Following his career in Australian (Monash University) and North American (Penn. State, ASU, Univ. Michigan) academe, Vic held senior positions in multinational major mining (MIM) and junior exploration companies (Southwestern Gold) further developing his expertise in regional geology, project generation and concept development for precious-, base-, and energy mineral systems worldwide. Professional highlights include developing new geobarometers and models for the TAG and unconformity-related uranium systems, targeting gold deposits in Queensland and China, MIM's acquisition of Alumbreira, the Northwest Queensland Mineral Province project and winning the Goldcorp Challenge.

**Summary:** Many of the world's great gold (and copper-gold) deposits are localised in the roof zone thermal aureoles and tops of granitoid plutons to which the ore-forming systems were temporally related. In this A.K. Denmead lecture we examine the essentials of such gold-fertile environments utilising examples of world class goldfields in Australia and the F.S.U. A TAG targeting model is developed which has broad application, including to parts of Queensland. 'Act like its right' and using the database built by Denmead and generations of Queensland geologists and geophysicists may help realise another world class gold project in Queensland.

### Wednesday 25 May – GSAQ Awards Night - presentation of the Dorothy Hill and Neville Stevens Medals and student medals

Speaker: Dr John Pandolfi (Centre for Marine Studies and Department of Earth Sciences, University of Queensland)  
Topic: The nature and causes of coral reef decline: clues from palaeo data.  
John's research interests include the fields of coral reef evolution and global and anthropogenic influences on reef degradation.  
Where: Irish Club, 175 Elizabeth St, Brisbane  
Time: 5:15 for 6pm; finger food and cash bar  
Cost: \$6 Members, \$8 non-members; \$2 students

### April 12th 2005: James Cook University MarSed Distinguished Lecture

Speaker: Guy Narbonne, Professor of Paleontology at Queen's University, Ontario Canada.  
Topic: The Ediacara Biota and the Origin of Animal Ecosystems  
Time: 4pm, followed by a BBQ.  
Venue: Biology main lecture theatre BSB, James Cook University, Townsville

**28 April PESA-QLD/NT Lunch-time Technical Meeting:**

Topic: River of sand – a new model for deep sea sediment supply based on the continental margin of SE Queensland

Speaker: Ron Boyd (Associate Professor in Geosciences, University of Newcastle, NSW)

Time: 12:00 noon. (Talk begins at 12:30 pm. Lunch after talk.)

Venue: The Chifley At Lennons Hotel (Queen Room), 66 Queen Street Mall, Brisbane

Cost: Talk only: No charge. Lunch: PESA Student members: \$14.00, PESA Members: \$30.00 Non-members: \$40.00 Payment is to be made at the door. No lunch if no prior booking.

To reserve and confirm your lunch (or to cancel a booking), contact one of the following before 5 p.m. on Monday, 25th April 2005:  
 Jayne Steer: Ph: 3858-0616; Email: [jayne.steer@upstream.originenergy.com.au](mailto:jayne.steer@upstream.originenergy.com.au);  
 Chris Gilbert: Ph 3858-0732; Email: [chris.gilbert@upstream.originenergy.com.au](mailto:chris.gilbert@upstream.originenergy.com.au);  
 (If you book for lunch but subsequently decide you can't attend, please either cancel before the above deadline or arrange for somebody else to attend in your place. All bookings will be charged unless cancelled)

**Summary:** The most popular current model to supply deep-sea sands is via river processes acting at low sea level. Along the SE Queensland continental margin east from Fraser Island, we have discovered an alternative model in which longshore transport, tidal and tectonic processes combine to supply mature coastal sands to the deep ocean at sea level highstand. This new model has been developed primarily through the use of high-resolution multibeam and seismic surveying to produce composite geomorphological images and stratigraphic sections of the SE Queensland margin. These techniques have imaged a longshore transport system forming the largest coastal sandy barrier in the world (205 km<sup>3</sup>), and then prograding a 30 km subaqueous spit across the continental shelf to the shelf break. Here strong tidal currents create large migrating submarine dune fields with individual bedforms up to 12 m high. The 3D imagery shows the dunes migrate over the shelf break, create a range of gravity slumps and slides before funnelling beach and nearshore sands into deep water through a network of 35 submarine gullies up to 40 m deep and 300 m wide on the upper continental slope. The sand continues for a further 40 km seaward across the margin through a major gully and canyon system to over 4000 m water depth where it deposits beach sands containing estuarine foraminifera and mangrove roots. Regional 3D visualisation of the Fraser margin reveals the failed-rift seascape of the Capricorn Basin, erosion across a 4 km high escarpment and a second potential mechanism for deep sea sand supply – gravity-driven recycling.

