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Confirmed occurrence of *Ploiaria domestica* (Heteroptera: Reduviidae: Emesinae) in Cyprus

Michael Hadjiconstantis[1] & Leonidas-Romanos Davranoglou[2]

[1]*Association for the Protection of Natural Heritage and Biodiversity of Cyprus, Kastellorizou 4, Lakatamia, 2314 Nicosia, Cyprus. E-mail: mikehadji@outlook.com*

[2]*Department of Zoology, University of Oxford, OX1 3PS, UK. E-mail: leonidas-romanos.davranoglou@queens.ox.ac.uk*

ABSTRACT

The presence of *Ploiaria domestica* Scopoli, 1786 (Hemiptera: Heteroptera: Reduviidae: Emesinae) in Cyprus was considered doubtful. Hereby we report the first confirmed occurrence of this species in the island. Images of a living specimen and diagnostic characters for recognition of this species are provided. Whether this species has a native population in this island remains to be found.

KEYWORDS: Emesinae, Leistarchini, thread-legged bugs, synanthropic, peridomestic, invasive species, Levant.

INTRODUCTION

The cosmopolitan emesine genus *Ploiaria* Scopoli, 1786 (Hemiptera: Heteroptera: Reduviidae) is distributed in all zoogeographic regions of the world, and is one of the most species-rich genera of Leistarchini. Members of the genus are ecologically diversified and occupy various habitats ranging from dense tropical forests to scorching deserts. They are typically found on trees and their epiphytes, plant debris such as dead leaves (Blatchley 1929), and sheltered microhabitats under bark, tree trunks and stones (Blatchley 1929; Villiers 1950; Wygodzinsky 1966). Species of *Ploiaria* exhibit remarkable dispersive potential, which has allowed them to occupy numerous oceanic islands (Wygodzinsky 1966), presumably via rafting on tree trunks. More recently, association of at least two species—*P. chilensis* (Philippi, 1862) and *P. domestica* Scopoli, 1786—with human habitats has also contributed to their dispersal across the globe (Putshkov & Moulet 2009).

In the Palearctic, most species are found in the Mediterranean region and typically inhabit arid ecosystems (Wygodzinsky 1966). *P. domestica*, the type species of the genus, is a turano-mediterranean species distributed in Southern Europe to Central Asia (Putshkov & Putshkov 1996). It is synanthropic, and is also frequently found under stones, in piles of logs, thatched roofs and bird's nests; its habitat preferences are reviewed by Putshkov and Moulet (2009). The distribution of this species in Cyprus is ambiguous. It is not mentioned in the works of Lindberg (1948) and Putshkov & Moulet (2009), and its presence in Cyprus is considered doubtful in the *Catalogue of the Heteroptera of the Palearctic Region* (Putshkov & Putshkov 1996). We have been unable to trace the exact reference that Putshkov &

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Putshkov (1996) may have used to determine the possible presence of the species in Cyprus, and major monographs do not mention *P. domestica* from the island (Oshanin 1912; Dispons & Stichel 1959; Stichel 1960; Putshkov 1987; Maldonado Capriles 1990).

At least three other species of the genus occur in Cyprus: the endemic *P. disponsi* Linnavuori, 1965, the Eastern Mediterranean *P. gutturalis* Noualhier, 1895 (Lindberg 1948) and the cosmopolitan *P. chilensis*, which was almost certainly in-

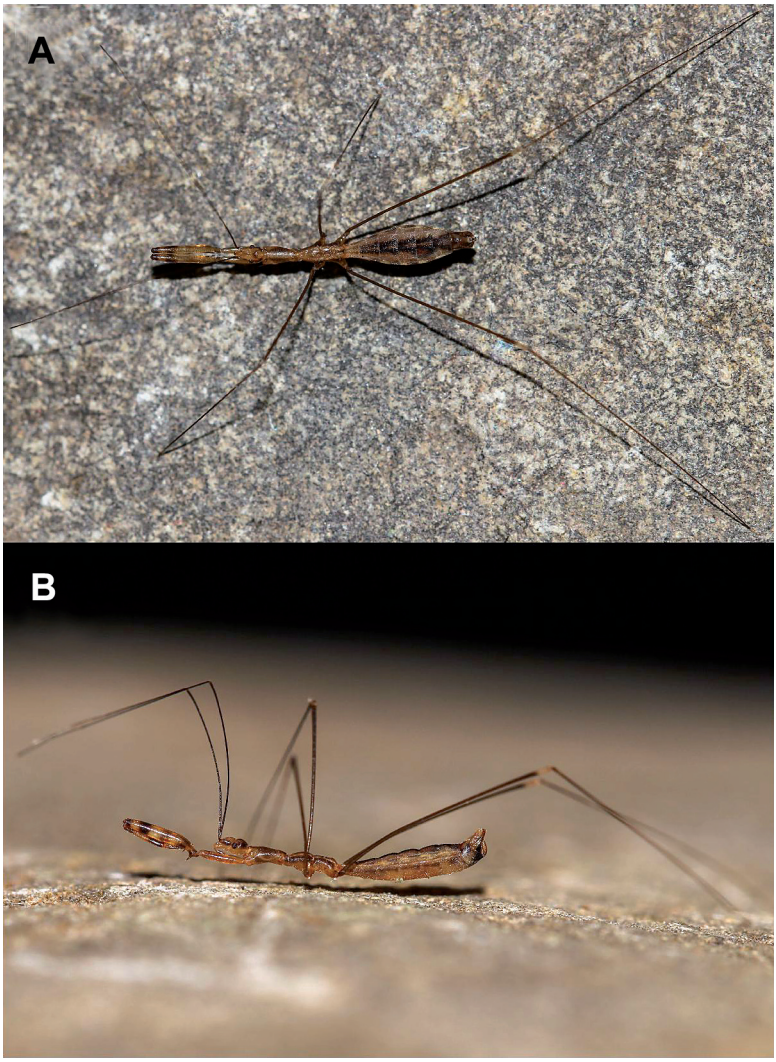

Fig. 1: Habitus photos of living specimen of *P. domestica*, dorsal (A) and lateral (B) views.

troduced (Putshkov & Moulet 2009). During a recent collecting trip, a single male specimen of *P. domestica* was collected, marking the first confirmed record of the species in the island of Cyprus.

