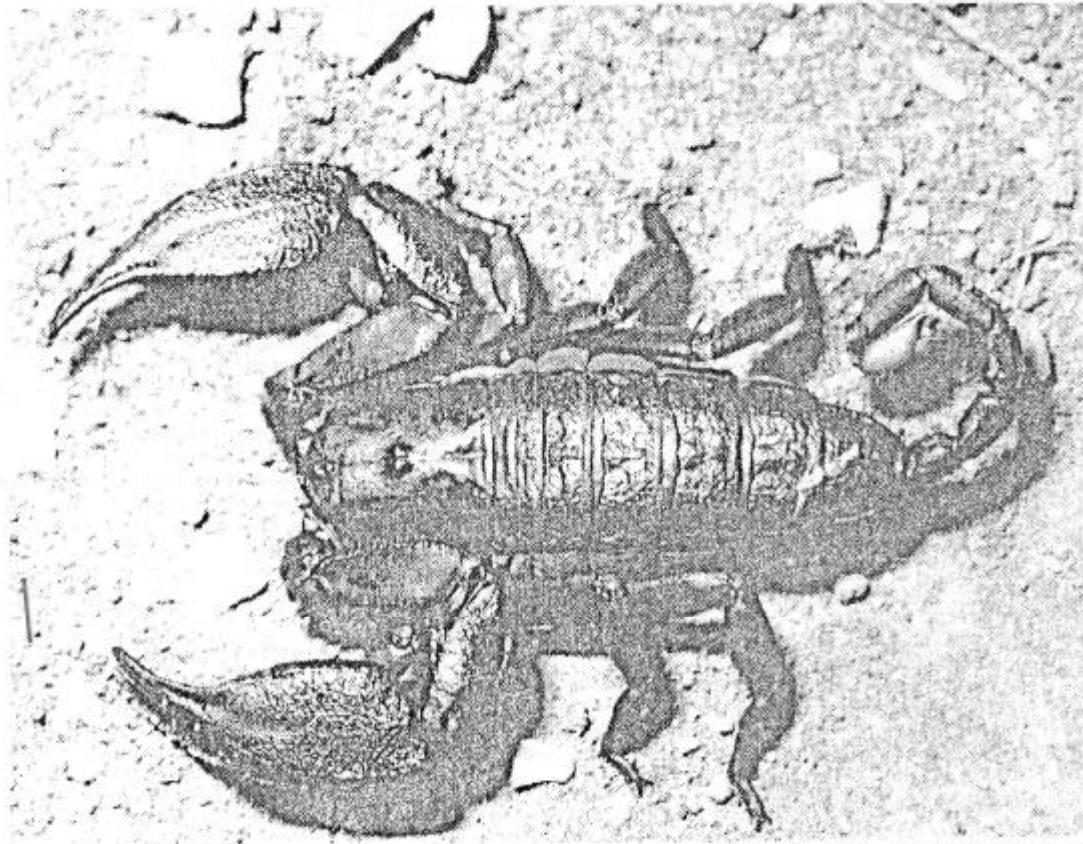


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MEMBERSHIP

Membership fees for residents in Australia, \$2; in New Zealand and New Guinea, \$3; other members wishing newsletters sent airmail, \$10, or at surface rate, \$5.; Australian institutions, \$2; Overseas institutions, \$6 at surface. If possible, 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 Arachnology, P.O. Box 573, Fortitude Valley, 4006, Q, Australia.

ARTICLES

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

NEW BOOKS

Spiders of Australia. B.Y. Main, 1964, 1980. Originally printed by Jacaranda Press and was no longer available because some plates were damaged. The book has now been reprinted by Axiom Books. As far as I can see after several casual examinations, this reprint is identical to the original both in content and quality of illustration reproduction. 'Spiders of Australia' is a useful guide to Australian spiders because both spiders and their webs, if any, are figured. Several taxonomic changes have occurred since 1964 that were not incorporated because the book is simply a reprint not a second edition. Despite that, I recommend 'Spiders of Australia' to any arachnologist interested in Australian spiders. The book is available from many book-shops for \$2.95 or from Axiom Books.

PEOPLE

Dr Valerie Davies and Dr Geoff Monteith were on an Earthwatch expedition (lead by the latter) from October 13 to November 12 to survey arachnids, insects and molluscs at different altitudes in the moist rainforests of Mt Bellenden Ker, tropical north Queensland.