**26-28 April: Coal 2005**

Venue: Brisbane, Queensland  
 Email: [dedwards@ausimm.com.au](mailto:dedwards@ausimm.com.au)  
 Website: [www.ausimm.com.au/events/upcoming.asp](http://www.ausimm.com.au/events/upcoming.asp)

**29 August-2 September: STOMP 2005 - International Conference on Structure, Tectonics and Ore Mineralization Processes**

Venue: Jupiters Townsville Hotel & Casino, Queensland  
 Co-hosts: Specialist Group for Tectonics and Structural Geology of the GSA, Economic Geology Research Unit and the Predictive Mineral Discovery CRC  
 Contact: Stewart Parker Tel: (07) 4781 4726 Email: [Stewart.Parker@jcu.edu.au](mailto:Stewart.Parker@jcu.edu.au)  
 Website: [www.es.jcu.edu.au](http://www.es.jcu.edu.au)

**12-14 October: Bowen Basin Symposium 2005 (The Future for Coal - Fuel for Thought Symposium)**

Venue: Rydges Capricornia International Resort, Yeppoon  
 Contact: Nick Gordon Ph 0428 186 255. Email [cngordon@tpg.com.au](mailto:cngordon@tpg.com.au)



## **Annual report for 2004-2005**

The AGM and awards night for 2004, held on 28 April, was a pleasant social evening attended by about 15 members and 30 non-members, mainly student medallists and their parents and teachers. The Dorothy Hill Medal for contributions to Queensland geology was presented to Professor Bob Henderson and the Neville Stevens Medal went to David Trezise. The brief AGM held before the presentations resulted in the previous committee being elected, except for one new face. As well as not being able to secure more fresh members, we were unable to fill the position of Chair. Our past Chair, A/Prof. Sue Golding stepped down after two years and assumed the position of vice-Chair. The position of Chair remained unfilled for the remainder of the year.

In August, the Queensland Division was pleased to announce the publication of its new Rocks and Landscapes book. The 162-page book, entitled "Rocks and Landscapes of the National Parks of Southern Queensland" was written by Warwick Willmott, the inaugural recipient of the Neville Stevens Medal. As many of you will know, Warwick worked in the Geological Survey of Queensland in a variety of fields, and was an author of several of our earlier Rocks and Landscapes booklets. He has an abiding passion for communicating geology to the public and is in demand for giving talks and guiding excursions. Unlike the previous booklets in our popular Rocks and Landscape series, the book is printed in full colour. The book covers all the national parks and some other reserves from the NSW border to Bundaberg and inland to the Bunya Mountains. There is also a simple up-to-date summary of the geological history of southeast Queensland. Printing of the book was in part made possible by a grant of \$8000 from the Queensland Gambling Community Benefit Fund, and in-kind support (drafting of some maps and figures) by the Department of Natural Resources and Mines.

Ms Desley Boyle MP, Minister for Environment, Local Government, Planning and Women, officiated at the launch of the book in November, which was held in the new foyer of the Queensland Museum. Among the attendees were representatives of the National Parks & Wildlife Service, the National Parks Association, Royal Geographical Society, the Divisional Committee and various contributors to the book. The book is selling well so that the Division is well on the way to recouping its outlay. As a result, the committee is now assessing the feasibility of commencing a follow-up book on the parks of central Queensland later in the year.

