

Short Communication

First records of *Megaselia scalaris* (Loew) and *M. spiracularis* Schmitz (Diptera: Phoridae) from New Zealand, with additional information on other worldwide species

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Abstract

First records are given for the phorid flies *Megaselia scalaris* (Loew) and *M. spiracularis* Schmitz in New Zealand. Both are of potential medical significance, being agents of myiasis elsewhere in the world. Further, more detailed records are given for *M. halterata* (Wood) and *M. rufipes* (Meigen) in New Zealand. All of these species are widely distributed throughout the world.

Keywords: distribution, myiasis

Introduction

The genus *Megaselia* Rondani is a large group of phorid flies with a huge variety of larval feeding habits. Some are common synanthropic scavengers, but many others are herbivores, fungivores, predators, parasitoids, and even true parasites. The habits of most species are unknown, and worldwide there are probably thousands of undescribed species. The known natural history of *Megaselia*, and other phorid flies, was reviewed by Disney (1994a).

Among the common scavenging species there are occasional records of larvae infesting humans (myiasis), especially for the species *Megaselia scalaris* (Loew) and *M. spiracularis* Schmitz. As such, these two flies represent a possible medical health concern wherever they occur, and their discovery in New Zealand is noteworthy. These, and other synanthropic phorids, have commonly been transported throughout the world by human activity.

The following new records are based on specimens in the collection of Hugh Oliver (HO), except those of *M. spiracularis*, which are based

on specimens in the Natural History Museum of Los Angeles County.

Results

One of us (HO) has seen specimens of *Megaselia scalaris* from Auckland, as follows (all submitted to HO by Ruud Kleinpaste): intercepted at Auckland airport, breeding in "century eggs", 19 July 1983; intercepted at Auckland airport, reared from rotting frangipani (*Plumeria* sp.), 12 August 1983; reared from milk powder agar left on a windowsill to cool at the Auckland dairy laboratory (near the port), 8 April 1984. The final record is the only one of oviposition in New Zealand so far. This species is found nearly worldwide, and is a highly polyphagous scavenger (records summarized by Disney, 1994a). Myiasis cases involving this species include infestation of wounds infected by bacteria, as well as larvae in the human intestine. Specimens of *M. scalaris* are recognizable by the distinctive male terminalia (Fig. 1) and especially the female abdomen, in which the sclerite of segment 6 extends laterally on the abdomen (Fig. 2).

The second species, *M. spiracularis*, was recorded previously from Japan, Malaysia, and Taiwan. Schmitz (1957) states that this species frequently enters houses in Tokyo, and we found two male specimens in HO's house in Hamilton, New Zealand. In Japan, this species was responsible for intestinal myiasis (Ogawa *et al.*, 1959) probably through the ingestion of eggs on food. Disney (1994a) also noted a possible record of *M. spiracularis* larvae extracted from a human lung. The adult male is easily recognized, based on the enlarged abdominal spiracles (Fig. 3) and the structure of the male terminalia.

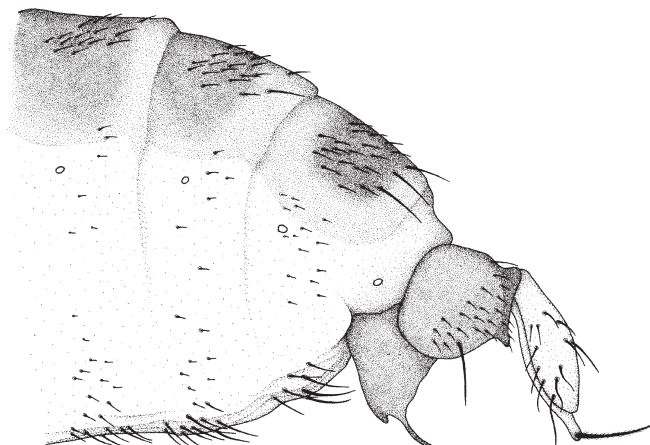


Figure 1. Apex of male abdomen, *Megaselia scalaris* (Loew) (specimen from Los Angeles, California).

