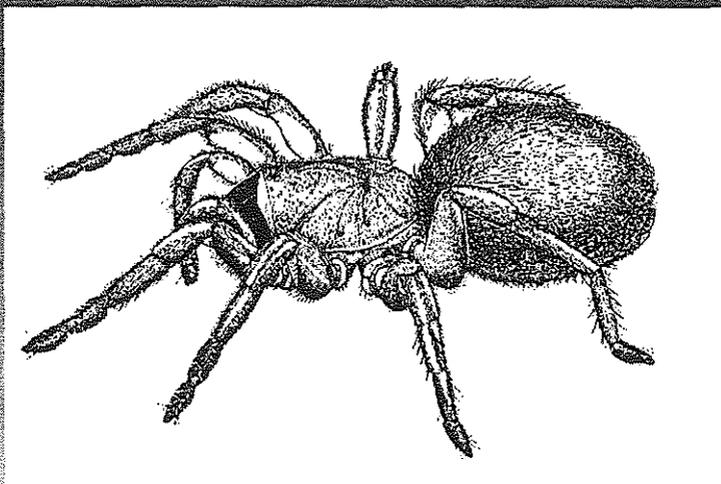


**AUSTRALASIAN
ARACHNOLOGY**



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THE AUSTRALASIAN ARACHNOLOGICAL SOCIETY

We aim to promote interest in the ecology, behaviour and taxonomy of arachnids of the Australasian region.

MEMBERSHIP

Membership is open to amateurs, students and professionals, and is managed by our Administrator :

Richard J. Faulder
Agricultural Institute
Yanco, New South Wales 2703. Australia.

or email : faulder@agric.nsw.gov.au

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The Status box on the envelope indicates the last issue which you have paid for.

Previous issues of the newsletter are available at \$1 per issue.

ARTICLES

The newsletter can only thrive with your contributions ! We encourage articles on a range of topics including current research activities, student projects, upcoming events or notable behavioural observations.

Please send articles to the editor as :

i) email attachments, in text, or preferably MS Word, format to :

tracey.churchill@terc.csiro.au

ii) typed or legibly written articles on one side of A4 paper. or on disk (which will be returned only upon request), to :

Dr Tracey Churchill
CSIRO Wildlife & Ecology
PMB 44 Winnellie N.T. 0822.
Australia.

LIBRARY

The AAS has a large number of reference books, scientific journals and scientific papers available for loan or as photocopies, for those members who do not have access to a scientific library. Professional members are encouraged to send in their arachnological reprints. Contact our librarian :

Jean-Claude Herremans
P.O. Box 291
Manly, New South Wales 2095. Australia.

or email : jcl@eagles.bbs.net.au

EDITORIAL



With the new millenium approaching we are gearing up up for all sorts of changes. And a change of editor was obviously on Mark Harvey's mind at the last international meeting ! It was in retrospect a clever ploy to exploit the dominant aura of arachnophilia and to challenge me directly with wistful eyes !! Mark has managed the newsletter since 1990 whilst juggling an ever growing number of work responsibilities and family additions (two wonderful daughters !). On behalf of us all I'd like to thank Mark for his great efforts in producing issues 37-54. Our loss will merely be our gain though, as Mark can now re-direct the extra time to producing even more high quality taxonomic revisions !

Both Mark Harvey and Robert Raven have been busy increasing our Australasian profile on the international arachnological scene. Mark was significantly involved in drafting a new constitution for our international society whilst Robert was elected the new president - congratulations Rob ! Among Rob's new responsibilities is the promotion of the revamped society which is now called the I.A.S. : International Arachnological Society instead of C.I.D.A. : Centre International de Documentation Arachnologique.

Back on the home front, the scene is also changing. We currently have 112 members and there is an increasing number of post-graduate students taking up exciting opportunities to study arachnids. I've included a new post-

graduate section in the newsletter to accommodate project outlines and completed abstracts from recent theses !! With more "hubs of activity" I look forward to regular contributions from nominated representatives (offers now open !) to develop a bigger and better arachnological web !!

