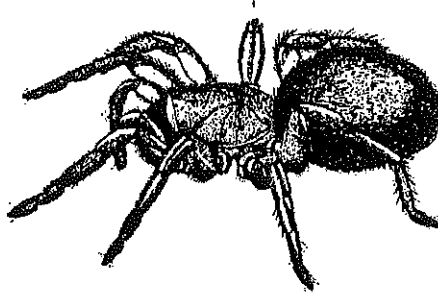


AUSTRALASIAN
ARACHNOLOGY



Special 20th Birthday Issue!



Number 57: November 1999

Price \$2
ISSN 0811-3696

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.

email : faulder@agric.nsw.gov.au

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Previous issues of the newsletter are available at \$2 per issue plus postage.

ARTICLES

The newsletter depends on 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 (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

COVER ILLUSTRATION by Clare Bremner :
Idioclis yertata Churchill & Raven 1992

EDITORIAL



Happy 20th Birthday to us !

Did you realise that the society has been going now for 20 years ? It all began back in November 1979 when Robert Raven, created the society as an enthusiastic technical officer for the then curator of Arachnology at the Queensland Museum, Dr Valerie Todd-Davies. Thankyou Rob !

To help celebrate, our previous editor, Mark Harvey, has kindly undertaken a mitey review extravaganza. It seems that the normally inconspicuous mite is demanding to be noticed with a suite of new reference materials ! We are particularly pleased to be able to acknowledge the invaluable contribution made by one of the authors, Dr Glenn Hunt, to the study of these ubiquitous arachnids. Sadly we have recently lost Glenn to failing health – cutting a very productive life far too short.

This is the second loss our arachnological community has endured this year, and Barbara York-Main shares with us, in this issue, her wonderful overview of the life of Graeme Smith.

Given the expertise of these two dedicated arachnologists, I will happily receive quality drawings of a scorpion or opilione for the covers of future newsletters. I have already used one of my favourite spiders for this year but I'd like something new for next year !

Have fun and please take care over the Christmas – New Year period !

.....Tracey

MEMBERSHIP
CHANGES

New Members

Welcome to :

Mrs Cathy Car
4 John St
Koorngal N.S.W. 2650
(a previous member !)

Mr Patrick Maiden
3/519 Dandenong Rd
Armadale Victoria 3143

Dr A. O. (Nick) Nicholls
CSIRO Wildlife & Ecology
GPO Box 284
Canberra A.C.T. 2601

GLENN HUNT



We regret to relate the sad news that on the 20th of September Glenn Hunt passed away. As many of you know, Glenn has played a significant role in Australian arachnology with his research on both Opiliones and Oribatid mites at the Australian Museum.

A kind and gentle man, Glenn will be very much missed. An obituary will be provided in the following issue.




OBITUARY*

GRAEME TALBOT SMITH

10 February 1938 - 30 June 1999

A personal tribute by
Dr Barbara York Main



Born in Adelaide, Graeme moved early to Melbourne where he went to school and later graduated from Melbourne University with a degree in Zoology and Geology. His Honours degree on scorpions, from the Australian National University in Canberra, initiated a life time fascination and passion for scorpions, pursued mostly incidentally to his later employment.

Joining Australian National Antarctic Research Expeditions in 1965, he spent part of 1966 and 1967 on Macquarie Island studying the behaviour and reproductive biology of the Royal Penguin which formed the topic of his Ph.D. thesis which was awarded in 1970 from the A.N.U.. Graeme then moved (in 1970) to C.S.I.R.O. in Perth, to study the Noisy Scrub bird at Two Peoples Bay, W.A.. While engaged in this pioneer conservation study, scorpions still engaged his interest and spare energies. In the early 1980's he continued to work with birds (corellas). And in the early to mid 1980's his professional work took a new direction with the biology and

conservation of small vertebrates in the wheatbelt, in association with other C.S.I.R.O. Wildlife and Ecology biologists. He also collaborated with academics from Western Australian universities and researchers from C.A.L.M. (Department of Conservation and Land Management) and the Western Australian Museum.

