

# ANNUAL REPORT

OF THE

## SOUTH AUSTRALIAN MUSEUM BOARD

2013–2014

**September 2014**  
**South Australian Museum**

North Terrace  
Adelaide, South Australia 5000  
ABN 39 808 959 302

**[www.samuseum.sa.gov.au](http://www.samuseum.sa.gov.au)**

Director  
Telephone +61 (08) 8207 7395

*For copies of this document  
please contact:*

Website: [www.samuseum.gov.au](http://www.samuseum.gov.au)  
Telephone: +61 (08) 8207 7395  
Facsimile: +61 (08) 8207 7643

ISSN 0814-2262



**Government  
of South Australia**



## TABLE OF CONTENTS

<b>1</b>	<b>SUMMARY .....</b>	<b>1</b>
1.1	Chair's report.....	4
<b>2</b>	<b>ROLE, LEGISLATION, STRUCTURE.....</b>	<b>6</b>
2.1	Role .....	6
2.2	Legislation .....	6
2.3	Structure .....	7
<b>3</b>	<b>CONTRIBUTION TO SOUTH AUSTRALIAN GOVERNMENT'S STRATEGIC PRIORITIES AND OBJECTIVES.....</b>	<b>8</b>
3.1	Alignment with South Australia's Strategic Priorities .....	8
3.2	Alignment with South Australian's Strategic Plan objectives .....	9
<b>4</b>	<b>ACHIEVEMENTS AND INITIATIVES .....</b>	<b>12</b>
4.1	Visitation .....	12
4.2	Exhibitions .....	12
4.3	Community Programs Team .....	16
4.4	Staff Achievements and Awards .....	26
4.5	Science Research .....	26
4.6	The Collections.....	39
4.7	Development .....	45
4.8	Support Organisations.....	47
4.9	Aboriginal Reconciliation.....	48
4.10	Volunteer Support.....	49
4.11	Greening of Government Operations.....	50
4.12	Energy Efficiency Action Plan.....	50
<b>5</b>	<b>PUBLICATIONS, TEACHING AND DISSEMINATION OF RESEARCH AND COLLECTIONS.....</b>	<b>51</b>
5.1	Books and Monographs .....	51
5.2	Book Chapters .....	52
5.3	Scholarly Journal Papers.....	54
5.4	Other Publications .....	68
5.5	Conference Papers, Talks and Lectures .....	70
5.6	External Researcher Publications .....	82
5.7	Other Events and Associations.....	86
<b>6</b>	<b>STAFF LIST .....</b>	<b>97</b>
6.1	Directorate.....	97
6.2	Business and Finance.....	97
6.3	Development .....	97

6.4	Operations and Information .....	97
6.5	Programs .....	98
6.6	Science .....	99
<b>7</b>	<b>HUMAN RESOURCES.....</b>	<b>104</b>
7.1	Number of Employees by Salary Bracket .....	104
7.2	Status of Employees in Current Position .....	104
7.3	Number of Executives by Status .....	105
7.4	Total Days Leave Taken per Full-Time Equiviant .....	105
7.5	Number of Aboriginal and/or Torres Strait Islander Employees .....	105
7.6	Number of Persons Separated from and Recruited to the Agency .....	105
7.7	Number of Employees by Age Bracket, by Gender .....	106
7.8	Cultural and Linguistic Diversity .....	106
7.9	Total Number of Employees with Disabilities .....	106
7.10	Types of Disability (Where Specified) .....	107
7.11	Number of Employees Using Voluntary Flexible Working Arrangements....	107
7.12	Documented Review of Individual Performance Management .....	107
7.13	Leadership and Management Training Expenditure.....	108
7.14	Accredited Training Packages by Classification.....	108
<b>8</b>	<b>WORK HEALTH SAFETY AND INJURY MANAGEMENT (WHS&amp;IM) .....</b>	<b>109</b>
8.1	Key Achievements.....	109
8.2	WHS Notices and Corrective Actions .....	109
8.3	Agency Gross Workers Compensation Expenditure .....	110
8.4	Successful Consultative Arrangements.....	110
8.5	Safety Targets in the Museum 2010–15 .....	111
<b>9</b>	<b>OVERSEAS TRAVEL .....</b>	<b>112</b>
<b>10</b>	<b>ACCOUNT PAYMENT STATISTICS.....</b>	<b>113</b>
<b>11</b>	<b>FRAUD AND LEGISLATIVE COMPLIANCE .....</b>	<b>113</b>
<b>12</b>	<b>FREEDOM OF INFORMATION ACT 1991 PART 11 SECTION 9(2).....</b>	<b>114</b>
12.1	Agency Structure and Functions: Section 9(2)(A) .....	114
12.2	Effect of Agency's Functions on Members of the Public: Section 9(2)(B)....	114
12.3	Arrangements for public participation in policy formation: Section 9(2)(C) .	114
12.4	Description of Documents Held by the Agency: Section 9(2)(D) .....	115
12.5	Access Arrangements, Procedures and Point of Contact: Section 9(2)(E)(F)	116
12.6	Freedom of Information Requests .....	116
12.7	Whistleblowers Protection Act 1993 .....	116
<b>13</b>	<b>INDEPENDENT AUDIT REPORT OF FINANCIAL STATEMENTS .....</b>	<b>117</b>

## 1 SUMMARY

The South Australian Museum is dedicated to the conservation and study of nature and culture for the benefit and enjoyment of current and future generations. The Museum's exhibitions, collections, programs and research projects contribute to global understanding of human cultures and the natural world as well as supporting life-long learning in the community.

The Museum continues to align this role with the South Australian Government's Strategic Plan. Entry to the majority of Museum events and roadshows were offered free of charge, while reasonable entry fees were maintained for some temporary exhibitions, helping to make Adelaide and South Australia an affordable place to live.

The Museum made a major contribution to making Adelaide a vibrant city by attracting 735 091 visitors during 2013–14. Plans have begun for a major redevelopment that will further enhance the Museum's appeal and attract and engage a diverse range of visitors to a high performance Museum. Early childhood programs in particular were designed to nurture the curiosity of young children and create a deep connection with and sense of belonging to the Museum, which will help ensure they become visitors for life.

Throughout 2013–14 the Museum delivered a wide range of programs, exhibitions, activities and research. This included engaging, educational and targeted programs with a particular focus on early childhood education such as Museum Alive for Under 5, Tell Me a Story, Through the eyes of a child, Children's University, Children's Voice and the myexcursion Learning SA application (app).

Community engagement continued to be a strength as evidenced by the Museum's Out of the Glass Case initiative. This program encompassed outreach programs conducted offsite in schools and in the general community, including *Science Alive*, APY Lands roadshow, Roxby Downs community roadshow, WOMAdelaide 2014, Upper Spencer Gulf roadshows (four roadshows in 19 locations) and the Great Australian Bight roadshow (four schools and one community event).

Public programs were also run on site at the Museum and targeted a diverse public audience. A comprehensive program was run during Biodiversity Month that attracted more than 15 500 people and catered for all ages. Public and school workshops as well as school holiday programs were held on the significant role of terrestrial invertebrates. The Museum held its first major 'after dark' event titled *Grubs Up: Food of the Future*, which was aimed at young professionals. Other public programs included *Biodiversity: Spineless – A World of Animals with No Backbone*, *Life Before Dinosaurs: The Permian Monsters*, *STEM Studio*, and a series of Sprigg Lectures.

The Museum partnered with several major events including the Adelaide Festival, the Adelaide Film Festival, DocWeek, and the Adelaide Festival of Ideas which collaboratively created new and exciting public programs. *Night Lab*, a new style of event aimed at 18–35 year olds, was created in partnership with DocWeek and sold out and participant engagement saw #nightlab trending on Twitter in Adelaide during the event. Also the Adelaide Festival, which used Ediacara iconography as its 2014 design theme, featured *Dig It @ The Museum* as one of its select family events.

The Museum's new publication, *Behind the Doors*, featured in Writer's Week 2014, as part of the Adelaide Festival. The Entomology Digitisation Project team, with support from the Information Centre, provided a talk and display as part a family event for the Adelaide Film Festival 2013. The Museum also hosted the launch of an app to support a documentary mapping Aboriginal stories of the Murray Darling Rivers during the Adelaide Festival of Ideas 2013.

Once again the Museum hosted two of the largest competitions of their kind in Australia – the *Waterhouse Natural Science Art Prize* (the Waterhouse) and the *Australian Geographic ANZANG Nature Photographer of the Year* (the ANZANG) competition. These competitions are rapidly gaining international reputations and contribute greatly to the high standing and broad appeal of the Museum.

Temporary exhibitions remained extremely popular with a range of audiences. *Life Before Dinosaurs: The Permian Monsters* taught visitors about the bizarre-looking animals that dominated land and sea and the greatest extinction the world has ever seen. *Ngintaka* was a multi-layered exhibition presented by the Anangu Arts and Culture Aboriginal Corporation that combined Anangu and western knowledge to tell the public story of the Ngintaka songline.

Support from corporations, foundations and private individuals continued to remain strong throughout and was central to the success of many of these activities. New support was secured for the Museum's School Holiday Program from a private foundation. Corporate support for the Museum's outreach activities and talks was again central to the success of these programs. In addition, donors, corporations and government departments continued to offer strong support for the *Waterhouse*.

The Museum continued to be Australia's most successful Museum in terms of both competitive research funding and peer-reviewed publications. In the last year, the Museum won 29 competitive external research grants totalling \$11.8 million, including 12 from the Australian Research Council (ARC). The impressive research grant results represent a significant increase, almost double the amount awarded in 2012–13. The Museum will benefit greatly from these successes for years to come. More than 220 collaborative research partnerships were maintained with museums, universities and other research institutions. Eighty-nine productive research collaborations were established or sustained with 28 nations across Europe, the United Kingdom, United States, Canada, South America, Asia and the Pacific.

The Museum's strong track record of research in biological and earth sciences, humanities and palaeontology continued. Museum staff and Honorary Research Associates (HRAs) published 178 journal articles, authored three books and 26 book chapters and delivered 73 conference papers and 63 public talks. Museum staff also contributed more than 4248 hours of time towards tertiary teaching at various academic institutions and directly supervised 61 PhD students, one Masters student and 15 Honours students.

In 2013, two of the Museum's main galleries were refurbished and relaunched. South Australian Megafauna: Giants of the Plesitocene is delivering more engaging and interactive experiences with specimens reorientated around wall graphics and touchscreens which provide artists' impressions. The First Life: Ediacara Biota Gallery refurbishment allows visitors a hands-on, digital glimpse into the oldest complex life known on Earth and was funded generously by private donors, facilitated by the South Australian Museum Foundation.

The digital presence of the Museum has been further enhanced with the launch of the Museum's new award-winning website, which received 182 380 visits in 2013–14. A series of *UNLOCKED* stories highlighted the Museum's world-class and diverse research and attracted attention from all mainstream media channels. The Museum has also engaged with its audience via social media, with Twitter followers and Facebook page likes increasing by 67 per cent and 140 per cent respectively, when compared to the previous year.

The enthusiasm, support and generous donations of the Museum's supporters continued to be fundamental to the Museum's success. The philanthropic support of the South Australian Museum Foundation enabled the Museum to purchase the Rainbow Opal as well as substantially upgrade the First Life: Ediacara Biota Gallery. As at the end of the 2013–14 year, the Foundation was actively raising funds for the Museum to purchase significant Warlpiri objects associated with the Yuendumu Doors collection. The Foundation also managed the commercial activities of the Museum Café and Shop, providing an enriched visitor experience as well as a valued source of income for the Museum.

The Friends of the South Australian Museum Incorporated continued to promote and support the Museum through newsletters and public presentations, conduct special tours and donations to support the Museum's collections.

The Waterhouse Club again ran events and expeditions that showcased the Museum's most talented scientists and raised funds through expeditions to the Galapagos Islands, New Zealand, Cape York and a number of South Australian destinations.

The Museum employs 82 people, ranging in age from 25 to over 65 from culturally diverse backgrounds. A continued commitment to improving Work Health and Safety and Injury Management strategies and staff training is helping to increase safety for staff on and offsite as well as for visitors.

Once again the Museum's impact extends far beyond its walls. It engaged a wide range of audiences locally, nationally and globally through modern, diverse and targeted programs, exhibitions and events. The Museum's research continues to be world class and is underpinned by strong collaborations within Australia and overseas. The Museum is delivering digital, interactive and hands-on experiences that make its collections, exhibitions and programs more accessible than ever. The Museum's focus will remain on preserving cultural and natural heritage and delivering affordable, educational and memorable experiences. Recent redevelopments, as well as those currently in the planning, will ensure that the Museum remains an honourable, accessible and high performance museum.

## 1.1 CHAIR’S REPORT

It has been a year of transitions for the Museum, with a change in Directorship, Foundation leadership and plans underway for a major refurbishment. We have grasped this opportunity to survey the Museum’s outstanding achievements, analyse our strengths and priorities and chart a new direction for the coming years.

In January we welcomed a new Director, Mr Brian Oldman, who follows on from the steady guidance of outgoing Acting Director Professor Andrew Lowe. Brian has held significant executive roles at several cultural institutions overseas and his expertise in major redevelopments; linking research to the community; collaborating with industry; and developing commercial income streams will be key to balancing the Museum’s cultural and commercial imperatives.

In our current environment no great institution can achieve its potential without the support of an active and successful Foundation supporting community and corporate engagement.

The Honorable Diana Laidlaw came to the end of her period as Chair of the South Australian Museum Foundation. Her impact has been transformational, and her energy and leadership has facilitated program development, capacity building, strategic development and acquisitions. The Foundation has supported the purchase of the Warlpiri collection to complement the funding of the restoration of the Yuendumu Doors, the purchase of the Rainbow Opal, as well as contributed to the upgrade of the First Life: Ediacara Biota Gallery. We look forward to continuing the close relationship between the Board and the Foundation with its new Chair Dr Mary Sutherland a longtime supporter of the Museum.

The Museum’s globally significant collections and world-class research ensure we continue to make our mark nationally and internationally. We are the only museum in the world holding opalised fossils and our newly refurbished First Life: Ediacara Biota Gallery gives visitors a truly unique experience of the oldest complex life known on Earth. We also boast the biggest and best collection of Aboriginal artefacts in the world as well as one of the world’s most significant Pacific Island collections. Our scientists are also undertaking vital ore body research and delivering key outcomes to the national and international mining sector on the formation of gold, copper and uranium mineralisations.

We have continued our great track record of collaboration with universities, particularly the University of Adelaide with whom we share local and joint appointments as well as honorary engagements. Academically we remain extremely strong, contributing to the supervision of 61 PhD students, one Masters student, and 15 Honours students as well as hosting visiting international academics, senior scholars and students. Our publication record was once again exceptional with more than 200 publications – many a result of collaborative research with other globally significant institutions.

The Museum also plays a central role in recruiting people into careers in science as well as training the next generation of scientists. Our involvement in STEM Studio, as part of National Science Week in collaboration with Bridge 8, is a great example of our commitment in this area. STEM Studio targeted year 8–9 female students and used hands-on sessions to inspire girls to take on science, technology, engineering and mathematics (STEM) careers. Developing skills and providing support for higher degree students also remains a key element of our science engagement program.

The Museum continues to make its collections accessible to remote communities through our extremely popular visits to the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands. This unique program maintains essential links to cultural history as well as fostering a passion for

science within the Aboriginal community. We have also continued our highly-successful program aimed at engaging marginalised young people, using our archival collections of Aboriginal family and community history to enhance a sense of belonging and self-esteem.

Our targeted and engaging education and outreach programs make a lasting contribution to the State's strategic priorities of *An affordable place to live*, *Creating a vibrant city* and *Every chance for every child*. Our activities align with many of the State's strategic plan objectives by engaging the community and delivering world class research outcomes.

On behalf of the Board I take this opportunity to thank our many sponsors, donors and supporters who make it possible for us to provide our exceptional exhibitions and programs, the majority of which we offer free of charge. I would like to particularly highlight the efforts and expertise of our more than 300 volunteers who boast skills and experience unrivalled by any other cultural institution in the State. They not only provide enhanced visitor experiences but also use their specialist skills and experience to make a crucial contribution to our research programs. Our institution is further enhanced by our professional and skills based Board which has in the last year been involved in leading the transitional changes in Museum leadership and strategic planning. In the last year the Board has also undergone changes losing several highly experienced members who, however, continue as advocates and supporters.

As an institution we have recognised the need to refurbish and expand the Museum's temporary exhibition spaces and invest in technology and infrastructure to ensure our collections and research findings are accessible for all in an ever-changing environment. We thank the Government of South Australia for their ongoing support and commitment to our redevelopment program and look forward to the exciting and enhanced capabilities and experiences it will deliver for our visitors.

The transitions that are taking place within the Museum have provided us with a great opportunity. We are assessing our strategic direction, learning from our achievements and developing new goals to ensure we continue to preserve and explore our cultural and natural history; undertake globally significant research; and attract and engage people from all walks of life.

All South Australians can be proud of this institution and be assured that their confidence, investment and affection for the Museum is well directed.

The Hon Dr Jane Lomax-Smith AM  
Chair  
South Australian Museum Board



## **2 ROLE, LEGISLATION, STRUCTURE**

### **2.1 ROLE**

The Museum's role is to increase knowledge and understanding of natural and cultural heritage; to serve the community by acquiring, preserving, interpreting and presenting material evidence concerning people and nature; and to provide opportunities for study, education and enjoyment.

### **2.2 LEGISLATION**

Management of the Museum is prescribed under the *South Australian Museum Act 1976*. The Museum is a Division of Arts South Australia within the Department of the Premier and Cabinet which transitioned to the Department of State Development as of 1 July 2014. The Museum Board comprises eight people appointed by the Minister. The board functions as a body corporate.

Board members during 2013–14:

The Hon Dr Jane Lomax-Smith AM (Chair)

Prof David Adelson

Ms Juliet Brown – appointment commenced August 2013

Ms Noeline Buddle

Ms Helen Carreker – appointment commenced January 2014

Mr Peter Hanlon

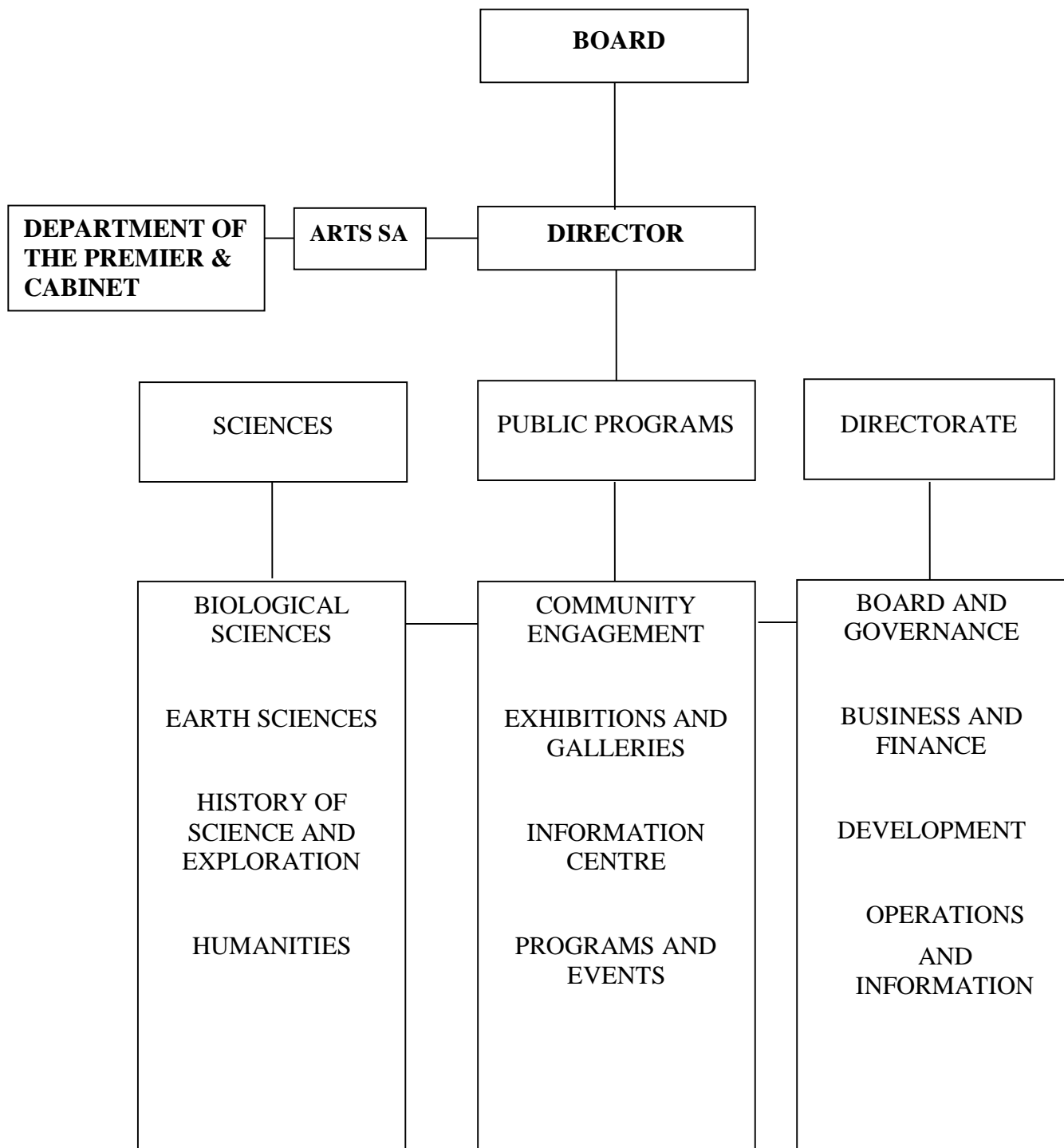
Ms Elizabeth Perry – appointment ended August 2013

Mr David Rathman AM PSM

Ms Natasha Stott Despoja AM – appointment ended November 2013

Prof Michael Worton – appointment ended February 2014

## 2.3 STRUCTURE



### **3 CONTRIBUTION TO SOUTH AUSTRALIAN GOVERNMENT'S STRATEGIC PRIORITIES AND OBJECTIVES**

The Museum continues to sustain and develop its contribution to achieving the goals of South Australia's Strategic Plan. The following sections summarise the Museum's commitment and achievements against the priorities and objectives of South Australia's Strategic Plan.

#### **3.1 ALIGNMENT WITH SOUTH AUSTRALIA'S STRATEGIC PRIORITIES**

The Museum's programs and activities (section 4) allow us to deliver benefits to a diverse audience, with particular emphasis on the following government priorities.

##### **3.1.1 An affordable place to live**

Once again the Museum has provided a suite of programs and events, many at no charge, whilst maintaining free entry to the main galleries. We continue to provide high-end, paid, temporary exhibitions and events but strive to offer these at an affordable entry fee (section 4.2.2).

##### **3.1.2 Creating a vibrant city**

Our main aim is to provide and deliver first-class activities and services to those who visit the Museum. The Museum's programs and exhibitions on North Terrace were enjoyed by 735 091 visitors (section 4.1) during 2013–14.

The Museum again delivered two of the largest competitions of their kind in Australia in the heart of the city of Adelaide; the *Waterhouse* and the *ANZANG* competition. These are highly regarded international events which have a strong annual following (section 4.2.2.1). The temporary exhibition gallery also hosted *Life Before Dinosaurs: The Permian Monsters* and *Ngintaka*, presented by the Ananguku Arts and Culture Aboriginal Corporation, which told the story of the Ngintaka songline from the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands.

Two of the Museum's main galleries were relaunched in 2013 – the South Australian Megafauna: Giants of the Pleistocene and the First Life: Ediacara Biota Gallery. These refurbished galleries offer hands-on, digital, interactive experiences to attract, engage and inspire visitors of all ages.

The Museum also contributed to key cultural programs held within the city including WOMAdelaide, Writers Week 2014, Adelaide Film Festival 2013, and Adelaide Festival of Ideas 2013.

##### **3.1.3 Every chance for every child**

The Museum's community programs team (section 4.3) was again well supported by the Department for Education and Child Development (DECD). This ensures that engaging new

programs are specifically developed, designed and delivered for key audiences at the Museum as well as during roadshows. Two DECD Education Managers were seconded to the Museum during 2013–14 and provided ongoing support for teachers and school groups.

New programs were developed to match the Australian Curriculum and more than 29 000 young children participated in Museum and outreach coordinated activities. Karen Hogan, DECD Education Manager within the Museum collaborated with Mark Fischer, DECD Education Manager, Art Gallery of South Australia, to develop the *Children's Voice* research project. This program, based on the Reggio Emilia philosophy and the work of Carla Rinaldi (Adelaide Thinker in Residence), gathered information on how preschoolers interacted with the Pacific Cultures Gallery during multiple gallery visits. Results will support future programming for early year students (section 4.3.1.3).

Roadshows visited schools and communities within the APY Lands (five locations), Roxby Downs, Upper Spencer Gulf (18 locations) and Great Australian Bight (four locations) as part of the Museum's *Out of the Glass Case* outreach program. This program provides Museum experiences for children in rural and regional areas.

In collaboration with DECD and Two Bulls, the Museum developed the *myexcursion* learning SA app. This educational app for the Museum's Megafauna Gallery addresses Australian Curriculum Understandings for year 5–6 students.

## 3.2 ALIGNMENT WITH SOUTH AUSTRALIAN'S STRATEGIC PLAN OBJECTIVES

The Museum's activities are closely aligned with many of the objectives outlined in South Australia's Strategic Plan (2011), as summarised below.

### 3.2.1 Our community

In 2013–14 nine public programs were run at the Museum attracting visitors ranging in age from two to 99 years (target 1: urban spaces). Along with the *Waterhouse* and *ANZANG*, the Museum held *Biodiversity Month*, *Life Before Dinosaurs: The Permian Monsters*, *Museum Alive for Under 5*, *Tell Me a Story*, *Through the eyes of a child*, *Children's University* and *Dig it @ the Museum*. School holiday and NAIDOC programs (target 12: early childhood) were also run as well as the *Sprigg Lecture Series* (target 23: social participation; section 4.3.2). This helped to maintain cultural vibrancy and a high regard for the Museum as a destination for interstate and international tourists (target 3: cultural vibrancy – arts activities and target 4: tourism industry).

The Museum also actively engaged in the Aboriginal Youth Program and visited the Anangu Pitjantjatjara and Yankunytjatjara (APY) Lands in 2013–14 as part of the ongoing roadshow program (target 5: multiculturalism, target 6: Aboriginal wellbeing, target 15: Aboriginal education (early years) and target 27: understanding of Aboriginal culture; section 4.2.2). The Museum's Information Services section worked on a project funded by the Milton Foundation to improve the self-esteem, motivation and sense of identity for Aboriginal young offenders (target 19: repeat offending; section 4.5.3.1).

The Board's Aboriginal Advisory Group acts as a conduit between Aboriginal communities and the Museum (target 28: Aboriginal leadership). The Museum continues to attract Aboriginal staff at a rate of 3.7 per cent (section 7.5), in excess of the Government target of two percent (target 53: Aboriginal employees).

The Museum's 172 volunteers and 64 HRAs continue to be integral to the Museum's activities and work in all sections of the Museum including Development, Information Services and Special Projects (target 24: volunteering; section 4.10). The Museum promoted its recycling regime to staff in order to reduce waste to landfill (target 67: zero waste) and continued to enforce a non-smoking environment in and around all Museum buildings (target 80: smoking).

Museum staff, volunteers, students and HRAs were given four wheel driving, first aid and manual handling training. The Museum also undertook a review of work health and safety equipment and purchased additional equipment to support remote and regional work (target 21: greater safety at work).

The Museum also promoted nature conservation (target 72: nature conservation) through the annual *Waterhouse* and *ANZANG* competitions, with continued success (section 4.2.2).

### 3.2.2 Our environment

The Museum is committed to ongoing improvements in energy efficiency with specific electrical circuitry connected to timers to reduce energy consumption and recyclable or biodegradable refuse systems in use throughout all work spaces (target 59: greenhouse gas emissions; target 61: energy efficiency – government buildings; target 67: zero waste).

The Museum undertakes a broad range of research into terrestrial and aquatic ecosystems, including major contributions to the mammals and birds sections of the Census of South Australian Vertebrates. This valuable body of work outlines the conservation status and distribution maps for each vertebrate species. The Museum is also conducting research into several indicator species identified in the Strategic Plan – (target 69: lose no species).

### 3.2.3 Our education

The *Museum Alive for Under 5* initiative continued to engage kindergarten-age children and has led to research on children's capabilities, needs and interests (target 12: early childhood; target 87: reading, writing and numeracy; section 4.3.2.2). More than 3705 students participated in the *Tell Me a Story* program that uses play experiences to engage the senses of 3–5 year old children, nurture their curiosity in culture and the natural environment and create a deep connection and sense of belonging to the Museum.

The Museum also ran a research pilot project titled *Through the eyes of a child*. This project examined how children engage with the Museum and made recommendations on how to effectively engage children less than five years of age. *Children's university* was also run in conjunction with the University of Adelaide and provided educational experiences for children, that were recognised with the awarding of formal certificates (target 12: early childhood; target 87: reading, writing and numeracy; section 4.3.2.2).

The Museum continues to deliver targeted and engaging science education programs using the 'learning through collections' approach, including the *Out of the Glass Case* science road show, the travelling science education service and science-related engagement activities on site (target 88: science and maths; section 4.3.2). This target was also addressed through two STEM (science, technology, education and mathematics) programs. In a STEM partnership, the Museum hosted and discussed science opportunities with the top 30 science students in the State. The STEM Studio, a collaboration with programers from Bridge 8, was run as part of National Science Week and involved hands on sessions for year 8–9 female students. These were designed to inspire female students to take on STEM subjects at a time when they were making school subject selections (target 92: Science, technology, engineering and mathematics).

qualifications). Our staff also participated in tertiary teaching programs (target 93: tertiary education and training; section 0).

Women comprise 50 per cent of the Museum Board (target 30: boards and committees) and the Chair is female (target 31: Chairs of Boards and Committees; section 7.3).

#### 3.2.4 Our ideas

The Museum contributes directly to cultural engagement, attracting 735 091 visitors to Museum activities and events during the year (target 99: cultural engagement – institutions; section 4).

The Museum delivered research outcomes, in partnership with South Australian universities, to attract \$11.8 million of research income (target 97: university research income; section 4.6). The Museum's research, special projects and exhibitions are also well supported by industry (target 95: industry collaboration, research and development commercialisation).

## 4 ACHIEVEMENTS AND INITIATIVES

The Museum is one of the community's and Australia's most admired scientific and cultural institutions. We care for Museum collections of national and international importance and present these to the public across South Australia and beyond. Our wealth of treasures collected over 150 years, cover everything from Australian and international archaeology and anthropology to the history of science, mineralogy and all aspects of the natural world.

The collections are used to conduct world-class research that advances the understanding of the natural world, attracts and retains talented scientists and educates students who will become the next generation of professionals. The Museum is Australia's most successful Museum in terms of both competitive research funding and the publication of peer-reviewed publications. The Museum continues to inspire the wider community – key achievements and initiatives undertaken in the last year are outlined in this section.

### 4.1 VISITATION

Over the past 12 months, approximately 735 091 people visited the Museum, with 712 562 attending the Museum on North Terrace and 22 529 visiting the Science Centre.

### 4.2 EXHIBITIONS

Two existing Museum galleries were refurbished in 2013–14 (section 4.2.1), ten different displays and exhibitions were held throughout the year (section 4.2.2) and two exhibitions toured successfully across Australia (section 4.2.3).

#### 4.2.1 Museum galleries

##### ***4.2.1.1 South Australian Megafauna: Giants of the Pleistocene***

Opened September 2013

Working within existing structures, the Museum's display of Megafauna was refreshed to present a more engaging and interactive experience for visitors. Specimens were reoriented in front of large format wall graphics and a new touchscreen provided an opportunity for artists' impressions and expert commentary to be included in this visual display.

##### ***4.2.1.2 First Life: Ediacara Biota Gallery***

Opened 17 December 2013

The Museum's First Life: Ediacara Biota Gallery received a significant refurbishment, reopening in December 2013. Funded by the generosity of private donors to the South Australian Museum Foundation, the gallery offers a new, digital, hands-on experience to give visitors a window into the oldest complex life known on the planet. The gallery features a wealth of fossil specimens from the Museum's collections and is developed for visitors of all ages – even children who are too small to see over the benches can look through windows at reconstructions of the sea floor.

## 4.2.2 Special exhibitions

### 4.2.2.1 Main Temporary Exhibition Gallery

#### *Waterhouse Natural Science Art Prize*

20 July 2013 – 8 September 2013

In its eleventh year, the annual *Waterhouse Natural History Art Prize* was revised slightly to become the *Waterhouse Natural Science Art Prize*. This allowed a broader scientific base for entries to be drawn from and helped to establish a stronger connection between entries and the Museum's collections and research.

In 2013, the prize attracted a record 859 entries from artists in 11 countries. Judges awarded the overall prize to Judith Brown for *Flight of Fancy*, an intricate cape made of bulbs, leaves and paper, which was also voted winner of the People's Choice award by visitors to the exhibition.

Visitation: 14 713

#### *Australian Geographic ANZANG Nature Photographer of the Year*

4 October 2013 – 24 November 2013

The Museum managed the *Australian Geographic ANZANG Nature Photographer of the Year* competition for the fifth year – 1828 photographs were submitted by 457 photographers from 12 different countries. The exhibition showcased more than 100 images from an outstanding international field of nature photography submissions. Judges awarded the overall prize to David Rennie of Western Australia for his black and white photograph *Near Miss*.

A new partnership with Australian Geographic saw the competition renamed the *Australian Geographic ANZANG Nature Photographer of the Year*. This partnership greatly increased exposure of ANZANG and allowed for an increase in the competition's prize offering.

Visitation: 6037

#### *Life Before Dinosaurs: The Permian Monsters*

14 December 2013 – 10 March 2014

In *Life Before Dinosaurs: The Permian Monsters*, visitors were invited to step back 290 million years, to a time when bizarre-looking animals dominated life on land and sea.

From Gondwana Studios, the creators of the successful *Hatching the Past: Dinosaur Eggs and Babies* (shown at the Museum in 2008–09), this unique exhibition presented casts of fossilised skeletons and full size life models of the animals that ruled the world millions of years before the age of dinosaurs. Visitors to this exhibition learnt about the greatest extinction the world has ever seen.

Visitation: 26 017

#### *Ngintaka*

28 March 2014 – 22 June 2014

The Museum hosted *Ngintaka*, an exhibition, presented by the Ananguku Arts and Culture Aboriginal Corporation, which told the story of the Ngintaka songline from the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands.

The multi-layered exhibition combined Anangu and western knowledge to tell the public story of Ngintaka. The exhibition covered the fields of archaeology, rock art and multimedia



technology. Audiences enjoyed song, story, dance, painting, carving, tjanpi (coiled basketry sculptures), audio and a 360-degree film installation.

Visitation: 34 643.

#### ***4.2.2.2 Australian Aboriginal Cultures Gallery temporary exhibition space***

##### *Spinifex Country*

5 October 2013 – 8 December 2013

(Paired with concurrent exhibition at Flinders University City Gallery, State Library of South Australia)

Drawing on material culture, historic photographs and contemporary works of art *Spinifex Country* explored the enduring significance of spinifex to Aboriginal Australia. The exhibition also considered non-indigenous interests in spinifex as a ubiquitous and uniquely Australian grass.

A collaboration between Flinders University Art Museum and the Museum, the exhibition drew heavily on the Museum's collections for displays at both venues.

Visitation figures are not available for this exhibition.

#### ***4.2.2.3 Various locations inside the Museum***

All of these exhibitions were offered free of charge and were integrated into the galleries; hence, visitation figures are unavailable.

##### *Traversing Antarctica*

7 December 2013 – 30 March 2014, Mawson Gallery

This exhibition from the National Archives of Australia looked at more than 100 years of Antarctic exploration. It investigated the scientific, historical and cultural legacy of those who navigated the extreme conditions in the name of discovery. The display was timed to coincide with the anniversary of the return of the Australasian Antarctic Expedition led by Douglas Mawson. The Museum and the University of Adelaide also hosted a special symposium at this time, which investigated that expedition on the Aurora.

##### *Inside SAM's Place*

*Inside SAM's Place*, a creative collaboration between the Museum and Guildhouse (the South Australian peak industry body for craftspeople, designers and visual artists) provided an opportunity for five South Australian artists to interpret the Museum's historical collections using the language of craft, design and visual art. The program commenced in 2010.

*UnEarthly: Meteorites and Microstructures*

31 October 2013 – 22 December 2013

Inspired by the Museum's collection of ancient extra-terrestrial meteorite specimens, *UnEarthly: Meteorites and Microstructures* featured work by contemporary jeweller and metalsmith, Meghan O'Rourke. Meghan was particularly drawn to the curious geometric phenomenon known as Widmanstätten patterns found in some iron–nickel meteorites. She developed specialised hand dyeing and texturing techniques to create work made from titanium with distinctive colour layers and fascinating optical effects, reminiscent of those found within the meteorites.

*Spotlight Series*

The *Spotlight Series* is a changing display that showcases some of the treasures in the Museum's collections, with particular reference to donations, unique collections and research.

Displays during 2013–14 included:

- *Census of SA Vertebrates* – 24 June 2013 – August 2013, Main foyer.

This display examined the census of South Australian vertebrates, an official listing of taxonomy for all vertebrates known to occur in South Australia. It combined maps, information and photographs with specimens from the Museum's collections.

- *Sir Arthur Conan Doyle: Author of Sherlock Holmes visits South Australian Museum* – 6 September 2013 – 3 November 2013, North foyer.

On 21 September 1920, celebrated author of the Sherlock Holmes series Sir Arthur Conan Doyle arrived in Adelaide on a four month lecture tour of Australia and New Zealand on the subject of spiritualism. His visit included time with then Director, Edgar Ravenswood Waite of the Museum as well as a visit to Humbug Scrub, north east of Adelaide. This Spotlight display followed Conan Doyle's time in Adelaide, introducing us to the people he met and the Museum specimens he encountered that later influenced his stories.

#### 4.2.3 Touring exhibitions

##### **4.2.3.1 Australian Geographic ANZANG Nature Photographer of the Year**

The full exhibition of the 2013 Australian Geographic ANZANG Nature Photographer of the Year exhibition travelled to Western Australia after the exhibition closed at the Museum.

*Western Australian Museum*

Albany: 6 December 2013 – 2 February 2014

Geraldton: 13 February – 20 April 2014

Kalgoorlie-Boulder: 3 May – 27 July 2014

Visitation figures not available.

The previous year's ANZANG exhibition also travelled to Tasmania during 2013.

*Queen Victoria Museum and Art Gallery*

Launceston: 24 August 2013 – 27 October 2013, visitation 16 392.

#### **4.2.3.2 *Waterhouse Natural Science Art Prize***

An exhibition of 31 prize-winning and highly-commended artworks from the 2013 *Waterhouse Natural Science Art Prize* travelled to the National Archives of Australia, Canberra.

20 September 2013 – 10 November 2013

Visitation: 7998.

### **4.3 COMMUNITY PROGRAMS TEAM**

The Community Programs Team is dedicated to creating innovative, high-quality learning opportunities in science, technology, engineering and maths (STEM) subjects, which actively engage community members as partners in science and culture. The Community Programs Team strives to represent and serve the diverse, talented and multi-faceted communities throughout South Australia and co-create fun, content-rich, participatory, multidisciplinary and intergenerational programs that meet the needs and interests of all visitors.

The Community Programs Team is organised into three key sections:

- education program: learning experiences for ‘birth’ to 18 year-old children from schools and community centres (section 4.3.1)
- outreach program: offsite learning experiences for schools and the public (section 4.3.2.1)
- public program: onsite learning experiences for the public (section 4.3.2.2).

#### **4.3.1 Education program**

##### **4.3.1.1 *The Department for Education and Child Development Education Managers***

Education Managers on secondment from the Department for Education and Child Development (DECD) continued to provide ongoing support for teachers and school groups visiting the Museum. New programs and resources were developed to match the Australian Curriculum.

In January 2014 Karen Hogan attended a DECD Study Tour to Reggio Emilia in Italy. This study trip toured early years learning centres and discussed education principles of Reggio Emilia. This experience will inform future programming and support learning opportunities for teachers and early year children visiting the Museum.

#### ***4.3.1.2 Museum school visitation***

The total, formal (pre-booked) school visitation to the Museum for 2013–14 was 29 785, with 13 269 children taught by DECD Education Managers and 16 516 children taught via self-guided resources developed by DECD Education Managers.

A number of school groups visited multiple galleries and exhibitions during the year, total numbers for each gallery visited included:

Discovery Trail: 12 441

Australian Aboriginal Cultures Gallery: 13 460

Biodiversity Gallery: 3738

Mawson: 2136

Ancient Egypt: 2 959

Pacific Cultures Gallery: 1602

Minerals: 1592

Fossils: 1669

World Mammals: 1206.

Children visited from a range of schools and locations, including:

Government schools: 20 673

Independent schools: 5555

Catholic schools: 3755

Disadvantaged schools: 7356

Country students: 8144

City students: 21641.

#### ***4.3.1.3 Special programs***

A number of highly successful special programs were organised in collaboration with the Museum's learning team, including school activities for National Science Week, Science Alive and Out the Glass Case Roadshows to the APY Lands and Great Australia Bight schools. Collaborations with Adelaide University's Compass program saw disadvantaged school students participating in Mawson programs, and a STEM partnership with Flinders University enabled the Museum's Education program to host and discuss science opportunities with 30 of the top science students in the State.

##### *Children's Voice*

During the year, DECD Education personnel from the Museum and Art Gallery of South Australia developed the Children's Voice research project, based on Reggio Emilia philosophy and the work of Carla Rinaldi (Adelaide Thinker in Residence). This research involves teachers and children from four preschool sites and investigates how children engage with the Pacific Cultures Gallery. The research involves multiple Museum visits, where children are observed and data is collected. An exhibition of the children's work will be held in the main foyer of the Museum in September. This research will support future programing for early year's students.

This project was generously supported by the Minister for Education and Child Development, the Hon Jennifer Rankine MP.

*myexcursion Learning SA App*

Since 2013 Education personnel from the Museum have been working in collaboration with DECD, award winning app and web developer, Two Bulls, and Museum staff to create an educational app for DECD Outreach sites. An app has been created for the Megafauna Gallery. The app addresses Australian Curriculum Science Understandings for year 5–6 students and allows students to collect and store data. This data is then able to be downloaded back at school to support further learning. The app was launched in May 2014. New apps can now be developed using this framework for other galleries to extend the learning opportunities.

#### 4.3.2 Community engagement

The community engagement team is dedicated to creating innovative, quality learning opportunities that explore natural history, science and culture. It strives to represent and collaborate with the diverse and multi-faceted communities throughout South Australia and co-create engaging, participatory, multidisciplinary and intergenerational programs that meet the needs and interests of all visitors.

The community engagement team is organised into:

- Outreach program – offsite learning experiences for educational settings and the public (section 4.3.2.1)
- Public program – onsite learning experiences for the public (section 4.3.2.2).

