

***Coniocleonus nebulosus* Linnaeus, 1758 and *Mecinus janthinus* Germar, 1817: Two Weevil Species (Coleoptera: Curculionidae) New to Turkey**

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ABSTRACT

Coniocleonus nebulosus Linnaeus, 1758 (Lixinae) and *Mecinus janthinus* Germar, 1817 (Curculioninae) were reported for the Turkey fauna for the first time. The brief description, the general distribution, some characters and female genital organ (spermatheca) were showed by drawing.

Key words: Coleoptera, Curculionidae, Fauna, New records, Turkey.

INTRODUCTION

Curculionidae is considered to be one of the most richest families in Coleoptera in terms of total number of species. The Curculionidae comprise approximately 60.000 species in world and, 13.000 species in Palearctic region (Varlı, 1998). In Turkey, 89 genera and 382 species of Curculionidae family were known (Lodos *et al.*, 2003). There are 30 species of genus *Mecinus* (Curculioninae) and 20 species of genus *Coniocleonus* (Lixinae) (Hoffmann, 1958) in palearctic region, in Turkey, 3 species of *Mecinus* and 3 species of *Coniocleonus* were known (Lodos *et al.*, 1978; 2003). The specimens of family are important phytophagous except some species (Ross, 1963). These groups cause to important damages on plants that having economic importance (Hoffmann, 1950). The fauna of Curculionidae (Coleoptera) of Turkey is more rich, because it has different climatic conditions. Both geographic position and climatic differentiations have some effects on fauna (Lodos *et al.*, 2003). The Curculionidae fauna of Turkey has been studied by many scientists (Bolu and Legalov, 2008; Davidian and Gültekin, 2006; Gültekin, 2006, 2008; Keskin, 2005; Lodos, 1960, 1971, 1972; Lodos *et al.*, 1978; 2003; Pehlivan *et al.*, 2005a, b; Avgın and Colonnelli, 2011; Sert, 1995; 2005; 2009; Sert and Çağatay, 1999; Voss, 1962).

The aim of the current study was to review the collection material and to extend our knowledge on the fauna of Coleoptera in Turkey.

MATERIAL AND METHODS

The six specimens were collected with net from different localities on Bolkar mountains of Turkey in 2006. The materials are deposited in the Kırşehir Zoology Museum, in Turkey. Identification of specimens were made by the first author based on the relevant literature such as (Lohse *et al.*, 1983, Ter-Minasyan, 1988, Hoffmann, 1950, 1958). The classification suggested by Alonso-Zarazaga and Lyal (1999) were followed. The genitals were prepared by first softening the abdomen in 10% KOH for 24 hours at 30°C. Thereafter, tissues were carefully removed in 70% alcohol and the genitals were placed in glycerin. Observation was made using a stereomicroscope (Olympus SZX12 Photomicroscope at 40X). Some special characters and female genital (spermatheca) showed with drawing in both species.

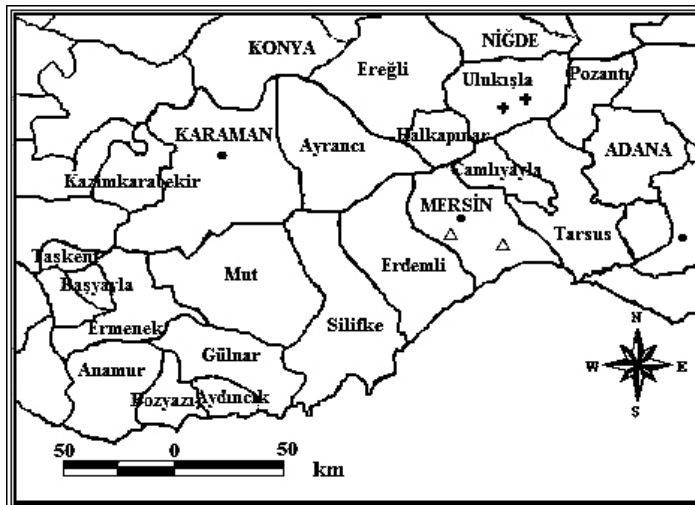


Fig. 1. The map of study area (Bolkar mountains); *Coniocleonus nebolus* (+) and *Mecinus janthinus* (Δ).

