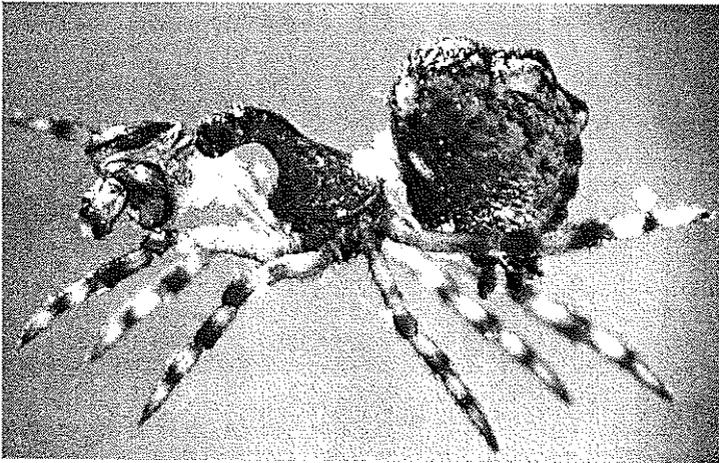


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THE AUSTRALASIAN ARACHNOLOGICAL SOCIETY

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

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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 behavioural observations.

Please send articles to the Editor:

Dr Tracey Churchill
CSIRO Sustainable Ecosystems
PMB 44 Winnellie
NT 0822
Australia.

email: spider@octa4.net.au

Postage format: i) typed or legibly printed on one side of A4 paper or ii) as a text or MS Word file on a 3 ½ floppy disk or CD.

Email format: as a text or MS Word file.

LIBRARY

The AAS has a large number of reference books, scientific journals and 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 :

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New South Wales 1655. Australia.

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COVER PHOTOGRAPH: *Phoroncidia* sp. ♂
from Western Australia by Melinda Moir

EDITORIAL



Members in many regions may have had 'unseasonal' weather over the summer months. In the tropics, we have had a poor Wet season, with below average rainfall denying us the regular downpours that provide welcome relief from the heat. The orb weavers seem to have been so keen to get out of the sun that they have taken over our house (which is a nice change from all the pholcids, oecobiids and scytodids, I must admit)!

In this issue, Peter Mirtschin sadly reflects upon our loss of Professor Struan Sutherland, who was famous for creating the funnel web antivenom, among many other achievements. We provide an abstract from a recently submitted PhD, and updates from some of our professional members. A new section has been introduced to cover internet sites, so descriptions of any good pages of arachnological interest are most welcome.

I am keen to collate more of your activities and observations now that I am finally back on line! Our new computer failed permanently last September due to the demise of the company in Australia. We are pleased to say that we now have a trusty brand of new PC with which to produce the newsletter. So please forward your articles, research outcomes or any other news for our next issue.

..... Tracey

MEMBERSHIP
UPDATES

Welcome to:

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LIBRARY



The society librarian would like to thank Dr Cor Vink from Lincoln University, New Zealand and Dr Lourenço from the Paris Museum, France, for sending reprints on spiders, and scorpions, respectively.

OBITUARY

STRUAN SUTHERLAND

1922 - 2000



Dr Sutherland after receiving his doctorate

Photograph courtesy of the Sutherland family

It is with regret that I advise that on Friday 11th January 2002, Professor Struan Sutherland passed away after a long illness suffering with Striatial Nigral Degeneration (SND). He will be missed by us all.

Struan achieved so much in his lifetime working in the area of management of poisonous bites and stings. Some of his more notable achievements were:

- Development of a funnel web spider antivenom.
- Development of the pressure immobilisation snake bite first aid method (sometimes called the "Sutherland wrap" method).
- Development of the snake bite venom detection kit.
- Establishment of the Australian Venom Research Unit.
- Major revues of envenomation in Australia and PNG.
- Publication of over 300 scientific publications relating to toxins, and envenomation.
- Publication of the first major book on envenomation in Australia: "Australian Animal Toxins" (Oxford University Press). This has now been revised as a second edition with the help of Dr James Tibballs .
- Publication of four books, and an autobiography, covering the management of envenomation at various levels.



Prof. Sutherland demonstrates the immobilisation technique on Erin Lovering



Prof. Sutherland in his office at the Commonwealth Serum Laboratories.

Photographs kindly provided by the Sutherland family

I have known Struan for over 30 years and have seen many facets of his life. The thing that stands out among all others was his tenacity to achieve outstanding results under extreme difficulties. The funnel-web antivenom development was a typical example of this character. Facing extreme funding cuts, an intolerable work place environment and the sheer difficulty in solving a problem that had evaded a number of eminent researchers preceding him, Struan succeeded. This antivenom saved a life almost as soon as it became available.

