

SEGments



Journal of the Scientific Expedition Group
Volume 25 Number 2



SEGments



Scientific Expedition Group

Volume 25 Number 2, September 2009.

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Editorial

As the Scientific Expedition Group (SEG) approaches its 25th year it is important to reflect on the type of work that SEG does. Biological surveys of remote areas of South Australia have been the main work which helps to establish the biodiversity of a variety of ecosystems.

So why is biodiversity important to South Australia in particular?

The Commonwealth and all state and territory governments had asked the public to comment on the draft of *Australia's Biodiversity Conservation Strategy 2010-2020* which have now closed. These submissions are listed on the Dept. of the Environment, Water, Heritage and the Arts website. I was particularly interested in the South Australian government submission as all work done by SEG is in SA. Two of the SA's goals in this submission are applicable to SEG's future.

- Lose no known native species as a result of human impacts.
- By 2010 have five well-established biodiversity corridors aimed at maximising ecological outcomes in the face of climate change.

So how can SEG continue to be helpful in the overall priorities of the SA government?

The Scientific Expedition Group can continue to do the following for SA:

- to contribute biological knowledge to the terrestrial dataset to develop indicators for SA priorities for sustainability policy.
- to work with the community and schools to increase the awareness of habitat monitoring and evaluation activities.

- to identify and build programs that establish biodiversity corridors in their local area by planting vegetation that restores habitat.
- to help to eradicate invasive feral species.

Following on the last edition of SEGments which was mainly on the issue of water in SA, the lead article by Christopher Steele, "*The Reconnaissance: Source of the River Murray*" is reprinted from GEO news as our first collaboration with another like minded group.

The second article by David West is from the first edition of SEGments, Vol 1 #1, Nov. 1985 as SEG is approaching a 25 year anniversary. We plan to reprint more articles from the archive in the future. The third article is an extract from the *DEH Mallee Fowl Monitoring report 2008/2009* which outlines SEG as one of the major contributors to the success of this program. The SEG 2009 Mallee fowl survey is being organised by Bruce Gotch (see page 10). The interactive SEG display at Science week at the Museum this year was organised by John Love and was well attended by many families. The public seemed very interested and praised the biological survey work that was undertaken by SEG. Finally, two topical book reviews and a Quiz page have been added to this edition. This year's SEG expedition is to Arkaroola which will be reported extensively in the next edition of SEGments.

Andrew Barr

SEE: <http://www.environment.gov.au/biodiversity/>

You can email information, comments and articles to the

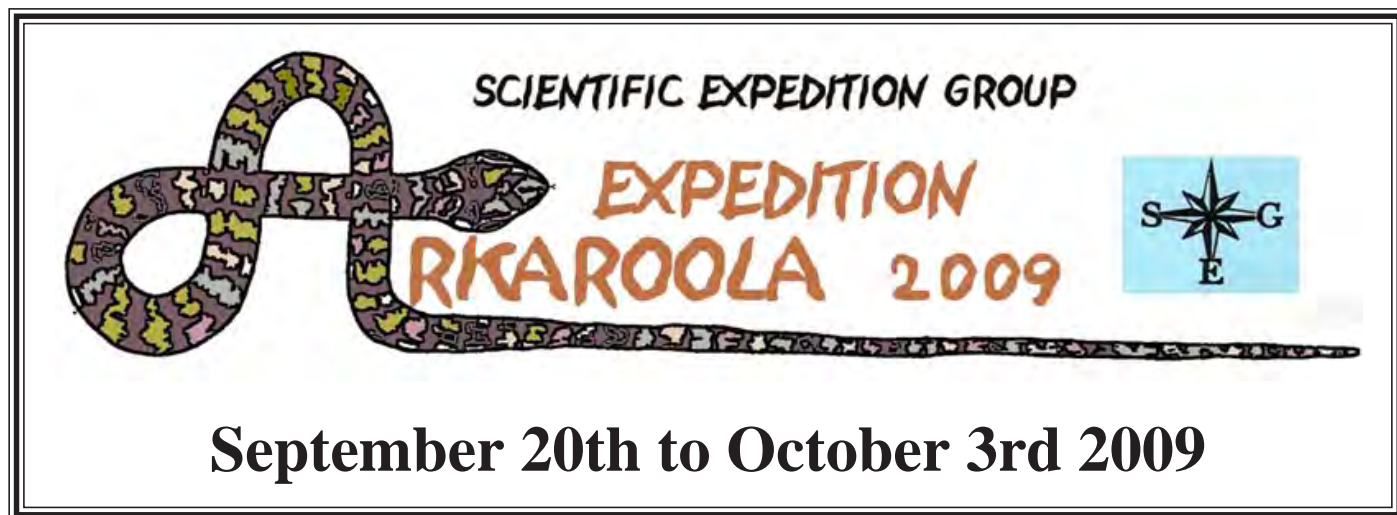
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Scientific Expedition Group Annual General Meeting

October 23rd at 7:00 pm

Speakers

Chris Wright & Paul Harvey

Co-founders of the
Vulkathunha-Gammon Ranges Scientific Project

“The Gammon Ranges Project – 21 years old and still going strong.”

