ABSTRACT: Diospilus belokobylskiji Beyarslan sp. nov. is described and diagnostic characters are illustrated and compared with the related species Diospilus inflexus Reinhard. New distributional records for eight species of Diospilini are reported for Turkey. Seven of these species are new to Turkey.

KEY WORDS: Hymenoptera, Braconinae, Helconinae, Diospilini, Diospilus belokobylskiji, new records, Turkey

In Turkey, Helconinae braconids are found in Asia Minor (Euxin, Mediterranean, and Irano-Anatolian phytogeographical provinces); only three species (Diospilus capito, D. productus, and Tapheus hiator) are known from the Turkish Thrace or the European part of Turkey. The tribe Diospilini (Helconinae) contains species of braconids recorded from less deeply concealed phytophagous beetles, such as the Curculionidae and the Nitidulidae (Shaw and Huddleston, 1991). Curculionids are plant feeders, some being serious pests of cultivated crops (http://eny3005.ifas.ufl.edu/lab1/Coleoptera/Curculionid.htm). Some species of nitidulids are considered serious pests of date palms throughout the world. Nitidulids attack ripe fruit, causing it to rot, and damage is reflected in reduced yield and lower fruit quality (Glazer et al., 2007). Pollen beetles (Meligethes spp. [Coleoptera: Nitidulidae]), in particular, are important pests on Brassica oilseed crops throughout Europe (Billqvist and Ekbom, 2001).

In recent years, studies on Diospilus (Diospilini: Helconinae) braconids, which could be especially useful in the biological control of nitidulid pests, have gained momentum. Diospilus capito has been reported to be the most common species found in pollen beetle larvae (Kevväi et al., 2005). Belokobylskij and Lobodenko, 1997 reported a list of Palaearctic species of Diospilus with data on their distribution. In the interactive TAXAPAD world catalogue on Ichneumonoidea, the tribe Diospilini Foerster was represented by 14 genera, of which six are present in the European fauna (Yu et al., 2005).

In this study, eight species of Diospilini representing two genera (Diospilus and Tapheus) are recorded from Turkey for the first time, including a new species belonging to Diospilus. The genus Diospilus differs from Tapheus by having a square or anteriorly broadened second radiomedial cell, by the uniformly rounded bend between the upper part the second metasomal tergite and its basal part, and by its metasoma usually shorter than the mesosoma (Tobias, 1986).
METHODS

Adult specimens of Diospilini (Hymenoptera: Braconidae: Helconinae) were collected from various habitats in Turkey between the years 1998 and 2006 (Figure 1). Sweep nets were used to obtain samples from field layer grassland plants. The specimens were identified mostly using the keys of Tobias (1986, 2000). Geographical coordinates of the localities are given. For general distributions of examined species, references from the literature on Palaearctic fauna were used (Yu et al., 2005). Specimens are deposited in the Zoological Museum of Department of Biology, Trakya University.

SYSTEMATIC ENTOMOLOGY

Diospilini Foerster, 1862

Diospilus Haliday, 1833

Diospilus belokobylskiji Beyarslan sp. nov.

Figs. 2-8

Holotype (female): Body color: Black; legs (except coxae and basal halves of femora, which are black) and pterostigma dark brown; wing membrane hyaline; veins yellowish-brown.

Body Length: 2.1 mm. Antenna length 1.8 mm. Forewing length: 2.4 mm. Mesosoma length: 0.9 mm. Metasoma length: 0.8 mm. Ovipositor sheath length: 0.8 mm.

Head: Antenna1 segments 21, the length of the third flagellar segment as long as the fourth segment, length of third, fourth and penultimate segments 2.3, 2.3 and 1.5 times their widths, respectively (Fig. 2). Last antennal segment sharply pointed. Antenna setiform. Width of head 1.8 times its medial length. Temple roundly narrowed behind the eye and as long as transverse diameter of eye in dorsal view. Vertex smooth, glabrous; ocelli very small, almost positioned
in equilateral triangle; POL 2.0 times OD, 3.5 times shorter than OOL (Fig. 3). Eyes scarce hairy, longitudinal diameter of eye 1.4 times its transverse diameter. Length of malar space as long as basal width of mandible and 0.4 times longitudinal diameter of eye (Fig. 4). Anterior tentorial pit deep and large, clypeal suture very deep; width of face 1.6 times height of face and clypeus combined; face smooth, medially punctate and with long and sparse setae. Clypeus and mandible microsculptured; temple smooth. Occipital carina distinct. Length of maxillary palp 0.5 times height of head; frons smooth and weakly convex.