##### **4.3.2.1 Outreach program**

The Museum's *Out of the Glass Case* community outreach program is an innovative program for regional, rural, remote and local communities to increase access to the Museum's stories, collections and research. *Out of the Glass Case* enables the Museum to travel across South Australia to engage with individuals, groups and communities who would otherwise not easily visit the Museum. This project was generously supported by Beach Energy, Flinders University, BHP Billiton and PepinNini Minerals.

The program:

- provides innovative outreach programs to engage all ages
- helps communities access the Museum's stories, collections and research
- provides high-level engagement in current scientific research
- exposes people of all ages to the diverse fields of science
- offers interactive, hands-on experiences with the Museum's collections
- promotes cultural connections, pride and leadership
- provides opportunity for discussions on the pathways for further education in science, natural and cultural history.

There were nine main outreach programs offered at no charge during 2013–14 as outlined below.

*Anangu Pitjantjatjara and Yankunytjatjara Lands Roadshow*

15–20 September 2013

Museum staff visited the Anangu Pitjantjatjara and Yankunytjatjara (APY) Lands for five days. This was the fourth year that Museum staff had visited Anangu communities in the far north. This year the Museum visited the eastern communities with twelve staff, visiting Indulkana, Fregon, Mimili, Pukatja (Ernabella) and Kenmore Park communities. The theme for the program this year was Homes and Habitats.

This year, for the first time, an educator was teamed with a scientist to collaboratively provide an enriched learning experience for students.

Participation: 40 classes from pre-school to year 12 and community members

*Great Australian Bight*

16–20 June 2014

For the first time the Museum's roadshow team of eight Museum staff and contractors visited Oak Valley Anangu School, Yalata Anangu School, Penong Primary School and Koonibba Aboriginal School. The Museum team also provided a community barbecue at Oak Valley and took eager children and community members on a torch light tour. This event was well attended and the children became very excited about the Museum's visit to the school the following day. A community event, promoted in the West Coast Sentinel, was also held at the Ceduna National Trust Museum on Friday evening, and was well attended by many families.

Participation: Years R–7, enrolments vary across schools ranging from 20 to 60 students

*Roxby Downs Community Roadshow*

22 November 2013

A team of seven Museum staff, one volunteer and contractors visited the Roxby Downs Area School and provided a twilight community event at the Roxby Downs Area School Library.

Participation: R-7 – 311 students enrolled; secondary – 266 students enrolled; community event – 50+ community members attended.

*Upper Spencer Gulf Roadshows*

There have been four separate roadshows to the Upper Spencer gulf region:

- Whyalla, Kimba and Cowell, 19–23 August 2013 (term 3)
- Orroroo, Peterborough, Gladstone and Booleroo Centre, 21–25 October 2013 (term 4)
- Jamestown, Koolunga, Spalding, Burra, Farrell Flat and Watervale, 1–4 April 2014 (term 1)
- Auburn, Clare, Laura, Napperby and Wirrabara, 23–26 June 2014 (term 2).

The roadshows are part of the *Out of the Glass Case* outreach program, demonstrating the Museum's commitment to equity and access for communities across South Australia. This roadshow is designed to engage school-aged students from R–7 with Museum stories, collections and research; provide up-to-date scientific research; and create an opportunity for discussions on learning pathways in science, natural history and culture.

This roadshow is hosted in different schools and facilitated by two presenters:

- Nick Bailey –a trip through 4.5 billion years of Australia – exploring Museum specimens to learn about nature and the past and how this can inform the future
- Carey Burke – bone box – hands-on exploration and interpretation of bones and fossils to learn about past and present animals and environments. Mystery fossil specimens were welcomed for identification.

Mike Gemmell, Manager, Information Centre, South Australian Museum, also presented *What's in your backyard?* Mike shared stories about insects from around the Clare district and also collected an array of insect specimens from the region that now reside at the Museum.

Participation: Years R–7 – minimum of four classes per day and a maximum of 28 students per class.

#### *Science Alive*

9–11 August 2013

*Science Alive* is the premier event of National Science Week in South Australia, bringing together some 50 organisations offering a huge range of interactive experiences. The aim is to show that science is a part of people's everyday lives.

The Museum attended this event at the invitation of the Department for Manufacturing, Innovation, Trade, Resources and Energy.

Participation: over 10 000.

#### *WOMADelaide 2014*

8–10 March 2014

This was the second year that the Museum has participated in the WOMADelaide event. A focus tent was established as part of the KidZone, with the theme:

*Awaken your senses!* People joined scientists and experts from the South Australian Museum as they guide you through the sounds and wonders of the natural and cultural world.

Children were taken on a journey into the dark by scientists. All sessions were booked out over the three day event and more than 400 children experienced an inspiring session with scientists. Dr Andrea Crowther, Dr Mark Stevens, Kate Sparks and Terry Reardon (all Science Centre staff) devoted their time at WOMADelaide.

Visitors also enjoyed face-to-face conversations with science experts from the Museum Information Centre, who are experienced in engaging young children and family audiences.

This project was generously supported by a grant from the Thyne Reid Foundation.

Participation: 1000 plus

#### *Writers Week 2014*

6 March 2014

Senior Curator, Dr Philip Jones took part in Writers Week at the Adelaide Festival to present his new book *Behind the Doors. An art history from Yuendumu*. The event featured Festival Director, Laura Kroetsch interviewing Philip on the book, his research, and the collections of the Museum. The event was attended by special guests from Yuendumu, in particular Mr Otto Jungarrayi Sims.

Participation: 100.

### *Night Lab*

19 February 2014

*Night Lab* was a new public event designed for the 18–35 year old demographic, who are currently accepting similar invitations from cultural institutions across the country. The event was designed to get post school aged visitors through the door, engage them and encourage them to return, with some sense of connection to science and to the Museum. Night Lab was themed broadly on the idea of exploration, discovery and survival. It featured film screenings curated by event partner DocWeek, yarn-bombing by artist E for Ethel, and a salon-style conversation with Adelaide Festival Director, David Sefton and polar explorer Tim Jarvis on his current book release. The event also featured a highlighted display of Mawson Collection items with Senior Collection Manager Mark Pharaoh, the Flinders Dome, and a tailored menu. The event was so popular it sold out a week prior and a waiting list was generated. Attendees connected strongly to the event, with good social engagement on Facebook, Twitter and Instagram. #Nightlab was trending in Adelaide during the event.

Participation: 250.

### *Adelaide Film Festival 2013*

11 and 20 October 2013, Palace Nova Cinema

The Adelaide Film Festival had a Family Triple Bill that featured *Micro Monsters 3D*, a David Attenborough film. At the invitation of the festival, the Museum created a display based on the Entomology Digitisation Project in the theatre where *Micro Monsters 3D* was screening. Alexis Tindall, Project Manager, spoke to the audience about the digitisation project.

Participation: over 700.

#### **4.3.2.2 Public program**

Over ten additional public programs were run onsite throughout the year designed for a broad range of visitors from all ages, with free entry for most programs.

### *Biodiversity Month September 2013*

*Biodiversity Month* is celebrated across Australia each September, to promote the importance of protecting, conserving and improving biodiversity. In 2013, the community engagement team collaborated with science staff to deliver a comprehensive month-long program. The program catered for all ages with a focus on terrestrial invertebrates and their significant role on the planet. This project was generously supported by BHP Billiton.



Activities included:

- public and school workshops
- a five-day holiday program for five to 12 year olds
- insect pinning workshops for the general public
- a Sprigg lecture
- *Tell Me a Story*, a program for 3–5 year old children
- a movie night
- after dark torchlight tours that catered for visitors from 6 to 18+ years.

*Biodiversity Month* also included the Museum's first major after dark event. Specifically targeting young professionals, *Grubs Up: Food of the Future?* (13 September 2013) explored the notion of eating insects, or entomophagy, as one way to solve the issue of world hunger. Quiz master, Professor Chris Daniels hosted two expert panels as they discussed the big questions around food sustainability and other entomological issues. After the panel discussion, guests listened to live music and had the opportunity to crunch on a cricket and other invertebrates cooked by Adelaide chef, Duncan Welgemoed. This event was designed for young professionals over 18 year of age. The event was fully booked (180 people) and received local and international media coverage. This project was generously supported by BHP Billiton.

Participation: 15 500.

#### *Adelaide Festival of Ideas 2013*

20 October 2013

For the Adelaide Festival of Ideas, the Museum hosted the launch of an app in support of *Ringbalin River Stories*, a documentary film mapping Indigenous stories of the Murray Darling Rivers told by Aboriginal Elders. The app geo-located these stories in the landscapes of Australia's greatest rivers. As part of the launch, Ben Penderick presented a guided tour of the project which was followed by a questions and answer session with Elders who participated in the project. The launch which was followed by tours of the Australian Aboriginal Cultures Gallery.

Participation: 120.

#### *School Holiday Program 2013–2014*

The Museum's popular *School Holiday Program* offered unique opportunities for children to connect with and be excited by science and culture. They had the opportunity to be involved in something out of the ordinary that they might not get to experience at home or school. Each five day program offers a range of free experiences designed to evoke children's curiosity – encouraging them to question and build on their own personal understandings related to nature and culture. The program is designed around seasonal themes, developed in collaboration with key Museum science staff and connects with current Museum stories and research.

In 2013–14 the themes included:

- *NAIDOC Week* - July 2013
- *Biodiversity: Spineless – a world of animals with no backbone* (30 September – 4 October 2013)  
This program explored the abundance and importance of invertebrates and insects on the planet and included trails, live animals, puppets and play spaces, workshops on building insect hotels, studying invertebrates under microscopes and much more.
- *Permian Monsters: Life before the Dinosaurs (13–24 January 2014)*  
This summer program offered a relaxing and informative place-making experience on the Museum front lawns, with umbrellas, bean bags, rock pools and hands-on exploration of Museum collection items from the Permian period. Inside the Museum, visitors could journey into the past with an interactive fossil trail and join in a performance on prehistoric monsters and palaeontology that connected with the exhibition.
- *Collections (13–17 April 2014)*  
This program explored collections and collecting. It invited inquiry around personal collections, the role of the Museum in collecting, why collections are important and how they can be a key to the future. The program activities invited visitors to bring in treasures from their own collection; hear stories from South Australian collectors; talk with experts from Artlab Australia on how best to care for collections; reflect on personal collections in confession booths; learn how to curate, group and interpret Museum collections through workshops; and hear stories from Museum science staff about some of the unique collection items on display at the Museum. This free program was generously supported with a grant from the Thyne Reid Foundation.

Participation: 70 000 children and their families across the Museum.

*STEM Studio as part of National Science Week*

13 August 2013

*STEM Studio*, a collaboration with Bridge 8, educated Year 8 and Year 9 female students about career pathways in science. The program was led by female scientists and staff at the Museum and provided participatory sessions that drew on scientific processes. The workshops were designed to inspire Year 8–9 students to consider science, technology, engineering and mathematics study and careers. The program particularly targeted schools that otherwise might not have high enrolments in science and girls of an age where school subjects were still to be selected.

Participation: 24.

*Sprigg Lectures 2013–14*

The Sprigg series of lectures commemorate a remarkable South Australian, Dr Reg Sprigg OA, with a program of exceptional guest presenters from diverse fields, such as palaeontology, geophysics, mineral exploration, biodiversity and Aboriginal culture. These lectures provide visitors with access to the latest research and thinking around scientific and cultural discoveries and ideas at a local and global level. Lectures held during the reporting period include:

- *Ursula Mcconnel's tin trunk: a remarkable story*, Prof Peter Sutton FASSA, Museum and University of Adelaide, 30 July 2013
- *It is never too early to learn: songbird mothers teach their eggs*, Prof Sonia Kleindorfer, Flinders University, 3 September 2013 *Catching the Ediacara wave: just how different was life in the South Australia ocean 550 million years ago*, Prof Mary Droser, University of Southern California, 4 March 2014
- *Discovering Melanesia's hidden biodiversity: exploration for conservation in remotest New Guinea*, Dr Stephen Richards, Museum HRA, 13 May 2014
- *For the learned and the curious: the role of natural history museums in the 21st century*, Professor Ian Owens, Natural History Museum, London and Imperial College London, 30 April 2014.

The events continue to attract large audiences and repeat visitation. This project was generously supported by Beach Energy.

Participation: 650.

*Museum Alive for Under 5*

The *Museum Alive for Under 5* project focuses on providing learning experiences for young visitors and their families. This has led to research on staff and community perceptions about the capabilities of children under five years of age and how the programs and spaces meet the needs and interests of children in this demographic. It is influenced by current research, neuroscience and Reggio Emilia principles. This project was generously supported by the Minister for Education and Child Development, with a grant from the Office of Non-Government Schools and Services.

*Tell Me a Story*

The *Tell Me a Story* program has been offered for five years and continues to evolve and grow, receiving overwhelming support from community members and educators. It is designed especially for 3–5 year olds, to immerse them in the stories, objects and spaces of the Museum.

Participation: 3705.

*Through the eyes of a child study*

*Through the Eyes of a Child* is a pilot project, seeking to gain a deep and authentic understanding about children's experiences and engagement with the Museum. Eighteen children and their educators from three diverse sites across metropolitan Adelaide made several visits to the Museum. Community Engagement managers and the educators observed, collected and analysed data on how the children engaged in scientific thinking. The findings have been documented in a variety of ways and provide recommendations on effective ways to engage young children less than five years of age, and their families, with the Museum. This project was generously supported by the Minister for Education and Child Development, with a grant from the Office on Non-Government Schools and Services. This seed funding has also

contributed to the *Children's Voice* project being delivered by the Education Manager at the Museum.

*Children's University*

September 2013 – June 2014

*Children's University*, hosted and administered by the University of Adelaide, offers educational experiences for children outside of school learning activities and recognises their achievements by awarding formal certificates. The Museum has worked in partnership with the University of Adelaide to become a learning destination for participants, with a number of children participating in components of the *School Holiday Program*.

Participants: 35.

*Dig it @ the Museum*

1–23 March 2014

Three purpose-built dig pits were constructed for the front Museum lawns. These remained in place for three weeks to help participants uncover key South Australian fossil stories that are reflected in the Museum's fossil galleries. An additional fossil program was delivered during the opening weekend (1–2 March) that included performances, bone sorting activities, short talks, guided tours of the fossil galleries, an immersive play space for young children and an activity trail. Science staff offered demonstrations on 'behind the scenes' preparation of fossils throughout March. An after dark evening program was also in place, which included short talks by a panel of Museum palaeontologists as well as torchlight tours for varying ages of visitors.

Participation: 6500.

#### 4.3.3 The Information Centre

The Information Centre is open to the public seven days per week, 11am–4pm on week days and 11am–3pm on weekends and public holidays. Three to four volunteers staff the Information Centre and it is one of the busiest areas in the Museum. The Information Centre is set up as a hands-on activity area and a place where almost anything can be identified for members of the public. The Centre contains a reference collection of various natural history items that can be accessed to help identify items as well as a range of books, files and a database that has been developed over a number of years. The Museum's working beehive, recently restored, is one of the most popular elements amongst children and their families.

## 4.4 STAFF ACHIEVEMENTS AND AWARDS

Associate Professor Jöel Brugger, a staff member at the Museum since 2001, was appointed to the Chair in Synchrotron Geoscience at Monash University at the beginning of 2014.

Dr Jim Gehling was awarded the degree of Doctor of Science (Honoris Causa) by the University of Adelaide in recognition of his outstanding research to establish the Ediacaran geological time period, based on his studies of the geology of the Flinders Ranges.

Professor Pring took an appointment as Distinguished Professor of Chemical Mineralogy at Flinders University in March 2014.

## 4.5 SCIENCE RESEARCH

Research scientists, HRAs and students co-supervised by Museum personnel won 29 competitive, external research grants, worth \$11 836 313. Twelve of these were grants or fellowship awards from the Australian Research Council (ARC). The largest single grant was for \$5 million awarded to Professors Allan Pring, Jöel Brugger and others for an ARC Research Hub for resources engineering and extractive metallurgy.

The Museum continued to establish strong collaborative research partnerships during the financial year. In total, 226 partnerships were noted:

- 35 with other museums
- 99 with university departments
- 27 with education departments
- 65 with other agencies and research institutions.

Internationally, Museum scientists and HRAs have established or sustained 89 productive research collaborations with the following 28 nations: Belgium, Brazil (two separate collaborations), Canada (five separate collaborations), Chile, China (two separate collaborations), Czech Republic, Denmark, Finland, France (nine separate collaborations), Germany (three separate collaborations), Iceland, Iran, Indonesia, Italy (three separate collaborations), Malaysian Borneo, Netherlands (three separate collaborations), New Zealand (five separate collaborations), Norway (two separate collaborations), Papua New Guinea, Poland, Russia (two separate collaborations), Slovenia, South Africa, Spain (seven separate collaborations), South Korea, Switzerland (three separate collaborations), UK (13 separate collaborations) and the USA (16 separate collaborations).

Throughout the year, Museum staff and HRAs have contributed to the direct supervision of 61 PhD students (51 by staff, two by Museum based (internal) HRAs, eight by externally based (external) HRAs), one MSc student mentored by a staff member and 15 Honours students (12 supervised by staff, two by internal HRAs and one by an external HRA).

### 4.5.1 Aboriginal Material Culture

Dr Philip Jones's research has continued on the ARC-funded 'Reconstructing the Spencer and Gillen Collection' project, with colleagues in Melbourne and Canberra. He has documented the Spencer/Gillen collection of 250 artefacts in the Field Museum, Chicago, USA. Dr Jones has continued his work editing, annotating and illustrating F.J. Gillen's 1901–02 expedition diary, *Camp Jottings*, for publication later in 2014.

Dr Jones has also continued to work on the Tindale Shoebox Project, with funding from the Indigenous Culture Branch of the Federal Office for the Arts. This project will enable digitisation and web-presentation of Norman Tindale's 12 000 data cards detailing Aboriginal language terms for cultural concepts and material culture. Stage one of this project has been completed; data checking, image scanning and website construction is now underway.

Research into the Muslim Cameleers project continued, with the addition of content and design elements to the website at [www.cameleers.net](http://www.cameleers.net), funded through a grant from the Department of Immigration and Citizenship. Through Dr Jones, the Museum was successful in obtaining two camel riding saddles that had been brought to Australia with the first cameleers for use in the Burke and Wills Expedition.

Dr Jones was successful in a joint application for ARC Linkage funding for a four-year, \$182 541 project to examine the legacy of the Muslim cameleers' built heritage in Australia. This is a joint project with researchers at the University of Adelaide and the Islamic University, Malaysia. Fieldwork will commence in July 2014.

The Museum's digitisation of its Australian Ethnographic collections commenced during this financial year, with the aim of presenting the collections on the web and through the Museum's KE-Emu collections database.

Research has continued into the background and history of the Yuendumu Doors and the Yuendumu Men's Museum. In March 2014, Dr Jones published an illustrated book on the Yuendumu Doors, titled *Behind the Doors. An art history from Yuendumu* (South Australian Museum and Wakefield Press).

Dr Jones is proceeding with research into the life and work of the artist and naturalist George French Angas, with the aim of delivering a book manuscript to the National Library of Australia in October 2014, preparatory to a joint exhibition (South Australian Museum and National Library), planned for 2016.

#### 4.5.2 Archaeology

The ground edge axe collection continued as a focus of external research led by Professor Val Attenbrow (Australian Museum) and Jess Walker (University of New England). This collection is being used to identify which quarries were sourced for these axes – distributed between western Victoria and southern Queensland into South Australia. The project uses a Portable X-ray Fluorescence instrument to collect data and some of the original data collection will be repeated as the team now has access to upgraded instrumentation. The results will enhance the intellectual value of the Museum's ground edge axe collection.

An application to excavate at Dempsey's Lake, Port Augusta was supported by Native Title claimants and submitted to the Minister for Aboriginal Affairs in March 2013. A final decision is yet to be made on this application.

Further research trips were undertaken with CSIRO and Mirning people representatives to Koonalda Cave on the Nullarbor Plain in South Australia. Samples for dating were collected and 3D-scanning and imaging of the cave and its archaeology were completed. A session on work to date at Koonalda Cave was convened at the 2013 Australian Archaeology Association conference.

Research on the Roonka collection was undertaken by external teams led by Professor Arthur Durband (Texas Tech University, USA) and Associate Professor Judith Littleton (University of Auckland, New Zealand). The general theme of bioarchaeology has resulted in two conference presentations, one journal publication and one poster presentation.

Research on the unique sealer's site on Kangaroo Island has been a focus for survey work this year. The work was published recently and also presented at an international conference. Coast Australia participated on one survey to take footage, funded by the Australian Broadcasting Commission, for the new series to be broadcast on Foxtel later in 2014.

A new survey commenced along the Samphire Coast, between Torrens Island and Middle Beach, funded by the Natural Resource Management Board. No formal archaeological survey has previously taken place along this stretch of coast.

### 4.5.3 Archives and Information Services

#### 4.5.3.1 *Information Services*

Information Services has been developing modern technologies to deliver the Museum's collections to those parts of the wider community for whom this information was previously inaccessible. John Dallwitz has secured funding from the Pitjantjatjara Council to develop an interface for mobile phones and iPads to deliver the Ara Irititja Archive Project to Aboriginal schools and communities. As the Manager of the project, Mr Dallwitz has seen for the first time APY Land and Northern territory communities contributing their own personal archives to the database. In the last financial year 20 000 items were uploaded. In a similar fashion, the Heritage Documentation Management System has been customised so the 1974 Norman Tindale Catalog of Australian Aboriginal Tribes could be accessed from touch screens. Lea Gardam and Jennifer Dalakis of Ripple Graphics have seen the Catalog successfully installed at Dreamworld on the Gold Coast. A theme park first, *Dreamworld Corroboree* is an interactive walk-through which also features Tindale's map of Aboriginal boundaries. Along with Paul Carter, Jill Evans has developed the library software, Inmagic, so that researchers globally can access the catalogue from the Museum website. Mrs Evans is also in the process of digitising Museum journals which can now be downloaded from the Biodiversity Heritage Library website.

Information Services has also been working to reach communities that have not previously accessed the Museum's archives and library. With Shane Agius and Isabel O'Loughlin, Mr Abdullah-Highfold secured a grant from the Milton Foundation to work with Aboriginal young offenders. The aim is to improve self-esteem, motivate and give a sense of identity to decrease risk-taking behavior. In the last financial year, 70 young people have attended the family and community history workshops.

An unpublished photograph of Sir Arthur Conan Doyle in the archive collections led to the development of a Spotlight display by Jenni Thurmer and Francesca Zilio in association with Sherlock Societies and archives in Canada, France, United Kingdom and Adelaide. Previously unresearched, the data from Conan Doyle's visit to the Museum in 1920 has been included in Brian Pugh's publication, *A Chronology of Arthur Conan Doyle*. Other archival material that had not been previously published has been included in television documentaries. Ms Gardam has worked on the ABC's *First Footprints*, a four part series and Mr Abdullah-Highfold has worked on SBS's program *Who Do You Think You Are – Adam Goodes*.

#### 4.5.4 Biological Sciences

This year, Biological Sciences staff and HRAs won \$1 620 959 in 17 competitive grants from the following 10 agencies and schemes: Adelaide Mount Lofty Natural Resources Management Board (two grants), Australian Biological Resources Study (ABRS; four grants), Australian Marine Mammal Centre, Australian Pacific Science Foundation, Australian Research Council (ARC) Discovery scheme (two grants), ARC Linkage scheme, Nature Foundation of South Australia, Mark Mitchell Foundation (four grants) and the Sea World Research and Rescue Foundation.

These projects will fund a broad diversity of local, national and global studies. Projects that focus on South Australia include: monitoring small cetacean mortalities and penguin mortalities in Gulf St Vincent; a case study of health implications for dolphins contaminated by heavy metals in Spencer Gulf; and establishment of a database of South Australian whale sightings.

At the national level, the Museum's biologists will be studying: the taxonomy and barcoding of pogonine beetles; the domination in Australia by open tough-leaved vegetation; the systematics and distribution of marsh beetles; a guide to *Camponotus* ants of Australia; and the biodiversity of subterranean invertebrates in arid zone Western Australia.

New projects of global significance cover the following broad array of topics:

- tracking the development of agricultural lifestyles in island Southeast Asia through modern and prehistoric rodent communities
- patterns of biological diversification to test environmental change and evolutionary adaptations in lizards and snakes
- biodiversity and evolution of soil organisms
- evolutionary relationships and genome architecture of an enigmatic group of parasitic marine worms
- status of New Guinean long-beaked echidnas in the north-west of Australia surveyed by DNA analyses of scats
- creating valuable genomic resources to study natural variation in sharks
- soil biodiversity of the Southern Prince Charles Mountains in Antarctica
- impacts of two major new pollinators in Fiji.

The Museum regularly disseminated media releases in the form of 'UNLOCKED: stories from the Museum's scientists to promote the work and discoveries of scientific staff. UNLOCKED stories that highlighted Biological Sciences research included the following subjects: use of protein electrophoresis to compare genetic profiles of a wide range of Australian animals; retrieval of a Southern Right Whale and preparation of its skeleton and important organs from Tumby Bay, South Australia; evolution of Carpenter bees and their extinctions that mirrored dinosaur deaths eons ago; 'extreme science' in canopies of tropical Australian forests to map insect evolution from Gondwana; video footage of the life of a fish ectoparasite; and the impacts of the last Ice Age on tropical island ecosystems in the South West Pacific using tropical bee species to track the effects of climate change.

Museum scientists Professor Steve Donnellan and Associate Professor Ian Whittington, in collaboration with Ichthyology HRA Professor Bronwyn Gillanders (University of Adelaide), co-supervised the PhD studies of Sarah Catalano. Sarah has been a highly successful PhD student and was awarded several travel grants and personal awards. She was awarded an ABRS Travel Bursary and a John Glover Travel Award to attend the 2013 *Australian Society for Fish Biology* conference where she won the Victorian Marine Science Consortium Award for best student presentation. Sarah was also awarded an *Australian Society for Parasitology* Student



Conference Travel Grant to attend the 2013 World Association for the Advancement of Veterinary Parasitology International Conference, where Sarah won the Organising Committee Prize for Best Student Presentation. Sarah also won a Dean's Commendation for Doctoral Thesis Excellence from the Faculty of Sciences at the University of Adelaide and won the Channel 9 Young Achiever – Flinders Ports Environmental Award for her PhD studies on dicyemid parasites from cephalopods, including the iconic Giant Australian Cuttlefish. Sarah has also made it to the finals for the South Australian Science Excellence Awards in the category of PhD Research Excellence – Life & Environmental Sciences, to be decided in August 2014.

Biological Sciences staff members Steve Cooper, Rachael King and Mark Stevens supervised five PhD students (Nicholas Fuller, You Li, Rebecca Kittel, Alejandro Velasco Castrillon and Seyedmohammad Javidkar (Javid)) who completed their PhD projects.

Highlights from their research include:

- description of two new genera and 27 new species of Australian Cheloninae wasps by Rebecca Kittel, who received a Dean's Commendation for her PhD thesis
- discovery of a new family and ~28 new species of subterranean isopods associated with the calcrete aquifers of central Western Australia (Javid)
- providing valuable information for the conservation management of Gould's long-eared bat and the lesser long-eared bat (Nicholas Fuller) as well as the endangered bandicoot species *Isoodon obesulus* (You Li), through genetic analyses that showed the impact of habitat fragmentation on populations
- discovery of an extraordinary hidden diversity of rotifer, nematode and tardigrade species, using DNA barcoding techniques, from Antarctica (Alejandro Velasco Castrillon).

Dr Mark Hutchinson, Senior Research Scientist in Herpetology posted the beautifully illustrated Keys to the *Geckos*, *Legless Lizards*, *Blind Snakes* and *Dragon Lizards of South Australia* on the Museum web site, and exemplifies how the award-winning website will be used in future to showcase the expert knowledge of the Museum's scientists.

HRAs contribute significantly to the scientific ethos and outputs of the Museum. In the Terrestrial Invertebrates section, three HRAs have published, or are about to publish, notable works. Dr Eric Matthews and co-authors have submitted chapters on Passalidae and Hybosoridae for the second volume of a new book series on Australian beetles scheduled for publication in 2015. Mr Archie McArthur will publish his third ant book, on *Camponotus* ants of Australia, in October 2014. Dr Chris Watts has contributed a much awaited paper on larvae of Australian marsh beetles including a key to known genera.

#### 4.5.4.1 *Invertebrates*

There were many successful research projects within the invertebrate section of Biological Sciences, and some examples are highlighted below.

##### *Taxonomy and barcoding of Australian pogonine beetles*

In March 2014, Dr Peter Hudson and Associate Professor Mark Stevens successfully collected beetles during a field trip to Lakes Torrens, Eyre, Callabonna and Frome. A range of beetles was collected during the field trip and ongoing laboratory studies are currently proceeding on the genetics of the beetles. This project is supported by a grant from the Nature Foundation SA.



Figure 1: Mark Stevens and Peter Hudson collecting beetles at Lake Callabonna (left) and a pogonid beetle from the site (right). Two legs were removed from the beetle specimen to extract DNA.

##### *Science expedition to the Federated States of Micronesia (31 March 2014 – 11 April 2014)*

An expedition to islands of the Federated States of Micronesia, funded by the Waterhouse Club (Expedition Leader: Dr Ben Robinson) assisted Museum researcher Associate Professor, Mark Stevens and a student, Mr Scott Groom, to collect Collembola and native bees from Pohnpei, Federated States of Micronesia.

Pohnpei is the ‘type’ location for the Collembola genus *Uchidanura* used to erect the subfamily, Uchidanurinae. New collections from the type localities were required as a revision of the Neanuridae is not possible without new specimens. The successful collection of new material will allow morphological assessments, combined with DNA analyses, that will contribute to a broader evolutionary study of Collembola (commonly known as ‘springtails’) to understand how Pohnpei species are related to those in Vietnam, New Caledonia, New Zealand and Australia. These springtails are unusual because most possess brightly coloured digitations (epidermal spine-like projections) on dorsal and lateral surfaces. Material has been collected from eastern Australia, New Zealand and New Caledonia and now studies are exploring two species known from Pohnpei. These giant springtails are of high conservation importance and are under threat due to their dependence on old growth vegetation where they play an important ecological role in nutrient cycling. Data from this project will aid effective strategies for species and habitat protection and promote healthy productive forests.



Figure 2: Collecting in the forests of Pohnpei (Micronesia)(left) and a springtail from Pohnpei (right), now known to occur widely across the island.

Collecting at Pohnpei also targeted native bees. Associate Professor Stevens and his team have worked in the South West Pacific islands for the last three years and aimed to include the bee fauna from other Pacific regions. Three bee families, Halictidae, Megachilidae and Apidae, dominate these islands but the fauna's taxonomy is not well-understood because most species descriptions are old and spread over diverse, often obscure, journals. The only archipelago for which there is a comprehensive taxonomic treatment is New Caledonia. Furthermore, taxonomic revisions for most bee faunas from South East Asian and Indo-Malayan regions are also lacking. Our widespread collections of bees from Fiji, Samoa and Vanuatu indicate that most apid and megachilid bees in these archipelagos, represent human-aided dispersals, predominantly from the Asian region, but also from Australia and the New World. These multiple recent introductions have the potential to change pollination dynamics in the Pacific, an issue that requires future attention. Such insights would have been impossible using entirely morphology-based systematics, but DNA analyses now make it possible to track bee introductions onto islands as well as investigate their source and route.



Figure 3: A native bee on a flower in Fiji.

Field work was assisted by local Pohnpeians, who work for the Conservation Society of Pohnpei. Their help was critical in translating old (pre-World War II) place names into present locations using their original names. Time spent on Pohnpei was highly successful with all target locations visited, often with collection assistance by local children. The ease of collecting was a credit to the island management and inhabitants. Most Collembola collections occurred in the mountains of Pohnpei, often using isolated tracks to reach sites of original Collembola collections from the 1940s. For native bees, sites were targeted that had flowering plants.

*New project to develop framework DNA sequence data for subterranean animals*

Professor Steve Cooper, in collaboration with HRA Professor Andrew Austin from the University of Adelaide, received funding of \$210 000 in a joint program with Bioplatforms Australia, in association with the Australian Biological Resources Study (BushBlitz program) and the University of Adelaide (Environment Institute). This program will develop framework DNA sequence data sets for subterranean animals with the aim of developing new techniques for rapid biodiversity assessment of subterranean invertebrate fauna to enhance species discovery. The funding will further support two new PhD students, based at the University of Adelaide, commencing in 2014. Professors Cooper and Austin also won an ARC Linkage grant of \$340 000 over three years to study subterranean invertebrate communities of arid zone Western Australia. This project commences later in 2014.

#### **4.5.4.2 Vertebrates**

There were many successful vertebrate research projects during the year, with several examples highlighted below.

*Birds in the 'Census of South Australian Vertebrates'*

Ornithology Senior Collection Manager Dr Philippa Horton, volunteer Brian Blaylock and HRA Dr Andrew Black published the online text of the chapter on birds in the *Census of South Australian Vertebrates*, a joint publication of the Department of Environment, Water and Natural Resources and the Museum. Since the publication in 2000 of its predecessor, the 3<sup>rd</sup> edition of *A List of the Vertebrates of South Australia*, numerous studies, largely molecular, have resulted in a profusion of changes to the taxonomy of Australian birds and in the understanding of higher-level classification of the world avifauna. All studies relevant to South Australian birds were assessed and taxonomic and nomenclatural changes made where appropriate. The chapter includes several new species recently recorded for the State, standardised common names, and up-to-date threatened species status information.

Ornithology HRA Dr Andrew Black published the results of investigations into the current whereabouts and likely provenance of early specimens of the Western Grasswren, South Australian subspecies *Amytornis textilis myall*. He established that specimens were collected in the Gawler Ranges by F.W. Andrews in the 1870s and that these pre-date the previously acknowledged earliest observation of the subspecies by 31 years and its description as a distinct taxon by 45 years. Those early specimens that survive are now all housed in interstate and overseas museums.

*Mammals in the Census of South Australian Vertebrates*

The mammal chapter for the *Census of South Australian Vertebrates* mentioned above was made available on the Department of Environment, Water and Natural Resources (DEWNR) website in early 2014. This online edition (the last version published in 2000 was in hard copy) provides information on the 190 terrestrial and marine mammal species reliably recorded in South Australia. It marks the culmination of many years' effort by a team of six specialists, five of whom are staff or HRAs at the Museum (Catherine Kemper, Graham Medlin, Terry Reardon, Peter Shaughnessy and David Stemmer).

The Census includes an accurate distribution map for each species, with records for the first time indicating whether they were based on modern specimens, sub-fossils or sightings. The records are also associated with dates pre- and post-1970, to give users an idea of whether a species might still exist in an area. Conservation status is included for those species assigned to threatened species categories. Twenty-seven mammals, all terrestrial species, have disappeared from South Australia since European settlement.

This document will be a much-used resource for those studying the distribution and status of mammals in South Australia such as researchers, wildlife managers, students and the broader community. Such a thorough treatment is not available for other Australian jurisdictions. It is testament to the long and fruitful collaboration between the Museum and other agencies, particularly DEWNR and its predecessors. The document is jointly published by DEWNR and the Museum.

*Tracking the development of agricultural lifestyles in island Southeast Asia through modern and prehistoric rodent communities*



Professor Steve Donnellan and Dr Terry Bertozzi from the Museum and collaborators from the Australian National University have secured an ARC Discovery grant to determine the timing of the introduction of agriculture into island South-East Asia. The study will take advantage of the prodigious habit of owls to regurgitate the indigestible parts of mammalian prey into caves and fissures. Deposits accumulate over thousands of years and provide a detailed survey of the species composition of small mammal communities. These deposits can help us to identify a transition from an endemic forest fauna to a mixed fauna, that includes commensal species, as agriculture transforms the landscape. Radiometric dating methods will be used to date this transition and the appearance of agriculture, which will assist anthropologists to understand the movement of modern humans and their cultural diversity.

*Hidden species diversity of Australian burrowing snakes*

The worm-like blindsnakes are all very similar in appearance and are among the most poorly-known terrestrial vertebrates in Australia and elsewhere. Blind snakes are often encountered in fauna surveys but they can be difficult to identify and many workers feel that there is a poor understanding of how many blindsnakes occur in Australia. For the first time, teams from the Museum (Dr Mark Hutchinson and Professor Steve Donnellan), Western Australian Museum and National Museum of France have used DNA technology to obtain a better estimate of the number of blindsnake species in Australia. As with the Museum's other investigations of reptile families in Australia, DNA evidence suggests that the number of blindsnake species has been under-estimated by a factor of two or three. Work is presently underway to describe these and provide keys for their identification.

*Molecular genetic evidence for the place of origin of the Pacific Rat, *Rattus exulans**

Commensal plants and animals have long been used to track human migrations. Indeed the Pacific rat or kiori is a commonly used organism for reconstructing Polynesian dispersal in the Pacific. However, with no knowledge of the homeland of the Pacific rat, the place of origin of this human-commensal relationship is unknown. Dr Vicki Thomson and her colleagues at the University of Adelaide and the Museum (Professor Steve Donnellan) have used molecular genetic analysis and the fossil record to infer that the Pacific rat originated from the island of Flores in the Lesser Sunda group, Indonesia. In addition to Flores being the homeland of the Pacific rat, it harboured unusual diversity in the form of the Flores man (*Homo floresiensis*), dwarfed stegodons and giant rats.

*Species discoveries in Australian lizards*

Two large studies that combined examinations of anatomy and genetic sequence information have altered the perspective on some of Australia's most widespread lizard species. In a study jointly carried out by Professor Steve Donnellan and Dr Mark Hutchinson of the Museum and Dr Dan Rabosky (University of Michigan, USA), populations of some large common skinks that were thought to be several species based on their colour patterns, have now been found to be completely genetically intermixed. This is evidence for only a single, widespread species that exhibits much local variation in its colour pattern. In contrast, a second study by PhD student Dr Mark Siström (now at Yale University, supervised by Dr Hutchinson and Prof. Donnellan), uncovered a case of a widespread lizard species that shows little geographic variation in its external appearance but has undergone marked genetic change – so much so that it actually comprises two species, one in the west of the country and one in the east, with an overlap zone in South Australia. This research, funded by the Commonwealth Government's Australian Biological Resources Survey, solved a long standing puzzle whereby apparently identical animals from different parts of the country had different chromosome arrangements.

Our results now conclusively show that these different chromosomal groups are indeed separate biological species.

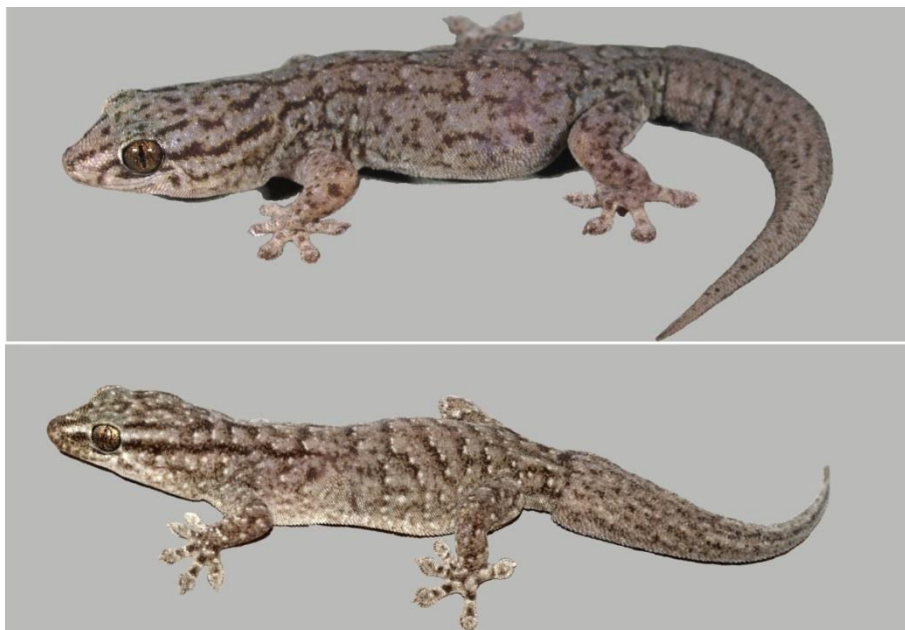


Figure 4: These two geckos were regarded as members of the same species, *Gehyra variegata*, until DNA sequence data demonstrated that eastern Australian populations belong to a distinct species, *Gehyra versicolor*, newly named as a result of Museum research.

#### 4.5.5 Earth Sciences

The Earth Sciences section continued to have major success in securing external funding for its research projects, with over \$8 million dollars in new, competitively won grants in 2013–14. This builds on a steady stream of ongoing research grant funding. Staff in the section have also been directly involved in the supervision of 14 research students (11 PhD students, one MSc student and two Honours students) during the year. Five externally-funded, Museum-based postdoctoral researchers have also contributed to the work of the section. In addition 14 regular volunteers assist with curation, field work and sample preparation in the Palaeontology section.

The section has hosted a considerable number of national and international visiting researchers, including scientists from China, France, Spain, the United States and the United Kingdom.

Of particular note this year was the award of the degree of Doctor of Science (*Honoris Causa*) to Dr Jim Gehling by the University of Adelaide in recognition of Dr Gehling's outstanding work in establishing the Ediacaran geological time period, based on the geology of the Flinders Ranges.

##### 4.5.5.1 Palaeontology

The Palaeontology section continued to attract major international attention and research funding, and generated significant public outreach. ARC Future Fellowships worth over \$1 million (combined) were awarded to HRA Dr Diego Garcia-Bellido (collaborating with Drs Jim Gehling and Mike Lee) and Dr Kate Sanders (collaborating with Dr Mike Lee). Papers in *Science* and *Current Biology* were covered in international and national news outlets such as *National Geographic*, *NBC News*, *The Advertiser* (*Weekend Magazine*), *ABC Landline* and *The Australian*.

As a result of external funding, through donations to the Museum Foundation, on 14 December 2013, the new First Life: Ediacara Biota Gallery was completed and opened to the public. The fossils on display were collected by Museum researchers and volunteers led by Dr Jim Gehling, with design and text by Jim Gehling and Jo Bain.

Members have participated in several field trips, many involving Museum supporters, HRAs, members of the public and local communities. These include Drs Diego Garcia-Bellido's and Mike Lee's trip with Professor John Long (Flinders University) and the Waterhouse Club to the Kimberley to collect Devonian fish and invertebrates from Gogo Station, and with HRA Dr Jim Jago to Kangaroo Island to collect Emu Bay Shale fossils at Big Gully. Jim Gehling, Mary-Anne Binnie and Diego Garcia-Bellido continued documenting and researching Ediacara sites in the Flinders Ranges. Mary-Anne Binnie participated in a major field trip to Lake Eyre basin collecting Megafauna fossils. The Palaeontology collection has over 49 000 registered specimens. Collecting priorities are Ediacara fossils from the Flinders Ranges, Cambrian fossils from Kangaroo Island, and vertebrate fossils from the Burra/Collinsville region, Kangaroo Island, Millicent and the Lake Eyre Basin region in South Australia.

