Members of the committee during 2009/2010, and their main areas of interest include:

Prof Patricia Vickers-Rich (Chair for 2010 onwards)
Palaeobiologist/Sci.Communicator
School of Geosciences
Monash University
MONASH, VICTORIA 3800
Email: pat.rich@monash.edu

Professor Peter Cawood – Tectonics, Assembly and Dispersal of Continents
Tectonics Special Research Centre
School of Earth and Geographical Sciences
The University of Western Australia
CRAWLEY WA 6009
Email: pcawood@tsrc.uwa.edu.au

A/Professor Tony Crawford - Petrology/Geochemistry
Department of Geology
University of Tasmania
GPO Box 252C
HOBART TAS 7001
Email: Tony.Crawford@utas.edu.au

Dr Brenda Franklin - Mineralogy/Industrial Minerals
Consulting Mineralogist/Petrologist
141 Oaks Ave
DEE WHY NSW 2099
Email: brendafranklin@bigpond.com

Bruce Goleby – Geophysics, Especially Seismic
Geoscience Australia
GPO Box 378
CANBERRA ACT 2601
Email: bruce.goleby@ga.gov.au
During 2009 Cec Murray decided to retire and Patricia Vickers-Rich of Monash University was asked to take on the Chair. Bob Delgarno also decided to retire. In 2010 Bruce Goleby retried. The Australian IGCP Committee gives their upmost thanks to these long serving members! Two new members were asked to join the committee in 2009-2010 and they are warmly welcomed:

Dr Allan Chivas - Geochemistry and Geochronology
School of Earth & Environmental Sciences
University of Wollongong
WOLLONGONG, NEW SOUTH WALES 2522
Email: toschi@uow.edu.au

The International Geological Programme (IGCP) is a joint initiative of UNESCO, through its Division of Earth Sciences, and the International Union of Geological Sciences (IUGS) Australia has been involved with the IGCP since its inception in 1972.

In 2009, 38 IGCP projects were active, including 5 on extended terms. Australian geoscientists at the beginning of 2009 were leaders or co-leaders of 8 projects, and active participants in 6 others (see attached list), indicating the ongoing high level of interest and the benefits to be gained from co-operation in international projects. One
Australian geoscientist (Professor Patricia Vickers Rich) continues in a position on the expanded IGCP Scientific Board.

The Australian National IGCP Committee functioned as usual. The main business of the Australian national committee was the disbursement of much of the $20 000 Grant-in-Aid provided annually by Geoscience Australia to assist Australian geoscientists to participate in IGCP activities. The ongoing contribution made by Geoscience Australia and the Geological Society of Australia to IGCP activities is gratefully acknowledged.

The following grants were provided to assist Australian scientists to attend IGCP sponsored meetings and workshops in 2010:

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Grant ($)</th>
<th>Project and Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Hall and Patricia Vickers-Rich Monash University, Vic. and students</td>
<td>4500</td>
<td>587 – Field conference in the Rajasthan examining the sedimentary environments and palaeobiota of late Neoproterozoic, early 2011</td>
</tr>
<tr>
<td>Zheng-Xiang Li, Curtin University, Perth, WA</td>
<td>1500</td>
<td>581 – Conference preceding field symposium in Nanjing China focusing on the tectonic history of Asian-Pacific region, 2010</td>
</tr>
<tr>
<td>S Turner Queensland Museum</td>
<td>2500</td>
<td>506, 587 – Attend the INHIGEO symposium in Madrid-Almaden-Iberian Pyritic Belt, 2010</td>
</tr>
<tr>
<td>Zhong Qiang Chen, University of Western Australia, WA</td>
<td>3000</td>
<td>572 – Field workshop at GUtech Muscat, Oman, field meeting in Wuhan, China, and 3rd Int. Palaeo. Congress in London, 2010.</td>
</tr>
<tr>
<td>A Chivas University of Wollongong, NSW</td>
<td>3500</td>
<td>526 – IGCP 526 meeting in Vigo, Spain, 2010</td>
</tr>
</tbody>
</table>

The total amount allocated was $15,000 to 6 recipients to assist their involvement in 5 different IGCP projects. In addition, $2000 of GST has been paid to the Australian Taxation Office.

Applications from graduate and undergraduate students were supported, but efforts still need to be made to increase the awareness of the geoscience community, particularly younger geoscientists, about the advantages that the IGCP program offers in establishing international research contacts. **It should be noted that funds granted to most of the above recipients were shared with their students or supported students in the countries where meetings occurred.**
IGCP PROJECTS WITH LEADERS FROM AUSTRALIA

493  The Rise and Fall of the Vendian Biota
     P. Vickers-Rich (Australia)
     M. Fedonkin (Russia)
     J. Gehling (Australia)

509  Palaeoproterozoic Supercontinents
     S.M. Reddy (Australia)
     R. Mazumder (India)
     D.A.D. Evans (USA)
     and Global Evolution
     2005-2009

514  Fluvial Palaeosystems: Evolution
     N. Patyk-Kara (Russia), Baohong Hou
     and Mineral Deposits
     A. Duk-Rodkin (Canada), PIRSA
     2005-2009

526  Risks Resources and Record of the
     F.L. Chiocci (Italy)
     Past on the Continental Shelf
     L. Collins (Australia)
     2007-2011

557  Diamonds, Xenoliths and
     H. Sommer (Botswana)
     Kimberlites
     K. Regenauer-Lieb
     C. Hauzenberger (Austria)
     J. Kashabano (Tanzania)
     G. Moloto-A-Kenguemba (Université de Bangui)

559  Crustal Architecture and Landscape
     Bruce R. Goleby (Australia)
     Evolution
     and 14 members (USA, Canada, China, Finland,
     2008-2012
     Netherlands, New Zealand,
     Russia)

565  Geodetic Monitoring of the Global
     Hans-Peter Plag (USA), C. Rizos
     Water Cycle
     Richard S. Gross (USA),
     2008-2012
     Markus Rothacher (Germany),
     GPO Box 378
     Norman L. Miller (USA),
     CANBERRA ACT 2601
     Susanna Zerbini (Italy),
     Chris Rizos (Australia)

572  Permian-Triassic ecosystems
     Zhong Qiang Chen
     Z. Oiang Chen
     (Australia),
     University of Western Australia
     Richard J. Twitchett (UK), PERTH WA 6009
     Jinnan Tong (China),
     Margret L. Fraiser (USA),
     Sylvie Crasquin (France),
     Steve Kershaw (UK),
     Thomas J. Algeo (USA),
     Kliti Grice (Australia)

587  Of identity, facies and time: The
     Vickers-Rich, P. (Australia)
     Ediacaran (Vendian) Puzzle
     Fedonkin, M. A. (Russia)
     2010-2015
     Gehling, J. (Australia)
     Narbonne, G. (Canada)
     P. Vickers-Rich
     Monash University
     Wellington Road
     MONASH, VIC 3800

509  A.S. Collins
     School of Geosciences
     Wellington Road
     MONASH, VIC 3800

514  Baohong Hou
     University of Adelaide
     ADELAIDE SA 5005

526  L. Collins
     Dept of Applied Geology
     Curtin University of Technology
     PERTH WA 6845

557  K. Regenauer-Lieb
     School of Earth & Geog Sciences
     University of Western Australia
     PERTH WA 6009

559  B. Goleby
     Geoscience Australia
     GPO Box 378
     SYDNEY NSW 2052

565  C. Rizos
     University of New South Wales
     SYDNEY NSW 2052
### IGCP Projects with Participation by Australian Geoscientists

