In a confined space, *Myrmarachne* species displayed versatile reactions to sympatric ants that were dependent on factors such as the position of the ant and the distance between the *Myrmarachne* and the ant. *Myrmarachne* also showed interspecific differences in their reactions to ants. All *Myrmarachne* species avoided contact with the ants whenever possible. Even when there was contact between the two, *Myrmarachne* managed to avoid being attacked by the ant. *Cosmophasis bitaeniata* also avoided contact with ants. *C. bitaeniata* and *Myrmarachne* had the same reaction types to ants, but actions occurred at different frequencies. Overall, there were more similarities than differences between the ways these two salticids interacted with *O. smaragdina* worker ants, even though *Myrmarachne* and *C. bitaeniata* have different methods of mimicking the ants. As for the types of behavioural mimicry, there was a significant difference between *Myrmarachne* species, as well as between the two salticid genera. When *Myrmarachne* was presented with another morphological ant mimic (the alydiid bug *Riptortus serripes*), the spiders' reactions differed from those displayed towards the ants. These differences indicate that *Myrmarachne* can distinguish the ant and the bug using visual cues (perhaps through the structure of the mouthparts, or the way the two insects move around).

So behaviourally, *Myrmarachne* is a versatile genus apparently under strong selection pressure and showing a high rate of differentiation and speciation. The phylogenetic study also reflects strong selection pressure, resulting in highly polymorphic species. *Myrmarachne* species have undergone adaptive radiation and speciation as they evolved towards resembling their different model ant species. Therefore the behavioural and evolutionary dynamics of these salticids and their model ants represents a case of plasticity and versatility by the salticids.

HONOURS THESIS
ABSTRACT

Spiders in Restored Habitat: How Important are Dead Standing Trees?

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There is relatively little known about any potential benefits to invertebrates of the provision of standing dead trees in areas rehabilitated following major disturbances. This study describes the effects on spiders of a tree thinning experiment at Huntly Bauxite mine, 110 km south-east of Perth, Western Australia, that created a large number of dead stags in a rehabilitated mine pit by notching and herbicide injection. Spiders were sampled over a six-month period on 159 jarrah (*Eucalyptus marginata*) trees using bark traps, which catch spiders as they walk up the tree trunk (Figs 1). Small dead and live trees were sampled in a restored mine pit and surrounding forest in order to assess the benefit of dead stags to spiders and to compare spider distribution in the forest and mine pit. In the forest, three tree size categories were sampled to study the effect of tree size on spiders.
The habitat available to spiders on individual trees was measured and included bark characteristics and crack dimensions. In total, 1,537 adult spiders were caught, representing 115 species and 24 families. Most spiders were active hunters, the remainder being web spinners. In general, dead trees supported fewer spiders and less species.

Figure 1: A bark trap as employed during the study on the importance of dead standing trees. Photo: Adam Peck

The distribution of species was more even on dead forest trees. While the mine pit had fewer spiders, richness and diversity were similar. There were no effects of tree size on spiders. It is suggested that higher spider abundance and richness on live trees than on dead trees was due to the higher bark cover and decortication of live trees, which increase the amount of microhabitat available to spiders and may also increase prey abundance. The creation of dead stags is of little or no benefit to spiders.

Recent Australasian Arachnological Publications

This column aims to collate arachnological publications that were issued (but not yet those ‘in press’) since the last volume of Australasian Arachnology. These include:

- papers on Australasian arachnology and
- papers written by Australasian arachnologists (including non-arachnid papers).

I am particularly interested in listing entries of publications that are not easily traceable through the common library search engines, including theses and abstracts of theses. Please provide me with information on your latest publications for the next issue.