In June, a joint meeting with ASEG-AIG-PESA was held at which Philip McInerney (Intrepid Geophysics), Antonio Guillen & Patrick Ledru (BRGM) and Terry Lees (Monash University) presented a talk on "3D-WEG Geological Modelling and Inversion Software Applied to Broken Hill". In early September, our Associate Professor Suzanne Golding belatedly gave her Retiring Chair's Address on the topic of "Meteorite impacts and mass extinction".

The Queensland Museum Theatre was almost filled to capacity on 27 October on the occasion of the Brisbane leg of the 2004 GSA Public Lecture Series. The hard work by the Queensland committee in publicising the Brisbane event thus paid off, although the support by the membership of the Division was disappointing. The title of the lecture was "Are we alone? Early life on Earth, life on Mars and the search for extra-terrestrial life". Those attending were treated first to an informative, thought-provoking and also highly entertaining presentation by Dr Charlie Lineweaver of the Planetary Science Institute, Australian National University. In a one-hour *tour de force*, he began by debunking Hollywood's idea of extra-terrestrial life and then looked at the immensity of

the cosmos, the evolution of stars and planets, the building blocks of life and their relative abundance through the universe and the scientific advances that have helped us discover over 100 extra-solar planets in recent years. He pointed out that Earth-like planets must be abundant and that of these, our Earth is relatively young. Life developed here as soon as it was able, and therefore is probably also abundant elsewhere. One was left to ponder the stage life may have reached on some of the Earth-like planets that formed 2 billion years before the Earth. Charlie was a hard act to follow, but Professor Malcolm Walter, Director of the Australian Centre for Astrobiology at Macquarie University, rose to the occasion in his presentation of the fossil evidence of earliest life on Earth and then some of the results of the recent efforts to find suitable habitats for life on Mars including some of the amazing images from the rover and orbital missions around that planet. The audience responded enthusiastically to the presentations and the questions could have gone on long after the time we had agreed to vacate the theatre.

The Federal Executive should be congratulated in organising an appealing topic and such quality presenters. Most other centres were also well attended so that the series achieved its aim of attracting the general public and thereby helped fulfill one of the strategies of the GSA in encouraging and promoting wider community awareness and application of earth sciences.

Our first lecture for 2005 was also in the form of a public lecture again at the Queensland Museum. Dr Dion Weatherley, QUAKES, Earth Systems Science Computational Centre, University of Queensland spoke on "The Dec. 26, 2004 Sumatra Earthquake and Tsunami" to about 110 people, including teachers, geographers as well as earth scientists and other members of the southern Queensland science community. His topical presentation was well-received by the audience and was followed by about half an hour of questions and discussion.

The Brainwaves Festival, attendance at which has been one of main outreach activities in recent years, was not held in 2004. However, another opportunity presented itself recently when the Head of Science Department at Indooroopilly High School approached the Geological Survey for assistance in running a field trip for Year 9 students to consolidate the classroom lessons on the earth science module in the science curriculum. Unfortunately, like many schools, they had previously skipped over the earth science module or, at best, gave it only cursory treatment. The idea was that the teachers should be able to run the trip themselves in future years from the experience gained, and also pass the information on to other schools in their 'cluster'. The GSA Qld Division took over organising the field trip and Warwick Willmott put together a one-day excursion in the Brisbane-Ipswich area. On March 3, Warwick, along with Ian Withnall and Paul Blake, accompanied about 100 students and their teachers on the trip. The day was deemed a success, and although the interest from the students was mixed, the majority did get reasonably excited at the Triassic plant fossil locality at Dinmore clay pit, and were able to find good specimens to take home and also to boost the school's collection. Hopefully, they also got an impression of the dramatic changes of the landscape of the region over geological time.

We are combining our 2005 AGM with the AK Denmead Lecture that was held over from last November. In previous years, we have experimented in combining the AGM and the awards night, but unfortunately, the numbers of members present were greatly outnumbered by the medals' recipients and their families, and probably barely constituted a quorum. It is hoped that we will have a better attendance by combining the AGM and the AK Denmead lecture.

