THE NEW ZEALAND MEDICAL JOURNAL
Journal of the New Zealand Medical Association

White-Tail Tales

The Australian spiders commonly known as white-tail spiders comprise two species in New Zealand: *Lampona cylindrata* (L. Koch) and *L. murina* (L. Koch), which have been present in the country for over 100 years.[1,2] White-tail spiders are common household spiders and can be found throughout much of New Zealand, including areas as remote as the Kermadecs[1] and the Chatham Islands (PJS, pers. obs).

Banks et al have previously discussed the media attention given to these spiders in New Zealand,[2] with regard to their alleged effects on human health.[3–5] Claims are frequently made of necrotic wounds caused by white-tail spider bites. However, evidence such as the collection of the organism responsible for the bite is invariably lacking.[6]

Nonetheless, these spiders have been given an 'official' reputation in New Zealand. Medical doctors appear to blame these creatures for a number of skin ailments of unknown origin, possibly so that patients are able to receive adequate cover from the Accident Compensation Corporation (ACC).[2] We are sceptical that all of the 22,000 ACC payouts for spider bites in the 2005–6 financial year are genuine cases.[7]

This issue is not unique to New Zealand, and white-tail spiders have a bad reputation in their Australian homeland as well, also without medical evidence to substantiate the claims.[6]

Isbister and Gray's review of 130 definite cases of bites by *Lampona* spp. in Australia provided the following information: [8]

- 95% of the bites occurred indoors [*confirming the species' synanthropic habits*];
- Pain/discomfort occurred in all cases, and was severe in 27%;
- Other effects included puncture marks (17%), redness/red mark (83%) and itchiness (44%), with systemic effects occurring in 9% of victims;
- There were no cases of necrotic ulcers or confirmed infections;
- Median duration of effects was 24 hours;
- There were three distinct clinical patterns: pain only (21%), pain and red mark for < 24 hours (35%), and a persistent painful or irritating red lesion (44%).

These observations led the authors to conclude that "bites by *Lampona* spp. cause minor effects in most cases, or a persistent painful red lesion in almost half the cases. White-tail spider bites are very unlikely to cause necrotic ulcers".[8]

The authors' conclusions are shared by Associate Professor Julian White (Head of Toxinology, Adelaide Women's and Children's Hospital), who vehemently criticised the "spurious diagnosis of white-tail spider bite necrosis".[6] White calls the unwarranted diagnosis of necrotising arachnidism and its attribution to white-tail spiders as "a prolonged and sad medical fable in Australia", pointing out that this

problem had been "regrettably now exported beyond our *[Australian]* shores", in reference to similar claims in New Zealand.[6]

Despite the publication of Banks et al's article in 2004,[2] necrotic wounds of unknown aetiology continue to be attributed to white-tail spider bites in New Zealand. The media also continues to spread the impression that skin ulcers of unknown origin are caused by these spiders,[9] perpetuating the creatures' undeserved reputation.

We regularly hear from people claiming a relative or friend was bitten by a white-tail spider and consequently experienced severe reactions. Typically no spider was seen, let alone collected for identification. Interestingly, in almost all cases, the supposed victim did not feel the 'bite'. This contrasts with the evidence of the Australian study where pain/discomfort occurred in all cases.[8]

It is important therefore, to adequately substantiate claims of necrotising arachnidism and other dermatological lesions or systemic effects regularly attributed to white-tail spider bites in New Zealand. The only way this can be confirmed is if the biting organism is collected and accurately identified. Specimens can be identified by staff at any of the main centre museums (Otago, Auckland, Canterbury, Te Papa) as well as Landcare Research in Auckland. However, we request that those spiders confirmed as having bitten a person should be sent to one of us to help us compile a more comprehensive picture of spider bite effects.

Spider specimens should ideally be preserved in a solution of 70% ethanol and 30% distilled water. It would also be helpful if these are adequately labelled with the date, locality (city, suburb) and location (indoors, backyard, etc) of collection. However, since most households are unlikely to have ethanol on hand, specimens may be kept in a freezer or even preserved in methylated spirits. Keeping them frozen would also preserve DNA for molecular identification,[10] in case morphological identification is not possible.

It should be stressed that while white-tail spider bites are over-diagnosed, we in no way wish to make light of the very real suffering experienced by the victims in alleged spider bite cases. However, we feel that everyone would be better served by more accurate diagnoses. As White observed, "when presented with skin damage of initially uncertain origin, medical practitioners must look for all the many and varied non-spider-bite causes for such damage, leaving necrotising arachnidism as a diagnosis of last resort and uncertain validity after all other possibilities are excluded". [6] In the meantime, as the available scientific evidence indicates that severe reactions to white-tail spider bites are very unlikely, we request that health professionals refrain from perpetuating the myth about these spiders in New Zealand.

In the absence of a culprit, one may as well blame the 'vicious attack' on the 'killer nine-inch nail'.

Acknowledgements: We thank John Fountain (National Poisons Centre, University of Otago) and Mike Fitzgerald for revising this letter.

José G B Derraik
Research Associate, Ecology and Health Research Group
Wellington School of Medicine and Health Sciences, University of Otago
Wellington, New Zealand
(derraik@gmail.com)

Phil Sirvid
Collection Manager (Entomology)
Museum of New Zealand, Te Papa Tongarewa
Wellington, New Zealand
(phils@tepapa.govt.nz)

Cor Vink
Scientist, AgResearch
Lincoln Science Centre
Canterbury, New Zealand
(cor.vink@agresearch.co.nz)

Grace Hall
Arachnologist, New Zealand Arthropod Collection
Landcare Research NZ Limited
Auckland, New Zealand
(hallgr@landcareresearch.co.nz)

References:

1. Platnick NI. A relimitation and revision of the Australasian ground spider family Lamponidae (Araneae: Gnaphosoidea). Bull Am Museum Nat Hist. 2000;245:1–330.
2. Banks J, Sirvid P, Vink C. White-tailed spider bites – arachnophobic fallout? N Z Med J. 2004;117(1188). http://www.nzma.org.nz/journal/117-1188/748
3. Boland MJ. Fears of biting spider plague. Evening Post. 2000; Apr 3.
4. Betts M. Spider suspect in death mystery. Dominion Post. 2003; Mar 5.
5. Price A. Venomous spiders back on the bite. The Mail. 2001; Feb 22.
6. White J. Debunking spider bite myths. Med J Aust. 2003;179:180–1. http://www.mja.com.au/public/issues/179_04_180803/whi10399_fm-2.html
7. Boyes N. 20,000 spider bites sting ACC for $1.7m. Sunday Star Times. 2006; Dec 10.
8. Isbister GK, Gray MR. White-tail spider bite: a prospective study of 130 definite bites by *Lampona* species. Med J Aust. 2003;179:199–202. http://www.mja.com.au/public/issues/179_04_180803/isb10785_fm.html
9. McKay T. White-tails are biting. Wanganui Chronicle. 2006; Apr 01. http://www.wanganuichronicle.co.nz/localnews/storydisplay.cfm?storyid=3678771&thesection=localnews&thesubsection=&thesecondsubsection=
10. Vink CJ, Thomas SM, Paquin P, Hayashi CY, Hedin M. The effects of preservatives and temperatures on arachnid DNA. Invert Systematics. 2005;19:99–104.