AT

Unley Civic Centre,
Oxford Terrace, behind the town
Hall at 181 Unley Rd.

Vulkathunha- Gammon Ranges Scientific Project Expedition

The Spring Trip for 2009 will be on Friday 2nd October to Tuesday 6th October 2009

The agenda is for great Photography, observing Yellow Footed Rock Wallabies and
hiking for the Data logger exchange and pluviometer calibration.

If you would like to join this trip?

Please visit the
SEG website <http://www.communitywebs.org/ScientificExpeditionGroup/pages/Grasp.htm>
for general information or contact Michelle Trethewey (h) 8390 3011
Email: mtrethewey@campbelltown.sa.gov.au

The Reconnaissance: source of the River Murray

Christopher Steele

Many years ago on one of my numerous seasonal visits to Canberra where my sister Jane lives together with her family, Sarah and Davis, I was taken on a summer camping trip to the winter ski-ing resort of Thredbo located in a valley of the Great Dividing Range of southern New South Wales.

One day we went past a rustic viewing platform, from times past, set beside the highway leading onwards to Victoria. Immediately my eye was captured by the pointed hill far off to the south-east looming slightly higher than the endless blue-green, misty expanse of trees which is the principal feature of the topography hereabouts. Jane told me this peak was The Pilot, and moreover nearby, was the source of the River Murray at a particular spring. I thought, one of these days I want to go there and see the exact spot - that spring - where the straight line section of the New South Wales/Victoria border also commenced, but in this case the direction being towards Cape Howe on the coast of the Tasman Sea.

As a one-time construction surveyor interested in the history of the profession I already knew that the origins, terminations and junctions of Australia's state borders were almost entirely located at inaccessible parts of the continent. Jane, now a virtual native of the Australian Capital Territory, assured me The Pilot was no exception. While the Australian Alps Walking Track passes only a kilometre away from the goal as it wends its way from Dead House Pass near Thredbo to the Limestone Black Mountain Track in Victoria, doubling up as a forest fire track in both states, the New South Wales government had not long before hand barred access to it for all civilian vehicles. So, this would mean a long hike into the two features I wanted to see. Thus my quest, late in 2004, to plan seriously for the challenge. Jane had just sent me a tantalising article of *'The Canberra Times'* revealing the fact that only a few months previously surveyors known to the Royal Melbourne Institute of Technology (R.M.I.T university) under the guidance of Dr. Ron Grenfell from the School of Mathematical & Geospatial Sciences, had returned from an expedition of accurately determining with new survey instruments the position of the initial cairn which indicated the alignment of the New South Wales/Victoria border. This newspaper article was valuable for all the information it contained previously unknown



Figure 1: The replacement cairn and author on the summit of Forest Hill situated on the straight line portion of the New South Wales/Victoria border. Photo courtesy of David Kedge.

to me. For instance The Pilot was just that, it was only the most predominant feature of the locality. A much less impressive one about five kilometres away, Forest Hill, was the real scene of my interests.

On its western approach from the Australian Alps Walking Track at Cowombat Flat - a large, clear expanse of bog's and tufted grass - a bush clad valley of swampy vegetation leads to the so called No. 1 spring as the source of the River Murray about 3.5 kilometres to the east. As this title implies, there are several springs. However, this one is the most significant having been officially selected in the 19th century as the closest to the Tasman Sea at Cape Howe. The crest of Forest Hill 452 metres further east at an altitude of 1524 metres was to be the site of the No. 1 or initial cairn.

It was so placed to enable the early surveyors to carry out their instrument sightings with theodolites forward to the next ridgeline up to a kilometre away. The alignment of the survey needed to be cleared of trees and bushes by the labourers in the parties to allow for visual observation, and distance chaining (miles chains and links).