All along Graeme's dual science degree in Zoology and Geology served him well to understand the complexity of the W.A. landscape and the ecological interactions of the fauna. He published many joint papers on the ecology and conservation of birds, small mammals and reptiles. He argued convincingly for the value of small reserves (remnant bush), and analysed the effect of fire and farming disturbances on scorpions and on other invertebrates. In all, his publication list includes over 70 papers, comprising both collaborative studies and work conducted on his own.

As arachnologists we claim Graeme as one of us. But Graeme lead several lives. There was his family and very close friends of long standing. Professionally there were birds, scorpions and ecology. His professional peers were sometimes unaware of his wide-ranging and diverse interests and even of the various strands of his professional work. At his funeral, two museum colleagues faced each other, puzzled as to why the other was there, each responding with "I didn't know Graeme was into birds / scorpions !"

Graeme's papers framed a new dimension for studies on Australian scorpions - included are papers on the reproductive biology, fecundity, life histories, response to fire, disturbance, isolation to small remnants, and conservation. These form a benchmark

for future researchers. But one wonders how long it will be before these studies are followed up. Very few earlier publications on Australian scorpions touched on ecology or biology, being mostly taxonomic. Graeme, although appreciative of the work of taxonomists and aware of his dependancy upon taxonomy to validate some of his observations and reports, had no inherent feeling for the discipline. I remember an occasion in the field when, after a discussion on name changes or such like, Graeme, frustrated and exasperated, flicked away the flies and expostulated "A POX ON TAXONOMISTS !" as he strode off into the bush.

As many others who shared days in the field with Graeme, I enjoyed his droll, wry humour, his laconic manner, his idiosyncratic remarks as when following a tedious search for some elusive species - "Any joy here, yet ?". Above all one remembers his generosity of spirit. I never heard Graeme say a harsh word about anyone. He could make trenchant and critical but always fair assessments of other peoples' research and publications but always tempered by a firm kindness. If I sometimes overstepped that boundary between personal and objective judgement of a mutual colleague, Graeme would gently admonish "Now Barbara".

Always eager to share his knowledge and interest in the biology of scorpions, Graeme once shared with me tutelage of students on a University Extension Course on arachnids in the wheatbelt. This indeed was his opportunity to dispel any notions about scorpions as "nasties", as fascinated, a group of adult students saw for the first time, scorpions miraculously fluorescing in a beam of

Graeme's ultra-violet light whilst they were going about their nocturnal activities in the bushland at Durokoppin.

Graeme had many interests and was remarkably well read. One is thankful for him that not long before he died he enjoyed a few months of "travel" with Helen (his wife) in Turkey, Egypt and neighbouring dry lands. "You'll be looking at scorpions" I remarked, before he left. "This is cultural, Barbara" Graeme said sternly, squashing my narrowness of vision for his journey.

When someone dies while still developing ideas and rich with plans for future research, full of zest and controlled energy to pursue field projects - one wonders will anyone else, ever, pick up unfinished fragments of research and records and weld a new amalgam or are the pieces lost forever with a foreshortened life? Graeme's work, life, sadly, was not completed; he still wanted to do, to give more.

Other colleagues and friends, will remember Graeme against certain backdrops, or particular landscapes. I see him sauntering through low scruffy heathy bush and tall woodlands north of Kellerberrin in the Western Australian wheatbelt all the while scanning the ground for *Urodacus* burrows. Sadly, for some colleagues, as Max Abensperg-Traun (who worked closely there with Graeme) said on his visit back to W.A. not long after Graeme died : "that landscape will never be the same again".

* a complete obituary written by Drs Denis Saunders and Ian Rowley will appear in an upcoming issue of the Journal of the Royal Society of Western Australia.

BOOK REVIEWS



by Mark Harvey

'Mites of Australia :
a checklist and bibliography.'

by R. B. Halliday

CSIRO Publishing, Melbourne.
Monographs on Invertebrate Taxonomy
Vol. 5. 1998. ISBN 0 643 06370 6.