**Mesosoma.** Length of mesosoma 1.4 times its height; pronotum smooth, glabrous; side of pronotum smooth, posteriorly with crenulae; mesonotum smooth, glabrous, notauli very deep and weakly punctate; mesopleuron smooth, precoxal sulcus distinct and crenulated (Fig. 5); scutellar sulcus with wide crenulae; scutellum distinctly convex, smooth and glabrous; sides of scutellum roughly sculptured; subalar depression deep and punctate; metapleuron finely punctate, medially smooth and glabrous; metanotum convex laterally; surface of propodeum rugo-rugulose and with long, grey setae laterally.

**Wings.** Forewing: length of pterostigma 2.0 times its maximum width and 1.5 times anterior margin of radial cell; medial vein on forewing originating together with basal vein directly from parastigma; r very short, almost absent; cuba interstitial; m-cu antefurcal; vein 1-SR+M almost straight. 3-SR : SR1 = 8 : 34; 2-SR : 3-SR : r-m = 12 : 8 : 12. Hind wing: lr-m 2.5 times 2-SC+R and as long as SC+R1 (Fig. 6).

**Legs.** Latero-medial side of hind coxa with a deep depression; ratio of femur : tibia : basitarsus of hind leg = 34 : 41 : 9; length of femur, tibia, and basitarsus of hind leg 3.7, 6.6 and 3.3 times their maximum widths, respectively (Fig. 7); length of hind tibial spurs 0.40 and 0.38 times hind basitarsus, tibia, and tarsus densely and femur sparsely setose.

**Metasoma.** Length of first tergite 0.5 times its apical width (Fig. 8), its median area smooth, laterally very weakly striato-rugulose; other tergites smooth and glabrous; basal width of second tergite 1.2 times its median length; apical width of second tergite 1.75 times its median length; length of ovipositor sheath 0.9 times of length of metasoma and 0.45 times length of forewing.

**Host Information.** Unknown.


**Distribution and Remarks.** Amasya, Çankırı, Içel, Giresun, Nevşehir, and Sivas. The area, where the type specimens is collected mostly over 1000 m. This species seems to prefer rather montane habitats.
Differential Diagnosis. *Diospilus belokobylskiji* sp. nov. is related to *Diospilus inflexus*. The two species are distinguishable as follows:

- Anterior margin of marginal cell shorter than pterostigma, 1-M as long as cu-a or 1r-m. ............................................................ *Diospilus belokobylskiji* sp. nov.
- Anterior margin of marginal cell longer than pterostigma, 1-M longer than 1r-m. .................................................................................... *Diospilus inflexus*

Figs. 2-8. *Diospilus belokobylskiji* sp. nov. (female): (2) habitus, lateral aspect; (3) head, dorsal aspect; (4) head, frontal aspect; (5) antenna; (6) wings; (7) hind leg; (8) metasoma, dorsal aspect. Scale 1 mm (Figs. 2, 7), 1.8 mm (Figs. 3, 6), 1.9 mm (Fig. 4), 1.7 mm (Fig. 5), 0.9 mm (Fig. 8).
**Etymology.** Named in honour of Dr. Sergey A. Belokobylskij, Russian specialist of Braconidae (Hymenoptera).