<table>
<thead>
<tr>
<th>No.</th>
<th>Title &amp; Duration</th>
<th>Project Leader</th>
<th>Australian Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>478</td>
<td>Neoproterozoic-Early Palaeozoic Events in South-West-Gondwana 2003-2009 (OET)</td>
<td>C. Gaucher (Uruguay), P. C. Boggiani (Brazil), A. Braun (Germany), H. Hartwig Frimmel (Germany), J.B. Germs (South Africa), D. G. Poiré (Argentina)</td>
<td>G. Halverson, University of Adelaide, ADELAIDE SA 5005</td>
</tr>
<tr>
<td>512</td>
<td>Neoproterozoic Ice Ages 2005-2009</td>
<td>G. Shields (UK), E. Arnaud (Canada)</td>
<td>M. Corkeron, School of Nat Resource Sciences, Qld University of Technology, BRISBANE QLD 4001</td>
</tr>
<tr>
<td>521</td>
<td>Black Sea Mediterranean Corridor during the last 50ky: Sea Level Change and Human Adaptation 2005-2009</td>
<td>V. Yanko-Hombach (Canada), A Chivas &amp; W Nicholas, Y. Yılmaz (Turkey), P. Dolukhanov (UK)</td>
<td>University of Wollongong, WOLLONGONG NSW 2</td>
</tr>
<tr>
<td>524</td>
<td>Arc-continent collision 2007-2009</td>
<td>D. Brown (Spain), C-Y Huang (Taiwan)</td>
<td>R. Glen, Geological Survey of NSW, 516 High Street, MAITLAND NSW 2320</td>
</tr>
</tbody>
</table>

### Reports from Australian Participants in IGCP Projects

**Capturing the 50-year History of the International Union of Geological Sciences (1961-2011)**

In early 2009 the IUGS announced a plan to create their 50th anniversary history; a first workshop proclaiming this was held at the Commission on the History of Geological Sciences (INHIGEO) meeting in Calgary in August. Previous efforts (see Schneer, 1995; Mason 2003) had looked particularly at certain events and aspects during the first decades and the time is ripe for a full analysis of the history and achievements of the Union going back to the post-WWII period when it was first mooted. Useful are the profiles and memories of the first IUGS president Jim Harrison and others of the executives to be found in *Episodes* (e.g. 1978, 1985, 1986). The new history work will allow reflection on the achievements and the future.

As you read in e-Bulletin #45, Dr Johannes Dons, former Director of the Mineralogical Museum in Oslo and first IUGS Executive Treasurer died on November 14th. This sad news came just as the Secretariat, which has been based in Norway for 25 years is undertaking the massive job of transferring to a new country.
The IUGS Secretariat moved to Trondheim when Richard Sinding-Larsen became Secretary-General in 1984.

At the same time from November 10–23 the Norwegian Committee hosted a visit by Australian INHIGEO member Dr Susan Turner, who has begun the task of preparing a 50th Anniversary history and spent some time assessing the state of the archives held at the Norwegian Geological Survey in Trondheim before the move to the USA. She had hoped to meet with Dr Dons but this was not to be. Fortunately, her successor in IUGS history work and another INHIGEO member, Emeritus Professor Cecil Schneer (University of New Hampshire, USA), had done so when working on the 25th anniversary and he had taped a conversation with Dr Dons. This tape is now one of an important oral archive being built for IUGS-50; while in Trondheim, Sue Turner interviewed, talked to and recorded several Norwegians who have been involved at high level with IUGS bodies to add to the legacy of tapes that Schneer had made. The tape archive now includes Cordani, Delaney, Dons, Drake, Lafferty, Refsdal, Sinding-Larsen, Trümpy, Wolff. We would ask all National Committees to see if they can tape their senior colleagues to help build the history of outreach.

Questions to ask: what work did they do for IUGS; what brought them to work for IUGS or to hear about IUGS programmes, such as IGCP (e.g. Turner 2006); had they attended the 1960 IGC where IUGS was finally initiated; who had been involved with the foundation process in 1960-1961; do they have memories, stories or anecdotes of their time with IUGS to share?

The current IUGS Secretariat in Trondheim, Anne Liinamma-Dehls has undertaken scanning of all key documents and photographs amassed over the years to produce the first digital IUGS archive. Former Secretariat Hanne Refsdal had made tapes of meetings during her 15-year period in office and she has provided an invaluable photographic record to add to those already acquired from early S-G Simon van der Heide and the Canadian GS and Episodes, kept during Bill Hutchinson's era. These tapes with personal history and stories provide a very direct way of understanding the past workings of the Union. Also digitized were items such as IUGS brochures and other products, such as conference memorabilia, another collection to the archive which we are trying to build. An IUGS-50 book is planned and a travelling exhibition might be developed for 2011 and beyond to show some of the achievements of the Union using these objects.


Dr Susan Turner
Brisbane
IGCP 493 RISE AND FALL OF THE VENDIAN (EDIACARAN) BIOTA
(completed in 2009)

Australian Co-Leaders:
Dr Jim Gehling
Prof Patricia Vickers Rich
Email: Gehling.jim@saugov.sa.gov.au
Pat.rich@sci.monash.edu.au

1. Website:  http://www.geosci.monash.edu.au/PreCsite/index.html

2. Summary of major past achievements of the project:  See website for more detail of
individual country accomplishments and refer to annual reports on that website for 2003-2009
reports for past achievements. These are varied: significant scientific and popular
publications (including 2 books), field trips (several each year), traveling exhibitions (2) and
education kits for primary and secondary students, stamp issue (Australia post with
international editions), documentaries (2), media interviews and meetings (1-3 or more per
year). See attached review of two books in Science.

3. Achievements of the project this year only
3.1. Countries involved in this project:
Argentina, Australia, Brazil, Canada, Peoples Republic of China, Germany, India, Iran, Iraq,
Ireland, Italy, Japan, Korea (Republic of Korea), Namibia, New Zealand, The Netherlands,
Norway, Poland, Russia, Saudi Arabia, Singapore, Spain, South Africa, Sweden, Taiwan
(Republic of China), United Kingdom, United States, Uruguay.  See website for individual
country reports.

3.2. General scientific achievements and social benefits
Filming of documentary on the origin and early evolution of life and the first animals with a
team from the Fukui Prefectural Dinosaur Museum, Japan. Filming carried out with
researchers in the Flinders Ranges, Western Australia with the Conservation and Land
Management staff, at Monash and Museum, the Geological Survey of Western Australia,
the South Australian Museum, Curtin University and the University of Western
Australia. This documentary finalized in 2009 and on show in the Fukui Prefectural
Dinosaur Museum in western Honshu.

Filming of documentaries in the Flinders Ranges of South Australia & Newfoundland with
Atlantic Productions (UK) (with the BBC & Discovery Channel) and David
Attenborough. Filming will continue into 2010 with further locations being Russia (the
White Sea collections in particular), Namibia and the UK. Attenborough is using The
Rise of Animals published by Johns Hopkins University Press (Fedonkin, Gehling, Grey,
Narbonne & Vickers-Rich) as the documentary “script” and has involved the research
scientists in the planning. Under the direction of J. M. Bayon and J. A. Gamez
(Universidad de Zaragoza) another documentary entitled On the Tail of Primitive Life.
The Cambrian Period was filmed in 2009.

