

TRACKING THE ORIGINS OF INTRODUCED TERRESTRIAL INVERTEBRATES ON MACQUARIE ISLAND

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We utilised mtDNA (COI) and AFLPs to investigate the origins of four terrestrial invertebrates (amphipod, an isopod, and two flatworm species) that were thought to have all been introduced to Macquarie Island early last century (between 1810 to 1919). The four species were probably imported accidentally with sealers and their supplies from New Zealand. The isopod (*Styloniscus otakensis*) and amphipod (*Puhuruhuru patersoni*) are only known from New Zealand and its southern islands, and were only recently discovered on sub-Antarctic Macquarie Island in 1991 and 1992, respectively. On Macquarie Island the amphipod and the isopod are found within or near the current station limits. The flatworms (*Arthurdendyus vegrandis* and *Kontikia andersoni*) have a distribution from Lusitania Bay (seal and penguin oil harvesting site from 1889-1919) to Waterfall Bay and were first discovered in 1998. *Arthurdendyus vegrandis* is suspected to be conspecific with an undescribed species found close to, and known only from, southern South Island, New Zealand, and the genus is only 'naturally' found in New Zealand. The distribution and origins of each species was explored using haplotype networks in addition to maximum likelihood analyses. We found very low levels of genetic diversity within any of the four species throughout their ranges on Macquarie Island, in comparison to the NZ species ranges. These results are discussed in the context of historical information to provide plausible explanations to the likely causes for these introductions as well as their origins.