

HEDG

HUNTER EARTH SCIENCES DISCUSSION GROUP

Next HEDG presentation:
Tuesday 3rd June 2014
Newcastle Museum, 6.30 pm

Volcanoes, salt and copper: a traverse of the Atacama Desert, northern Argentina and Chile

Paul Ashley

(Paul Ashley Petrographic and Geological Services, and
Adjunct Associate Professor, Earth Sciences, University of New England)

About the talk: The Andes mountains forms one of the major tectonically induced landscapes on planet Earth. In the northern part of Argentina and Chile, the Andes includes the Atacama Desert, a region of dramatic and bizarre landscapes that are related to the tectonic evolution. The long period of tectonic development has resulted in a collage of folded marine and terrestrial sedimentary rocks and the products of several magmatic events that extend from the Palaeozoic to the present. The Atacama Desert is also a product of uplift and consequent climate modification and it hosts the modern active volcanic arc as well as evidence of prior magmatic-hydrothermal events. The combination of several periods of emplacement of major arc-related porphyry copper deposits and climatic factors that have caused the formation of supergene enrichment zones and their preservation has resulted in northern Chile being the most copper-endowed region on Earth. Climate modification due to tectonics has produced the driest terrestrial environment on Earth, leading to excellent preservation of the abundant volcanic constructs along the magmatic arc, and the formation of locally abundant evaporite systems that host a large range of economic resources (including nitrates and lithium).

About the speaker: Paul is a graduate of the University of Sydney and Macquarie University, worked for the Geological Survey of NSW, as an exploration and applied research geologist with the Minerals Department of Esso Australia Ltd, Associate Professor in Earth Sciences at University of New England teaching economic geology (amongst a plethora of other topics), and in recent years, running a geological consultancy, specialising in petrographic work for the minerals industry in Australia and internationally.

Venue

McIntyre Theatrette, Newcastle Museum

Time

Drinks and nibbles at 6.00 pm, presentation at 6.30pm

Cost

Free entry and nibbles. Cash bar for beer, wine, soft drinks

RSVP

By COB Monday 2nd June 2014 to Phil Gilmore
phil.gilmore@trade.nsw.gov.au



Trade &
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2014 HEDG program

- 19 August National Science Week - 2014 theme 'Food for our future: Science feeding the world'
- 14 October Earth Science Week - 2014 theme 'Earth's connected systems'
- 2 December New earth sciences research from the University of Newcastle

Australian Earth Sciences Convention 2014, July 7-10, Newcastle

see www.aesc2014.gsa.org.au for themes, registration details, field trips and workshops

Last HEDG presentation (25th March 2014)

Two presentations on coal geology were attended by about 40 people. Erin Holmes (Geoscientist, Coal and Petroleum Geoscience, Mineral Resources) presented on CA-IDTIMS Dating of Permian - Triassic Aged Tuffaceous Units in NSW. With over 50 new dates in NSW alone, the results are being used to refine correlations within and between eastern Australian coal basins, and to estimate sedimentation rates. Shaun Ayshford (Principal Geologist, RungePincockMinarco) presented an introduction to the Witbank Coalfields of South Africa: An auditor's perspective. Shaun's talk looked at the evolution, morphology and coal quality from a selection of coal mines in the Province of Mpumalanga.

About HEDG

HEDG formed in 2008 with the aim to increase the interaction between geoscientists in the Lower Hunter, promote geoscience, provide a platform to learn about current research, and provide an opportunity for student and professional networking. HEDG is sponsored by the Geological Survey of NSW (NSW Trade & Investment) and the Geological Society of Australia, Hunter Valley Branch.

About Geological Society of Australia (GSA), Hunter Valley Branch

GSA provides an opportunity to keep in touch with scientific developments, present the results of work, and contribute to discussions on vocational and scientific topics. See: <http://www.gsa.org.au>

About other (local) geoscience resources for other events and field trips:

- Geological Survey of NSW: <http://www.resources.nsw.gov.au/geological>
- Resources & Energy, NSW Trade & Investment: <http://www.resources.nsw.gov.au>
- Sydney Mineral Exploration Discussion Group (SMEDG): <http://www.smedg.org.au>
- Amateur Geological Society of the Hunter Valley: <http://agshv.com>
- AusIMM – Hunter Region Branch: <http://www.ausimm.com.au/content/default.aspx?ID=213>



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