I met him a number of times during his illness and admired his sense of purpose, courage and humor coping with his physical problems as the disease progressed. He once laughed at how his difficulties helped him in certain circumstances. He loved his daily walk along the beach near his home. The walk to the beach became an arduous task toward the end. He had to negotiate a very busy road and his method of getting across the road was novel. Because his mobility was impeded, he could never get across the road between the traffic breaks. His answer to this problem, with typical independence, was to wear a pair of dark glasses and carry a walking stick which made him look like a blind person. The traffic obliged him and he was able to continue walking to the beach until about 6 months ago.

He managed to carry out a complete review of Australian Animal Toxins during his illness. With the help of James Tibballs, he completely reviewed all the literature and brought this invaluable book up to date. Part way through this review, he was unable to write and dictated alterations and additions onto tapes.

Every barrier that presented itself was overcome as he continued on with absolute resolve to complete his life's work.

The legacy of Struan's work will be carried on through the Australian Venom Research Unit which is being admirably run by Dr Ken Winkel.

Most Australian toxin / envenomation workers and associates were touched in some way by Struan's work. He will be sadly missed. His life's work can be read by everyone in "A Venomous Life" Hyland House (1998).

..... Peter Mirtschin

Venom Supplies Pty Ltd
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Tanunda
South Australia 5352

INTERNATIONAL ARACHNOLOGICAL SUBSCRIPTIONS



For ISA members, we would like to clarify the subscription process. The role of our ISA correspondent (Dr Mark Harvey) includes collecting Australasian subscriptions for ISA (but not other international societies). In order to offer members a "one stop shop" for subscriptions to both the ISA and other societies (eg. BAS, American AS), our society will be the conduit for all future subscriptions. More details and current fee costs will be published as they become available, prior to renewal.

POSTGRADUATE PROJECTS



Taxonomy, Life History Characteristics, and Ecology of Riparian Wolf Spiders (Araneae, Lycosidae) in the Victorian Alps, South-east Australia

Volker W. Framenau

Degree: Doctor of Philosophy

Institution: The University of Melbourne,

Supervisor: Dr Mark Elgar

Submission Date: November 2001

Abstract: Riparian gravel banks contain an arthropod community consisting of predatory species that are well adapted to a disturbance prone environment. Systematic investigations in this habitat throughout the Victorian Alps revealed wolf spiders (Araneae, Lycosidae) to be the most abundant taxon. Two main genera were found to dominate on the river banks, *Venatrix* Roewer and *Artoria* Thorell.

The Australasian lycosid genus *Venatrix* Roewer, 1960, with *Venator fuscus* Hogg, 1900 as type, is reinstated and redefined to include 22 species as follows:

Venatrix funesta (C. L. Koch, 1847), comb. nov. (= *Venator fuscus* Hogg, 1900;

new synonymy); *V. penola*, sp. nov.; *V. australiensis*, sp. nov.; *V. roo*, sp. nov.; *V. mckayi*, sp. nov.; *V. koori*, sp. nov.; *V. archookoora*, sp. nov.; *V. pictiventris* (L. Koch, 1877), comb. nov.; *V. hickmani*, sp. nov.; *V. allopictiventris*, sp. nov.; *V. speciosa* (L. Koch, 1877), comb. nov. (= *Lycosa mayama* McKay, 1976; new synonymy), *V. esposica*, sp. nov.; *V. pseudospeciosa*, sp. nov.; *V. brisbanae* (L. Koch, 1878), comb. nov.; *V. forsteri*, sp. nov.; *V. lapidosa* (McKay, 1974), comb. nov.; *V. fontis*, sp. nov.; *V. furcillata* (L. Koch, 1867), comb. nov.; *V. arenaris* (Hogg, 1905), comb. nov.; *V. pullastra* (Simon, 1909), comb. nov.; *V. goyderi* (Hickman, 1944), comb. nov. (= *Lycosa howensis* McKay, 1979; new synonymy) and *V. hoggi*, sp. nov. *Hogna albosparsa* (L. Koch, 1876) is considered *nomen dubium* (Framenau & Vink, 2001).

