

## A New Record for the Cereal Pests in Turkey: *Phorbia securis* Tiensuu, 1935 (Diptera, Anthomyiidae)

Erhan KOÇAK\*, Mustafa ÖZDEMİR  
Ministry of Agriculture, Central Plant Protection Research Institute, 06172, Yenimahalle, Ankara - TURKEY

Received: 30.01.2003

**Abstract:** *Phorbia securis* Tiensuu, 1935 (Diptera, Anthomyiidae) is a new pest found in the cereal areas of the Thrace region in Turkey. In this paper, its morphology, short biology, hosts and distribution in Turkey are presented.

**Key Words:** *Phorbia securis*, Anthomyiidae, Diptera, Cereal, New Record, Turkey.

### Türkiye Hububat Zararlılarına Yeni Bir Kayıt: *Phorbia securis* Tiensuu, 1935 (Diptera, Anthomyiidae)

**Özet:** *Phorbia securis* Tiensuu, 1935 (Diptera, Anthomyiidae), Trakya bölgesi hububat alanlarından Türkiye faunası için yeni kayıt olarak saptanmıştır. Bu makalede, zararlının morfolojisi, kısa biyolojisi, konukçuları ve Türkiye'deki yayılışı verilmiştir.

**Anahtar Sözcükler:** *Phorbia securis*, Anthomyiidae, Diptera, Türkiye, Hububat, Yeni Kayıt.

#### Introduction

This pest caused an epidemy in the cereal fields of Edirne, Kırklareli and Tekirdağ provinces in autumn 2000. Thereupon, some observations were carried out and materials (egg, larva, pupa and adult) were obtained. The identified adult specimens are preserved in the museum of the Central Plant Protection Research Institute, Ankara. Wheat and oats were determined as host plants. In the same region, Yürüten (1964) determined *Hylemyia* sp. from the cereal areas in Kocaeli and Edirne provinces. İyriboz (1970) stated that *P. genitalis* Schnabl had been determined in the wheat experiment field in Bornova in 1939. In addition, Adıgüzel (1980) found *P. penicillifera* Stein. in the cereal areas of Adıyaman, Diyarbakır and Siirt provinces.

Wheat, rye, barley, couch grass (*Elymus repens* Gould.), smooth brome (*Bromus inermis* Leysser) and timothy grass (*Phleum bertoloni* DC.) are preferred as host plants (Jermy, 1953; Hennig, 1969; Rygg, 1966).

#### Species Description

**Adult:** It is black in general appearance. The size varies approximately from 4.0 to 5.0 mm. In males, the narrowest part of the frontal vitta is less than 2/3 of the third antennal segment's width (Figure 1a). In females, this area is clearly larger than in males (Figure 1b). The length of the third antennal segment is approximately 2 times longer than the second antennal segment. Arista is slightly pubescent. Thorax dull black and dorsal stripes slightly marked. The grey wings are 3.0-4.5 mm in length. Wings extend 1.0-1.5 mm behind the abdomen. Wing base is brownish-black. Along both sides of the veins are thin brownish-black lines. The latter part of the cubitus (cu) is shorter than the posterior crossvein (m) (Figure 1c). Abdomen is shining black and cylindrical. The shape of the lamellae (Figure 1d) and the male genitalia (Figure 1e) are the most important identification characters. The legs are black with long bristles.

