

A contribution to the study of Bulgarian Throscidae (Coleoptera: Elateriformia)

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Abstract. A review of the family Throscidae, based on new records and literature data, is made. *Aulonothroscus brevicollis* (Bonvouloir), *Trixagus carinifrons* (Bonvouloir), *T. gracilis* Wollaston, and *T. leseigneuri* Muona, as well as the genus *Aulonothroscus* Horn are reported from Bulgaria for the first time. For the time being, six species from two genera are known to live in the country. Four species from the family were found to live sympatrically and syntopically in a spot in the Maleshevska Planina Mts.

Key words: Coleoptera, Throscidae, new records, Bulgaria

Introduction

Throscidae is a small family of small beetles unknown to many entomologists. The group belongs to the superfamily Elateroidea of the series Elateriformia and is regarded as a separate family, excluding Lissominae (BURAKOWSKI, 1975; LAWRENCE et al., 2000). The characters used to separate Throscidae from the other families of Elateroidea, respectively Coleoptera, are: 1/ antennae fusiform, with three-segmented club, 2/ presence of deep grooves in the propleural region for reception of the antennae, with grooves extending at least in part along the prosternal suture, and 3/ the presence of a free, movable labrum (YENSEN, 1975). The family includes 3 genera and approximately 150 species distributed worldwide (op. cit.). Only two genera *Aulonothroscus* Horn and *Trixagus* Kugelann, both having cosmopolitan distribution, live in Europe. On the European mainland (including the former territories of ex-URSS) there are eighteen species of *Trixagus* and three species of *Aulonothroscus* (MUONA, 2002; LESEIGNEUR, 2005; LESEIGNEUR, in press), whereas, only in Central Europe *Trixagus* is represented by ten species (LESEIGNEUR, 1998) and *Aulonothroscus* by two species. The larvae of the group are terricolous and they feed with the mycothallus of dead trees (BURAKOWSKI, 1975).

For a long time only one species of Throscidae was recorded from Bulgaria – *Trixagus dermestoides* (ANGELOV, 1968; BURAKOWSKI, 1975). However, a recent research carried out by the second author and collaborators in the Maleshevska Planina Mts. found out twenty three specimens of this family. Based on examination of both the material just mentioned and one previously investigated, the first author ascertained a genus and five species, which had not been previously

recorded for the fauna of Bulgaria. Material from one of the species was published almost immediately and was included in the type series of *Trixagus meybohmi* Leseigneur, 2005 (LESEIGNEUR, 2005).

The material studied is preserved in the collections of the National Museum of Natural History Sofia (coll. NMNHS), those of the Hungarian Natural History Museum of Budapest (coll. HNHMB), and the private collections of J. Mertlik (coll. JM, Hradec Kralove, Czech Republic), the first author (coll. LL, Meylan, France) and U. Hornig (coll. UH, Oppach, Germany). The taxa new for Bulgaria are asterisked. The first author identified or revised all specimens listed below.

List of the species

**Aulonothroscus* Horn, 1890

**Aulonothroscus brevicollis* (Bonvouloir, 1859)

Material examined: Middle Struma Valley, vicinity of Sandanski, 21.IV.1987 (2 specimens), J. Mertlik leg., coll. JM; Maleshevska Planina Mts., 3 km E of Nikudin, 660 m, soil traps in *Quercetum* forest, 4.V – 4.VII (1 specimen) / 8.VIII – 4.X.2003 (1 specimen), S. Lazarov & T. Ljubomirov leg., coll. NMNHS; same mountain, SW of Sedelets, 680 m, soil traps in deciduous forest, 8.VIII – 4.X.2003 (1 specimen), T. Ljubomirov leg., coll. NMNHS.

Trixagus Kugelann, 1794 [= *Throscus* Latreille, 1796]

**Trixagus carinifrons* (Bonvouloir, 1859)

LESEIGNEUR (in press).