RESULTS

Subfamily: Curculioninae Latreille, 1802

Tribe: Mecinini Germar, 1824

Mecinus janthinus (Germar, 1817)

Material examined: Mersin, Central, Aslanköy-Çatak, 1428m, 18.VIII.2006, 1♂, Çatak-Fındıkpınarı, 1903m, 2.VII.2006, 3♀♀.

Distribution: Europa, Siberia (Hoffmann, 1958; Lohse *et al.*, 1983; Legalov, 2010).

Host plants: *Linaria vulgaris*; *Linaria dalmatica* (Mc.Clay and Hughes, 2007).

Description: Body long, cylindrical, blackish blue or dark blue, head oval, eyes round and slightly projected, rostrum bently, surface smooth, shining, antennae blackish brown or black, 1. segment of funicule nearly two times to 2., pronotum oval, lateral edges round, surface with large punctures, apical part articulated (Fig. 2a), elytra long,

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cylindrical, striae distinctly impressed, intervals consists of large punctures (Fig. 2a), ventral surface of body and legs black, covered with simple, yellowish setae, male fore femora with teeth (Fig. 2b), tarsi dark brown or black, claws basally contiguous, the length of the body with rostrum 3.6 mm.

Spermatheca: Spermatheca like sickle, cornu long and curvley, apical part narrow, proximal part is very short, basally, ramus like canal, nodule seem circle and rather dilated, and strongly sclerotized (Fig. 2c).

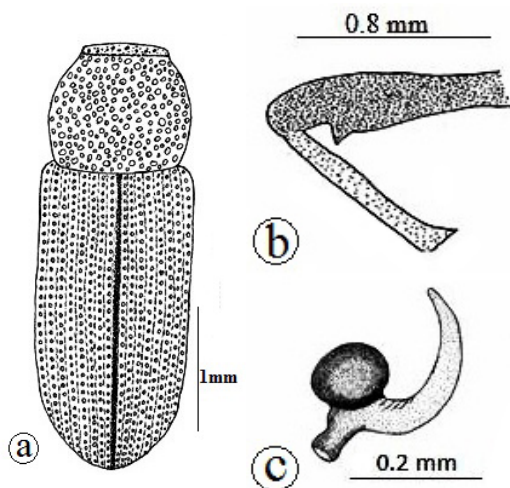


Fig. 2. *Mecinus janthinus*; a) dorsal view, b) femur (toothed)(♂), c) spermatheca

Subfamily: Lixinae Schoenherr, 1823**Tribe: Cleonini Faust, 1904*****Coniocleonus nebulosus* Linnaeus, 1758**

Material examined: Niğde, Ulukışla, Kozluca, 1210m, 5.VI.2006, 1♀, Darboğaz, 1662m, 5.VI.2006, 1♀.

Distribution: Europa (Central) (Hoffmann, 1950; Ter-Minasyan, 1988).

Host plants: *Calluna* (Ericaceae) (Balalaikins and Bukejs, 2011).

Description: Body black or blackish red, surface covered with grey setae, head wide, frons smooth with a little impression between eyes, eyes elliptical, narrow and not protuberant, rostrum short, wide, parallel-sided, in middle, carina distinct, antennae dark red, 1. segment of funicule as long as 2. and 3., pronotum transverse, surface with deep longitudinal grooves, edges concave and have band that exist with short, grey hairs, in posterior part has a deep groove which like rectangle (Fig. 3a), surface of groove black and unhair, postorbital lobe distinct, projection of prosternum pointed (Fig. 3b), elytra parallel-sided, in the posterior part narrows to apex, apical part of elytron separated, with large spot in basal part of elytra (Fig. 3a), legs dark red or blackish, femurs long, without teeth, 1. and 2. segment of tarsi equal and very long, claws strong and basally contiguous, the length of body with rostrum is 12.6 mm.

Spermatheca: Spermatheca like hook, cornu long, curvly, longer than proximal part, proximal part curly, basally, spermatheca dilated and strongly sclerotized, ramus and nodule slightly projecting (Fig. 3c).