'Oribatid Mites, a catalogue of
Australian genera and species.'

by M. J. Colloff and R. B. Halliday

CSIRO Publishing, Melbourne.
Monographs on Invertebrate Taxonomy
Vol. 6. 1998. ISBN 0 643 06371 4.

'Oribatid mites: An interactive
glossary of oribatid mites.'

by G.S. Hunt, R.A. Norton, J.P.H. Kelly,
M.J. Colloff and S.M. Lindsay
and

'An interactive key to oribatid mites
of Australia'

by G.S. Hunt, M.J. Colloff, M.J.
Dallwitz and D.E. Walter.

CSIRO Publishing, Melbourne.
1998 ISBN 0 643 06369 2.

Mites remain one of the last great unknown faunal groups in Australia. Sampling virtually any habitat – soil, leaf litter, tree bark, leaves, inside houses, freshwater ecosystems, or marine benthos – will uncover a plethora of species, some of which are so bizarre in appearance that they defy the imagination. They represent one of the most massive evolutionary radiations which exists on Earth, yet remain one of the most understudied groups. No worldwide catalogue exists and the last Australian catalogue was published in 1906 by the eminent entomologist / arachnologist W.J. Rainbow from the Australian Museum. Rainbow's catalogue listed 102 species – a princely number – but as evidenced in a splendid new publication by Bruce Halliday, it represented a small portent of what was to follow in the subsequent 90 or so years. *'Mites of Australia, a checklist and bibliography'* is a masterful summary of our current state of knowledge of the Australian mite fauna, which now boasts some 2,700 species included in 240 families, of which 894 species are included in just 10 families.

This attractive, superbly produced volume is laid out in a traditional catalogue style with an introduction, followed by six chapters dealing with three suborders in each of two orders, some supplementary information, a bibliography and an index. Suitable explanation is given for the chosen higher level classification (which is nowadays necessary for any major publication on mites). The bibliography is detailed and comprehensive, and I can see that I shall have to start ferreting out some important references of which I was previously unaware.

I have very few bones to pick with the content or the layout. However, some items caught my eye. I was surprised to see that the Australian dependencies (Christmas Is., Cocos (Keeling) Is., Lord Howe Is., Norfolk Is, and the like) were specifically omitted (p. 4), and there is no break-down of the distribution of each species by state or even by biogeographic province. No page numbers are given for each citation – ensuring that one must search through each reference to find a particular species – and the mode of listing each citation under individual species is somewhat extravagant as each citation is given its own line. Furthermore, each citation is then given its own listing in the index, resulting in one of the longest indexes I have ever seen for a catalogue. For example, *Ixodes holocyclus* is listed 19 times. However, these are minor comments and the catalogue is easy to use and full of useful data.

While this invaluable work can't help you identify your mite, it can assist as a pointer into the literature and it can help by correctly placing your mite once you have some sort of name. And it shows that, naturally, we know a lot more than W.J. Rainbow did in 1906. However, don't be surprised if that knowledge base will increase exponentially now that this checklist and bibliography are available. Cataloguing is probably one of life's thankless tasks, but I only have two words for Bruce – Thank You.

If you wish to go one step further into the world of oribatid mites, then the publication by Matt Colloff and Bruce Halliday – *Oribatid Mites, a catalogue of Australian genera and species* – will be your cup of tea. The volume is produced in an identical style to *Mites of Australia, a*

checklist and bibliography by CSIRO Publishing (indeed, they are difficult to distinguish from each other on my desk). Every oribatid ever recorded from Australia is listed, but the geographic coverage is greater than the preceding volume and includes the Australian territories. Under each species are listed full citations, synonyms, type depository (or depository if the species is undescribed), description (if available, this field lists which part of the animal has been described), Australian records, and distribution. The Australian records are full lists of Material Examined taken from the original literature, which seems a bit excessive to reprint such information in this volume. It should be noted that many genera (or in some cases, families) are known only from as-yet undescribed species, but these taxa are listed in full, giving us a broader picture of the Australian fauna than simply the species which are formally named. The bibliography is comprehensive, and the index takes a more traditional form and I found no problems in finding species listed. The introductory sections discuss aspects of the ecology and history of the Australian oribatid fauna, as well as useful background information on the composition of the catalogue. A whole-body drawing or SEM is provided for each of the six major groups of oribatids covered in the volume, thus breaking up the text and providing some idea of what each group looks like. Like its stable-mate, this volume is a timely and useful contribution to the literature, and will surely stimulate further research on this important group of mites.