Material examined: Rhodope Mts., 1.VII.1928, J. Fodor leg., coll. HNHMB; Sofia, IX.1928, Biro leg., coll. HNHMB; Maleshevska Planina Mts., 3 km E of Nikudin, 660 m, soil traps in *Quercetum* forest, 4.V – 4.VII (1 ♂, 2 ♀♀) / 4.VII – 8.VIII.2003 (1 ♂), S. Lazarov & T. Ljubomirov leg., coll. NMNHS.

Trixagus dermestoides (Linnaeus, 1758)

Throscus dermestoides: ANGELOV (1968: 98); BURAKOWSKI (1975: 390).

Localities known: Belogradchik, VI; Pirdop, VI (ANGELOV, 1968: 98); Sofia – Knyazhevo, IX; Petrich, VI (BURAKOWSKI, 1975: 390).

Material examined: Sofia Region, Knyazhevo, 5.IX, several larvae, B. Burakowsky leg.; Middle Struma Valley, Petrich, 12.VI.1959, 1 specimen, R. Bielawski leg. (BURAKOWSKY, 1975: 390).

We consider the Burakowsky's description of larvae of this species reliable because he reared the larva in laboratory conditions until the imaginal stage.

**Trixagus gracilis* Wollaston, 1854

LESEIGNEUR (in press).

The first author examined a single specimen of the species from Bulgaria without exact localities. *Trixagus gracilis* is widely distributed in Europe, but for a long time it was mistaken with *T. elateroides* (LESEIGNEUR, 1997).

**Trixagus leseigneuri* Muona, 2002

Material examined: Maleshevska Planina Mts., 3 km E of Nikudin, 660 m, soil traps in *Quercetum* forest, 4.V – 4.VII (2 specimens) / 4.VII – 8.VIII (2 specimens) / 8.VIII – 4.X.2003 (1 specimen), S. Lazarov & T. Ljubomirov leg., coll. NMNHS.

Trixagus meyhohmi Leseigneur, 2005

LESEIGNEUR (2005: 90).

Material examined: SE Bulgaria, Lozenec Village, ruderal vegetation, soil traps, 1 ♀, M. Mikát leg., in coll. Hornig; Maleshevska Mts., 3 km E of Nikudin, 660 m, soil traps in *Quercetum* forest, 4.V – 4.VII.2003, 3 ♂♂; 4.VII – 8.VIII.2003, 2 ♂♂; 8.VIII – 4.X.2003: 1 ♂, 1 ♀; 4.X – 4.XI.2003, 1 ♂, 1 ♀, all T. Ljubomirov leg., coll. LL, coll. NMNHS, coll. UH.

Eight paratype specimens (6 ♂♂, 2 ♀♀) of this species, collected from the Maleshevska Planina Mts., are preserved in the coll. NMNHS.

Notes

It is worth mentioning that four species of the family, including three representatives of the genus *Trixagus*, live sympatrically and definitely syntopically. Thus, in the period 4.V – 4.VII.2003 *Aulonothroscus brevicollis*, *Trixagus carinifrons*, *T. leseigneuri* and *T. meyhohmi* were found together within the traps disposed at the spot near Nikudin (see above). Besides, the last two taxa belong to one and the same group of species and they have only recently been separated each other (LESEIGNEUR, 2005).

Out of the species enumerated in the list here, five more species inhabit the neighboring countries (Greece, Romania, and Yugoslavia) but they have never been cited from Bulgaria. These species are *Trixagus atticus* Reitter, 1921 (Greece, Romania), *T. duvalii* Bonvouloir, 1859 (Greece, Romania), *T. elateroides* Heer, 1841 (Greece, Romania, Yugoslavia), *T. exul* Bonvouloir, 1859 (Greece, Romania) and *T. obtusus* (Curtis, 1827) (Romania). Further findings of all or most of these species in Bulgaria are doubtless.

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Принос към изучаването на българските Throscidae (Coleoptera: Elateriformia)

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(Р е з ю м е)

Представен е списък на познатите до момента представители на семейство Throscidae от България. Вуговеме *Aulonothroscus brevicollis* (Bonvouloir), *Trixagus carinifrons* (Bonvouloir), *T. gracilis* Wollaston и *T. leseigneuri* Муона, както и род *Aulonothroscus* Horn се съобщават за първи път за фауната на страната.