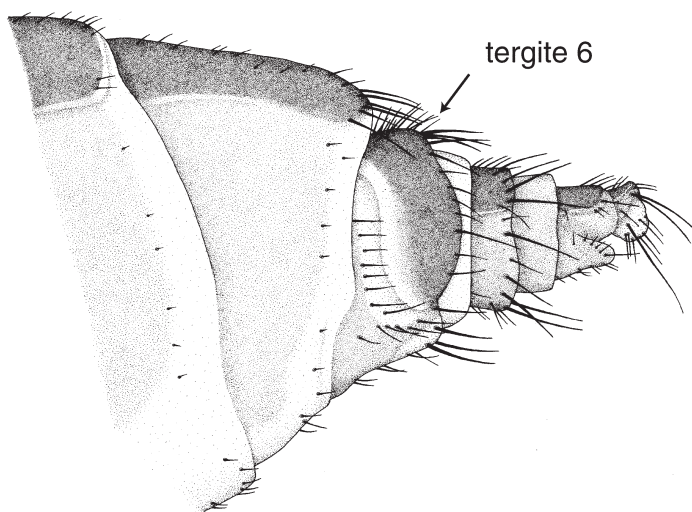


Figure 2. Apex of female abdomen, *Megaselia scalaris* (Loew) (specimen from Los Angeles, California).

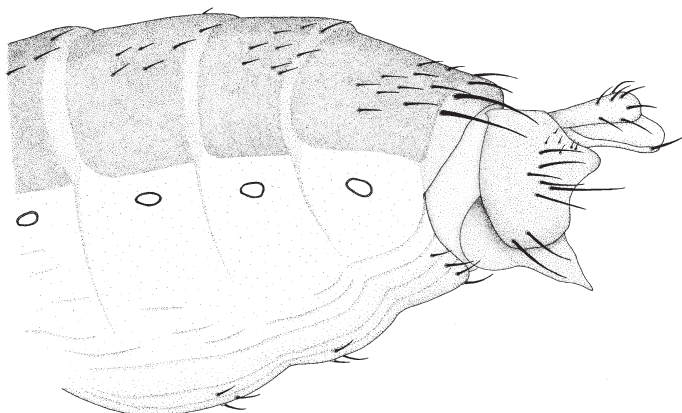


Figure 3. Apex of male abdomen, *Megaselia spiracularis* Schmitz.

Both *Megaselia scalaris* and *M. spiracularis* can be identified by the keys in Borgmeier (1967a, b), or by the distinctive adults (Figs. 1-3).

Two other worldwide species of *Megaselia* have been recorded in New Zealand: *M. halterata* (Wood), and *M. rufipes* (Meigen). A single specimen of *M. halterata* was collected by Disney (1994b), who illustrated the male terminalia, but this species has been found on many occasions by HO. It can be a pest of cultivated mushrooms, in both North and South Island mushroom farms. It is also common in South Island pastures, but less so in North Island pastures. *M. halterata* was common in the pitfall collections of the spider specialists R. R. Forster and C. L. Wilton taken in Otago in 1967-1968, as well as in R. P. McFarlane's yellow pan trap collections in the New Brighton dunes, Christchurch (both South Island), and males were swept by HO from roadside grass at Whatawhata, Waikato (North Island) on 1 March 1968.

The first record of *M. rufipes* from New Zealand was as a new species erroneously described as *M. omnivora* by Hudson (1892). It is easily recognized by the blunt, dense spines on the tergites of the male abdomen (eg. Disney, 1994b; figs. 385-386), and the presence of 5 large alular setae. In New Zealand this common scavenger is widespread around human habitations and terrain modified by human activity. Specimens include the following: males and females bred from detritus in the floor of a beehive in August, 1967; specimens from a rotten fungus-baited trap, Claudelands Bush Reserve, Hamilton, 4 May 1970; and specimens obtained from a yellow pan trap over buried fish skins at Raglan, 3-22 March 2006.

Acknowledgements

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