**Diospilus capito** (Nees, 1834)

Diospilus melanoscelus (Nees, 1834)

Material Examined. Adapazarı-Hendek-Hüseyins¸eyh, 27.VI.2001, 40° 49' 0N-30° 46' 60E, 248 m., 1♀; Bursa-Burhaniye, 18.IX.1992, 39° 43' 60N-29° 22' 60E, 703 m., 1♀; Bursa-Keles-Baraklı, 13.VII.1993, 39° 58' 1N-29° 13' 40E, 1066 m., 1♀; Kastamonu-Daday-Ballıdag-Sarpun, 1.VII.2001, 41° 34' 0N-30° 31' 16E, 1441 m., 1♀; Kocaeli-Izmit-Karasu, 13.VII.1993, 40° 28' 0N-36° 17' 60E, 1249 m., 1♀; Trabzon-Maçka-Gülindagı, 27.X.2001, 39° 58' 29N-39° 34' 13E, 1572 m., 2♂♂; Trabzon-Maçka-Ocaklı, 26.VII.2003, 40° 26' 29N-38° 31' 29E, 1752 m., 1♂; Yalova-Safran deresi, 27.X.2001, 40° 28' 0N-36° 17' 60E, 1249 m., 1♀; Zonguldak-Devrek-Davulga, 29.VI.2001, 41° 13' 9N-31° 57' 21E, 227 m., 1♀, 1♂.

Distribution. Eastern Palaearctic, Europe, Western Palaearctic.

Diospilus morosus Reinhard, 1862

Material Examined. Afyon-Bayat-Köroğlu, 29.VI.1998, 38° 58' 59N-30° 55' 29E, 1100 m., 1♂; Afyon-Emirdag-Koruca, 29.VI.1998, 39° 1' 11N-31° 8' 60E, 980 m., 1♀; Afyon-Sandıklı-Ekinhisar, 28.VI.1998, 38° 31' 50N-30° 32' 17E, 1035 m., 1♀; Amasya-Merzifon-Esenköy yaylası, 9.VII.2003, 41° 00' 37N-35° 17' 23E, 1538 m., 1♀; Amasya-Yolyani, 30.VI.2004, 40° 34' 0N-36° 7' 0E, 800 m., 1♂; Bartın-Çamlık 30.VI.2001, 41° 38' 09N-32° 20' 15E, 60 m., 1♂; Bursa-Karakabey-Çingene Çeşmesi, 18.VIII.1994, 40° 12' 50N-28° 21' 22E, 32

Distribution. Belarus, Germany, Russia, Slovakia.
**Diospilus nigricornis** (Wesmael, 1835)

**Material Examined.** Trabzon-Çaykara-Uzungöl, 4.VII.2004, 40° 37' 21N-40° 17' 14E, 1281 m., 1♂.

**Distribution.** Eastern Palaearctic, Europe, Western Palaearctic.

**Diospilus productus** Marshall, 1894


**Distribution.** Armenia, Greece, Hungary, Italy, Switzerland, Ukraine, United Kingdom.

**Tapheus hiator** (Thunberg, 1824)

**Material Examined.** Edirne-Uzunköprü-Yeniköy yaylası, 22.V.2002, 41° 20' 41N-26° 46' 5E, 69 m., 1♂; Samsun-S.Pazarı-A.Tepe mevkii, 3.VII.2003, 41° 10' 10N-36° 10' 20E, 970 m., 1♀; Sivas-Gürün, 5.VI.2002, 38° 43' 19N-37° 15' 43E, 1332 m., 1♂; Sivas-Şerefie-Arapç, 5.V.2001, 40° 7' 60N-37° 46' 60E, 1670 m., 2♂♂; Sivas-Yeniçubuk, 2. VI.2001, 39° 12' 44N-36° 5' 43E, 1145 m., 1♀; Tokat-Niksar, 17.V.2001, 40° 35' 30N-36° 57' 6E, 426 m., 1♀.

**Distribution.** Holoarctic.

**Tapheus rufocephalus** (Thunberg, 1824)

**Material Examined.** Sivas-Şerefie-Arapç, 5.V.2001, 40° 7' 60N-37° 46' 60E, 1670 m., 1♂.

**Distribution and Remarks.** *Tapheus rufocephalus* is a rare species through the Palaearctic, and it is known only from Far East Russia in the Eastern Palaearctic, from Kazakhstan and Germany, both in the Western Palaearctic. The report from Turkey is the third record of the species for the western Palaearctic.
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LITERATURE CITED