Dr Jim Gehling was the consultant for a program titled Hidden National Treasure funded under the *Inspiring Australia* scheme in 2013–2014, to give tour operators and landholders in the Flinders Ranges skills and knowledge for interpreting the fossil record of the Flinders Ranges.

Planning for the collections data migration to the Electronic Museum Collections Management System (EMu) platform is currently underway. The entire palaeontology team also had the immense pleasure of showing the best of the Museum's Ediacaran and Cambrian collections to Sir David Attenborough, who made a private visit to the Museum in July 2013. Palaeontology staff also participated in numerous public lectures and events throughout the year, such as the Museum's Dig It! program and the Adelaide Festival of Ideas.

#### **4.5.5.2 Mineralogy**

The Minerals, Microbes and Solutions research team led by Professor Allan Pring and Associate Professor Joël Brugger continued to build national and international research collaborations. A major focus of the group is currently on understanding the formation of gold, copper and uranium mineralisation in deposits such as Olympic Dam, Prominent Hill and Moonta. Detailed high temperature and pressure hydrothermal experiments have shown directly how the major copper and uranium ore minerals are deposited by the actions of fluids and very significant results were obtained in understanding the origins of ore textures. These results have been published in the *American Mineralogist*, the leading international journal in the field. During the current year, nine research students associated with the group completed their PhDs.

The group has undertaken a number of experiments at synchrotron and neutron sources around the world in the last 12 months, including the European Synchrotron Research Facility and the Institut Laue–Langevin neutron source both in Grenoble, France, the Diamond Synchrotron in England, The Australian Synchrotron in Melbourne, and the Opal reactor in Sydney. This experimental work was facilitated by Dr Barbara Etschmann, a special researcher in synchrotron and neutron sciences funded by a grant from the Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE). During the year Joël Brugger and Barbara Etschmann undertook an extended field trip to the Kamchatka Peninsula, eastern Russia to study hydrothermal ore forming processes associated with active volcanism. The research on the interaction between precious metals and bacteria continued in collaboration with Dr Frank Reith (University of Adelaide) and funded by the ARC.

Associate Professor Brugger resigned from the Museum at the end of 2013 to take up the Chair in Synchrotron Geoscience at Monash University. Dr Etschmann resigned at the end of March



and also took a position at Monash University. Professor Pring became a half-time appointee at the Museum from March 2014 to take up a 50 per cent appointment as Distinguished Professor of Chemical Mineralogy at Flinders University.

#### 4.5.6 Foreign Ethnology

Research using data from the Upper Sepik–Central New Guinea Project (USCNGP) has progressed this year. The project analyses variables affecting the spatial distribution of technical characteristics of material culture. The project’s website (<http://uscngp.com>) was continually updated and includes new material under ‘Papers’ for example (see *How Karius Found a River to the North: the first 1927 attempt to cross New Guinea from the Fly to the Sepik*). Current USCNGP work is progressing the coding of designs on arrow foreshafts for analysis. This will help to determine whether graphic design responds to the same variables as technical characteristics such as bindings on the foreshafts. HRA Dr Andrew Fyfe and Jill Bolton (Handspinners and Weavers Guild, Adelaide) have prepared a paper for publication: *A spatial analysis of string bag construction and colour pattern variability in the upper Sepik basin and Border Mountains*.

Fulbright scholar Dr Christopher Roberts, joined the project and was based at the Museum (June–December 2012) to prepare his book *Music of the Star Mountains* and to transcribe and analyse songs of the Upper Sepik, recorded in 1973 by Dr Barry Craig (Senior Curator, Foreign Ethnology). This collaboration continued during the 2013–14 financial year.

Dr Craig continues to provide advice and support to the Trustees and management of the Papua New Guinea National Museum and Art Gallery. He is seeking a commitment from the PNG National Museum to approach major resource companies in PNG (Oil Search and Exxon Mobil) for funding. He is seeking funds for the *Upper Fly-Southern Highlands Project* (UFSHP) to survey, photograph and document Museum collections from that region with a view to analyse the collections in a similar manner to the USCNGP project. If successful, this would be a three-year, AU\$1 000 000 project.

Writing was completed for the book *War Trophies or Curios?* by Barry Craig, Ron Vanderwal and Christine Winter. This book covers ethnographic collections sent to Melbourne by officers and men of the Australian Naval and Military Expeditionary Force that took over German New Guinea during World War I. The book, to be published by the Museum of Victoria, will be launched in September 2014. A \$26 000 grant from the Gordon Darling Foundation was obtained for archival research by Dr Christine Winter for this project.

Dr Craig has been asked to critically read and edit the text of a large manuscript by external HRA Dr Thomas Schultze-Westrum (residing at Thasos, Greece) entitled *Titi - Evolution of Decorative Art in the Papuan Gulf Region of New Guinea*. Dr Schultze-Westrum has worked for several years on this piece at Dr Craig’s encouragement and it will be the most comprehensive treatment of the art styles of any region of New Guinea.

Paintings on sago ‘bark’ and paper by the Awim of East Sepik Province, PNG, commissioned by Dr Craig, have been received and an exhibition is planned for the future.

Volunteer, Charles Gabreel has made progress transcribing field diaries of Graeme Pretty (a former Museum curator) from the latter’s field trip to the Melanesian Islands in 1971. He is now scanning field photographs and linking them with transcriptions of the field diaries. It is anticipated that this will result in a publication on Pretty’s field trip. Volunteer Kathryn Dickinson has continued to sort, file and index the PNG photographs of Maureen McKenzie in preparation for submission to the Museum’s Archives.

Senior Collection Manager Alice Beale, ably assisted by part-time Collection Manager Dean Mullen, has laboured hard to address the backlog registration challenge in Foreign Ethnology and storage reorganisation.

## 4.6 THE COLLECTIONS

The Museum continued to develop its collections through donations, field collecting and acquisitions and build on digitisation initiatives to ensure data and images are available for all. With the appointment of new collections staff in Anthropology, Arachnology and Marine Invertebrates, significant inroads in addressing collection backlogs have also been achieved in 2013–14. Over 20 000 items have been registered and valued, representing an overall addition to the collections of \$2.474 million. Furthermore the digitisation of the Museum's collections continues apace and builds on the successes of 2012–13. Over 6000 images have been added to the Museum's digital assets library. The large number of loans to and from the Museum attests to the significance of these collections at state, national and international levels.

There have been important developments with the mobilisation of collections data online. A number of invertebrate collections, having been migrated to the Museum's Collections Management System can now be made accessible via the Atlas of Living Australia (ALA). The Museum is now serving over 320 000 specimen records to the ALA.

### 4.6.1 The Entomology Stores Project

The refit and rehousing of the state's collection of over two million terrestrial invertebrate specimens was completed in December 2013. All specimens have been returned to the new storage facility without any loss or damage. The collection is now housed in one of the best facilities of its kind in the world. This project has provided the opportunity to update the taxonomic layout of the specimens within the store, increase storage capacity by 20 per cent, mobilise a digital collections management system, and conduct a comprehensive audit of the collection supported by high resolution digital images of every specimen drawer within the collection.



Figure 5: Views of the new Entomology Store, Science Centre.

The project was completed on time and under budget. These savings will now be put to addressing similar pest management issues in the mammalogy and ornithology collections. Each collection will benefit from the acquisition and installation of compactus systems and pest proof cabinets. Work on these collections is due for completion in December 2014.

#### 4.6.2 Volunteer Digitisation Project

The volunteer digitisation program has continued in 2013–14. This project, initially funded by the Atlas of Living Australia in 2011, works to get data and images of specimens of high research value online, to make them more accessible to the research community and the general public. A team of up to twelve volunteers have continued to photograph and database types from the insect collection this year, improving the Museum's documentation and making specimens more discoverable and useful.



Figure 6: Specimen 31-001604, *Cephrenes trichopepis* (dorsal view), now available to be shared online through the volunteer digitisation program.



Figure 7: Specimen 25-015920, *Castiarina mimesis* (lateral view), photographed by volunteers as part of the Museum's digitisation program.

During the first half of 2014, the volunteer digitisation team experimented with crowdsourcing digitisation. In-house volunteers created photographs of hundreds of sea stars with their labels from the Marine Invertebrates collection and loaded those images into the Atlas of Living Australia's Biodiversity Volunteer Portal Biodiversity Volunteer Portal. Online volunteers, working from home and in their own time, transcribed the information from the labels into a template. The data and images were imported into the Museum collections management system and delivered online via the Atlas of Living Australia. This has proven to be a very efficient way of databasing specimens in bulk. We will continue to process the sea star (Echinodermata) collection in this way and will likely implement crowdsourcing with other suitable collections. Volunteers from these projects have photographed around 1700 specimens and created more than 1300 new database records.



Figure 8: Sea star scans for crowd sourcing.

The volunteer digitisation laboratory is used by volunteers to photograph specimens from the herpetology and marine invertebrate collections, including specimens on loan from other Museums, as well as researchers preparing to name newly identified lepidopteran and hymenopteran species.

The availability of quality imaging equipment and processes has led to increased demand for images. Images of specimens are regularly requested in lieu of loans, for illustration of scientific papers, and for in-house marketing and promotional material. During this year the Project Manager has generated specimen images from the mollusc, bird, marine invertebrates, fish and humanities collections. Images have been delivered to researchers in the USA, Spain, Switzerland and to the Western Australian Museum, the Victorian Mollusc Society, local schools and other organisations. After providing a number of images to the Public Programs team for their 2013 Biodiversity Month, which focused on invertebrates, the Museum has installed a touchscreen in the Biodiversity Gallery on a permanent basis. This demonstrates

how high-resolution, extended depth-of-field images are captured by volunteers, with some striking examples from the collection.

#### 4.6.3 Govhack

In July 2013 the Museum participated for the first time in the national Govhack initiative, as part of the South Australian Government's Unleashed Adelaide event. Programmers, hackers, data visualisation experts and other technically talented people were encouraged to use open licensed government-sourced datasets to blend, mash and create new, fun and informative initiatives over the course of a weekend. Prizes, taking the form of financial or professional support, were awarded for projects that advance progress towards the goals in South Australia's Strategic Plan. This event was simultaneously an opportunity to support people with new skills that will be valuable to the information economy and drive the delivery of open government data, in line with the South Australian Government's Open Data Declaration. Museum datasets are available in machine-readable formats with open licences on the Atlas of Living Australia and [data.sa.gov.au](http://data.sa.gov.au).



#### 4.6.4 Field guide

In May 2014 the Museum launched the Field Guide to South Australian Fauna App. This app for mobile devices contains information, images and sound recordings of more than 700 common species in South Australia, and can be downloaded free of charge from the iTunes and Google Play stores. This is part of a national project funded by the Federal Government's Inspiring Australia: Unlocking Australia's Potential program and led by Museum Victoria. Field guide apps have been released for all states and territories, with shared content where appropriate.

Museum staff, HRAs and colleagues wrote the species descriptions for this app and images were sourced from the Museum's collections, staff, colleagues, the Department of Environment, Water and Natural Resources and enthusiasts in the community. In total, the app represents the work of 52 contributors, 17 Museum staff and HRAs and 35 external contributors. The app had been downloaded more than 1700 times in the first six weeks of release and had a 4.8 star rating on the Google Play Store. The Museum has received positive feedback from users and it anticipates adding new species and images over time to ensure that this is a growing and engaging resource.

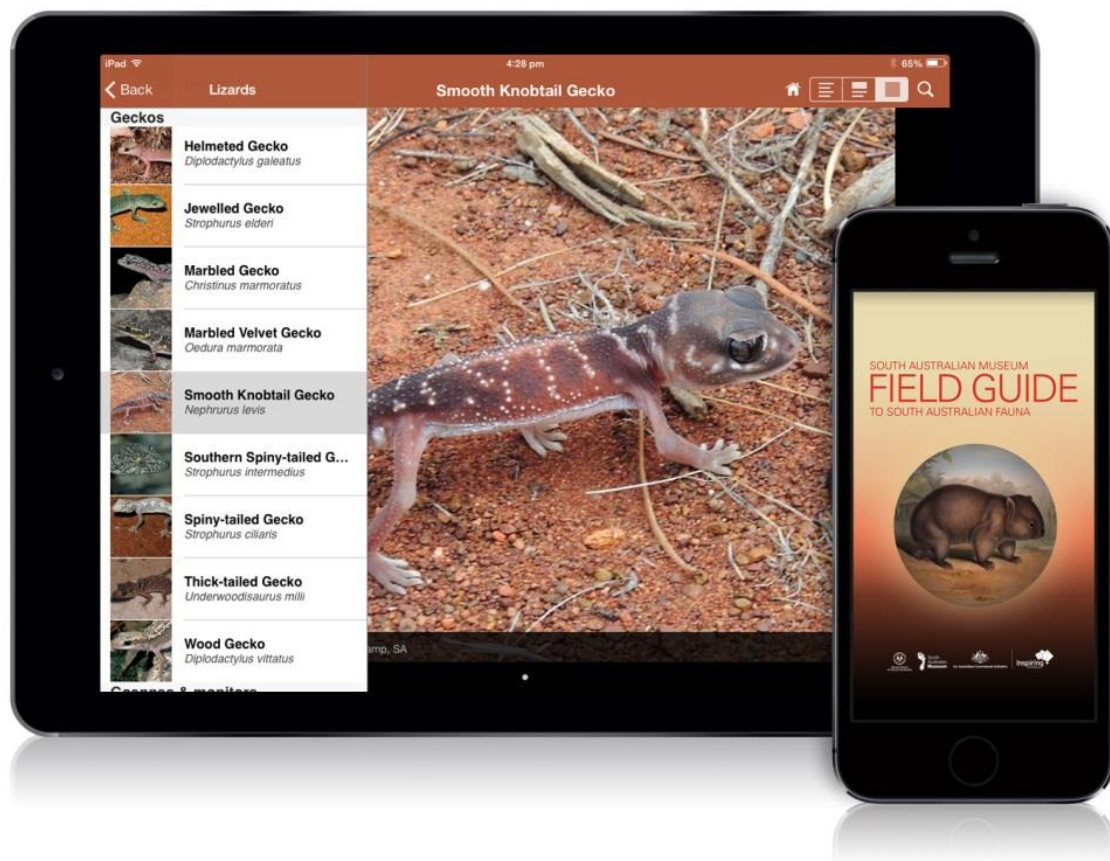


Figure 9: Screen shot of the South Australian Museum Field Guide to South Australian Fauna App.

#### 4.6.5 Australian Aboriginal Material Cultures Collection Digitisation Project

The digitisation of the Australian Aboriginal Material Cultures Collection continued during 2013–14. Volunteers have photographed and documented a further 2500 objects over this period and the completed images are being attached to their relevant records in KE EMu, the Museum's collections management system. The online delivery system for the images has been progressed to 'test' stage and the Museum anticipates it should be live within the next financial year. This will enable all community members to engage with the collection through the Museum website. The project has also provided images for a set of posters that were distributed to schools and community centres throughout the APY Lands and assisted with image requests for exhibitions and publications, both internally and externally. A presentation about the project and how it will increase access to the collections was given by the Project Officer at the annual Australian Archaeology Conference held in December 2013. The volunteers have also assisted the Archaeology department by photographing finds from the Old Adelaide Gaol for an upcoming publication.



Figure 10: Specimen A2584 (from Cardwell, Queensland), a woven bicornuate basket made from lawyer cane, photographed as part of the digitisation project. This basket was used for gathering food, catching fish and leaching toxins from food.



Figure 11: Specimen A70347: a headdress (from Thursday Island, Torres Strait) photographed as part of the digitisation program. The headdress is made of a fibre ring and strings of seeds embellished with red cloth and black seeds and was collected in the 1920s by Edith Wily.

Additional highlights within Collections include:

- heritage collections donations and acquisitions to the value of \$61 571 through the Board, Foundation, Cultural Gifts Program and Australian Valuation Office
- registration of over 20 000 objects, specimens from fieldwork, research, donations and addressing backlogs. This represents a further \$2 413 000 in value of non-heritage assets in 2013–14
- creation of approximately 6000 digital images and databasing of approximately 18 000 records
- delivery of more than 100 commercial and non-commercial loans in 2013–14, involving 4945 objects and specimens, to over 70 different institutions around the world.

## 4.7 DEVELOPMENT

The Development section worked to establish relationships as well as build profile. This included leading the effort to develop programs and partnerships for *National Science Week*, the *Adelaide Film Festival*, the *Festival of Ideas*, and the *Adelaide Festival*. The Development section had oversight of the *Night Lab* pilot event, and included partnerships with *DocWeek* and Flinders University. It also involved creating compelling proposals for public engagement opportunities throughout the year.

The Development section was also closely involved in the operations and communications in the transition from outgoing to acting to incoming Director. New and significant fundraising support was secured for the delivery of the Museum's *School Holiday Program*, which welcomes over 5000 children, four times per year. New and renewed support was secured for the *Waterhouse Natural Science Art Prize*. Also, the new role of Senior Manager of Individual Giving was designed, approved, advertised and recruited during this period.



The Museum successfully continues to use mass media and online tools to promote its collections, research, exhibitions and public engagement activities.

The Museum takes an integrated approach to raising awareness and understanding of the value, and impact, of the Museum's work and to encouraging participation in programs, as well as providing opportunities for deeper virtual engagement in Museum work and activities.

#### 4.7.1 Publicity

The Museum received significant international coverage in the media in 2013–14.

The Museum has further extended its media contact database, creating opportunities to strengthen established relationships, and build new relationships, with media across Australia.

The Museum has continued to produce articles for the *UNLOCKED* initiative, which provides high-quality articles profiling behind-the-scenes scientific Museum research stories. These articles are able to be used directly by media, with text and images that are suitable for print and online use supplied via the Museum website.

Two of the Museum's senior scientists, Ian Whittington and Steve Cooper participated in advanced media training. This very successful pilot will be further developed in 2014–15.

Media and engagement selected highlights throughout the year include:

- the Museum's volunteer-based effort to digitise and share tens of thousands of objects from its Australian Aboriginal Material Culture Collection attracted significant international coverage on television, in newspapers and through online media outlets, including *The Australian*, the *Guardian*, SBS, ABC, Yahoo, Radio Australia, and interest through the Hyperallergic.com website.
- work from the Evolutionary Biology Unit attempting to track down a long-beaked echidna, previously thought extinct, was covered in print and online in the *Australian*, on news.com.au, on air and online with Radio Australia, in the *International Business Times* and on ibtimes.com, yahoo.com and in the *Austrian Times*.
- media coverage of the *Waterhouse* and *ANZANG* competitions was again very positive and widespread, with coverage in *The Weekend Australian*, *Adelaide Matters*, *Adelaide Review*, *SA Life*, the *Guardian*, the *Adelaide Advertiser*, the *West Australian*, the *Canberra Times*, *Australian Geographic*, the *Townsville Bulletin*, the *Cairns Post*, the *Barrier Daily Truth*, and on 891 ABC Adelaide and ABC Far North.

#### 4.7.2 Digital

##### 4.7.2.1 Website

The Museum proudly launched its new website in July 2013. The new site provides clearer information for visitors and enables a stronger digital visitor experience by connecting browsers directly with the Museum's collections.

During the 2013–14 year, the Museum website received 182 380 visits and two significant industry awards:

- Culture and Events category of the State 2013 Australian Web Award (Winner)
- 2014 Museums Australia Multimedia and Publication Design Award in the Institution Website category (joint winner).

#### **4.7.2.2 Social media**

##### *Twitter*

There was a 67 per cent increase in followers on Twitter over the same time last year. The effectiveness of the Museum's Twitter engagement has significantly improved as well. While there was a deliberate 40 per cent decrease in the volume of tweets sent by the Museum, there was both a 15 per cent increase in reach and an eight per cent increase in retweets demonstrating improved engagement in social media activity.

##### *Facebook*

At the close of the financial year, the Museum's Facebook page had a 140 per cent increase in page likes over the same time last year, culminating in 9334 as at 30 June 2014. While administrator posts were down by five per cent, public engagement increased in every area: 149 per cent in post likes, 108 per cent in shares, 37 per cent in comments, and 556 per cent in page impressions.

Notable spikes in new 'likes' coincided with the Museum's increased use of Facebook campaigns.

#### **4.7.2.3 Applications**

##### *Field guide to SA Fauna App*

Launched in May 2014, the image-rich and information-dense app is a resource for the identification of South Australian fauna. This app was downloaded 2030 times in the two months it was available.

##### *myexcursion App*

In partnership with the Department of Education and Childhood Development and the Botanic Gardens of South Australia, the Museum developed the *myexcursion* app, an interactive learning tool linked to the Australian curriculum. The tool is in widespread use for schools

### **4.8 SUPPORT ORGANISATIONS**

#### **4.8.1 South Australian Museum Foundation Incorporated**

The South Australian Museum Foundation continued in its commitment to further the scientific, cultural and educational projects and programs at the Museum. The Foundation's support ensures that the Museum remains at the forefront of natural history and history debate, research and visitor attendance in Australia.

The Foundation continues to successfully manage both the Museum Shop and Museum Café (formerly Balaena Café). The Foundation proudly operates these businesses solely for benefit of the Museum. The Foundation returns the net profit from both the Shop and the Café to the Museum annually.

During 2013–14 the inaugural Chair, Hon Dr Diana Laidlaw AM and Treasurer, Mr Andrew Strickland retired from the Foundation Board of Management. The Museum acknowledges and thanks Diana for her time, her personal generosity and her leadership of appeals and profile raising opportunities over the last nine years. The Museum also acknowledges the pivotal role Andrew played in managing the Foundation's finances.

During their tenure Diana and Andrew's commitment resulted in raising the funds for the conservation of the Yuendumu School Doors and 45 Poles Appeals and had been instrumental in realising all recent Gallery developments including the South Australian Biodiversity Gallery and the re-development of the Australian Aboriginal Cultures Gallery.

Both Diana and Andrew remain genuine friends and advocates of the Museum.

Following the retirements of Diana and Andrew, Dr Mary Sutherland has been appointed as Chair and Mr Andrew Bradley as Treasurer. Throughout the year the Foundation also welcomed Mr Andrew Stock, Ms Pamela Martin, Mr Peter Hanlon (Museum Board Member) and Mr Brian Oldman (Museum Director) as new Board of Management members. All new Foundation Board members bring a wealth of philanthropic, corporate and not-for-profit knowledge and experience, which will foster further development of the Foundation.

#### 4.8.2 The Friends of the South Australian Museum Incorporated

The Friends continue to promote and support the Museum by way of publishing newsletters and the use of public speakers.

As public tours are not always suitable for some groups, special tours for community groups, charitable organisations and overseas students are arranged and the money raised is donated to the Museum.

#### 4.8.3 The Waterhouse Club Incorporated

The Waterhouse Club aims to both engage with the opinion leaders of the community to build a supportive network for the Museum and to raise significant funds, working closely with the Foundation. To build membership, The Waterhouse Club runs events and expeditions that showcase the Museum's most talented scientists, who provide thought-provoking interpretations – often with a touch of humour – in places of special interest.

During the year The Waterhouse Club and the Museum strengthened its relationship by agreeing to a Memorandum of Understanding. The programs and support of The Waterhouse Club continue to be of benefit to the Museum.

### 4.9 ABORIGINAL RECONCILIATION

A critical component of the Museum Board's governance structure is the Aboriginal Advisory Group Sub-Committee. The Aboriginal Advisory Group considers and makes recommendations to the Board on policy and consultative processes regarding Aboriginal matters. The Aboriginal Advisory Group also provides the Museum with valued feedback on its programming, collections and research activities which are associated with Aboriginal culture.

The Museum continues its active participation in the Indigenous Repatriation Program (IRP), formally known as the Return of Indigenous Cultural Property (RICP) program. The Museum has maintained consultations with Aboriginal communities and senior custodians both within South Australia and interstate.

In addition to this program, the Museum's family history and public programs sections continued to engage with communities throughout the year to provide archive and family history services to individuals and communities and to engage with aboriginal communities through programs. The Museum continued to work voluntarily with indigenous young

offenders. The Museum's extensive archival collections of indigenous family and community history were used to conduct individual workshops for offenders in a non-confrontational setting. Participants received copies of material records relating to their family history helping to enhance their sense of belonging, improve self-esteem and motivation and encourage these disadvantaged young Australians to re-integrate into society.

During the year the Museum worked with the Port Adelaide Football Club as part of the extremely successful Power Cup. On 24 May 2014 the Museum was one of the stopping locations along the 2014 Aboriginal Power Cup, Kurna Long Wanganeen Walk.

South Australian Aboriginal students who took part in the Power Cup Carnival walked from Tarndanyangga (Victoria Square) to Tandanya, the Museum, The Aboriginal and Torres Strait Islander War Memorial and the banks of the Torrens River, Kurna School – First School site on Torrens River, before ending at the Adelaide Oval. When at the Museum the students learnt about the Museum's collections, galleries, family history unit and archives. This was the first time the Museum, and in particular the Family History Unit, was involved with the program.

As part of the program the Museum's Family History Unit has offered to work closely with a group of senior school-aged students within Power Cup leadership program. This targeted offering will give those interested an opportunity to learn about their own family history as part of the program.

## 4.10 VOLUNTEER SUPPORT

The Museum is currently supported by the generous participation of 172 volunteers and 64 HRAs who regularly and voluntarily contribute to all facets of the Museum from behind the scenes to the Museum's public face.

The Museum has been supported by talented and committed volunteers for over 150 years. It is recognised that volunteers provide their time and expertise without remuneration and they are integral to the culture and development of the organisation. Volunteering enables people to participate actively in all facets of society in a way that is personally satisfying and contributes to the spirit of community involvement. The Museum supports the involvement of capable and innovative volunteers who are committed to helping us achieve the Museum's goals.

### 4.10.1 Value of Volunteering

Although it is not yet possible to gain an exact figure, the Museum estimates that each volunteer or HRA on average contributes one day a week of their time to the Museum, that is 7.5 hours per week, 30 hours a month, 360 hours a year in volunteered time per person. As the Museum has 172 volunteers and 64 HRAs, this equates to approximately 84 960 hours volunteered freely, without expectation of reward, in service to the Museum. To put a financial figure of \$30 per hour, based on a rounded figure from 2012 Australian Bureau of Statistics (ABS) average weekly earnings for Australians; this is the equivalent of a \$2 548 800 yearly contribution to the Museum. The Economic Value of Volunteering in South Australia report shows South Australia's volunteers' contribution, based on 2006 data, is valued at more than \$4.89 billion annually. Their efforts equate to a volume of work equivalent to 107 400 full time jobs across the State.

The Museum's volunteers conduct ground-breaking research on the Museum's collections and are major contributors to its impressive annual publications record. The Museum's collections

are made digitally accessible through a structured volunteer program which enables international access to our collections.

Special Projects at the Museum are powered by volunteer support, industry partnerships, project managers and dedicated staff knowledge. In collaboration, all of these elements provide us with invaluable opportunities to run special projects to digitise, preserve, document and make the Museum's collections accessible to local and global audiences. The Atlas of Living Australia Volunteer Digitisation Project has been highly successful in bringing the Museum's collections to a global audience through volunteer work locally and internationally through online crowdsourcing.

The Australian Aboriginal Collections Digitisation Project in partnership with Newmont Asia Pacific and additional support from the State Government has provided an invaluable opportunity to digitise this unique and unparalleled collection. Through the support of partners to purchase specialist equipment, volunteer training and attract talented staff to provide innovative methodologies and project management, the Museum has been able to rapidly increase our capacity to digitise the most precious collections.

Volunteers who work directly with the Museum's programs are often the first point of contact for Museum visitors, they are our public face. The Museum's Volunteer Gallery Guides enable us to offer free daily tours and conduct special tours during the last week of each month. Daily volunteers support information staff to help answer queries from the public. The Museum's public programs are supported by dedicated volunteers who work with staff and students onsite, locally and in remote areas; to foster a love of culture, science and the natural world. Volunteers work in all sections of the Museum and contribute to the administration and operations of the Museum including development, Information Services and Special Projects.

#### 4.11 GREENING OF GOVERNMENT OPERATIONS

The Museum maintains its ongoing commitment to improving energy efficiency. The full recycling and biodegradable refuse removal system throughout all work spaces at the Museum continues to be a success. Specific electrical circuitry is connected to timer devices to reduce energy consumption. Audio visual equipment in public galleries also operates on timers in order to closely follow the operating times of the Museum and reduce energy consumption. With the support of the State Government, the Museum's solar panels were upgraded in 2013.

#### 4.12 ENERGY EFFICIENCY ACTION PLAN

As an agency of the Department of the Premier and Cabinet, the Museum's energy efficiency activities are captured through the department's reporting.

## 5 PUBLICATIONS, TEACHING AND DISSEMINATION OF RESEARCH AND COLLECTIONS

The Museum's collections exemplify critical cultural and natural assets and the Museum's ongoing research strengths and profile support the State's and Australia's standing in cultural and scientific research of local, national and international significance. We have active programs on Australian and global research topics. The understanding of the Museum's collections further promotes expertise in human cultures and broadly in the sciences to a wide-ranging audience through many media including publications, seminars, talks, radio and television and the award-winning website (<http://www.samuseum.sa.gov.au/>).

For the current reporting period, Museum staff contributed 4248 hours towards tertiary teaching at numerous academic institutions and university schools and departments. During the year, Museum staff and HRAs participated in the direct supervision of 61 PhD students (51 by staff, two by internal HRAs, eight by external HRAs), one MSc student supervised by a staff member and 15 Honours students (12 supervised by staff, two by an internal HRA and one by an external HRA). Twelve postdoctoral researchers are supervised by Museum staff members. Museum staff also presented at, or were involved in, 19 professional workshops to students, scientists, research specialists and professional societies.

Museum staff and HRAs continue to be prolific in publishing the results of their studies in peer-reviewed journals and scholarly books as well as presenting their work at national and international conferences. During this reporting period, a total of three books (all by external HRAs), 26 book chapters (10 by staff members, nine by internal HRAs, seven by external HRAs) and 178 scholarly journal articles (92 by staff members, 22 by internal HRAs, 63 by external HRAs, one by a volunteer) were published as well as 28 other publications (17 by staff, six by internal HRAs, five by external HRAs).

In addition, staff continued their public and professional academic engagement activities and delivered a total of 73 conference papers (50 by staff, 12 by internal HRAs, 11 by external HRAs) at national and international conferences and symposia, and staff and HRAs delivered 63 public talks and tours to schools, societies and organised events. There were also frequent media engagements involving interviews on radio and television.

External research studies related to the Museum's collections resulted in 46 publications.

### 5.1 BOOKS AND MONOGRAPHS

#### 5.1.1 Authored by Museum Staff

**Jones, P. G.** (2014) *Behind the Doors: An Art History from Yuendumu*. Adelaide: South Australian Museum & Wakefield Press.

#### 5.1.2 Authored by external HRAs (i.e. not resident at the Museum, but based at a different institution)

**Shepherd, S. A.**, Madigan, S., Murray-Jones, S., **Gillanders, B.**, and Wiltshire, D. (eds.) (2014). *Natural History of Spencer Gulf*. Adelaide, Australia: Royal Society of South Australia.

**Shepherd, S. A.** and Edgar G. J. (2013). *Ecology of Australian Temperate Reefs: The Unique South*. Melbourne, Australia: CSIRO Publishing.

Wheeler, J. N., Wheeler, G. C., **Lavigne, R. J.**, Christiansen, R. A., and Wheeler, D. H. (2013). *The Ants of Yellowstone National Park*. Charleston, South Carolina, USA: Amazon.

## 5.2 BOOK CHAPTERS

### 5.2.1 Authored by Museum staff

Burbidge, A. A., Eldridge, M. D. B., Groves, C., Harrison, P., Jackson, S. M., **Reardon, T. B.**, Westerman, M., and Woinarski, J.C.Z. (2014). ‘A list of native Australian mammal species and subspecies’ in Woinarski, J. C. Z., Burbidge, A. A., and Harrison, P. (eds.) *The Action Plan for Australian Mammals 2012*, pp. 16–32. Collingwood, Victoria, Australia: CSIRO Publishing.

**Dallwitz, J.** and Scales, S. A. *et al.* (2013). ‘The Ara Irititja Project: Past, present, future’ in Ormond-Parker, L. *et al.* (eds.) *Information Technologies and Indigenous Communities*, Chapter 9, pp. 151–169. Canberra: AIATSIS Research Publications.

Gibbs, S. E. and **Kemper C. M.** (2014). ‘Whales and dolphins in Spencer Gulf. Chapter 17’ in Shepherd, S. A., Madigan, S., Gillanders, B. M., Murray-Jones, S., and Wiltshire, D. (eds.) *Natural History of Spencer Gulf*, pp. 242–253. Adelaide: Royal Society of South Australia.

Hogg, I. D., **Stevens, M. I.**, and Wall, D. (2014). ‘Invertebrates’, Chapter 4 in Cowan, D. (ed.) *Antarctic Terrestrial Microbiology*, pp. 1–23. Berlin, Heidelberg, Germany: Springer-Verlag. doi: 10.1007/978-3-642-45213-0\_4.

**Horton, P., Blaylock, B., and Black, A.** (2013). ‘Birds. Section 3’ in Owens, H. and Graham, A. (eds.) *Census of South Australian Vertebrates*, pp. 1–38. Adelaide: Department of Environment, Water and Natural Resources, South Australia and South Australian Museum. ebook, last updated September 2013.

**Kemper, C., Stemmer, D., Reardon, T., Medlin, G., Shaughnessy, P., and Owens, H.** (2014). ‘Mammals’ in Owens, H. and Graham, A. (eds.) *Census of South Australian Vertebrates*, pp. 1–14. Adelaide: Department of Environment, Water and Natural Resources, South Australia and South Australian Museum. ebook, last updated September 2013.

**Reardon, T. B.** with others (2013). ‘Species accounts for *Taphozous hilli*, *T. georgianus*, *Mormopterus* sp., *M. eleryi*, *Miniopterus orianae bassanii*, *Scotorepens greyii*, *Vespadelus baverstocki*, *V. finlaysoni*’ in van Dyck, S., Gynther, I., and Baker, A. (eds.) *Field Companion to the Mammals of Australia*.

**Walshe, K.** (2013). ‘Archaeology and the emergence of different fields: Environmental’ in Smith, C. (ed.) *Encyclopedia of Global Archaeology*. New York, USA: Springer.

Weston, P. H. and **Hill, R. S.** (2013). ‘Southern (Austral) Ecosystems’ in Levin, S. A. (ed.) *Encyclopedia of Biodiversity*, second edition, Volume 6, pp. 612–619. Waltham, Massachusetts, USA: Academic Press.

Winter, S. and **Beale, A.** (2014). ‘Volunteering in Archaeology’ in Smith, C. (ed.) *Encyclopedia of Global Archaeology*. New York, USA: Springer.

## 5.2.2 Authored by internal HRAs (i.e. resident at the Museum)

Goldsworthy, S. D., **Shaughnessy, P. D.**, and Page, B. (2014). ‘Seals in Spencer Gulf’ in Shepherd, S. A. Madigan, S. M., Gillanders, B. M., Murray-Jones, S., and Wiltshire, D. (eds.) *Natural History of Spencer Gulf*, pp. 254–265. Adelaide: Royal Society of South Australia.

Gutiérrez-Marco, J. C., Rábano, I., Sá, A. A., **García-Bellido, D. C.**, and Sarmiento, G. N. (2013). ‘Paleontological heritage from the Middle Ordovician outcrops in Cabañeros National Park (Castilla-La Mancha, central Spain)’ in Vegas, J., Salazar, A., Díaz-Martínez, E., and Marchán, C. (eds.) *Patrimonio Geológico, un Recurso Para el Desarrollo*, pp. 591–599. Madrid, Spain: Instituto Geológico y Minero de España (ISBN 978-84-7840-901-3).

**Medlin, G. C.** (2013). ‘Broad-cheeked Hopping-mouse *Notomys robustus*’ in Van Dyck, S., Gynther, I. and Baker, A. (eds.) *Field Companion to the Mammals of Australia*, p. 171. Sydney, Australia: New Holland.

**Medlin, G. C.** (2013). ‘Long-eared Mouse *Pseudomys auritus*’ in Van Dyck, S., Gynther, I., and Baker, A. (eds.) *Field Companion to the Mammals of Australia*, p. 172. Sydney, Australia: New Holland.

**Medlin, G. C.** (2014). ‘Broad-cheeked Hopping-mouse *Notomys robustus*’ in Woinarski, J. C. Z., Burbidge, A. A., and Harrison, P. L. (eds.) *The Action Plan for Australian Mammals 2012*, p. 620. Collingwood, Victoria: CSIRO Publishing.

**Medlin, G. C.** (2014). ‘Long-eared Mouse *Pseudomys auritus*’ in Woinarski, J. C. Z., Burbidge, A. A. and Harrison, P. L. (eds.) *The Action Plan for Australian Mammals 2012*, p. 621. Collingwood, Victoria: CSIRO Publishing.

Sá, A. A., Gutiérrez-Marco, J. C., Meireles, C. A., **García-Bellido, D. C.**, and Rábano, I. (2014). ‘A revised correlation of Lower Ordovician sedimentary rocks in the Central Iberian Zone (Portugal and Spain)’ in Rocha, R. B., Pais, J., Kulberg, C., and Finney, S. (eds.) *STRATI-2013, First International Congress on Stratigraphy. At the Cutting Edge of Stratigraphy*, pp. 441–446. Switzerland: Springer Geology.

**Sutton, P.** (2013). ‘Collaborations’ in *Mapping our World: Terra Incognita to Australia*, pp. 6–7. Canberra, Australia: National Library of Australia.

**Sutton, P.** (2013). ‘We are all navigators’ in *Mapping our World: Terra Incognita to Australia*, pp. 10–14. Canberra, Australia: National Library of Australia.

## 5.2.3 Authored by external HRAs

Álvaro, J. J., Ahlberg, P., Babcock, L. E., Bordonaro, O. L., Choi, D. K., Cooper, R. A., Ergaliev, G. Kh., Gapp, I. W., Ghobadi Pour, M., Hughes, N. C., **Jago, J. B.**, Korovnikov, I., Laurie, J. R., Lieberman, B. S., Paterson, J. R., Pegel, T. V., Popov, L. E., Rushton, A. W. A., Sukhov, S. S., Tortello, M. F., Zhou, Z., and Żylinska, A. (2013). ‘Global Cambrian trilobite palaeobiogeography assessed using parsimony analysis of endemism’ in Harper, D. A. T. and Servais, T. (eds.) *Early Palaeozoic Biogeography and Palaeogeography. Geological Society, London, Memoirs* **38**: 273–296.

Baker J. L., **Shepherd S. A.**, Barrett N., and Gurgel C. F. D. (2014). ‘Subtidal macroalgae of Spencer Gulf’ in Shepherd, S. A., Madigan, S., Gillanders, B. M., Murray-Jones, S., and Wiltshire, D. (eds.) *Natural History of Spencer Gulf*, pp. 136–152. Adelaide, Australia: Royal Society of South Australia.



**Beveridge, I.**, Spratt, D. M., and Durette-Desset, M.-C. (2014). ‘Order Strongylida (Railliet & Henry, 1913)’ in Schmidt-Rhaesa, A. (ed.) *Handbook of Zoology. Gastrotricha, Cycloneuralia and Gnathifera. Volume 2: Nematoda*, pp. 557–612. Berlin, Germany: De Gruyter.

**Daniels, C. B.** and Roetman, P. E. J. (2014). ‘Urban wildlife’ in Byrne, J., Dodson, J., and Sipe, N. (eds.) *Australian Environmental Planning: Challenges and Future Prospects*, pp 118–129. London, UK: Routledge Press.

Pereira D. and **Cooper, B. J.** (2014). ‘Building stone as a part of a World Heritage Site: ‘Piedra Pajarilla’ Granite and the city of Salamanca, Spain’ in Cassar, J., Winter, M. G., Marker, B. R., Walton, N. R. G., Entwisle, D. C., Bromhead, E. N., and Smith, J. W. N. (eds.) *Stone in Historic Buildings: Characterization and Performance*, Geological Society of London, Special Publication **391**: 7–16. <http://www.geolsoc.org.uk/SP391>

**Shepherd, S. A.** and Baker, J. L. (2014). ‘Reef fishes of Spencer Gulf’ in Shepherd, S. A., Madigan, S., Gillanders, B. M., Murray-Jones, S., and Wiltshire, D. (eds.) *Natural History of Spencer Gulf*, pp. 302–316. Adelaide, Australia: Royal Society of South Australia.

Svane I. and **Shepherd, S. A.** (2014). ‘The environmental impact of prawn trawling in Spencer Gulf’ in Shepherd, S. A., Madigan, S., Gillanders, B. M., Murray-Jones, S. and Wiltshire, D. (eds.) *Natural History of Spencer Gulf*, pp. 359–377. Adelaide, Australia: Royal Society of South Australia.

## 5.3 SCHOLARLY JOURNAL PAPERS

### 5.3.1 Authored by Museum staff

**Adams, M.**, Page, T. J., Hurwood, D. A., and Hughes, J. M. (2013). A molecular assessment of species boundaries and phylogenetic affinities in *Mogurnda* (Eleotridae): a case study of cryptic biodiversity in the Australian freshwater fishes. *Marine and Freshwater Research* **64**: 920–931.

**Adams, M.**, Raadik, T. A., Burrridge, C., and Georges, A. (2014). Global biodiversity assessment and hyper-cryptic species complexes: more than one species of elephant in the room? *Systematic Biology* **63**:518–533.

Andersen, A. N. Arnan, X. A., and **Sparks, K.** (2013). Limited niche differentiation within remarkable co-occurrences of congeneric species: *Monomorium* ants in the Australian seasonal tropics. *Austral Ecology* **38**: 557–567.

Austin, J. J., Olivier, L., Nankervis, D., Brown, W. E., **Gardner, M. G.**, and Burrridge, C. P. (2014). Twenty microsatellite loci for population and conservation genetic studies of the wedge-tailed eagle (*Aquila audax*). *Australian Journal of Zoology*. Published online 30 June 2014; doi: 10.1071/ZO14030

Barnes, T. C., Izzo, C., **Bertozi, T.**, Saint, K. M., **Donnellan, S. C.**, **Hammer, M. P.**, and Gillanders, B. M. (2014). Development of 15 microsatellite loci from mulloway, *Argyrosomus japonicus* (Pisces: Sciaenidae) using next generation sequencing and an assessment of their cross amplification in other sciaenids. *Conservation Genetics Resources* **6**: 345–348.