..... Tracey

MEMBERSHIP
CHANGES

New Members

We welcome two new members :

Kelli-Jo Lamb

WMC Olympic Dam
PO Box 150
Roxby Downs SA 5725

fax (08) 86710506
email: lambke@wmc.com.au

Helen Smith

P.O. Box A2114
Sydney South
N.S.W. 1235

Change of email address

David Hirst
South Australian Museum
dbhirst@senet.com.au

BOOK REVIEW



'The Australian Water Mites: A Guide to Families and Genera.'

by Mark S. Harvey.

CSIRO Publishing, Collingwood, Victoria.
150 pp. \$120.00.

Reviewer: Dr Heather C. Proctor
Australian School of Environmental
Studies, Griffith University,
Nathan, Qld 4111, Australia

Water mites (Hydracarina) are to the rest of the Acari as butterflies are to the rest of the insects; flashy, beautiful, and the object of passion to collectors. Because of their bright colours and relatively large size (for mites), hydracarines are among the best known groups of mites in the world. However, unlike in the United Kingdom, Sweden, Germany, the U.S. and Canada, there has been no comprehensive guide to the identification of genera of water mites in Australia. David Cook's *Water Mites from Australia* (1986) contains descriptions of an impressive number of species but doesn't provide a key to families or genera. As well, it is out of date with regard to the current diversity of these mites in Australia. The person who can take most responsibility for increasing the known number of Australian taxa is Mark Harvey, who has described more than 40 species and 9 genera over the past decade. In this elegant black volume, Harvey provides illustrated keys to all of Australia's 22 families and 89 genera of water mites.

The Australian Water Mites is the fourth in a series of monographs on invertebrate taxonomy published by the CSIRO. If anyone might hold doubts about the taxonomic importance of water mites, these should be dispelled by this book's introduction. Harvey reveals that with their current richness of 413 named species, Australian water mites approach the diversity of this continent's Trichoptera, or caddis-flies (489 species) and aquatic beetles (approximately 500 species), and easily outnumber the Plecoptera, or stoneflies (179 species) and Ephemeroptera, or mayflies (81 species).

Harvey then describes how to collect and prepare water mites for easy identification. In the subsequent section, Harvey places the Hydracarina among terrestrial members of its cohort, the Parasitengona. He discusses morphological characters that unite the Hydracarina and separate this group from the rest of the parasitengones. Each of the nine superfamilies of water mites is characterised in a similar manner. Harvey boldly proposes a cladogram of relationships among water mite superfamilies, providing a phylogenetic hypothesis that other hydrachnologists will be eager to test.

Harvey then discusses the biogeography of the Hydracarina. Water mites clearly had a Pangaeian or pre-Pangaeian origin, but continued to diversify after the separation of the continents. Gondwanan associations are particularly striking, with many Australian taxa also occurring in South America and New Zealand, and

others being shared with India and Africa.

After a brief discussion of general biology (with a minor editing error or two : eg. p.31) Harvey begins the section on identification and taxonomy of Australian water mites. An illustrated key to the 22 families is followed by a generic key for each family. As well as being illustrated in plentiful line drawings, a wide selection of taxa are represented in colour plates. Although many of the pictures are too blurry to be useful for identification, they do give an idea of the diversity of colour and form displayed by these aquatic mites. The keys themselves are simple, dichotomous, and well-illustrated. Anyone familiar with keying out arthropods should have little trouble using this book.

The taxonomic placement and synonymy of each of the 89 genera found in Australia are thoroughly discussed. This is admirable scholarship and clearly reveals Mark Harvey as one of the world's experts in water mite systematics. The book closes with an excellent feature, a checklist of the Australian species of water mites together with their distributions by state and in other countries. I've already noted a number of taxa whose northern limits could be extended from New South Wales and Victoria into Queensland.

Because of the thoroughness of Harvey's reviews of generic and supragenaric taxa, any hydrachnologist will find something of value in this book regardless of where they are based. All freshwater ecology laboratories in Australia should have a copy, as its publication removes the

taxonomic impediment to identification of aquatic mites. The rather hefty price may put off some potential purchasers; however, I feel it is an investment well worth the expense, and recommend this well-packaged and informative book to all hydrachnologists and limnologists.

Reference :

Cook, D.R. 1986. Water mites from Australia. Mem. Amer. Ent. Inst. 40:1-568.



CONFERENCE
REVIEW

XIVth International Congress of
Arachnology

Chicago U.S.A. : 27 June - 3 July 1998

Reviewer : Dr Tracey Churchill
CSIRO Wildlife and Ecology, Darwin
& Tropical Savannas CRC.