My nephew David Kedge, as an electronic engineer, and an enthusiast, 'after-hours' of the continent's south east 'high country' soon caught the bug I had of wanting to travel into and explore this obscure locality with its man-made objects. I had 'the story', the maps and the

co-ordinates of the foregoing, while David had more local knowledge and the expertise of operating the global positioning system (G.P.S.) instrument, as well as a magnetic compass. The one representing 'state of the art' modernity, the other, 'ancient and honourable.'

The two, to my mind, go literally 'hand in hand'. I'm reliably informed that hiking with just G.P.S. can be tedious as it only reveals a digital display to the operator who constantly has to extrapolate from figures, bearing and direction. By contrast the compass is more easily decipherable for instant directional navigation. David obviously enjoyed the opportunity of interpreting this duopoly for our onward progress through terrain without any recognisable geographical landmarks.



Figure 2: Looking north-west downstream of the miniscule River Murray 4 kilometres from its source. To the left is Victoria, to the right New South Wales. Photo courtesy of David Kedge.

In the planning stages of our three day sortie it was David's idea to make a two night stand, tenting on a suitable, open, expansive piece of ground known to him as MacFarlane's Flat, beside a rough track of the same name leading north-west out of Suggar Buggar.

This was December 2006, and summertime, but we needed to find a bank of gnarled trees to shield our camp from the cold winds which blew-up after dark. Ironically at the same time in north-eastern Victoria, bushfires were burning out of control merely a 100 kilometres distant and occasionally we got a whiff of the smoke!

The MacFarlane Flat Track provided us with several more kilometres of vehicular travel on the 'big day' from the camp. As in New South Wales we eventually came to a barred gate installed by the Victorian Alpine National Park authorities, but at least from the car park

here we only had a 22 kilometre return hike! None the less at least half of that foot-slogging would be through thick scrub, up-hill and down dale.

It has to be said that all the planing and subsequent action functioned like clockwork. The G.P.S instrument and compass brought us almost within a 100 metres of our first objective, the impressive re-constructed initial cairn on the New South Wales/Victoria border, also known as the '**Black/Allan Line**' (see Footnote# 1) after the surveyors responsible for the work undertaken in 1870-72. We spent half an hour here soaking up the symbolism of this lonely yet important place and taking pictures to show, amongst other things, that we did actually get there.

Equally well from the perspective of the Royal Geographical Society of South Australia/University of the Third Age now proposed May 2007 safari coach tour, titled 'Source of the Murray River', was the second objective to be reached down the slope of Forest Hill to the dale on a bearing of 283 magnetic to where the No. 1 spring was situated. Needless to say that didn't take much effort to find, and around mid-day we celebrated 'mission accomplished' by having our cut lunches around the capped galvanised iron pipe pushed into the soggy ground by Dr. Grenfell during an earlier visit here in the mid 1980's. A tiny watertight capsule there on records the notes of the few visitors who have made the pilgrimage here. We added our own.

The 'Canberra party' also consisted of David's and Sarah's friends, creating seven people in all, inclusive of me. As much for curiosity and companionship these 'extras' with their own vehicle assured us of a degree of security should anything go seriously wrong.

For the 'exit strategy' we had the choice of following the course of the embryonic River Murray in its swampy valley by means of a reasonable foot pad to Cowombat Flat, or alternatively 'scrub bash' a much shorter route along the prolongation of the bearing we already knew, on only one kilometre to join the more 'civilised' Australian Alps Walking Track. We chose the second option to save time because mid-afternoon was quickly catching up on us, and our feet were getting rather sore and less responsive! It was at Cowombat Flat that we rejoined the MacFarlane Flat Track for the long walk back to the 'car park'.

As the participants of the coach tour will recall,

Cowombat Flat was where we had lunch, and the opportunity to straddle the metre-wide River Murray at this point with one foot in New South Wales and the other in Victoria; for the river is the states border hereon.

Mr. David Foster, our accompanying ranger from the Victoria Alpine National Park office in Omeo on the R.G.S./U.3.A coach tour ruled against attempting any further approach to the source of the river. It was only three weeks to the shortest day of the year, and a snow fall was threatening. Both I, and I'm sure my fellow adventurers on the coach were satisfied with what they came to see at Cowombat Flat.