Ian Withnall (Secretary, GSAQ)

## **Treasurer's Report**

The books are being audited. The report will be tabled at the AGM and posted on our website at <http://qld.gsa.org.au>. A hard copy can also be made on request to the Treasurer.

## **New Membership**

No new membership applications have been approved since the last newsletter

## **Call for Nominations for GSAQ Committee**

Included with the last newsletter, you should have received a nomination form for the GSAQ Committee. Alternatively obtain a copy from our website <http://qld.gsa.org.au>. Election of a new committee will be held at the AGM this month. Please nominate yourself or someone else for a position on the committee or pass it on to someone who you think might like to contribute to the Division. We would particularly welcome younger members and also members from industry.

## **Minutes of 2004 Annual General Meeting, Queensland Division of the Geological Society of Australia Inc**

Four Provinces Room, Irish (Qld) Association, 28 April 2004

Meeting opened at 6.15pm

1. Attendance: Approximately 15 members attended the meeting in addition to about 30 non-members (mainly student medalists and their parents and teachers)
2. Apologies: Dr Greg Webb, Ms Zoe Kyriasis, Dr Sue Turner, Matthew Ng
3. Confirmation of Minutes of Annual General Meeting of 30 April 2003: Duncan Scott moved that the Minutes of the 2003 AGM as printed in the newsletter be accepted. Seconded by Dr Cec Murray and passed by the members present.
4. Presentation and adoption of Annual Reports as printed in the newsletter:
  - a) Division's Annual Report was spoken to by the Chair, A/Prof Sue Golding.
  - b) Treasurer's report was spoken to by Friedrich von Gnielinski.
 Adoption moved by Ian Withnall, Seconded by Laurie Hutton
5. Election of Office-bearers for 2004/2005:  
The following nominations were received
  - a) Chairman- No nomination received
  - b) Vice Chairman - Assoc Professor Sue Golding
  - c) Honorary Secretary and Newsletter Editor - Ian Withnall
  - d) Honorary Treasurer – Friedrich von Gnielinski
  - e) Membership Secretary- Friedrich von Gnielinski
  - f) Web Page editor – Paul Blake
  - g) Committee- Matthew Ng, Duncan Scott, Laurie Hutton, Paul Blake, Zoe Kyriasis, Greg Webb, Colin Laing
  - h) Central Region- Kyle Waye
  - i) Northern Region- Aldo van Heeswijck
  - j) Northwest Region – Simon Crouch

In the absence of a need for any ballot, the nominations were accepted by the meeting.

Meeting closed at 6:30 pm, followed by the presentation of Student Awards and the Dorothy Hill Medal to Prof Bob Henderson and the Neville Stevens Medal to Mr David Trezise

**QUEENSLAND COMMITTEE 2004-2005**

<i>Position</i>	<i>Phone</i>	<i>Fax</i>	<i>E-mail</i>
<b>Chairman</b>	vacant		
<b>Vice-Chairman</b>			
A/Prof. Sue Golding	3365 1159	3365 1277	s.golding@earth.uq.edu.au
<b>Secretary and Newsletter Editor</b>			
Mr Ian Withnall	3362 9363	3362 9343	ian.withnall@nrm.qld.gov.au
<b>Treasurer, Membership Secretary &amp; Video Library</b>			
Mr Friedrich von Gnielinski	3362 9362	3362 9343	friedrich.vongnielinski@nrm.qld.gov.au
<b>Committee Members</b>			
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Mr Laurie Hutton	3362 9347	3362 9343	laurie.hutton@nrm.qld.gov.au
Ms Zoe Kyriazis	3896 9387	3362 9343	zoe.kyriasis@nrm.qld.gov.au
Mr Matthew Ng			MatthewN@qm.qld.gov.au
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<b>Awards Convenor</b>			
Mr Laurie Hutton	3362 9347	3362 9343	laurie.hutton@nrm.qld.gov.au
<b>GSA Publications</b>			
Mr Warwick Willmott	3379 6485		willmott@powerup.com.au

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Size	width x height	1 issue	12 months (5 issues)
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