This was the first time an international congress of arachnology had been held in the U.S.A. Since its inception as a meeting of European arachnologists in Germany in 1960, only two other venues had been outside Europe : Panama (1983), and Brisbane (1992). Dr Otto Kraus, who had hosted the 2nd meeting in Germany, in 1961, presented a great summary of the evolution of the international meetings, and of CIDA (Centre International de Documentation Arachnologique : see below). As with other papers from the meeting, it will hopefully be published in the congress

proceedings as a special issue of the Journal of Arachnology. This journal is a publication of the American Arachnological Society, which held their 22nd annual meeting in conjunction with this international meeting making it very well attended with 315 delegates.

A European influence was maintained with the organiser, Dr Petra Swierald, (of German origin) showing off her excellent organisational skills and attention to detail. The week long program was full of activities and informal social events to keep the delegates completely entertained. The venue was great : the Field Museum, in Chicago, Illinois, on the shores of the huge Lake Michigan with its Greek style pillars that provided a convenient backdrop for the group photo. Petra even arranged for tourist shuttle buses to transport delegates between the Museum and the two accomodation options, the Blackstone Hotel or the Institute of Technology. Those staying at the Blackstone also had the option of walking 15 minutes through the park to the Museum, which was great for countering the sitting blues so typical of conferences. And if blues was your thing, the 15th Chicago Blues Festival was happening nearby and great for a detour, an expensive snack or to hear music like the ol' Doobie Bros ! The festival provided lots of people and police on the streets to help dissipate any mugaphobia. The weather was great - quite warm most days and only a little bit of rain.

The program started off with an Agro-ecosystem Symposium introduced by Matt Greenstone and Keith Sunderland. The

papers looked at a range of aspects of biological control using spiders including guild structure, ballooning physics, predation and prey choice, decomposition food webs, pesticide effects, and architectural modifications. It was a stimulating session with enough to interest even the non-agricultural workers. That evening was then spent by many enjoying an architecture cruise on the Chicago River looking ever upwards at the amazing diversity of building designs which were built after Chicago burnt down in 1871 and now give it a unique character.

The next morning, in the same freezing lecture theatre, Jon Coddington and Gustav Hormiga ran a session on phylogeny where they, among other well known arachnologists, like Norman Platnick, Charles Griswold, and Ray Forster, had work presented on a range of groups such as the Lamponidae, haplogynes, entelegynes, Theraphosinae, araneoids, ctenids, thomisids and mygalomorphs. After lunch the challenge for the week really began : which of two and sometimes three concurrent sessions to go to. It was generally divided between taxonomy, behaviour and ecology so for those of us with overlapping interests there were quite a few doors to not so quietly slip-in an out of. I felt especially challenged with the extra honour of marking student ecology papers which meant I had to be careful not to get waylaid in conversation after coffee breaks, which was easy to do (I emphasise coffee as there was no tea at all, and lots of sweet soft drink : a bit too American for many of us). That evening

there was the Vince Roth Memorial Auction, Fund to honour Vince Roth who sadly died last year after making a very significant contribution to American arachnology over many years. His lovely wife and their very young twin sons were there to enjoy the fun of auctioning off a great selection of arachnid paraphernalia. One was a teapot owned by Bristowe that went for around \$200. I picked up an old copy of Spider Wonders of Australia by K.C. McKeown for a few dollars.

Midweek there were three field trip choices and I ended up going to Swallow Cliff Woods where there were forest walks and restored prairie fields. The weather was fine and it was just great to be around so many spider enthusiasts and be given insights by those that know the fauna so well. I was particularly honoured to chat with Dr Herb Levi. By the end of the full week we were all somewhat exhausted, especially those of us that took the perfect opportunity to see real blues bands in action in the evening ! Nevertheless, it was definately worthwhile and I look forward to going to the next (XVth) international congress in Pretoria, South Africa in 2001. Next issue will hopefully include some happy snaps !

Papers or *posters presented by Australasian delegates :

*Mike Bowie & Cor Vink : Comparison of the spider fauna in two field-boundary types in Canterbury, New Zealand.

Tracey Churchill : Differential selection of habitat patches by an Australian tropical lycosid.