The production and release of *Oribatid Mites* on CD is a landmark in Australian arachnology. The project was

spearheaded by Glenn Hunt whose unfortunate recent passing is a tragic loss to us all. The software operates in Windows 3.1, Windows 95 or Windows NT4, and requires certain hardware levels to operate, none of which are excessive. The accompanying booklet provides all sorts of useful tips, and includes a sample identification for the uninitiated or overly wary.

The Interactive Key is a superb feature. Written in DELTA, it allows the user to select any feature to attempt to obtain an identification, without constraining the user in the way a standard written key would operate. For example, you can select the character 'nature of the claws' and four different features: monodactylous, bidactylous, tridactylous and without claws. Selecting 'monodactylous' informs you that only 16 taxa remain from the original 380 included in the matrix. And so on, until a single terminal taxon is reached. It is also possible to call up all available illustrations of a particular species – very useful once you have an identification and wish to determine whether you have the right name! Naturally, the terminal species name you reach may not be the creature in front of you in the laboratory. The authors point out that the Australian oribatid fauna is barely known and the chances of someone attempting to identify a species which is not included on the CD is high. So, buyer beware and treat your resulting identification with caution!

The glossary is easy to use. After inserting the CD, you simply click on the Glossary icon and away you go. Various images of an oribatid appear, allowing you to click onto any feature which produces a description, as well as showing any

variation which may occur within the oribatids. There are also useful links to other related features.

I cannot recommend this product highly enough, and it is such a shame that Glenn's death came so soon after the launch of this product. However, he and his co-authors should be proud of their achievement. Well done to you all!

**'Mites - ecology, evolution and
behaviour.'**

**by David Evans Walter &
Heather Coreen Proctor**

University of New South Wales Press,
Sydney & CABI Publishing, Wallingford.
1999 ISBN 0 86840 529 9.

Mites. They're everywhere – literally everywhere. As the back cover of this new book states – “what creatures live in the dark depths of the ocean, in the lungs of birds, on the leaves of rainforest plants and in the pillow beneath your head? MITES”. Not only are they everywhere, but they display vast arrays of behaviour, ecological specialisations and reproductive strategies which are ably and vibrantly discussed by David Evans Walter and Heather Coreen Proctor in *Mites – ecology, evolution and behaviour*. The chapter titles are evocative - “Sex and celibacy” and “Acari underwater, or, why did mites take the plunge” caught my eye straight away – and indicate the broad subject matter of the book. The volume is jam-packed with a wealth of data, sourced from an exhaustive

literature review, and from the authors' own unpublished observations and experiments. Numerous illustrations, including some superb SEM's, add to the attractive nature of the volume, and the layout is crisp and uncluttered. I couldn't find a single typo (but I shall keep looking!) – a fitting testimony to both the authors and the publishers skills.

Several books on the Acari have been published over the past few years, but none have evoked the sense of delightful wonder in studying these fascinating creatures that this book imparts. It is sure to become a classic text and one which I can recommend to anybody interested in arachnids. You can't help but be transformed by their enthusiasm.

Dr Mark S. Harvey
Western Australian Museum
Francis St, Perth 6000

POSTGRADUATE PROJECTS



Web site selection and foraging behaviour of a riparian orb-web spider: *Tetragnatha valida* (Araneae, Tetragnathidae).

Patrick Maiden : Honours thesis.

Institution : Department of Zoology,
University of Melbourne, Victoria

Supervisors: Dr Barbara Downes
& Dr Mark Elgar

Abstract :

The riparian orb-web spider, *Tetragnatha valida* (Araneae, Tetragnathidae) is commonly found in vegetation alongside and overhanging streams. Survey data from the Steavenson River, Buxton, revealed that this nocturnal spider is restricted to sites no further than 2m from the river; mature *T. valida* were generally found further over the water than their juvenile counterparts.