- Bell, K. L., Murphy, D. L., and **Gardner, M. G.** (2013). Isolation, via 454 sequencing, and characterisation of microsatellites for *Vachellia farnesiana* (Leguminosae: Mimosoideae). *Applications in Plant Sciences* **1**(10): 1300035.
- Binks, R. M., **Gardner, M. G.**, Millar, M. A., and Byrne, M. (2014). Characterization and cross-amplification of novel microsatellite markers for two Australian sedges, *Lepidosperma* sp. Mt Caudan and *L.* sp. Parker Range (Cyperaceae). *Conservation Genetics Resources* **6**: 333–336.
- Bradford, T. M., **Adams, M.**, Guzik, M. T., Humphreys, W. F., **Austin, A. D.**, and **Cooper S. J. B.** (2013). Patterns of population genetic variation in sympatric chiltoniid amphipods within a calcrete aquifer reveal a dynamic subterranean environment. *Heredity* **111**: 77–85.
- Bradford, T. M., Humphreys, W. F., **Austin, A. D.**, and **Cooper S. J. B.** (2014). Identification of trophic niches of subterranean diving beetles in a calcrete aquifer by DNA and stable isotope analyses. *Marine and Freshwater Research* **65**: 95–104.
- Brauer, C. J., Unmack, P. J., Hammer, M., **Adams, M.**, and Beheregaray, L. B. (2013). Catchment-scale conservation units identified for the threatened Yarra pygmy perch (*Nannoperca obscura*) in highly modified river systems. *PLoS ONE* **8**: e82953.
- Brugger, J.**, Tooth, B., **Etschmann, B.**, Liu, W., Testemale, D., Hazemann, J.-L., and Grundle, P. (2014). Structure and thermal stability of Bi(III) oxy-clusters in aqueous solutions. *Journal of Soluble Chemistry* **43**: 314–325.
- Bull, J. K., Sands, C. J., Garrick, R. C., **Gardner, M. G.**, Tait, N. N., Briscoe, D. A., Rowell, D. M., and Sunnucks, P. (2013). Environmental complexity and biodiversity: the multi-layered evolutionary history of a log-dwelling velvet worm in montane temperate Australia. *PLoS ONE* **8**(12): e84559.
- Burridge, C. P., Brown, W. E., Wadley, J., Nankervis, D., Olivier, L., Hull, C., Barbour, R., **Gardner, M. G.**, and Austin, J. J. (2013). Did post-glacial changes in sea-level initiate the evolutionary divergence of a Tasmanian ‘endemic’ raptor from its mainland relative? *Proceedings of the Royal Society B*. **280**: no. 1773, 20132448.
- Catalano, S. R., **Whittington, I. D.**, **Donnellan, S. C.**, and Gillanders, B. M. (2014). Dicyemid fauna composition and infection patterns in relation to cephalopod host biology and ecology. *Folia Parasitologica*. Published online 24 March 2014; doi: 10.14411/fp.2014.034.
- Catalano, S. R., **Whittington, I. D.**, **Donnellan, S. C.**, and Gillanders, B. M. (2013). Using the giant Australian cuttlefish (*Sepia apama*) mass breeding aggregation to explore the life cycle of dicyemid parasites. *Acta Parasitologica* **58**: 599–602.
- Catalano S. R., **Whittington I. D.**, **Donnellan S. C.**, and Gillanders B. M. (2014). Parasites as biological tags to assess host population structure: Guidelines, recent genetic advances and comments on a holistic approach. *International Journal for Parasitology: Parasites and Wildlife*. Published online 12 December 2013; doi: 10.1016/j.ijppaw.2013.11.001

Clarke, L. J., Czechowski, P., Soubrier, J., **Stevens, M. I.**, and Cooper, A. (2014). Modular tagging of amplicons using a single PCR for high-throughput sequencing. *Molecular Ecology Resources* **14**: 117–121.

Collins, T. E., Ottens, R., Ballantyne, K. N., Nagle, N., Henry, J., Taylor, D., **Gardner, M. G.**, Fitch, A. J., Goodman, A., van Oorschot, R. A. H., Mitchell, R. J., and Linacre, A. (2014). Characterisation of novel and rare Y-chromosome short tandem repeat alleles in self-declared South Australian Aboriginal database. *International Journal of Legal Medicine* **128**: 27–31.

Colyer, K. Quinton, J. S., **Pring, A.**, Popelka-Filcoff, R. S., and Lenehan C. E. (2014). Determining the origins of particulates on Arkaroo Rock art. *Open Journal of Archaeometry* **2**: 65–68.

Davies, O. K., Groom, S. V. C., Ngo, H. T., **Stevens, M. I.**, and Schwarz, M. P. (2013). Diversity and origins of Fijian leaf-cutter bees (Megachilidae). *Pacific Science* **67**: 561–570.

Dew, R., **Gardner, M. G.**, and Schwarz, M. P. (2014). The problems of *a priori* categorisation of agonism and cooperation: circle tube interactions in two allodapine bees. *Ethology* **120**: 551–562.

Droser, M. L., **Gehling, J. G.**, Dzaugis, M. E., Kennedy, M. J., Rice, D., and Allen, M. F. (2014). A new Ediacaran fossil with a novel sediment displacive life habit. *Journal of Paleontology* **88**: 145–151.

Durband, A. C., Littleton, J., and **Walshe, K.** (2014). Patterns in ritual tooth avulsion at Roonka. *American Journal of Physical Anthropology*. Published online 14 May 2014; doi: 10.1002/ajpa.22531.

Elliott, C. P., Enright, N., Allcock, R., **Gardner, M. G.**, Anthony, J., and Krauss, S. L. (2014). Microsatellite discovery: Comparing PGM (Ion Torrent) semi-conductor sequencing and 454/FLX pyro-sequencing. *Molecular Ecology Resources* **14**: 554–568.

**Elliott, P.**, **Brugger, J.**, Caradoc-Davies, T., and **Pring, A.** (2013). Hylbrownite,  $\text{Na}_3\text{MgP}_3\text{O}_{10} \cdot 12\text{H}_2\text{O}$ , a new triphosphate mineral from the Dome Rock Mine, South Australia: description and crystal structure. *Mineralogical Magazine* **77**: 385–398.

**Elliott, P.**, Giester, G., Rowe, R., and **Pring, A.** (2014). Putnisite,  $\text{Sr Ca}^4\text{Cr}^{3+}_8(\text{CO}_3)_8\text{SO}_4(\text{OH})_{16} \cdot 25\text{H}_2\text{O}$ , a new mineral from Western Australia: description and crystal structure. *Mineralogical Magazine* **78**: 131–144.

Fuller, N. C., Carthew, S. M., and **Cooper, S. J. B.** (2014). Isolation and characterisation of 16 microsatellite markers for the endangered Gould's long-eared bat (*Nyctophilus gouldi*) and cross-amplification in the lesser long-eared bat (*N. geoffroyi*). *Conservation Genetics Resources*. Published online April 2014; doi: 10.1007/s12686-014-0165-0

**Gehling, J. G.** and Droser, M. L. (2014). How well do fossil assemblages of the Ediacara Biota time? Forum Reply. *Geology* **42**: 333. doi: 10.1130/G35403Y.1.

**Gehling, J. G.**, Runnegar, B. N., and Droser, M. L. (2014). Scratch traces of large Ediacaran bilaterian animals. *Journal of Paleontology* **88**: 284–298.

**Greenslade, P.**, **Stevens, M.**, and Porco, D. (2013). Measuring changes in molecular and geographical distribution after forty years of a possible endemic genus of South Australian Collembola (springtail). *The South Australian Naturalist* **86**: 18–21.

- Groom, S. V. C., **Stevens, M. I.**, and Schwarz, M. P. (2014). Parallel responses of bees to past climate change in three isolated archipelagos of the south western Pacific. *Proceedings of the Royal Society B* **281** no. 1785: 20133293.
- Groom, S. V. C., Ngo, H. T., Rehan, S. M., **Stevens, M. I.**, and Schwarz, M. P. (2014). Multiple recent introductions of apid bees into Pacific archipelagos signify potentially large consequences for both agriculture and indigenous ecosystems. *Biological Invasions*. Published online March 2014; doi: 10.1007/s10530-014-0664-7.
- Groom, S. V. C., **Stevens, M. I.**, and Schwarz, M. P. (2013). Diversification of Fijian halictine bees: Insights into a recent island radiation. *Molecular Phylogenetics and Evolution* **68**: 582–594.
- Grundler, P. V., **Brugger, J.**, **Etschmann, B. E.**, Helm, L., Liu, W., Spry, P. G., Tian, Y., Testemale, D., and **Pring A.** (2013). Speciation of aqueous tellurium (IV) in hydrothermal solutions and vapors, and the role of oxidized tellurium species in Te transport and gold deposition. *Geochimica et Cosmochimica Acta* **120**: 298–325.
- Hagen, I. J., Herfindel, I., **Donnellan, S. C.**, and Bull, C. M. (2013). Fine scale genetic structure in a population of the prehensile tailed lizard, *Corucia zebrata*. *Journal of Herpetology* **47**: 308–313.
- Hammer, M. P.**, Unmack, P. J., **Adams, M.**, Raadik, T. A., and Johnson, J. B. (2014). A multi-gene molecular assessment of cryptic biodiversity in the iconic river blackfishes (Teleostei: Percichthyidae: *Gadopsis*) of south-eastern Australia. *Biological Journal of the Linnean Society* **111**: 521–540.
- Hodges, K., **Donnellan, S. C.**, and Georges, A. (2014). Phylogeography of the Australian freshwater turtle *Chelodina expansa* reveals complex relationships among inland and coastal bioregions. *Biological Journal of the Linnean Society* **111**: 789–805.
- Hutchinson, M. N.**, Sistrom, M. J., **Donnellan, S. C.**, and Hutchinson, R. G. (2014). Taxonomic revision of the Australian arid zone lizards *Gehyra variegata* and *G. montium* (Squamata, Gekkonidae) with description of three new species. *Zootaxa* **3814**: 221–241.
- Izzo C., **Bertozzi .T.**, **Gillanders B. M.**, and **Donnellan S. C.** (2014). Variation in telomere length of the common carp, *Cyprinus carpio* (Cyprinidae) in relation to age and tissue type. *Copeia* **2014**: 87–94.
- Joel, L., Droser, M. L., and **Gehling, J. G.** (2014). A new enigmatic, tubular organism from the Ediacara Member, Rawnsley Quartzite, South Australia. *Journal of Paleontology* **88**: 253–262.
- Kemper, C. M.**, Trentin, E., and **Tomo, I.** (2013). Sexual maturity in male Indo-Pacific bottlenose dolphins (*Tursiops aduncus*): evidence for regressed/pathological adults. *Journal of Mammalogy* **95**: 352–368.
- King, R. A.** and **Leys, R.** (2014). Molecular evidence for mid-Pleistocene divergence of populations of three freshwater amphipod species (Talitroidea: Chiltoniidae) on Kangaroo Island, South Australia, with a new spring-associated genus and species. *Journal of Australian Zoology* **62**: 137–156.
- Lee, M. S. Y.**, Soubrier, J., and Edgecombe, G.D. (2013). Rates of phenotypic and genomic evolution during the Cambrian explosion. *Current Biology* **23**: 1889–1895.

- Lee, M. S. Y.** (2013). Turtle origins: insights from phylogenetic retrofitting and molecular scaffolds. *Journal of Evolutionary Biology* **26**: 2729–2738.
- Lee, M. S. Y.**, Caur A., Naish, D., and Dyke G. J. (2014). Morphological clocks in palaeontology, and a mid-Cretaceous origin of crown Aves. *Systematic Biology* **63**: 442–449.
- Littleton, J., Scott, R., McFarlane, G., and **Walshe, K.** (2013). Hunter-gatherer variability: Dental wear in South Australia. *American Journal of Physical Anthropology* **152**: 273–286.
- Littleton, J., **Walshe, K.**, and Hodges, J. (2013). Burials and time at Gillman mound, Northern Adelaide, South Australia. *Australian Archaeology* **77**: 38.
- Liu, W., **Etschmann, B.**, Testemale, D., Hazemann, J.-L., Rempel, K., Müller, H., and **Brugger, J.** (2014). Gold transport in hydrothermal fluids: competition among the Cl<sup>-</sup>, Br<sup>-</sup>, HS<sup>-</sup> and NH<sub>3</sub> (aq) ligands. *Chemical Geology* **376**: 11–19.
- Malekian, M., Dudaniec, R. Y., **Saint, K. M.**, Carthew, S. M., and **Cooper S. J. B.** (2013). Development of a multiplex panel of microsatellite markers for two species of gliding marsupials: *Petaurus breviceps* and *Petaurus norfolcensis*. *Australian Journal of Zoology* **61**: 475–478.
- McLelland, D. J., **Reardon, T.**, Bourne, S., Dickason, C., Kessell, A., and Boardman, W. (2013). Outbreak of skin nodules associated with *Riouxgolvania beveridgei* in the southern bentwing bat (*Miniopterus schreibersii bassanii*), South Australia. *Journal of Wildlife Diseases* **49**: 1009–1013.
- Marin, J., **Donnellan, S. C.**, Hedges, S. B., Puillandre, N., Doughty, P., **Hutchinson, M. N.**, Couloux, A., and Vidal N. (2013). Hidden species diversity of Australian burrowing snakes (*Ramphotyphlops*). *Biological Journal of the Linnean Society* **110**: 427–441.
- Maryan, B., How, R. A., and **Adams, M.** (2013). A new species of the *Aprasia repens* species-group (Squamata: Pygopodidae) from Western Australia. *Records of the Western Australian Museum* **28**: 30–43.
- Maryan, B., Bush, B., and **Adams, M.** (2013). Morphological and molecular assessment of *Aprasia fusca* and *A. rostrata* (Squamata: Pygopodidae) with a description of a new species from the Lake Macleod region, Western Australia. *Records of the Western Australian Museum* **28**: 144–163.
- Mecke, S., Doughty, P., and **Donnellan, S. C.** (2013). **Redescription of *Eremiascincus fasciolatus* (Günther, 1867) (Reptilia: Squamata: Scincidae) with clarification of its synonyms and the description of a new species.** *Zootaxa* **3701**: 473–517.
- Mei, Y., Sherman, D., Liu, W., and **Brugger, J.** (2014). Metal complexation and ion hydration in low density hydrothermal fluids: ab initio molecular dynamics simulation of Cu(I) and Au(I) in chloride solutions (25–1000 C, 1–5000 bar). *Geochimica et Cosmochimica Acta* **131**: 196–212.
- Mei, Y., Sherman, D. M., Liu, W., and **Brugger, J.** (2013). Complexation of gold in S<sub>3</sub>-rich hydrothermal fluids: evidence from ab-initio molecular dynamics simulations. *Chemical Geology* **347**: 34–42.

- Mitchell, K. J., Llamas, B., Soubrier, J., Rawlence, N. J., Worthy, T. H., **Lee, M. S. Y.**, and **Cooper, A.** (2014). Ancient DNA unites elephant birds with kiwis and clarifies ratite evolution. *Science* **344**: 898–900.
- Mitchell, K. J., Pratt, R. C., Watson, L. N., Gibb, G. C., Kasper, M., Edson, J., Armstrong, K., Meyer, M., Hofreiter, M., Austin, J., **Donnellan, S. C.**, **Lee, M. S. Y.**, Phillips, M. J., and **Cooper, A.** (2014). Phylogeny and macroevolution of the marsupials. *Molecular Biology and Evolution*. Published online, 30 May 2014; doi: 10.1093/molbev/msu176.
- Momigliano, P., Robbins, W. D., **Gardner, M. G.**, and Stow, A. (2014). Characterisation of 15 novel microsatellite loci for the grey reef shark (*Carcharhinus amblyrhynchos*). *Conservation Genetic Resources*. Published online, April 2014; doi: 10.1007/s12686-014-0174-z
- Murphy, N. P., **Adams, M. A.**, Guzik, M. T., and **Austin, A. D.** (2013). Extraordinary micro-endemism in Australian Desert spring amphipods. *Molecular Phylogenetics and Evolution* **66**: 645–653.
- Naughton, K., O'Hara, T. D., Appleton, B. R., and **Gardner, M. G.** (2014). Sympatric cryptic species in the crinoid genus *Cenolia* (Echinodermata: Crinoidea: Comasteridae) delineated by sequence and microsatellite markers. *Molecular Phylogenetics and Evolution* **78**: 160–171.
- Nettle, D., Halverson, G. P., Cox, G. M., Collins, A. S., Schmitz, M., **Gehling, J. G.**, Johnson, P. R., and Kadi, K. (2014). A middle–late Ediacaran volcano-sedimentary record from the eastern Arabian-Nubian shield. *Terra Nova* **26**: 120–129.
- Okrugin, V. M., Andreeva, E., **Etschmann, B.**, **Pring, A.**, Li, K., Zhao, J., Griffins, G., Lumpkin, G. R., Triani, G., and **Brugger, J.** (2014). Microporous gold: comparison of textures from Nature and experiments. *American Mineralogist* **99**: 1171–1174.
- Platt, T. R., Hoberg, E. P., and **Chisholm, L. A.** (2013). On the morphology and taxonomy of *Griphobilharzia amoena* Platt and Blair, 1991 (Schistosomatoidea), a dioecious digenetic trematode parasite of the freshwater crocodile, *Crocodylus johnstoni*, in Australia. *Journal of Parasitology* **99**: 888–891.
- Popelka-Filcoff, R. S., Mauger, A., Lenehan, C. E., **Walshe, K.**, and **Pring, A.** (2014). HyLoggerNear-Infrared spectral analysis: A non-destructive mineral analysis for Aboriginal Australian objects. *Analytical Methods* **6**: 1309–1316.
- Rabosky, D. L., **Hutchinson, M. N.**, **Donnellan, S. C.**, Talaba, A. L., and Lovette, I. J. (2014). Same lizard, different paint job: phylogenetic disassembly of species boundaries in a widespread group of Australian skinks (Scincidae: *Ctenotus*). *Molecular Phylogenetics and Evolution* **77**: 71–82.
- Rabosky, D. L., **Donnellan, S. C.**, Grundler, M., and Lovette, I. J. (2014). The relationship between speciation and morphological evolution in Australian scincid lizards. *Systematic Biology* **63**: 610– 627.
- Reardon, T. B.**, McKenzie, N. L., **Cooper, S. J. B.**, Appleton, B., Carthew, S., and **Adams, M.** (2014). A molecular and morphological investigation of species boundaries and

phylogenetic relationships in Australian free-tailed bats *Mormopterus* (Chiroptera: Molossidae). *Australian Journal of Zoology* **62**: 109–136.

Reith, F., Campbell, S. G., Ball, A. S., **Pring, A.**, and Southam, G. (2014). Platinum in Earth surface environments. *Earth Science Reviews* **131**: 1–21.

Reith, F., **Brugger, J.**, Zammit, C. M., Nies, D. H., and Southam, G. (2013). Geobiological cycling of gold: from fundamental process understanding to exploration solutions. *Minerals* **2013-3**: 367–394.

Schodde, R., Boles, W., Christidis, L., **Horton, P.**, Johnstone, R., Joseph, L., and Longmore, W. (2013). Case 3630. CORCORACIDAE Mathews, 1927 (Aves) and the spelling *melanorhamphos* Vieillot, 1817 for the valid name of the type species of its type genus: proposed conservation of usage. *Bulletin of Zoological Nomenclature* **70**: 238–244.

Schofield, J. A., **Gardner, M. G.**, Fenner, A., and Bull, C. M. (2014). Promiscuous mating in the endangered Australian lizard *Tiliqua adelaidensis*: a potential windfall for its conservation. *Conservation Genetics* **15**: 177–185.

Sistrom, M., **Hutchinson, M. N.**, Bertozzi, T., and **Donnellan, S. C.** (2014). Evaluating evolutionary history in the face of high gene tree discordance in Australian *Gehyra* (Reptilia: Gekkonidae). *Heredity* **113**: 52–63.

**Skinner, A.**, **Hutchinson, M. N.**, and **Lee, M. S. Y.** (2013). Phylogeny and divergence times of Australian *Sphenomorphus* Group Skinks (Scincidae, Squamata). *Molecular Phylogenetics and Evolution* **69**: 906–918.

Smith, A. L., Bull, C. M., **Gardner, M. G.**, and Driscoll, D.A. (2014). Life history influences how fire affects genetic diversity in two lizard species. *Molecular Ecology* **23**: 2428–2441.

Smith, J. A., **Chenoweth, L. B.**, Tierney, S. M., and Schwarz, M. P. (2013). Repeated origins of social parasitism in allodapine bees indicate that the weak form of Emery's rule is widespread, yet sympatric speciation remains highly problematic. *Biological Journal of the Linnean Society* **109**: 320–331.

**Sparks K. S.**, Andersen A. N., **Donnellan S. C.**, and **Austin A. D.** (2014). Navigating the mtDNA road map out of the morphological maze: interpreting morphological variation in the diverse *Monomorium rothsteini* (Forel) complex (Hymenoptera: Formicidae). *Systematic Entomology* **39**: 264–278.

Stingemore, J. A., Nevill, P. G., **Gardner, M. G.**, and Krauss, S. L. (2013). Development of microsatellite markers for two Australian *Persoonia* (Proteaceae) species using two different techniques. *Applications in Plant Sciences* **1**(10): 1300023.

Ta, C., Reith, F., **Brugger, J.**, **Pring, A.**, and Lenehan, C. E. (2014). Analysis of gold (I/III)-complexes by HPLC-ICP-MS demonstrates gold (III) stability in surface waters. *Environmental Science and Technology* **48**: 5737–5744.

Tang, L., Smith-Keune, C., **Gardner, M. G.**, and Hardesty B. D. (2013). Development, characterisation and cross-species amplification of 16 novel microsatellite markers for the endangered Black-throated Finch (*Poephila cincta*) in Australia. *Conservation Genetics Resources* **6**: 143–146.

- Thomson, V., Aplin, K., Cooper, A., Hisheh, S., Suzuki, H., Maryanto, I., and **Donnellan, S. C.** (2014). Molecular genetic evidence for the place of origin of the Pacific Rat, *Rattus exulans*. *PLoS One* **9**: e91356.
- Tian, Y., **Etschmann, B.**, Testemale, D., Ngothai, Y., and **Brugger, J.** (2014). Speciation and thermodynamic properties of manganese(II) chloride complexes in hydrothermal fluids: in situ XAS and quantum-chemical study. *Geochimica et Cosmochimica Acta* **129C**: 77–95.
- Velasco-Castrillon, A., Schultz, M. B., Colombo, F., Gibson, J. A. E., Davies, K. A., **Austin, A. D.**, and **Stevens, M. I.** (2014). Distribution and diversity of microfauna from East Antarctica: assessing the influence of biotic and abiotic factors. *PLoS One* **9**: e87529.
- Velasco-Castrillón, A. and **Stevens, M. I.** (2014). Morphological and molecular diversity at a continental scale: a step closer to understanding Antarctic nematode biogeography. *Soil Biology and Biochemistry* **70**: 272–284.
- Velasco-Castrillón, A., Schultz, M. B., Colombo, F., Gibson, J. A. E., Davies, K. A., **Austin, A. D.**, and **Stevens, M. I.** (2014). Distribution and diversity of soil microfauna from East Antarctica: assessing the link between biotic and abiotic factors. *PLoS ONE* **9**: e87529.
- Wadley, J. J., Austin, J. J., **Gardner, M. G.**, and Fordham, D. A. (2013). Fifteen microsatellite loci for use in non-invasive sampling studies of antilopine wallaroo (*Macropus antilopinus*). *Australian Journal of Zoology* **61**: 399–401.
- Walshe, K.** (2014). Archaeological evidence for a sealer's and wallaby hunter's skinning site on Kangaroo Island, South Australia. *Journal of Island and Coastal Archaeology* **9**: 130–143.
- Xiao, S., Droser, M. L., **Gehling, J. G.**, Hughes, I. V., Wan, B., Chen, Z., and Yuan, X. (2013). Affirming life aquatic for the Ediacara biota in China and Australia. *Geology* **41**: 1095–1098.
- Xu, W., Zhao, J., **Brugger, J.**, Chen, G., and **Pring, A.** (2013). Mechanism of mineral transformations in krennerite,  $\text{Au}_3\text{AgTe}_8$ , under hydrothermal conditions. *American Mineralogist* **98**: 2086–2085.
- Zammit, C. M., Quaranta, D., Gibson, S., Zaitouna, A. J., Ta, C., **Brugger, J.**, Lai, R. Y., Grass, G., and Reith, F. (2013). A whole-cell biosensor for the detection of gold. *PLoS One*. **8**: e69292.
- Zhang, F., Chen, Z., Dong, R., Huang, Y., **Stevens, M. I.**, Deharveng, L., and Zhu, C. (2014). Molecular phylogeny shows convergent evolution of body scales in Entomobryidae (Hexapoda: Collembola). *Molecular Phylogenetics and Evolution* **70**: 231–239.
- Zhao, J., **Brugger, J.**, Chen, G., Ngothai, Y., and **Pring, A.** (2014). Experimental study of the formation of chalcopyrite and bornite via the sulfidation of hematite: mineral replacements with a large volume increase. *American Mineralogist* **99**: 343–354.

### 5.3.2 Authored by internal HRAs

- Aceñolaza, G. F., Albani, R., Bernárdez, E., **García-Bellido, D. C.**, Gutiérrez-Marco, J. C., Rábano, I., and Sá, A. A. (2014). First Furongian (late Cambrian) trilobites from the Cantabrian Zone (northwestern Spain). *Bulletin of Geosciences* **89**: 233–244.



Barragán, T., Esteve, J., **García-Bellido, D. C.**, Zamora, S., and Álvaro, J. J. (2014). New mid-Cambrian palaeoscolecid sclerites of *Hadimopanella oezgueli* from the Cantabrian Mountains, northern Spain. *GFF* **136**: 22–25.

**Black, A.** and Schodde, R. (2013). In support of Quoy and Gaimard. *Bulletin of the British Ornithologists' Club* **133**: 325–327.

**Black, A.** (2013). The likely collector and an approximate type-locality of the Chestnut-breasted Whiteface *Aphelocephala pectoralis* (Gould, 1871). *Australian Field Ornithology* **30**: 196–202.

**Black, A. B.**, Jansen, J. J. F. J., van der Mije, S. D., and Fisher, C. T. (2014). On the identification and provenance of some early specimens of grasswrens (Maluridae: *Amytornis*) and their significance for taxonomy and nomenclature. *Bulletin of the British Ornithologists' Club* **134**: 52–61.

**Black, A. B.** (2014). Early South Australian records of the Western Grasswren *Amytornis textilis myall*. *Australian Field Ornithology* **31**: 43–49.

Daley, A. C., Paterson, J. R., Edgecombe, G. D., **Garcia-Bellido, D. C.**, and **Jago, J. B.** (2013). New anatomical information on *Anomalocaris* from the Cambrian Emu Bay Shale of South Australia and a reassessment of its inferred predatory habits. *Palaeontology* **56**: 971–990.

**García-Bellido, D. C.**, Paterson, J. R., Edgecombe, G. D., and Ma, X. Y. (2013). A “Collins’ monster”-type lobopodian from the Emu Bay Shale Konservat-Lagerstätte (Cambrian), South Australia. *Alcheringa* **37**: 474–478.

**McArthur, A. J.** (2013). A major environmental improvement facilitated by the ant *Camponotus terebrans* Lowne. *South Australian Naturalist* **87**: 34–41.

**Pledge, N. S.** and Baulch, J. C. I. (2013). New fish from the Late Triassic Leigh Creek coal measures, South Australia. *Transactions of the Royal Society of South Australia* **137**: 90–96.

**Pledge, N. S.** (2013). First South Australian labyrinthodont: A possible chigutisaurid Stereospondyl amphibian from the Late Triassic of Leigh Creek. *Transactions of the Royal Society of South Australia* **137**: 127–134.

Rábano, I., Gutiérrez-Marco, J. C., and **García-Bellido, D. C.** (2014). A remarkable illaenid trilobite from the Middle Ordovician of Morocco. *Bulletin of Geosciences* **89**: 365–374.

Rehan, S. M., **Leys, R.**, and Schwarz, M. P. (2013). First evidence for a massive extinction event affecting bees close to the K-T boundary. *PLoS ONE* **8**: e76683.

**Shaughnessy, P. D.**, Goldsworthy, S. D., Burch, P., and Dennis, T. E. (2013). Pup numbers of the Australian sea lion (*Neophoca cinerea*) at The Pages Islands, South Australia, over two decades. *Australian Zoology* **61**: 112–118.

**Smales, L. R.** (2013). Acanthocephala including the descriptions of two new species of *Centrorhynchus* (Centrorhynchidae) and the redescription of *Lueheia inscripta* (Westrumb, 1821) (Plagiorhynchidae) from birds from Paraguay South America. *Revue Suisse de Zoologie* **120**: 1–28.

**Smales, L. R.** (2013). A review of the genus *Neoechinorhynchus* (Acanthocephala: Neoechinorhynchidae) from Australia with the description of two new species. *Journal of Parasitology* **99**: 1106–1112.

**Smales, L. R.** (2014). Acanthocephala including the descriptions of two species of *Mediorhynchus* (Gigantorhynchidae) from birds from Paraguay. *Revue Suisse de Zoologie* **121**: 1–16.

**Smales, L. R.** (2014). *Micracanthorhynchina* and *Serrasentis* (Acanthocephala: Rhadinorhynchidae) from Australian fishes, with the description of a new species. *Transactions of the Royal Society of South Australia* **138**: 92–97.

**Sutton, P.** (2013). Comment on Denham's 'Beyond fictions of closure in Australian Aboriginal Kinship'. *Mathematical Anthropology and Cultural Theory: an International Journal* **5** (5): 1–5.

**Sutton, P.** (2013). Cross-comment on Denham's 'Beyond fictions of closure in Australian Aboriginal Kinship'. *Mathematical Anthropology and Cultural Theory: an International Journal* **5** (6): 1–6.

**Sutton, P.** (2014). A bigger splash. *Meanjin* **73**: 176–179.

Weaver, H. J. and **Smales, L. R.** (2014). Two species of Acanthocephala (Rhadinorhynchidae and Transvenidae) from elasmobranchs from Australia. *Comparative Parasitology* **81**: 110–114.

### 5.3.3 Authored by external HRAs

Aguado, M. T., Nygren, A., and **Rouse, G. W.** (2013). Two apparently unrelated groups of symbiotic annelids, Nautiliniellidae and Calamyzidae (Phyllodocida, Annelida), are a clade of derived chrysopetalid polychaetes. *Cladistics* **29**: 610–628.

Arias, M. C., Atteke, C., Augusto, S. C., Bailey, J., Bazaga, P., Beheregaray, L. B., Benoit, L., Blatrix, R., Born, C., Brito, R. M., **Hammer, M. P.** *et al.* (2013). Permanent Genetic Resources added to Molecular Ecology Resources Database 1 February 2013–31 March 2013. *Molecular Ecology Resources* **13**: 760–762.

Belokobyl'skij, S. A. and **Austin, A. D.** (2013). New species of flightless doryctine parasitoid wasps (Hymenoptera: Braconidae: Doryctinae) from Australia and New Zealand. *Australian Journal of Entomology* **52**: 338–355.

**Beveridge, I.** and Campbell, R. A. (2013). A new species of *Grillotia* Guiart, 1927, (Cestoda: Trypanorhyncha) with redescrptions of congeners and new synonyms. *Systematic Parasitology* **85**: 99–116.

**Beveridge, I.** and Jabbar, A. (2013). New species of *Kiluluma* Skrjabin, 1926, (Nematoda: Strongylida) from the white rhinoceros *Ceratotherium simium* (Burchell), with a redescription of *K. solitaria* Thapar, 1924. *Systematic Parasitology* **85**: 131–145.

**Beveridge, I.** and Besier, R. B. (2013). Veterinary parasitology in Australia--a short history. *Veterinary Parasitology* **195**: 218–222.

**Beveridge, I.** (2014). A review of the genus *Paramoniezia* Maplestone et Southwell, 1923, (Cestoda: Anoplocephalidae), with a new genus *Phascolecestus*, from wombats (Marsupialia) and redescrptions of *Moniezia mettami* Baylis, 1934 and *Moniezia phacochoeri* (Baylis, 1927) comb. n. from African warthogs (Artiodactyla). *Folia Parasitologica* **61**: 21–33.

- Brown, R. M., **Richards, S. J.**, and Broadhead, T. S. (2013). A new shrub frog in the genus *Platymantis* (Ceratobatrachidae) from the Nakanai Mountains of eastern New Britain island, Bismarck Archipelago. *Zootaxa* **3710**: 31–45.
- Bryant, C., **Beveridge, I.**, Jones, M. K., and Jones, H. I. (2013). John Frederick Adrian Sprent, 1915–2010. *Historical Records of Australian Science* **24**: 1–23.
- Burks R. A., Masner L., Johnson N. F., and **Austin A. D.** (2013). Systematics of the parasitic wasp genus *Oxyscelio* Kieffer (Hymenoptera: Platygasteridae *s.l.*), part I: the Indo-Malayan and Palearctic fauna. *ZooKeys* **292**: 1–263.
- Burks R. A., Masner L., Johnson N. F., and **Austin A. D.** (2013). Systematics of the parasitic wasp genus *Oxyscelio* Kieffer (Hymenoptera: Platygasteridae *s.l.*), part II: the Australian and south-west Pacific fauna. *ZooKeys* **327**: 1–266.
- Cripps, J., **Beveridge, I.**, and Coulson, G. (2013). The efficacy of anthelmintic drugs against nematodes infecting free-ranging eastern grey kangaroos, *Macropus giganteus*. *Journal of Wildlife Diseases* **49**: 535–544.
- Cripps, J., **Beveridge, I.**, Ploeg, R., and Coulson, G. (2014). Experimental manipulation reveals few subclinical impacts of a parasite community in juvenile kangaroos. *International Journal for Parasitology: Parasites and Wildlife* **3**: 88–94.
- Dahl, C., **Richards, S. J.**, and Novotny, V. (2013). The Sepik River (Papua New Guinea) is not a dispersal barrier for lowland rain-forest frogs. *Journal of Tropical Ecology* **29**: 477–483.
- Elliott, P.**, Peisley, V., and Mills, S. (2014). The phosphate deposits of South Australia. *Australian Journal of Mineralogy* **17**: 3–32.
- Fitzgerald, E., Velez-Juarbe, J., and **Wells, R. T.** (2013). Miocene sea cow (Sirenia, Dugongidae) from Papua New Guinea sheds light on sirenian evolution in the Indo-Pacific. *Journal of Vertebrate Paleontology* **33**: 956–963.
- Fordham, D. A., Mellin, C., Russell, B. D., Akçakaya, R. H., Bradshaw, C. J., Aiello-Lammens, M. E., Caley, J. M., Connell, S. D., Mayfield, S., **Shepherd, S. A.**, and Brook, B. W. (2013). Population dynamics can be more important than physiological limits for determining range shifts under climate change. *Global Change Biology* **19**: 3224–3237.
- Geen, M. R. S. and **Johnston, G. R.** (2014). Colouration affects heating and cooling in three colour morphs of the Australian bluetongue lizard, *Tiliqua scincoides*. *Journal of Thermal Biology* **43**: 54–60.
- González Solís, D., Castellanos Osorio, I., and **Beveridge, I.** (2013). Larval trypanorhynch (Cestoda) infecting *Euphausia americana* (Euphausiacea) collected in the Mexican Caribbean Sea. *Revista Mexicana de Biodiversidad* **84**: 664–667.
- Greenslade, P.** (2013). Barrow Island Collembola. *Records of the Western Australian Museum supplement* **83**: 221–228.
- Greenslade, P.**, Ireson, J. E., and Skarzynski, D. (2014). *Hypogastrura* and *Ceratophysella* species in Australia. *Austral Entomology* **53**: 53–74.
- Günther, R., **Richards, S. J.**, and Dahl, C. (2014). Nine new species of microhylid frogs from the Muller Range in western Papua New Guinea (Anura, Microhylidae). *Vertebrate Zoology* **64**: 59–94.

- Helm, C., Stevenson, P. A., **Rouse, G. W.**, and Bleidorn, C. (2014). Immunohistochemical investigations of *Myzostoma cirriferum* and *Mesomyzostoma* cf. *katoi* (Myzostomida, Annelida) with implications for the evolution of the myzostomid body plan. *Zoomorphology*. Published online, February 2014; doi: 10.1007/s00435-014-0221-z.
- Hughes, T., Lott, G. K., Poultney, M. J., and **Cooper, B. J.** (2013). Portland Stone: A nomination for “Global Heritage Stone Resource” from the United Kingdom. *Episodes* **36**: 221–226.
- Iannella, A., **Richards, S. J.**, and **Oliver, P.** (2014). A new species of *Choerophryne* (Anura, Microhylidae) from the central cordillera of Papua New Guinea. *Zootaxa* **3753**: 483–493.
- Jabbar, A., Fong, R. W. J., Kok, K. X., Lopata, A., Gasser, R. B., and **Beveridge, I.** (2013). Molecular characterization of anisakid nematode larvae from 13 species of fish from Western Australia. *International Journal of Food Microbiology* **161**: 247–253.
- Jabbar, A., **Beveridge, I.**, Mohandas, N., Chilton, N. B., Littlewood, D. T. J., Jex, A. R., and Gasser, R. B. (2013). Analyses of mitochondrial amino acid sequence datasets support the proposal that specimens of *Hypodontus macropi* from three species of macropodid hosts represent distinct species. *BioMedCentral Evolutionary Biology* **13**: 259–570.
- Johnson, N. F., Burks, R. A., **Austin, A. D.**, and Zaifu Xu. (2013). Chinese species of egg-parasitoids of the genera *Oxyscelio* Kieffer, *Heptascelio* Kieffer and *Platyscelio* Kieffer (Hymenoptera: Platygasteridae s. l., Scelioninae). *Biodiversity Data Journal* **1**: 1–60.
- Katz, S. and **Rouse, G. W.** (2013). The reproductive system of *Osedax* (Annelida, Siboglinidae): sperm ultrastructure, ovary structure and fertilization. *Invertebrate Biology* **132**: 368–385.
- Karuppannan, S., Baharuddin, Z. M., Sivam, A., and **Daniels, C. B.** (2014). Urban green space and urban biodiversity: Kuala Lumpur, Malaysia. *Journal of Sustainable Development* **7**: 1–16.
- Kittel, R. A. and **Austin, A. D.** (2013). Remarkable range extension of the previously monotypic braconid genus *Wushenia* Zettel (Hymenoptera: Braconidae: Cheloninae), with description of a second species from Australia. *Zootaxa* **3694**: 486–492.
- Kittel, R. A. and **Austin, A. D.** (2014). Synopsis of Australian chelonine wasps (Hymenoptera: Braconidae: Cheloninae) with description of two new genera. *Austral Entomology* **53**: 183–202.
- Kruse, P. D.** and Moreno-Eiris, E. (2013). Archaeocyaths of the White Point Conglomerate, Kangaroo Island, South Australia. *Alcheringa* **38**: 1–64.
- Kruse, P. D.** and Reitner, J. R. (2014). Northern Australian microbial-metazoan reefs after the mid-Cambrian mass extinction. *Memoirs of the Association of Australasian Palaeontologists* **45**: 31–53.
- Lavigne, R. J.** (2013). A new species of *Bathypogon* Loew (Insecta: Diptera: Asilidae: Bathypogoninae) from Kangaroo Island, South Australia with notes on its behaviour. *The South Australian Naturalist* **87**: 75–81.

- Law, C., Dorgan, K. M., and **Rouse, G. W.** (2014). Relating divergence in musculature within Opheliidae (Annelida) with different burrowing behaviors. *Journal of Morphology* **275**: 548–571.
- Lopez, J., Bracken-Grissom, H., Collins, A., Collins, T., Crandall, K., Distel, D., Dunn, C., Giribet, G., Haddock, S., Knowlton, N., Martindale, M., Medina, M., Messing, C., O'Brien, S., Paulay, G., Putnam, N., Ravasi, T., **Rouse, G. W.**, Ryan, J., Schulze, A., Wörheide, G., Adamska, M., Voolstra, C., Bailley, X., Breinholt, J., Evans, N., Browne, W., Diaz, M., Fogarty, N., Johnston, M., Laberge, T., Kawahara, A., Lavrov, D., Michonneau, F., Kamel, B., Moroz, L., Oakley, T., Pomponi, S., Rodriguez-Lanetty, M., Santos, S., Satoh, N., Thacker, R., van der Peer, Y., Winston, J., and Zhou, X. (2014). Global Invertebrate Genomics Alliance (GIGA): Developing community resources to study diverse invertebrate genomes. *Journal of Heredity* **105**: 1–18.
- Meng, M., **Austin, A. D.**, Johnson, N. F., and Dowton, M. (2014). Coexistence of minicircular and a highly rearranged mtDNA molecule suggest that recombination shapes mitochondrial genome organization. *Molecular Biology and Evolution* **31**: 636–644.
- Nishi, E. and **Rouse, G. W.** (2014). First whale fall chaetopterid; a gigantic new species of *Phyllochaetopterus* (Chaetopteridae: Annelida) from the deep sea off California. *Proceedings of the Biological Society of Washington* **126**: 287–298.
- Noort, S. van., Masner, L., Popovici, O., Valerio, A., Taekul, C., Johnson, N. F., Murphy, N., and **Austin, A. D.** (2014). Systematics and biology of the aberrant intertidal parasitoid wasp *Echthrodesis lamoralis* Masner (Hymenoptera: Platygasteridae s. l.): a parasitoid of spider eggs. *Invertebrate Systematics* **28**: 1–16.
- Ormond, S. E., Whatmough, R., Hudson, I. L., and **Daniels, C. B.** (2014). Environmental and anthropogenic impacts on avifaunal assemblages in an urban parkland, 1976 to 2007. *Animals* **4**: 119–130.
- Orr, A., Kalkman, V., and **Richards, S. J.** (2013). Four new species of *Palaiargia* Förster, 1903 (Odonata: Platynemididae) from New Guinea with revised distribution records for the genus. *International Journal of Odonatology* **16**: 309–325.
- Paull, C. A., Schellhorn, N. A., and **Austin, A. D.** (2014). Response to host density by the parasitoid *Dolichogenidea tasmanica* (Hymenoptera: Braconidae) and the influence of grapevine variety. *Bulletin of Entomological Research* **104**: 79–87.
- Percival, I. G. and **Kruse, P. D.** (2014). Middle Cambrian brachiopods from the southern Georgina Basin of central Australia. *Memoirs of the Association of Australasian Palaeontologists* **45**: 349–402.
- Ramos, P., Lynch, M., Hu, M., Arnould, J. P. Y., Norman, R., and **Beveridge, I.** (2013). Morphometric and molecular characterization of the species of *Uncinaria* Frölich, 1789 (Nematoda) parasitic in the Australian fur seal *Arctocephalus pusillus doriferus* (Schreber), with notes on hookworms in three other pinniped hosts. *Systematic Parasitology* **85**: 65–78.
- Richards, S. J.**, Oliver, P., and Brown, R. M. (2014). ‘A new scansorial species of *Platymantis* Günther, 1858 (Anura: Ceratobatrachidae) from Manus Island, Admiralty Archipelago, Papua New Guinea’ in Telnov, D. (ed.) *Biodiversity, Biogeography and Nature Conservation in Wallacea and New Guinea* **2**: 123–133.
- Riordan, J. and **Johnston, G. R.** (2013). Morphological sex determination in black-faced cormorants (*Phalacrocorax fuscescens*). *Waterbirds* **36**: 94–101.