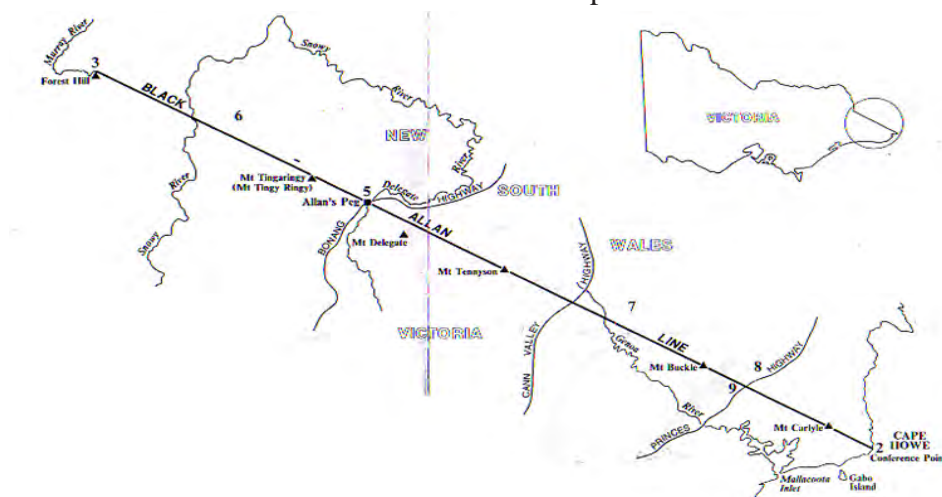


Figure 3: The replacement cairn on the summit of Forest Hill situated on the straight line portion of the New South Wales/Victoria border [452 metres from the source or start of the Murray River (Spring No.1 5926793.70 northing; 0606653.90 easting)] erected by Dr. Ron Grenfell in November 2004 to mark the original cairn by surveyors Alexander & Black in 1870. Featured (l to r) Sarah Kedge, Ian Sinclair, Jane Kedge, Christopher Steele, David Coleman & Elizabeth Coleman. Photo courtesy of David Kedge.

Footnotes: The Black-Allan Line is a straight line from Cape Howe to the nearest source of the River Murray. It was marked in 1870-72 by Surveyors Alexander Black and Alexander C. Allan.

1. SEPARATION (1850): The Colony of Victoria was separated from New South Wales “by a straight line from Cape Howe to the nearest source of the River Murray.

2. DEFINITION OF EASTERN END (1868): As the coast was indefinite in the vicinity of Cape Howe, P. F. Adams (Surveyor General of New South Wales) and R. J. L. Ellery (Superintendent of Geodetic Survey of Victoria) surveyed the coast line. They selected a pile of rocks, which they named Conference Point, as the point through which the border was to pass – within an acceptable error.



3. DEFINITION OF WESTERN END (1870): Surveyor Alexander Black surveyed the headwaters of the River Murray to locate the source of the Murray nearest to Cape Howe.

4. DETERMINATION OF ASIMUTH (1870): The geodetic survey of Victoria was extended to Conference Point and the azimuth (i.e. direction) of the border line computed.

5. PLACEMENT OF ALLAN'S PEG (1870): The border survey was broken into two by placement of a peg on the border west of the Delegate River. Its position was computed and it was placed using the geodetic survey.

6. DEFINITION OF WESTERN END (1870): Surveyor Alexander Black marked the border from the

source of the River Murray to Allan's Peg. The 61.5km survey took 11 months, traversed extremely difficult terrain that included the Snowy River and Mount Tingy Ringy and finished at Allan's Peg.

7. DEFINITION OF EASTERN END (1870-72): Surveyor Alexander C. Allan proceeded from Allan's Peg to Conference Point. His survey of 114km took 18 months and passed within a chain of Conference Point. Map & information courtesy of The Institution of Surveyors, Victoria.

Editor's Note: Reprinted from the GEO news vol. 16, #1, February/March 2009, pp.17-21. with premission of Author and Editor



The screenshot shows the website of the Royal Geographical Society of South Australia. The header includes the society's crest and the text "Royal Geographical Society of South Australia" with the tagline "Exploration...Environment...Population...GIS...History DISCOVER GEOGRAPHY...". A navigation menu at the top right lists "HOME", "SOCIETY", "LIBRARY", "EVENTS", "DISCOVERY", "PUBLICATIONS", and "MEMBERSHIP". The main content area is divided into a left sidebar with links like "Location and Hours", "Contact", "Search our Databases", "Links", "Recognising Achievement", "Research Grants", and "FAQ". The main body contains a "Welcome" message, a "Members Questionnaire" link, and a "National Geography Curriculum" section with text about the consultation to have Geography added to the National Curriculum of Australia.