Work continues towards setting aside heritage areas that have produced prime
Ediacaran/Vendian assemblages as heritage sites, protected and yet available for
ecotourism, particularly in the Flinders Ranges of South Australia and the Aus region of
Namibia. A small regional museum on a rural property near Aus is assisting in
conserving these sites and encouraging limited ecotourism – several groups visited the
property in 2009 while research work was underway in October and November – from
Germany, Switzerland, Canada. Scientists engaged the visitors as well as continued to
train local herders on the property for a possible future as rangers and explainers if the
national heritage proposal now before the Nambian Government is successful. Talks
were also begun with Monash University South Africa to provide training on this
property as an exemplary project. Monash South Africa has a strong program for youth in the area already.

**Continued involvement of IGCP493 to Casting Project in Charnwood Forest.** This project is outstanding and there are hopes of liaising with this group in future to insure continued casting of the extensive exposures yielding a new array of Ediacarans under study by Trevor Ford and Helen Boynton and their colleagues – this continues from 2008.

**Continued Field Efforts in South Australia, Newfoundland, Namibia, Argentina, China, UK, and Saudi Arabia** providing a significant better understanding of the environments hosting Ediacarans as well as continuing to increase biodiversity.

3.3. **List of meetings with approximate attendance and number of countries:**

Working groups in India, Australia, Russia, Namibia and Canada remained outstandingly active, both in meetings and field excursions in 2009. Because of the project being on OET, only one meeting was organized – a field meeting in Namibia during early November – 14 attendees including representatives from Australia, the UK, the USA, Canada, Russia and Germany. Participants in IGCP493 attended a number of other meetings in Japan, Germany, Australia, the USA, Canada, reporting on research carried out under the umbrella of this project. Field Meeting in September to Mistaken Point as part of the “Evolution of Complex Life” working group in affiliation with the NASA Astrobiology Institute (NAI) at the Massachusetts Institute of Technology (MIT).

3.4. **Educational, training or capacity building activities**

See above and below. Examples also include: Several invited keynote lectures were given at these conferences by participants in IGCP493, examples being the Sprigg Lecture in Adelaide during Dec. 2009, one the “Frontiers of Science” lectures for the Year of Planet Earth at Ludwig-Maximilians-Universitat in Munich Jan. 09), the Walcott Symposium (100th Ann. Of the Discovery of the Burgess Shale) in Banff, Canada, Keynote address at the meeting for the Bicentennial of Charles Darwin’s Birth (Kyoto, Japan, Oct. 09), amongst many others.

3.5. **Participation of scientists from developing countries, and in particular young and women scientists**

Outstanding throughout this project is the involvement of a number of young people, including young women. In Namibia young women members of the Geological Survey of Namibia have been involved in the field work. In Kurdistan, Profs. Rund Hammoudi and Nazar Nauman have made a continuing effort to train young geologists despite the uncertainties of that nation. Our colleagues in Iran continue their participation and the Geological Survey has invited two scientists and one student to participate in field work, with their full support in 2010. Other young participants include graduate students (e.g. Australians David Elliott (Ph.D), Chris Wemmers and Nicole Founie (Undergraduates) and Mike Meyer from West Virginia State University whose projects were carried out in Namibia on Ediacarans and Neoproterozoic sedimentology) with staff from the Geological Survey of Namibia.

3.6. **List of most important publications (including maps) – a limited list of exemplary publications (peer reviewed)**


### 3.7. Activities involving other IGCP projects, UNESCO, IUGS or others

Members and co-leaders of IGCP493 also interact with IGCP478 (Neoproterozoic-Early Paleozoic Events in SW Gondwana), IGCP497 (the Rheic Ocean: Its Origin, Evolution and Correlatives), IGCP512 (Neoproterozoic ice Ages) and the ICS Subcommission of Ediacaran and Cryogenian Stratigraphy.

### 4. Activities planned for 2010-2014 (new proposal under consideration)

Further field work in India, the White Sea of Russia, Saudi Arabia, Newfoundland, Australia, Namibia, Argentina, Iraq, the UK was carried out in 2009, especially targeting the first and last occurrences of the Ediacarans and attempting to understand the reasons for their origin and their demise. Traveling of the *Wildlife of Gondwana Exhibition* in Australia, an exhibition in which Ediacarans have been highlighted and final planning for an exhibition on palaeo-reconstruction art was finalized and this exhibition will begin traveling in mid-2010. Accompanying the launch of this exhibition will be the release of a new book by Peter Trusler, Patricia Vickers-Rich and T. H. Rich (*The Artist and the Scientists. Bringing the Past to Life*), now in press with Cambridge University Press – which contains much of the art dealing with the Neoproterozoic. This exhibition will showcase much of the research carried out under the umbrella of IGCP493.

### 5. Project funding requested

**Project was on OET status**

### 6. Request for extension, on-extended-term-status, or intention to propose successor project.

As noted in 7 (below) critical funding was secured from a number of sources this year as a result of our project being listed as an active IGCP project (on OET). A successor project proposal was submitted in October 2009.

### 7. Financial statement ($ USD only)

Project on OET but funds secured to support some student and academic attendance at several meetings; $US200,000 was secured to support two traveling exhibitions, one of which remains in Timor Leste helping in the rebuilding of the National Museum destroyed in the 1999 disturbance in that country the second being the Wildlife of Gondwana; an Australian Research Council grant to Gehling, Droser and Jensen for $90,000 (Flinders Ranges of South Australia); a National Geographic grant to Vickers-Rich for $US29,500 (Namibia); >$70,000 for field work in the Neoproterozoic of Saudi Arabia, support provided by the Geological Survey of Saudi Arabia; > $40,000 for filming of documentary by the Fukui Prefectural Museum (Japan) exemplify the support for this project. Listing of this project as a UNESCO IGCP project was of great value in helping secure such critical funding; funding has been provided by Atlantic Productions for filming with David Attenborough to underwrite field work and researcher participation in this documentary – funding for both 2009 and 2010. These are only exemplary grants, and there were many others to participants in this project.

### 8. Other information
Reference to our website will provide additional data on the outcomes of his project both in 2009 and over its entire history. It is of note that one of the main books resulting from IGCP493 (The Rise of Animals. Evolution and Diversification of the Kingdom Animalia, by Fedonkin, Gehling, Grey, Narbonne & Vickers-Rich) published in 2008 by Johns Hopkins University Press, won the Victorian Premiers Prize (Australia) for the best science book of 2008-2009 and was short listed (one of 5) for the Queensland Premier’s Prize for Science Writing.

**IGCP 506: MARINE AND NON-MARINE JURASSIC**

Australian Corresponding Member  
Dr Sue Turner  
Email: paleodeadfish@yahoo.com

Members of the Australian working group have finalised a review of the Jurassic marine-non.marine.

**Dr Susan Turner (Australian correspondent)** ~ Geoscience Consultant, Monash University Geosciences Hon Snr RA. With colleagues in the Australian working group she has submitted a review of the Jurassic of Australia to the resultant IGCP 506 symposium volume to be published as a special issue of *GFF*. With Dr Vivi Vajda (Univ. Lund) who convened the IGC Symposium, she is editing the papers for the special volume, due out in mid-2009.

