



Scuttle flies (Diptera: Phoridae) caught at dead mice in S. W. Finland

R. HENRY L. DISNEY

Department of Zoology, University of Cambridge, Downing Street, CB2 3EJ, U. K. E-mail: rhld2@hermes.cam.ac.uk

Abstract

Scuttle flies trapped at baits of dead mice are reported from a region of S. W. Finland subjected to pollution from the smelting of copper and nickel. Most belonged to the huge genus *Megaselia*, but 96% were females, the majority of which cannot be named until linked to their males. These are given code numbers and distinguished by means of a key.

Key words: Diptera, Phoridae, *Megaselia*, Europe, key

Introduction

Elena Zvereva (Section of Ecology, Department of Biology, University of Turku, Finland) asked me to identify the scuttle flies (Diptera, Phoridae) obtained as part of a project investigating the effects of copper and nickel smelters on the insect fauna of the Kola Peninsula in North West Russia and in S. W. Finland that was also subjected to pollution from the extraction of copper and nickel. The report on the invertebrate faunas in relation to the pollution gradients will be given elsewhere. In this paper I report on the species encountered in the Finnish survey. This survey was in the vicinity of Harjavalta and was carried out by T. van Ooik in 2009 using traps baited with dead mice, as had been employed in the Kola Peninsula study. In both surveys most specimens belonged to the genus *Megaselia* Rondani. In Finland 86 phorid specimens were obtained, of which 56 (65%) belonged to *Megaselia*.

Identification of the species of the giant genus *Megaselia*, with at least 300 species recorded from the Northern Europe, is currently based on the male sex in the first instance (e.g. Disney, 1989). Indeed, several recent ecological studies have only identified the males of *Megaselia* species obtained in their samples and have ignored the females of this genus. This is unfortunate when, as in this case (see below), the samples are dominated by females. The recognition of the females is gradually advancing and, relevant to this paper, includes species keyed by Buck & Disney (2001) and a species whose female was recently characterized (Disney, 2011). However, the females of many species cannot be identified in our present state of knowledge. The sexual dimorphism of species of *Megaselia* means it is often far from easy to link specimens of males to the females of the same species. Indeed erroneous associations of the males of one species with females of another species have often been based on the collection of the specimens at the same locality on the same occasion. Traditionally mating pairs and reared series have been the sure way of linking the sexes. Today, following the switch to mounting Phoridae on slides, small external details and the presence or absence of the internal subcutaneous pit sensilla in the postpedicels of the antennae have proved useful for linking the sexes or rejecting a proposed linkage (e.g. Disney, 2009). However, the use of molecular barcodes (e.g. Cook & Mostovski, 2002) is likely to be the means of solving the identities of many females in the future.

Material and methods

The specimens were preserved in alcohol and were slide mounted in Berlese Fluid (Disney, 2001). Voucher specimens of all the species are deposited in the University of Cambridge Museum of Zoology.