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Psocids from Malta (Insecta: Psocodea: 'Psocoptera'), with new synonymy for *Peripsocus stagnivagus* based on the discovery of its first Palaearctic male

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Abstract

About 2,000 specimens of Psocoptera were collected in Malta recently. Examination of this material revealed 21 new records for the Maltese archipelago, augmenting the known psocid fauna of these islands from 6 to 27 species. One of the most abundant species is *Peripsocus stagnivagus* Chapman, 1930 (= *P. bivari* Baz, 1988 = *P. leleupi* Badonnel, 1976, new synonymies), formerly considered to be a predominantly Nearctic species. The discovery in Malta, of one male of this usually parthenogenetic species enabled comparison of this first Palaearctic male with the well-documented, rare Nearctic male. The lack of any morphological difference between these males, or between females from the Nearctic, the western Palaearctic and several Atlantic islands, supports the proposed synonymies.

Key words: Mediterranean, *Peripsocus bivari*, *Peripsocus leleupi*, new synonymies

Introduction

The Order Psocodea, formerly considered as a Superorder, comprises the free-living (i.e. nonparasitic) paraphyletic 'Psocoptera' (former Order Psocoptera, booklice and barklice) and the possibly polyphyletic parasitic lice (former Order Phthiraptera, chewing and sucking lice or "true lice"). The latter are phylogenetically embedded in the Suborder Troctomorpha (see Johnson *et al.* 2004; Yoshizawa & Johnson 2006, 2010; Yoshizawa & Lienhard 2010). The species richness is similar in both these groups; about 5,100 species of parasitic lice and 5,700 species of psocids have been described so far (Zhang 2011). Psocids have a worldwide distribution (Lienhard & Smithers 2002) and usually live on vegetation, especially on the bark and foliage of trees and shrubs, where they feed on epiphytic microflora (algae, fungi and lichen) or organic detritus and pollen; some species are regularly found in ground litter, under stones, in caves or in birds' nests, mammals' nests or human dwellings (Lienhard 1998).

At the initiation of this study, the psocid fauna of the Maltese Islands was poorly known, with only six species recorded (Lienhard 1990, 1998, 2004; Mifsud 2000), namely: *Liposcelis bostrychophila*, *L. compacta*, *L. decolor*, *Bertkauia lucifuga*, *Ectopsocus meridionalis*, and *E. vachoni*. No specific surveys for psocids had ever been carried out in Malta and the above mentioned records were based on accidental captures collected by foreign entomologists who did field work there. The Maltese archipelago is a group of small, low-lying islands located in the Central Mediterranean basin, of which the islands of Malta, Gozo and Comino are inhabited. Malta and Gozo are the main islands, with a surface area of 245.7 km^2 and 67.1 km^2 respectively. With the overall population density currently at 1,317 people per km^2, the archipelago is one of the most densely populated regions in the World, and human impact on the natural environment is quite severe; however, we are of the opinion that a considerably higher number of psocid species could potentially occur in these islands.

In the present work, 27 species of psocids are documented for the Maltese archipelago, of which 21 are here recorded for the first time. Moreover, *Peripsocus bivari* Baz, 1988 and *Peripsocus leleupi* Badonnel, 1976 are here synonymised with *Peripsocus stagnivagus* Chapman, 1930.

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