Black flies, sandflies, te namu

Known in New Zealand as ‘sandflies’ or ‘te namu’ and elsewhere in the world mainly as ‘black flies’. Simuliidae are iconic New Zealand insects. Virtually every New Zealander has been bitten by female simulids, as have many overseas tourists. Worldwide, simulids are notorious for their disease transmission, in particular river blindness in Africa and South America. New Zealand simulids are not known to transmit any diseases to humans, but many people react badly to bites of species to which they have no previous exposure.

Simuliids of New Zealand belong to the genus Austrosimulium known only from New Zealand, Tasmania, and mainland Australia. Simulid larvae require running water and in New Zealand are more or less ubiquitous, occurring in almost all running water habitats. There are 19 species of Austrosimulium in New Zealand, but only three species found here are serious biters of humans and it is only the females that bite. They bite to get the nutrients to produce eggs. In this Fauna keys are provided for larvae, pupae, adults, and ecological habitats. All known stages are described and illustrated for each species, together with information on their biometrics and biogeography.

There are 72 full-page colour plates and a total of 540 figures. Molecular analysis indicated that New Zealand Austrosimulium arrived by dispersal about 5 million years ago.

Elsewhere in the world simulids in the genus Austrosimulium may be considered to feed on birds or mammals, depending on the presence or absence of a tooth on the larval claw. New Zealand simulids are opportunistic and females will generally take blood meals from whatever is available, though there is one species that attacks Fiordland crested penguins while studiously avoiding humans.

What did New Zealand simulids feed on before humans arrived? Of little doubt it would be on the vast number of birds, now greatly depleted, and probably also the large numbers of seals present then. Indeed, searching along beaches for a blood meal from either birds or seals still appears inherent behaviour of New Zealand adult female simulids — and probably the reason for their name ‘sandflies’.

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