View the web site of the Royal Geographical Society of South Australia

[Http://www.rgssa.org.au](http://www.rgssa.org.au)

SEGment 25th Anniversary

SEG is 25 years old this year and the editors of SEGments have decided to peer back into the archives and revisit some of the interesting stories from the early days of SEG. The original aims of SEG, as spelt out in the first edition of the SEG journal were;

- To promote and run expeditions of a scientific, cultural and adventurous nature.
- To further the knowledge, understanding and appreciation of the natural environment.
- To enable people to learn the skills required for planning and running expeditions, and to develop sound field techniques.

The first edition of SEGments (Then called the Journal of the Scientific Expedition Group) was published in November 1985. The following article comes from the journal, Vol.1 No.1 and was written by David West. The article is reproduced verbatim and the pictures have been added for illustrative purposes.

IN SEARCH OF THE THYLACINE!



Thylacine in Hobart Zoo (1936)

South Australia and Adelaide University in particular, are often linked to scientific expeditioning through one name, that of Sir Douglas Mawson. Possibly the ideal scientific expeditioner, Mawson braved incredible risks to gain scientific knowledge.

Nearly seventy-five years on from his historic 1911-12 Antarctic expedition, we have formed a group concerned with the things Mawson was concerned with

– the quest for scientific knowledge in the field, via expeditions of an adventurous nature.



Sir Douglas Mawson

Many members of our group are young people, presently or just recently finished studying, some of us at Adelaide University. It is with us then, that the future of the group, and possibly scientific expeditioning, at least in South Australia, lies.

The group's aims are by now hopefully known (if not, they can be found elsewhere in this issue). A group of young expeditioners have had some thoughts on these aims, and some of their hopes and ideas are summarised here.

It was suggested that eventually the group should be aiming at two types of expeditions. The first type would be aimed at younger, or less experienced people, and would involve mainly training in field techniques, observation and expeditioning skills, as well as adventure skills. These would all be put to use during the expedition. That is, the expedition would have a broadly based low-level scientific observational format, but of an adventurous nature possibly along the lines of "Expedition Investigator".

The second would probably be of longer duration, with more scientific research aims, and having the adventure component inherent in the expedition. This would ideally involve scientific researchers and people experienced in expeditioning and field research. An

example could possibly be a survey of Lake Eyre in flood, or on a larger scale, an expedition to Heard Island to examine the changes since the ANARE station was removed.



Lake Eyre in flood



British expedition to Heard Island (1927)

It is certainly felt that there should be a large degree of training involved in our expedition, from lower levels of expedition and bush skills and field observation, to the logistics of planning and running a large expedition, to eventually leading such an expedition.

It is hoped that there should be an increasing involvement from scientific, academic and government areas, with eventually a register of possible research projects being developed. In addition, some attempts to liaise with other organisations with similar ideals, for example Earthwatch, and local amateur scientific groups.

Finally, the ultimate dream would be that members of the group, whilst on an expedition, could make a major discovery of some form. Who knows – maybe we could capture a live Thylacine!

Authors comments:

Original article by David West (1985).

Well how have we gone?

The original ambitions of SEG were pretty clear. Most of the thoughts and ambitions from this article have become a formal part of what SEG has achieved in the last quarter century. A strong commitment to furthering scientific knowledge through expeditions remains central to the objectives of SEG in 2009.

But no Thylacine – yet.

Other articles covered in the first journal included “*Reflections in a Billy-Can*” by Warren Bonython

“*Chris Bonington in Australia*” an interview

We’re Away (Expedition Chowilla) by David Heinjus
An introduction to the SEG committee and The “*Falie*” and the “*One and All*” restoration projects

Conrad Denyer

University of South Australia

DEH Mallee fowl program

Since 2004 the Department of Environment and Heritage (DEH) has been working towards standardizing the monitoring of existing malleefowl grid areas in the South Australian Murray Darling Basin (SAMDB) using a system developed in Victoria. The Victorian Malleefowl Recovery Group (VMRG) monitoring system is considered a benchmark for best practice for this type of monitoring and has been recognized as the national standard.



Malleefowl on mound

This report focuses on the work done over the last 5 years to implement this new standardized monitoring system. As well it focuses on collection of related environmental data such as rainfall and the continuing advancement and training of volunteer networks to collect data on malleefowl in existing grids across the basin.

SEG has been identified as an important contributor in the goal of the project to train and use volunteer groups in this important work. SEG was specifically involved in data collection and monitoring at Bakara Conservation Park (Nov 2008) and Short's Heritage Agreement Grid (Nov 2008). SEG members contributed some 168 hours as volunteers in the monitoring process.