Ms Mandy Kotzman, Zoology Department, Monash University, Clayton, Victoria, has commenced research on some Australian theraphosids for a Doctor of Philosophy.

RECENT PUBLICATIONS ON AUSTRALASIAN ARACHNIDA

- Green, A. 1981. Golden Orb-weaver spiders (*Neohila* sp.) in Tasmania. Tasmanian Naturalist 67 (October, 1981), 12-13.
- Hickman, V.V. 1981. New Tasmanian spiders of the families Archaesidae, Cycloctenidae, Amaurobiidae and Micropholcommatidae. Pap. Proc. R. Soc. Tasm. 115, 47-68.
- Raven, R.J. 1981. A review of the Australian genera of the mygalomorph spider subfamily Diplurinae (Dipluridae: Chelicerata). Aust. J. Zool. 1981, 29, 321-63.

NEWSLETTER OF THE AUSTRALASIAN ARACHNOLOGICAL SOCIETY

LETTERS TO THE EDITOR

Over the last few months the editor has received several letters from Mr John Kochalka, University of Florida, Gainesville, U.S.A. John's letters relate testing aspects of spider collecting which otherwise carries with it the risk of being bitten. Excerpts are printed here for the interests of members.

Travel in Colombia is dangerous because there are so many thieves. You should be with a group of people. When travelling alone you should never sleep two nights in the same place, and you should lie to everyone about where you are going next.

Over 300 languages are spoken by various groups of native "Indians", but most of them speak Spanish as a second language. In cities and large towns you can usually find someone who can speak English. In the more remote villages you will almost always find someone who speaks Spanish. In some of the remote villages the natives will make you pay a fee to walk through their territory. In other places they will throw stones at you from cliffs. In other places they run into their houses and peer at you through cracks in the houses. In the 1930's, the natives in the Sierra Nevada de Santa Marta used to burn the whole village and run away as the foreigners approached the smouldering remains. In 1974 one man there almost committed suicide because he thought that a helicopter was a sign from god who had to be appeased. In 1977 a group of cowboys in Valledupar invited 25 "Indians" to dinner and shot them all. They didn't know that it was against the law. One day in the 1960's a truck full of Evangelist missionaries from North America raced out of San Pedro while 20 or 30 men were shooting at them with rifles. San Pedro is one of the places where I found lots of Accola (a very small mygalomorph - Editor). I spent several weeks there, and it is probably my favorite place in the whole world.

Collecting is easy as long as you watch out for thieves. I'll tell you about the bad parts. Some of my pit traps were dug up by armadillos. Others were filled with water, and others dried up, but some were successful. Army ants (small ones) live there but were no problem. I some uncomfortable encounters with fleas, ticks and bedbugs. The mountain lions were very shy, and we had no direct encounters with dangerous snakes. I got hepatitis, maybe amebic dysentery, and also some unidentified disease which was supposedly a protozoan that lived in the blood and eats bone marrow. I had that disease for a year without even knowing it. The only symptom is that you sleep too much. I met many North Americans who had had hepatitis, malaria, and worms. In the 1960's a boy died of diphtheria in San Pedro. When I went to Colombia I had preventative shots for tetanus, typhoid, diphtheria, polio, smallpox, yellow fever and hepatitis. As of 1975, cholera and schistosomiasis had not yet gotten into Colombia.

I took 3 trips to Colombia in 1973, 1974, and 1975. Each time I had 3 or 4 companions from the United States. Each person paid for himself. I organized those expeditions mainly because I wanted to do something different. We flew from Miami, Florida to Barranquilla, Colombia. From there we travelled by public bus, private truck and jeep and by foot. On our trip we had mules carry our equipment to 3600 m.

John A. Kochalka

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For sometime I have been studying Australian spiders of the genus *Arcysa*. I have had a look at many specimens from different Australian museums. This year I will finish the examinations and will publish the results. Next year I will begin a study of Australian mimetid spiders.

For those studies I am very interested in all specimens of Australian araneid spiders I can examine (especially Mimetidae, Araneidae and others). It will be of greatest value for my studies if I could have a look at living specimens of these groups. Are you (members) able to help? Perhaps you can send me egg-cocoons or living specimens of these spiders (*Arcysa*).

On the other hand I am very interested in good connections to your Society and in the exchange of information and reprints between me and members. I am working as an arachnologist at the Staatliches Museum für Tierkunde, Augustusstr. 2, DDR-8010, Dresden. And so the connections can be also between your Society and our museum.

