

## Taxonomic triage: molecular tools complementing morphological description, a New Zealand case study

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Morphological analysis was once the only means of accomplishing the taxonomical description of new species and identifying those already described. Today, molecular tools are often complementary to classic morphological description. Indeed, DNA barcoding is now recognised as an additional character that can contribute to taxonomic descriptions and facilitate identification of morphologically cryptic species. In many cases, molecular tools are solicited after the morphological description of a species. However, there is also significant benefit from using these tools the other way around. One such circumstance is when a taxonomic description is based on the adult, 'trappable' life stage of a pest species, but is not available or extremely difficult to attain for the more sessile and, often more damaging juvenile stages. In New Zealand this situation exists for the larval stage of the native scarab *Costelytra zealandica* (White) (Coleoptera: Scarabaeidae), which is a significant pasture pest that occurs sympatrically with con-generic non-pest larvae. High morphological similarity makes it extremely difficult to study these larvae for ecological or pest management research without first having confirmed their species identity. We report on the use of molecular markers to separate morphologically indistinct larvae into their species groups, which can then be critically examined to try and correlate novel morphological features that distinguish them. In this presentation, we will demonstrate how we triaged morphological description with molecular tools to differentiate the larval stages of the pest *C. zealandica* from the non-pest species, *C. brunneum* (Broun).

