



Phylogenetics of Australian archaeococcoid scale insects to assist in decision making for classical biological control.

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A recently detected pest in Australia is the gymnosperm-feeding giant pine scale *Marchalina hellenica* (Hemiptera: Marchalinidae). This archaeococcoid scale insect originates from the eastern Mediterranean and in its native range it is one of the most important species used in the apiculture industry for pine honey production. However, high numbers of *M. hellenica* on its gymnosperm host plants can negatively impact the health of trees including a reduction in wood production and even tree death. A biocontrol program to control *M. hellenica* in Australia is currently underway, however a rigorous risk assessment process must be conducted before any new biocontrol agent can be considered for introduction. Risk assessment includes prey-specificity testing of selected non-target species such as native scales, and one of the most important criteria for selecting which non-target species to test is relatedness to the target pest. We are constructing a phylogeny of Australian scale insects to resolve uncertain relationships amongst archaeococcoid taxa. Reducing uncertainty of the phylogenetic relationships between Australian native scale insects will make a significant contribution to the selection of test species, biological control risk assessment, and biological control agent introduction decisions.

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