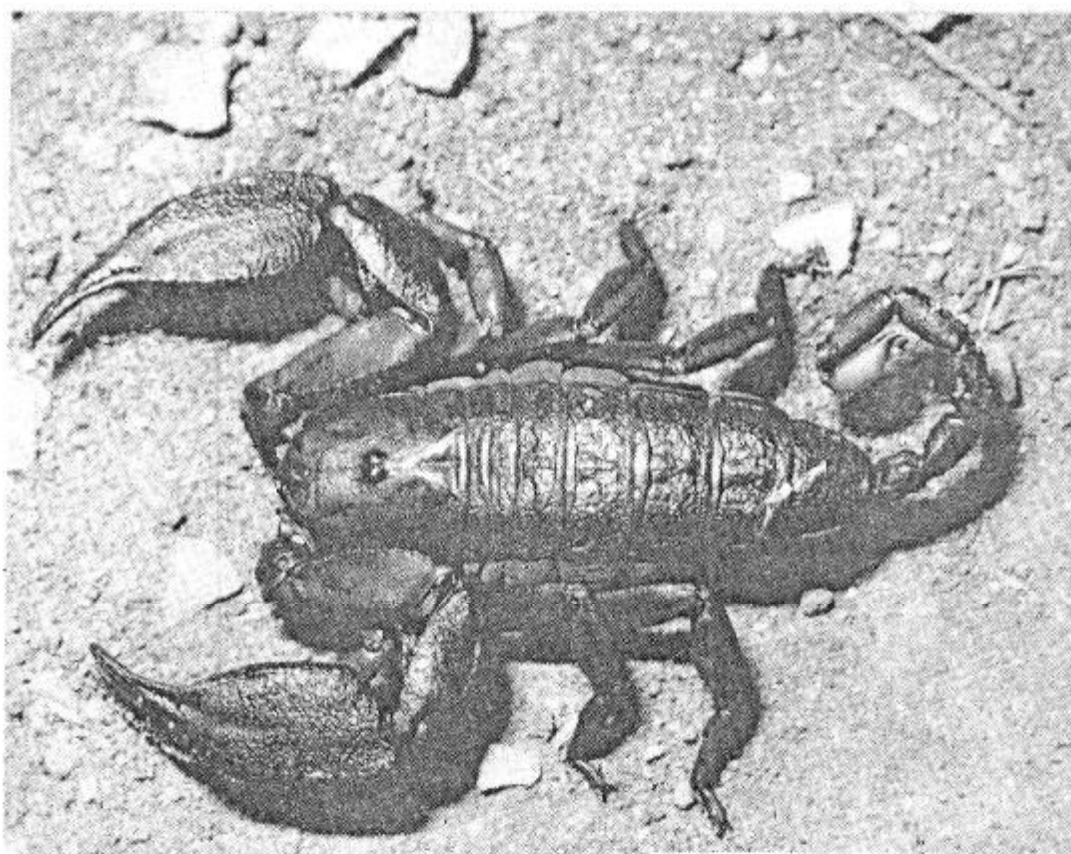


AUSTRALASIAN



LIOCHELES WAIGIENSIS

ARACHNOLOGY : 5

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AUSTRALASIAN ARACHNOLOGY 5

MEMBERSHIP

Membership fees for residents in Australia \$2; in New Zealand and in New Guinea \$3; other members wishing newsletters sent airmail, \$10, newsletters mailed at surface rate, \$5. Institution subscriptions, \$2 in Australia; overseas (surface) \$8. All subscriptions should be made out in Australian dollars. Information concerning membership and back issues of Australasian Arachnology are available from Robert J. Raven, Editor, Australasian Arachnological Society, P.O. Box 573, Fortitude Valley, Queensland, 4006, Australia.

MEMBERSHIP FEES FOR 1981 ARE NOW DUE. If an X follows this sentence, your fees are due.

ARTICLES

All articles should be sent to the Editor at the above address and should be concisely written and neatly typed.

NEW BOOKS

Correction: 'Australian harmful arachnids and their allies', by R.V. Southcott was erroneously stated in AA2 to be \$2 + postage; cost is actually \$2.50 + postage, which in Australia brings the cost to \$3.10.
Correction: In AA4, I (editor) inverted G. Scott's statement about the volume of venom delivered by male and female Atrax (see AA4, page 3, paragraph 3); Dr Scott stated that the female (not the male) delivers five times more venom than the male. However, that also contradicts Wiener (1957) who found that, when milked, females yielded an average of 0.28 mg, whereas males yielded 0.175 mg; the dissected venom glands of females yielded an average of 2.05 mg and those of males gave an average of 0.81 mg. My thanks to Mr Walter Spundy, Darling Downs Institute Press, for noting my error. Wiener, S. 1957. The Sydney funnel-web spider (Atrax robustus) I. Collection of venom and its toxicity in animals. Med. J. Aust. 2, 377-382 (1957).