\* Central Plant Protection Research Institute, 06172 Yenimahalle-Ankara

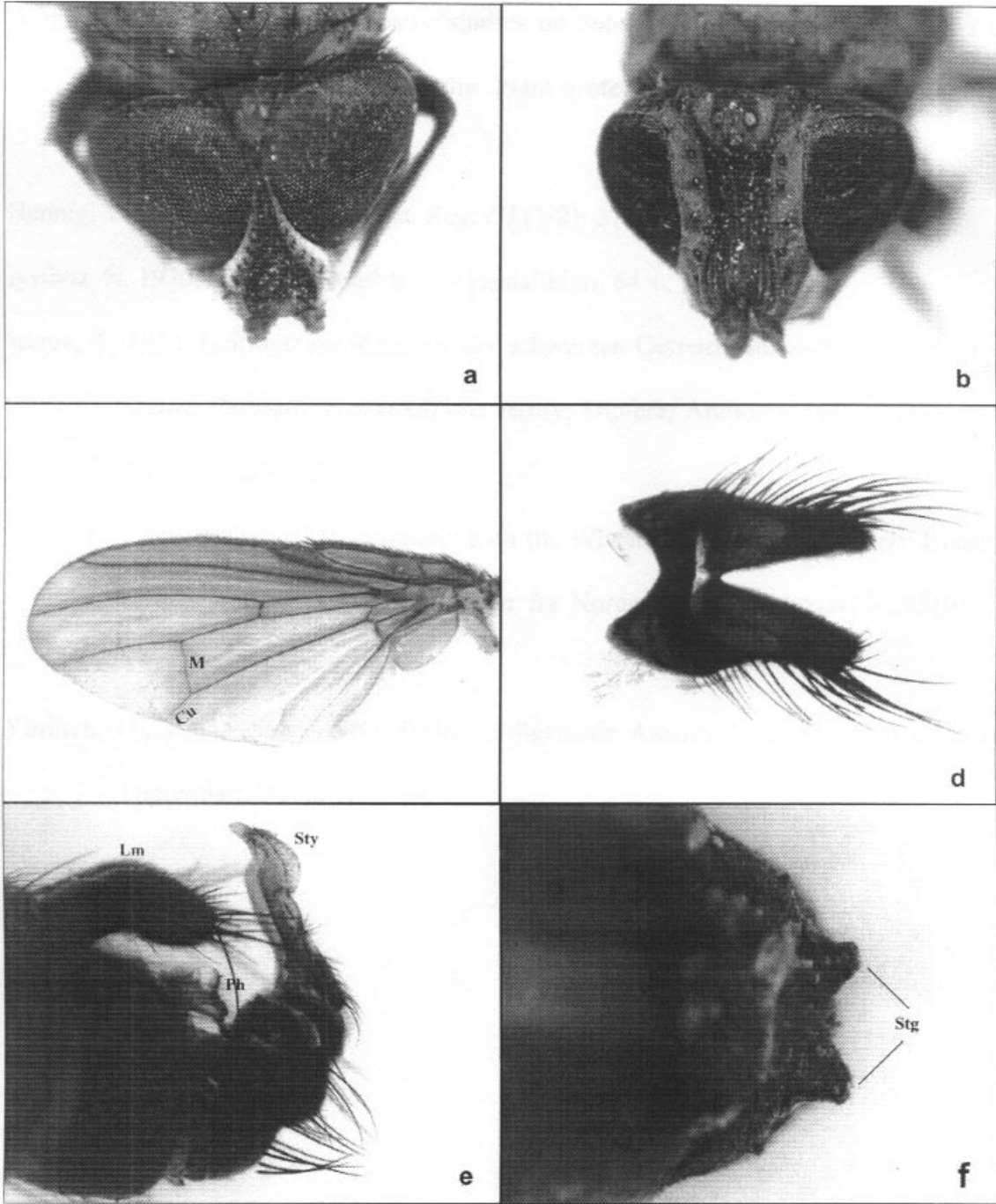


Figure 1. *Phorbia securis* Tiensuu: a. Head of male head from front, x40; b. Head of female head from front, x50; c. Left wing, x20; d. Lamellae of male from front; e. Lamellae (Lm), styli (Sty) and phallus (Ph) of male from lateral; f. Pupal last abdomen segment with stigmata (Stg).

**Egg:** Freshly laid eggs white, but during development become yellowish. They are elongate oval shaped and approximately 1 mm in length.

**Larva:** The body is cylindrical. There are 3 larva instars. Larva instars are on average 1.0, 3.0 and 7.0 mm in length respectively. First instar larva is white. Later, they become yellowish-white (Jermy, 1953).

**Pupa:** The pupa is reddish-brown and on average 4.5 mm in length. Abdominal stigmas are curved outside like a crescent (Figure 1f ).

**Material examined:** Edirne, 22.10.2000, 28♂, 35♀; Kırklareli 24.10.2000, 15♂, 9♀ and Tekirdağ 21.10.2000, 8♂, 3♀.

### Biological Notes

*P. securis* develops 2 generations a year. The pest overwinters as pupa under 1-3 cm soil depth. The flies of

the overwintering generation emerge in April. They spend the summer as matured larvae. Second generation flies appear in September and October (Jermy, 1953).

### Acknowledgements

We are grateful to Dr. V. Michelsen (Zoology Museum, Copenhagen University, Denmark) for identifying the specimens.

### References

- Adıgüzel, N. 1980, The preliminary studies on determining of pests in the stems of cereals the Southeast Anatolia. Plant Protection Research Annual, Volume 15, page 4, Zirai Mücadele ve Karantina Umum Genel Müdürlüğü Yayınları, Ankara.
- Hennig, W. 1969, Anthomyiidae, Fliegen palaearkt. Reg.VII (1-2): 271-328.
- İyriboz, N. 1970, Hububat Zararlıları ve Hastalıkları, 64 s., Zirai Mücadele ve Karantina Umum Genel Müdürlüğü Yayınları, Ankara.
- Jermy, T. 1953, Beitrage zur Kenntnis der schwarzen Getreideblumenfliegen (*Phorbia securis* Tiensuu, *P. penicillifera* Jermy; Diptera, Anthomyiidae). Acta Agron. Hung., 3: 225-255.
- Rygg, T. 1966, Biological Investigations on the Wheat Fly, *Hylemyia securis* Tiensuu (Dipt.: Anthomyiidae). Meldinger fra Norges Landbrukshogskole, 45(6): 1-15.
- Yürüten, O., 1964, Marmara ve Trakya Bölgesinde Arasıra Zararı Görülen Hububat Dipteraları. Böcü, 1(8): 7-9.