MATERIALS AND METHODS

The species was found under a stone located at the base of Aleppo oak (*Quercus infectoria* Olivier), by the side of the road (34°50'17.34"N 32°28'47.22"E;

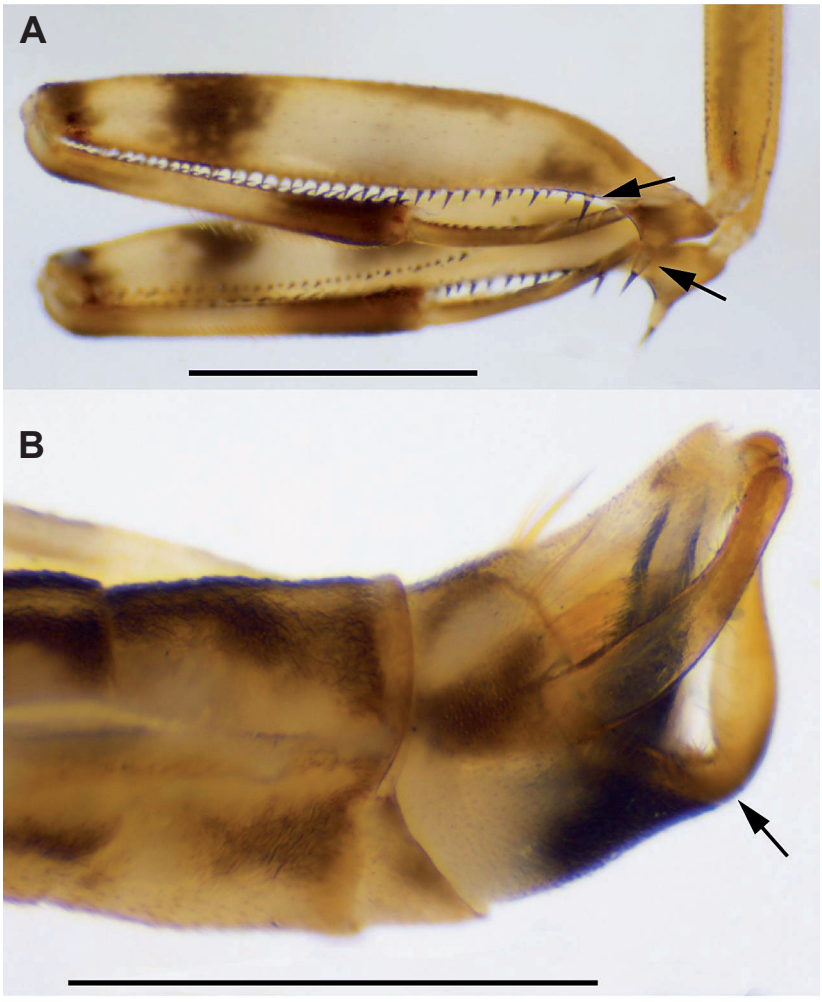

Fig. 2: Diagnostic features of *P. domestica*: (A) fore legs, arrows point to spines on trochanter and femur; (B) external male genitalia, arrow indicates notched base of cup-like sclerite of pygophore. Scale bars = 1 mm.

580 m a.s.l.), on 28 October 2017, in an area adjacent to the village of Tsada. The surrounding habitat is a xerothermic plain used for the cultivation of fruit-bearing trees and olives. The specimen was immediately placed in 70% ethanol. For dissection of the genitalia, the pygophore was immersed in 10% KOH for 15 min and then cleared in ethanol. All dissections were made using Dumont#5 forceps. Following dissection, the specimen was dry pinned, with the genitalia preserved in a microvial with glycerol, along with the specimen, now deposited at the Life Collections, Oxford University Museum of Natural History (OUMNH). Images of the genitalia and fore legs were taken using a Leica M165c binocular microscope equipped with a Leica DFC490 camera, while stacked images were combined using Helicon Focus. Habitus images of the living specimen were taken using a Canon EOS 600D camera with a Canon EF 100 mm f2.8L Macro IS USM Lens.

RESULTS AND DISCUSSION

The characteristic pattern of the abdomen (Fig. 1A) and fore femur (Figs 1B, 2A), the processes of the fore femur being much smaller than the trochanteral process (Fig. 2A, arrowed), the notched base of the cup-like sclerite of the pygophore (Fig. 2B, arrowed) and the structure of the parameres are all diagnostic for *P. domestica* (Wygodzinsky 1966; Putshkov & Moulet 2009). In addition, the structure of the phallus is identical to that of a specimen figured by Wygodzinsky (1966: fig. 51R, S).

It is a vexing question whether the specimen examined in course of the present study belongs to a native population of the species on the island, or rather represents a recent introduction. This species is always apterous and it was found close to the island's coast, making a recent introduction to the island a possibility, although its arrival within historical times is also possible. Presumably indigenous populations of this species occur in neighbouring countries of the Levant, including Turkey and Greece. Given the synanthropic and peridomestic habits of this species, it is not hard to imagine a scenario of a native population in Cyprus, supplemented with human-driven invasions from the eastern Mediterranean. The demography of this species will hopefully be elucidated by future molecular studies. For the time being, we tentatively suggest treating this species as native to the island.

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