PEOPLE

Dr Robert Jackson visited Brisbane on his way back from collecting sorties at Katherine, Northern Territory and Cairns, Queensland. Robert was chasing the fascinating salticid spider Portia. See publications on Australasian Arachnida for some of the interest Portia has generated.

Dr Yael Lubin visited Brisbane and Sydney during February. With Dr Valerie Davies and Robert Raven, Yael furthered her knowledge of spider behaviour on collecting trips around Brisbane and at Lamington National Park.

Mr Andrew Rosefelds, Queensland Museum, collected spiders and met arachnologists in Tasmania in January.

Mr Harry Parnaby, sparrow enthusiast, visited Brisbane on March 5 on his way to north Queensland.

DR GARTH MAY

Members will be saddened to hear of the sudden and unexpected death of Dr Garth May on March 23, 1981. Dr May is well-known to many of us for his active interest in photographing spiders and their webs. His photographs appeared in 'Spiders' by B. I. Main and in other publications.

N. CLYDE COLEMAN

As a result of burns from a tragic fire that gutted his house, Clyde Coleman died on April 8, 1981. Clyde was an untiring naturalist and photographer, known to many in north Queensland as President of the North Queensland Naturalists Club. Like Dr May, his good friend, Clyde's love was the study of spiders. Both men will be sadly missed.

NEWSLETTER OF THE AUSTRALASIAN ARACHNOLOGICAL SOCIETY

Numerous interstate and Queensland members will be attending the A.C.M. of the Australian Entomological Society to be held at Noosa during 8-10 May, 1981, in conjunction with the ANZAS Conference. Queensland welcomes Dr Penny Gullan, Mark Harvey, Mandy Kotzman, Andrew Austin, David Williams and others.

Mr David Lee, Curator of Arachnida and Helminths, South Australian Museum will be visiting Brisbane during June, 1981.

RECENT PUBLICATIONS ON AUSTRALASIAN ARACHNIDA

- Baert, L. 1980. Spiders (Araneae) from Papua New Guinea. II. Ochyroceraatidae. Ann. Roy. Soc. Zool. Belg. 1980, 109: 1-7.
- Bishop, A.L. 1981. The spatial dispersal of spiders in a cotton ecosystem. Aust. J. Zool. 29 (1): 15-24.
- Brignoli, P.M. 1980. On few Mysmenidae from the Oriental and Australian regions (Araneae). Rev. suisse Zool. 87(3): 727-38.
- Centrell, B.K. 1980. Additional Australian Harvestman (Arachnida: Opiliones). J. Aust. ent. Soc. 1980, 19: 241-253.
- Raven, R.J. 1980. The evolution and biogeography of the mygalomorph spider family Hexathelidae (Araneae, Chelicerata). J. Arachnol. 8, 251-66.
- Williams, D.S. and P. McIntyre. 1980. The principal eyes of a jumping spider have a telephoto component. Nature 283, 578-80.

A SLIDE BOOKLET

Spiders. Queensland Museum. 1981. A slide booklet in the form of a plastic wallet. Six 35mm slides of Redback, Funnel-web, St. Andrew's Cross, Magnificent, Net-casting and Jumping spiders are accompanied by three pages of information about spiders generally and up to 4 paragraphs on each spider. Firstaid measures for the treatment of funnel-web and red-back spider bites are included. Cost \$3 + 28 cents postage within Australia. Available from Queensland Museum, Gregory Terrace, Fortitude Valley, 4006, Q.

REQUESTS FOR MATERIAL

Live specimens of the theraphosid genera, Selenocosmia, Selenotypus and Selenosthulus, are required by Mr Jeff Cossam, 3 Perceval St., Sunbury, 3429, Vic. Jeff is prepared to supply live Tasmanian Lycosa specimens to those wanting them.

Any colleague who has information of any kind about Family Eresidae (not found in Australia) or can send specimens of this family, is asked to write to the below address. Any colleague who has an excess of papers and wishes to help constituting the first arachnological library in Egypt can send them to Mr. Hisham K. El-Hennawy, 41, El-Manteqa El-Rabis St., Heliopolis, Cairo, EGYPT.