The Australasian wolf spider genus *Artoria*, with *A. parvula* Thorell, 1877 as type species, is revised in part. In addition to *A. parvula* (= *A. luwamata* Barrion and Litsinger, 1995; new synonymy), recorded from the Philippines and Indonesia, and *A. palustris* Dahl, 1908 from Papua New Guinea, it includes the Australian *A. albopedipalpis*, sp. nov., *A. avona*, sp. nov., *A. cingulipes* Simon, 1909, *A. flavimanus* Simon, 1909 (= *Lycosa neboissi* McKay, 1976; new synonymy), *A. howquaensis*, sp. nov., *A. lineata* (L. Koch, 1877), *A. mckayi*, sp. nov., *A. quadrata*, sp. nov., *A. taeniifera* Simon, 1909, *A. triangularis*, sp. nov., *A. ulrichi*, sp. nov., and *A. versicolor* (L. Koch, 1877). *Artoriella* Roewer and *Trabaeola* Roewer are junior synonyms to *Artoria*, as the type species of both genera, *A. flavimanus* (Simon 1909) and *T. lineata* (L. Koch, 1877), are transferred to *Artoria*. *Trabea australiensis* (L. Koch, 1877) is

considered *nomen dubium* (Framenau, 2002).

A survey of upper and lower floodplains of the main rivers and tributaries in ten major catchments in the Victorian Alps showed that species composition of wolf spiders and ground beetles (Coleoptera, Carabidae) changed substantially between upland and lowland rivers. These differences correspond with changes in altitude, shading, substrate and gravel bank size. A second monthly sample program on gravel banks along the Avon River (Gippsland) over a one year period, provided information on the life histories of eight common gravel bank arthropods: *Venatrix lapidosa*, *V. arenaris*, *Artoria albipedipalpis*, *A. mckayi* (Lycosidae), *Eudalia macleayi*, *Elaphropus ovensensis*, *Perileptus constricticeps* and an unidentified *Loxandrus* species ('B') (Carabidae) (Framenau *et al.* 2002).

The life history and movement pattern of one wolf spider species, *Venatrix lapidosa*, was examined in more detail employing a three year mark and resight study of a population. This survey revealed *V. lapidosa* to have two different, biennial cohorts maturing at different times of the year. Both cohorts differed significantly in their development cycle, size at maturity, adult longevity and reproductive output. The co-existence of two subpopulations with considerably different life strategies increases life history plasticity and may be the result of the unstable habitat (riparian gravel banks) of *V. lapidosa*. Males were found to be more active during the reproductive period, reflecting male mate searching behaviour and the sedentary behaviour of brood caring females. Males *V. lapidosa* have relatively longer legs than females, which is thought to increase efficiency in

locomotion and, in combination with the lower mobility of females, may increase fertilization success. This is supported by comparative data with *Artoria*, in which males and females are vagrant during their whole life and there is no difference between the leg length of the sexes.

Prey capture behaviour of *V. lapidosa* was analysed with regard to their adaptation to the riparian, prey poor environment. Juvenile spiders were subjected to two different feeding regimes (starvation for 14 and 28 days) and then provided with two different prey types (blowflies, *Lucilia cuprina*, and crickets, *Acheta domestica*). Results indicate a more efficient ingestion rate when more prey are consumed simultaneously. Spiders starved for longer periods, appear to secure a previously caught item rather than optimise their capture rate by attacking further prey (Framenau *et al.* 2000).

Acknowledgements: Volker would like to thank Cor Vink (New Zealand) for taxonomic feedback, and Randolph Manderbach (Marburg, Germany) and Martin Baehr (Munich, Germany) for contributions relating to carabid beetles.

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- Framenau, V. W. (2002). Review of the wolf spider genus *Artoria* Thorell (Araneae: Lycosidae). *Invertebrate Systematics* 16 (in press).
- Framenau, V. W., Finley, L. A., Allan, K., Love, M., Shirley, D. and Elgar, M. A. (2000). Multiple feeding in wolf spiders: the effect of starvation on handling time, ingestion rate, and intercatch intervals in *Lycosa lapidosa* (Araneae: Lycosidae). *Australian Journal of Zoology* 48, 59-65.

Framenau, V. W. and Vink, C. J. (2001). Revision of the wolf spider genus *Venatrix* Roewer (Araneae: Lycosidae). *Invertebrate Taxonomy* **15**, 927-970.

Framenau, V. W., Manderbach, R and Baehr, M. (2002). Riparian gravel banks of upland and lowland rivers in Victoria (South-east Australia): arthropod community structure and life history patterns along a longitudinal gradient (Araneae, Lycosidae; Coleoptera, Carabidae). *Australian Journal of Zoology* **50** (in press).