**Dr John Backhouse**, GSWA has supported the review by offering data and unpublished material. See publication below on East Timor.

**Dr Mary Dettmann**, Queensland Museum, Honorary Researcher is a co-author of the Jurassic review.

**Dr John McKeller with Dr Noel de Jersey**, GSQ Qld is a co-author of the Jurassic review. He has one long review monograph in the pipeline discussing microfloras including the *Alisporites/Falcisporites* Microflora, representative of the temperate *Dicroidium* Flora, to palynofloras dominated by cheirolepidiacean pollen (*Classopolis*), highlighting the development, assumptively in somewhat lower palaeolatitudes, of a warmer climate and representing the early development of the Jurassic flora of the region.

A new cross-Tasman palynostratigraphic compilation has been developed (by de Jersey & JMck) embracing work on accurate location of the Triassic-Jurassic (Rhaetian-Hettangian) and Hettangian-Sinemurian boundaries in continental eastern Australia; the results based on correlation with the marine, ammonite-dated succession in New Zealand, then part of Greater Eastern Australia. Another major paper, on Early and Middle Jurassic spore-pollen assemblages of New Zealand (again accurately dated by associated marine invertebrate fossils) and their biostratigraphic relationships with palynofloras from continental eastern Australia, has been largely completed.

**Dr Stephen McLoughlin**, Department of Paleobotany, Swedish Museum of Natural History, has completed projects on the Jurassic flora of Australia (see publications) and is a co-author of the Jurassic review.
Dr Mike Pole, Queensland Herbarium, Toowong: murihiku@yahoo.com submitted a paper to the GFF volume on the Jurassic vegetation of New Zealand.

Geoscience Australia
PhD research on Australian Jurassic palynofloras is aimed at refining the Australian standard dinocyst biozonation scheme (*Wanaea spectabilis* Zone) to provide high-resolution age and facies controls on strata intersected by hydrocarbon exploration wells. Integration of this data with seismic and downhole petrophysical data is providing improved sequence and systems-tract interpretations. Work in train by Natalie Sinclair, (ANU, GA, ExxonMobil & ChevronTexaco material; pers. comm.) is on the Upper Jurassic in the Jansz Gas Field, on the Exmouth Plateau of the offshore Northern Carnarvon Basin (North West Shelf).

Other doctoral research (Mantle, 2006) to be published in the future comprises palynomorph diversity and abundance in assemblages with marine (dinocysts and acritarchs) and terrestrial (spores and pollen) and covers palynology, sequence stratigraphy and palaeoenvironments of Middle to Late Jurassic strata of the Bayu-Undan Field, Timor Sea (Daniel Mantle pers. comm.).

Other news

Dr Myra Keep and Assoc. Prof. David Haig have been working on the geological and tectonic evolution in East Timor since 2003, looking closely at the structural relationships and re-mapping and re-dating the formations, with a view to constraining and formulating models for tectonic evolution. Exciting discoveries to date include the type section of the Miocene is in fact largely Triassic to Jurassic; the type section of the Jurassic is Triassic; there is a large section of ocean floor material, complete with MORBS and cumulates, the remnants of a collided oceanic plateau, complete with OIBs, preserved as thrust stacks along strike across the island. This work continues and P. Vickers-Rich and her student D. Kumar are working on both the vertebrate and invertebrate faunas that have been discovered in sediments near Ossu of probable Jurassic age. See www.socrates.uwa.edu.au/Staff/StaffProfile.aspx?Person=myrakeep

Publications of interest:
In press
McKellar, J.L. in press. Late Early to Late Jurassic palynology, biostratigraphy and palaeogeography of the Roma Shelf area, northwestern Surat Basin, Queensland, Australia. *Association of Australasian Palaeontologists Memoir*
IGCP 521: BLACK SEA – MEDITERRANEAN CORRIDOR
DURING THE LAST 30KY

Australian Corresponding Members:
W. A. (Tony) Nicholas (PhD candidate)
Professor A. R. Chivas
E-mail: wan734@uow.edu.au
toschi@uow.edu.au

Project outline
The Black Sea-Mediterranean corridor consists of a series of inter-connected semi-enclosed basins between the Mediterranean and Caspian Seas, and refers to the geographical area covering the Aegean Sea, Sea of Marmara including the Dardanelles, and Bosphorus Strait, The Black Sea, and Kerch Strait and Sea of Azov (The Manych-Kerch Gateway) up to the Caspian Sea coast. Within this corridor, sea-level variations and coastline migration have been especially pronounced due to repeated connection and unconnection with the global ocean. The history of the corridor over the past 30 ka is complicated, and controversial. This project was initially instigated in part as a result of Ryan et al.’s (1997) claim for a catastrophic flood into the Black Sea from the Mediterranean, and for that flood being the source of the Biblical, and other, flood myths. This project is inter-disciplinary, with continuing collaboration between marine and terrestrial geologists, palynologists,
palaeoceanographers, archaeologists, mathematicians and others from approximately 23 countries including Australia. However, most members are from developing countries.

In this project, Australia’s role is principally to co-operate by use of advanced geochemical facilities including stable isotope, amino acid racemisation dating, ICP-MS for trace elements on microfossils, C-14, U/Th dating. Nicholas and supervisor, A. R. Chivas, are the principal Australians involved with IGCP 521. Nicholas is undertaking the first amino acid racemisation dating on Black Sea molluscs and foraminifers from Holocene and Last Interglacial sediments under the supervision of Chivas and C. Murray-Wallace. Chivas is the leader of the IGCP 521 Geochemistry working group. Other Australians involved through lab-based work include those providing C-14 dates at ANSTO, and U/Th dating at the University of Queensland; as well as Prof. C. Murray-Wallace (U. Wollongong) for AAR facilities.

Fourth Plenary Meeting and Field Trip, 4-16 October, 2008, Bucharest (Romania) and Varna (Bulgaria)

This meeting was organized jointly by the National Institute of Marine Geology and Geocology (GeoEcoMar), Bucharest, Romania, the Department of Natural History of the Regional Historical Museum, Varna, Bulgaria, and the Avalon Institute of Applied Science, Winnipeg, Canada. Financial support for this meeting was contributed by INQUA, UNESCO-IUGS-IGCP, the Romanian Ministry of Education and Research, and the Romanian National Council of Science. Delegates from 17 countries attended. The overall focus of the conference and the project has been to provide a regional cross-disciplinary collaboration, and correlation among scientific disciplines (principally those of geoscience and archaeology) in order to comprehend the spatial influence and temporal scales of climatically-driven sea-level change and associated changes in coastal environments, on human adaptation to this region over the last 30 ka. Over the course of this project, it has been very successful in bringing together workers from different disciplines under one theme and this conference was no exception.

