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First records for Turkish fauna: *Megaselia brevissima* (Schmitz, 1924) and *Megaselia scalaris* (Loew, 1866) (Diptera: Phoridae)

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Summary

Two phorid species, *Megaselia brevissima* (Schmitz, 1924) and *Megaselia scalaris* (Loew, 1866) (Diptera: Phoridae) were recorded for the first time from Turkey. Both species were obtained on decompozing *Xeropicta derbentina* (Krynicki) (Pulmonata: Hygromiidae). In the laboratory *Megaselia scalaris* was also observed feeding on dead *Ablattaria arenaria* Kraatz (Coleoptera: Silphidae) adult and *Helix aspersa* Müller, 1774 (Pulmonata: Helicidae), *Monacha syriaca* Ehrenberg (Pulmonata: Hygromiidae) and *Zebrina eburnea* Pfeiffer (Pulmonata: Enidae) and even on dead *M. scalaris* larvae and adults.

Key Words: *Megaselia scalaris*, *Megaselia brevissima,* Phoridae, Diptera, first records, Turkey

Anahtar sözcükler: *Megaselia scalaris*, *Megaselia brevissima,* Phoridae, Diptera, ilk kayıtlar, Türkiye

Introduction

The scuttle flies (Diptera: Phoridae) exhibits a greater diversity of larval habits than any other family of insects (Dowding, 1967; Disney, 2008) and so they are the most biologically diverse family of insects (Mostovski, 2004). *Megaselia* Rondani 1856 is the largest genus in the family Phoridae, with around 1400 named species, but in all likelihood most species are still unnamed and not described (Disney, 2008). Only five species of the *Megaselia* genus have been recorded from Turkey in the literature. *Megaselia halterata* (Wood, 1910) was recorded in 11 mushroom produce stores in İzmir province of Turkey (Civelek & Önder, 1996). Like this species, Disney & Bayram, 1999 also reported *Megaselia berndseni* (Schmitz, 1919), *Megaselia coaetanea* Schmitz, 1929 and *Megaselia flavicans* Schmitz, 1935 in Turkey. Apart from of these fungus-breeding species, Megaselia *onis* Mostovski & Disney, 2002 was reported from donkey dung in Turkey (Mostovski & Disney, 2002). The two species belonging to the *Megaselia* genus reported from Turkey in this study were obtained during determination of the phorid species feeding on dead snails.

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Material and Methods

Specimens of two different phorid species obtained from dead *Xeropicta derbentina* (Krynicki, 1836) (Pulmonata: Hygromiidae) specimens taken into culture boxes and collected from Adana province of Turkey. The adult phorid specimens obtained from *X. derbentina* were preserved in 70-80% ethanol by Dr. T. Özsisli and were identified by Dr. R. H. L. Disney in January 2008.

Results and Discussion

***Megaselia brevissima* (Schmitz, 1924)**

Material examined: Adana: Centre, 23 m August 2007, 9 ♀♀, ex: *Xeropicta derbentina* (Krynicki, 1836) (Pulmonata: Hygromiidae).

Distribution: *M. brevissima* has been found in Croatia, France, Italy and the Canary Islands (Disney, 2006; Disney et al, 2010).

Biology: There are very few studies (Disney, 2006; Disney et al, 2010) about this species. *Megaselia brevissima* belongs to a complex that has caused many problems regarding recognition of the species in the past. However, the Palaearctic members of this complex have been revised by Disney, 2006.

This species is a new record for the Turkish fauna.

***Megaselia scalaris* (Loew, 1866)**

Material examined: Adana: Centre, 23 m, August 2007, 13 ♀♀ and 17 ♂♂, ex: *Xeropicta derbentina* (Krynicki, 1836) (Pulmonata: Hygromiidae).

Distribution: *Megaselia scalaris* is a nearly cosmopolitan species. It has been unwittingly carried around the world by humans, often for many hundreds of kilometers (Lever, 1944). The species has been found throughout North America, Asia, Africa, and Europe (Mainx 1964; Robinson 1975). *M. scalaris* is primarily a warm climate species whose distribution extends into southern Europe, where it has been reported outdoors in countries that border the Mediterranean and northward to Austria and Germany (Disney, 2008) The reported distribution of *M. scalaris* extending northern Indiana in North America has recently been shown to be a misidentification (Disney et al., 2009).

This species is a new record for the Turkish fauna.

Biology: The observations indicated that *M. scalaris* had established in the laboratory during this study in Kahramanmaraş province. It also fed on the remains of the other snail species remaining after feeding of the snail predator, *Ablattaria arenaria* (Kraatz, 1876) (Coleoptera: Silphidae) in the laboratory. These snail species were *Helix aspersa* Müller, 1774 (Pulmonata: Helicidae), *Monacha syriaca* (Ehrenberg, 1831) (Pulmonata: Hygromiidae) and *Zebrina eburnea* Pfeiffer (Pulmonata: Enidae). *Megaselia scalaris* pupae were recovered also inside abdomen of an *A. arenaria* female in the laboratory cultures. *M. scalaris* had fed even on own dead larvae and adults in the laboratory.

M. scalaris has many harmful and beneficial aspects (Disney 2008). It lives as a common polyphagous saprophage unwanted invader of laboratory cultures (Robinson, 1975). However, it is readily cultured in the laboratory standard commercial laboratory culture media and for genetic developmental studies and bioassay. It is a useful species including in forensic cases (Miller et al., 1994; Disney, 2008). Its larvae may exhibit facultative predation, parasitoidism (Robinson 1971; 1975) under very confined and overcrowded conditions in the laboratory, and parasitism (Idris & Abdullah, 1997). However, *M. scalaris* is not suitable as a biological control agent (Disney, 2008), because it is frequently a cause of human and animal myiasis and may be harmful to health as a transporter of pathogens (Biery et al., 1978; Silva, et al., 1999).

Özet

Türkiye faunası için ilk kayıtlar: *Megaselia brevissima* (Schmitz, 1924) ve *Megaselia scalaris* (Loew, 1866) (Diptera: Phoridae)

Megaselia brevissima (Schmitz, 1924) ve *Megaselia scalaris* (Loew,1866) (Diptera: Phoridae) Türkiye için yeni kayıtlardır. Her iki tür çürüyen *Xeropicta derbentina* (Krynicki) (Pulmonata: Hygromiidae) üzerinden elde edilmiştir. *Megaselia scalaris*'in aynı zamanda laboratuarda ölü *Ablattaria arenaria* (Kraatz, 1876) (Coleoptera: Silphidae) ergini, *Helix aspersa* Müller, 1774 (Pulmonata: Helicidae), *Monacha syriaca* (Ehrenberg, 1831) (Pulmonata: Hygromiidae), *Zebrina eburnea* Pfeiffer (Pulmonata: Enidae) ve hatta ölü *M. scalaris* larva ve erginleri ile beslendiği belirlenmiştir.

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