FUNNEL-WEB ANTIVENOM

The Funnel-web antivenom developed by Dr S.K. Sutherland and his team at Commonwealth Serum Laboratories has been tested and is successful in cases of human envenomation.

TAXONOMY OF AUSTRALIAN SPIDERS - A HISTORICAL ACCOUNT*

Because of its size and location, embracing almost all possible climates and topographies, Australia has a vast assortment of spiders, At least half of which are still to be described. Take for example, one group of

* By Dr. V.E. Davies, Queensland Museum, Gregory Terrace, Fortitude Valley, Q. Reprinted with permission of the council of the Entomological Society of

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spiders, the 'amaurobiids'. By 1970 there were 13 genera in two families described from Australia. Compare this with New Zealand where Forster has recently described over 60 genera in 12 families. The amaurobiids are particularly well represented in Australia; they usually spin bluish sheet webs of some sort, though a few no longer spin webs but depend on spiny legs to capture prey. There has been wide radiation within this group of spiders. They are found in both sclerophyll and rainforest, along the coast, on the reef, on high mountains, in litter, in low herbage, on shrubs and trees and sometimes occupying insect holes on these. Besides the amaurobiids, we know we have many spiders to describe and to group these into taxa we shall have to apply some method of phylogenetic analysis and classification. I shall talk about 3 aspects of taxonomy:

1. History of spider collecting and taxonomy in Australia.
2. Pre- and Post-Darwinian theories of Classification
3. Application of one of these theories, cladism, to spider phylogeny.

(Editor's note: Only the first aspect is reprinted here.)

The first Australian spider described was the northern jewel spider, Casteracantha formicata by Fabricius in 1775. The spider was collected during the time that Captain Cook's 'Endeavour' was beached for repair at Cooktown in 1770. It was probably collected by either Banks or Solander. This was the only description to precede the settlement of Port Jackson in 1778. Shortly afterwards, in 1789, White, who was surgeon-general to the settlement produced his 'Journal of a Voyage to New South Wales'. In this he described two spiders, one a small unrecognisable spider, and the other a very large sparassid or huntsman. Unfortunately, he did not name either spider.

In 1799 Labillardiere, a botanist who was with the French admiral, D'Entrecasteaux on his voyage, described a large golden orb-web spider, Nephila edulis, the second spider to be described from Australia. In 1802 the Frenchman, Baudin, with naturalists Peron and Lesueur, visited Australia and collected extensively. Unfortunately little of this material has been described. However Delena cancerides, a very flat spider from under eucalypt, the mouse spider, Missulena occatoria and a ground living spider Storena cyanea described by Walckenaer in 1805 were probably from this collection. He later (1837) described about 20 more spiders from Australia. In 1826 W.S. Macleay described 4 spiders in Capt. Philip King's 'Survey of the Inter-tropical and Western Coasts of Australia' (1818-1822). Three of these spiders are still recognised (Uloborus canus, Linyphia declanata and Olios morbillosus); the descriptions are very brief (no more than 3 lines) and no localities are mentioned. As far as I know, no spiders have been identified as belonging to any of these species since their description and unfortunately the types are lost.

The period from 1850-1900 is known, especially in Europe, as the Golden Age of Araneology. It was certainly Australia's Silver Age - the Golden is just beginning, we hope. At this time Museums of Natural History were being set up all over Europe. Godeffroy, a wealthy German merchant and ship owner set up his museum in Hamburg and sent out collectors wherever his ships went. Of these collectors, Amalie Dietrich and Edward Daemel are noteworthy for their collections of Australian plants and animals. Amalie Dietrich was already well recognised in Germany as an independent collector of plants. Between 1863-1873 she collected along the Queensland coast at the ports of Brisbane, Rockhampton, Mackay and Bowen. This was much more intensive collecting than that done by the various voyages of exploration. Daemel made three trips to Australia between 1852-1875 and as well as collecting at the ports along the Queensland coast penetrated inland to Peak Downs and Gayndah and spent eight months at Somerset Cape York in 1866. He also collected at Sydney, West Australia and Bass Strait. The spiders

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that these two collected form the basis of Ludwig Koch's (1871-81) 'Die Arachniden Australiens', which was completed and had a supplement added by Eugene Keyserling (1881-1889). It is a beautifully illustrated work and is still, today, the standard work on Australian spiders.