Bakara Conservation Park is approximately 30 kms east of Swan Reach on the road to Loxton. It was set up to conserve the Malleefowl habitat. It is a gently undulating calcrete plain with low easterly trending sand dunes and shallow depressions in the east

dominated by Mallee vegetation. An unusual feature of this park is that the park is on the boundary between two types of dunes and this contributes to the high diversity in the numbers of plants growing here. 56 mounds were inspected by SEG volunteers and none were found to be active.

Short's Heritage Agreement Grid is approximately 18 kms south-east of the Bakara Conservation Park on the road to Mindarie. 41 malleefowl mounds were inspected and one was active

The report states:

"This year we were able to involve SEG in monitoring for the first time. The level of involvement & enthusiasm already shown by this group has vindicated our focus on recruiting Adelaide based volunteers & more specifically, organized volunteer groups".

What a great endorsement of the value of the monitoring work done by SEG member volunteers. In concluding the report makes 8 recommendations regarding the continuation of the project.

They were:

- 1. Modify draft VMRG landowner/land manager surveys for collecting environmental data for monitoring grids for use in the SAMDB.*
- 2. Consider implementation of a simple uniform system for collecting fox baiting data across the SAMDB for all groups conducting fox baiting for malleefowl conservation eg. GPS & Palm systems.*
- 3. Continue contacting established Adelaide based volunteer groups to recruit volunteers for monitoring in the SAMDB.*
- 4. Continue liaison with the DOD to try & involve their malleefowl monitoring and fox baiting programs in this project on an annual and ongoing basis.*
- 5. Continue to identify a network of rain gauges in the project area which can supply accurate figures for all existing grids. Rainfall figures should indicate monthly totals as a minimum level of detail.*
- 6. Continue efforts to collect & collate historical rainfall figures.*
- 7. Purchase handheld UHF radios for the Murraylands monitoring kits.*
- 8. DEH should actively pursue potential adaptive*

management opportunities to progress the National Recovery Plan at a regional level. This would be a natural progression from the work done to date, which is mainly focused on monitoring.

Clearly SEG volunteers have a role in the future of the ~~monitoring work across the SAMDB.~~

Editor's note:

Summarised from the Final report, "*Coordinating the DEH Malleefowl Monitoring Program in the South Australian Murray Darling Basin 2008/2009*" prepared by the Mallee Eco Services,
Email: mallee.eco.services@bigpond.com



PHOTOS & REFERENCES

www.environment.sa.gov.au

www.malleefowlwatch.org.au

www.malleefowl.com.au

Malleefowl chick

Conrad Denyer

University of South Australia

SEG Annual Malleefowl Survey 2009



SEG has adopted the malleefowl grid within the Bakara CP (east of Swan Reach) and also the grid on an adjacent property owned by SEG member Henry Short. This year's malleefowl survey will take place on Saturday 31st October to Sunday 1st November. Bakara grid area covers 420 ha. - Number of mounds visited in 2008 was 56 Henry's grid area covers 250 ha. - Number of mounds visited in 2008 was 41



Henry has kindly offered to allow us to camp Friday night and Saturday night on his property. You will need to bring normal camping equipment and food for the overnight stays. A small fire may be possible if the weather is OK but plan to cook on your own gas or fuel stove. If possible please bring a handheld UHF radio. Monitoring refresher training will take on the Saturday morning at Henry's place and will be presented by Dave Setchell of Mallee Eco Services. Please indicate:

1. Whether you will be attending one or both days
2. Your intention (or otherwise) to camp over.

**Interested SEG members are invited to contact
Bruce Gotch at bgotch@picknowl.com.au**

Science Week at the Museum



The 2009 Science Week at the Museum was held from August 15th to 23 with many families in attendance. The two week Museum program had free family events that informed the public about it's activities by displaying live animals, touch tables, workshops and meet the scientist exhibits.



Figure1: Museum Staff member explains the characteristics of a walrus skull to the interested audience

There were also “behind the scenes” tours of the Bolivar and Netley warehouses. Talks by scientists and displays featuring cloud chambers and the Ancient skies. Many people also attended the Waterhouse Natural History painting Exhibition.



Figure 2 : Interactive pit trap line model

SEG had a very good interactive display that appealed to the many young families that came to the museum on the science week-ends.

The pit trap model of the display was designed and built by Alun Thomas that showed in graphic detail the operation a pit trapline. This interactive model allowed the children to remove small plastic “critters” from the pit trap to see if they could indentify them. John Love organised the exhibition with many SEG members volunterring to taking part and talk to the public about the biology survey work of SEG.



