

New arachnids living in symbiosis with birds

December 29 2015, by Teresa Belcher, Sciencenetwork Wa



A sociable weaver (*Philetairus socius*). Credit: Greg Goldsmith

A research team involving a WA scientist have determined that a citizen of a bustling bird metropolis in South Africa is actually a new type of miniscule arachnid.

The nests of sociable weaver birds (*Philetairus socius*) are the largest of any bird, and may contain up to 500 individuals, while also harbouring a wide variety of organisms acting as ectoparasites on the birds

themselves—similar to fleas on a dog—or feeding on other invertebrates.

International scientists from the UK and South Africa came across the small arachnid, known as a pseudoscorpion or false scorpion, and sought the help of WA Museum curator Dr Mark Harvey to identify the creatures.

Dr Harvey, who specialises in studying pseudoscorpions, says knowledge from this research will help build a global picture of pseudoscorpions and enable him to consider the WA fauna in a broader context.

"We studied the taxonomy and relationships of a pseudoscorpion found in the nests and plumage of sociable weavers and found that they not only represented a new species that have not been previously described, but a new genus," he says.

They characterised the species by examining the creature's physical structure.

The main distinguishing feature was the gaping fingers found only in the males and which only occurs in one other genus of the Cheliferidae family.



The pseudoscorpion *Sociochelifer metoecus* on a collecting bag. Credit: Patricia Lopes

It is most likely the males either use the space between the fingers to grasp females during mating, or to grapple with other males to gain access to females, Dr Harvey says.

He also used molecular sequence data to show that two different South African populations of the pseudoscorpion had only slight differences, confirming that they represented the same species.

The biology of *Sociochelifer metoecus* is completely unknown, Dr Harvey says, but as other pseudoscorpions feed on small invertebrates it is likely that it feeds on other invertebrates found in the nest.



A sociable weaver nest. Credit: Greg Goldsmith

It is likely the pseudoscorpions commute between nests in the plumes of the resident sociable weavers, Dr Harvey says.

"It is possible—but not confirmed—that *Sociochelifer metoecus* only occurs with the sociable weaver, and does not occur in any other habitat," he says.

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