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## Preliminary investigations on the thrips (Insecta: Thysanoptera) fauna of the Maltese Islands

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Thrips constitute a small order of insects with some 6,150 described species worldwide. Some species are of economic importance mainly due to their polyphagous nature and ability to transmit plant pathogens in agricultural crops. No surveys have ever been conducted in the Maltese Islands which specifically focus on the biodiversity of Thysanoptera. In fact, only nine species are recorded as occurring in Malta namely: *Aeolothrips tenuicornis* Bagnall, 1926, *Melanthrips fuscus* (Sulzer, 1776), *Melanthrips libycus* Priesner, 1936, *Tenothrips discolor* (Karny, 1907), *Thrips tabaci* Lindeman, 1889, *Gynaikothrips ficorum* (Marchal, 1908), *Liothrips oleae* (Costa, 1857), *Heliethrips hemorrhoidalis* (Bouché, 1833) and *Frankliniella occidentalis* (Pergande, 1895). Many of the above mentioned species are widespread in Europe, and some others (e.g. *G. ficorum*) are not even native to the Palaeartic Region.

The current study attempts to determine which thrips occur both in the natural habitats and in the agro-ecosystems of the Maltese Islands. In order to conduct a more systematic approach when surveying these insects in Malta, an extensive literature review was conducted and a list of 576 thrips species (belonging to two suborders and seven families) occurring in the western Palaeartic Region was compiled. This list provides host-plant data, preferred habitat (e.g. dried twigs, leaf litter, grasses and mosses), distribution and other useful information on these thrips. For sure, thrips confined to northern Europe or species which are confined to high altitudes will not be found in Malta. Likewise, monophagous or oligophagous thrips whose host plant/s are lacking in Malta will also most likely not be found. However, this list provides a baseline on which plants and in which habitats the research efforts should be directed.

Material was mainly collected by beating stems, foliage, flowers/inflorescence of different plants or fungi or lichens into a light coloured plastic tray and picking thrips individually using a fine paintbrush and placing them in AGA. Preliminary

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examination of the material collected between September 2015 to the present day indicates the presence of around 30 new species records, bringing the total number of recorded species from the Maltese Islands to around 40. Whilst a number of these species are native to the Mediterranean Region, others seem to have originated from regions other than Europe and are likely to have been imported with exotic plants.

The relatively large number of species recorded was not expected, given the fact that natural habitats in the Maltese Islands are mostly disturbed due to anthropogenic pressures, and also because these islands have no permanent freshwater bodies or mountain ranges, thus offering a limited variety of natural habitats for thrips. The current data obtained, indicate that most species show polyphagous tendencies and that the abundance of these species was mostly influenced by habitat features rather than by distribution of host plant species. Less disturbed habitats seem to favour higher species richness and abundances than habitats with the same host plants, but with more anthropogenic pressures, such as high incidence of pollution from cars or from particulate matter such as quarries.