Valerie Davies : A new spider genus from North Queensland, Australia (Araneae : Amaurobioidea: Kababininae).

S. Ferrier, Michael Gray & G. Cassis : Spatial patterns of species turnover in ground dwelling spiders and insects in eastern Australia : implications for selection of forest conservation reserves.

Grace Hall : Golden orbweb spider in New Zealand.

Mark Harvey (*Plenary lecture*) : The neglected cousins : what do we know about the 'minor' arachnid orders ?

*Duane Harland : Perception of the orientation of dangerous prey by *Portia*, tropical araneophagic jumping spiders.

Barbara York Main : Notes on the biogeography and natural history of the orb-weaving spider *Carepalxis* (Araneae : Araneidae) including a gumnut mimic from southwestern Australia.

Robert Raven : Revision of the Australian genera of the Miturgidae with a preview of their relationships.

Simon Pollard & Robert Jackson : Palp friction : sexual selection and foraging costs.

Cor Vink : Past, present future : the taxonomy and systematics of the New Zealand Lycosidae (wolf spiders).

*Eric Voischenk & Mark Harvey : Preliminary systematic studies of *Lychas*-like scorpions (Scorpiones : Buthidae) in Australia.

*Julianne Waldock : *Lycidas chrysomelas* (Simon) (Araneae: Salticidae) is alive and well and living in the semi-arid regions of Australia.

Michelle Ward : Conserving New Zealand's endemic spider *Latrodectus katipo*.

POSTGRADUATE
PROJECTS



**Cattle grazing impacts on mound
spring spider communities**
(Arachnida: Araneae)

Kelli Jo Lamb submitted her Honours
thesis last year : congratulations Kelli !

Institution : School of Biological Sciences
Flinders University of South Australia
Supervisor : Duncan Mackay
Arachnological Support : David Hirst,
South Australian Museum)

Abstract : Cattle utilisation of mound
spring water causes vegetation and
substrate destruction through trampling
and herbivory. Spiders are highly
abundant in mound springs and therefore
are ideal for assessing grazing impacts.
Descriptive surveying was conducted
comparing spiders in springs with varying
grazing histories. A grazing experiment
was carried out simulating the impact of
grazing using treatments of mowing and
trampling. Spiders were sampled using
pitfall traps and a vacuum device.
Spiders were found to be in highest
abundance in lightly grazed springs.
Spiders were correlated with *Cyprax
laevigatus* density, which is also impacted
by grazing. Other factors also appear to
be impacting spiders. Vegetation dwelling
families such as Araneidae and
Thomisidae decreased in abundance
as a result of vegetation destruction.

Studies on the orb-weaver *Poltys*

Helen Smith recently began a PhD
project on the taxonomy of this group.

Institution : The University of Sydney
Arachnological Support : Dr Michael Gray
Australian Museum

Poltys have an unique eye arrangement
amongst araneid spiders. Instead of the
usual two pairs in the centre of the head
and the laterals close together each side,
Poltys have well separated lateral eyes so
that three pairs of eyes are forward on a
prominent tubercle and the others are far
back on the carapace. At rest the
forelegs are drawn around the head,
leaving the eye tubercle sticking out the
front. Females exhibit an oddly shaped
abdomen which camouflages the spider
at rest during the day. Males are small
with a less extreme abdomen shape.

Female specimens I have examined so
far fall into three distinct groups. Firstly,
the classic '*P. illepidus*' type as illustrated
by Davies (1988), are relatively large
spiders with broad often rather irregular
abdomens. These are found in tropical
regions of Queensland, Northern Territory
and New Guinea and several of the
described species are in this group. The
only animal I have seen alive was
apparently associated with a bush which
had buds which the abdomen shape
resembled. All New South Wales
specimens have been of a second type.
These are usually associated with dead
twigs and have rather thinner, often tall

abdomens which presumably look like broken twig stumps when at rest. Some described species apparently fall into this group. Finally a third type found in only one Queensland specimen and a handful from the Northern Territory superficially resemble the New South Wales ones. However they have some rather interesting modifications (presumably against predation) when viewed under the microscope. I have many more female specimens to examine so I would expect more groups to turn up.

One problem I am facing is a lack of male specimens, which are diagnostic for araneids, and especially males associated with a female, so that the male/female pairs can be matched. There are currently over 40 species of *Poltys* described from Australia, South East Asia, India and Africa. However, all original descriptions are only of females. Simon (1895) describes a male but his figure leaves much to be desired and so only Davies (1988), has usefully figured a male palp.