ARACHNOLOGICAL ACTIVITIES



WESTERN AUSTRALIAN MUSEUM

The Arachnology Section of the Western Australian Museum has been keeping busy with numerous projects. Erich Volschenk is currently in the final throes of writing up his long-awaited Ph.D. thesis on buthid scorpions - his sleepless nights are nearly at an end... At the same time, Erich is hard at work on an interactive key to the terrestrial and freshwater invertebrate orders of the world - a project conducted by himself, Mark Harvey, Andy Austin (Adelaide University), David Yeates and Mike Hodda (CSIRO, Canberra) and funded by the Australian Biological Resources Study.

Mark Harvey and Julianne Waldo are slowly finishing their revision of the hadrotarsine spiders. These tiny spiders were once placed in their own family, Hadrotarsidae, due to a suite of unusual

characters such as kidney-shaped posterior median eyes and swollen tarsi and metatarsi of the anterior legs. However they were recently found to represent highly modified members of the Theridiidae and closely related to genera such as *Euryopsis* and *Dipoena*. The revision will recognise about 30 species in several genera. Curiously, many species are found to be quite widespread across the continent.

And the cataloguing fever continues.... Mark Harvey is currently completing his world catalogue to the minor arachnid orders - Amblypygi, Uropygi, Schizomida, Palpigradi, Ricinulei and Solifugae - to be produced by CSIRO Publishing. These orders are poorly represented within Australia but interest in the catalogue is strong from arachnologists.

QUEENSLAND MUSEUM

In December, Robert Raven and Barbara Baehr gave a three day workshop on spider identification (using paper keys and real spiders) for 20 people from Perth, Canberra, Sydney & Brisbane.

In January, Dr Norman Platnick from the American Museum of Natural History, visited the museum and then went hunting for a new lamponid genus (and other grist for a DNA "mill") just south of Texas with Barbara Baehr and Robert Raven.

In April, a group of scientists visited the museum: Dr Gustavo Hormiga from George Washington University, and his PhD students Matjaz Kuntner and Fernando Alvarez (which are being co-supervised by Jonathon Coddington at the Smithsonian Institute), and Dr Nikolaj

Scharff from the Zoological Museum of Denmark and his student Ms Sidsel Larsen. Their expertise is in the araneoid clade and they will target south-east and north-east Queensland for collecting spiders and observing web types.

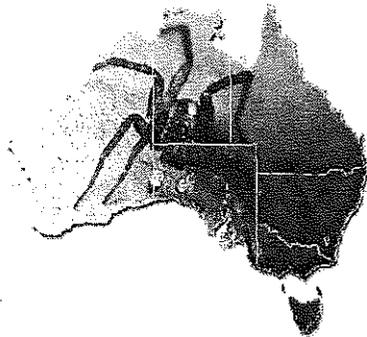
The Queensland Museum Centre for Biodiversity conducted a survey of spiders on North Stradbroke Island for an Environmental Impact Statement in relation to sand mining. A total of 15,000 spiders (allocated to 263 species) were taken by Robert Raven, Barbara Baehr, Chris Burwell, Susan Wright and Doug Cook at nine sites over a five day period using several collecting techniques.

WEB VIBES



The Wolf Spiders of Australia (Araneae, Lycosidae). Checklist, Taxonomy and Identification.

by Volker W. Framenau



www.alphalink.com.au/~framenau/Lycosidae

This web site is well structured. The user can quickly find information of interest, which is displayed in easy-to-read text and clear graphics. It contains:

- An historical overview of the current systematic status of lycosids in Australia. This includes a summary table of the number of species known for each genus.

- Species list: displayed either alphabetically, or by genera. The taxonomic author and year of description is provided and each species is hyperlinked to a page that includes an illustration (including rare drawings), a list of type specimens, distributional data (or map), and biological information where available.

- Synonyms, *nomina dubia* and replacement names.

- Bibliography for Australian lycosid ecology, taxonomy and systematics.

The work includes many species that have been described by Rolly McKay, and more recently, by Volker and his colleague Cor Vink. The latter are documented in:

Framenau, V. W. (2002). Review of the wolf spider genus *Artoria* Thorell (Araneae, Lycosidae). *Invertebrate Systematics* (in press).

Framenau, V. W. & Vink, C. J. (2001). Revision of the wolf spider genus *Venatrix* Roewer (Araneae, Lycosidae). *Invertebrate Taxonomy* 15, 927-970.

There is much to learn about our fauna: for instance, what kinds of spiders belong to the genera *Crocodylosa* Caporiacco, 1947 and *Dingosa* Roewer, 1955?

..... Tracey