A third collector of note, an Italian, Luigi Maria D'Albertis spent some months collecting at Somerset in 1874 while waiting for transport to Yule Island and New Guinea. He was collecting and selling specimens to his friend from school-days, Marquis Giacomo Doria, who had given one of his family's villas to the city of Genoa as a museum - Museo Civico di Storia Naturale. D'Albertis was delayed at Somerset during the wet, when he made extensive collections which included many spiders. These spiders (47 spp.) were described in 1881 by Teodor Thorell, a Swedish friend of Doria's who was living on the Italian Riviera because of his poor health (he lived some 20 years after this). His descriptions though lengthy are inadequate and not illustrated. Today, Thorell's spiders form one of the few almost inaccessible collections in Europe. The Museum in Genoa is short of staff and money. The collection is for the most part in large jars according to geographical region e.g. Austro-Malesi. As it is not sorted into families, retrieval of specimens is very difficult. The flood of 1970, when labels were washed from bottles and jars broken, accounts for the loss of some specimens.

A further voyage in 1875, the Chevert Expedition to New Guinea was lead by Sir William Macleay, wealthy squatter, politician and museum collector (he was a cousin of W.S. Macleay who described 4 spiders collected during King's Survey). Spiders brought back from Cape York on this expedition were described by H.B. Bradley (1877, '78). It may be noted that Cape York is the type locality for 70 spp. of spiders - most are also found in New Guinea.

During these early years collections of spiders were sent to England where they were described by Rev. C.P. Cambridge and a few by R.I. Pocock, who was at the British Museum of Natural History from 1885-1903. After this he went to the Zoological Gardens and became more interested in Mammals which was a great loss to araneology. Spiders were also described by Eugene Simon in Paris who was to become the world's greatest araneologist. He described more than 200 spiders collected on a German expedition to South West Australia in 1905. Spiders from a further German expedition in 1910, lead by Leonhardi to Central Australia were described by Embrik Strand (1913) in Berlin. The types of all these spiders, where they still exist, are of course in European Museums.

Between 1893 and 1920 W.J. Rainbow, an Englishman who became Entomologist at the Australian Museum, Sydney, contributed much to the knowledge of Australian spiders. He described about 200 spp. and observed their webs and behaviour. In 1911 he published 'A Census of Australian Araneidae' where he listed about 1200 spp. Included among these were about 100 spiders described by H.R. Hogg from specimens in the British Museum. Hogg had spent about 20 years in Melbourne between 1873-1922.

Since 1926 Emeritus Professor V. V. Hickman, professor of zoology at the University of Tasmania until 1959 and foremost Australian araneologist, has described many spiders, most of which were from Tasmania and some of which led to the establishment of new families. His publications span more than 50 years; he is in his 85th year. More recently Barbara York Main, Perth has revised and re-defined some of the trap-door genera.

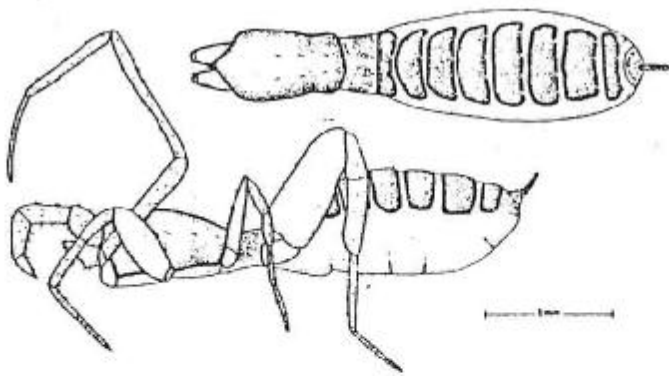
People are now interested in spiders in Australia, especially their behaviour and ecology but they continually find that the spiders are not described.. The Australian and Queensland Museums are the only museums (in Australia) where taxonomic studies of spiders are being pursued even though less than half our spiders are described.

THE ORDER SCHIZOMIDA

James C. Cokendolpher, Department of Biological Sciences, Texas Tech University, Lubbock, Texas 79409, U.S.A.

The Schizomida is represented by slightly over 100 described species disproportionately divided between three families. The family Calcitronidae is wholly extinct and only known from a few Pliocene fossils from Arizona in the U.S.A. Only four species of the family Protoschizomidae are described, all are from México. Protoschizomids are the real giants of the order, reaching 12 mm in length. The family Schizomidae is composed of two subfamilies, the Megaschizominae and the Schizominae. The relatively large members, up to 8 mm in length, of the Megaschizominae are known from South Africa and Mozambique. Only two species of Megaschizominae are described. The Schizominae contain the majority of known species, over 90%, and are primarily tropical and sub-tropical; however, several species are known from temperate regions. The Schizominae are typically 4-7 mm in length.