- Rodriguez-Zarate, C. J., Carvalho, D. C., **Hammer, M. P.**, and Beheregaray, L. B. (2014). A set of microsatellite markers for the threatened Murray hardyhead, *Craterocephalus fluviatilis* (Pisces: Atherinidae) from the southern Murray-Darling Basin. *Conservation Genetics Resources* **6**: 473–475.
- Schaeffner, B. C. and **Beveridge, I.** (2013). *Poecilorhynchus perplexus* n. gen., n. sp. (Trypanorhyncha: Eutetrarhynchidae) from the brownbanded bamboo shark, *Chiloscyllium punctatum* Müller & Henle from Australia. *Systematic Parasitology* **85**: 1–9.
- Schaeffner, B. C. and **Beveridge, I.** (2013). *Prochristianella mattisi* sp. n. (Trypanorhyncha: Eutetrarhynchidae) from the wedgenose skate, *Dipturus whitleyi* (Rajiformes: Rajidae), from Tasmania, Australia. *Folia Parasitologica* **60**: 257–263.
- Schaeffner, B. C. and **Beveridge, I.** (2013). *Dollfusiella* Campbell and Beveridge, 1994, (Trypanorhyncha: Eutetrarhynchidae) from elasmobranchs off Borneo, including descriptions of five new species. *Systematic Parasitology* **86**: 1–31.
- Sequeira, A., Roetman, P., **Daniels, C. B.**, Baker, A., and Bradshaw, C. (2014). Distribution models for koalas in South Australia using citizen science-collected data. *Ecology and Evolution* **4**: 2103–2114.
- Siddiqui, S., Filomeni, E., Francois, M., Collins, S. R., **Glatz, R. V.**, Taylor, P. W., Fenech, M., and Leifert, R. (2013). Exposure of insect cells to ionising radiation *in vivo* induces persistent phosphorylation of a H2AX homologue (H2AvB). *Mutagenesis* **28**: 531–541.
- Summers, M. M., Katz, S., Allen, E. A., and **Rouse, G. W.** (2013). Association of rhizobia with a marine polychaete. *Environmental Microbiology Reports* **5**: 492–498.
- Taekul, C., Valerio, A. A., **Austin, A. D.**, Klompen, H., and Johnson, N. F. (2014). Molecular phylogeny of telenomine egg parasitoids (Hymenoptera: Platygasteridae s.l.: Telenominae): evolution of host shifts and implications for classification. *Systematic Entomology* **39**: 24–35.
- Taylor, G. S., Jennings, J. T., Purcell, M. F., and **Austin, A. D.** (2013). Three new Australian species of *Trioza* Foerster (Hemiptera: Triozidae) with a remarkable adaptation to oviposition on articulate branchlets of *Allocasuarina* (Casuarinaceae). *Australian Journal of Entomology* **52**: 42–52.
- Theischinger, G. and **Richards, S. J.** (2013). Two new species of *Hylaeargia* Lieftinck from New Guinea (Zygoptera: Platycnemididae). *International Dragonfly Fund – Report* **64**: 1–11.
- Theischinger, G. and **Richards, S. J.** (2013). Three new species of *Teinobasis* Kirby from Papua New Guinea (Zygoptera: Coenagrionidae). *Odonatologica* **42**: 359–367.
- Theischinger, G. and **Richards, S. J.** (2014). *Drepanosticta elaphos* sp. nov. and *Drepanosticta pterophora* sp. nov. from Papua New Guinea (Odonata: Platystictidae). *Odonatologica* **43**: 91–103.
- Theischinger, G. and **Richards, S. J.** (2014). *Palaeosynthemis nigrostigma* sp. nov., a new dragonfly from Papua New Guinea (Anisoptera: Synthemistidae). *International Dragonfly Fund – Report* **71**: 1–7.

Tresguerres, M., Katz, S., and **Rouse, G. W.** (2013). How to get into bones: proton pump and carbonic anhydrase in *Osedax* boneworms. *Proceedings of the Royal Society of London Series B-Biological Sciences* **280**: 20130625.

Valerio, A. A., **Austin, A. D.**, Masner, L., and Johnson, N. F. (2013). Systematics of Old World *Odontacolus* Kieffer s. l. (Hymenoptera: Platygasteridae s. l.): Parasitoids of spider eggs. *ZooKeys* **314**: 1–151.

Vendl, C. and **Beveridge, I.** (2014). Estimation of species richness in the complex communities of nematode parasites found in the stomachs of kangaroos and wallabies (Family Macropodidae). *Transactions of the Royal Society of South Australia* **138**: 105–112.

#### 5.3.4 Authored by Volunteers

**Moore, M. D.** and Edwards, E. D. (2014). Two species of *Abantiades* Herrich-Schäffer (Lepidoptera: Hepialidae) from Western Australia. *Australian Entomologist* **41**: 29–44.

### 5.4 OTHER PUBLICATIONS

*Book reviews, electronic-only publications, non-peer reviewed papers, conference and workshop proceedings, technical reports and opinion pieces.*

#### 5.4.1 Authored by Museum staff

Catalano, S., **Donnellan, S.**, **Whittington, I.**, and Gillanders, B. (2013). Cephalopod secrets: marine parasites reveal all about their hosts. *e-Science* (The University of Adelaide Science Magazine) issue 6 (July 2013): 18–23.

**Craig, B.** (2013). ‘How Karius Found a River to the North’: the first 1927 attempt to cross New Guinea from the Fly to the Sepik, posted on-line 2013 at <http://uscngp.com/papers/37>.

**Craig, B.** (2014). ‘Introduction’ to C. Roberts (2014). *Songs of the Star Mountains*. Institute of Papua New Guinea Studies.

**Craig, B.** (2014). ‘War Trophies or Curios?’ *Oceanic Art Society Journal* **19**: (February 2014): 2–4.

**Craig, B.** (2013). ‘The Ok Tedi Mine in Papua New Guinea’. *Artlink* **33**: (4) on-line at <https://www.artlink.com.au/articles/4043/the-ok-tedi-mine-in-papua-new-guinea/>

**Craig, B.** ‘Amitung (houseboard)’ in exhibition catalogue *Plumes and pearlshells: art of the New Guinea highlands* (30 May–10 August 2014), pp. 62–65.

Flaherty, A. Langsford, S., Grant, C., **Reardon, T.**, Linke, A., Gunn, B., Paulenas, P., Turton, M., Law, B., and Kerr, M. (2014). *Bat Pack: A Resource for Teachers and Students*. A multimedia/interpretative resource. Printcity, 89pp.

**Gardner, M. G.** (2014). Genetic analysis of parental contributions by broodstock. Report to the Seafood Cooperative Research Centre.

Goldsworthy, S. D., Kennedy, C., **Shaughnessy, P. D.**, and Mackay, A. I. (2014). Monitoring of Seal Bay and other pinniped populations on Kangaroo Island: 2012–2015. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2014/000332-1. SARDI Research Report Series No. 782, 39 pp.

**Greenslade, P., Stevens, M.**, and Porco, D. (2013). Measuring changes in molecular and geographical distribution after forty years of a possible endemic genus of South Australian Collembola (springtail). *The South Australian Naturalist* **86**:18–21.

**Horton, P.** (2013). South Australian Ornithological Association (SAOA) Historical Series No 45. John Sutton - a biography. Part Two. *Birds SA Newsletter* No. 227 August 2013: i–iv.

**Kemper, C. M., Segawa, S.**, and Cameron, J. (2014). Progress report on cetacean research, January 2013 to December 2013, with statistical data for the calendar year 2013. Report to Australian Antarctic Division, Hobart, 9 pp.

**Lee, M. S. Y.** and **Sanders K. L.** (2013). Shape-shifting snakes of Oz. *Australasian Science* Sept 2013, 25–27.

**Lee, M. S. Y.** (2013). Evolution's big bang explained. *The Conversation* Sept 13, 2013 (<http://theconversation.com/evolutions-big-bang-explained-and-its-slower-than-predicted-18098>).

**Leijs, R.** and **King, R. A.** (2013). Stygofauna biodiversity and conservation in Australia. Oral presentation, ABRS-Bush Blitz Symposium, Canberra, July 2013.

**Reardon, T. B.** (2013). Peer review of ‘Targeted Survey and Risk Assessment for Southern Bent-wing Bat Penshurst Wind Farm DRAFT REPORT’. Prepared for RES Australia Pty Ltd 3 September 2013. BIOSIS Report to Department of Transport, Planning & Local Infrastructure, Melbourne, Victoria, 8pp.

**Tindall, A.** (2014). *Field Guide to South Australian Fauna*, digital app, available through Apple iTunes and Google Play Stores.

#### 5.4.2 Authored by internal HRAs

Goldsworthy, S. D., Kennedy, C., Lowther, A., **Shaughnessy, P. D.**, McMahon, C. R., and Burch, P. (2013). Australian sea lion population monitoring at Seal Bay and the Seal Slide, Kangaroo Island: 2011/12 breeding season. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000216-2. SARDI Research Report Series No. 693, 29 pp.

Goldsworthy, S. D. and **Shaughnessy, P. D.** (2013). Abundance of New Zealand fur seal pups in the Cape Gantheaume Wilderness Protection Area, Kangaroo Island: 2011/12 breeding season. SARDI Publication No. F2013/000070-1. SARDI Research Report Series No. 735.

Goldsworthy, S. D., Lowther, A. D., and **Shaughnessy, P. D.** (2013). Maintaining the monitoring of pup production at key Australian sea lion colonies in South Australia (2011/12). South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2010/000665-3. SARDI Research Report Series No. 739.



Hogendoorn, K. and **Leijs, R.** (2013). Native bee diversity and its importance for conservation and ecosystem services. Oral presentation, ABRs-Bush Blitz Symposium, Canberra, July 2013.

Mackay, A. I., **Shaughnessy, P. D.**, and Goldsworthy, S. D. (2013). Australian sea lion abundance in the Bunda Cliffs region, GAB Marine Park. Final Report to the Department of Environment, Water, and Natural Resources. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2013/000642-1. SARDI Research Report Series No. 746, 25 pp.

Page B., Goldsworthy S. D., and **Shaughnessy P. D.** (2013). *Monitoring the impact of the proposed tier three tours on Australian sea lions at the Seal Bay Conservation Park*. DEWNR Technical Report 2013/13, Department of Environment, Water and Natural Resources, Adelaide.

#### 5.4.3 Authored by external HRAs

**Johnston, G. R.** (2013). Hiltaba Survey. *Nature Matters* Winter: **6**.

**Johnston, G. R.** (2013). Property profile Hiltaba. *Nature Matters* Spring: **6**.

**Johnston, G. R.** (2013). Gawler Ranges Mintbush. *Nature Matters* Spring: **7**.

**Johnston, G. R.** (2013). Feral cat control. *Nature Matters* Spring: **9**.

**Johnston, G. R.** (2014). Gawler Ranges short-tailed grasswren. *Nature Matters* Summer: **8**.

### 5.5 CONFERENCE PAPERS, TALKS AND LECTURES

#### 5.5.1 Presented by Museum staff/section

##### 5.5.1.1 Terry Bertozzi

Tierney, S. M., Hyde, J., Guzik, M. T., **Saint, K. M., Bertozzi, T.**, Friedrich, M., Humphreys, W. F., Austin, A. D., and **Cooper, S. J. B.** (2013). Vision related transcriptomics of stygobitic and surface-dwelling water beetles, *Systematics without Borders Conference*, December 1–6, Sydney, Australia.

Javidkar, M., **Cooper, S. J. B., King, R. A.**, Humphreys, W. F., **Bertozzi, T.**, and Austin, A. D. (2013). Molecular systematics and diversification of oniscidean troglotauna (Isopoda) in groundwater calcretes of Central Western Australia, *44th AGM and Scientific Conference of the Australian Entomological Society*, September 29–October 2, Adelaide, Australia.

##### 5.5.1.2 Steve Cooper

**Cooper S.**, Guzik, M., **Leijs, R.**, Bradford, T., **Watts, C., Austin, A.**, and Humphreys, W. (2013). Species diversification underground versus colonisation from the surface: phylogeography of subterranean diving beetles from the Western Australian arid zone, *Genetics Society of Australasia Annual Conference*, 14–17 July, Sydney, NSW, Australia.

Ansari, T. H., **Cooper, S.**, Schwarz, M., Dolman, G., Delphs, L., Bull, C., and **Gardner, M.** (2013). Phylogeography within the Australian arid zone. Plio-Pleistocene diversification and genetic structure in the skink *Tiliqua rugosa* revealed by mitochondrial and nuclear DNA,

(poster presentation), *Genetics Society of Australasia Annual Conference*, July 14–17, Sydney, NSW, Australia.

McLean, A., Lancaster, M., **Cooper, S.**, and Carthew S. (2013). Small marsupial, big dispersal: Implications for conservation, *11<sup>th</sup> International Mammal Congress*, August 11–16, Belfast, UK.

McLean, A., Lancaster, M., **Cooper S.** and Carthew S. (2013). Contemporary and historic genetic processes in an endangered semi-arid marsupial: Implications for conservation, (poster presentation), *INTECOL (International Ecology Conference)*, August 18–23, London, UK.

Guzik, M. T., **Cooper, S. J. B.**, Humphreys, W. F., **Stevens, M. I.**, Javidkar, M., Harrison, S., **King, R. A.**, Abrams, K., Harvey, M. S., and **Austin, A. D** (2013). Genetic divergences and species boundaries in subterranean invertebrates of calcrete aquifers in central Western Australia, *Australian Entomological Society 44th AGM and Scientific Conference*, September 29–October 2, Adelaide, Australia.

Javidkar, M., **Cooper, S. J. B.**, **King, R. A.**, Humphreys, W. F., **Bertozi, T.**, and **Austin, A. D.** (2013). Molecular systematics and diversification of oniscidean troglifauna (Isopoda) in groundwater calcretes of Central Western Australia, (oral presentation), *Australian Entomological Society 44th AGM and Scientific Conference*, September 29–October 2, Adelaide, Australia.

10–17 November 2013: Lecture and tutorial in *Issues in Evolutionary Biology*, 3<sup>rd</sup> year course, The University of Adelaide.

Harrison, S. E., Rix, M. G., Guzik, M. T., **Cooper, S. J. B.**, and **Austin, A. D.** (2013). Systematics and biogeography of the mygalomorph spider genus *Blakistonia* (Idiopidae) from semi-arid Australia, (oral presentation), *Systematics without Borders Conference*, December 1–6, Sydney, Australia.

Javidkar, M., **Cooper, S. J. B.**, **King, R. A.**, Humphreys, W. F., **Bertozi, T.**, and **Austin, A. D.** (2013). Molecular systematics and diversification of oniscidean troglifauna (Isopoda) in groundwater calcretes of Central Western Australia, (oral presentation), *Systematics without Borders Conference*, December 1–6, Sydney, Australia.

Rix, M. G., **Cooper, S. J. B.**, Harvey, M. S., and **Austin, A. D.** (2013). RNA-Seq and the systematics of Australian idiopid trapdoor spiders: progress and prospects, (oral presentation), *Systematics without Borders Conference*, December 1–6, Sydney, Australia.

Tierney, S. M., Hyde, J., Guzik, M. T., **Saint, K. M.**, **Bertozi, T.**, Humphreys, W. F., **Austin, A. D.**, and **Cooper, S. J. B.** (2013). Vision related transcriptomics of stygobitic and surface-dwelling water beetles, (oral presentation), *Systematics without Borders Conference*, December 1–6, Sydney, Australia.

**Cooper, S. J. B.,** Li, Y., Lancaster M. L., Packer, J. G., and Carthew, S. (2014).

Conservation genetics of southern brown bandicoots (*Isoodon obesulus*) from South Australia and western Victoria, (invited oral presentation), *The 2014 Natural Resources Management Science Conference*, April 15–16, Adelaide, Australia.

#### **5.5.1.3 Andrea Crowther**

15 October 2013: Attended *Australian Marine Sciences Association* conference.

6 May 2014: The secret lives of sea anemones. Talk presented to the Butterfly Conservation Society.

#### **5.5.1.4 Steve Donnellan**

29 July 2013–9 August 2013: *Evolutionary Biology II* course, University of Adelaide, 4 lectures and two practicals.

8 August 2013: Science Centre Tour for Premiers Science and Research Council.

14 August 2013: National Science week talk in Museum Gallery.

13 September 2013: SEG Meeting Fullarton Centre, talk on biodiversity.

17 September 2013: Science Centre Tour for Rostrevor College students.

16 October 2013: School of Molecular Biomedical Science, University of Adelaide - school seminar.

17 October 2013, 24 October 2013: Issues in *Evolutionary Biology* course, University of Adelaide, lecture and tutorial.

20 November 2013: Radio Adelaide interview.

3 December 2013: Bioninformatics summer annual meeting, University of Adelaide, public lecture.

11 February 2014: National Seniors monthly meeting, talk on biodiversity.

19 March 2014: Queen Adelaide Club, talk on impact of Museum research.

15–16 April 2014: 4 Gallery talks for Museum *School Holiday Program*.

22 May 2014: Australian Chief Scientists Forum tour of Science Centre.

#### **5.5.1.5 Mike Gardner**

**Gardner, M. G.,** Pearson, S., Johnston, G., and Schwarz, M. P. (2014). Grouping in squamate reptiles: A review of the evidence for stable aggregations, *50th Anniversary Meeting of The Australian Society of Herpetologists*, 29 January–1 February 2014, Greenhills Conference Centre Canberra, ACT, Australia.

June 23 2014: The social networking of lizards. Year 10 Science and Mathematics Taster Day, Flinders University.

#### **5.5.1.6 Jim Gehling**

20 November 2013: Speech to Adelaide Festival of Arts “Angels and Patrons” on *Creativity of Evolution*, South Australian Museum.

13 December 2013: Opening Address and acknowledgements for the Opening of the South Australian Museum, Ediacara Fossil Gallery.

10 April 2014: Address to Royal Society of South Australia at Flinders University: *Evidence of Ediacaran motility and the origins of bilaterian animals*.

#### **5.5.1.7 Information Services – Archives**

4 July 2013: Southern Flinders Health Group, Group Family History workshop.

21 August 2013: Diana Laidlaw and members of the Milton Foundation, Talk and Tour of South Australian Museum Archives.

27 August 2013: Yorgum Aboriginal Corporation, Western Australia, Workshop on Family History and Tour.

29 August 2013: Warriappendi School Students, Workshop on Family History and Tour.

4 September 2013: Aboriginal Youth Program (South Australian Museum Education), Talk and Tour of Family History.

27 September 2013: Community Visit (Mannum), Talk and Behind the Scenes Tour of Family History.

10 October 2013: Yorgum Aboriginal Corporation, Western Australia, Workshop on Family History and Tour.

20 October 2013: Jane Lomax-Smith and Guest, Tour and Talk on Family History.

30 October 2013: Australian Society of Archivists, Talk on the South Australian Museum Archives.

21 November 2013: Attorney-Generals, Talk and Tour.

10 October 2013: Community Visit, Yorgum Aboriginal, Talk, Tour and Workshop on Family History.

19 December 2013: Jane Lomax-Smith Tour and Guest, Talk and Tour.

6 February 2014: Adelaide City Council, Talk, Tour and Workshop on Family History.

11 February 2014: Young Offenders Program - Whitelion, Team Talk, Tour and Workshop on Family History.

21 February 2014: Jonathan Jones, Talk and Tour.

25 February 2014: Young Offenders Program - Whitelion, Team Talk, Tour and Workshop on Family History.

28 February 2014: John Strehlow, Talk and Tour.

5 March 2014: Newmont, Tour and Talk on Archives.

17 March 2014: Young Offenders Program - MAYFS, Team Talk, Tour and Workshop on Family History.

2 April 2014: Aboriginal Advisory Group.

10 April 2014: Jane Lomax-Smith and MPs, Talk and Tour of Archives.

13 May 2014: Young Offenders Program - Port Lincoln Youth, Team Talk, Tour and Workshop on Family History.

14 May 2014: Heta Indigenous Employment, Talk and Tour of Family History.

16 May 2014: SA Link Up, Tour and Workshop to case workers.

27 May 2014: WATTO PURRUNNA Northern Adelaide Health Unit, Workshop on Family History.

29 May 2014: Young Offenders Program - MAYFS, Team Talk, Tour and Workshop on Family History.

3 June 2014: University of South Australia lecture on the Norman Tindale Collection for the Archival Management INFS 5081 post graduate course.

11 June 2014: Jane Lomax-Smith and MPs, Talk and Behind the Scene Tour of Archives and Family History .

12 June 2014: Young Offenders Program - CAMHS Journey Home Team Talk, Tour and Workshop on Family History

#### ***5.5.1.8 Informations Services - Library***

Three groups were given a talk and tour of the South Australian Museum Library.

#### ***5.5.1.9 Philippa Horton***

2 July 2013: Interview by ABC TV regarding a recent sighting of the Night Parrot in South-West Queensland; filming in the Bird Collection Room included footage of our two Night Parrot skins.

#### ***5.5.1.10 Peter Hudson***

**Hudson, P. and Stevens, M.** (2013). Flightless beetles and islands of salt: a tale of Australian pogonine beetles, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, Adelaide, September 29–October 02, 2013, Adelaide.

#### ***5.5.1.11 Mark Hutchinson***

2 July 2013: Public Talk, “Four Legs Good, No Legs Better” to Butterfly Conservation Group, Clarence Park Community Centre, 72–74 East Ave., Black Forest, Adelaide.

19 July 2013: Public Talk, “Four Legs Good, No Legs Better” to Strathalbyn Field Naturalists Club, Langhorne Creek Bowls Clubrooms, Langhorne Creek.

2 October, 2013: **Hutchinson, M. N.**, Hacking, J., Gillespie, A., and Archer, M. (2013). A Miocene *Egernia* (Reptilia: Scincidae) from Riversleigh, Queensland – appreciating the extra crunch, (Oral presentation ), *14th biennial Conference on Australasian Vertebrate Evolution, Palaeontology & Systematics* (CAVEPS). Flinders University, Adelaide, South Australia.

29–31 January, 2014: Scott, S. and **Hutchinson, M. N.** (2014). Hol(e)y bones: morphology and post-hatching ontogeny in Australian gekkotan vertebrae, (Poster presentation), *Australian Society of Herpetologists, 50th Anniversary Meeting*. Greenhills Conference Centre, Canberra, ACT, Australia.

**5.5.1.12 Philip Jones**

24 September 2013: ‘The Field Island Bark Paintings’ – lecture delivered at Royal Academy for the Arts, London, U.K.

6 March 2014: ‘Behind the Doors: An Art History from Yuendumu’ – lecture delivered at Adelaide Writers’ Week, Adelaide, South Australia.

**5.5.1.13 Catherine Kemper**

Milano, S. and **Kemper, C. M.** (2013). Does the neonatal line really appear at birth?, *Australian Mammal Society Conference*, July 8–10, 2013, Sydney, NSW, Australia.

Bastianello, S., **Tomo, I., Kemper, C.**, Woolford, L., Dickason, C., and Bingham, J. (2013). Morbillivirus infection in bottlenose dolphins in South Australia, *Australian Society for Veterinary Pathology*, October 2013, Adelaide.

**Kemper, C. M.**, Woolford, L., **Tomo, I.**, Dickason, C., Bastianello, S., Gibbs, S., Kelly, D., Wang, J., and Bingham, J. (2013). Abnormally high dolphin mortalities linked to *Morbillivirus* in South Australia, *Society for Marine Mammalogy Biennial Conference*, December 9–13, 2013, Dunedin, New Zealand.

**Tomo, I.**, Bastianello, S., **Kemper, C.**, Wang, J., Bingham, J., Woolford, L., Dickason, C., and Kelly, D. (2013). Pathology of dolphins during an Unusual Mortality Event in South Australia, *Society for Marine Mammalogy Biennial Conference*, December 9–13, 2013, Dunedin, New Zealand.

**Tomo, I., Kemper, C.** Bastianello, S., Wang, J., Bingham, J., Woolford, L., Dickason, C., and Kelly, D. (2014). Unusual Mortality Event of Dolphins in South Australia, 2013, *43<sup>rd</sup> International Association of Aquatic Animal Medicine*, May 17–21, 2014, Gold Coast, Queensland, Australia.

16 March 2014: Talk for Dolphin Day at Port Adelaide on morbillivirus event of 2013 in South Australia. Organised by DEWNR.

17–18 March 2014. Catherine Kemper (as President of the Australian Mammal Society) attended Science meets Parliament in Canberra, ACT, Australia. Organised by Science and Technology Australia.

14 April 2014: Two Collection Conversation sessions in Front of House, South Australian Museum.

16 April 2014: Talk to Natural Resources Mmanagement Conference, University of Adelaide on monitoring small cetaceans in Gulf St Vincent.

**5.5.1.14 Rachael King**

**King, R. A.** (2013). Exploring the biodiversity of Australian groundwater associated amphipods using molecular and morphological approaches, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, Adelaide, September 29–October 02, 2013, Adelaide.

**Leijes, R.** and **King, R. A.** (2013). Stygo fauna biodiversity and conservation in Australia. Oral presentation, *ABRS Bush Blitz Symposium*, July, 2013, Canberra, ACT, Australia.

**5.5.1.15      Mike Lee**

Beck, R. M. D. and **Lee, M. S. Y.** (2013). Ancient dates or accelerated rates? The tempo of morphological evolution in placental mammals, *Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics*, October 1–5, Flinders University, Adelaide.

**Lee, M. S. Y.**, Cau, A., Naish, D., and Dyke G. J. (2013). Sustained miniaturisation in the dinosaurian ancestors of birds, *Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics*, October 1–5, Flinders University, Adelaide.

Llamas, B., Brotherton, P., Templeton, J., Thomson, V. A., Metcalf, J., Mitchell, K., Armstrong, K., Kasper, M., Richards, S., Camens, A. B., **Lee, M. S. Y.**, and **Cooper, A.** (2013). Upper Pleistocene Australian marsupial DNA clarifies the affinities of extinct megafaunal kangaroos and wallabies, *Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics*, October 1–5, Flinders University, Adelaide.

Long, J., Young, G., and **Lee, M.** (2013). Origins of the ptychodontid placoderms, Society of Vertebrate Paleontology, 73rd Meeting, October 30–November 2, Los Angeles, California, USA. *Journal of Vertebrate Paleontology* **October 2013 Supplement 164**.

**5.5.1.16      Terry Reardon**

Talk to the Lyceum Club on *Bats and their conservation*.

**5.5.1.17      Kate Sparks**

**Sparks, K. S.** Andersen, A. N., **Donnellan, S. C.**, and **Austin, A. D.** (2013). Navigating the morphological maze: species delimitation in the *Monomorium rothsteini* (Forel) complex (Hymenoptera: Formicidae), Poster Presentation to *Systematics without Borders Conferences*, December 1–6, 2013, Sydney.

28 April 2014: Amazing Arachnids. Talk presented to the Modbury Branch of National Seniors Australia.

**5.5.1.18      Mark Stevens**

Drummond, A., Buckley, T., **Stevens, M.**, Tooman, L., Xei, W., Dopheide, A., Russell, J., Myles, B., Newcomb, R.D., and Nelson, N. (2013). Multi-phyla metagenomics along an altitudinal gradient on a small temperate island, *Genetics Society of Australasia*, July, 2013.

Duran-Racero, V., Deharveng, L., **Stevens, M. I.**, and D’Haese, C. A. (2013). *Thaliabella aenigmatica* N.GEN., N.SP. (Collembola: Neanuridae), with notes on the ambiguous status of the endemic *Caledonimeria* lineage in New Caledonia, *The Australian Entomological Society’s 44th AGM & Scientific Conference*, September 29–October 2, 2013, Adelaide.

Groom, S., **Stevens, M.**, and Schwarz, M. (2013). Coalescent analyses indicate parallel responses of bees to past climate change in three isolated archipelagos of the south western Pacific, *The Australian Entomological Society’s 44th AGM & Scientific Conference*, September 29–October 2, 2013, Adelaide.

Guzik, M., **Cooper, S.**, Humphreys, W., **Stevens, M.**, Harvey, M., and **Austin, A.** (2013). Genetic divergences and species boundaries in subterranean invertebrates of calcrete aquifers in central Western Australia, *The Australian Entomological Society’s 44th AGM & Scientific Conference*, September 29–October 2, 2013, Adelaide.

**Hudson, P.** and **Stevens, M.** (2013). Flightless beetles and islands of salt: a tale of Australian pogonine beetles, *The Australian Entomological Society's 44th AGM & Scientific Conference*, September 29–October 2, 2013, Adelaide.

Velasco-Castrillón, A., Schultz, M. B., **Cooper, S.**, **Austin, A.**, Gibson, J. A., Davies, K., Sands, C., McInnes, S., Adams, B., and **Stevens, M. I.** (2013). Diversity and distribution of soil microfauna from Antarctica, *The Australian Entomological Society's 44th AGM & Scientific Conference*, September 29–October 2, 2013, Adelaide.

Velasco-Castrillón, A. and **Stevens, M. I.** (2013). Antarctic nematodes, rotifers and tardigrades: assessing morphological and molecular diversity at a continental scale, *5<sup>th</sup> International Barcode of Life Conference*, October 27–31, 2013, Kunming, China.

Groom, S. V. C., Ngo, H. T., Rehan, S. M., Skelton, P., **Stevens, M. I.**, and Schwarz, M. P. (2013). Barcoding reveals that all Apidae bee species in Fiji, Vanuatu and Samoa represent anthropogenic dispersals, *5<sup>th</sup> International Barcode of Life Conference*, October 27–31, 2013, Kunming, China.

Groom, S., **Stevens, M.**, and Schwarz, M. (2013). Coalescent analyses indicate parallel responses of bees to past climate change in three isolated archipelagos of the south western Pacific, *5<sup>th</sup> International Barcode of Life Conference*, October 27–31, 2013, Kunming, China.

Groom, S. V. C., Hayes, S., Ngo, H. T., **Stevens, M. I.**, and Schwarz, M. P. (2013). Megachilidae in the south west Pacific: the impact of a recent bee fauna on ecosystem development and stability, *5<sup>th</sup> International Barcode of Life Conference*, October 27–31, 2013, Kunming, China.

**Stevens, M. I.**, **Adams, M.**, **Foster, R.**, and Humphreys, W. F. (2013). Where (subterranean) worlds collide: periodic gene flow between two mtDNA lineages of the Australian blind cave gudgeon *Milyeringa veritas*, *Western Australian Freshwater Fish Symposium*, November 8, 2013, Perth, Western Australia.

31 March–11 April 2014: Waterhouse Expedition to Federated States of Micronesia. Trip to the islands of Pohnpei, Chuuk, and Guam to collect Collembola and native bees. One talk given to the Waterhouse Club pre-trip, one on Pohnpei and one on Chuuk. Two talks given to students at the College of Micronesia-FSM (on Pohnpei), and one talk to students at the Xavier High School (Chuuk).

Czechowski, P., White, D., Clarke, L. J., Cooper, A., and **Stevens, M. I.** (2014). High-throughput DNA sequencing reveals Antarctic soil biodiversity. Centre for Biodiversity Analysis and CSIRO (OCE Cutting Edge Science Symposia) hosted a conference and series of workshops at CSIRO Discovery and ANU on Understanding biodiversity dynamics using diverse data sources, April 22–24 2014.

#### **5.5.1.19 Alexis Tindall**

Volunteer digitisation at the South Australia Museum: a case study in strategic digitisation, *National Digital Forum*, November 25–26 2013, Wellington, New Zealand.

#### **5.5.1.20 Keryn Walshe**

September 2013: Archaeology of the southern Fleurieu area. Yankalilla Historical Society Inc.



October 2013: Coastal Archaeology of South Australia. Aboriginal Site Management Training Program, NRMA.

**Walshe, K.** (2013). Revision of the archaeology and chronology Koonalda Cave and results of geochemical analysis, *Australian Archaeology Annual Conference*, December 3–6 2013, Coffs Harbor, NSW.

**Walshe, K.** (2014). Reconstruction of a rare ornament from a Sealer's Site on Kangaroo Island, South Australia, *Computer Applications in Archaeology Conference*, April 21–24, 2014, Sorbonne, Paris, France.

11 March 2014: Coastal Archaeology of the Fleurieu Peninsular. Coastal Ambassadors Training Program, NRMA.

17 March 2014: Nineteenth Century post-contact Adelaide archaeology. Burnside Historical Society Inc.

23 and 25 May 2014: Mystery and History –Archaeology of Kangaroo island, South Australia. Talk and display of artefacts, Hindmarsh ArtsSA, *About Time, South Australia's History Festival and National Archaeology Week*.

#### **5.5.1.21 Ian Whittington**

Catalano, S. R., **Whittington, I. D.**, **Donnellan, S. C.**, and Gillanders, B. M. (2013). The secret lives of dicyemid parasites: an insight into cephalopod host populations via analyses of their dicyemid parasite fauna using a combined morphological and molecular method, *American Society of Parasitologists 88<sup>th</sup> Annual Meeting*, June 26–29, Quebec City, Canada.

Catalano, S. R., **Whittington, I. D.**, **Bertozzi T.**, **Donnellan S. C.**, and Gillanders, B. M. (2013). Dicyemid parasites as biological tags, *Australian Society for Fish Biology Conference*, August 19–23, Hamilton, New Zealand.

Catalano, S. R., **Whittington, I. D.**, **Bertozzi, T.**, **Donnellan, S. C.**, and Gillanders, B. M. (2013). Dicyemid parasites as biological tags to assess the population structure of *Sepia apama* (giant Australian cuttlefish) in southern Australian waters, *24<sup>th</sup> International Conference of the World Association for the Advancement of Veterinary Parasitology*, August 25–29, Perth, Australia.

Deveney, M. R. and **Whittington, I. D.** (2013). Monogeneans in aquaculture: The future of management. Session 4: Aquaculture, aquarium and fisheries, invited contribution to the *Seventh International Symposium on Monogenea*, August 4–9 2013, Rio de Janeiro, Brasil.

Paladini, G., Rubio-Godoy, M., **Whittington, I. D.**, Domingues, M. V., Bron, J. E., and Shinn, A. P. (2013). Databases. Round Table 2: Diagnosis global mono / keys / info / database, invited contribution to the *Seventh International Symposium on Monogenea*, August 4–9 2013, Rio de Janeiro, Brasil.

Shinn, A. P., Paladini, G., **Whittington, I. D.**, and Domingues, M. V. (2013). A web host for the Monogenea: what do we want? Round Table 2: Diagnosis global mono / keys / info / database, invited contribution to the *Seventh International Symposium on Monogenea*, August 4–9 2013, Rio de Janeiro, Brasil.

Shinn, A. P., Gibson, D. I., Domingues, M. V., Paladini, G., Rubio-Godoy, M., **Whittington, I. D.**, Boeger, W., and Bron, J. E. (2013). Yamaguti's *Systema Helminthum*: 50 years on. Round Table 2: Diagnosis global mono / keys / info / database, invited contribution to the *Seventh International Symposium on Monogenea*, August 4–9 2013, Rio de Janeiro, Brasil.

## 5.5.2 Presented by internal HRAs

### 5.5.2.1 *Diego Garcia-Bellido*

Barragán, T., Esteve, J., **García-Bellido, D. C.**, Zamora, S., and Álvaro, J. J. (2013). New mid-Cambrian palaeoscolecid sclerites of *Hadimopanella oezgueli* from the Cantabrian Mountains, northern Spain, *Proceedings of the 3rd IGCP 591 Annual Meeting–Lund*, pp. 42–44. IGCP 591 Annual Meeting & Joint meeting of ICS subcommissions on Cambrian, Ordovician and Silurian Stratigraphy, Lund, Sweden.

Edgecombe, G. D., **Gehling, J. G.**, **Jago, J. B.**, **García-Bellido, D. C.**, Lee, M. S. Y., Daley, A. C., and Paterson, J. R. (2013). Recent advances in understanding Cambrian Lagerstätten - the Emu Bay Shale, *Abstract Book–Lyell Meeting 2013. The Cambrian ‘explosion’*, p. 12. Lyell Meeting 2013, London, U.K.

Gutiérrez-Marco, J. C., Sá, A. A., **García-Bellido, D. C.**, and Rábano, I. (2013). The extent of the Dapingian Stage (Middle Ordovician) in peri-Gondwanan Europe and North Africa. Stratigraphic record, biostratigraphic tools, and regional chronostratigraphy, *Proceedings of the 3rd IGCP 591 Annual Meeting–Lund*, pp. 114–115. IGCP 591 Annual Meeting & Joint meeting of ICS subcommissions on Cambrian, Ordovician and Silurian Stratigraphy, Lund, Sweden.

### 5.5.2.2 *Remko Leijs*

Bush Blitz survey report: ABRS–Bush Blitz, Henbury Station.

Four public lectures: ‘On the biodiversity and Conservation of Native Bees’ for local community groups.

### 5.5.2.3 *Graham Medlin*

3 September 2013: Talk to the Butterfly Conservation Society of South Australia at Clarence Park on the topic “Using stick-nest rat nests to investigate holocene vegetation history and possible climatic change in the central and northern Flinders Ranges”.

9 April 2014: Talk to The Field Naturalists Society of South Australia General Meeting on the topic, “Using Barn Owl pellet analysis to complement traditional biodiversity surveys”.

### 5.5.2.4 *Peter Shaughnessy*

**Shaughnessy, P.** (2013). Presentation to Mallee and Coorong NRM Group at their Weed and Vermin forum at Meningie, 18 September 2013, entitled ‘New Zealand fur seals in South Australia.’

**Shaughnessy, P.**, **Kemper, C.**, **Stemmer, D.**, and McKenzie, J. (2013). Records of vagrant fur seals (family Otariidae) in South Australia, *Australian Mammal Society Conference*, July 2013, Sydney, NSW. Oral presentation and abstract, p. 81.

**Shaughnessy, P. D.** and Goldsworthy, S. D. (2013). Australian fur seals invading territory of New Zealand fur seals in South Australia, *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9–13 December 2013, Dunedin, New Zealand. Poster and abstract.

Goldsworthy, S. D., Hamer, D. J., **Shaughnessy, P. D.**, Hindell, M. A., Burch, P., and Mackay, A. (2013). Impact and mitigation of Australian sea lion bycatch in the shark gillnet fishery off South Australia, *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9–13 December, 2013 Dunedin, New Zealand. Oral presentation and abstract.

**Shaughnessy, P.** Talk to Adelaide branch of National Seniors on 13 May, 2014 entitled ‘A tour to the Antarctic Peninsula.’

#### **5.5.2.5 Peter Sutton**

4–5 July and 3–4 October 2013: Invited participant in Stewardship Dialogues for Aboriginal and Torres Strait Islander Health (national think-tank sponsored by The Lowitja Institute, University of Melbourne), Woodend, Victoria.

18 July 2013: Invited talk on ‘Assisting Indigenous people in native title cases’, at Australian Indigenous Justice Association conference: Current issues in Delivering Indigenous Justice – Challenges for the Courts, Adelaide.

25 July 2013: Presented a paper on ‘The lexicon of classical Wik technology’ at annual conference of the Australian Association for Lexicography at the University of Adelaide.

30 July 2013: Presented The Sprigg Lecture, title: ‘Ursula McConnel’s tin trunk: a remarkable story’, South Australian Museum Adelaide.

19 September 2013: Took part in panel discussion of Indigenous art and politics at Gallery of Modern Art, Brisbane (downloadable video is at <http://tv.qagoma.qld.gov.au/2013/09/20/goma-talks-life/>; broadcast on ABC Radio National *Big Idea*).

18 October 2013: Presented invited talk on ‘Back to the bush: a Cape York Mission outstation in the 1970s’, for the Mt Lofty & District Historical Association, Coventry Library, Sterling, South Australia.

12 November 2013: An invited participant in public debate on the statement: ‘True Reconciliation Requires a Treaty’, organised by The Wheeler Foundation. Melbourne Town Hall, Melbourne, Victoria, Australia. See <http://wheelercentre.com/events/event/true-reconciliation-requires-a-treaty/>

16 December 2013: Invited paper on ‘Wik Outstations in the 1970s’ at a two-day workshop on ‘Outstations in the history of self-determination’, Department of Archaeology and Anthropology, Australian National University, Canberra, ACT, Australia.

10 September 2013: Made invited oral submission to the external review panel for the Department of Linguistics, University of Adelaide.

30 April 2014: Made invited oral submission to Commissioner Lee Godden of the Australian Law Reform Commission’s Native Title Inquiry.

#### **5.5.2.6 Ikuko Tomo**

Bastianello, S., **Tomo, I.**, **Kemper, C.**, Woolford, L., Dickason, C., and Bingham, J. (2013). Morbillivirus infection in bottlenose dolphins in South Australia, *Australian Society for Veterinary Pathology*, Oct 2013, Adelaide.

**Kemper, C. M.**, Woolford, L., **Tomo, I.**, Dickason, C., Bastianello, S., Gibbs, S., Kelly, D., Wang, J., and Bingham, J. (2013). Abnormally high dolphin mortalities linked to *Morbillivirus* in South Australia, *Society for Marine Mammalogy Biennial Conference*, December 9–13, 2013, Dunedin, New Zealand.

**Tomo, I.**, Bastianello, S., **Kemper, C.**, Wang, J., Bingham, J., Woolford, L., Dickason, C., and Kelly, D. (2013). Pathology of dolphins during an Unusual Mortality Event in South Australia, *20<sup>th</sup> Society for Marine Mammalogy Biennial Conference*, December 9–13, 2013, Dunedin, New Zealand.

**Tomo, I.**, **Kemper, C.**, Bastianello, S., Wang, J., Bingham, J., Woolford, L., Dickason, C., and Kelly, D. (2014). Unusual Mortality Event of Dolphins in South Australia, 2013, *43<sup>rd</sup> International Association of Aquatic Animal Medicine*, May 17–21 2014, Gold Coast, Queensland, Australia.

### 5.5.3 Presented by external HRAs

#### 5.5.3.1 Barry Cooper

**Cooper, B. J.** (2013). A ‘sense of place’ in geology: the case history of four locations from South Australia. *iCHSTM conference*, Manchester, United Kingdom, Symposium S113-B: Geologist in the Field: The importance of place.

**Cooper, B. J.** and Kramar S. (2014). Sydney sandstone: Heritage Stone from Australia, *Geophysical Research Abstracts*, EGU General Assembly 2013.

#### 5.5.3.2 Richard Glatz

**Glatz, R. V.** (2013). Insects of Kangaroo Island, *Kangaroo Island Flora and Fauna Club Annual General Meeting*, July 20, 2013, Kingscote, Kangaroo Island, South Australia.

**Glatz, R. V.** (2013). Distribution and conservation status of Green carpenter bee, *SA Department of Environment, Water & Natural Resources public seminar*, October 09, 2013, Kingscote, Kangaroo Island, South Australia.

Anantanawat, K., Hill, K., Cooper, T., Keller, M. A., and **Glatz, R. V.** (2013). Comparison of egg gene expression profiles between Bt-toxin susceptible and induced tolerant *Helicoverpa armigera* (Lepidoptera: Noctuidae), *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, September 29–October 2, 2013, Adelaide.

