

## *Microphthalma europaea* Egger (Diptera: Tachinidae), a new record for Turkey

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**Abstract:** *Microphthalma europaea* Egger (Diptera: Tachinidae) is recorded as a parasitoid of the last instar larvae of *Polyphylla fullo* (Linnaeus) (Coleoptera: Scarabaeidae). The adult male and female were used for identification, and this is the first known record of this species in Turkey. This is also a first report of a tachinid obtained from scarabaeid larvae in Turkey.

**Key words:** *Microphthalma europaea*, Tachinidae, Diptera, Turkey

### *Microphthalma europaea* Egger (Tachinidae: Diptera), Türkiye için yeni bir kayıt

**Özet:** *Microphthalma europaea* Egger (Diptera: Tachinidae), son dönem *Polyphylla fullo* (Coleoptera: Scarabaeidae) larvalarının parazitoidi olarak saptanmıştır. Tanımlama, ergin erkek ve dişi bireyler kullanılarak yapılmıştır. Mevcut çalışma, bu türün Türkiye'de bulunduğu dair ilk kayıttır. Ayrıca, Türkiye'de Scarabaeidae familyasına ait bir türden ilk defa bir tachinid elde edilmiştir.

**Anahtar sözcükler:** *Microphthalma europaea*, Tachinidae, Diptera, Türkiye

The dipteran family Tachinidae has approximately 10,000 species (Irwin et al., 2003). Some of them are very important as natural and applied biological control agents of insect pests. Most species of this parasitoid family are solitary endoparasitoids with susceptible hosts in most major insect orders and a few other arthropod groups (Kara and Tschorsnig, 2003). Some tachinid

species are host-specific, whereas others are polyphagous (Grenier, 1988). One of the main insect orders with hosts for tachinids is Coleoptera. In a survey of natural enemies of the scarab *Polyphylla fullo* (Linnaeus), we found some larvae parasitized by a dipteran parasitoid. *Polyphylla fullo* larvae have a wide host-range and feed on the roots of many plants, including strawberries, grapes, vegetables,

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and young fruit trees. This pest species is widely distributed in Turkey (GDAR, 2008) and this tachinid species, along with other enemies, may be an important natural mortality factor of this pest.

Our studies were conducted in 2008, during which time 120 final instars living in *P. fullo* larvae were collected from a strawberry field in Aydın, Turkey. Collected larvae were incubated in a plastic box (30 × 50 × 20 cm) with soil and strawberry plants and kept at room temperature (23-24 °C). When a dead larva

was found, it was transferred individually to a petri dish and monitored daily for parasitoid emergence. If a parasitoid emerged, it was held on moist filter paper in a dark incubator at room temperature until adult emergence. Out of 120 scarab larvae, 54 died (45%), and, of these, 16 cadavers produced dipteran puparia, giving an overall parasitism rate of 13.3%. The cause of death of the remaining 38 *P. fullo* larvae is unknown. Approximately 2 weeks later, 3 adult flies emerged from the 16 puparia.