- Stefan Heimer, Kuntzelmannstr. 7, DDR-8051,
Dresden, East Germany.

HIBERNATION:

Its effect on the toxicity of funnel-web spider venom

It is not generally accepted that Funnel-web spiders hibernate during winter, but from my own observations I have found that they do hibernate and what is more they undergo a lengthy period of hibernation. The Tree Funnel-web spider, *Atrax formidabilis*, for instance, closes its burrow, ceases to eat as early as April and does not emerge again until October. Females emerge in about October whereas mature males commence to emerge in November and are about until February.

The long 'sleep' of hibernation probably has a considerable effect on the toxicity of the spider's venom. Venom of male spiders is estimated to be five or six times more toxic than that of females. The reason for that has been the subject of much conjecture, but it probably involves hibernation.

Before going into hibernation for the final month, the male spider looks very like the female, but during the long 'sleep' a great transformation takes place and he emerges a completely changed spider - a mature male structurally different from the female. After coming out of hibernation he has only the small amount of venom carried over during hibernation and there lies the secret of the apparently higher toxicity of male venom.

During the long 'sleep' the venom probably becomes highly concentrated. The same, no doubt, takes place with the female venom, but there is a difference. As soon as the female comes out of hibernation she commences to eat and consequently new venom which would tend to dilute the small amount of highly concentrated venom carried over during hibernation. The male, on the other hand, after coming out of hibernation a mature spider, no longer eats and consequently is unable to manufacture more venom and so his venom remains undiluted and highly toxic until it is all used up. That would account for the apparent difference in toxicity of the male and female venom.

The small amount of venom possessed by male spiders is probably the reason that many bites to humans cause no reactions. The spider had probably used up all its venom on some other creature.

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Female spiders collected just before coming out of hibernation, about September, before they commenced to eat would probably yield venom just as highly toxic as that of male spiders.

Pat Walker, Toowoomba, July, 1961.

Missulena bradleyi in Victoria?

Missulena bradleyi Rainbow (Ctenizidae, Araneae) is apparently common in and around Sydney (Womersley 1943; Main 1976) and is reportedly restricted to New South Wales (Mascord 1980). Several specimens recently collected in south-eastern Victoria are identified as Missulena 'near bradleyi'. That occurrence is a possible extension of range. Specimens examined will be lodged at the National Museum of Victoria.

Material examined: ♂, Beaconsfield Upper, Vic, 2.iv.1981; ♂, same locality, iv. 1981; ♂, Somers, Vic., 9.v.1980; ♀, Frankston, Vic., 24.iv.1981.

References

- Main, B.Y. 1976. 'Spiders'. Sydney: Collins.
 Mascord, R. 1980. 'Spiders of Australia. A field guide.' Sydney: Reed Pty Ltd.
 Womersley, H. 1943. A revision of the spiders of the genus Missulena Walckenaer, 1805. Rec. S. Aust. Mus. 7: 251-65.

Mandy Kotzman, Zoology Dept, Monash Univ., Clayton, Vic.

The Tree Funnel-web spider, Atrax formidabilis(Rainbow)

Very little is known of the life of this, the largest and probably the most poisonous of the funnel-web spiders, Atrax formidabilis. The spiders make nests in hollows usually of dead trees and stumps, but sometimes in green trees if there happens to be a suitable hollow. Over long periods such hollows become filled with material composed largely of earth brought up by termites and excreta of hundreds of thousands of these small creatures together with that of various other wood-boring insects and leaf mould. Such hollows are natural traps for rainwater that saturates the complex material. Little water loss occurs through evaporation in such hollows with the result that they remain wet for considerable periods - an ideal condition for the existence of spiders requiring dampness in the burrow. Several spiders may sometimes be found occupying the same hollow which may be quite large.

Tree Funnel-web spiders also burrow in the ground, the burrow somewhat resembling that of a Ground-dwelling Funnel-web spider, Atrax infensus. The burrow of Atrax infensus is almost always closed whereas that of A. formidabilis is usually open but is closed during excessive wet weather. The silken tube of the burrow can be quite long. A tube in an old stump when measured was found to be more than four feet in length and lead deep down inside the stump to the dampness at the bottom.

How the spiders get into the hollow that may be sometimes more than fifty feet above ground. I suspect that after dispersal the young spiders

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climb the trees to find a suitable hollow in which to commence their small burrow that is enlarged as the spider grows. Young spiders would have no difficulty in climbing up and down the rough cracked surface of dead trees at mating time. The first mature male spiders are out of hibernation in November and mating occurs until February or sometimes into March when most male spiders have disappeared. Male spiders wander at night, especially wet nights, in search of females.