Fung, E., Cooper, T., Hill, K., Hogendoorn, K., and **Glatz, R.** (2013). First detection of honeybee viruses associated with Australian native bees, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, Adelaide, September 29–October 2, 2013, Adelaide.

**Glatz, R. V.** (2013). Discovery of a new primitive lepidopteran family on Kangaroo Island, South Australia, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, September 29–October 2, 2013, Adelaide.

**Glatz, R. V.** (2013). Do bracoviruses interfere with G-protein signalling to facilitate parasitisation by their braconid wasp hosts, invited talk to “*Parasitoids and the Host Milieu*” symposium, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, September 29–October 2, 2013, Adelaide.

**Glatz, R. V.** (2014). Documenting the unique insects of Kangaroo Island, *South Australian State Friends of Parks Forum*, May 10–12, 2014, Kingscote, Kangaroo Island, South Australia.

**Glatz, R. V.** (2014).  $\gamma$ H2AvB: a dose-dependent marker to detect prior irradiation of insect

cells, *International Atomic Energy Agency's New Methods for the Detection and Quantification of Irradiated Insects Consultants' Meeting*, March 10–14 2014, Vienna, Austria.

#### 5.5.3.3 *Peter D. Kruse*

12 April 2014: Led public outreach geological excursion under auspices of Normanville Natural Resource Centre entitled “Rocks of the southern Fleurieu – foundation of our landscape and scenery”, involving introductory explanatory talk followed by excursion to five geological localities in the district. Transcript of talk available online via [www.nnrc.com.au](http://www.nnrc.com.au).

#### 5.5.3.4 *Chris Madden*

**Madden, C.** (2013). Teenage Mutant Indicator Chironomids? Long-term occurrence of deformities in the chironomid larvae (Diptera: Chironomidae) in the Murray-Darling basin, *Australian Entomological Society 44<sup>th</sup> AGM and Scientific Conference*, Adelaide, September 29–October 2, 2013, Adelaide.

## 5.6 EXTERNAL RESEARCHER PUBLICATIONS

*Based on material in the South Australian Museum's collections.*

### 5.6.1 Arachnids

Beard, J. J., Seeman, O. D., and Bauchan, G. R. (2014). Tenuipalpidae (Acari: Trombidiformes) from Casuarinaceae. *Zootaxa* **3778**: 1–157.

Clark J. M. (2013). A new hypertrichous larval *Erythrism* (Erythraeinae) from Banks Peninsula, New Zealand. *International Journal of Acarology* **39**: 393–399.

Clark, J. M. (2014). New erythraeids (Parasitengona) from recent glacial outwash, Southern Alps, New Zealand; *Callidosoma*, *Momorangia*, *Grandjeanella*, and *Pukakia* gen. nov; with a description of the deutonymph of *Callidosoma tiki*. *International Journal of Acarology* **40**: 174–204.

Mesibov, R. (2013). New species of *Agathodesmus* Silvestri, 1910 from Australia (Diplopoda, Polydesmida, Haplodesmidae). *ZooKeys* **325**: 33–64.

Seeman, O. D. (2013). *Fedrizzia* (Acari: Mesostigmata: Fedrizzidae) from Australian beetles of the genus *Mastachilus* (Coleoptera: Passalidae). *Memoirs of the Queensland Museum* **58**: 33–47.

### 5.6.2 Archaeology

Durband, A. C., Littleton, J., and Walshe, K. (2014). Patterns in ritual tooth avulsion at Roonka. *American Journal of Physical Anthropology*. Article first published online: 14 May 2014. doi: 10.1002/ajpa.22531.

Littleton, J., Scott, R., McFarlane, G., and Walshe, K. (2013). Hunter-gatherer variability: Dental wear in South Australia. *American Journal of Physical Anthropology* **152**: 273–286.

Littleton, J., Walshe, K., and Hodges, J. (2013). Burials and time at Gillman mound, Northern Adelaide, South Australia. *Australian Archaeology* **77**: 38.

### 5.6.3 Entomology

Gerstmeier, R. and Seitner, M. (2013). Revision of the checkered beetle genus *Eunatalis* Schenkling, 1909 (Coleoptera: Cleridae: Clerinae). *Zootaxa* **3698**: 1–77.

Jałoszyński, P. (2014). The smallest Cyrtoscydmini of Australia: revision of *Microscydmus* Saulcy & Croissandeau and *Penicillidmus* gen. n. (Coleoptera, Staphylinidae, Scydmaeninae). *Zootaxa* **3774**: 1–30.

Kallies, A. and Hilton, H. J. (2012). Revision of Cossinae and small Zeuzerinae from Australia (Lepidoptera: Cossidae). *Zootaxa* **3454**: 1–62.

Kejval, Z. (2013). Taxonomic revision of the Australian Notoxinae (Coleoptera: Anthicidae). *ACTA Entomologica Musei Nationalis Pragae* **53 (Supplement)**: 1–98.

Namyatova, A. A. and Cassis, G. (2013). Systematics, phylogeny and host associations of the Australian endemic monaloniine genus *Rayieria* Odhiambo (Insecta: Heteroptera: Miridae: Bryocorinae). *Invertebrate Systematics* **27**: 689–726.

Namyatova, A. A., Schwartz, M. D., and Cassis, G. (2013). First record of the genus *Stenotus* Jakovlev from Australia, with two new species, and a list of mirine species from Witchelina Nature Reserve (Insecta: Heteroptera: Miridae: Mirinae: Mirini). *Journal of Natural History* **47**: 987–1008.

Velasco-Castrillón, A. (2014). *Diversity and Distribution of Limno-Terrestrial Microfauna from Antarctica*. PhD thesis, The University of Adelaide.

Zwick, P. (2013). Australian marsh beetles. 3. A restricted concept of genus *Cyphon*, Australian species of *Cyphon* s. str., and the new Australasian genus *Nanocyphon* (Coleoptera: Scirtidae). *Genus* **24**: 163–189.

Zwick, P. (2013). Australian marsh beetles (Coleoptera: Scirtidae). 4. Two genera, *Austrocyphon* and *Tasmanocyphon*. *Zootaxa* **3706**: 1–74.

### 5.6.4 Evolutionary Biology Unit

Davis, A. M., Unmack, P. J., Pusey, B. J., Pearson, R. G., and Morgan, D. L. (2014). Effects of an adaptive zone shift on morphological and ecological diversification in terapontid fishes. *Evolutionary Ecology* **28**: 205–227.

Cook, B. D., Unmack, P. J., Huey, J. A., and Hughes, J. M. (2014). Did common disjunct populations of freshwater fishes in northern Australia form from the same biogeographic events? *Freshwater Science* **33**: 263–272.

Huey, J. A., Cook, B. D., Unmack, P. J., and Hughes, J. M. (2014). BROADSCALE phylogeographic structure of five freshwater fishes across the Australian Monsoonal Tropics. *Freshwater Science* **33**: 273–287.

Page, T. J., and Hughes, J. M. (2014). Contrasting insights provided by single and multispecies data in a regional comparative phylogeographic study. *Biological Journal of the Linnean Society* **111**: 554–569.

### 5.6.5 Information Services – Archives

Amery, R. and Simpson, J. (2013). *Kulurdu Marni Ngathaitya - Sounds good to me!* Kent Town, Adelaide, Australia: Wakefield Press. [Use of the George French Angas collection (AA 8) and Herbert Matthew Hale Collection (AA 124)].

Cane, S. (2013). *First Footprints. The epic story of the First Australians*. Crows Nest, NSW, Australia: Allen and Unwin. [Use of various Archive collections].

Davis, F. (2014). *Australian Settler Colonialism and the Cummeragunja Aboriginal Station*. Eastbourne, Sussex, UK: Sussex Academic Press. [Use of the Board for Anthropological Research collections (AA 346)].

Green, J. (2014). *Drawn from the Ground Sound, Sign and Inscription in Central Australian Sand Stories*. Cambridge, UK: Cambridge University Press. [Use of the Norman Barnett Tindale Collection (AA 338)].

Ngaanyatjarra Pitjantjatjara Yankunytjatjara Women's Council Aboriginal Corporation. (2013). *Traditional Healers of Central Australia: Ngangkari*. Broome, Western Australia: Magabala Books.

Roper, S. (2013). *Palya. Images and recollections from two decades on the Anangu Pitjantjatjara Yankunytjatjara Lands in north western South Australia*. Adelaide, South Australia: Stewart Roper.

Thagaalbi Indigenous Corporation Prospectus (2013).

### 5.6.6 Ornithology

Guay, P.-J., Weston, M. A., Symonds, M. R. E., and Glover, H. K. (2013). Brains and bravery: little evidence of a relationship between brain size and flightiness in shorebirds. *Austral Ecology* **38**: 516–522.

Heenan, C. B. (2013). An overview of the factors influencing the morphology and thermal properties of avian nests. *Avian Biology Research* **6**: 104–118.

Kearns, A. M., Joseph, L., Toon, A., and Cook, L. G. (2014). Australia's arid-adapted butcherbirds experienced range expansions during Pleistocene glacial maxima. *Nature Communications* **5**: 3994. doi: [10.1038/ncomms4994](https://doi.org/10.1038/ncomms4994).

LeCroy, M. (2013). Type specimens of birds in the American Museum of Natural History. Part 11. Passeriformes: Parulidae, Drepanididae, Vireonidae, Icteridae, Fringillinae, Carduelinae, Estrildidae, and Viduinae. *Bulletin of the American Museum of Natural History* Number **381**: 1–155.

Riordan, J., Gardner, M. G., Fitch, A. J., and Johnston, G. R. (2013). Isolation, via 454 sequencing, and characterisation of microsatellites for *Phalacrocorax fuscescens*, the black-faced cormorant (Aves, Phalacrocoracidae). *Australian Journal of Zoology* **60**: 340–342.

Riordan, J. and Johnston, G. (2013). Morphological sex determination in Black-faced Cormorants (*Phalacrocorax fuscescens*). *Waterbirds* **36**: 94–101.

Schoenjahn, J. (2013). A hot environment and one type of prey: investigating why the Grey Falcon (*Falco hypoleucos*) is Australia's rarest falcon. *Emu* **113**: 19–25.

Worthy, T., Anderson, A., and Sand, C. (2013). An extinct Austral snipe (Aves: *Coenocorypha*) from New Caledonia. *Emu* **113**: 383–393.

Worthy, T., Hand, S. J., and Archer, M. (2014). Phylogenetic relationships of the Australian Oligo-Miocene ratite *Emuarius gidju* Casuariidae. *Integrative Zoology* **9**: 148–166.

Worthy, T., Worthy, J. P., Tennyson, A. J. D., Salisbury, S. W., Hand, S. J., and Scofield, R. P. (2013). 'Miocene fossils show that kiwi (*Apteryx*, Apterygidae) are probably not phyletic dwarves' in Göhlich, U. B. and Kroh, A. (eds) *Proceedings of the 8<sup>th</sup> International Meeting of*

*the Society of Avian Paleontology and Evolution*, pp. 63–80, 11–16 June 2012, Natural History Museum, Vienna, Austria.

Worthy, T. H., Worthy, J. P., Tennyson, A. J. D., and Scofield, R. P. (2013). A bittern (Aves: Ardeidae) from the Early Miocene of New Zealand. *Paleontological Journal* **47**: 1331–1343.

### 5.6.7 Parasitology

Caira, J. N., Jensen, K., Waeschenbach, A., Olson, P. D., and Littlewood, D. T. J. (2013). Orders out of chaos – molecular phylogenetics reveals the complexity of shark and stingray tapeworm relationships. *International Journal for Parasitology* **44**: 55–73.

Jabbar, A., Beveridge, I., Mohandas, N., Chilton, N.B., Littlewood, D.T.J., Jex, A.R., and Gasser, R.B. (2013). Analyses of mitochondrial amino acid sequence datasets support the proposal that specimens of *Hypodontus macropi* from three species of macropodid hosts represent distinct species. *BMC Evolutionary Biology* **13**: 259.

Platt, T. R., Hoberg, E. P., and Chisholm, L. A. (2013). On the morphology and taxonomy of *Griphobilharzia amoena* Platt and Blair, 1991. (Schistosomatoidea), a dioecious digenetic trematode parasite of the freshwater crocodile, *Crocodylus johnstoni*, in Australia. *Journal of Parasitology* **99**: 888–891.

Schaeffner, B. C. and Beveridge, I. (2013). *Prochristianella mattisi* sp. n. (Trypanorhyncha: Eutetrarhynchidae) from the wedgenose skate, *Dipturus whitleyi* (Rajiformes: Rajidae), from Tasmania (Australia). *Folia Parasitologica* **60**: 257–263.

Schaeffner, B. C. and Beveridge, I. (2013). *Dollfusiella* Campbell & Beveridge, 1994 (Trypanorhyncha: Eutetrarhynchidae) from elasmobranchs off Borneo, including descriptions of five new species. *Systematic Parasitology* **86**: 1–31.

Shimazu, T., Cribb, T. H., Miller, T. L., Misako Urabe, Nguyen Van Ha, Tran Thi Binh, and Shed'ko, M. B. (2014). Revision of *Isoparorchis* Southwell, 1913. (Digenea, Hemiuroidea, Isoparorchidae), parasites of the air bladder of freshwater catfishes: a molecular and morphological study. *Bulletin of the National Museum of Nature and Science Series A, Zoology* **40**: 15–41.

Weaver, H. J. and Smales, L. R. (2014). Two species of Acanthocephala (Rhadinorhynchidae and Transvenidae) from elasmobranchs from Australia. *Comparative Parasitology* **81**: 110–113.



## 5.7 OTHER EVENTS AND ASSOCIATIONS

### 5.7.1 Museum staff & Work Groups

#### 5.7.1.1 *Mark Adams*

Undertook a record number of on-demand genetic identifications on fruit fly maggots (27 during the December–April peak period), as supplied by Biosecurity SA (part of Primary Industries and Regions South Australia). This high level of activity reflected outbreaks of pest species in both the Riverland and Adelaide’s southern suburbs.

#### 5.7.1.2 *Alice Beale*

Committee Member for *Museums Australia* – South Australian Branch.

Member of Industry Advisory Panel – History & Culture, Bachelor of Arts – University of South Australia.

#### 5.7.1.3 *Steve Cooper*

28 September 2013: Convener of a workshop for Environmental Consultants updating research of subterranean fauna project, The University of Adelaide.

29 September–2 October 2013: Organised a symposium and chaired a session on subterranean fauna at the *Australian Entomological Society 44th AGM and Scientific Conference*, Adelaide, Australia.

2 December 2013: Chaired the Annual General Meeting as outgoing President of the *Society for Australian Systematic Biologists*, Sydney, Australia. Re-joined the committee as an ordinary member of the council.

Continued as Editor of the *Australian Journal of Zoology* and Associate Editor, *BMC Evolutionary Biology*.

Continued as a Member of the Australian Biological Resources Study Advisory Committee, and the Research Sub-Committee. This committee meets three times per year to assess grant applications and award federal funding for major and minor taxonomic projects.

#### 5.7.1.4 *Andrea Crowther*

Committee member for the *Australian Marine Sciences Association*.

13 August 2013: Science, Technology, Engineering & Maths Studio (in National Science Week). Developed and delivered experience for female students (years 8 and 9) with day-to-day activities in the Marine Invertebrates section at the Museum. This event was designed to encourage girls to consider science, technology, engineering, and maths study and career paths.

17 November 2013: South Australian Research & Development Institute (SARDI) Open Day. Engaging with the public at the *Australian Marine Sciences Association* stall at SARDI open day.

19 February 2014: talk to school group at Gilles Street Primary School about deep sea animals and bioluminescence.

8–10 March 2014: WOMADelaide. Educational experience about deep sea animals and bioluminescence delivered to children and adults across the WOMAD festival long weekend.

9 April 2014: *Australian Marine Sciences Association* student advisory night. Assisted with organisation and running of “Student Networking Night for SA Marine Science”; an opportunity for students to meet and talk to marine scientists in South Australia.

6 June 2014: talked to school group at Magill Primary School about marine animals and their homes for Ocean Day.

15–21 June 2014: Great Australian Bight and Beyond Roadshow. Developed and delivered an educational program to school children in remote communities about marine animals and their homes.

23–24 June 2014: hosted year 10 work experience student.

25 June 2014: after-hours tour of Marine Invertebrate collections for NGO ReefWatch.

26 June 2014: internal Museum talk to staff about a marine invertebrates Atlas of Living Australia volunteer portal project.

#### **5.7.1.5 Steve Donnellan**

Museum representative on the *Council of Heads of Australian Fauna Collections* (CHAFC).

CHAFC representative on the *Council of Australian Biological Collections* (CABC).

#### **5.7.1.6 Jim Gehling**

17 August 2013: ABC TV *Landline* interview about Ediacara fossil research in the Flinders Ranges.

16 December 2013: *The Australian* page.3, “Oldest fossil to finally see the light of day as fears rise for others”.

17 December 2013: SBS interview on fossils of the Ediacara biota.

18 December 2013: Interview on Ediacara Gallery and the South Australian Museum for Radio 5AA (7:30am).

29 April 2014: Awarded honorary degree of Doctor of Science (*honoris causa*) with citation, by the University of Adelaide, for research and promotion of Ediacaran Period and fossils in Australia and overseas.

10 May 2014: Featured in an article in the Weekend Review of the *Advertiser* on Ediacaran interests and history.

#### **5.7.1.7 Mark Hutchinson**

23 July 2013: Invited participant at workshop to assign regional conservation ratings at an Interim Biogeographic Regionalisation for Australia sub-region level to Reptiles & Amphibians occurring in the Adelaide-Mt Lofty Ranges Region, using International Union for Conservation of Nature criteria. Goodman Building, Hackney Rd, Adelaide Botanic Gardens, Adelaide.

14 August 2013: Attended Pygmy Bluetongue Lizard Conservation Committee meeting. Burra Town Hall, Burra, South Australia.

15 August 2013: Chaired Pygmy Bluetongue Lizard Recovery Team meeting. Burra Town Hall, Burra, South Australia.

15–21 September 2013: Museum Roadshow. Participant in South Australian Museum APY Lands ‘Roadshow’.

20 November 2013: Visit to Lefevre Peninsula Primary School to talk about bush gardens and urban reptiles and frogs.

7 February 2014: Invited presenter in training day for field staff of the Australian Wildlife Conservancy. Subject: 'Justification, collection and proper preservation of voucher specimens as part of vertebrate survey work'. Roseworthy Campus, University of Adelaide.

3 April 2014: Chaired Pygmy Bluetongue Lizard Recovery Team meeting. Burra Railway Station visitor centre, Burra, South Australia.

#### **5.7.1.8 Information Services – *Ara Irititja***

*Digital images and archival media, research and community consultation for external productions*

35 Requests including:

*The Story of Ernabella Mission: Tradition and Change* (2014). Photographic exhibition curated by Rev Bill Edwards for the Uniting Church Historical Society, South Australia. South Australia's History Festival, May 2014.

*Spinifex Country* (2014). Collaborative exhibition between Flinders University Art Museum and the South Australian Museum, curated by Heidi Pitman and Fiona Salmon.

France TV. Paris (2014). Archival film footage for documentary on Martu people of Western Australia. For broadcast on 'Planete Thalassa' and 'France Televisions' from 2014–17.

*Margaret Bain. Celebrating Finke Church and Community* (2014). Projected image presentation and booklet. Uniting Aboriginal and Islander Christian Congress.

*Dreamworld Corroboree*. Interpretive display at Dreamworld, Gold Coast, Queensland (2013).

#### ***Grants***

The Pitjantjatjara Council has received funding for the development of a Mobile Devices/iPad interface for *Ara Irititja*. This has come from Central Land Council (Alice Springs), Northern Territory Library and Western Local Land Services (NSW).

The Pitjantjatjara Council has received substantial funding from Central Land Council to provide computers, support and access to *Ara Irititja* in 10 Northern Territory community centres.

*Ara Irititja* has been asked to provide archival material and research for community consultation by the Department of Planning, Transport and Infrastructure, Northern and Western Region, for the APY Lands Road ongoing project 2014–2019.

#### **5.7.1.9 Information Services – *Archives***

##### ***Research and Enquiries***

95 Native Title, exhibitions, research and publication requests.

##### ***Aboriginal Family & Community History Requests***

240 Family and Community History requests

##### ***Aboriginal Community Consultations & Repatriations***

4 July 2013: Southern Flinders Health Group.

10 July 2013: Good Sister Organisation Queensland.

27 August 2013 Yorgum Aboriginal Corporation.

27 September 2013: Ngaut Ngaut Mannum Aboriginal Community.

10 October 2013: Yorgum Aboriginal Corporation.

15 October 2013: Kurna Plains School.

14 January 2014: Brewarrina Aboriginal Community.

15 May 2014: Akeyulerre Community.

19 May 2014: Buandik Community.

### *Exhibitions*

*First Peoples* at the Bunjilaka Aboriginal Cultural Centre, Melbourne Museum. Use of the Inspector Paul Foelsche Collection (AA 96).

*Gamaragal: Aboriginal people in Manly and northern suburbs* at the Manly Art Gallery and Museum. Use of the George French Angas Collection (AA 8).

*Dreamworld Corroboree*, Dreamworld, Goldcoast. Use of the Norman Barnett Tindale (AA 338) *Catalog of Australian Aboriginal Tribes* and other collections.

### *Documentaries*

*Ringbalin - River stories*, GMB Films (also includes phone apps and internet).

*Our Footprints - Through the Eyes of Grace*, NITV.

*Who Do You Think You Are – Adam Goodes*, SBS.

*First Footprints*, ABC.

### *Archive Collections processed*

15 collections were arranged and described and uploaded to the website. The majority of the collections were processed by our Honorary, George Smith.

### *Spotlight Display*

Jenni Thurmer and Francesca Zilio worked with Sherlock Societies globally to develop a Spotlight display on Sir Arthur Conan Doyle's visit to the South Australian Museum in September 1920 after the discovery of an unpublished photograph. The image has been donated to Sherlock and Conan Doyle enthusiasts and the research data from the visit has been included in Brian Pugh's publication '*A Chronology of Arthur Conan Doyle*'.

### *Grants*

With Shane Agius and Isabel O'Loughlin, Ali Abdullah-Highfold secured a grant from the Milton Foundation to work with Aboriginal young offenders. The aim was to improve self-esteem, motivate and give a sense of identity to decrease risk-taking behavior. In the last financial year, 70 young people have attended the family and community history workshops.

Ali Abdullah-Highfold secured a grant from the University of Adelaide Mobile Language Unit to digitise and repatriate archival material to the Yankunytjatjara Community.

### *Software Development*

The Heritage Documentation Management System has been customised to access the 1974 Norman Tindale *Catalog of Australian Aboriginal Tribes* from touch screens. Lea Gardam and Jennifer Dalakis have seen the Catalog successfully installed at Dreamworld on the Gold Coast. A theme park first, *Dreamworld Corroboree* is an interactive walk-through which also features Tindale's map of Aboriginal boundaries.

#### **5.7.1.10      *Information Services – Library***

##### *Library Requests*

Twenty-one requests to researchers in Holland, Papua New Guinea, and within Australia from Victoria, Canberra and Adelaide.

##### *Inter Library Loans*

59 loans to non-Museum researchers and 9 internal loans.

##### *Web Access to Museum journals*

The *South Australian Naturalist* is currently being scanned and uploaded to the Biodiversity Heritage Library website; see <http://www.biodiversitylibrary.org/>. This allows for free downloading of articles.

##### *Retroconversion*

With the help of volunteer Helen Tolcher, Jill Evans has added 1215 books and journals to the library database which were formerly only in the card catalogue.

### *Software Development*

Inmagic, the library software, has been upgraded so that external researchers can access the catalogue from the South Australian Museum website.

#### **5.7.1.11      *Philip Jones***

11 July 2013: Interview with Cameron Stuart, *The Australian*, on Aboriginal naming taboos.

23 October 2013: Interview with Radio 4EB in Brisbane on Ludwig Leichhardt letter.

9 December 2013: Interview and tour of the Australian Aboriginal Cultures Gallery with Fernanda de Oliveira from O Globo newspaper, Brasil.

18 March 2014: Interview with Peter Goers, ABC Radio 891, on the '*Behind the Doors*' book.

21 March 2014: Interview with Cath Keneally, Radio Adelaide, on the '*Behind the Doors*' book.

#### **5.7.1.12      *Cath Kemper***

22 February 2014: Interview by ABC radio journalist (Sydney) regarding ambergris and sperm whales.

26 March 2014: Attended a stakeholders workshop for Spencer Gulf. Organised by Marine Innovations South Australia.

1 April 2014: Took Dr Ian Cresswell (Chair of Australian Marine Mammal Centre Scientific) on a tour of the Bolivar Facility.

**5.7.1.13 Rachael King**

Invited participant for meetings of Marine Innovations South Australia (MISA), a South Australian State Government initiative to build the capacity of Marine Sciences in the state.

Facilitated a partnership between the Museum, CSIRO and SARDI for the Great Australian Bight benthic marine communities' survey.

Presented a one-day session on marine science as part of the Science, Technology, Engineering & Maths project to encourage female students to take science/mathematics subjects in high school (August 2013).

Participated in the APY-land Museum Roadshow tour, with a presentation on desert-adapted invertebrate species (September 2013).

Participated as a mentor and advisor for the Australian Marine Sciences Association South Australian Branch student networking workshop (March 2014).

**5.7.1.14 Mike Lee**

28 September 2013: Pre-Conference field trip for ~30 scientists to Cambrian site at Emu Bay as part of the Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics.

1 October 2013: Half-day Workshop on Phylogenetics for ~30 participants as part of the Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics. Co-presented with Matt Phillips, Queensland University of Technology, Brisbane, Queensland, Australia.

23 June 2014 – 05 July 2014: Waterhouse Club field trip to Gogo, Western Australia with ~20 participants (led by Professor John Long, Flinders University, with Don and Margie Heylen).

**5.7.1.15 Terry Reardon**

8–10 March 2014: WOMAD; educational experience about bats delivered to children and adults across the WOMAD festival long weekend.

*Use of mobile marine radar for studying flight heights and roost exit flight paths of bats* with Krishna Venkataraman.

*Male bat genitalia: A short course for fun and profit* with Bill Breed.

Upgraded the Museum's capacity with new bat detectors and software for Bat Acoustics, including provision of bat call analyses for the Mammal Section at the Museum and other institutions.

Formed new research collaborations with the Defence Science and Technology Organisation and The University of Adelaide to develop new methods for bats surveys, especially in relation to wind farm environmental impact assessments using radar and drones.

Contributing member of the Australian Wildlife Health Network.

Member of the extended Executive of the Australasian Bat Society.

**5.7.1.16 Kate Sparks**

30 September–4 October 2013: *School Holiday Program for Biodiversity Month*. Prepared educational activities for school children aged 5–12 years based around recognising the differences among terrestrial invertebrates, the diversity of soil and aquatic invertebrates and those used in biological control programs.

8–10 March 2014: WOMADelaide. Educational experience about cave invertebrates delivered to children and adults across the WOMAD festival long weekend.

15–21 June 2014: Great Australian Bight and Beyond Roadshow. Developed and delivered an educational program to school children in remote communities about invertebrates and their homes.

**5.7.1.17 David Stemmer**

Treasurer of the *Australian Mammal Society*: Managing the Society's finances, providing regular reports and advice to the Council, presenting the Society's finances to members at the Annual General Meeting.

2–9 August 2013: Collection of juvenile male Southern Right Whale near Tumby Bay. The collection activity was covered by all major TV channels. Interviews with ABC Radio on multiple occasions during and after the event.

**5.7.1.18 Mark Stevens**

Invited onto the Editorial Board for the Royal Society of South Australia (May 2014).

Member of the organising committee for *The Australian Entomological Society's 44th AGM & Scientific Conference*, Adelaide, 29 Sept 2013 – 2 Oct 2013.

8–10 March 2014: WOMADelaide. Three days of presentations in the 'kids zone'.

11 May 2014: Interviewed by Ewart Shaw about native bees, Radio Adelaide 100.5 FM, appeared 9–10am. <http://www.radioaustralia.net.au/international/>

Other media that took up this story:

<http://phys.org/news/2014-05-trio-bee-populations-key-food.html>

<http://www.dailynewsen.com/science/research-trio-suggest-certain-bee-populations-could-be-key-to-food-security-h2487550.html>

<http://www.veooz.com/news/BHAB2x5.html>

Magazine story by Arby Gharibian (with links to the story above) (2014) *Gondwanan Survivors*, Episode 3. *CNRS international magazine* **33**: 14.

**5.7.1.19 Alexis Tindall**

Member, *Faunal Collections Informatics Group*, a sub-committee of the *Council of Heads of Australian Faunal Collections*.

11 and 20 November 2013: Speaker: *Micro-Monsters 3D*, Adelaide Film Festival, Palace Nova Cinemas.

2 December 2013: Reviewer: 1<sup>st</sup> Computer Vision for Accelerated Bioscience workshop held in conjunction with the International Conference on Computer Vision 2013, Sydney Convention Centre.

Member, North Terrace Precinct Volunteer Coordinators' Network.

**5.7.1.20 Keryn Walshe**

3–6 December 2013: Chaired an Archeology session (Koonalda Cave South Australian Museum collection) at the *Australian Archaeology Annual Conference*, Coffs Harbor.

**5.7.1.21 Ian Whittington**

Member of the Museum's Executive representing Science.

Chair of the Collections & Research Group at the Museum.

Member of the Museum's Finance Group.

Head of Biological Sciences.

Continued on the Editorial Boards of the following international journals: *Acta Parasitologica*, *Folia Parasitologica*, *Journal of Natural History* and *Systematic Parasitology*.

Coordinator and organiser for the Review of Collections & Research for one week in April 2014 at the Museum involving one international external scientist (Professor Ian Owens, Natural History Museum, London) and three Australian external scientists (Professor Pauline Mooney, SARDI; Professor Howard Morphy, Australian National University; Professor Hugh O'Neill, Australian National University).

26 May 2014: Radio interview on ABC 891 for the Peter Goers Evening Show about [Parasites](#).

**5.7.2 Internal HRAs**

**5.7.2.1 Jan Forrest (Honorary Associate)**

23 June 2013: presented a talk at Victor Harbor Floral Art and Garden Club.

11 February 2014: presented a talk at Salisbury Garden Club.

13 February 2014: presented a talk at Aldinga Library.

24 February 2014: presented a talk at Stirling Ladies Probus Club.

5 June 2014: presented a talk on Environment Day at the Botanic Gardens.

16 June 2014: presented a talk at Brownhill Creek Probus Club.

**5.7.2.2 Diego Garcia-Bellido**

20 August 2013: 500 million-year-old eyes and other exceptional fossils from the Cambrian. Ophthalmology Department Seminar Series, Flinders Medical School, Adelaide.

22 August 2013: Ediacara, Burgess Shale and Emu Bay Shale. A look at the earliest Animal life on Earth, *Issues in Evolutionary Biology III*, School of Earth & Environmental Sciences, University of Adelaide.

30 August 2013: Ediacara, Burgess Shale and Emu Bay Shale: the oldest Animals on Earth, CSIRO Double Helix Science Club, Adelaide.

17 October 2013: The record of the Cambrian 'explosion' in South Australia, *Geological Society of Australia – South Australian Division*, Adelaide.

14 March 2014: Cambrian biological warfare, South Australian Museum *Dig It!*, Adelaide.



20 March 2014: *South Australia's Konservat-Lagerstätten: Ediacara and Emu Bay Shale*, School of Biological Sciences, Flinders University, Adelaide.

9 April 2014: A glimpse at the marine realm half a billion years ago: the Ediacaran and Cambrian biotas, *Frontiers in Marine Biology III*, School of Earth & Environmental Sciences, University of Adelaide.

8 May 2014: Ediacara, Burgess Shale and Emu Bay Shale: the oldest Animals on Earth, *Wissanger Club*, Wissanger, Kangaroo Island.

#### **5.7.2.3 Remko Leijts**

Expert witness, NSW-EDO: SHCAG Pty Ltd versus Minister for Planning and Infrastructure & Berrima Colliery: extension of underground coal mine.

Eight consultancies: Molecular Biodiversity Assessments of subterranean habitats as part of environmental impact assessments of mining projects in Western Australia and South Australia.

#### **5.7.2.4 Graham Medlin**

1–2 March 2014: Participated in 'digit @ the South Australian Museum' (part of Palaeo Week) in early March with Museum Subfossil volunteers, Ron Simms, Jaye Bessell and Jessie Treloar. We demonstrated Barn Owl pellet dissection to look for prey species and set up trays of bones for young children to sort through and try and match the bones on drawings of the skeleton of a rat, a bird and a frog.

24 March 2014 – 24 June 2014: Worked in the Subfossil Laboratory at the South Australian Museum with Honours student Diana Fusco from the Flinders University (Supervisors: Associate Professor Gavin Prideaux and Dr Matt McDowell) helping with the identification of the remains of small mammals from an old owl roost near Mypolonga on the River Murray.

5 April 2014: Contributed to a workshop (organised by Janet Pedler), carried out at the National Trust of South Australia property, Lenger Reserve, in the Murray Mallee. Topics: (1) Using recent Barn Owl pellets to monitor small mammal populations in an area; (2) Using old owl roost deposits to study pre-European mammal diversity using material from a site on the River Murray near Mypolonga as a case study.

14 June 2014: Ran two workshops at Hindmarsh for junior members of the CSIRO Double Helix Club giving them hands-on experience at Barn Owl pellet dissection and identification of prey species. Assisted by Double Helix Club Coordinator, Rona Sakko and two volunteers from the Junior Field Naturalist South Australia Inc Club.

#### **5.7.2.5 Peter Shaughnessy**

Member of the writing group producing a chapter on marine mammals for the United Nation's World Ocean Assessment with colleagues from USA, Canada and Mexico: Smith, T. D., Bannister, J., Bracho, L., Hines, E., Reeves, R., and **Shaughnessy, P.**, *Marine Mammals* in 'World Oceans Assessment', Chapter 37.

Member of the Marine Mammal Working Group of the Southern and Eastern Scalefish and Shark Fishery coordinated by the Australian Fishery Management Authority.

#### **5.7.2.6 Peter Sutton**

Interviewed by Verity Edwards regarding the Museum digitisation program. Story appeared in *The Australian* on 19 August 2013 on page 2.

Interviewed by Nicola Gage, ABC Radio Adelaide, regarding the Museum digitisation program, for a news item.

20 August 2013: Interviewed by Peggy Giakomelos, SBS Radio Sydney.

22 August 2013: Email responses quoted by Allison Meier in a New York-based web journal *Hyperallergic: Sensitive to Art & its Discontents*.

18 September 2013: Gave Aboriginal Cultures Gallery tour to the Ambassador for Qatar, Yousef Ali Al-Khater.

15 October 2013: Interviewed by Rebecca Duncker for video about volunteers at the Museum; see <http://youtu.be/xBVEgDYsso8>.

Appointed member, Editorial Advisory Board, *Public Archaeology* (London) in 2013.

### 5.7.3 External HRAs

#### 5.7.3.1 Barry Cooper

Report in *The Australian Geologist* newsletter on “National Rock Garden – Harlequin Stone”. *The Australian Geologist* **168**: 19.

Attended the international conference, *The historical heritage of scientists and thinkers of the Medieval East, its role and significance for modern civilization*, in Samarkand, Uzbekistan, sponsored by the Government of Uzbekistan, 15–16 May 2014.

Interviewed on ABC Radio 891, Radio Adelaide and screened on Channel 7 News with respect to the heritage building stone of North Terrace, Adelaide.

#### 5.7.3.2 Peter Elliott

22 April 2014: University of Adelaide media release; new mineral shows nature’s variability [www.adelaide.edu.au/news/news70062.html](http://www.adelaide.edu.au/news/news70062.html). This release was picked up by:

- newspapers, including *The Australian*, *The Daily Mail*, *The Washington Post*
- radio stations, including ABC Rural radio, Public Radio International
- news websites, including [salon.com](http://salon.com), [CNSNews.com](http://CNSNews.com), [huffingtonpost.com](http://huffingtonpost.com), [globalpost.com](http://globalpost.com), [slate.com](http://slate.com)
- science websites, including [Sci-News.com](http://Sci-News.com), [livescience.com](http://livescience.com), [discovermagazine.com](http://discovermagazine.com), [realclearscience.com](http://realclearscience.com)
- mineral resources magazines and websites, including *Australian Mining*, *The Lead*, [Mining.com](http://Mining.com), [mineweb.com](http://mineweb.com), [resourceinvestingnews.com](http://resourceinvestingnews.com) and many others.

#### 5.7.3.3 Richard Glatz

Member of Biosecurity Advisory Committee to the Kangaroo Island Natural Resource Management Board.

Member of Biosecurity Steering Committee for the South Australian Department of Environment, Water & Natural Resources Kangaroo Island biosecurity project.

Led green carpenter bee survey and conducted pre-burn surveys for the South Australian Department of Environment, Water & Natural Resources project Conservation Status of the Green carpenter bee on Kangaroo Island.

Advisor to Primary Industries & Regions South Australia regarding entomology issues on Kangaroo Island.

**5.7.3.4 Penelope Greenslade**

Invited talk to Fungi Map Meeting on Collembola and fungi.

Invited talk to Probus, Buningong on Collembola in general.

Invited talk to the Pedagogical University, Moscow on invasive species in Australia.

Editor of Collembola section for *Zootaxa*.

**5.7.3.5 Peter D. Kruse**

Voting member of Cambrian Stage Subdivision Working Group of *International Union of Geological Sciences* since 2004.

**5.7.3.6 Steve Richards**

13 May 2014: Sprigg Lecture Series Public Lecture: 'Discovering Melanesia's hidden biodiversity: exploration for conservation in remotest New Guinea', South Australian Museum.

**5.7.3.7 Scoresby Shepherd**

Member of Scientific Working Group, an advisory Group to the Minister of Environment, Water and Natural Resources on Marine Parks in South Australia.

