

Flies regifted? Did Australia give New Zealand its horse flies (Saptia Diptera: Tabanidae)

Bryan Lessard ^{*1}, David Yeates ², Stephen Cameron ², John Trueman ³

¹ CSIRO Ecosystem Sciences, Clunies Ross St, Acton, ACT 2601, Australia

² CSIRO Ecosystem Sciences, GPO Box 1700, Canberra, ACT 2601, Australia

³ Australian National University, Canberra, ACT 200, Australia

Horse flies are notorious for their feeding behaviour and transmission of disease in both humans and livestock, but also have a beneficial and underestimated role in pollination. The tabanid genus *Saptia* has an exclusively austral distribution, occurring in Australasia, New Zealand, and South America. Contemporary molecular techniques are combined with traditional morphological methods to create the first robust phylogenetic hypothesis for *Saptia*. We analysed a 5KB concatenated matrix of CAD, PGD, AATS, 28s, COI and COII DNA sequences, and 30 morphological characters. Results suggest that *Saptia* and its five included subgenera are monophyletic, however new subgenera will be required for a small subset of species. Divergence time estimation using the molecular data calibrated with fossils suggests that the New Zealand *Saptia* evolved in situ from a Gondwanan ancestor, rather than being colonized by long distance dispersal after the Oligocene drowning.