Substrate supplementation demonstrated that the distribution of web sites was limited over the river by an unavailability of web-attachment sites, however sites over land were not selected. Prey capture rates of spiders over the river were relatively uniform, but were lower for spiders foraging over land directly beside the river. Potential prey availability, measured using artificial web traps, was greatest over the water and at dusk. However, not all prey types were able to be captured by *T. valida*. Those prey types most suited for *T. valida*'s foraging strategy (small, weak insects) were most commonly captured in traps deployed nocturnally and over the river. These insects were also more commonly captured in horizontal traps, although there was no evidence of a foraging advantage to horizontal webs.

INTERNATIONAL ARACHNOLOGICAL SUBSCRIPTIONS



Our society is now collating society members' subscriptions to international arachnological journals and/or societies. The advantages include having one combined bank draft as well as supporting the International Society of Arachnology. Existing members who have recently received their subscription envelopes can forward these with payment as below. Those wishing to join please provide a letter outlining your details and selected subscriptions.

Fees for 2000 in Australian dollars:

- ♦ Acta Sinica **\$46.20**
- ♦ American Arachnol. Soc. **\$46.20**
(student \$30.80)
- ♦ Arachnol. Soc. of Japan **\$61.60**
- ♦ Arthropoda Selecta **\$61.60**
- ♦ British Arachnol. Soc. **\$55.44**
- ♦ Internat'l Soc. Arachnol. **\$33.88**
(student / retiree \$23.10)

(Fees for Revue Arachnologique will not be collected until 2001).

Payment for the total amount is preferred as a cheque or postal note made out in Australian dollars to "Australasian Arachnological Society" (if cash is sent please round up to the nearest dollar). Send to our administrator, Richard Fauldner (see page 1) by Friday 14th January 2000.

LIBRARY



The A.A.S. library has moved from N.S.W. to the Queensland Museum to be now managed by the Curator of Arachnology, Dr Robert Raven and the helpful staff of the Queensland Museum library.

We sincerely thank Jean-Claude Herremans for the wonderful job he has done so far in organising reprints, books and other literature and in maintaining the database. Jean-Claude will still receive all library contributions to include them in the database before the material is forwarded to the Queensland Museum.

Jean-Claude would like to take this opportunity to thank everyone who has contributed to the library so far, and in particular, Dr Robert Jackson (NZ), Dr Maria E. Galiano (Argentina), Dr Leon Baert (Brussels); and Dr Lourenço (Paris).

As of August, the library had a total of 11,544 arachnid papers (books, reprints, etc.) which can be categorised as follows :

Acari	2,255	Amblypygi	77
Araneae	7,171	Opiliones	432
Palpigrada	81	Pseudoscorpiones	730
Pycnogonida	55	Ricinulei	57
Schizomida	68	Scorpiones	450
Solifugae	108	Uropygi	60

For a number of reasons a list of publications has not been provided since August 1998 (Issue #54). In order to streamline the process it is now planned that the first issue of each year will include a list of new publications from the previous year (or from August 1998 in the

case of the next issue). So if you haven't sent a copy of your latest reprints or literature to Jean-Claude now is your chance ! Its the time of year to be sending gifts anyway !



CONFERENCE REVIEW

7TH Australasian Conference on Grassland Invertebrate Ecology

Perth, Australia
4-6 October 1999

The ACGIE meeting provided papers on a broad range of topics including the ecology and management of pests and beneficial invertebrates in native and introduced grasslands and related systems.

The conference was only small (42 delegates : 18 from overseas with 17 of these from New Zealand) but the topics were diverse, so it was very interesting. The small size meant it was a relaxed, informal gathering and speakers were asked lots of questions which generated much discussion (and some friendly arguments! - eg about the significance/or non-significance of density dependence).

