

Cryptic diversity in Northland landhoppers

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Landhoppers (Crustacea: Amphipoda: Talitridae) are a conspicuous element of the leaf litter fauna of New Zealand. Currently, six endemic and two introduced genera are recognised in New Zealand. The endemic genus *Waematau* has five described species, all restricted to the northern North Island. A large-scale pitfall trapping survey of ground-dwelling invertebrates was conducted in the Te Paki Ecological District at the northern tip of the North Island. Examination of numerous specimens of *Waematau reinga* from the survey revealed variation in this species. Three subgroups of *W. reinga* could be identified from subtle differences in a set of morphological characters. The characters included differences in body size, length of the second antenna, depth of the palm on the propod of gnathopod 1, shape of the sixth coxal gill, and the number of spines on uropods 1-3. Although the three taxa otherwise bear a very close morphological resemblance to each other, molecular analysis of samples collected in sympatry strongly suggests that they constitute distinct gene pools, indicating the presence of cryptic species. These findings have consequences for conservation management as one of the new taxa has only been recorded from one location, and in very low numbers. Further investigations in Northland have revealed cryptic diversity in other species of *Waematau*; for example, an undescribed species from the Poor Knights Islands is morphologically almost identical to *W. unuwahao* from Te Paki, but molecular analyses again suggest they are distinct. Observations from further afield also indicate that cryptic diversity is likely to be a general characteristic of New Zealand landhoppers, suggesting that the talitrid fauna in this country is considerably richer than previously thought.