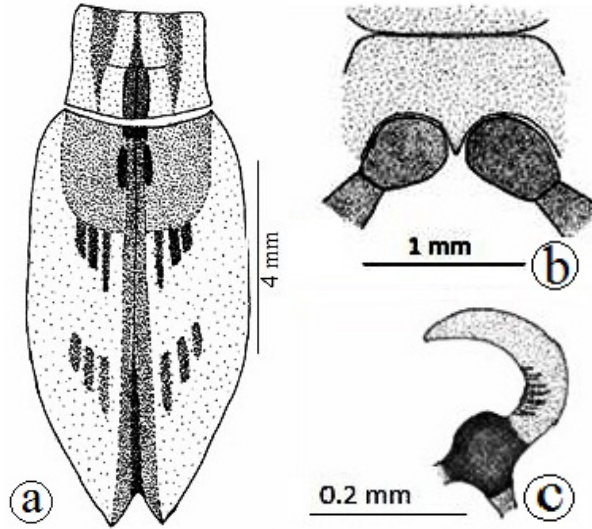


Fig. 3. *Coniocleonus nebulosus*; a) dorsal view, b) prosternum, c) spermatheca

DISCUSSION

We showed the specific characters of species and their genital organs (spermatheca) with drawing after diagnosis. In *Coniocleonus nebulosus* (Lixinae); the groove that like rectangle, a hemicycle stain that exist with simple, grey setae in basal part of elytra and pointed projecting of prosternum are specific characters (Hoffmann, 1950; Ter-Minasyan, 1988) (Fig. 2a-c). The body with blackish blue, the punctures on elytral intervals are very deep and wide, and toothed fore femura (♂) are specific characters of *Mecinus janthinus* (Curculioninae) (Lohse *et al.*, 1983; Hoffmann, 1958) (Fig. 1a-c). We determined these characters in this study (Fig. 1a-c, Fig. 2a-c).

In Palearctic region, there are 30 species of genus *Mecinus* (Curculioninae) (Hoffmann, 1958), and in Turkey, 3 species are exist (Lodos *et al.*, 1978, 2003). *M. janthinus* is recorded in Europe, Russia by Hoffman (1958), and in Ukraine by Mazur (2002). There are any records about *M. janthinus* for Turkey. Thus, the number of species of genus *Mecinus* were reach to 4. However, there are 20 species of genus *Coniocleonus* (Lixinae) (Hoffmann, 1950) in Palearctic region, and in Turkey, 3 species are exist (Lodos *et al.*, 1978, 2003). *C. nebulosus* is recorded in Europe by Hoffmann (1950). There are any records about *C. nebulosus* for Turkey. Thus, the number of species of genus *Coniocleonus* were reach to 4.

The European stem-mining weevil *Mecinus janthinus* Germar (Coleoptera: Curculionidae) has been released and established in North America as a biological

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control agent on both *Linaria* species. Yellow toadflax, *Linaria vulgaris* P. Mill., and *Dalmatian toadflax*, *Linaria dalmatica* (L.) P. Mill. (Scrophulariaceae), are important invasive plants of European origin in the northern US and Canada (Mc. Clay and Hughes, 2007). We recorded *M. janthinus* for the first time in southern of Turkey. In our country, the distributions of the *Linaria* species must be known and, in these area that include the *Linaria* species, the exist of *M. janthinus* were observed. The feature of *M. janthinus* was well-known and used.

The Bolkar mountains is among Europe, Iran and Mediterranean regions with Sahara-Arabian subregion, and exist a passing zone among zoogeographic regions. The flora of Bolkar mountains were existed %59 Mediterranean, %31 Iran-Turan and %10 Europe-Sibiria floristic component. Thus, the Bolkar mountains is a more reach and important mountain in Turkey and Europe (Gemici, 1993). In Turkey that is a passing zone among zoogeographic regions, many faunistic components of Europe, Mediterranean and Iran-Turan regions can exist. As a result, this study show that can be new records of the species and records with more similar investigations.

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