## 6 STAFF LIST

### 6.1 DIRECTORATE

Director

B. Oldman, BA (Hons)

(Commenced 2 January 2014)

Acting Director

A. Lowe, BSc (Hons), PhD

(1 July 2013 to 1 January 2014)

Board & Governance Manager

K. Ross, Dip Bus (Marketing)

Directorate Administrative Assistant

Vacant

Administration Officer

N. Mladenovic

### 6.2 BUSINESS AND FINANCE

Head of Business Finance

B. Macdonald

IT Network and Systems Manager

P. Carter, CertIV IT CS; CertIV IT NM;

Dip IT N

Helpdesk Officer

T. Cheng, As Dip Bus (Computer  
Programming)

Venue Coordinator

A. Ferrari

### 6.3 DEVELOPMENT

Head of Development

J. Parsons, BA (Hons), MA (Museum  
Studies)

### 6.4 OPERATIONS AND INFORMATION

Associate Director

S. Clark, BSc(Hons), BSoc Ad, M Pol Man

Volunteer Coordinator

M. Filsell

Operations Manager

B. Collett, Dip Man

Museum Services Officers

Vacant

R. Simon

Manager Information Services

F. Zilio, B A, MIMS

Library Services Officer

J. Evans

Archives Collection Manager

L. Gardam (Part-time)

Senior Designer

C. Midson, BA

Family and Community History Consultant

A. Abdullah-Highfold

Supervisor 3D Design

J. Bain

A. Guy, BA Aboriginal Studies (Part time)

Archive Access and Community Outreach Officer

Museum Services Officer

G. Parnell

S. Agius

Manager, Multimedia

Manager Ara Iritja Project

T. Peters, BA Fine Art

J. Dallwitz

Public Programs Coordinator – Marketing

A. Hua, BA (Journalism), MA (Marketing)

## 6.5 PROGRAMS

### 6.5.1 Galleries and exhibitions

Head of Public Programs

Marketing Manager

Vacant

K. Nitschke, B.Sc, Grad. Dip. Ecology and Management, Grad. Cert. Prof Comm (commenced June 10, 2014)

Manager of Community Engagement

L. Underwood, BT, B Edu

Public Programs Coordinator – Executive

S. Morris, Dip T

E. Thomson, BSc

Education Officers

K. Hogan, BEd, (DECD Secondment)

Manager, Galleries and Exhibitions

C. Nobbs, Adv Dip T (DECD Secondment, appointment ended January 2014)

T. Gilchrist, BA, Grad Dip Comm (PR)

Public Programs Coordinator – Exhibitions

Education Administration Officer

A. Guy, BA Aboriginal Studies

C. Pietrantonio

Manager, Development and Design

D. Kerr, B Ed (Hons), BA

Outreach Programs Coordinator

Senior Exhibition Designer

L. Bloomfield

B. Chandler, BAVA, BAFT

Public Programs Coordinator - Community Engagement

K. Tucker

L. Mann (finished April 2014)

Supervisor Information Centre

M. Gemmell

Information Officers

L. Bulth, Dip Nat Res Management

J. Smith, BSc (Hons)

## 6.6 SCIENCE

### 6.6.1 Administration

Head of Science

Prof. R. Hill, BSc (Hons), PhD, D Sc, FAI Biol, FLS

Manager Science Administration

L. Strefford

Senior Administrative Officer

D. Churches

Head of Collections

R. Morris, BA (Hons), M Soc Sci

ALA Digitisation Project

A. Tindall, BA (Hons), Grad Dip Arts (Museums & Collections)

Entomology Stores Project

L. Chenoweth, BSc (Hons), PhD (start 9.7.2012)

K. Maguire, BA (Hons), Grad Dip (Information Management) (start 2.7.2012)

### 6.6.2 Anthropology and Humanities section

Senior Researcher Australian Ethnology

P. Jones, LLB, BA (Hons), PhD

Senior Researcher Foreign Ethnology

B. Craig, BA (Hons), Dip Ed, MA (Hons), PhD

Researcher Archaeology

K. Walshe, PhD

Senior Collection Manager Anthropology

A. Beale, BArch (Hons), Grad Cert (Museum Studies)

Collection Manager, Foreign Ethnology

A. Rose, BA, Grad Dip Mus St, MA

Assistant Collection Manager, Anthropology

T. Collier (nee Dodd)

Project Digitisation Officer

E. Adams, BSc (Hons), MA (Museum & Curatorial Studies)

Collection Manager, History of Science and Polar Collections

M. Pharaoh, BA (Hons), MA, Grad Dip Information Services (Archives)

### 6.6.3 Earth Sciences section

Head of Earth Sciences

A. Pring, BSc (Hons), PhD, ScD, FMSA, F  
Min Soc

Senior Researchers

J. Brugger, PhD

M. Lee, BSc (Hons), PhD

J. Gehling, BSc (Hons), MSc, PhD

Senior Collection Manager

B. McHenry, BSc (Hons), MSc

Collection Manager

M. Binnie, BEd (Geology)

Synchrotron Researcher

B. Etschmann, PhD

Research Assistants/Scientists

G. Qian, PhD

R. Popelka-Filcoff, PhD

F. Xia, PhD

Casual staff

N. Allen, BSc (end date 17.12.13)

### 6.6.4 Biological Sciences section

Head of Biological Sciences

I. Whittington, BSc (Hons), PhD

#### 6.6.4.1 ENTOMOLOGY

Senior Researcher Terrestrial Invertebrates

M. Stevens, PhD

Collection Manager Terrestrial  
Invertebrates

P. Hudson, PhD

Assistant Collection Manager Entomology

C. Lee

Databasing Project

M. Moore (end date 21.1.14)

J. Skarbnik-Lopez, BSc (Hons)

I. Van Streepen, BSc (Environmental  
Science) (end date 18.6.14)

J. Wood

#### 6.6.4.2 ARACHNOLOGY

Collection Manager Arachnology

K. Sparks, BSc (Hons) (Part time)

#### 6.6.4.3 PARASITOLOGY

Principal Researcher/Head of Biological  
Sciences

Parasitology

I. Whittington, BSc (Hons), PhD

Collection Manager

Parasitology

L. Chisholm, BSc, MSc, PhD

#### 6.6.4.4 MARINE INVERTEBRATES

Researcher Aquatic Invertebrates

R. King, BSc (Hons), PhD

Collection Manager Marine Invertebrates

T. Laperousaz, BSc (Hons)

Collection Manager Marine Invertebrates

A. Crowther, BSc (Hons), Grad Dip Env  
Mgt, PhD

Assistant Collection Manager Marine  
Invertebrates

C. Lee

**6.6.4.5 HERPETOLOGY**

Senior Researcher Herpetology

M. Hutchinson, BSc (Hons), PhD

Collection Manager Herpetology

C. Kovach

**6.6.4.6 ICHTHYOLOGY**

Collection Manager Ichthyology

R. Foster

**6.6.4.7 MAMMALOGY**

Senior Researcher Mammalogy

C. Kemper, BSc, PhD

Collection Manager Mammalogy

D. Stemmer, BSc

Researcher

T. Reardon, Cert Sc Tech

Bolivar Casual Staff

I. Tomo, BVSc, MVSc, DVM (Japan) (end  
date 14.2.14)

**6.6.4.8 ORNITHOLOGY**

Senior Collection Manager Ornithology

P. Horton, BSc (Hons), PhD

Collection Manager Ornithology

M. Penck, BSc (Hons)

Assistant Collection Manager Ornithology

D. Churches (part time)

**6.6.4.9 EVOLUTIONARY BIOLOGY**

Head of Evolutionary Biology/Chief  
Researcher Evolutionary Biology

S. Donnellan, BSc (Hons), PhD

Principal Researcher, Evolutionary Biology

S. Cooper, BSc (Hons), PhD

Senior Researcher Evolutionary Biology

M. Adams, BSc (Hons)

Researcher Evolutionary Biology

T. Bertozzi, BSc (Hons), PhD

T. Reardon, Cert Sc Tech

L. Wheaton

Mike Gardner, BSc (Hons), PhD

Principal Technical Officer

K. Saint, BSc

Technical Officer

R. Foster

Casual Staff

A. Gardner (end date 7.5.14)

A. Johnson (end date 2.10.13)

V. Thomson (end date 30.9.13)



**6.6.4.10 HONORARY RESEARCH ASSOCIATES**

K. Armstrong, BSc, PhD (Biological Sciences)

A. Austin, BSc, PhD (Biological Sciences)

S. Barker, PhD (Biological Sciences)

D. Barton, PhD (Biological Sciences)

I. Beveridge, BSc, PhD (Biological Sciences)

A. Black, PhD (Biological Sciences)

V. Boll, PhD (Anthropology)

S. Burnell, BSc (Biological Sciences)

J. Brugger, PhD (Earth Sciences)

A. Cooper, PhD (Biological Sciences)

B. Cooper, BSc, PhD (Earth Sciences)

C. Daniels, BSc, PhD (Biological Sciences)

P. Elliott, BSc (Hons), PhD (Earth Sciences)

J. Forrest, OA (Biological Sciences) (Honorary Associate)

A. Fyfe, BA, PhD (Anthropology)

D. Garcia-Bellido, BSc, MSc, PhD (Earth Sciences)

M. G. Gardner, BSc, PhD (Biological Sciences)

L. Gershwin, BSc, PhD (Biological Sciences)

B. Gillanders, BSc, PhD, (Biological Sciences)

R. V. Glatz, BSc, PhD (Biological Sciences)

P. Greenslade (Biological Sciences)

W. Haak, PhD (Biological Sciences)

M. Halt, BSc (Hons) (Biological Sciences)

M. Hammer, BSc (Hons), PhD (Biological Sciences)

J. Jago, BSc (Hons), PhD, F Aus IMM (Earth Sciences)

G. R. Johnston (Biological Sciences)

B. Kear, PhD (Earth Sciences)

P. Kolesik, PhD (Biological Sciences)

P. Kruse, BSc, PhD (Earth Sciences)

R. J. Lavigne, PhD (Biological Sciences)

R. Leijs, MSc, PhD (Biological Sciences)

A. J. McArthur, OAM, BE (Biological Sciences)

C. Madden, BSc, M Env St (Biological Sciences)

E. Matthews, BA, PhD (Biological Sciences)

G. Medlin, BSc, Dip T (Biological Sciences)

M. O'Donoghue, B Ed, Grad Dip Rel Ed, M Ed (Foreign Ethnology)

N. Pledge, BSc (Hons), MSc (Earth Sciences)

G. Prideaux, BSc (Hons), PhD (Earth Sciences)

L. Reed, BA (Hons), PhD (Earth Sciences)

D. Rice (Earth Sciences) (Honorary Associate)

S. Richards, PhD (Biological Sciences)

G. Rouse, PhD (Biological Sciences)

T. Schultze-Westrum, PhD (Foreign Ethnology)

P. Shaughnessy, BSc (Hons), MSc, PhD (Biological Sciences)

S. Shepherd, BA, LIB, M Env St, PhD (Biological Sciences)

G. Smith (Information Services)

M. Snow, BSc, PhD (Earth Sciences)

P. Sutton, BA, MA, PhD (Anthropology)

I. Tomo, BVSc, MVSc, DVM (Japan)  
(Biological Sciences)

M. Tyler, MSc, DSc. AO, (Biological  
Sciences)

L. Warner, BSc, PhD (Biological Sciences)

C. Watts, BSc (Hons), PhD (Biological  
Sciences)

P. Weinstein, BSc, PhD (Biological  
Sciences)

R Wells, BSc (Hons), PhD (Earth  
Sciences)

C. Wilson-Roberts (Mawson Collection)  
(Honorary Associate)

W. Zeidler, BSc (Hons), MSc, PhD  
(Biological Sciences)

## 7 HUMAN RESOURCES

Agency	Arts SA – South Australian Museum
Persons	82
FTE's	74.2
Gender	
Male	43
Female	39

### 7.1 NUMBER OF EMPLOYEES BY SALARY BRACKET

Salary bracket	Male	Female	Total
\$0 – \$54,799	3	3	6
\$54 800 – \$69 699	15	24	39
\$69 700 – \$89 199	11	7	18
\$89 200 – \$112 599	10	5	15
\$112 600+	4	0	4
Total	43	39	82

### 7.2 STATUS OF EMPLOYEES IN CURRENT POSITION

FTE's					
Gender	Ongoing	Short-term contract	Long-term contract	Casual	Total
Male	35.3	2.6	2.0	0.3	40.2
Female	26.2	4.0	3.0	0.8	34
Total	61.5	6.6	5.0	1.1	74.2
Persons					
Gender					
Male	37	3	2	1	43
Female	30	4	3	2	39
Total	67	7	5	3	82

### 7.3 NUMBER OF EXECUTIVES BY STATUS IN CURRENT POSITION, GENDER AND CLASSIFICATION

Classification	Ongoing		Term Tenured		Term Untenured		Other (inc. Casual)		Total				
	M	F	M	F	M	F	M	F	M	% of total	F	% of total	Total
Gender													
SAES1					2				2.4				2
Total					2				2.4				2

### 7.4 TOTAL AVERAGE DAYS OF LEAVE TAKEN PER FTE

Leave type	2010–11	2011-12	2012-13	2013-14
Sick leave taken	6.6	0.9	5.5	6.1
Family carer's leave taken	0.8	0.3	0.6	1.2
Miscellaneous special leave	1.2	0.2	1.0	0.6

### 7.5 NUMBER OF ABORIGINAL AND/OR TORRES STRAIT ISLANDER EMPLOYEES

Salary bracket	Aboriginal employees	Total employees	% Aboriginal employees
\$0 – \$54,799	0	6	0
\$54 800 – \$69 699	3	39	7.7
\$69 700 – \$89 199	0	18	0
\$89 200 – \$112 599	0	15	0
\$112 600+	0	4	0
Total	3	82	3.7

### 7.6 NUMBER OF PERSONS DURING THE 2013-14 FINANCIAL YEAR

Seperated from the agency	11
Recruited to the agency	10

## 7.7 NUMBER OF EMPLOYEES BY AGE BRACKET, BY GENDER

Age bracket	Male	Female	Total	% of total
15–19	0	0	0	0
20–24	0	0	0	0
25–29	1	2	3	3.7
30–34	2	7	9	11
35–39	8	4	12	14.6
40–44	2	7	9	11
45–49	7	5	12	14.6
50–54	6	3	9	11
55–59	10	7	17	20.7
60–64	3	2	5	6.1
65+	4	2	6	7.3
Total	43	39	82	100

## 7.8 CULTURAL AND LINGUISTIC DIVERSITY

Name	Male	Female	Total	% of agency
Number of Employees born overseas	8	8	16	19.5
Number of Employees who speak language(s) other than English at home	1	1	2	2.4

## 7.9 TOTAL NUMBER OF EMPLOYEES WITH DISABILITIES (ACCORDING TO COMMONWEALTH DDA DEFINITION)

Male	Female	Total	% of agency
1	0	1	1.2

## 7.10 TYPES OF DISABILITY (WHERE SPECIFIED)

Disability	Male	Female	Total	% of agency
Disability requiring workplace adaptation	1	0	1	1.2
Physical	0	0	0	0
Intellectual	0	0	0	0
Sensory	0	0	0	0
Psychological/psychiatric	0	0	0	0

## 7.11 NUMBER OF EMPLOYEES USING VOLUNTARY FLEXIBLE WORKING ARRANGEMENTS, BY GENDER

Leave type	Male	Female	Total
Purchased leave	0	0	0
Flexitime	39	31	70
Compressed weeks	2	0	2
Part-time	0	4	4
Job share	0	4	4
Working from home	3	1	4

## 7.12 DOCUMENTED REVIEW OF INDIVIDUAL PERFORMANCE MANAGEMENT

Documented review of individual performance management	Total
% reviewed within the last 12 months	96
% review older than 12 months	4
% not reviewed	0

## 7.13 LEADERSHIP AND MANAGEMENT TRAINING EXPENDITURE

Training and development	Total cost	% of total salary expenditure
Total training and development expenditure	\$22 244.06	0.32
Total Leadership and Management Development	\$9 427.00	0.13

## 7.14 ACCREDITED TRAINING PACKAGES BY CLASSIFICATION

Classification	Number of accredited training packages
	0

## **8 WORK HEALTH SAFETY AND INJURY MANAGEMENT (WHS&IM)**

### **8.1 KEY ACHIEVEMENTS**

Key achievements during the reporting period 2013-14 are as follows:

Provision of training for workers, volunteers, students and HRAs including first aid, four wheel drive and manual handling

Ongoing review of the Museum WHS management system to align with the Work Health and Safety Act 2012.

Purchase of safety equipment to support the workers operating in remote and regional locations

#### **8.1.1 Disability Access and Inclusion Plans**

The Museum continued to enhance its services to improve the experiences of all visitors. Disability access services and special needs groups were frequently welcomed at the Museum throughout the year, with many community groups being able to participate in the Museum's public programs. The Museum worked with Arts SA on monitoring its visitor services for visitors with special needs and varied access requirements. Improvements for disability safety included a review of the visual indicators used on glass at the Museum; new indicators were installed in 2013 at a lower level to those detailed in Australian Standard 1428.1 to control the risk of injury to children.

#### **8.1.2 Equal Employment Opportunity Programs**

The Museum continued to function as an Equal Employment Opportunity employer. During the period the Museum remained strongly committed to employing on merit based selection processes which does not discriminate against race, gender, sexuality, marital status, age, pregnancy or disability for all positions within the organisation. The Museum's position to operate with such processes was heavily supported by the Board, Executive Management and workers.

### **8.2 WHS NOTICES AND CORRECTIVE ACTIONS TAKEN**

Number of notifiable incidents pursuant to WHS Act Part 3	0
---	---

Number of notices served pursuant to WHS Act Section 90, Section 191 and Section 195 (Provisional improvement, improvement and prohibition notices)	0
---	---

---



### 8.3 AGENCY GROSS WORKERS COMPENSATION EXPENDITURE FOR 2013–14 COMPARED WITH 2012–13

EXPENDITURE	2013–14 (\$)	2012–13 (\$)	Variation	Change (%)
Income maintenance	0.00	190.11	-190.11	(100)
Lump sum settlements redemptions – sect.42	0.00	350.00	-350.00	(100)
Lump sum settlements permanent disability – sect.43	0.00	28 053.00	-28 053.00	(100)
Medical/hospital costs combined	788.75	162.40	626.35	385
Other	0.00	3 117.00	-3 117.00	(100)
Total claims expenditure	788.75	31 872.51	-31 083.76	(97)

### 8.4 SUCCESSFUL CONSULTATIVE ARRANGEMENTS WITHIN THE MUSEUM

Internal stakeholders	Corporate stakeholders	External stakeholders
Executive Management	ArtsSA	Adelaide University
Health and Safety Committee	DPC; DPCCC	Spotless Maintenance Contractors
Health and Safety Representatives	DPC; Workplace Safety and Well Being Unit	ISS Cleaning Contractors
Volunteers and Students	Zero Waste	Wilson Security
Employees	SafeWork SA	SA Metropolitan Fire Service
Internal working groups	Department of Planning, Transport and Infrastructure	Registered Training Organisations
	Art Gallery of South Australia	SAPOL
	State Library of South Australia	Health, Safety, Environment Australia
		Physiolink

## 8.5 SAFETY TARGETS IN THE MUSEUM 2010–15 TARGETS REPORT AS AT 30.06.2014

	Base: 2009–10  Numbers or %	Performance 12 months as at 30.06.2014			Final target  Numbers or %
		Actual	Notional target	Variation	
1. Workplace fatalities	0	0	0	0	0
2. New workplace injury claims	3	4	2	2	2
3. New workplace injury claims frequency rate	0	0	0	0	0
4. Lost time injuries frequency rate	0	0	0	0	0
5. New psychological injury frequency rate	0	0	0	0	0
6. Rehabilitation and return to work:					
6a. Early assessment within two days	66.67	75%	80%	-5%	80%
6b. Early intervention within five days	0	0	0	0	0
6c. Days lost <= 10 days	0	0	0	0	0
7. Claim determination					
7a. Claims determined for provisional in seven calendar days	0	100%	100%	0	100%
7b. Claims determined in 10 business days	66.67	100%	75%	25%	75%
7c. Claims still to be determined after three months	0	0	3	-3	3
8. Income maintenance payments for recent injuries	0	0	0	0	0
2012–13 injuries (at 24 months development)	0	\$190.11	0	\$190.11	0
2013–14 injuries (at 12 months development)	0	0	0	0	0

## 9 OVERSEAS TRAVEL

Number of employees	Destination(s)	Date of travel	Reason for travel	Total cost to agency
1	Germany and UK	13–29 July 2013	Lesley Warren to finalise book chapter and network with colleagues, Parasitology Network Travel grant.	\$0
1	China	27–31 October 2013	Mark Stevens; Invited to attend the 5th International Barcode of Life Conference	\$3 630.40 cont. of salary
1	Switzerland	13 July 2013 – 23 September 2013	Barbara Etschmann, synchrotron and neutron experiments	\$16 010.83 cont. of salary
1	Switzerland	26 November 2013 – 30 December 2013	Barbara Etschmann, synchrotron and neutron experiments	\$7 779.50 cont. of salary
1	Micronesia	31 March 2014 – 11 April 2014	Mark Stevens, Waterhouse Club Expedition	\$3 630.40 cont. of salary
1	Micronesia	31 March 2014 – 11 April 2014	Scott Groom, Mark Stevens' PhD Student, Waterhouse Club Expedition	\$0.00
1	France	9 April 2014 – 20 April 2014	Keryn Walshe, attend 2014 CAA Paris Archaeology Conference	\$6 000.00 cont. of salary
1	South China	9 June 2014 – 24 June 2014	Jim Gehling, attending Symposium and field workshop on Ediacaran and Cryogenian Stratigraphy	\$6 000.00 cont. of salary
1	London, Bangkok, Sydney	25 June 2013 – 9 July 2014	Steve Donnellan, representing SAM – Global Genome Biodiversity Network meeting. Networking with ARC colleagues	\$2 613.00 cont. of salary \$3 349.00 travel expenses

## 10 ACCOUNT PAYMENT STATISTICS

Particulars	Number of accounts paid	Percentage of accounts paid (by number)	Value in \$A of accounts paid	Percentage of accounts paid (by value)
Paid by due date*	3 109	98.3	6 676 677.95	96.20
Paid late, within 30 days of due date	40	1.3	251 749.18	3.63
Paid more than 30 days from due date	13	0.4	11 863.88	0.17
<b>Totals</b>	<b>3 162</b>	<b>100</b>	<b>\$6 940 291.01</b>	<b>100</b>

*\*Note: The due date is defined under 11.7 of Treasurer's Instruction 11 Payment of Creditors' Accounts*

## 11 FRAUD AND LEGISLATIVE COMPLIANCE

The Museum has maintained a comprehensive system of checks and balances to control and prevent fraud, under the advice of the Auditor General's Department. During the 2013-14 period, single alleged instance of minor fraud was reported by the Museum. Full disclosure has been made to authorities and auditors and the matter remains under investigation.

## **12 FREEDOM OF INFORMATION ACT 1991 PART 11 SECTION 9(2)**

### **12.1 AGENCY STRUCTURE AND FUNCTIONS: SECTION 9(2)(A)**

The following information is contained in this Annual Report and is deemed to be consistent with the requirements of the *Freedom of Information Act 1991*:

- statement of role and objectives
- legislation responsibilities
- resources employed

Agency performance is monitored regularly. Each year specific targets and objectives are formulated and major achievements, improvements and initiatives reported.

### **12.2 EFFECT OF AGENCY'S FUNCTIONS ON MEMBERS OF THE PUBLIC: SECTION 9(2)(B)**

The Museum has a direct effect on the general public in two quite different ways. First, as an institution whose display galleries are open for public education and enjoyment and second through the scientific divisions whose research and information are available to other government departments as well as the public.

The impact and involvement of each division of the Museum in this process can be obtained from the achievements and initiatives section of this annual report.

### **12.3 ARRANGEMENTS FOR PUBLIC PARTICIPATION IN POLICY FORMATION: SECTION 9(2)(C)**

The board of eight members is appointed by the Governor. These appointments are from the general public and provide an avenue for public participation in policy formulation.

For any major development, such as the development of displays relating to living cultures, advisory committees are established for the period of the project to ensure that there is full and proper provision for public participation.

The Museum also maintains regular contact with Aboriginal community groups through the board-appointed Aboriginal Advisory Group, which deals specifically with matters relating to custodianship and access to collections.

## 12.4 DESCRIPTION OF KINDS OF DOCUMENTS HELD BY THE AGENCY: SECTION 9(2)(D)

The Museum classifies all documents into the following categories:

- Board minutes

The minutes of the Museum Board meetings are numbered, approved, signed by the Chair and recorded in a board minute book. Board papers are also numbered and filed in a similar manner. The papers contain all documents and correspondence relating to each board meeting. Current minute books and papers are kept in the director's office, with older minute books and papers, dating back to 1940, stored in the Museum Archives section. Board papers and minutes up to 1940 are permanently stored in State Records.

- Dockets

The Museum continued to administer the formal document recording/registration and archiving via its docket database system. Administration staff coordinated the process of document management for each of the Museum's departments. Dockets hold all documents concerned with the day-to-day management of the Museum and are classified as in the areas of research, collection management, public programs and directorate activities.

- Policy statements

The Board has published several policy statements which are available for use by the general public. These include: *Professional and Commercial Services*, *Statement on Secret/Sacred Collection*, *Collections Policy*, *Policy on Human Skeletal Remains Collection*, *Honorary Appointments*, *Guidelines for the Acquisition, Operation and Management of Computers in the Museum*, *Access to Personal Information – policy and procedures*, *Procedures for Records Management*, *Copyright Policy and Procedures*, *Museum Inbound Funds Policy*, *Museum Budget Policy* and *South Australian Museum Board Investment Policy*.

## 12.5 ACCESS ARRANGEMENTS, PROCEDURES AND POINTS OF CONTACT: SECTION 9(2)(E)(F)

To gain access to Museum documents, other than those identified above as available, it is necessary to apply in writing under the Freedom of Information Act to:

Contact Officer, Freedom of Information

C/- The Director

South Australian Museum

North Terrace, Adelaide 5000

## 12.6 FREEDOM OF INFORMATION REQUESTS

The Museum received no enquiries under the Freedom of Information Act during 2013–14.

## 12.7 WHISTLEBLOWERS PROTECTION ACT 1993

As an entity of the South Australian Government, the Museum remained committed to supporting and encouraging staff to demonstrate integrity and conduct ethical professionalism as part of the public sector ethical standards. Reporting, as defined by the Whistleblowers Protection Act, is encouraged by the Museum should it be necessary.

For the 2013–14 reporting period there were no occasions where public interest information has been disclosed to the responsible officer.

## **13 INDEPENDENT AUDIT REPORT OF FINANCIAL STATEMENTS**





9th Floor  
State Administration Centre  
200 Victoria Square  
Adelaide SA 5000  
DX 56208  
Victoria Square  
Tel +618 8226 9640  
Fax +618 8226 9688  
ABN 53 327 061 410  
audgensa@audit.sa.gov.au  
www.audit.sa.gov.au

## To the Chair Museum Board

As required by section 31(1)(b) of the *Public Finance and Audit Act 1987* and section 16(3) of the *South Australian Museum Act 1976*, I have audited the accompanying financial report of the Museum Board for the financial year ended 30 June 2014. The financial report comprises:

- a Statement of Comprehensive Income for the year ended 30 June 2014
- a Statement of Financial Position as at 30 June 2014
- a Statement of Changes in Equity for the year ended 30 June 2014
- a Statement of Cash Flows for the year ended 30 June 2014
- a Certificate from the Chair, Museum Board and the Director, South Australian Museum.

## The members of the Museum Board's Responsibility for the Financial Report

The members of the Museum Board are responsible for the preparation of the financial report that gives a true and fair view in accordance with the Treasurer's Instructions promulgated under the provisions of the *Public Finance and Audit Act 1987* and Australian Accounting Standards, and for such internal control as the members of the Museum Board determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

## Auditor's Responsibility

My responsibility is to express an opinion on the financial report based on the audit. The audit was conducted in accordance with the requirements of the *Public Finance and Audit Act 1987* and Australian Auditing Standards. The auditing standards require that the auditor comply with relevant ethical requirements and that the auditor plan and perform the audit to obtain reasonable assurance about whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial report that gives a true and fair view in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made by the members of the Museum Board, as well as the overall presentation of the financial report.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

### **Opinion**

In my opinion, the financial report gives a true and fair view of the financial position of the Museum Board as at 30 June 2014, its financial performance and its cash flows for the year then ended in accordance with the Treasurer's Instructions promulgated under the provisions of the *Public Finance and Audit Act 1987* and Australian Accounting Standards.

A handwritten signature in dark ink, appearing to read 'S O'Neill', with a small horizontal line at the end.

**S O'Neill**  
**AUDITOR-GENERAL**  
24 September 2014

**Museum Board**

**Annual Financial Statements**

**For the year ended 30 June 2014**

## Museum Board


### Certification of the Financial Statements

We certify that the:

- attached general purpose financial statements of the Museum Board:
  - are in accordance with the accounts and records of the authority; and
  - comply with relevant Treasurer's instructions; and
  - comply with relevant Australian accounting standards; and
  - present a true and fair view of the financial position of the authority at the end of the financial year and the result of its operations and cash flows for the financial year.
- Internal controls employed by the South Australian Museum over its financial reporting and its preparation of the general purpose financial statements have been effective throughout the financial year.



*Mr Brian Oldman*  
*Director*  
*South Australian Museum*  
12 September 2014



*Dr Jane Lomax-Smith*  
*Chair*  
*Museum Board*  
12 September 2014

Museum Board			
STATEMENT OF COMPREHENSIVE INCOME			
For the year ended 30 June 2014			
	Note	2014 \$'000	2013 \$'000
<b>Expenses</b>			
Staff benefits	3	7,305	6,916
Supplies and services	5	3,792	3,744
Accommodation and facilities	6	2,820	2,867
Depreciation and amortisation	7	1,999	1,932
Grants		7	12
<b>Total expenses</b>		<b>15,923</b>	<b>15,471</b>
<b>Income</b>			
Grants	8	813	973
Fees and charges	9	811	625
Donations and bequests		226	442
Donations of heritage assets		1,434	194
Sponsorships	10	304	359
Interest and investment income	11	135	180
Resources received free of charge	13	450	477
Recoveries		270	427
Net gain from the disposal of non-current assets	12	52	76
Other income	14	489	208
<b>Total income</b>		<b>4,984</b>	<b>3,961</b>
<b>Net cost of providing services</b>		<b>10,939</b>	<b>11,510</b>
<b>Revenues from SA Government</b>			
Recurrent operating grant		10,286	10,861
Capital grant		870	2,417
<b>Total revenues from SA Government</b>		<b>11,156</b>	<b>13,278</b>
<b>Net result</b>		<b>217</b>	<b>1,768</b>
<b>Other Comprehensive Income</b>			
<i>Items that will not be reclassified to net result:</i>			
Change in value of land and buildings	16	863	6,828
Change in value of heritage collections	18	-	648
<b>Total other comprehensive income</b>		<b>863</b>	<b>7,476</b>
<b>Total comprehensive result</b>		<b>1,080</b>	<b>9,244</b>

The net result and total comprehensive result are attributable to the SA Government as owner

*The above statement should be read in conjunction with the accompanying notes*

Museum Board			
STATEMENT OF FINANCIAL POSITION			
As at 30 June 2014			
	Note	2014 \$'000	2013 \$'000
<b>Current assets</b>			
Cash	23	1,754	2,744
Receivables	15	1,062	1,279
<b>Total current assets</b>		<b>2,816</b>	<b>4,023</b>
<b>Non-current assets</b>			
Receivables	15	10	27
Property, plant and equipment	16	42,244	42,290
Intangible assets	17	94	-
Heritage collections	18	362,579	361,127
Investments	19	947	905
<b>Total non-current assets</b>		<b>405,874</b>	<b>404,349</b>
<b>Total assets</b>		<b>408,690</b>	<b>408,372</b>
<b>Current liabilities</b>			
Payables	20	544	1,398
Staff benefits	21	879	853
Provision	22	9	8
<b>Total current liabilities</b>		<b>1,432</b>	<b>2,259</b>
<b>Non-current liabilities</b>			
Payables	20	133	127
Staff benefits	21	1,430	1,373
Provision	22	38	36
<b>Total non-current liabilities</b>		<b>1,601</b>	<b>1,536</b>
<b>Total liabilities</b>		<b>3,033</b>	<b>3,795</b>
<b>Net assets</b>		<b>405,657</b>	<b>404,577</b>
<b>Equity</b>			
Revaluation surplus		270,498	269,635
Retained earnings		135,159	134,942
<b>Total equity</b>		<b>405,657</b>	<b>404,577</b>
The total equity is attributable to the SA Government as owner			
Unrecognised contractual commitments	24		
Contingent assets and liabilities	25		

*The above statement should be read in conjunction with the accompanying notes*

Museum Board			
Statement of Changes in Equity			
For the year ended 30 June 2014			
	Revaluation surplus	Retained earnings	Total
	\$'000	\$'000	\$'000
Balance at 30 June 2012	262,159	133,174	395,333
Net result for 2012-13	-	1,768	1,768
Gain on revaluation of land and buildings	6,828	-	6,828
Gain on revaluation of heritage collections	648	-	648
<b>Total comprehensive result for 2012-13</b>	<b>7,476</b>	<b>1,768</b>	<b>9,244</b>
<b>Balance at 30 June 2013</b>	<b>269,635</b>	<b>134,942</b>	<b>404,577</b>
Net result for 2013-14	-	217	217
Gain on revaluation of land and buildings	863	-	863
<b>Total comprehensive result for 2013-14</b>	<b>863</b>	<b>217</b>	<b>1,080</b>
<b>Balance at 30 June 2014</b>	<b>270,498</b>	<b>135,159</b>	<b>405,657</b>

All changes in equity are attributable to the SA Government as owner

*The above statement should be read in conjunction with the accompanying notes*



Museum Board			
Statement of Cash Flows			
For the year ended 30 June 2014			
	Note	2014 \$'000	2013 \$'000
<b>Cash flows from operating activities</b>			
<b>Cash outflows</b>			
Staff benefits		(7,215)	(6,746)
Supplies and services		(3,814)	(3,223)
Accommodation and facilities		(2,820)	(2,767)
Grants		(7)	(12)
<b>Cash used in operations</b>		<b>(13,856)</b>	<b>(12,748)</b>
<b>Cash inflows</b>			
Grants		813	982
Fees and charges		997	657
Donations and bequests		226	308
Sponsorships		268	294
Interest and investment income		172	173
Recoveries		270	426
Other		489	208
<b>Cash generated from operations</b>		<b>3,235</b>	<b>3,048</b>
<b>Cash flows from SA Government</b>			
Recurrent operating grant		10,286	10,251
Capital grant		870	2,547
<b>Cash generated from SA Government</b>		<b>11,156</b>	<b>12,798</b>
<b>Net cash provided by operating activities</b>	23	<b>535</b>	<b>3,098</b>
<b>Cash flows from investing activities</b>			
<b>Cash outflows</b>			
Purchases of heritage collections		(361)	(31)
Purchases of property, plant and equipment and intangibles		(1,189)	(2,633)
Purchases of investments		(511)	(829)
<b>Cash used in investing activities</b>		<b>(2,061)</b>	<b>(3,493)</b>
<b>Cash inflows</b>			
Proceeds from sale of investments		536	1,204
<b>Cash generated from investing activities</b>		<b>536</b>	<b>1,204</b>
<b>Net cash (used in) investing activities</b>		<b>(1,525)</b>	<b>(2,289)</b>
<b>Net (decrease) increase in cash</b>		<b>(990)</b>	<b>809</b>
Cash at the beginning of the financial year		2,744	1,935
<b>Cash at the end of the financial year</b>	23	<b>1,754</b>	<b>2,744</b>

The above statement should be read in conjunction with the accompanying Notes.



## Museum Board

## Note Index

### Objectives and policies notes

- 1 Objectives of the Museum Board
- 2 Summary of significant accounting policies

### Expense notes

- 3 Staff benefits
- 4 Remuneration of board and committee members
- 5 Supplies and services
- 6 Accommodation and facilities
- 7 Depreciation and amortisations

### Income notes

- 8 Grants
- 9 Fees and charges
- 10 Sponsorships
- 11 Interest and investment income
- 12 Net gain (loss) from the disposal of non-current assets
- 13 Resources received free of charge
- 14 Other Income

### Asset notes

- 15 Receivables
- 16 Property, plant and equipment
- 17 Intangible assets
- 18 Heritage collections
- 19 Investments

### Liability notes

- 20 Payables
- 21 Staff benefits
- 22 Provision

### Other notes

- 23 Cash flow reconciliation
- 24 Unrecognised contractual commitments
- 25 Contingent assets and liabilities
- 26 Events after balance date
- 27 Financial instruments/Financial risk management
- 28 Fair value measurement
- 29 Transactions with SA Government

## Museum Board

### Note 1. Objectives of the Museum Board

The functions of the Museum Board (the Board), as prescribed under the *South Australian Museum Act 1976*, are as follows:

- to undertake the care and management of the Museum; and
- to manage the premises of the Board; and
- to carry out, or promote, research into matters of scientific and historical interest; and
- to accumulate and care for objects and specimens of scientific or historical interest; and
- to accumulate and classify data in regard to any such matters; and
- to disseminate information of scientific or historical interest; and
- to advise the Minister on matters relating to scientific or historical research or collections; and
- to carry out any other functions assigned to the Board by this or any other Act or the Minister.

### Note 2. Summary of significant accounting policies

#### 2.1 Statement of compliance

The Board has prepared these financial statements in compliance with section 23 of the *Public Finance and Audit Act 1987*.

The financial statements are general purpose financial statements. The accounts have been prepared in accordance with relevant Australian Accounting Standards and comply with Treasurer's Instructions and Accounting Policy Statements promulgated under the provision of the *Public Finance and Audit Act 1987*.

The Board has applied Australian Accounting Standards that are applicable to not-for-profit entities, as the Board is a not-for-profit entity.

Australian Accounting Standards and interpretations that have recently been issued or amended but are not yet effective have not been adopted by the Board for the reporting period ending 30 June 2014.

#### 2.2 Basis of preparation

The preparation of the financial statements requires:

- the use of certain accounting estimates and requires management to exercise its judgement in the process of applying the Board's accounting policies. The areas involving a higher degree of judgement or where assumptions and estimates are significant to the financial statements, are outlined in the applicable notes; and
- accounting policies are selected and applied in a manner which ensures that the resulting financial information satisfies the concepts of relevance and reliability, thereby ensuring that the substance of the underlying transactions or other events are reported; and
- compliance with Accounting Policy Statements issued pursuant to section 41 of the *Public Finance and Audit Act 1987*. In the interest of public accountability and transparency the Accounting Policy Statements require the following note disclosures, which have been included in the financial statements:
  - a) revenues, expenses, financial assets and liabilities where the counterparty/transaction is with an entity within the SA Government as at reporting date, classified according to their nature. A threshold of \$100 000 for separate identification of these items applies;
  - b) expenses incurred as a result of engaging consultants;
  - c) staff targeted voluntary separation package information;
  - d) staff whose normal remuneration is equal to or greater than the base executive remuneration level (within \$10 000 bandwidths) and the aggregate of the remuneration paid or payable or otherwise made available, directly or indirectly, by the entity to those staff; and
  - e) board/committee member and remuneration information, where a board/committee member is entitled to receive income from membership other than a direct out-of-pocket reimbursement.

The Board's Statement of Comprehensive Income, Statement of Financial Position and Statement of Changes in Equity have been prepared on an accrual basis and are in accordance with historical cost convention, except for certain assets that were valued in accordance with the valuation policy applicable.

The Statement of Cash Flows has been prepared on a cash basis.

The financial statements have been prepared based on a twelve month operating cycle and are presented in Australian currency.

The accounting policies set out below have been applied in preparing the financial statements for the year ended 30 June 2014 and the comparative information presented.

#### 2.3 Reporting Entity

The financial statements and accompanying notes cover the Board as an individual reporting entity. It is a statutory authority of the State of South Australia, established pursuant to the *South Australian Museum Act 1976*.

#### 2.4 Sources of Funds

The Board's principal source of funds consists of grants from the State Government. In addition, the Board also receives monies from sales, admissions, donations, bequests, sponsorships and other receipts, and uses the monies for the achievement of its objectives.

## 2.5 Income and Expenses

Income and expenses are recognised in the Board's Statement of Comprehensive Income to the extent it is probable that the flow of economic benefits to or from the Board will occur and can be reliably measured. Income and expenses have been classified according to their nature, and have not been offset unless required or permitted by a specific accounting standard, or where offsetting reflects the substance of the transaction or other event.

### *Income*

Income from the sale of goods is recognised upon the delivery of goods to customers. Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets. Investment income is recognised when the Board obtains control over the funds. Income from the rendering of a service is recognised upon the delivery of the service to the customers. Government grants are recognised as income in the period in which the Board obtains control over the grants. Bequests, donations and sponsorships are recognised as an asset and income when the Board obtains control or obtains the right to receive the bequest, donation or sponsorship and the income recognition criteria are met (ie the amount can be reliably measured and the flow of resources is probable).

### *Resources received free of charge*

Resources received free of charge are recorded as income and expenditure in the Statement of Comprehensive Income at their fair value.

Under an arrangement with Arts SA and Artlab Australia, divisions of the Department of the Premier and Cabinet, Artlab Australia receives SA Government appropriation to perform conservation services on the Board's heritage collections. The value of this work performed is recognised as resources received free of charge in income and a corresponding amount included as conservation work expenditure in supplies and services (Note 5).

Under an arrangement with the Services Division of the Department of the Premier and Cabinet, financial services and human resources are provided free of charge to the Board. The value of these services is recognised as resources received free of charge in income and a corresponding amount included as a business services charge in supplies and services (Note 5).

### *Net gain on disposal of non-current assets*

Income from the disposal of non-current assets is recognised when the control of the asset has passed to the buyer and has been determined by comparing proceeds with carrying amount. When revalued assets are sold, the revaluation surplus is transferred to retained earnings.

### *Staff benefits expense*

Staff benefits expense includes all costs related to employment including wages and salaries, non-monetary benefits and leave entitlements. These are recognised when incurred.

## 2.6 Current and non-current classification

Assets and liabilities are characterised as either current or non-current in nature. The Board has a clearly identifiable operating cycle of twelve months. Assets and liabilities that will be realised as part of the normal operating cycle have been classified as current assets or current liabilities. All other assets and liabilities are classified as non-current.

## 2.7 Cash

Cash in the Statement of Financial Position includes cash at bank, cash held for investments and cash on hand.

For the purposes of the Statement of Cash Flows, cash is defined above. Cash is measured at nominal value.

## 2.8 Receivables

Receivables include amounts receivable from trade, prepayments and other accruals.

Trade receivables arise in the normal course of selling goods and services to other government agencies and the public. Trade receivables are generally settled within 30 days after the issue of an invoice or the goods/services have been provided under a contractual arrangement.

Collectability of receivables is reviewed on an ongoing basis. An allowance for doubtful debts is raised when there is objective evidence that the Board will not be able to collect the debt. Bad debts are written off when identified.

## 2.9 Investments

Investments are brought to account at cost in accordance with Accounting Policy Framework IV *Financial Asset and Liability Framework* APS 2.1.

## 2.10 Non-current asset acquisition and recognition

The cost method of accounting is used for the initial recording of all acquisitions of assets. Cost is determined as the fair value of the assets given as consideration plus costs incidental to the acquisition. Assets donated during the year have been brought to account at fair value.

All non-current assets with a value of \$10,000 or greater are capitalised.

Componentisation of complex assets is only performed when the complex asset's fair value at the time of acquisition is greater than \$5 million for infrastructure assets and \$1 million for other assets.

## 2.11 Valuation of non-current assets

All non-current assets are held at fair value and a revaluation of non-current assets or a group of assets is only performed when its fair value at the time of acquisition is greater than \$1 million and estimated useful life is greater than three years.

Land and buildings and heritage collections are re-valued every 5 years. However, if at any time management considers the carrying amount of an asset materially differs from its fair value, then the asset will be revalued regardless of when the last valuation took place. Non-current assets that are acquired between revaluations are held at cost until the next valuation, where they are revalued to fair value.

Any revaluation increment is credited to the revaluation surplus, except to the extent that it reverses a revaluation decrement of the same asset class previously recognised as an expense, in which case the increase is recognised as income.

Any revaluation decrement is recognised as an expense, except to the extent that it offsets a previous revaluation increase of the same asset class, in which case the decrease is debited directly to the revaluation surplus to the extent of the credit balance existing in the revaluation surplus for that asset class.

Upon revaluation, the accumulated depreciation has been restated proportionately with the change in gross carrying amount of the asset so that the carrying amount, after revaluation, equals its revalued amount.

Upon disposal or de-recognition, any revaluation surplus relating to that asset is transferred to retained earnings.

*Land and buildings*

Land and buildings have been valued at fair value. Valuations of land and buildings were determined as at 30 June 2014 by independent valuer Valcorp Australia Pty Ltd.

*Plant and equipment*

Plant and equipment, including computer equipment, has been deemed to be held at fair value on acquisition.

*Intangible assets*

An intangible asset is an identifiable non-monetary asset without physical substance. Intangible assets are measured at cost. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses.

The useful lives of intangible assets are assessed to be either finite or indefinite. The Board only has intangible assets with finite lives. The amortisation period and the amortisation method for intangible assets is reviewed on an annual basis.

*Heritage collections*

The Board's collections were revalued as at 30 June 2011 using the valuation methodology outlined below in accordance with fair value principles adopted under Australian Accounting Standard AASB 116 *Property, Plant and Equipment*. These valuations were undertaken by both external valuers and internal specialists.

The collections were broadly valued on the following basis:

Collection	Method of valuation
Heritage collections	Net market valuation
Natural History collections	Cost of recovery

Heritage collection status applies to those collections where an established market exists. The net market valuation applied has been assessed either by valuation undertakings by staff and valuers or by applying valuations determined under the Cultural Gifts Program.

Natural History collections have been valued at fair value on the basis of the cost of fieldwork, preparation and documentation to replace the material in its present condition. The most recent revaluation saw an increase in the value of each Holotype from \$1,000 to \$5,000 per specimen.

Internal valuations were carried out by staff specialists in their related fields. These valuations were based on a knowledge of the particular collections, an understanding of valuation techniques and the markets that exist for the collection items. Independent external valuers were engaged to review the methodology adopted for valuation to verify the valuations applied by internal specialists via sampling techniques, and to carry out independent valuations where required.

Heritage collections deemed to have market value are Australian Ethnology, Foreign Ethnology, Malacology, Butterflies, Industrial History Collection, Mineralogy, Museum Library, Archives/Artworks and Rare Books.

Natural History collections valued at cost of recovery are the Australian Biological Tissue Bank, the Australian Helminthological Collection, Entomology, Arachnology, Marine Invertebrates, Ichthyology, Herpetology, Ornithology, Mammalogy, Palaeontology and Archaeology.

The Archaeology collection was valued for the first time in the 30 June 2011 valuation. Previously the collection was inaccessible due to storage limitations.

In June 2012, the Archives/Artwork collection was valued for the first time by JFB Bruce AVAA JP of Theodore Bruce Auctions Pty Ltd. Resource limitations had previously prevented the valuation of the collection.

The external valuations were carried out by the following recognised industry experts:

Collection	Industry Expert
Foreign Ethnology	H Gallasch
Mineralogy	R Noble
Malacology (Marine Invertebrates)	I Van Streepen
Butterflies (Terrestrial Invertebrates)	L Mound
Mammalogy	R Schodde
Archives/Artwork	JFB Bruce

Heritage collections assessed internally by staff with the necessary expertise:

Collection	Industry Expert
Australian Ethnology	P Jones
Foreign Ethnology	B Craig

## Museum Board

Collections deemed to be culturally sensitive, including human remains or items which are secret and sacred to Aboriginal communities have not been included within the current valuation and are deemed to be at zero valuation. These collections are Human Biology, Secret Sacred and Archives.

### 2.12 Impairment of assets

All non-current assets are tested for indications of impairment at each reporting date. Where there is an indication of impairment, the recoverable amount is estimated. An amount by which the asset's carrying amount exceeds the recoverable amount is recorded as an impairment loss.

