Species identification and tools to study hybridisation of tree weta

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Eligible for student prize

The concept of species is central to the field of biology. Defining the line between species can be difficult, especially where hybridization occurs. Hybridization may or may not lead to introgression of alleles between species, which can have important implications for both understanding a species evolutionary history and the speciation process itself. It is also important for many conservation issues, as introgression of genetic material may swamp endangered species and threaten their genetic integrity, although in other cases it can lead to much needed increases in genetic diversity. Tree weta (genus *Hemideina*) have attracted interest both because of their close relationship to many endangered giant weta (*Deinacrida*), and also because two species are known to have multiple chromosomal races. So far, little is known about hybridization between species in this genus so the aim of this project is to look for introgression between two species pairs (*H. thoracica* & *H. crassidens*, and *H. thoracica* & *H. trewicki*). Both morphological characters that distinguish species, as well as genetic data are used to define species and look for potential hybridization and introgression.