Thirty eight oral presentations including two keynote talks were delivered. Presentations focused primarily on either archaeology or coastal geoscience, and included recent work by Lericolais et al. (2008) and Soulet et al. (2008) indicating that there was a significant influx of Mediterranean water into the Black Sea at approximately 8.4 ka (14C yr). Other presentations included those on Caspian sea-level fluctuations, palynostratigraphy of the western Black Sea, sedimentary relationships between the Carpathians and the Black Sea basin, and tectonics of the North Anatolian Fault for example. In contrast, Murdmaa et al. (2008) described the first submersible examination of the Gibraltar Sill by Russian workers in 1995. Two talks (one keynote) focused on the results from the first amino acid racemisation based geochronological studies in the Black Sea region, by workers from the GeoQuEST Research Centre, University of Wollongong. Field trips to the Danube Delta, and Bulgarian coastal geological and archaeological sites were undertaken. These included examinations of aeolian dunes at Caraorman village, St George II (Danube) Delta, and a brief examination of the K/T boundary in shallow marine calcareous limestones near Bjala, 35 km south of Varna, Bulgaria. For the Australian researchers this meeting has led to enhanced collaboration with colleagues from Romania and Ukraine. The results from these collaborative projects will be presented at the next IGCP 521 meeting in Turkey (2009). This would normally be the final meeting of this project, but consideration is being given to developing a successor project. Nicholas and Chivas gratefully acknowledge partial financial support from
the Australian UNESCO committee for the International Geological Correlation Program.

**IGCP Project 559 – Crustal Architecture and Images**

Dr. Douglas M. Finlayson (Business Manager, IGCP Project 559)
Dr. Bruce R. Goleby (Project Leader)
Email: doug.finlayson@netspeed.com.au
bruce.goleby@ga.gov.au

During the year 2009 the IGCP Project 559 focussed on three aspects of its international program:

- Development of its web site to provide information to the public and the scientific community on seismic imaging of the Earth’s crust and upper mantle.
- Sponsorship of sessions at international conferences relevant to its aims through support for keynote speakers and students.
- Taking a lead in the organisation in Australia of the next in the series of international symposia on Deep Seismic Profiling of the Continents and theirMargins.

This report is a brief summary of the 2009 annual report to the IGCP organisational headquarters in Paris.

**Aims**

This project focuses on that part of planet Earth that has the most significance for the world’s communities, namely the Earth’s crust, that outer part of the planet on which we all live. The project makes available to communities-at-large a wealth of information and seismic imaging that is commonly only available to research workers but yet has a profound effect on how we think of the landscapes, natural environments and their controlling geological processes and tectonic influences.

IGCP Project 559 provides an international mechanism whereby specialist seismic researchers from all countries can meet at various sponsored conferences/symposia, can sponsor international student participation at conferences and symposia, and can disseminate information on seismic images of the Earth’s crust and upper mantle that affect the lives of many communities on this planet.

**Working Group**

IGCP Project 559 has a Working Group of seventeen research scientists from twelve countries spread world-wide. These highly regarded geoscientists work actively in various fields of seismology and the geological sciences. They develop the IGCP Project 559 program on an ongoing basis in consultation with colleagues and IGCP Paris.

**Website**

Opening up the scientific world of seismic imaging to the general public is an important goal of IGCP Project 559. In this respect the project places great emphasis on the availability of information through its website [http://www.earthscrust.org](http://www.earthscrust.org) to academics, students and the general public from all countries.
Over the last three years there have been, on average, over 100 “hits” on the IGCP Project 559 every day (over 400,000 “hits” per year). The top 10 user countries are USA, Australia, UK, India, Netherlands, France, Germany, Sweden, and China.

In 2009 the web site has updated its information base by including the abstracts of all papers presented at the thirteen biennial International Deep Seismic Profiling Symposia since 1984. These symposia have been the focus for geosciences researchers since the beginning of imaging of the detailed 3-D geological structure of the Earth’s crust during the 1970s.

**Symposium support**
During 2009 IGCP Project 559 sponsored a session at the European Geosciences Union General Assembly, 2009, Vienna-

**Session SM1.4/TS3.4  Active Source Images of the Crust**
Convener: R.Stephenson
Co-Conveners: A. Korja, B. Goleby

**Theme:** Most Earth science theory flows from an understanding of the geology at the surface of the Earth. However, seismic images of the Earth’s crust and upper mantle give us a detailed insight into the deeper geological structures and tectonic processes that shape the lithosphere and the modern landscapes. They are therefore relevant to natural resource exploration, the distribution and management of groundwater resources and the study and mitigation of natural hazards such as earthquakes. They define the large-scale processes that control the evolution of the landscape and soils.

At the EGU session there were twelve oral presentations and twentythree poster presentations from around the world.

**Seismix 2010**
The 14th International Symposium on Deep Seismic Profiling of the Continents and their Margins will be held in Cairns, North Queensland, during the period 29 August - 4 September, 2010.

The sponsors of the meeting are the Geological Society of Australia through its Specialist Group on Solid-Earth Geophysics, Geoscience Australia, Australian National University and IGCP Project 559. In addition, the Geological Survey of Queensland is assisting with a post-conference field excursion.

The IGCP Project 559 Australian working group members are heavily involved in the organisation of the symposium that usually attracts about 100 delegates from around the world.

The second circular for the symposium, including registration, travel and accommodation options, is available online via [http://www.earthscrust.org/earthscrust/Seismix2010/index.htm](http://www.earthscrust.org/earthscrust/Seismix2010/index.htm)
IGCP Project 587 Of Identity, Facies and Time: The Ediacaran (Vendian Puzzle)

Project leader(s):

1. Name: Prof. Patricia Vickers-Rich
   Address: School of Geosciences, Monash University, Melbourne (Clayton), Victoria 3800 Australia
   Tel.: +61 3 9905 4889 or 9905 1102
   Fax: +61 3 9905 4903
   Email: pat.rich@monash.edu

2. Name: Dr Mikhail Fedonkin
   Address: Paleontological Institute, Profsoyuznaya 123 ul. & Geological Institute, Pyzhevskiy, 7, Russian Academy of Sciences, Moscow, Russia 117997 and 119017 Moscow, Russia
   Tel.: +7 095 339 9566
   Fax: +7 095 339 1266
   Email: mfedon@paleo.ru

3. Name: Dr Jim Gehling
   Address: South Australian Museum, North Terrace, Adelaide, South Australia 5000 Australia
   Tel.: +61 8 8207 7441
   Fax: +61 8 8207 7222
   Email: gehling.jim@sa.gov.au

4. Name: Prof. Guy Narbonne
   Address: Department of Geological Sciences and Geological Engineering, Queens University, Kingston, Ontario K7L3N6, Canada
   Tel.: +1 613 533 6168
   Fax: +1 613 533 6592
   Email: narbonne@geol.queensu.ca

Project Secretary:

Name: Prof. Patricia Vickers-Rich (see above)

Date of submission of report: 22 December 2010

Signature of project leader:

Annual Report
(December 2010)

1. Website address related to the project: www.geosci.monash.edu.au/precsite

2. Summary of major past achievements of the project:
This is the first year of the project. It followed on IGCP493 and all the reports from this past project can be accessed on the website: www.geosci.monash.edu.au/precsite