The reason for the lack of males is twofold. Firstly their size makes them difficult to locate and secondly, like other araneids, adult males do not spin a web, so about the only way of finding them is in the web of an adult female. I have had some success in this. Sub-adult males do spin webs - a small version of the characteristic female web, so they can also be captured at this time and allowed to moult to maturity, but then it may not be certain which female they would be associated with. Finding females is easiest at night when they spin a slightly angled (from vertical) orb web which has a

distinctive, very fine weave so it looks like a gramophone record. The spider sits head down in the centre of this, on the underside of the slight slope.

Females show considerable variation in abdomen shape and it is very unclear at present where specific boundaries lie. Hopefully a combination of examination of males, which will require scanning electron microscopy to look at palpal structures, and DNA or electrophoresis work will elucidate the species and open the way for further studies. So far I have not carried out many observations on the habits of these spiders, as my initial target is to collect specimens to make sure I have enough material for the taxonomic part of the project (if not then I will probably switch to *Dolophones*, a rather different araneid which also hides on twigs during the day). In subsequent seasons I intend to set up study areas where I can mark the locality of individual animals and return to them on a nightly or weekly basis to study aspects of their life history and individual variation.

If anyone would like more information or can help with specimens or observations I can be contacted on 02 9320 6135 (but please do not leave a message), email: scfhms@ibm.net or snail mail: PO Box A2114, Sydney South NSW 1235.

References :

Davies, V.T. 1988. An illustrated guide to the genera of orb-weaving spiders in Australia. Mem. Qld Mus. 25 (2): 273-332.

Simon, E. 1895. Histoire Naturelle des Araignees. 1(4): 889.

ARACHNOLOGICAL
ACTIVITIES

QUEENSLAND MUSEUM

Dr Barbara Baehr, from the Zoologisches Staatssammlung in Munich, Germany, visited the Qld Museum during March. Barbara is a taxonomic expert on the Zodariidae, Prodidomidae (*Molycrta*) and Hersiliidae and is working with Marek Zabka, of Poland, and soon transferring to Robert Jackson's lab in New Zealand for a couple of years to work on the salicid genus *Holoplatys*. With Robert Raven, Barbara spent 10 days driving to Queensland's western border to look for males of *Fissarena* (a flattened Clubionioidea of unclear family status) and *Asteron* (Zodariidae). Despite heavy rain, and double flat tyres miles from nowhere, they made it to the desert to meet up with Dr Chris Dickman's students at Ethabuka. No male *Fissarena* were found but pitfall traps were very effective catching lots of miturgids and zorids.

Ms Martha Yanez Rivera, from the University of Mexico (UNAM), is being jointly supervised for her PhD by Robert Raven. Martha is visiting the museum from 12 March – 4 May to produce some papers on the morphology of *Brachypelma*, one of the highly prized and CITES listed pet tarantulas. Mr Graham Wishart, of Gerringong & *Misgolas* fame, will return to work with Robert on the taxonomy on *Misgolas*, *Arbanitis* and other tangled questions in early June. Robert will be in New Zealand

May 6-20 to check for potential problems identifying *Cantuaria* / *Misgolas* / *Arbanitis* in Auckland and also to look for *Latrodectus katipo* as part of a focus on the taxonomy of the genus.

Australian Spider Catalogue.

Ms Kristy Hoath is providing wonderful volunteer help at the museum. In particular Kristy has helped complete stage I (of III) of typesetting the catalogue, which lists all described spider species. Substantial corrections have also been made by Mark Harvey, Norm Platnick and especially David Hirst. It should be printed by mid-May. People wishing to order it may send a cheque or postal order for \$10 made out to the Queensland Museum Board of Trustees, c/- Arachnology, P.O. Box 3300, South Brisbane, Australia, 4101. Overseas orders are very expensive and the only way I can think is to send \$10 US cash but the risk is yours.

