

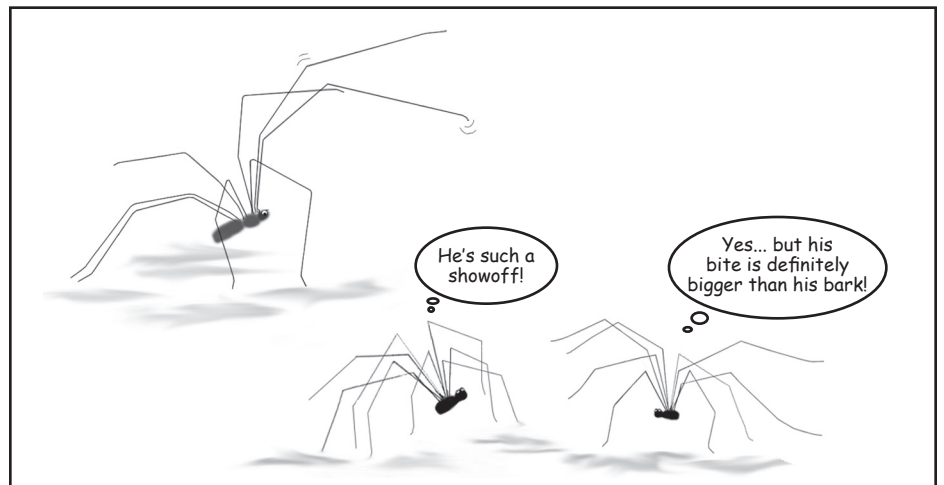
Daddy-longleg Deadly Weapons

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When I was invited to give a plenary lecture at the International Congress of Entomology in Brisbane, Australia, in August 2004, I knew I would have to take my family along. For years, my husband and daughter have good-naturedly vacationed with me while I attended meetings in far less enticing spots. Although we all had a great time in Alpine, Texas, and West Lafayette, Indiana, for example, neither city routinely ends up on lists of top 10 most popular tourist destinations. Thus, it seemed only fair, when the opportunity presented itself, to take them to a place that large numbers of people know they want to visit even if there's no conference in town.

The problem I faced was how to spend time with my family seeing what we could of Australia in the five days we were going to be there, while attending to my various responsibilities during the conference at the same time. The ideal solution appeared to be to hire a private tour guide, who could take us wherever we wanted to go, who could tell us interesting facts about the natural and cultural history of the area, and who could drive a car on the left side of the road without accidentally swerving into oncoming traffic or inadvertently shifting into reverse instead of signaling for a turn.

So that's how we came to know Terry Umstad, of SeeMore Scenic Tours, our personal guide to Brisbane. Terry met us at our hotel the day we arrived (after I had registered at the congress), to take us to Lone Pine Sanctuary, a nature preserve just outside the city where tourists can get photographed holding a koala—the consummate Brisbane tourist activity. After pointing out a few highlights on the way out of town, Terry asked what brought us to Australia. When I told him I was an entomologist in Brisbane for the International Congress, he proudly informed me that the world's most venomous spider lived in Australia.



“Sydney funnelweb spider, maybe, or redback spider?” I asked.

“No,” he replied, “it’s the daddy longlegs—its venom is the deadliest in the world, but its fangs are too weak to pierce the skin.”

There followed an excruciating silence. What bothered me more than the technicality that daddy longlegs aren’t actually spiders (they belong to the order Opiliones, not the order Araneida) was that I have heard these very words many times before (albeit never with an Australian accent). Back in the United States, “the deadly daddy longlegs” is one of the most persistent of urban legends, entirely baseless due to the simple fact that all known opilionids lack venom glands and perforce can’t be the world’s most venomous creatures.

I hesitated to say anything to Terry in part because, for all I knew, “daddy longlegs” is an Australian common name for something other than an opilionid—maybe even a deadly spider. After all, I hadn’t been at the congress more than an hour before I discovered that an “iced coffee” in Australia (which I ordered to fend off massive jet lag) contains not ice but rather ice cream, which was just fine with me. Later in the

week, though, I was dismayed to discover that a “milk shake” in Australia has no ice cream at all—it’s milk and flavoring, as the name suggests; milk shaken with ice cream is called a “thick shake.” And for reasons I never could ascertain, ice cream combined with soda, a beverage we here in the United States call an “ice cream soda,” is called a “spider” (further adding to the linguistic confusion).

Even in the United States, there’s some confusion about what a daddy longlegs is. Species in the family Pholcidae are true spiders sometimes referred to as “daddy longlegs spiders.” In Britain, tipulids, species known as crane flies in the United States, are often called “daddy longlegs” as well.

While I was mulling this linguistic dilemma, Terry noticed the prolonged silence and asked if something was wrong. I mumbled something about American daddy longlegs; and then, in the hope of moving the conversation into an area about which I truly knew nothing, I asked him to explain the rules of Australian football.

Mercifully, we didn’t see any daddy longlegs of any kind on any of the subsequent trips we took with Terry, although we did see one dead funnelweb spider in a jar in

a restaurant and some silk-spinning glow-worms (from the genus *Arachnocampa*) outside Lamington National Forest. When I returned home, I checked the literature on and off the Internet for whatever I could find about Australian poisonous daddy longlegs. I found that I am hardly the first entomologist to wonder about deadly daddy longlegs.