While schizomids have been known from Australia for several years, thus far no species have been formally named. Woodward (1963) reported the first specimens, while subsequent records are provided by Main (1980). Schizomids are quite common in the tropical rainforests of northern Australia around Darwin. They also appear common in the closed forest around Brisbane. A single specimen has been reported from Spiral Cave on North West Cape. Robert Raven has informed me that schizomids are also known from north east Queensland, north of Cairns, and in parts of mid-eastern Queensland around Mackay, and finally in an area of rainforest on coastal sand dunes in Cooloolool.



Female *Schizomus* sp. from Darwin

Schizomids usually lack eyes. Some have weak eyespots on the anterolateral portions of the carapace, but three species are known that have convex vitreous ocelli (Sisson, 1980). The body and legs are brown to yellow in color, although some species may be red or even light green. The chelicerae are not equipped with a poison gland and are thus not harmful to man. The first pair of legs are not used when walking, but function as a tactile organ. The sexes of schizomids can be determined by the modifications of the male flagellum; the last segment is much larger and thicker than others.

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Little is known about the biology of these small animals. Mating is accomplished by the use of a spermatophore; see Strum (1958), and Kraus and Beck (1967) for details. Oviposition has been discussed by Gravely (1915) and Rowland (1972), the development of the zygotes remains undescribed, however, the postembryonic development of one species is reported by Rowland (1972).

Schizomids are most often encountered beneath rocks and in leaf litter, but they are also found in or under rotting wood and debris. Several species are known from caves; other species have been obtained while sweeping netting brush (Rowland, 1975).

Any arachnologist being fortunate enough to collect living schizomids should consider the valuable biological information that might be obtained before the animals are placed in preservative. Any observations on feeding, mating, growth, or general behaviour are welcome additions to the knowledge of this little known group.

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NEW MEMBERS/SUBSCRIBERS & ADDRESS CHANGES


- Mr R. Allison, The Laurels, Manchester Rd, Sway, Lynton, Hants, England.
- Mr Greg Anderson, c/- Queensland Institute of Medical Research, Herston, Q. 4006.
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- Mr R. Moran, 10/a Fraser Court, Eyre St, Kingston, A.C.T. 2064.
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- Mrs R. Wilkinson, P.O. Box 1070, Cairns, 4870, Q.
- British Arachnological Society, 34 Bramcote Rd, Loughborough, Leics., LE11 2SA, U.K.
- Science Reference Library, Bayswater Branch, 10 Porchester Gardens, London, W2 4DE, England.
- General Library, British Museum of Natural History, Cromwell Rd, London, SW7 5BD, England.
- Spider Club of Southern Africa, 8 cedar St, Lindhaven, Roodepoort, 1725, S. Africa.
- Ms P.J. Gullan, Dept Zool., P.O. Box 4, Canberra, A.C.T. 2600.
- Mr D.B. Hirst, c/- 10 Deakin St, Blair Athol, S.A. 5084.
- Mr J. Kupke, F1, 3 Cherry St, Pearce, A.C.T. 2607.
- Mr. H. Parhaby, 114 Punt Rd, Windsor, Vic. 3181.
- Dr A.L. Yen, Biological Survey Dept, National Museum of Victoria, 71 Victoria Crescent, Abbotsford, Vic. 3067.

A PICTORIAL KEY TO AUSTRALIAN MYGALOMORPH FAMILIES


1. Terminal article of posterior spinnerets long and pointed or longer than wide.....2




Terminal article of posterior spinnerets short and blunt..... 4




2. Tarsal claws visible only from above, laterally obscured by thick tufts of hair... Theraphosidae^{1c}




Tarsal claws visible, usually three claws present..... 3



3. At least 6 black cuspules on labium, usually many more.....Hexathelidae^{1a}





Few, if any, cuspules on labium..... Dipluridae^{2b}





4. Tarsal claws visible only from above; laterally obscured by thick tufts of hair.... Barychelidae^{3c}

Tarsal claws readily visible from side..... 5


5. Head region rises steeply, labium very long and maxillae almost square.... Actinopodidae^{3a} (*Missulena*)


Head region rises slowly, labium wider than long, maxillae rectangular..... 6

6. Sternum with only posterior sigilla, anterior pairs lacking..... Migidae^{3a}



Sternum with posterior, middle and anterior sigilla..... Ctenizidae^{3a}



By Robert J. Raven, 1981.

1 Cheliceral rastellum never present.
 2 Cheliceral rastellum present in some genera
 3 Cheliceral rastellum present in most genera

a All genera have 3 claws
 b Most genera have 3 claws
 c All genera have 2 claws