ABRS funded grants

The first revision in the queue is the Corinnidae (formerly included in the Clubionidae; mimics of ants, etc) which once included about 10 species. The current species count is 104. Most are new species with lots of patronyms after people who have made big contributions to the paper (Maureen Glover, Doug Wallace), to science (Dr Jean Just, ABRS Director), or society (St John Ambulance, The Right Rev. Archbishop Hollingworth). After that will come the revisions of the Ctenidae, Zoropsidae (new family for Australia), Miturgidae, & Zoridae. Eventually we'll also revise the Clubionidae, Pisauridae, Toxopidae & Cycloctenidae : so please be patient !!

WESTERN AUSTRALIA

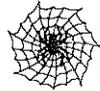
If there was such a thing as a news flash in the spider world it would have rung out in Western Australia in late October 1998 : beware the Americans are coming ! Intrepid arachnologists Drs Kefyn Catley and Vladimir Ovtsharenko were on a mission for a month to collect spiders "down under". It was part of a larger project to revise spiders in the super-family Gnaphosoidea, run by Dr. Norman Platnick of the American Museum of New York. Dr Mark Harvey and Julianne Waldo, from the Western Australian Museum (as if you didn't know !), kindly organised the event and gave their colleagues a guided arachnid tour. Kefyn and Vlad had been to Australia several times before so were at least familiar with the local customs and lingo.

The main targets were new species (given that estimates are that only 20% of Aussie spiders are described) and type localities of original collections. One of the type localities of interest was the Montebello Islands from which Hogg had described a species earlier this century. However, since the British did an above ground nuclear test there in 1952 its best avoided, and they aimed for nearby Barrow islands instead with success. Mark was less successful looking for *Draculoides bramstokeri* – a new species (and genus) of schizomid that he described recently from the caves of Barrow Island.

The expedition was relayed regularly back to the U.S. where the Discovery Channel offered it "live" on the web. It was

projected in true American style – full of quirky details and lots of action photos. Not your average spider collecting trip ! Its still lurking on the Net if you can access it at : <http://www.discovery.com/exp/spiders/reports/more.html>

ARACHNOLOGICAL REQUESTS



WANTED : Spider eggsacs

As part of an honours research project under the supervision of Dr Andy Austin, Nick Stevens would like to receive any live spider eggs so that he can rear out hymenopteran parasitoids. He is conducting a taxonomic / biological study of the wasp group *Baeini* which are obligate endoparasitoids of spider eggs.

Please send any eggsacs to :

Mr Nick Stevens,
Department of Crop Protection,
The University of Adelaide,
P.O. Box Glen Osmond,
S.A. 5064

Phone : (08) 8303-7278;

Email:

nick.stevens@student.adelaide.edu.au.

Your help would be greatly appreciated !

UPCOMING
EVENTS**DAMPIER 300 : Biodiversity in Australia 1699–1999 and beyond.**

Organisers : Australian Systematic Botany Society & Society of Australian Systematic Biologists & Invertebrate Biodiversity and Conservation.

When : 6 - 10 December, 1999.

Where : Alexander Library Theatre, Perth Cultural Centre, Francis Street Perth, Western Australia.

Why : The final biodiversity conference of the 1900s will be held in Perth, Western Australia, from 6 to 10 December 1999. It will commemorate the 300th anniversary of William Dampier's second visit to 'New Holland', when he made the first authenticated collections of plant specimens from the continent. The major theme of the conference will be 300 years of Australian biodiversity—what have we learned, and where do we go in the 21st Century?

Expressions of interest are called for presenting papers and posters. Abstracts will be required by 30 September 1999.

Bearing in mind the major historical and scientific themes as set out above, principal areas of interest will be :

- the Shark Bay region, a World Heritage Site with a wealth of arid coastal landforms and diverse geology, flora and fauna
- analytical advances and interactive keys
- plant systematics, especially overviews of major groups including cryptogams
- arid zone biodiversity
- invertebrate diversity: subterranean biota, sampling and monitoring protocols, conservation
- co-evolution
- research priorities and funding

There will be two pre-conference excursions, and an afternoon cruise up the Swan River, including a visit to a winery in the State's original wine-producing district, the Swan Valley.

For further information and for a registration brochure, please contact:

Mark Harvey, Western Australian Museum, *ph*: (08) 9427 2737 *fax*: (08) 94272882; mark.harvey@museum.wa.gov.au

Or visit our website at:

<http://www.museum.wa.gov.au/Dampier300/Dampier300.htm>

Mark & Harvey @ museum.wa.gov.au