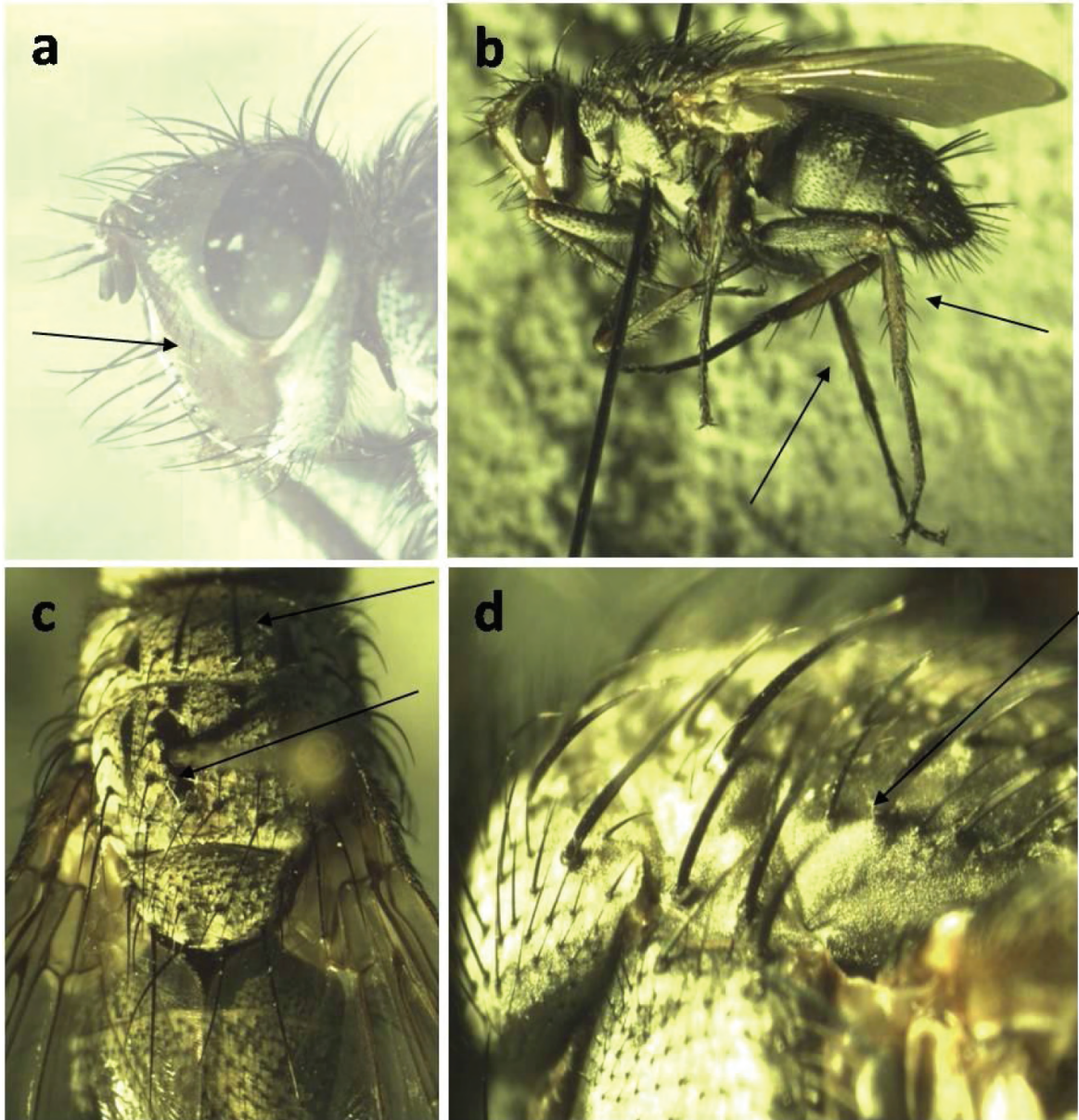


Figure. *Microphthalma europaea* ♀: a) hairs on cheeks, b) legs, c) acr and dc setae, d) prealar bristles.

We followed the systematic catalog of Herting and Dely-Draskovits (1993) and used the work of Tschorsnig and Herting (1994) for species identification. The adult flies were identified as the tachinid *Microphthalma europaea* Egger, which is the first record of this species in Turkey. In addition to this study, the adults of *M. europaea* were also collected by sweep net in the Eskişehir (Çayköy) and Diyarbakır (Çermik) provinces of Turkey. The specimens of tachinids were deposited in the Entomology Laboratory of Gaziosmanpaşa University's Faculty of Agriculture, Plant Protection Department, in Tokat, Turkey.

### Taxonomic information

Subfamily: Tachininae

Tribe: Microphthalmini

*Microphthalma europaea* Egger, 1860

*Reared material:* Aydın, emergence of flies 15.12.2008, 2♀ 1♂.

*Collected material:* Eskişehir (Çayköy), 22.07.2003, 1♂; Diyarbakır (Çermik), 06.07.2007, 1♀.

*Distribution:* Austria; Bulgaria; Croatia; Czech Republic; France; Greece; Hungary; Italy; Malta; Moldova; the North Aegean islands; Poland; Romania; central, eastern and southern Russia; Sardinia; Sicily; Slovakia; Slovenia; Spain; Switzerland; Ukraine; and Yugoslavia (Tschorsnig et al., 2004).

*Hosts:* Various *Scarabaeidae* (e.g. the genera *Amphimallon*, *Cetonia*, *Melolontha*, *Oryctes*, *Polyphylla*) (Tschorsnig and Herting, 1994).

*Diagnosis:* Hairs on cheeks black (Figure 1a); legs black with yellow tibia (Figure 1b); 2 st. with 4 humeral bristles, 3 acrostichal (acr) setae in front of suture, 4 dorsocentral (dc) setae behind suture (Figure 1c). Short prealar bristle present (Figure 1d) (Tschorsnig and Herting, 1994).

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