In a letter published in *Natural History*, Rogelio Mafias-Ordonez (2001) responded to the query, "I've been told that daddy longlegs are poisonous but have mouthparts too tiny to inflict wounds in humans. Is this true?" with the speculation that this urban legend probably arose when "at some point, an article on a group of somewhat poisonous Australian spiders that are also called daddy longlegs was picked up by the U.S. media, and the creature was interpreted to be our own harvestman."

Vetter and Visscher (2004) were more emphatic in definitively debunking the myth, even in Australia: "This tale has been lurking around for years. I have heard it repeatedly in the United States, and even heard a school-teacher misinforming her class at a museum in Brisbane, Australia."

Finally, I found the ultimately authoritative site—the Australian Museum itself (<http://www.amonline.net.au/spiders/resources/general.htm#venomous>), which directly addresses the issue on its Spider FAQ website (as it were):

There is no evidence in the scientific literature to suggest that Daddy-long-legs spiders are dangerously venomous. Daddy-long-legs have venom glands and fangs but their fangs are very small. The jaw bases are fused together, giving the fangs a narrow gape that would make attempts to bite through human skin ineffective. However, Daddy-long-legs Spiders can kill and eat other spiders, including Redback Spiders whose venom can be fatal to humans. Perhaps this is the origin of the rumour that Daddy-long-legs are the most venomous spiders in the world.

Although I failed to turn up deadly daddy longleg venom in my Internet search, I stumbled across another distinctive feature of daddy longlegs that had escaped my notice up to that point. Evidently, although his mouthparts are popularly thought to be tiny, the male daddy longlegs, in reality, is much more impressively endowed in the genitalia department. In a paper published in *Nature* titled "Preserved organs of Devonian harvestmen," Dunlop et al. (2003) reported finding a 400-million-year-old fossil harvestman in the Rhynie chert of Scotland clearly equipped with a male intromittent organ. This organ, together with tracheae and the ovipositor found in female specimens, is noteworthy in that it provides evidence of

a terrestrial existence; intromittent organs aren't a necessity for aquatic organisms, which can discharge their sperm into an aqueous medium without fear of desiccation and viability loss.

The popular press found the organ noteworthy as well, but apparently for different reasons. On the NationalGeographic.com website, Pickrell (2003) reported the discovery of "probably the oldest penis found in spider fossil." The article itself correctly identified the fossil as a "harvestmen [*sic*], a non-web-spinning arachnid" and not a spider, but the focus of the article wasn't really on the challenge of colonizing terrestrial environments in the Devonian era.

The "large branching trachea [*sic*]" were mentioned as an "interesting feature" in a paragraph, but these structures were clearly of secondary status; the main emphasis of the story was indisputably the fact that this was not only a very old penis but was possibly the world's very first penis. Whereas in the *Nature* story, the word "penis" appeared only twice (and not in the title), the much shorter *National Geographic* story used the word "penis" five times, the word "sperm" eight times, and the word "genitalia" seven times—so these few thematically linked words collectively constituted a full 2.7% of the entire 734-word story. This tally doesn't even include the word "hemipenes," which also appeared once, nor the word "tool" (as in "A penis...is a common tool required for life on land," a turn of phrase that I have a hard time believing was totally fortuitous). The story concludes with a quotation from Paul Selden, president of the International Society of Arachnology:

These type of harvestmen 'have relatively large genitalia, compared to their body size,' said Selden—the fossil male has a penis two-thirds the length of his body. 'I suppose it is to get past those long legs,' said Selden.

It amazes me that this story isn't the one circulating among the public, although perhaps some subliminal recognition of this feature of their anatomy is the reason that opilionids are universally known in the English-speaking world (including Australia, "milkshakes" notwithstanding) by male epithets, such as "daddy longlegs," "harvestmen," or "grandfather greybeards." But the public never had the opportunity to circulate this story: A mere month after Dunlop et al. (2003) came out in *Nature*, a paper by Siveter et al., somewhat unexpectedly titled "An Ostracode Crustacean with Soft Parts from the Lower Silurian," was published in *Science* describing what *BBC Online* called the "oldest male fossil animal yet discovered"—a 425 million-year-old

ostracode. This fossil organism was sufficiently well-endowed as to inspire the name *Colymbosathon eplecticos*," which translates roughly to mean "amazing swimmer with a large penis." Nicholas Wade of the *New York Times* heralded the finding with the headline "The Archaeology of Maleness Reaches Back...and Back Again" and many news websites, including *BBC News Online*, brought the update to an eager public anxious to keep abreast of late-breaking preserved-organ-related news.

Frankly, I don't know why ancient intromittent organs merit so many headlines in such high-profile venues. But, then again, I don't have what all of the authors of all of these articles in *Nature*, *Science*, the *New York Times*, the *BBC News* website, the *National Geographic* website, and many other online news sites that carried these stories have. That's right—I don't have a Y chromosome, so I guess I'll never understand what all of the fuss is about.

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