3. Achievements of the project this year only


3.2. General scientific achievements and social benefits. A significant number of research papers were generated by the participants in this project, some examples of which will be given in 3.6. In addition four exhibitions were fielded during 2010: Wildlife of Gondwana (with venues in Singapore, Adelaide and Darwin, Australia), O Mundo Perdido Timor-Leste (a major upgrade for the ConocoPhillips sponsored geology exhibition in Dili and two small regional exhibitions in the towns of Aileu and Baucau in Timor-Leste) and another launched in Melbourne at the Monash Science Centre, Monash University – The Artist and the Scientists. Upstream/Downstream. The latter exhibition was a investigation into the flow on use of the scientific art of Peter Trusler, who has crafted many of the art pieces used in publications dealing with Neoproterozoic life. The catalogue for this last exhibition is the book The Artist and the Scientists. Bringing Prehistory to Life by Peter Trusler, Patricia Vickers-Rich and Thomas H. Rich, published in late 2010 by Cambridge University Press. Another publication of translation significance was the 2nd volume of A Chinese/English and English/Chinese Dictionary of Paleontological Terms. The two volumes now cover both vertebrate and invertebrate terminology, the end of a project which began in 1982, joint between Monash University in Melbourne, Cambridge University and the Institute of Vertebrate Paleontology and Paleoanthropology in Beijing. This has now been placed on line and can be accessed through the website of IGCP587. Proposed, aided in the planning and production of David Attenborough’s First Life documentary released in late 2010 by the BBC and Atlantic Productions. The research of Guy Narbonne and Jim Gehling were featured in this beautiful conclusion of Attenborough’s Life series (http://news.bbc.co.uk/earth/hi/earth_news/newsid_9118000/9118606.stm). A CBC documentary “Mistaken Mystique” explored how the fossils at Mistaken Point have influenced the international scientists, local community, and Newfoundland artists.

3.3 List of meetings with attendance and number of countries. The principal meeting of 2010 was Precambrian Life, Time, and Environment: Evolving Concepts and Modern Analogues held in Lucknow from 2-9 Feb. This meeting involved a field trip to the Sub-Himalayas (see website for more detail) examining a wide range of topics related to the Neoproterozoic sequences that crop out in this region – the Krol Belt in which Cryogenian Pre-Blani to Tal Formations are exposed. This was a meeting in conjunction with IGCP512. A second field meeting to examine the late Neoproterozoic sections in Rajasthan had to be rescheduled for early 2011 and funding was used to bring young scientists from both Russia and India to attend this conference. See form for this meeting submitted to IUGS on 26 July 2010, and attached. Upwards of
100 were in attendance at the meeting in Lucknow with representatives from North America, Europe, Australia, China and India. The meeting planned for the Flinders Ranges was not run due to the conflict of schedules of several of the participants and so delayed until 2011 or 2012 with the prospect of running it in concert with the IGC to be held in Brisbane in 2012.

3.4 Educational, training or capacity building activities. In the group of participants in the Sub-Himalayas led by V. Rai and colleagues, a number of students were involved and so the experience acted as a significant platform for international exchange. In the set up and delivery of the exhibitions in Australia, Singapore and Timor-Leste, opportunities were provided for capacity building in research training and in exhibition outreach training. Another event attended by members of IGCP587 was to take part in the Timor-Leste Pavilion at the Shanghai World Expo working with young children attendees in geology-based activities – such as preparing casts of Ediacaran material. Each child prepared a cast from moulds made of Australian Ediacaran taxa and was able to take this along with a copy of O Mundo Perdido Timor Leste with them as a momento of their visit to the Expo – an event which took place in September 2010.

3.5 Participation of scientists from developing countries, and in particular young and women scientists. With the field trip/conference in India and the exhibition activities listed in 3.2 and 3.4 there were a number of women, young scientists and even primary, secondary and tertiary level students involved. In particular, Timor-Leste was a wonderful opportunity to interact with young men and women in a developing country atmosphere. The publication of O Mundo Perdido Timor-Leste. A Boy and Crocodile Travel Through Time (now translated into Tetun, Portuguese, English, Chinese, Arabic, Spanish, and Slovenian with Hebrew, Tamil, Farsi, German and French translations underway), the geology of a developing country is centerpoint. This little book is written by the President of Timor-Leste and Nobel Peace Prize Recipient, Jose Ramos-Horta and Patricia Vickers-Rich with art by Peter Trusler and at a primary and secondary level.

3.6. List of most important publications (including maps). Only a few of a considerable number of publications by participants in IGCP587 will be listed due to the constraints of the 5 pages. Also see above.

Book

Peer Reviewed Research Papers


3.7. Activities involving other IGCP projects, UNESCO, IUGS or others. See above for exhibition and publication activities related to/but outside the boundaries of the IGCP. In addition to this many of the participants presented public lectures around the globe, examples including titles such as: *In Search of Ghosts. Trying to Find the First Animals* (Royal Society of New South Wales, Australia), *Reading Rocks – Uncovering the Secrets of Past and Educating* (Singapore Science Centre), *The Wandering Path of a Rock Whisperer* (South Australian Museum, Adelaide and Singapore Science Centre), *The Rise of Animals* (Institute of Paleobiology, Polish Academy of Sciences, Warsaw), etc. See 3.3 for cooperation with IGCP512.

4. Activities planned

4.1. General goals. To continue to provide a platform upon which discussion concerning changing environments and climate has affected the evolution of animals and the biota in general. This is being done by organizing a series of meetings and field work globally, concentrating in particular on the youngest and oldest occurrences of the Ediacaran (Vendian) time periods. See website for more specific goals detailed in 8.1 of Aims and Background for this project.
4.2. **Tentative list of specific meetings and field trips.** Three events minimum are planned for 2011 – one taking place in the Urals (a conference and field excursion based out of Novisibersk), another in India (a field excursion in western India – Rajasthan) and a third in southern Namibia. A multinational team will be taking part in each involving the countries of: Russia, Namibia, Australia, Germany, Canada, USA, Spain, India, UK, amongst others. Major events are planned for the Geological Association of Canada annual meeting in St. John’s in May 2012. These include a pre-meeting fieldtrip to the basal Cambrian GSSP on the Burin Peninsula (P. Myrow and G.M. Narbonne), the Hans Hofmann Memorial Session on Precambrian Paleontology during the meeting (J.G. Gehling and G.M. Narbonne), and a post-meeting trip through the Ediacaran of the Avalon Peninsula (G.M. Narbonne, J.G. Gehling, M. Laflamme, and R. Thomas).

5. **Project funding requested:** $10,000.00 US

6. **Request for extension, on-extended-term-status, or intention to propose successor project.**
   Not Applicable

**Other Reports**

**Meeting report: IGCP-581 First Field Symposium May 8-18, 2010, China**

IGCP 581 – Evolution of Asian River Systems Linking to Cenozoic Tectonics, Climate and Global Geochemical Cycles, held its first field symposium in Nanjing and southern Tibet. The two-day indoor symposium was held in Nanjing. Fifty-five scientists and students from eight countries (Australia, China, Germany, India, Ireland, Japan, UK and USA) attended the symposium. Topics of both oral and poster presentations cover three major research directions. (1) Tectonics and landform evolution. Scientists reported new results that provide constraints on the timing and mechanism of the growth of Tibet, including new evidence for ca. 40 Ma uplift of central Tibet, and evidence on Late Cenozoic uplift and its impact on climatic changes. (2) Drainage development: tectonic and climatic constraints. In this session, presentations focused on the topographic evolution of Asia, in particular the evolution of major drainages with respect to sediment delivery from “source to sink”. Some highlights include the debate on whether the Yangtze River system was as yang as 2 Ma or was formed much earlier, and regionally correlatable cyclic sedimentary record of Quaternary climatic events in eastern China. (3) Climate change, chemical weathering and CO2 consumption. In this session, researchers summarized our current knowledge on the evolutionary history of Asian monsoon based on terrestrial and marine records. A talk by Prof. David Taylor of University of Dublin on the earliest records of agricultural activity and migration of human settlements along coastal southeast China, and environmental implications, also attracted much interest.

