

Two Tachinid (Diptera: Tachinidae) Parasitoids of *Diprion pini* (L.) (Hymenoptera: Diprionidae), Along with a New Record for the Turkish Tachinidae Fauna

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Abstract: *Drino gilva* (Hartig) and *Diplostichus janitrix* (Hartig) (Diptera: Tachinidae) were reared from the larvae of *Diprion pini* (Linnaeus) (Hym.: Diprionidae) in Birlik (Ankara) Forest. *D. janitrix* was recorded for the first time in Turkey.

Key Words: *Drino gilva*, *Diplostichus janitrix*, new record, *Diprion pini*, parasitoid, Tachinidae, Turkey

Diprion pini (L.) (Hymenoptera: Diprionidae)'nin İki Tachinid Parazitoiti ve Bunlardan Türkiye Tachinidae Faunası İçin Yeni Bir Kayıt

Özet: *Diprion pini* (L.) (Hymenoptera: Diprionidae)'nin Birlik (Ankara) ormanında Tachinidae familyasına ait *Drino gilva* Hartig ve *Diplostichus janitrix* Hartig (Diptera: Tachinidae) olmak üzere iki parazitoiti tespit edilmiştir. Bunlardan *D. janitrix* Türkiye Tachinidae faunası için yeni kayıttır.

Anahtar Sözcükler: *Drino gilva*, *Diplostichus janitrix*, yeni kayıt, *Diprion pini*, parazitoit, Tachinidae, Türkiye

The sawfly, *Diprion pini* (Linnaeus, 1758) (Hymenoptera: Diprionidae), is a well-known defoliating pest of pine forests in Europe. It mostly prefers *Pinus sylvestris* Linnaeus and *Pinus nigra laricio* Poiret (Barre et al., 2002). It usually has only one generation per year; however, the build-up population was also correlated with the occurrence of bivoltine development caused by favorable weather conditions in the spring (Eichhron, 1982, 1991). Rows of eggs are laid in slits cut by the females in the inner sides of needles, which are then covered by a coating that turns brown when hardened. Larvae live communally, feeding on old needles (spring to summer) and on the bark of twigs; second generation larvae feed on the current year's needles (Figure 1).

Severe defoliation (by *D. pini*) strongly reduces annual growth. Defoliation and twig feeding weakens trees and increases their susceptibility to attacks by stem borers. Total defoliation in stressed trees may cause tree death.

Diprion pini larvae significantly damaged *Pinus nigra* in Birlik (Ankara) Forest in 2007. According to the literature, this saw fly has different parasitoid groups. *Diprion pini* eggs have been parasitized by hymenopteran Chalcidoidea and Ichneumonoidea (Herz and Heitland, 2005), and sawfly larvae have been parasitized by tachinids (Tschorsnig and Herting, 1994). The aim of the present study was to identify parasitoids of *D. pini* in Birlik Forest.

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Figure 1. *Diprion pini* (a. larvae, b. pupae), *Diplostichus janitrix* (c. lateral view of the head, d. dorsal view of the body), and *Drino gilva* (e. dorsal view of the body, f. lateral view of the head).

Third and fourth instar larvae (149) of *D. pini* collected from 15-30-year-old pine (*Pinus nigra*) trees (Ankara, Turkey; lat 39°52'15"N, long 32°52'54" E) on 20 June 2007 were brought to the laboratory and transferred into rearing cages (20 × 14 × 7 cm). The larvae were fed daily with fresh pine needles until the pupal stage and were maintained at 25 ± 1 °C, L:D 18:6 h, and 70% relative humidity (Figure 1). Parasitoid emergence was observed daily.

Two tachinid pupae were observed from mature sawfly larvae on the 10th day of laboratory culturing. The pupae were placed in separate rearing boxes until flies emerged. Both adult parasitoids emerged from the pupae in 7 days and were identified by the second author. The authority names for Tachinidae species were obtained from the Catalogue of Palaearctic Diptera (Herting and Dely-Draskovits, 1993). The collection data, as well as host and distribution ranges for the 2 tachinid species reared in the current study, are given below. The parasitoid species were deposited in the collection of the second author.

Diplostichus janitrix (Hartig, 1838) [subfamily Exoristinae, tribe Exoristini] (Figure 1)

Material Examined: 1 ♂, Birlik (Ankara) Forest, reared from larvae of *Diprion pini*, emerged 7 July 2007.

Distribution: Northwards toward Great Britain, Sweden; Russia: East Siberia (Herting and Dely-Draskovits, 1993).

Hosts: *Diprion* spp. (predominantly *D. pini*) and *Gilpinia* spp. (Hym.: Diprionidae) (Tschorsnig and Herting, 1994). This species was reared from sawfly larvae of the genus *Diprion*, the majority of records,

Diprion pini. In Russia, there is a doubtful record from *Neodiprion sertifer* (Belshaw, 1993).

Drino gilva (Hartig, 1838) [subfamily Exoristinae, tribe Eryciini] (Figure 1)

Material Examined: 1 ♀, Birlik (Ankara) Forest, reared from larvae of *D. pini*, emerged 7 July 2007.

Distribution in Turkey: Erzurum (Tortum) (Doğanlar, 1982).

Hosts: *Diprion* spp. (mainly *D. pini*), *Gilpinia* spp., *Neodiprion sertifer* Geoff., and *Microdiprion pallipes* Fall. (Hym.: Diprionidae) (Tschorsnig and Herting, 1994).

Hosts in Turkey: *Diprion pini* (L.) (Kara and Tschorsnig, 2003).

Information about tachinid parasitoids of *Diprion pini* is given by Eichhorn (1981), Hellrigl (1996), and Herz and Heitland (1999). Our findings show that *Drino gilva* and *Diplostichus janitrix* (Diptera: Tachinidae) were reared from the larvae of *D. pini*. *Diplostichus janitrix* was recorded for the first time in Turkey.

Each species, *Drino gilva* and *Diplostichus janitrix*, used a different strategy for host utilization. The most important difference between them is the time of attack. *Diplostichus janitrix* specializes on young hosts (second and third instars) (Hellrigl, 1996), whereas *D. gilva* prefers older sawfly larvae (third and fourth instars) (Herz and Heitland, 1999).

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