Figure 3: *Oh my God, is that real ?*



Figure 4 : Spinifex Hopping mouse

The live animal display of Spinifex Hopping mice generated the biggest reaction from young and old and they asked many questions about these entertaining animals.

The video slide display that featured photographs of many recent expeditions caused many people to ask questions about SEG.



Figure 5: John Love explains SEG's role to an interested member of the public

Many members of the public seemed very interested in the work that SEG has undertaken in the past and would like to become involved in the future.

Andrew Barr
University of South Australia

Minnawarra Biodiversity Survey

Our Spring survey is coming up!

It will be on the **7th to 11th of October**, which is the last few days of the school holidays. It is at Minnawarra, near Myponga. We will be looking at the usual mammals, reptiles and other animals over the five days. There will also be bird surveys, but they may be at a different time. Any and all interested people, from 8 to 80 years, are welcome to come and visit for one day, or the whole time.

Details are available from
Richard Willing 0408 807 517 or

Janet Furler 0419 842 667
Email: furlers@optusnet.com.au





SEGments



Trivia Quiz

1. Who was the first Surveyor-General of SA?
2. Which is larger in land area SA or Texas?
3. What is the floral emblem of Queensland?
4. What is the highest mountain in SA?
5. When driving which is closer to Adelaide, Ceduna or Melbourne?
6. How did the SA explorer John Ainsworth Horrocks die?
 - (a) Poisoned by his second in command
 - (b) Speared by angry Aboriginies
 - (c) Shot by his own camel
 - (d) Beaten to death by his wife for being away so long
7. What month contains vernal equinox in the Southern Hemisphere?
8. The acronym for a Bachelor of Science is?
 - (a) BSe
 - (b) BSc
 - (c) BSce
 - (d) BSi
9. The Commonwealth Minister for the Environment was previously in which rock band?
 - (a) Mental as Anything
 - (b) Cold Chisel
 - (c) The Scientists
 - (d) Midnight Oil
10. What does acronym CSIRO stand for?
11. When using the imperial measurement system – how many links in a chain?
12. What is the animal on the front cover of this edition?



13. Can you use Google to find out what animal this is?



All answers on the inside back cover

Book Review

THE LINK: Uncovering our earliest ancestor

Colin Tudge with Josh Young. 2009. Little, Brown: Great Britain. 262 pages. ISBN 978-1-4087-0221-5

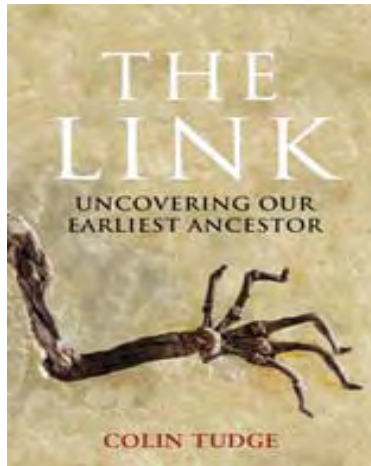
Missing links have always been popular in fiction and scientific nonfiction. When Darwin first proposed the Theory of Evolution in 1859, the fossil evidence was sketchy and incomplete. The Theory critics of the times could or would not believe transitional types of creatures existed. *Archaeopteryx* the half-reptile and half-bird was discovered a few years later and help silence some of the critics. Scientists have been discovering many missing links since that time.

Sir David Attenborough recently remarked when he saw the fossil ; “*The link they would have said until now is missing... it is no longer missing*”

This book documents the discovery and scientific study of a very significant primate “missing link” from the Eocene period, nicknamed “Ida”. The recounting of the lineage of the fossil and the modern forensic techniques used to reconstruct what this animal looks like using 3D computer modelling is fascinating.

The first three chapters on the book deals with the team of international scientists led by Dr Jorn Hurum; the intrigue of acquiring and authenticating the fossil, their secret forensic challenges, and publication of results. The parallels between the Eocene period (47 million years ago) and the global warming predictions are discussed with vivid details and warnings for our future.

The description of this fossil revolutionises our understanding of primate to human evolution. It is a transitional species on the primate/adapoids line. The following characteristics confirm that it is a primate; five fingers on each hand with opposable thumb, nails rather than claws, the talus foot bone, teeth similar to monkeys and forward facing eyes for 3D vision.



