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A new species of *Physokermes* Targioni Tozzetti (Hemiptera: Coccoidea: Coccidae) from Greece

FERENC KOZÁR¹, SOFIA GOUNARI², CHRIS HODGSON³, KINGA FETYK¹ & G. GORAS⁴

¹Department of Zoology, Plant Protection Institute, Centre for Agricultural Research, Hungarian Academy of Sciences, Herman Ott út 15. 1022 Budapest, H-1525, P.O. Box 102, Hungary. E-mail: h2405koz@ella.hu

²Laboratory of Honeybee Pathology, Institute of Veterinary Research, NAGREF, 25 Neapoleos, 15341, Athens, Greece.
E-mail: sgounari@nagref.gr

³Department of Biodiversity and Biological Systematics, The National Museum of Wales, Cathay's Park, Cardiff, Wales, UK.
E-mail: Hodgsoncj@cardiff.ac.uk

⁴Laboratory of Apiculture-Sericulture, School of Agriculture, Aristotle University of Thessaloniki, Greece.
E-mail: panthakk@yahoo.gr

Abstract

During surveys of scale insects in Greece, a new species of *Physokermes* (Coccidae: Coccoidea: Hemiptera), *P. hellenicus* Kozár & Gounari, **sp. n.**, was collected on the conifer *Abies cephalonica* (Pinaceae). The adult male, adult female, third-instar female, second-instar male and female, and the first-instar nymphs are described. This is the first time a third-instar female has been found in the Kermesidae. A key is provided to identify the adult females of western Palaearctic species of *Physokermes*.

Key words: Soft scale insects, pests, distribution, taxonomy, Greece, Palaearctic Region, species key, third-instar female

Introduction

The scale insects or Coccoidea are sap-sucking insects related to the Psylloidea (jumping plant lice), Aphidoidea (aphids) and Aleyrodoidea (whiteflies). Together, these 4 superfamilies comprise the hemipterous suborder Sternorrhyncha, a group characterised by the labium appearing to arise from the prosternum (Gullan & Martin, 2009). The Coccoidea embrace about 31 extant families (although there is some disagreement at the present time about the status of some of these) with perhaps 8,000 species (Ben-Dov *et al.*, 2012). The family Coccidae is the third largest within the Coccoidea with about 1,200 described species (Ben-Dov, 1993).

Scale insects are all plant parasites and can be found on almost any part of a plant. A few are virus vectors and many species are extremely important economic pests, attacking agricultural and horticultural crops, forestry and ornamental plants. Their feeding activities directly weaken their host plants through sap loss, and their honeydew soils the leaf surface so that sooty moulds develop, reducing photosynthesis. In addition to their unsightly appearance, the presence of scale insects on plant material is also a major phytosanitary issue

Recently there has been increased interest in the scale insects in the Mediterranean subregion of the Palaearctic (Ben-Dov, 1993; Hodgson & Gounari, 2006; Milonas *et al.*, 2008; Pellizzari *et al.*, 2011; Stathas *et al.*, 2010; Ben-Dov, *et al.*, 2012). Several surveys have been undertaken that have yielded a substantial number of new records and new species. As part of this overall study, one of us (SG) has made several surveys of the Coccoidea in Greece during the past decade and this has produced several new records, including the new species of *Physokermes* described below.

Of the soft scale genera, *Physokermes* species are restricted to the Holarctic region on coniferous plants where they are sometimes important as pests but are also economically important as a honeydew source for honey production in some areas of the Mediterranean (Hodgson & Gounari, 2006). *Physokermes* Targioni Tozzetti currently contains 11 species, of which seven occur in the Palaearctic and four in the Nearctic Region (Ben-Dov *et*