We had plenty of time to talk because we had most of our meals together at the conference venue, the Tradewinds Hotel, in Fremantle. The conference dinner (also at the Tradewinds) was delicious. A group walked into the main 'coffee shop' area of Fremantle one night to socialise, and I

think there were some informal post-conference trips organised, but we preferred to 'do our own thing' with just the two of us (movies, boat trip into Perth and walking in King's Park), so I can't comment on the group events.

There were a few papers, and a poster, on mites and a couple of papers which mentioned spiders as indicators of healthy ecosystems.

Papers that included work on arachnids were :

G. Osler, D. Westhorpe & I. Oliver "Short term response of soil arthropods to endosulfan and changes in soil moisture on a eucalypt floodplain"

J. Seidel "A new approach to the control of earth mites using Gaucho dressing"

A. Lyons & J. Majer "The value of farm valleys as refugia for beneficial arthropods"

R. Clements, G. Purvis & O. Schmidt "The impact of a novel clover: cereal bi-cropping system for growing silage on earthworms, predatory arthropods, aphids and slugs"

C. Day & J. Majer "Leaf litter invertebrates in the Western Australian wheatbelt: recolonisation of revegetation and its implications in restoring ecosystem functions and biodiversity"

There will be a printed proceedings and both presentations and contributed papers will be available on the web at :

www.agric.wa.gov.au:7000/ento/ACGIE

Dr Ros Blanche,
Northern Territory University
&

Dr John Matthiessen, CSIRO Entomology



CONFERENCE REVIEW...

ESA99 : Ecological Connections

Perth, Australia

26 September - 1 October 1999

This annual meeting of the Ecological Society of Australia was well attended and very well organised. Held in Fremantle, it was perfectly located to allow delegates to roam up the street and network over a tasty meal from one the seemingly endless line of restaurants. Or they could meet up with colleagues at the Sail and Anchor Hotel (which became the alternative conference venue) and quantitatively analyse the selection of great beers (I recommend the Matilda Bay Pilsner).

The quality and diversity of the talks, as well as catching up with colleagues, is why I like going to ESA meetings. The first day provided a broad range of topics from Plenary speakers to help place Australian ecological issues in a wider context. It began with Noel Nannup relating his excellent dreamtime story of the history of his country in the southern half of W.A. Prof. Tony McMichael from the London School of Hygiene and Tropical Medicine then brought home some not-to-be-ignored global truths with his talk "Climate Change, Land Use, Biodiversity Loss : ecological determinants of human health." Dr Chapman & Dr Hyne from the N.S.W. E.P.A. followed with the complexities of determining the effects of toxic chemicals on ecological systems. The science and social issues that surrounded the

interpretation of the effects of Exxon Valdez Oil spill on the (bird) fauna was then explained by Prof. John Wiens from Colorado State University. After lunch we were enlightened by Prof. Bert Main (University of W.A.) and his valuable experience with the not-so-effective bureaucratic and political processes that characterise environmental decision making. Prof. Harry Recher (Edith Cowan Univ., W. A) followed with his passionate insight into the very frustrating process of trying to achieve ecologically meaningful Regional Forest Agreements. The final session included an interesting talk by Dr Peter Newman from Murdoch University, W.A., which emphasised that transport mode and energy use is central to the sustainable development of cities.

Over the remaining three days of the meeting the following arachnological information was presented :

Paper : T. Churchill & J. Ludwig "Changes in spider assemblages in relation to landscape attributes across a grazing gradient in northern Australia".

Posters : T.Z. Dawes-Gromadzki. Top-down, bottom-up: lessons learned from trophic interactions between fertiliser, ants, spiders and bluebush bugs.

R. Harris. Cattle grazing in public forests : the response of spider assemblages.

J.W.C. Smith & B. York Main Natural history observations of the trapdoor spider *Aganippe raphiduca* (Mygalomorphae, Idiopidae).

K. Strehliow, J. Davis, S. A. Bradley & G. R. Friend. Immediate impact of logging on terrestrial invertebrate communities in jarrah forests.

Dr Tracey Churchill
CRC Tropical Savannas
& CSIRO Wildlife & Ecology