Kale Tree Funnel-web spiders have a process on each of the second pair of legs. That process was thought to be for the purpose of holding the female fangs open during mating, but that is not so. Photographs (see 'The Funnelweb', fig. 22, p.27, reviewed in AA 4) of mating show that the fangs of the female are held by the first pair of legs of the male not the second pair. (The second pair of the male's legs hold the base of the second femur of the female. - Editor)

The egg-sac is cushion-shaped, composed of white silk and attached to the silk lining of the burrow. One egg-sac contained 295 eggs when opened.

Females of *A. formidabilis* normally have a black thorax and light brown abdomens, but after moulting and after coming out of hibernation they are all black but slowly take on the normal adult colour. The mature male spider is black throughout its rather short adult life.

Pat Walker, Toowoomba.

Murgah-Muggi, the Spider of the Pines

Slung high between the trees in the rainforest near Kenilworth the enormous yellow-gold web glittered in the patchy sunlight; its maker hanging head downwards in its centre. With her eight long spindly legs, yellow banded and knobby, spanning nine inches and a large egg-shaped body covered with silvery hairs, she was to some a repulsive sight. To others, a strikingly beautiful giantess of the spider world.

Found along the entire east coast of Australia, she is quite common in some places, often building her web in close proximity to others of her kind. She abounds in the cypress pine forests of the western districts of New South Wales. Today we know her as *Nephila* or, more familiarly, the Golden Orb-weaver. The Aborigines call her Murgah-Muggi. Seated around the campfire, the Wiradjuri and their kindred tribes would tell how this great spider came into being.

Long long ago, they said, an old woman lived in the pine forest. She was a 'wirreenum', a witch, and as such was shunned by her tribe. Her favourite food was human flesh. Over many months young men had mysteriously disappeared while hunting the kangaroos which grazed in the forest's open grassy spaces. One day Nullyan the Eagle-Hawk, bravest and cleverest warrior of the Wiradjuri tribe, came to the pine forest while hunting. Suddenly there came towards him through the trees a beautiful young woman.

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She was, in fact, the old witch who had transformed herself into a lovely young maiden. Mullyan felt instinctively suspicious. However, he accepted her offer to accompany him on his hunting, resolving to watch her closely. He hunted successfully throughout the day and, when night came, agreed to stay with and protect the maiden. She prepared a meal which he pretended to eat. Then Mullyan laid down beside the fire and appeared to fall fast asleep. The maiden bent over him and as he watched through almost closed eyelids, he saw the glossy hair turn lank and gray, the full breasts sag and flatten, the smooth skin wrinkle and on her face an expression of gloating triumph as she anticipated her next meal. Stooping, she snatched up her sharp pointed yam-stick with which to pierce his heart. Mullyan sprang to his feet and grappled with the old woman. She was exceptionally strong and the struggle was fierce and prolonged. At last he wrenched the yam-stick from her grasp and with it pinned her body to the ground. Thus the old witch met her end, but her spirit was transformed into a huge spider. She now satisfies her hunger with the bodies of large insects and, occasionally, tiny birds. She is Murgah Muggi, the spider of the pine trees.

Maureen Glover, Caloundra, with excerpts from McKewen, K. 1952. 'Australian Spiders'

FINANCES OF THE SOCIETY

The Australasian Arachnological Society maintains an account in a government backed building society. I present here some details of our finances.

From 12 December 1979 to 14 December 1980.

	Donations and membership fees	188.99
	Interest on account	<u>7.42</u>
		196.41
COSTS	Post Office box rental	16.00
	Newsletter postage	25.00
	First printing of AA1-3	<u>18.86</u>
		59.86
	Balance as of 15 December 1980	136.55

From 15 December 1980 to 15 December 1981

	Donations and membership fees	432.87
	Interest on account	<u>17.92</u>
		450.79

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COSTS	Post Office box rental	16.00
	Newsletter registration	20.00
	First printing of AA 4-6	40.47
	Newsletter postage and postage for general correspondence	69.51
	Further printing of AA 1-6	8.73
	Stationery	17.35
	Petty Cash	<u>3.32</u>
		175.38
Nett Income	1981	275.41
Balance as of	16 December 1981	<u>411.96</u>