The last half of the book describes Ida in more detail and discusses the significance of the Messel pit where she was found and her diet as her soft tissues were very well preserved due to the very unique circumstances of her fossilization. The fossilised contents of the digestive tract provides a greater understanding of the paleobotany of the Eocene period.

When the fossil primate was revealed to the world it was the 150th anniversary of *On the Origin of Species*, so it seems that the scientific name is appropriate, *Darwinus masillae*. The scientific paper was been written that would be heavily scrutinized but the hope for the team of scientists was that Ida would be studied by school students and lay people. After much secrecy, a TV documentary was deemed to be a good way to reveal this important discovery to the world.



Darwinus masillae

So on May 26th 2009, Ida was presented to the world on a BBC documentary and now the secret is out!

Andrew Barr

University of South Australia

Further study and sources:

Author, Colin Tudge at www.colintudge.com

Video presentations, www.revealingthelink.com

Documentary, *Uncovering Our earliest ancestor: THE LINK* screened on BBC 1: 26th May, 2009

THE LAST EXPLORER: Hubert Wilkins Australia's Unknown Hero

Nasht, Simon 2005,
Hodder, Sydney.
346 pages. ISBN-10 0
7336 2077 9 (pbk).

Many Australian explorers are well known; Cook, Tasman, Flinders, Sturt, Stuart, Eyre, Burke and Wills and Mawson come to mind. Children across Australia learn about the incredible expeditions and discoveries of these explorers while studying at school. But who has heard of Sir George Hubert Wilkins?

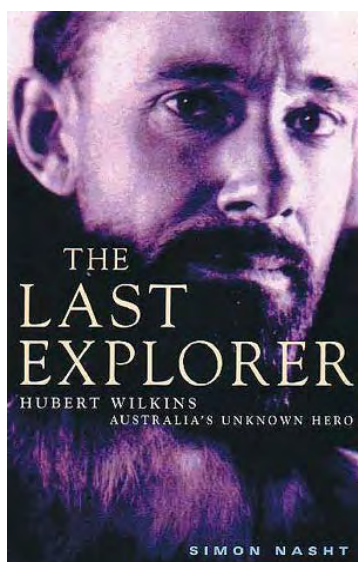
Hubert Wilkins has a plaque on the North Terrace trail along with some of South Australia's most famous people but Simon Nasht's book correctly identifies him as "Australia's Unknown Hero".

Born here in South Australia and world famous for his exploits during World War I and the 1920s and 1930s he is not a name that comes up in many lists of Australian explorers and heroes. Nasht has written a biography which attempts to change that understanding and illuminate this fascinating character from the latter stages of the age of exploration.

At different times Wilkins was a photographer, soldier, pilot, polar explorer, aerial cinematographer, meteorologist, ornithologist, reporter, writer, spy, submariner and gifted orator. He was knighted by King George V in 1928 for his services to science and the military. Nasht claims that "Wilkins was humbled by the honour to the point of embarrassment."



Dogs pull plane in Arctic



Wilkin's family home, Mt Bryan East, near Hallett, South Australia.

Some have criticised Wilkins because he lived out of Australia for large parts of his life, was self taught and worked for the US spy services but Nasht identifies Wilkins as a personality of exceptional strength, incredible intelligence and superior daring.

Nasht identifies some of Wilkins most important exploits. These included flying around the world in a Zeppelin, flying over both of the polar regions, travelling by submarine under the Arctic and pioneering filming of the First World War.

Since the publication of this facinating book Sir Hubert Wilkins is less likely to be "Australia's Unknown Hero"

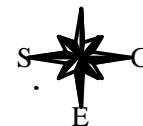


Kingsford Smith and Hubert Wilkins in front of the "Southern Cross".

Conrad Denyer
University of South Australia



SEGments



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- * The furthering of knowledge, understanding and appreciation of the natural environment.
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Segments Trivia Quiz Answers

- | | |
|---|--|
| 1. Colonel Light | 7. September (21 st or 22 nd) |
| 2. SA = 983,482 km ² v Texas = 696,241 km ² | 8. BSc |
| 3. Cooktown Orchid | 9. (d) |
| 4. Mt Woodroffe 1,435 m | 10. Commonwealth Scientific and Industrial Research Organisation |
| 5. Ceduna = 800km v Melbourne = 740km | 11. 100 |
| 6. (c) | 12. Marbled gecko |
| | 13. Bosavi woolly rat |

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[http://www.communitywebs.org/
ScientificExpeditionGroup/default.htm](http://www.communitywebs.org/ScientificExpeditionGroup/default.htm)



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