A field excursion to southern Tibet was lead by Prof. Xiumian Hu from Nanjing University, and attended by 11 researchers (see photo). The focus of the excursion was the geology along the Yarlung Zangbo River in Southern Tibet.

IGCP 581 was approved by the IGCP Scientific Board in early 2009 for five years. The project aims to coordinate group efforts in (1) using sedimentary archives,
both onshore and offshore, to trace the evolutionary history of Asian big river systems, (2) correlating continental and marine tectonic and climatic records, in particular, those about the uplift of the Tibetan Plateau and the monsoonal evolution, and examining their interrelations, and (3) exploring linking mechanism(s) between tectonics and climate in East Asia and its marginal seas during the Cenozoic. Through these studies, we hope to create a new model on the tectonics and climate linkage in East Asia and their impact on global climate, and elaborate a strategy to test the model by utilizing international sediment sampling programs such as IODP, ICDP, and IMAGES.

Co-leaders of the project include Prof. Hongbo Zheng of Nanjing University, Prof. Ryuji Tada of the University of Tokyo, Prof. Peter Clift of the University of Aberdeen, Dr Masood Ahmad of the National Geophysical Research Institute of India, and Prof. Zheng-Xiang Li of Curtin University, Australia. It was decided that the second field symposium of IGCP-581 will be held in Sapporo, Japan in 2011.

My attendance to the Nanjing symposium was partially supported by the IGCP Australian National Committee’s grant-in-aid program. After the meeting I participated in a fieldtrip in southern Qinling mountains, and a frontier geoscience workshop in Guangzhou.

Participants of the IGCP-581 fieldtrip to southern Tibet.
(background: the Potala Palace of Tibet. Photograph provided by Mengying He)

Author information: Prof. Zheng-Xiang Li, Curtin University (z.li@curtin.edu.au), Co-Leader of IGCP-581

IGCP491 Final Report

2010 saw the publication of the Final volume for the project IGCP 491: Middle Palaeozoic Vertebrate Biogeography, Palaeogeography and Climate (2003-2007) in *Paleoworld* vol. 19, edited by co-leaders Zhu Min (China) and Gavin Young (Australia). Several Australians contributed major reviews to this volume (see refs below): free download may be possible as a sample issue [here](http://www.science-direct.com/).

Another volume recently published that includes further final contributions is a special Festschrift for Chinese Academician Professor Meemann Chang, published by Dr F. Pfeil Verlag [here](http://www.pfeil-verlag.de/ef1.html).
This work is the culmination of two decades of activity by members of the International Working Group on Palaeozoic Microvertebrates and related workers begun in the late 1980s. Australians have worked within the predecessor projects IGCPs 328 and 406, as well as in 410, 421, and 499 (more info at www.unesco.org). One successor project to IGCP 499 has been proposed this year.

**Australasian Working Group**

Eighteen workers from Australia and New Zealand are currently working in or researching aspects of this region and were active in IGCP 491.

**BRISBANE:** Many years of work came to fruition for Sue Turner with the publication during 2007 of the *Handbook of Paleoichthyology Agnatha Part 1B, Thelodonti* book, co-authored with T. Märs (Estonia) and V. Karatajute-Talimaa (Lithuania). Sue is currently working on the earliest sharks from Canada, the mid-western USA and Australia. One of her presentations at the final IGCP 491 meeting in Uppsala was on work in central Queensland (Narrien and Drummond Ranges). The other talk she presented (Turner et al 2007, Schultze et al 2008) was a keynote address (A Special Moment: Great Northern Researchers) on the work and lives of two of the leading lights of Middle Palaeozoic fish studies over the last half century, Drs Elga Mark-Kurik and Valentina Karatajute-Talimaa (honoured by the Symposium this year). Sue has also been part of an international collaborative effort reviewing the affinities of conodonts.

Carole Burrow (now an Honorary Research Fellow with the Queensland Museum) continues working on the Early Devonian fish faunas of the Gaspé Peninsula, Canada, on Scottish Early-Middle Devonian acanthodians, with Sue Turner on Canadian Early Devonian acanthodians, Early Carboniferous xenacanthid sharks, and conodont affinities, and (also with Gavin Young) on the ?late Early Devonian shark *Mcmurdoz*, with John Long (Museum of Victoria) and Kate Trinajstic (University of Western Australia) on Middle-Late Devonian acanthodians of Antarctica, and also with John, Mike Coates (Chicago) and Michal Ginter (Warsaw) on the Gogo shark. She continues to work on the histology and morphology of rich Early Devonian microvertebrate assemblages from central west NSW (poster presentations included one on possible stem osteichthyans from these limestones at the Uppsala meeting and another on postcranial exo-endoskeleton interfaces in early vertebrates at CAVEPS) and on Late Silurian-Early Devonian acanthodians of the western USA and those from the IUGS Global stratotype Emsian section of Zinzilban, Uzbekistan.

Over the last 4 years Sue and Carole have been involved in a joint research effort with colleagues from Belgium, Canada, France, Germany, and USA to show that conodonts are not vertebrates (see below).

**CANBERRA:** Research activities relevant to IGCP 491 at the Australian National University included Gavin Young’s fieldwork in the Devonian of the NSW south coast in January 2007 (with John Long); he also attended the 2007 CAVEPS meeting in Melbourne in April, and the Early Vertebrate Symposium in Uppsala, Sweden in August. At the CAVEPS meeting he hosted IGCP 491 co-leader Zhu Min, plus two of his students from Beijing. The Uppsala meeting included the last business meeting for IGCP 491. Other work included an Aztec Siltstone actinopterygian, a reassessment of...
tristichopterids from the Devonian of East Gondwana, and revised interpretations of
the antiarch pectoral fin. Earlier field-work with palaeobotanist Brigitte Meyer-
Berthaud (Montpellier) resulted in a publication. Student activities included fieldwork
with Lu Jing and Qiao Tuo from Beijing, who visited the Hatchery Creek Formation
near Wee Jasper, NSW, where James Hunt carried out his investigation of new
Middle Devonian osteolepid material. Greg Bell has started a project (M.Phil.) on the
placoderm material from Jemalong quarry, near Forbes, NSW (which produced the
jaw of the tetrapod Metaxygnathus), and successfully trialed some acid preparation
techniques. Collaboration continued with Tim Senden (ANU) on XCT scanning and 3-
D visualization of numerous Devonian fish specimens. Ken Campbell and Dick
Barwick have continued their ongoing work on the morphology and phylogeny of
Devonian dipnoans, again collaborating with Jan den Blaauwen (Amsterdam) and
Tim Senden. Alex Ritchie (now in Canberra) continues to work on undescribed
material in the huge AM collection of fossil fish. Although unable to attend the
Uppsala meeting, he was coauthor on talks by Ivan Sansom on the Ordovician
radiation of fishes from a Gondwanan perspective, and on the gnathostome branchial
skeleton (with Bob Carr, Zerina Johanson).