For re-valued assets an impairment loss is offset against the revaluation surplus.

### 2.13 Fair Value measurement

AASB 13 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants, in the principal or most advantageous market, at the measurement date.

The Board classifies fair value measurement using the following fair value hierarchy that reflects the significance of the inputs used in making the measurements, based on the data and assumptions used in the most recent revaluation.

Level 1 Traded in active markets and is based on unadjusted quoted prices in active markets for identical assets or liabilities that the entity can access at measurement date.

Level 2 Not traded in an active market and are derived from inputs (inputs other than quoted prices included within level 1) that are observable for the asset, either directly or indirectly.

Level 3 Not traded in an active market and are derived from unobservable inputs.

#### *Non-financial assets*

In determining fair value, the Board has taken into account the characteristic of the asset (eg condition and location of the asset and any restrictions on the sale or use of the asset); and the asset's highest and best use (that is physically possible, legally permissible and financially feasible).

The Board's current use is the highest and best use of the asset unless other factors suggest an alternative use is feasible. As the Board did not identify any factors to suggest an alternative use, fair value measurement was based on current use.

The carrying amount of non-financial assets with a 'fair value at the time of acquisition that was less than \$1 million or had an estimated useful life that was less than three years' are deemed to approximate fair value.

Refer to Note 16 and 28 for disclosure regarding fair value measurement techniques and inputs used to develop fair value measurements for non-financial assets.

### 2.14 Depreciation/ amortisation of non-current assets

All property, plant and equipment and intangibles, having a limited useful life, are systematically depreciated/ amortised over their useful lives in a manner that reflects the consumption of their service potential.

Assets' residual values, useful lives and depreciation/ amortisation methods are reviewed and adjusted if appropriate, on an annual basis.

Land is not depreciated.

Depreciation/ amortisation is calculated on a straight line basis over the estimated useful life of the following classes of assets as follows:

<u>Class of Asset</u>	<u>Useful Life (years)</u>
Buildings and improvements	20-100
Plant and equipment :	
Exhibition	10
Other	3-25
Computer equipment	3-5
Intangibles	5-10

Exhibitions with a life of less than one year are expensed.

Heritage collections are kept under special conditions so that there is no physical deterioration and they are anticipated to have very long and indeterminate useful lives. No amount for depreciation has been recognised, as their service potential has not, in any material sense, been consumed during the reporting period.

### 2.15 Payables

Payables include creditors, accrued expenses and staff on-costs.

Creditors and accrued expenses represent goods and services provided by other parties during the period that are unpaid at the end of the reporting period. All payables are measured at their nominal amount and are normally settled within 30 days from the date of the invoice or date the invoice is first received.

Staff on-costs include superannuation contributions and payroll tax with respect to outstanding liabilities for salaries and wages, long service leave, annual leave and skills and experience retention leave.

### 2.16 Staff benefits

These benefits accrue for staff as a result of services provided up to the reporting date that remain unpaid. Long-term staff benefits are measured at present value and short-term benefits are measured at nominal amounts.

No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by staff is estimated to be less than the annual entitlement of sick leave.

#### *(i) Salaries, Wages, Annual Leave and Skills and Experience Retention Leave*

Liabilities for salaries, wages, annual leave and skills and experience retention leave have been recognised as the amount unpaid at the reporting date at remuneration rates current at reporting date. The annual leave liability and the skills and experience retention leave liability are expected to be payable within twelve months and are measured at the undiscounted amount expected to be paid.

## Museum Board

### (ii) *Long Service Leave*

The liability for long service leave is measured as the present value of expected future payments to be made in respect of services provided by staff up to the end of the reporting period using the projected unit credit method.

The estimated liability for long service leave is based on actuarial assumptions over expected future salary and wage levels, experience of staff departures and periods of service. These assumptions are based on employee data over SA government entities. Expected future payments are discounted using market yields at the end of the reporting period on government bonds with durations that match, as closely as possible, the estimated future cash outflows.

### (iii) *On-Costs*

Staff benefit on-costs (payroll tax and superannuation) are recognised separately under payables.

### (iv) *Superannuation*

The Board makes contributions to several State Government and externally managed superannuation schemes. These contributions are treated as an expense when they occur. There is no liability for payments to beneficiaries as they have been assumed by the respective superannuation schemes. The only liability outstanding at balance date relates to any contributions due but not yet paid to the relevant superannuation schemes. The Department of Treasury and Finance centrally recognises the superannuation liability, for the schemes operated by the State Government, in the whole-of-government financial statements.

## 2.17 **Workers compensation provision**

The workers compensation provision is an actuarial estimate of the outstanding liability as at 30 June 2014 provided by a consulting actuary engaged through the Public Sector Workforce Relations Division of the Department of the Premier and Cabinet. The provision is for the estimated cost of ongoing payments to staff as required under current legislation.

## 2.18 **Leases**

The Board has entered into a number of operating lease agreements for accommodation and motor vehicles where the lessors effectively retain all of the risks and benefits incidental to ownership of the items held under the operating leases. Operating lease payments are representative of the pattern of benefits derived from the leased assets and accordingly are charged to the Statement of Comprehensive Income on a straight-line basis over the lease term.

## 2.19 **Comparative information**

The presentation and classification of items in the financial statements are consistent with prior periods except where specific Accounting Standards and/or Accounting Policy Statements have required a change.

Where presentation or classification of items in the financial statements have been amended, comparative figures have been adjusted to conform to changes in presentation or classification in these financial statements unless impracticable to do so.

The restated comparative amounts do not replace the original financial statements for the preceding period.

## 2.20 **Taxation**

The Board is not subject to income tax. The Board is liable for payroll tax, fringe benefits tax, goods and services tax (GST) and the emergency services levy.

Income, expenses and assets are recognised net of the amount of GST. The amount of GST incurred by the Board as a purchaser that is not recoverable from the Australian Taxation Office is recognised as part of the cost of acquisition of an asset or part of an item of expense.

The net GST receivable/payable to the Australian Taxation Office is not recognised as a receivable/payable in the Statement of Financial Position as the Board is a member of an approved GST group of which Arts SA, a division of the Department of the Premier and Cabinet, is responsible for the remittance and collection of GST. As such, there are no cash flows relating to GST transactions with the Australian Taxation Office in the Statement of Cash Flows.

## 2.21 **Events after the reporting period**

Adjustments are made to amounts recognised in the financial statements, where an event occurs after 30 June and before the date the financial statements are authorised for issue, where those events provide information about conditions that existed at 30 June.

Note disclosure is made about events between 30 June and the date the financial statements are authorised for issue where the events relate to a condition which arose after 30 June and which may have a material impact on the results of subsequent years.

## 2.22 **State Government funding**

The financial statements are presented under the assumption of ongoing financial support being provided to the Board by the State Government.

## 2.23 **Rounding**

All amounts in the financial statements and accompanying notes have been rounded to the nearest thousand dollars (\$'000).

## 2.24 **Insurance**

The Board has arranged, through SAICORP, a division of the SA Government Financing Authority, to insure all major risks of the Board. The excess payable is fixed under this arrangement.

## 2.25 **Unrecognised contractual commitments and contingent assets and liabilities**

Commitments include operating, capital and outsourcing commitments arising from contractual or statutory sources and are disclosed at their nominal value.

Contingent assets and contingent liabilities are not recognised in the Statement of Financial Position, but are disclosed by way of a Note and, if quantifiable, are measured at nominal value.

Unrecognised contractual commitments and contingencies are disclosed net of the amount of GST recoverable from, or payable to the Australian Taxation Office. If GST is not payable to, or recoverable from the Australian Taxation Office, the commitments and contingencies are disclosed on a gross basis.

### 3 Staff benefits

	2014	2013
	\$'000	\$'000
Salaries and wages	5,586	5,702
Long service leave	227	103
Annual leave	491	98
Skills and experience retention leave	20	36
Staff on-costs - superannuation	589	601
Staff on-costs - other	314	312
Board fees	18	56
Other staff related expenses	60	8
<b>Total staff benefits</b>	<b>7,305</b>	<b>6,916</b>

#### Remuneration of staff

The number of staff whose remuneration received or receivable falls within the following bands:

	2014	2013
	No. of staff	No. of staff
\$141 500 to \$151 499	1	2
\$221 500 to \$231 499	-	1
<b>Total number of staff</b>	<b>1</b>	<b>3</b>

The table includes all staff who received remuneration equal to or greater than the base executive remuneration level during the year. Remuneration of staff reflects all costs including salaries and wages, payments in lieu of leave, superannuation contributions, fringe benefits tax and salary sacrifice benefits. The total remuneration received or receivable by these staff members for the year was \$144 000 (\$510 000).

### 4 Remuneration of board and committee members

Members during the 2013-14 financial year were:

#### Museum Board

The Hon Dr J Lomax-Smith AM (Chairperson)  
Prof D Adelson  
Ms J H Brown (started 12 August 2013)  
Ms N Buddle  
Ms H Carreker (started 23 January 2014)  
Mr P Hanlon  
Ms E D Perry (term ended 11 August 2013)  
Mr D Rathman AM\*  
Ms N Stott Despoja AM (Resigned 18 November 2013)  
Prof M Worton (Resigned 9 February 2014)

#### Aboriginal Advisory Committee

Mr D Rathman AM \* (Chairperson)  
Dr L O'Donoghue AC, CBE, DSG  
Mr M Turner  
Ms E Tongerie (started 27 February 2014)  
Mr F Lampard OAM (started 27 February 2014)  
Ms S Miller (started 27 February 2014)  
Mr L O'Brien (Resigned 13 November 2013)  
Ms L Buckskin (Resigned 19 August 2013)

The number of members whose remuneration received or receivable falls within the following bands:

	2014	2013
\$0 - \$9,999	17	10
\$10,000 - \$19,999	-	4
<b>Total number of members</b>	<b>17</b>	<b>14</b>

Remuneration of members reflects all costs of performing board/committee member duties including sitting fees. The board fees received or receivable by members were \$18 000 (2013: \$56 000).

Amounts paid or payable to a superannuation plan for board/committee members were \$1 290 (\$4 740).

\*In accordance with the Premier and Cabinet Circular No. 016, government employees did not receive any remuneration for board/committee duties during the financial year.

#### Related party disclosures

Board members or their related entities have transactions with the Board that occur within a normal customer or supplier relationship on terms and conditions no more favorable than those with which it is reasonably expected the entity would have adopted if the transactions were undertaken with any other entity at arm's length in similar circumstances.

## 5 Supplies and services

	2014	2013
	\$'000	\$'000
<b>Supplies and services</b>		
Cost of goods sold	7	7
Insurance and risk management	386	401
Marketing	341	321
Administration	379	149
IT services and communications	317	276
Maintenance	155	89
Artlab conservation work	321	334
Business services charge	129	143
Collections	89	21
Exhibitions	204	253
Research	344	444
Travel and accommodation	104	155
Contractors	256	256
Motor vehicle expenses	53	57
Minor equipment	55	137
Fees	192	180
Consultants	92	87
Hire, rent and equipment	41	88
Audit Fees	37	34
Legal Fees	24	5
OHS&W	24	31
Other	242	276
<b>Total supplies and services</b>	<b>3,792</b>	<b>3,744</b>

### Consultants

The number and dollar amount of consultancies paid/payable (included in the supplies and services expense shown above) fell within the following bands:

	2014	2013	2014	2013
	Number	Number	\$'000	\$'000
Below \$10,000	4	-	6	-
Between \$10,000 and \$50,000	4	-	86	-
Greater than \$50,000	-	1	-	87
<b>Total paid/payable to consultants engaged</b>	<b>8</b>	<b>1</b>	<b>92</b>	<b>87</b>

### Auditor's remuneration

	2014	2013
	\$'000	\$'000
Audit fees paid/payable to the Auditor-General's Department relating to the audit of the financial statements	36	34
Audit fees paid/payable to other auditors for the audit of the Return of Indigenous Cultural Property Program acquittal statement	1	-
<b>Total audit fees</b>	<b>37</b>	<b>34</b>

No other services were provided to the Board by the Auditor-General's Department or the other auditors.

## 6 Accommodation and facilities

	2014	2013
	\$'000	\$'000
<b>Accommodation and facilities</b>		
Accommodation	902	931
Facilities	1,024	1,074
Security	894	862
<b>Total accommodation and facilities</b>	<b>2,820</b>	<b>2,867</b>

## 7 Depreciation and amortisation

	2014	2013
	\$'000	\$'000
<b>Depreciation</b>		
Buildings and improvements	1,354	1,329
Plant and equipment	621	590
Computer equipment	14	13
<b>Total depreciation</b>	<b>1,989</b>	<b>1,932</b>
<b>Amortisation</b>		
Intangibles	10	-
<b>Total amortisation</b>	<b>10</b>	<b>-</b>
<b>Total depreciation and amortisation</b>	<b>1,999</b>	<b>1,932</b>



## 8 Grants

	2014	2013
	\$'000	\$'000
State Government grants	337	-
General grants	413	799
Commonwealth grants	63	174
<b>Total grants</b>	<b>813</b>	<b>973</b>

## 9 Fees and charges

	2014	2013
	\$'000	\$'000
Admissions	399	291
Functions	85	88
Fees for service	287	199
Other	40	47
<b>Total fees and charges</b>	<b>811</b>	<b>625</b>

## 10 Sponsorships

	2014	2013
	\$'000	\$'000
<b>Sponsorships received/receivable</b>		
Cash sponsorships	268	294
In-kind sponsorships	36	65
<b>Total sponsorships</b>	<b>304</b>	<b>359</b>

## 11 Interest and investment income

	2014	2013
	\$'000	\$'000
Interest	74	86
Investments	61	94
<b>Total interest and investment income</b>	<b>135</b>	<b>180</b>

## 12 Net gain (loss) from the disposal of non-current assets

	2014	2013
	\$'000	\$'000
<b>Investments</b>		
Proceeds from disposal	536	1,204
Less: Net book value of assets disposed	(470)	(1,128)
<b>Net gain from disposal of investments</b>	<b>66</b>	<b>76</b>
<b>Plant and equipment</b>		
Proceeds from disposal	-	-
Less: Net book value of assets disposed	(5)	-
<b>Net loss from disposal of plant and equipment</b>	<b>(5)</b>	<b>-</b>
<b>Heritage Assets</b>		
Proceeds from disposal	-	-
Less: Net book value of assets disposed	(9)	-
<b>Net loss from disposal of heritage assets</b>	<b>(9)</b>	<b>-</b>
<b>Total assets</b>		
Total proceeds from disposal	536	1204
Less: Total net book value of assets disposed	(484)	(1,128)
<b>Total net gain from disposal of assets</b>	<b>52</b>	<b>76</b>

## 13 Resources received free of charge

	2014	2013
	\$'000	\$'000
Business services charge	129	143
Artlab conservation work	321	334
<b>Total resources received free of charge</b>	<b>450</b>	<b>477</b>

**14 Other income**

	2014	2013
	\$'000	\$'000
Lab Consumable Recharge	93	6
Commissions and Royalties	50	19
Competition Entry Fees	34	72
Exhibition hire	14	37
Rental income	230	-
Other	68	74
<b>Total other income</b>	<b>489</b>	<b>208</b>

**15 Receivables**

	2014	2013
	\$'000	\$'000
<b>Current</b>		
Receivables	1,014	442
Prepayments	29	23
Accrued income	19	814
<b>Total current receivables</b>	<b>1,062</b>	<b>1,279</b>
<b>Non-current</b>		
Receivables	1	1
Prepayments	9	26
<b>Total non-current receivables</b>	<b>10</b>	<b>27</b>
<b>Total receivables</b>	<b>1,072</b>	<b>1,306</b>

**Interest rate and credit risk:**

Receivables are raised for all goods and services provided for which payment has not been received. Receivables are normally settled within 30 days. Receivables, prepayments and accrued income are non-interest bearing. It is not anticipated that counterparties will fail to discharge their obligations. The carrying amount of receivables approximates net fair value due to being receivable on demand. In addition, there is no concentration of credit risk.

- a) *Maturity analysis of receivables - refer Note 27*
- b) *Categorisation of financial instruments and risk exposure information - refer Note 27*

**16 Property, plant and equipment**

	2014	2013
	\$'000	\$'000
<b>Land, buildings and improvements</b>		
Land at fair value	5,300	4,850
Buildings and improvements at fair value	72,962	70,018
Less: Accumulated depreciation	(41,377)	(39,397)
<b>Total land, buildings and improvements</b>	<b>36,885</b>	<b>35,471</b>
<b>Work in progress</b>		
Work in progress at cost	56	2,356
<b>Total work in progress</b>	<b>56</b>	<b>2,356</b>
<b>Plant and equipment</b>		
Plant and equipment at cost (deemed fair value)	8,812	7,571
Less: Accumulated depreciation	(3,526)	(3,139)
<b>Total plant and equipment</b>	<b>5,286</b>	<b>4,432</b>
<b>Computer equipment</b>		
Computer equipment at cost (deemed fair value)	49	49
Less: Accumulated depreciation	(32)	(18)
<b>Total computer equipment</b>	<b>17</b>	<b>31</b>
<b>Total property, plant and equipment</b>	<b>42,244</b>	<b>42,290</b>

**Valuation of land and buildings**

The valuation of land and buildings was performed by Fred Taormina, an independent valuer from Valcorp Australia Pty Ltd as at 30 June 2014. The valuer arrived at fair value based on recent market transactions for similar land and buildings in the area taking into account zoning and restricted use.

**17 Intangible assets**

	2014	2013
	\$'000	\$'000
<b>Computer software</b>		
Computer software at cost	104	-
Less: Accumulated amortisation	(10)	-
<b>Total computer software</b>	<b>94</b>	<b>-</b>
<b>Total intangible assets</b>	<b>94</b>	<b>-</b>

**RECONCILIATION OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLES  
2013-14**

	Land	Buildings & improvements	Work in progress	Plant & equipment	Computer equipment	<b>Total Tangible assets</b>	Computer software	<b>Total Intangible assets</b>
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000		
<b>Carrying amount at 1 July 2013</b>	<b>4,850</b>	<b>30,621</b>	<b>2,356</b>	<b>4,432</b>	<b>31</b>	<b>42,290</b>	-	-
Additions	-	-	1,051	93	-	1,144	45	45
Disposals	-	-	-	(238)	-	(238)	-	-
Accumulated depreciation on disposals	-	-	-	233	-	233	-	-
Depreciation and amortisation	-	(1,354)	-	(621)	(14)	(1,989)	(10)	(10)
Revaluation increment/(decrement)	450	413	-	-	-	863	-	-
Transfers between asset classes	-	1,905	(3,351)	1,387	-	(59)	59	59
<b>Carrying amount at 30 June 2014</b>	<b>5,300</b>	<b>31,585</b>	<b>56</b>	<b>5,286</b>	<b>17</b>	<b>42,244</b>	<b>94</b>	<b>94</b>

**RECONCILIATION OF PROPERTY, PLANT AND EQUIPMENT  
2012-13**

	Land	Buildings & improvements	Work in progress	Plant and equipment	Computer equipment	Total tangible assets
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Carrying amount at 1 July 2012</b>	<b>7,440</b>	<b>22,038</b>	<b>288</b>	<b>4,966</b>	<b>30</b>	<b>34,762</b>
Additions	-	125	2,437	56	14	2,632
Disposals	-	-	-	(41)	-	(41)
Accumulated depreciation on disposals	-	-	-	41	-	41
Depreciation	-	(1,329)	-	(590)	(13)	(1,932)
Revaluation increment/(decrement)	(2,590)	9,418	-	-	-	6,828
Transfers between asset classes	-	369	(369)	-	-	-
<b>Carrying amount at 30 June 2013</b>	<b>4,850</b>	<b>30,621</b>	<b>2,356</b>	<b>4,432</b>	<b>31</b>	<b>42,290</b>

## 18 Heritage collections

	2014	2013
	\$'000	\$'000
Social/Industrial History	278	278
Australian Aboriginal Ethnographic	24,788	24,778
Foreign Ethnology	8,462	8,456
Australian Polar Collection	4,808	4,808
Archives/Artwork	16,735	16,726
Archaeology	69,301	69,305
Minerals	17,764	17,462
Malacology	7,686	7,686
Butterflies	41	41
Australian Biological Tissue Bank	17,631	17,611
Australian Helminthological Collection	24,483	24,026
Entomology	80,145	79,917
Arachnology	11,389	11,026
Marine Invertebrates	15,553	15,553
Ichthyology	4,837	4,824
Herpetology	6,488	6,480
Ornithology	12,494	12,475
Mammalogy	7,963	7,963
Palaeontology	25,335	25,314
Library	6,398	6,398
<b>Total heritage collections</b>	<b>362,579</b>	<b>361,127</b>

### Reconciliation of carrying amounts of heritage collections

	2014			2013				
	Balance 1 July	Additions	Disposals	Balance 30 June	Balance 1 July	Additions	Revaluation Increment	Balance 30 June
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Social/Industrial History	278	-	-	278	278	-	-	278
Australian Aboriginal Ethnographic	24,778	10	-	24,788	24,778	-	-	24,778
Foreign Ethnology	8,456	6	-	8,462	8,448	8	-	8,456
Australian Polar Collection	4,808	-	-	4,808	4,733	75	-	4,808
Archives/Artwork	16,726	9	-	16,735	16,714	12	-	16,726
Archaeology	69,305	-	(4)	69,301	69,305	-	-	69,305
Minerals	17,462	307	(5)	17,764	17,421	41	-	17,462
Malacology	7,686	-	-	7,686	7,686	-	-	7,686
Butterflies	41	-	-	41	41	-	-	41
Australian Biological Tissue Bank	17,611	20	-	17,631	17,611	-	-	17,611
Australian Helminthological Collection	24,026	457	-	24,483	24,026	-	-	24,026
Entomology	79,917	228	-	80,145	79,904	13	-	79,917
Arachnology	11,026	363	-	11,389	11,026	-	-	11,026
Marine Invertebrates	15,553	-	-	15,553	15,553	-	-	15,553
Ichthyology	4,824	13	-	4,837	4,824	-	-	4,824
Herpetology	6,480	8	-	6,488	6,480	-	-	6,480
Ornithology	12,475	19	-	12,494	12,475	-	-	12,475
Mammalogy	7,963	-	-	7,963	7,963	-	-	7,963
Palaeontology	25,314	21	-	25,335	24,259	407	648	25,314
Library	6,398	-	-	6,398	6,398	-	-	6,398
<b>Carrying amount at 30 June</b>	<b>361,127</b>	<b>1,461</b>	<b>(9)</b>	<b>362,579</b>	<b>359,923</b>	<b>556</b>	<b>648</b>	<b>361,127</b>

## 19 Investments

	2014	2013
	\$'000	\$'000
Investments with entities other than SAFA:		
<b>Non-Current</b>		
Shares, convertible notes and other investments in companies	947	905
<b>Total non-current investments</b>	<b>947</b>	<b>905</b>
<b>Total investments</b>	<b>947</b>	<b>905</b>

The market value of investments as at 30 June 2014 is \$1.208 million (\$1.043 million).

Of the three investment accounts; Museum Board, Norman B Tindale Memorial and the Mawson Collection - there are restrictions in place for both the Norman B Tindale Memorial and Mawson Collection relating to funds totalling \$557 000 (\$532 000).

## 20 Payables

	2014	2013
	\$'000	\$'000
<b>Current</b>		
Creditors and accruals	422	1,278
Staff on-costs	122	120
<b>Total current payables</b>	<b>544</b>	<b>1,398</b>
<b>Non-current</b>		
Staff on-costs	133	127
<b>Total non-current payables</b>	<b>133</b>	<b>127</b>
<b>Total payables</b>	<b>677</b>	<b>1,525</b>

As a result of an actuarial assessment performed by the Department of Treasury and Finance, the percentage of the proportion of long service leave taken as leave has remained at the 2013 rate of 40% and the average factor for the calculation of employer superannuation cost on-cost has increased to 10.3% (10.2%). These rates are used in the staff on-cost calculation. The financial effect of the change in the superannuation on-cost rate on staff on-costs and staff benefits expense is immaterial.

### Interest rate and credit risk

Creditors and accruals are raised for all amounts billed but unpaid. Sundry creditors are normally settled within 30 days. Staff on-costs are settled when the respective staff benefit that they relate to is discharged. All payables are non-interest bearing. The carrying amount of payables approximates net fair value due to the amounts being payable on demand.

- a) *Maturity analysis of payables - refer Note 27*
- b) *Categorisation of financial instruments and risk exposure information - refer Note 27*

## 21 Staff benefits

	2014	2013
	\$'000	\$'000
<b>Current</b>		
Annual leave	537	605
Skills and experience retention leave	56	36
Long service leave	264	212
Accrued salaries and wages	22	-
<b>Total current staff benefits</b>	<b>879</b>	<b>853</b>
<b>Non-current</b>		
Long service leave	1,430	1,373
<b>Total non-current staff benefits</b>	<b>1,430</b>	<b>1,373</b>
<b>Total staff benefits</b>	<b>2,309</b>	<b>2,226</b>

AASB 119 contains the calculation methodology for long service leave liability. The actuarial assessment performed by the Department of Treasury and Finance has provided a set level of liability for the measurement of long service leave.

AASB 119 requires the use of the yield on long term Commonwealth Government bonds as the discount rate in the measurement of the long service leave liability. The yield on long term Commonwealth Government bonds has decreased from 2013 (3.75%) to 2014 (3.5%).

This decrease in the bond yield, which is used as the rate to discount future long service leave cash flows, results in an increase in the reported long service leave liability.

The net financial effect of the changes in methodology and actuarial assumptions in the current financial year is immaterial. The impact on future periods is impracticable to estimate as the long service leave liability is calculated using a number of assumptions. A key assumption is the long-term discount rate.

The actuarial assessment performed by the Department of Treasury and Finance left the salary inflation rate at 4%. As a result, there is no net financial effect resulting from changes in the salary inflation rate.

## 22 Provision

	2014	2013
	\$'000	\$'000
<b>Current</b>		
Provision for workers compensation	9	8
<b>Total current provision</b>	<b>9</b>	<b>8</b>
<b>Non-current</b>		
Provision for workers compensation	38	36
<b>Total non-current provision</b>	<b>38</b>	<b>36</b>
<b>Total provision</b>	<b>47</b>	<b>44</b>
<b>Reconciliation of the provision for workers compensation</b>		
Provision at the beginning of the financial year	44	43
Increase in provision during the year	3	1
<b>Provision for workers compensation at the end of the financial year</b>	<b>47</b>	<b>44</b>

## 23 Cash flow reconciliation

### Reconciliation of cash

For the purposes of the Statement of Cash Flows, cash includes cash on hand, cash held for investments and cash at bank. Cash as at the end of the financial year as shown in the Statement of Cash Flows is reconciled to the items in the Statement of Financial Position as follows:

	2014	2013
	\$'000	\$'000
Deposits with the Treasurer	735	1,767
JB Were Investments	1,018	976
Cash on hand	1	1
<b>Cash as recorded in the Statement of Financial Position</b>	<b>1,754</b>	<b>2,744</b>

### Deposits with the Treasurer

Deposits with the Treasurer are a combination of funds held in the "Museum Board - Bequests Account", an account held with the Treasurer of South Australia pursuant to section 21 of the *Public Finance and Audit Act 1987*, and funds held in the Premier and Cabinet Operating Account, an account held with the Treasurer of South Australia pursuant to section 8 of the *Public Finance and Audit Act 1987*. There are stipulated restrictions on the use of the Zimmerman Bequest component of the cash funds available \$103 000 (\$101 000) and the Bonython Bequest component of the cash funds available \$21 000 (\$20 000).

### JB Were Investments

Deposits with JB Were are the total of the Cash Trust Accounts for the three managed investment funds - Museum Board, Norman B Tindale Memorial and the Mawson Collection. There are restrictions in place for the cash accounts for Norman B Tindale Memorial and Mawson Collection \$676 000 (\$658 000).

### Cash on hand

Cash on hand includes petty cash.

### Interest rate risk

Cash and cash equivalents are recorded at nominal value. Interest is calculated based on the average daily balances of the interest bearing funds. The interest bearing funds of the Board are held in the section 21 interest bearing account titled the "Museum Board - Bequests Account" and the JB Were accounts.

### Reconciliation of net cash provided by operating activities to net cost of providing services

	2014	2013
	\$'000	\$'000
<b>Net cash provided by operating activities</b>	<b>535</b>	<b>3,098</b>
Less revenues from SA Government	(11,156)	(13,278)
<b>Add/(less) non-cash items:</b>		
Depreciation of property, plant and equipment	(1,989)	(1,932)
Amortisation of intangibles	(10)	-
Donations of heritage collections	1,434	194
Net gain on disposal of non-current assets	52	76
<b>Changes in assets and liabilities</b>		
Increase/ (decrease) in receivables	(234)	749
(Increase)/ decrease in payables	515	(267)
(Increase) in staff benefits	(83)	(149)
(Increase) in provision	(3)	(1)
<b>Net cost of providing services</b>	<b>(10,939)</b>	<b>(11,510)</b>

## 24 Unrecognised contractual commitments

### Operating lease commitments

Commitments under non-cancellable operating leases at the reporting date not recognised as liabilities in the financial statements, are payable as follows:

	2014	2013
	\$'000	\$'000
Not later than one year	17	345
Later than one year but not later than five years	28	688
<b>Total operating lease commitments</b>	<b>45</b>	<b>1,033</b>

The operating lease commitments comprise non-cancellable motor vehicle leases, with rental payable monthly in arrears. No contingent rental provisions exist within the lease agreements and no options exist to renew the leases at the end of their terms.

### Capital commitments

Capital commitments under contract at the reporting date, but not recognised as liabilities in the financial report, are payable as follows:

	2014	2013
	\$'000	\$'000
Not later than one year	-	62
<b>Total capital commitments</b>	<b>-</b>	<b>62</b>

The Board does not have any capital commitments as at 30 June 2014.

### Remuneration commitments

Commitments for the payment of salaries and other remuneration under employment contracts in existence at the reporting date but not recognised as liabilities are payable as follows:

	2014	2013
	\$'000	\$'000
Not later than one year	205	82
Later than one year but not later than five years	512	-
<b>Total remuneration commitments</b>	<b>717</b>	<b>82</b>

Amounts disclosed include commitments arising from executive and other service contracts. The Board does not offer remuneration contracts greater than five years.

### Other commitments

	2014	2013
	\$'000	\$'000
Not later than one year	1,004	1,115
Later than one year but not later than five years	212	1,625
<b>Total other commitments</b>	<b>1,216</b>	<b>2,740</b>

The Board's other commitments are for agreements for security and cleaning.

Contingency provisions within the contracts require the minimum contract payments to be increased by variable operating costs and wage rises. Options exist to renew the contracts at the end of their terms.

## 25 Contingent Assets and Liabilities

The Board is not aware of any contingent assets or liabilities as at 30 June 2014.

## 26 Events after balance date

There are no known events after balance date that affect these financial statements in a material manner.

## 27 Financial instruments/Financial risk management

**Table 27.1 Categorisation of financial instruments**

Details of the significant accounting policies and methods adopted including the criteria for recognition, the basis of measurement, and the basis on which income and expenses are recognised with respect to each class of financial asset and financial liability are disclosed in Note 2 *Summary of Significant Accounting Policies*.

Category of financial asset and financial liability	Statement of Financial Position line item	Note	2014		2013	
			Carrying amount	Fair value	Carrying amount	Fair value
			\$'000	\$'000	\$'000	\$'000
<b>Financial assets</b>						
Cash and cash equivalents	Cash	23	1,754	1,754	2,744	2,744
Investments	Investments	19	947	1,208	905	1,043
Loans and receivables	Receivables <sup>(1) (2)</sup>	15	1,015	1,015	590	590
<b>Financial liabilities</b>						
Financial liabilities at cost	Payables <sup>(1)</sup>	20	387	387	1,375	1,375

<sup>(1)</sup> Receivable and payable amounts disclosed here exclude amounts relating to statutory receivables and payables. In government, certain rights to receive or pay cash may not be contractual and therefore in these situations, the requirements will not apply. Where rights or obligations have their source in legislation such as levy receivables/payables, tax equivalents, commonwealth tax, audit payables etc they would be excluded from the disclosure. The standard defines contract as enforceable by law. All amounts recorded are carried at cost (not materially different from amortised cost).

<sup>(2)</sup> Receivables amount disclosed here excludes prepayments. Prepayments are presented in Note 15 as trade and other receivables in accordance with paragraph 78(b) of AASB 101. However, prepayments are not financial assets as defined in AASB 132 as the future economic benefit of these assets is the receipt of goods and services rather than the right to receive cash or another financial asset.

### Credit risk

Credit risk arises when there is the possibility of the Board's debtors defaulting on their contractual obligations resulting in financial loss to the Board. The Board measures credit risk on a fair value basis and monitors risk on a regular basis.

The carrying amount of financial assets as detailed in table 27.1 represents the Board's maximum exposure to credit risk.

The Board has minimal concentration of credit risk. The Board has policies and procedures in place to ensure that transactions occur with customers with appropriate credit history. The Board does not engage in high risk hedging for its financial assets.

Allowances for impairment of financial assets are calculated on past experience and current and expected changes in client credit rating. Currently the Board does not hold any collateral as security to any of its financial assets. There is no evidence to indicate that the financial assets are impaired.

**Table 27.2 Ageing analysis of Financial Assets**

The following table discloses the ageing of financial assets past due:

Financial assets item	Overdue for < 30 days \$'000	Overdue for 30-60 days \$'000	Overdue for > 60 days \$'000	Total \$'000
<b>2014</b>				
Not impaired				
Receivables	99	21	364	484
<b>2013</b>				
Not impaired				
Receivables	16	2	66	84

**Table 27.3 Maturity analysis of financial assets and liabilities**

The following table discloses the maturity analysis of financial assets and financial liabilities.

	Contractual maturities			
	Carrying amount \$'000	< 1 year \$'000	1-5 years \$'000	> 5 years \$'000
<b>2014</b>				
<b>Financial assets</b>				
Cash	1,754	1,754	-	-
Receivables	1,015	1,015	-	-
Investments	947	-	-	947
<b>Total financial assets</b>	<b>3,716</b>	<b>2,769</b>	<b>-</b>	<b>947</b>
<b>Financial liabilities</b>				
Payables	387	387	-	-
<b>Total financial liabilities</b>	<b>387</b>	<b>387</b>	<b>-</b>	<b>-</b>
<b>2013</b>				
<b>Financial assets</b>				
Cash	2,744	2,744	-	-
Receivables	590	590	-	-
Investments	905	-	-	905
<b>Total financial assets</b>	<b>4,239</b>	<b>3,334</b>	<b>-</b>	<b>905</b>
<b>Financial liabilities</b>				
Payables	1,375	1,375	-	-
<b>Total financial liabilities</b>	<b>1,375</b>	<b>1,375</b>	<b>-</b>	<b>-</b>



## 28 Fair Value Measurement

The Board categorises non-financial assets measured at fair value into a hierarchy based on the level of inputs used in measurement.

Fair value measurements recognised in the Statement of Financial Position are categorised into the following levels as at 30 June 2014:

### Fair value measurements at 30 June 2014

	Level 2 \$'000	Level 3 \$'000	2014 \$'000
<b>Recurring fair value measurements</b>			
Land (note 16)	250	5,050	5,300
Buildings (note 16)	1,154	30,431	31,585
Plant & Equipment (note 16)	-	5,286	5,286
Computer equipment (note 16)	-	17	17
Heritage collections (note 18)	-	362,579	362,579
<b>Total recurring fair value measurements</b>	<b>1,404</b>	<b>403,363</b>	<b>404,767</b>

The Board had no valuations categorised into level 1.

There were no transfers of assets between level 1 and 2 fair value hierarchy levels in 2014. The Board's policy is to recognise transfers into and out of fair value hierarchy levels as at the end of the reporting period.

Comparative information for non-financial assets has not been provided as permitted by the transitional provisions of the new standard.

### Valuation techniques and inputs

Valuation techniques used to derive level 2 and 3 fair values are at notes 2, 16 and below. There were no changes in valuation techniques during 2014.

Land with restricted use is considered within Input Level 3

Buildings specialised are classified as Input Level 3

Heritage buildings - Market Buying Price has been estimated by the written-down Replacement Cost of a modern equivalent or reproduced comparable asset, not the replacement cost of an existing asset on a like with like materials basis.

Description	Fair value \$'000	Valuation Technique	Unobservable Inputs	Range
Land	5,050	Market approach	Adjustment to market price	73.2 - 76.4%
Buildings	30,431	Depreciated replacement cost	Useful life	40 - 100 years
Plant & equipment	5,286	Depreciated cost	At cost	NA
Computer equipment	17	Depreciated cost	At cost	NA
Heritage collections	24,740	Market approach	Adjustment to market price	(10.0 %) - 10.0%
	62,220	Market approach (average value)	Random sample adjusted market transactions	(20.0 %) - 20.0%
Natural history	275,619	Replacement cost	Re-Collection costs	(25.0 %) - 25.0%

### Significant Level 3 inputs utilised by the Board are derived and evaluated as follows:

#### Heritage Collections - Adjusted Market Transactions

Where the frequency of available market transactions has not permitted the use of observable inputs, the valuers have used significant professional judgement in determining the fair value measurements.

#### Heritage Collections - Random Sample/Average Value

Due to the size and nature of the heritage collection the Board separates the collection in to homogeneous groups that are subject to a random sampling methodology and extrapolation of average values across the relevant collections. All holdings were divided into homogenous groups according to category.

#### Natural History Collections - Re-Collection Cost

The majority of specimens held within the natural history collection are held for scientific research and preservation and not considered to have a readily identifiable market. These items have been valued based on their cost of recollection (replacement cost) and have been categorised as Level 3 as professional judgment has been utilised to determine their costs. Additionally, these costs (labour, materials, transport, accommodation) are extrapolated across very large populations that have been categorised at high levels (Local, Distant, International, Remote and Type Premium).

The following table is a reconciliation of fair value measurements using significant unobservable inputs (level 3)

### Reconciliation of fair value measurements – Level 3

	Land \$'000	Buildings \$'000	Plant & equipment \$'000	Computer equipment \$'000	Heritage Assets \$'000	Total \$'000
<b>Opening balance at 1 July 2013</b>	<b>4,600</b>	<b>30,621</b>	<b>4,432</b>	<b>31</b>	<b>361,127</b>	<b>400,811</b>
Acquisitions	-	-	93	-	27	120
Donated assets	-	-	-	-	1,434	1,434
Transfers between asset classes	-	743	1,387	-	-	2,130
Disposals	-	-	(5)	-	(9)	(14)
<b>Subtotal</b>	<b>4,600</b>	<b>31,364</b>	<b>5,907</b>	<b>31</b>	<b>362,579</b>	<b>404,481</b>
<b>Total gains/(losses) for the period recognised in net result</b>						
Depreciation	-	(1,346)	(621)	(14)	-	(1,981)
<b>Subtotal</b>	<b>-</b>	<b>(1,346)</b>	<b>(621)</b>	<b>(14)</b>	<b>-</b>	<b>(1,981)</b>
<b>Total gains/(losses) for the period recognised in other comprehensive income</b>						
Revaluation increment/(decrement)	450	413	-	-	-	863
<b>Subtotal</b>	<b>450</b>	<b>413</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>863</b>
<b>Closing balance at 30 June 2014</b>	<b>5,050</b>	<b>30,431</b>	<b>5,286</b>	<b>17</b>	<b>362,579</b>	<b>403,363</b>

Of these gains and losses, \$1.977 million is attributable to the change in unrealised gains or losses for assets held at the end of the reporting period. This is included in depreciation.

## 29 Transactions with SA Government

Note	SA Government		Non-SA Government		Total	
	2014 \$'000	2013 \$'000	2014 \$'000	2013 \$'000	2014 \$'000	2013 \$'000
<b>Expenses</b>						
3 Staff benefits expenses	314	304	6,991	6,612	7,305	6,916
5 Supplies and services						
Cost of goods sold	-	-	7	7	7	7
Insurance and risk management	386	400	-	1	386	401
Marketing	7	-	334	321	341	321
Administration	-	1	379	148	379	149
IT services and communications	83	80	234	196	317	276
Maintenance	6	3	149	86	155	89
Artlab conservation work	321	334	-	-	321	334
Business services charge	129	143	-	-	129	143
Collections	37	-	52	21	89	21
Exhibitions	7	6	197	247	204	253
Research	5	4	339	440	344	444
Travel and accommodation	-	-	104	155	104	155
Contractors	-	-	256	256	256	256
Motor vehicle expenses	12	19	41	38	53	57
Minor equipment	-	-	55	137	55	137
Fees	-	5	192	175	192	180
Consultants	-	-	92	87	92	87
Hire, rent and equipment	-	-	41	88	41	88
Audit Fees	36	34	1	-	37	34
Legal Fees	24	5	-	-	24	5
OHS&W	1	1	23	30	24	31
Other	8	47	234	229	242	276
6 Accommodation and facilities						
Accommodation	483	505	419	426	902	931
Facilities	634	682	390	392	1,024	1,074
Security	1	2	893	860	894	862
<b>Total Expenses</b>	<b>2,494</b>	<b>2,575</b>	<b>11,423</b>	<b>10,952</b>	<b>13,917</b>	<b>13,527</b>
<b>Income</b>						
10 Sponsorships						
Cash sponsorships	23	141	245	153	268	294
In-kind sponsorships	-	-	36	65	36	65
8 Grants						
State Government grants	337	-	-	-	337	-
General grants	83	232	330	567	413	799
Commonwealth grants	-	-	63	174	63	174
9 Revenues from fees and charges						
Admissions	2	5	397	286	399	291
Functions	9	48	76	40	85	88
Fees for service	25	14	262	185	287	199
Other	8	2	32	45	40	47
11 Interest and investment income						
Interest	45	70	29	16	74	86
Investments	-	-	61	94	61	94
13 Resources received free of charge						
Business services charge	129	143	-	-	129	143
Artlab conservation work	321	334	-	-	321	334
14 Other Income						
Lab Consumable Recharge	8	2	85	4	93	6
Commissions and Royalties	-	-	50	19	50	19
Competition Entry Fees	-	-	34	72	34	72
Exhibition hire	-	1	14	36	14	37
Rental income	-	-	230	-	230	-
Other	-	14	68	60	68	74
<b>Total Income</b>	<b>990</b>	<b>1,006</b>	<b>2,012</b>	<b>1,816</b>	<b>3,002</b>	<b>2,822</b>
<b>Financial Assets</b>						
15 Receivables						
Receivables	264	41	751	402	1,015	443
Prepayments	-	-	38	49	38	49
Accrued Income	4	615	15	199	19	814
<b>Total Financial Assets</b>	<b>268</b>	<b>656</b>	<b>804</b>	<b>650</b>	<b>1,072</b>	<b>1,306</b>
<b>Financial Liabilities</b>						
20 Payables						
Creditors and accruals	80	634	342	644	422	1,278
Staff on-costs	120	117	135	130	255	247
<b>Total Financial Liabilities</b>	<b>200</b>	<b>751</b>	<b>477</b>	<b>774</b>	<b>677</b>	<b>1,525</b>