MELBOURNE: At La Trobe University, work on the Viséan Ducabrook Formation
was completed, although further field work is planned, subject to funding. Anne
Warren’s description of the new half skull of Ossinodus was published. Anne was
the one of the principal organizers of the CAVEPS in Melbourne in 2007, where she
talked on Ossinodus and sensory canals in early tetrapods. Kate Parker is nearing
completion of her paper on the Horton Bluff rhizodontid cranial and postcranial
material, and was coauthor on a new Barameda paper. She spoke on the
sedimentology of the Early Carboniferous Ducabrook Formation tetrapod locality at
CAVEPS. Tim Holland continued his Ph.D. on basal tetrapodomorph fish with John
Long (now LA County Museum) and Pat Rich (Monash University); his poster
presentation at CAVEPS was on his Honours work on the rhizodontid Barameda, and
he also talked on the tetrapodomorph Marsdenichthys from Mt Howitt, Victoria. At
Museum Victoria, Brian Choo presented some of his Ph.D. work results on
colinaichthyidae from the Gogo Formation in a poster and talk at CAVEPS and a talk at
the Uppsala meeting (coauthors John Long, Kate Trinajstic). John Long has
continued working with Kate Trinajstic (UWA), and has contributed to papers on the
Fairy Formation vertebrates and soft tissue preservation in Gogo placoderms with
regional coauthors. John’s presentation at CAVEPS was on a new edentulous fish
from the Gogo Formation. He attended the Uppsala meeting, giving a talk (coauthored
with Tim Holland) on Gogonasus and tetrapod origins.

PERTH: Kate Trinajstic (now at Curtin University) was part of Annette George’s
sedimentology group at the University of Western Australia, and has continued her
biostratigraphic work on the Canning Basin and Lennard Shelf to determine the time
frame of significant events in the evolution of the reef complexes in the Canning
Basin. She has just gained one of the Prime Minister’s prestigious Science Prizes.
Next year she will host the next CAVEPS Symposium in Perth (see below). The main
focus of her research is the relationship between development, evolution and the
extinction of major groups across the Frasnian/Famennian boundary and Devonian
(Famennian)/Carboniferous boundary, with particular interest in how organisms
respond to environmental change and niche occupation by different taxa following
extinction events. At the 2007 CAVEPS, Kate’s presentation was on the Gogo arthrodire *Bullerichthys*. Kate talked on the Late Devonian fish microremains of the Canning and Carnarvon basins of Western Australia (coauthor Annette George) and was first author with Kim Dennis-Bryan on her presentation on polymorphism in Gogo arthrodires at Uppsala. Her placoderm work is particularly focussed on intraspecific variation and the effect of polymorphism on phylogeny. She has been logging core through Paddys Valley (where most of the Gogo placoderm material is found) to determine if environmental change was the driving force for evolutionary changes, particularly in relation to feeding strategy. She continues to work with John Long, with recent project being on the taxonomy and description of new articulated ptyctodonts from the Carnarvon and Canning Basins. Kate is also working with Sue Turner on Late Devonian-Early Carboniferous shark microremains from the Canning and Bonaparte basins, including material studied in M.Sc. projects by Benita Chambers (James Cook University) and Frances Edwards (Macquarie University).


NEW ZEALAND: Ian Macadie continues working on the Lower Devonian microvertebrates of Reefton, NZ.

Acknowledgements: Carole Burrow, Susan Turner gratefully received grant-in aid from the Australian IGCP Committee to participate in IGCP 491 conferences.

REFERENCES

Books

Edited Volumes


Peer-reviewed Papers


Last IGCP 491 Conference Proceedings in H. Blom; M. D. Brazeau (eds.), 40th Anniversary Symposium on Early Vertebrates/Lower Vertebrates (11th Intern.


Other relevant publications:


B-Recent journal articles:


**Conodonts are Not Vertebrates**


Carole Burrow & Susan Turner
November 2010

**IGCP587 South Australian Activities**

*South Australian Museum IGCP587 Report for 2010*

**James G. Gehling**

**Publications 2010**


**Conference Papers**


Public Lectures (2010)

- Gehling, J.G. “Once were sponges: Flinders Ranges fossils and the origins of animals”. Talk to Probis Club, Norwood-Burnside, Friday 27 August 2010.

Geoscience Promotion (2010)

- 2-5 Feb 2010: Workshops and lectures on coastal ecology and geomorphology for Seafari Arts Festival at Beachport, South Australia.
- 6-11 Apr 2010: Filming and interviews in the Flinders Ranges at the Brachina Gorge Geological Trail and Ediacara fossil site at Nilpena for NASA Astrobiology Institute virtual field trip for the Advent of Complex Life project.
- 21-23 Apr 2010: Filming and interviews in the Flinders Ranges at the Brachina Gorge Geological Trail and Ediacara fossil site at Nilpena for Japanese University of the Air.
- 16 Jun 2010: Broadcast of interview for Channel 10 Totally Wild on Mesozoic fossils of the Opal Fossil gallery, for children’s TV.
- 1-3 Sep 2010: Documentary filming of Ediacara fossil sites in the Flinders Ranges for “Australia: the land that time forgot” commissioned by ABC TV.
Major Books and Exhibitions for 2010

The Artist and the Scientists
Bringing Prehistory to Life

By Peter Trusler, Patricia Vickers-Rich, Thomas H. Rich

This stunning book follows the development of selected works of art covering the last 500 million years of the geological record. Over more than thirty years Patricia, Tom and Peter have travelled across Australia, New Zealand, Asia, the Americas, Africa and Eastern Europe in search of the remains of early life, including fish, dinosaurs, birds and mammals. Told from the viewpoints of both scientist and artist, the reader is given a unique insight into the process of preserving and recording the evolution of prehistoric life.

It is a unique personal account of how three people – two scientists (eminent palaeontologists Patricia Vickers-Rich and Thomas H. Rich) and one artist (Peter Trusler, one of the finest Australian artists of scientific realism) – have worked together for more than two decades to produce some of the best reconstructions of past times. The art in the book is exceptional in its accuracy and quality and each chapter represents a self-contained recollection (from both an artist’s and scientist’s perspective) of a particular field trip – the people, the geography and the fossil discoveries leading to the reconstruction of an ancient past.

Award winning author team with many publications, commissioned artworks, and exhibitions to their credit:

- Wildlife of Gondwana was awarded both the Eureka Prize and the Whitby Medal (1993–1994)
- Peter Trusler has provided the art for the second largest stamp issue in the history of Australia Post on Australian Dinosaurs
- Peter has worked for National Geographic and together with Patricia and Tom produced the cover of Time Magazine in 1993

Double-page spread from “The Artist and the Scientists”
- Spans over a period of 600 million years
- Depicts not just dinosaurs, but also fish, birds and mammals
- Discoveries that originate from all over the world - Australia, New Zealand, Asia, the Americas, Africa and Eastern Europe
Wildlife of Gondwana
Exhibition

Purpose of the exhibition
- Education
- Engagement of school children and the general public in science and technology
- Establishment with a learning edge.
- Public from this project are used to support research on dinosaur related projects and scientific exchanges as well as development of further educational material.

Availability
The exhibition will be available for rent from April 2011.

For inquiries please contact:
Dr Corrie Williams
Exhibition Manager
Monash Science Centre
Building 74, Monash University, Victoria 3800
Email: Corrine.Williams@monash.edu

Economic products
Full education packages with pre- and post-exhibition activities for students in Levels Prep to Year 12.

This exhibition is supported by Visions of Australia, an Australian Government Program supporting touring exhibitions by providing funding assistance for the development and touring of cultural material across Australia.